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(54) Title: BIOMARKERS OF TARGET MODULATION, EFFICACY, DIAGNOSIS AND/OR PROGNOSIS FOR RAF IN-
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(57) Abstract: Methods of utilizing biomarkers to identify patients for treatment or to monitor response to treatment are taught
herein. Alterations in levels of gene expression of the biomarkers, particularly in response to Raf kinase inhibition, are measured
and identifications or adjustments may be made accordingly.



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BIOMARKERS OF TARGET MODULATION, EFFICACY, DIAGNOSIS, AND/OR PROGNOSIS FOR RAF INHIBITORS

5 The present invention relates generally to the field of pharmacogenomics and in particular to the use of biomarkers for identifying patients suitable for treatment as well as to methods of following their response to methods of treatment.

 An effort to understand an individual patient's response or disease progression is the topic of present day research. Indeed, the field of pharmacogenomics or pharmacogenetics
10 utilizes genomic data, pharmacology, and medicine, and often relies on advanced research tools to correlate genetic variability to one or more of predisposition to a disease and/or its progression, as well as therapeutic response to a drug or therapeutic regimen. Typically, multiple genes are analyzed simultaneously in a large-scale, genome-wide approach.

 Proliferative cell disorders such as cancers usually develop through the
15 accumulation of a series of mutations in the patient's DNA within a subpopulation of cells. These mutations may confer a survival advantage on the cells that causes them to grow and spread in an uncontrolled manner that is deleterious to the surrounding tissues. The particular set of mutations may be unique to an individual patient's tumor. Cancers of the same tissue or organ in different individuals may have originated from different sets of
20 mutations, though certain mutations may be prevalent among particular cancer types. The characteristic set of mutations will determine how the cancer cells behave, and in particular, their likelihood of response to a given therapeutic regimen.

 One may characterize the genetic alterations in a tumor by using advanced research tools that measure the genetic sequence of the tumor's DNA, or the RNA or proteins that
25 are the expression of the altered DNA. It is a goal of current research to identify characteristics of an individual's tumor that are predictive of the likelihood of that tumor's response to various therapeutic treatments and to identify biomarkers that are modulated in response to treatment, thus improving patient care. Thus, one or more genes would be identified where presence of particular genetic mutations in the DNA, or their levels of
30 expression, either as RNA transcripts or as proteins, or a combination of these factors,

would be predictive of the likelihood that a particular treatment would affect the tumor in a manner that would be beneficial to the patient.

One main purpose is to determine which variations in individuals or subpopulations, associated with their genetics or the genetic characteristics of their disease, factor into drug efficacy and to create suitable tests, including diagnostic tests. Drugs that are tailored for patients with a particular genetic sequence, or for diseases characterized by particular genetic alterations, may thus be produced. The tests may also be used to guide treatment decisions, such as which drug or drug combination is most likely to be beneficial to the patient, and what dosing and schedule is most appropriate. Diagnostic tests and genetic profiling will help avoid the expense and the potentially detrimental trial-and-error approach to the suitability of a particular treatment regimen or a particular dosage level.

While the era of customized drugs may be coming, methods that utilize genetic information to identify specific individuals or subgroups for a particular type of treatment or optimization of a treatment may be immediately put to use today.

An individual's response to a particular treatment or predisposition to disease and the correlation to a particular gene of interest has been documented. It is now believed that cancer chemotherapy is limited by the predisposition of specific populations to drug toxicity or poor drug response. For a review of the use of germline polymorphisms in clinical oncology, see Lenz, H. J. (2004) *J. Clin. Oncol.* 22(13):2519-2521. For a review of pharmacogenetic and pharmacogenomics in therapeutic antibody development for the treatment of cancer, see Yan and Beckman (2005) *Biotechniques* 39:565-568.

Results from numerous studies suggest several genes may play a major role in the principal pathways of cancer progression and recurrence, and that the corresponding germline polymorphisms may lead to significant differences at transcriptional and/or translational levels. Polymorphism has been linked to cancer susceptibility (oncogenes, tumor suppressor genes, and genes of enzymes involved in metabolic pathways) of individuals. In patients younger than 35 years, several markers for increased cancer risk have been identified. Cytochrome P4501A1 and glutathione S-transferase M1 genotypes influence the risk of developing prostate cancer in younger patients. Similarly, mutations in the tumor suppressor gene, p53, are associated with brain tumors in young adults.

This approach may be extended to mutations that are specific to cancer cells, and not otherwise found in the patient's genome. For instance, it has been demonstrated clinically

in patients with gastrointestinal stromal tumors (GIST) treated with the drug Gleevec (imatinib mesylate; Novartis) that particular activating mutations in the genes KIT and PDGFA are linked to higher response rates to the drug, see J Clin Oncol, 2003 Dec 1;21(23):4342-9.

5 By measuring changes in gene expression of cancer cell lines or an *in vivo* model of cancer induced by treatment with a particular therapeutic agent, one may characterize the cells' response to that agent. This approach provides insight into the mechanism of the drug, including what biological processes or pathways it impacts. Such information can help guide the treatment of patients, by providing expectations as to which genes will
10 change in response to treatment. An assay of those genes from a sample collected from a patient post-treatment could then be used to determine whether the drug was having the intended effect, and by extension, whether the dose or schedule should be altered, or the regimen discontinued. This approach would improve efficacy by ensuring that patients receive the most appropriate treatment.

15 By the way of further background, kinases known to be associated with tumorigenesis include the Raf serine/threonine kinases.

The Raf serine/threonine kinases are essential components of the Ras/Mitogen-Activated Protein Kinase (MAPK) signaling module that controls a complex transcriptional program in response to external cellular stimuli. Raf genes code for highly conserved
20 serine-threonine-specific protein kinases which are known to bind to the Ras oncogene. They are part of a signal transduction pathway believed to consist of receptor tyrosine kinases, p21 ras, Raf protein kinases, Mek1 (ERK activator or MAPKK) kinases and ERK (MAPK) kinases, which ultimately phosphorylate transcription factors. In this pathway, Raf kinases are activated by Ras and phosphorylate and activate two isoforms of Mitogen-
25 Activated Protein Kinase (called Mek1 and Mek2), that are dual specificity threonine/tyrosine kinases. Both Mek isoforms activate Mitogen Activated Kinases 1 and 2 (MAPK, also called Extracellular Ligand Regulated Kinase 1 and 2 or Erk1 and Erk2). The MAPKs phosphorylate many substrates including cytosolic proteins and ETS family of transcription factors and in so doing set up their transcriptional program. Raf kinase
30 participation in the Ras/MAPK pathway influences and regulates many cellular functions such as proliferation, differentiation, survival, oncogenic transformation and apoptosis.

Both the essential role and the position of Raf in many signaling pathways have been demonstrated from studies using deregulated and dominant inhibitory Raf mutants in mammalian cells as well as from studies employing biochemical and genetic techniques in model organisms. In many cases, the activation of Raf by receptors that stimulate cellular tyrosine phosphorylation is dependent on the activity of Ras, indicating that Ras functions upstream of Raf. Upon activation, Raf-1 then phosphorylates and activates Mek1, resulting in the propagation of the signal to downstream effectors, such as MAPK (Crews et al. (1993) *Cell* 74:215). The Raf serine/threonine kinases are considered to be the primary Ras effectors involved in the proliferation of animal cells (Avruch et al. (1994) *Trends Biochem. Sci.* 19:279).

Raf kinase has three distinct isoforms, Raf-1 (c-Raf), A-Raf, and B-Raf, distinguished by their ability to interact with Ras, to activate MAPK kinase pathway, tissue distribution and sub-cellular localization (Marias et al., *Biochem. J.* 351:289-305, 2000; Weber et al., *Oncogene* 19:169-176, 2000; Pritchard et al., *Mol. Cell. Biol.* 15:6430-6442, 1995).

Activating mutation of one of the Ras genes can be seen in about 20% of all tumors and the Ras/Raf/MEK/ERK pathway is activated in about 30% of all tumors (Bos et al., *Cancer Res.* 49:4682-4689, 1989; Hoshino et al., *Oncogene* 18:813-822, 1999). Recent studies have shown that B-Raf mutation in the skin nevi is a critical step in the initiation of melanocytic neoplasia (Pollock et al., *Nature Genetics* 25: 1-2, 2002). Furthermore, most recent studies have disclosed that activating mutation in the kinase domain of B-Raf occurs in about 66% of melanomas, 12% of colon carcinoma and 14% of liver cancer (Davies et al., *Nature* 417:949-954, 2002) (Yuen et al., *Cancer Research* 62:6451-6455, 2002) (Brose et al., *Cancer Research* 62:6997-7000, 2002). It is also present in about 30% of ovarian low-grade serous carcinomas (Shih and Kurman, *Am J Pathol*, 164:1511-1518, 2004) and 35-70% papillary thyroid carcinomas (Xing et al., *J Clin Endocrinology*, 90:6373-6379, 2005).

Melanoma, which continues to represent a significant unmet medical need, is a complex multigenic disease with a poor prognosis, especially in the advanced metastatic state. Activating somatic mutations in the B-Raf proto-oncogene have recently been discovered in a variety of malignancies, and most frequently in melanoma. Approximately 70% of melanoma express a mutated and activated form of B-Raf (V600E), making it an excellent target for drug development. Furthermore, another 10-15% of melanomas express

mutant N-Ras, further demonstrating the importance of the MAPK pathway in the growth and survival of melanoma cells.

Inhibitors of the Ras/Raf/MEK/ERK pathway at the level of Raf kinases can potentially be effective as therapeutic agents against tumors with over-expressed or mutated
5 receptor tyrosine kinases, activated intracellular tyrosine kinases, tumors with aberrantly expressed Grb2 (an adapter protein that allows stimulation of Ras by the Sos exchange factor) as well as tumors harboring activating mutations of Raf itself. In the early clinical trials, inhibitors of Raf-1 kinase that also inhibit B-Raf have shown promise as therapeutic agents in cancer therapy (Crump, *Current Pharmaceutical Design* 8:2243-2248, 2002;
10 Sebastien et al., *Current Pharmaceutical Design* 8: 2249-2253, 2002).

Disruption of Raf expression in cell lines through the application of RNA antisense technology has been shown to suppress both Ras and Raf-mediated tumorigenicity (Kolch et al., *Nature* 349:416-428, 1991; Monia et al., *Nature Medicine* 2(6):668-675, 1996). It has also been shown that the administration of deactivating antibodies against Raf kinase or the
15 co-expression of dominant negative Raf kinase or dominant negative MEK, the substrate of Raf kinase, leads to the reversion of transformed cells to the normal growth phenotype (see Daum et al., *Trends Biochem. Sci* 1994, 19:474-80; Fridman et al. *J. Biol. Chem.* 1994, 269:30105-8).

Several Raf kinase inhibitors have been described as exhibiting efficacy in inhibiting
20 tumor cell proliferation *in vitro* and/or *in vivo* assays (see, e.g., U.S. Pat. Nos. 6,391,636, 6,358,932, and 6,268,391). Other patents and patent applications suggest the use of Raf kinase inhibitors for treating leukemia (see, e.g., U.S. Patent Nos. 6,268,391, and published U.S. Patent Application Nos. 20020137774; 20010016194; and 20010006975), or for treating breast cancer (see, e.g., U.S. Patent Nos. 6,358,932 and 6,268,391, and published
25 U.S. Patent Application No. 20010014679).

It would be particularly beneficial to be able to determine in a patient having a cell proliferative disease whether such disease involves one or more components of the Ras/Raf/MEK/ERK pathway. It would also be beneficial to be able to identify patients with a good likelihood of treatment of a cell proliferative disease with a Raf kinase inhibitor and
30 to monitor the response of those patients.

SUMMARY OF THE INVENTION

One embodiment of the invention relates to a method of identifying a patient for treatment. The method may optionally include an administration of a Raf kinase inhibitor to the patient. Gene expression is determined from a biological sample from the patient,
5 specifically to detect the presence and/or measure the alteration in level of expression of biomarkers disclosed herein.

Another embodiment of the invention comprises a method of monitoring response of a patient to treatment. The method may include the step of administration of a Raf kinase inhibitor to the patient prior to measurement of gene expression on a biological sample
10 obtained from the patient. Alternatively, monitoring may be conducted on a sample obtained from a patient who has previously been treated so that the administration step by one practicing the method of monitoring response need not performed. The response of the patient is evaluated based the detection of gene expression of at least one biomarker from the tables. Detection and/or alteration in the level of expression of at least one biomarker
15 compared to baseline may be indicative of the response of the patient to the treatment. The pattern of expression level changes may be indicative of a favorable response or of an unfavorable one.

Another aspect of the invention is a method of treating a cell proliferative disorder in a patient. A therapeutically effective amount of an agent that alters gene expression level
20 compared to baseline of at least one of the biomarkers from the tables is administered to the patient for treatment of the disorder. The patient is selected based on evidence of gene expression of at least one of the biomarkers. The agent is preferably CHIR-265 or an agent with an inhibitory profile similar to CHIR-265.

Yet another embodiment of the invention is a method of identifying an agent for
25 treatment of a cell proliferative disorder.

A further embodiment of the invention is a method of identifying a Raf kinase inhibitory agent for treatment or further development of the agent.

Also included are data sets of the biomarkers of any of the tables of biomarkers disclosed herein.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The invention is an example of translational medicine at work, wherein patients may be treated selectively based on their particular genetic profile.

The biomarkers noted herein may be advantageously utilized to identify patients for treatment and to monitor their response to treatment. For example, dosage amounts may be adjusted, additional therapies may be introduced, toxic response or other adverse events may be foreshadowed and forestalled, or treatment may be discontinued, depending upon the response of the patient to the Raf kinase inhibitor as measured by the expression profile. In addition, the methods taught herein may be utilized to study the mechanism of action of CHIR-265 or other Raf kinase inhibitors on a molecular level. Thereafter, rational combinations for treatment may be based on information learned regarding the molecular mechanism of action.

Definitions and Techniques

The practice of the present invention will employ, unless otherwise indicated, conventional techniques of immunology, molecular biology, microbiology, cell biology and recombinant DNA, which are within the skill of the art. See e.g., Sambrook, Fritsch and Maniatis, MOLECULAR CLONING: A LABORATORY MANUAL, 2nd edition (1989); CURRENT PROTOCOLS IN MOLECULAR BIOLOGY (F. M. Ausubel et al. eds., (1987)); the series METHODS IN ENZYMOLOGY (Academic Press, Inc.): PCR 2: A PRACTICAL APPROACH (M.J. MacPherson, B.D. Hames and G.R. Taylor eds. (1995)), Harlow and Lane, eds. (1988) ANTIBODIES, A LABORATORY MANUAL and ANIMAL CELL CULTURE (R.I. Freshney, ed. (1987)).

As used herein, certain terms have the following defined meanings.

As used in the specification and claims, the singular form “a”, “an” and “the” include plural references unless the context clearly dictates otherwise. For example, the term “a cell” includes a plurality of cells, including mixtures thereof.

All numerical designations, e.g., pH, temperature, time, concentration, and molecular weight, including ranges, are approximations which are varied (+) or (-) by increments of 0.1. It is to be understood, although not always explicitly stated that all numerical designations are preceded by the term “about”. It also is to be understood,

although not always explicitly stated, that the reagents described herein are merely exemplary and that equivalents of such are known in the art.

The terms “polynucleotide” and “oligonucleotide” are used interchangeably and refer to a polymeric form of nucleotides of any length, either deoxyribonucleotides or ribonucleotides or analogs thereof. Polynucleotides can have any three-dimensional structure and may perform any function, known or unknown. The following are non-limiting examples of polynucleotides: a gene or gene fragment (for example, a probe, primer, EST or SAGE tag), exons, introns, messenger RNA (mRNA), transfer RNA, ribosomal RNA, ribozymes, cDNA, recombinant polynucleotides, branched polynucleotides, plasmids, vectors, isolated DNA of any sequence, isolated RNA of any sequence, nucleic acid probes, and primers. A polynucleotide can comprise modified nucleotides, such as methylated nucleotides and nucleotide analogs. If present, modifications to the nucleotide structure can be imparted before or after assembly of the polymer. The sequence of nucleotides can be interrupted by non-nucleotide components. A polynucleotide can be further modified after polymerization, such as by conjugation with a labeling component. The term also refers to both double- and single-stranded molecules. Unless otherwise specified or required, any embodiment of this invention that is a polynucleotide encompasses both the double-stranded form and each of two complementary single-stranded forms known or predicted to make up the double-stranded form.

A polynucleotide is composed of a specific sequence of four nucleotide bases: adenine (A); cytosine (C); guanine (G); thymine (T); and uracil (U) for guanine when the polynucleotide is RNA. Thus, the term “polynucleotide sequence” is the alphabetical representation of a polynucleotide molecule. This alphabetical representation can be input into databases in a computer having a central processing unit and used for bioinformatics applications such as functional genomics and homology searching.

A “gene” refers to a polynucleotide containing at least one open reading frame (ORF) that is capable of encoding a particular polypeptide or protein after being transcribed and translated. A polynucleotide sequence may be used to identify larger fragments or full-length coding sequences of the gene with which they are associated. Methods of isolating larger fragment sequences are known to those of skill in the art.

A “gene product” or alternatively a “gene expression product” refers to the amino acids (e.g., peptide or polypeptide) generated when a gene is transcribed and translated.

The term “polypeptide” is used interchangeably with the term “protein” and in its broadest sense refers to a compound of two or more subunit amino acids, amino acid analogs, or peptidomimetics. The subunits may be linked by peptide bonds. In another embodiment, the subunit may be linked by other bonds, e.g., ester, ether, etc.

5 As used herein the term “amino acid” refers to either natural and/or unnatural or synthetic amino acids, and both the D and L optical isomers, amino acid analogs, and peptidomimetics. A peptide of three or more amino acids is commonly called an oligopeptide if the peptide chain is short. If the peptide chain is long, the peptide is commonly called a polypeptide or a protein.

10 The term “isolated” means separated from constituents, cellular and otherwise, in which the polynucleotide, peptide, polypeptide, protein, antibody or fragment(s) thereof, are normally associated within nature. In one aspect of this invention, an isolated polynucleotide is separated from the 3’ and 5’ contiguous nucleotides with which it is normally associated within its native or natural environment, e.g., on the chromosome. As
15 is apparent to those of skill in the art, a non-naturally occurring polynucleotide, peptide, polypeptide, protein, antibody, or fragment(s) thereof, does not require “isolation” to distinguish it from its naturally occurring counterpart. In addition, a “concentrated”, “separated” or “diluted” polynucleotide, peptide, polypeptide, protein, antibody or fragment(s) thereof, is distinguishable from its naturally occurring counterpart in that the
20 concentration or number of molecules per volume is greater in a “concentrated” version or less than in a “separated” version than that of its naturally occurring counterpart. A polynucleotide, peptide, polypeptide, protein, antibody, or fragment(s) thereof, which differs from the naturally occurring counterpart in its primary sequence or, for example, by its glycosylation pattern, need not be present in its isolated form since it is distinguishable
25 from its naturally occurring counterpart by its primary sequence or, alternatively, by another characteristic such as glycosylation pattern. Thus, a non-naturally occurring polynucleotide is provided as a separate embodiment from the isolated naturally occurring polynucleotide. A protein produced in a bacterial cell is provided as a separate embodiment from the naturally occurring protein isolated from a eukaryotic cell in which it is produced in nature.

30 A “probe” when used in the context of polynucleotide manipulation refers to an oligonucleotide that is provided as a reagent to detect a target potentially present in a sample of interest by hybridizing with the target. Usually, a probe will comprise a label or a means by which a label can be attached, either before or subsequent to the hybridization reaction.

Suitable labels include, but are not limited to radioisotopes, fluorochromes, chemiluminescent compounds, dyes, and proteins, including enzymes.

A “primer” is a short polynucleotide, generally with a free 3' -OH group that binds to a target or “template” potentially present in a sample of interest by hybridizing with the target, and thereafter promoting polymerization of a polynucleotide complementary to the target. A “polymerase chain reaction” (“PCR”) is a reaction in which replicate copies are made of a target polynucleotide using a “pair of primers” or a “set of primers” consisting of an “upstream” and a “downstream” primer, and a catalyst of polymerization, such as a DNA polymerase, and typically a thermally-stable polymerase enzyme. Methods for PCR are well known in the art, and taught, for example in “PCR: A PRACTICAL APPROACH” (M. MacPherson et al., IRL Press at Oxford University Press (1991)). All processes of producing replicate copies of a polynucleotide, such as PCR or gene cloning, are collectively referred to herein as “replication.” A primer can also be used as a probe in hybridization reactions, such as Southern or Northern blot analyses. Sambrook et al., *supra*.

As used herein, “expression” refers to the process by which polynucleotides are transcribed into mRNA and/or the process by which the transcribed mRNA is subsequently translated into peptides, polypeptides or proteins. If the polynucleotide is derived from genomic DNA, expression may include splicing of the mRNA in a eukaryotic cell. “Differentially expressed” as applied to a gene, refers to the differential production of the mRNA transcribed and/or translated from the gene or the protein product encoded by the gene. A differentially expressed gene may be overexpressed or underexpressed as compared to the expression level of a normal or control cell. However, as used herein overexpression generally is at least 1.25 fold or, alternatively, at least 1.5 fold or, alternatively, at least 2 fold expression, or alternatively, at least 4 fold expression over that detected in a normal or healthy counterpart cell or tissue. The term “differentially expressed” also refers to nucleotide sequences in a cell or tissue which are expressed where silent in a control cell or not expressed where expressed in a control cell.

A high expression level of the gene may occur because of over expression of the gene or an increase in gene copy number. The gene may also be translated into more protein because of deregulation of a negative regulator.

A “gene expression profile” refers to a pattern of expression of a set of genes that recurs in multiple samples and reflects a property shared by those samples, such as tissue

type, response to a particular treatment, or activation of a particular biological process or pathway in the cells. Furthermore, a gene expression profile differentiates between samples that share that common property and those that do not with better accuracy than would likely be achieved by assigning the samples to the two groups at random. A gene
5 expression profile may be used to predict whether samples of unknown status share that common property or not. Some variation between the levels of the individual genes of the set and the typical profile is to be expected, but the overall similarity of the expression levels to the typical profile is such that it is statistically unlikely that the similarity would be observed by chance in samples not sharing the common property that the expression profile
10 reflects.

An expression “database” denotes a set of stored data that represent a collection of sequences, which in turn represent a collection of biological reference materials.

The term “cDNAs” refers to complementary DNA, i.e. mRNA molecules present in a cell or organism made into cDNA with an enzyme such as reverse transcriptase. A
15 “cDNA library” is a collection of all of the mRNA molecules present in a cell or organism, all turned into cDNA molecules with the enzyme reverse transcriptase, then inserted into “vectors” (other DNA molecules that can continue to replicate after addition of foreign DNA). Exemplary vectors for libraries include bacteriophage (also known as “phage”), viruses that infect bacteria, for example, lambda phage. The library can then be probed for
20 the specific cDNA (and thus mRNA) of interest.

As used herein, “solid phase support” or “solid support”, used interchangeably, is not limited to a specific type of support. Rather a large number of supports are available and are known to one of ordinary skill in the art. Solid phase supports include silica gels, resins, derivatized plastic films, glass beads, cotton, plastic beads, alumina gels,
25 microarrays, and chips. As used herein, “solid support” also includes synthetic antigen-presenting matrices, cells, and liposomes. A suitable solid phase support may be selected on the basis of desired end use and suitability for various protocols. For example, for peptide synthesis, solid phase support may refer to resins such as polystyrene (e.g., PAM-resin obtained from Bachem Inc., Peninsula Laboratories, etc.), POLYHIPE® resin
30 (obtained from Aminotech, Canada), polyamide resin (obtained from Peninsula Laboratories), polystyrene resin grafted with polyethylene glycol (TentaGel®, Rapp

Polymere, Tübingen, Germany), or polydimethylacrylamide resin (obtained from Milligen/Biosearch, California).

A polynucleotide also can be attached to a solid support for use in high throughput screening assays. PCT WO 97/10365, for example, discloses the construction of high density oligonucleotide chips. See also, U.S. Patent Nos. 5,405,783; 5,412,087; and 5,445,934. Using this method, the probes are synthesized on a derivatized glass surface to form chip arrays. Photoprotected nucleoside phosphoramidites are coupled to the glass surface, selectively deprotected by photolysis through a photolithographic mask and reacted with a second protected nucleoside phosphoramidite. The coupling/deprotection process is repeated until the desired probe is complete.

As an example, transcriptional activity may be assessed by measuring levels of messenger RNA using a gene chip such as the Affymetrix HG-U133-Plus-2 GeneChips. High-throughput, real-time quantitation of RNA (of hundreds of genes simultaneously) thus becomes possible in a reproducible system.

“Hybridization” refers to a reaction in which one or more polynucleotides react to form a complex that is stabilized via hydrogen bonding between the bases of the nucleotide residues. The hydrogen bonding may occur by Watson-Crick base pairing, Hoogsteen binding or in any other sequence-specific manner. The complex may comprise two strands forming a duplex structure, three or more strands forming a multi-stranded complex, a single self-hybridizing strand, or any combination of these. A hybridization reaction may constitute a step in a more extensive process, such as the initiation of a PCR reaction or the enzymatic cleavage of a polynucleotide by a ribozyme.

Hybridization reactions can be performed under conditions of different “stringency”. In general, a low stringency hybridization reaction is carried out at about 40°C in 10 X SSC or a solution of equivalent ionic strength/temperature. A moderate stringency hybridization is typically performed at about 50°C in 6 X SSC, and a high stringency hybridization reaction is generally performed at about 60°C in 1X SSC.

When hybridization occurs in an antiparallel configuration between two single-stranded polynucleotides, the reaction is called “annealing” and those polynucleotides are described as “complementary”. A double-stranded polynucleotide can be “complementary” or “homologous” to another polynucleotide, if hybridization can occur between one of the strands of the first polynucleotide and the second. “Complementarity”

or “homology” (the degree that one polynucleotide is complementary with another) is quantifiable in terms of the proportion of bases in opposing strands that are expected to form hydrogen bonding with each other, according to generally accepted base-pairing rules.

A polynucleotide or polynucleotide region (or a polypeptide or polypeptide region) has a certain percentage (for example, 80%, 85%, 90%, or 95%) of “sequence identity” to another sequence means that, when aligned, that percentage of bases (or amino acids) are the same in comparing the two sequences. This alignment and the percent homology or sequence identity can be determined using software programs known in the art, for example those described in CURRENT PROTOCOLS IN MOLECULAR BIOLOGY (F.M. Ausubel et al., eds., 1987) Supplement 30, section 7.7.18, Table 7.7.1. Preferably, default parameters are used for alignment. A preferred alignment program is BLAST, using default parameters. In particular, preferred programs are BLASTN and BLASTP, using the following default parameters: Genetic code = standard; filter = none; strand = both; cutoff = 60; expect = 10; Matrix = BLOSUM62; Descriptions = 50 sequences; sort by = HIGH SCORE; Databases = non-redundant, GenBank + EMBL + DDBJ + PDB + GenBank CDS translations + SwissProtein + SPupdate + PIR. Details of these programs can be found at the following Internet address: www.ncbi.nlm.nih.gov/cgi-bin/BLAST.

The term “cell proliferative disorders” shall include dysregulation of normal physiological function characterized by abnormal cell growth and/or division or loss of function. Examples of “cell proliferative disorders” includes but is not limited to hyperplasia, neoplasia, metaplasia, and various autoimmune disorders, e.g., those characterized by the dysregulation of T cell apoptosis.

Hyperplasia is a form of controlled cell proliferation involving an increase in cell number in a tissue or organ, without significant alteration in structure or function. Metaplasia is a form of controlled cell growth in which one type of fully differentiated cell substitutes for another type of differentiated cell. Metaplasia can occur in epithelial or connective tissue cells. Atypical metaplasia involves a somewhat disorderly metaplastic epithelium.

As used herein, the terms “neoplastic cells,” “neoplastic disease,” “neoplasia,” “tumor,” “tumor cells,” “cancer,” and “cancer cells,” (used interchangeably) refer to cells which exhibit relatively autonomous growth, so that they exhibit an aberrant growth phenotype characterized by a significant loss of control of cell proliferation (i.e., de-

regulated cell division). Neoplastic cells can be malignant or benign. A metastatic cell or tissue means that the cell can invade and destroy neighboring body structures.

The term "cancer" refers to cancer diseases that can be beneficially treated by the inhibition of Raf kinase, including, for example, solid cancers, such as carcinomas (e.g., of
5 the lungs, pancreas, thyroid, ovaries, bladder, breast, prostate, liver, or colon), melanomas, myeloid disorders (e.g., myeloid leukemia, multiple myeloma and erythroleukemia), and adenomas (e.g., villous colon adenoma) and sarcomas (e.g., osteosarcoma).

"Suppressing" tumor growth indicates a growth state that is curtailed when compared to growth without contact with educated, antigen-specific immune effector cells.
10 Tumor cell growth can be assessed by any means known in the art, including, but not limited to, measuring tumor size, determining whether tumor cells are proliferating using a ³H-thymidine incorporation assay, measuring glucose uptake by FDG-PET (fluorodeoxyglucose positron emission tomography) imaging, or counting tumor cells. "Suppressing" tumor cell growth means any or all of the following states: slowing, delaying
15 and stopping tumor growth, as well as tumor shrinkage.

A "composition" is also intended to encompass a combination of active agent and another carrier, e.g., compound or composition, inert (for example, a detectable agent or label) or active, such as an adjuvant, diluent, binder, stabilizer, buffers, salts, lipophilic solvents, preservative, adjuvant or the like. Carriers also include pharmaceutical excipients
20 and additives proteins, peptides, amino acids, lipids, and carbohydrates (e.g., sugars, including monosaccharides, di-, tri-, tetra-, and oligosaccharides; derivatized sugars such as alditols, aldonic acids, esterified sugars and the like; and polysaccharides or sugar polymers), which can be present singly or in combination, comprising alone or in combination 1-99.99% by weight or volume. Exemplary protein excipients include serum
25 albumin such as human serum albumin (HSA), recombinant human albumin (rHA), gelatin, casein, and the like. Representative amino acid/antibody components, which can also function in a buffering capacity, include alanine, glycine, arginine, betaine, histidine, glutamic acid, aspartic acid, cysteine, lysine, leucine, isoleucine, valine, methionine, phenylalanine, aspartame, and the like. Carbohydrate excipients are also intended within
30 the scope of this invention, examples of which include but are not limited to monosaccharides such as fructose, maltose, galactose, glucose, D-mannose, sorbose, and the like; disaccharides, such as lactose, sucrose, trehalose, cellobiose, and the like; polysaccharides, such as raffinose, melezitose, maltodextrins, dextrans, starches, and the

like; and alditols, such as mannitol, xylitol, maltitol, lactitol, xylitol sorbitol (glucitol) and myoinositol.

The term “carrier” further includes a buffer or a pH adjusting agent; typically, the buffer is a salt prepared from an organic acid or base. Representative buffers include organic acid salts such as salts of citric acid, ascorbic acid, gluconic acid, carbonic acid, tartaric acid, succinic acid, acetic acid, or phthalic acid; Tris, tromethamine hydrochloride, or phosphate buffers. Additional carriers include polymeric excipients/additives such as polyvinylpyrrolidones, ficolls (a polymeric sugar), dextrates (e.g., cyclodextrins, such as 2-hydroxypropyl- β -cyclodextrin), polyethylene glycols, flavoring agents, antimicrobial agents, sweeteners, antioxidants, antistatic agents, surfactants (e.g., polysorbates such as “TWEEN 20” and “TWEEN 80”), lipids (e.g., phospholipids, fatty acids), steroids (e.g., cholesterol), and chelating agents (e.g., EDTA).

As used herein, the term “pharmaceutically acceptable carrier” encompasses any of the standard pharmaceutical carriers, such as a phosphate buffered saline solution, water, and emulsions, such as an oil/water or water/oil emulsion, and various types of wetting agents. The compositions also can include stabilizers and preservatives and any of the above noted carriers with the additional proviso that they be acceptable for use in vivo. For examples of carriers, stabilizers and adjuvants, see Martin REMINGTON’S PHARM. SCI., 15th Ed. (Mack Publ. Co., Easton (1975) and Williams & Williams, (1995), and in the “PHYSICIAN’S DESK REFERENCE”, 52nd ed., Medical Economics, Montvale, N.J. (1998).

An “effective amount” is an amount sufficient to effect beneficial or desired results. An effective amount can be administered in one or more administrations, applications or dosages.

A “subject,” “individual” or “patient” is used interchangeably herein, which refers to a vertebrate, preferably a mammal, more preferably a human. Mammals include, but are not limited to, murines, simians, humans, farm animals, sport animals, and pets.

Raf kinase has three distinct isoforms, Raf-1 (c-Raf), A-Raf, and B-Raf, distinguished by their ability to interact with Ras, to activate MAPK kinase pathway, tissue distribution and sub-cellular localization (Marias et al., *Biochem. J.* 351:289-305, 2000; Weber et al., *Oncogene* 19:169-176, 2000; Pritchard et al., *Mol. Cell. Biol.* 15:6430-6442, 1995), and by genomic sequence. Raf-1 is identified by the US National Institutes of Health

with Entrez-Gene ID 5894 and is mapped to chromosome location 3p25

(<http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=handbook.chapter.ch19>). A-Raf and B-Raf Entrez Gene IDs are 369 and 673 with chromosomal locations Xp11.4 and 7q34,

respectively. The first Raf kinase discovered, RAF-1, was identified in a search for

5 oncogenic viral sequences (Rapp et al., *Proc. Nat. Acad. Sci.* 80:4218-4222, 1983). A-Raf and B-Raf were subsequently cloned and identified as Raf family members ((Mark et al., *Proc. Nat. Acad. Sci.* 83:6312-6316, 1986 and Sithanandam et al., *Oncogene* 5:1775-1780, 1990).

10 An "inhibitor" of Raf or of Raf kinase as used herein binds or blocks or diminishes the effect of the Raf kinase. Examples include, but are not limited to CHIR-265 and related compounds, BAY 43-9006, and siRNA. Other examples include ISIS-5132 (CGP-69846A), ODN-698, and ISIS-13650.

A "Raf inhibitor," "Raf kinase inhibitor," or "inhibitor of Raf" useful in conjunction with the invention preferably refers to a compound that exhibits an IC_{50} with respect to Raf
15 kinase activity of no more than about 100 μM and more typically not more than about 50 μM , as measured in a Raf/Mek Filtration Assay. The Raf/Mek Filtration Assay is as described in WO 03/082272 and reproduced in Example 3. Preferred isoforms of Raf kinase especially useful in conjunction with the present invention include A-Raf, B-Raf, and C-Raf (Raf-1). " IC_{50} " is that concentration of inhibitor which reduces the activity of an
20 enzyme (e.g., Raf kinase) to half-maximal level. Compounds such as CHIR-265 have been discovered to exhibit inhibitory activity against Raf. Compounds useful in conjunction with the methods of the present invention preferably exhibit an IC_{50} with respect to Raf of no more than about 10 μM , more preferably, no more than about 5 μM , even more preferably not more than about 1 μM , and most preferably, not more than about 200 nM, as measured
25 in Raf kinase assays. A preferred agent, CHIR-265, has shown the characteristics presented below:

	VEGFR2	PDGFRβ	CKIT	B-RAF (V600E)	C-RAF (WILD TYPE)	B-RAF (WILD TYPE)
IC_{50} (μM)	0.07	0.003	0.02	0.019	0.005	0.07
EC_{50} (μM)	0.19	0.79	1.1	0.12	0.3–1.0	0.3–1.0

As used herein, the phrase "MAPK signal transduction pathway" is an abbreviation that stands for Mitogen activated protein kinase signal transduction pathway in a module that is formed of the Ras-Raf-MEK1-ERK signaling molecules.

A "biomarker" is a distinctive indicator or specific feature or characteristic of a biological process or event. As used herein, a biomarker is a gene. A biomarker may be especially useful for measuring the progress of a disease or the response to a given treatment. In addition to assessing prognosis, in some instances, it may be used to diagnose an illness or screen for patients within a category, such as those most likely to respond to a certain type of treatment. A biomarker may also be useful in guiding the development or administration of an agent for treatment of a disease.

As noted above, the invention provides methods of identifying patients suitable for treatment and methods of monitoring response in patients receiving treatment. Also included within the scope of the invention are methods of treating a cell proliferative disorder. The methods include adjusting dosage amounts, altering inhibitors, or otherwise altering treatment by utilizing the biomarkers disclosed herein.

The present invention also provides a screen for various agents and methods that may supplement or replace the anti-Raf kinase therapy known in the art. In one aspect, the agent, alone or in combination with another agent or therapy method, is provided to the patient. After administration, a sample from the patient is assessed for expression of one or more biomarkers identified herein and then compared to a baseline.

Further details regarding the practice of the invention are discussed below.

Biomarkers

Panels of genes have now been identified, whose expression correlates with the inhibition of Raf kinase. The presence or absence of gene expression or the level or amount of gene expression of one or more of the biomarkers identified herein may be used to guide treatment decisions and measure responsiveness of the patient to a given type of treatment. For example, detection of the presence or lack thereof of gene expression or alteration of the level of gene expression compared to baseline of one or more of the biomarkers identified in Tables I-XX provides information regarding whether a patient may be a suitable candidate for treatment by CHIR-265 or another Raf kinase inhibitor or drug with similar inhibitory profile.

Changes in gene expression level in response to the Raf kinase inhibitor were tested as presented in the experimental examples and those deemed to be of statistical significance were utilized to generate the tables disclosed herein.

Within the parameters of this experiment, and as discussed in greater detail below, the biomarkers of Table I generally correlate with significant alterations in expression level. The biomarkers of Table II generally correlate with alterations in expression level of 5-fold or greater compared to baseline, and the biomarkers of Table III generally correlate with alterations in expression level of 10-fold or greater compared to baseline, whereas the biomarkers of Table IV generally correlate with alterations in expression level of 30-fold or greater compared to baseline. It should be noted that these fold-change numbers (as well as other numbers used to generate tables according to the invention) are indications of relative changes in expression level as per the experiments reported herein and may not represent absolute numbers. Also, changes in transcription level of any of the genes may correlate with a greater or lesser change at the level of protein. Table V is a subset of Table I showing the biomarkers of Table I that are particularly preferred because their gene products are secreted. Table VI is a subset of Table I showing the biomarkers of Table I that are even more particularly preferred because their gene products are secreted and they showed 10-fold or greater alteration in expression level in this experiment. Table VII is a subset showing the biomarkers of Table I that are preferred according to a different aspect of the invention because they showed significant alterations in expression level compared to baseline sustained over several time points.

Also within the parameters of this experiment and as discussed in greater detail below, the biomarkers of Table VIII generally correlate with significant alterations in expression level. Table VIII was generated by examining the data resulting from the protocol of Example 1 in an alternate way, following the six queries of Example 1's section B to identify the genes showing greatest modulation by the Raf kinase inhibitor as compared to matching control. Table IX is a preferred subset of Table VIII. Tables X and XI are subsets of Table IX that generally correlate with down-regulation and up-regulation, respectively, of the biomarkers listed in Table IX. Tables XII through XIV show various subsets of Tables IX with secreted gene products. Tables XV through XVII show various subsets of Table IX that are likely to have their gene products located on a cell surface.

Also of particular interest are the biomarkers listed on Tables XVIII and XIX, since they are involved in decreased glucose uptake in tumors. These biomarkers may be useful

indicators of suppression of tumor growth, as discussed in greater detail in Example 2. Table XX is a most preferred subset of the biomarkers from Tables XVIII and XIX. These biomarkers relate to glucose uptake and/or metabolism and may provide a molecular explanation for why glucose uptake is decreased in the experiment.

5 Any or all of the biomarkers presented in the tables are of interest and those in the most preferred subsets such as Table IV, V, VI, VII, XII, XV, and XX may especially be of interest.

 As noted, of particular interest are biomarkers whose gene product is secreted, thereby allowing the gathering of information and assessment of a patient's condition to be
10 quick and efficient. For example, hepatocyte growth factor (HGF, Entrez Gene ID 3082) is secreted in serum and is believed indicative of cell proliferation, invasiveness, and angiogenesis, among others. Serum HGF levels have been reported to be reflective of aggressive disease in patients with invasive breast cancer (Sheen-Chen, et al., "Serum Levels of Hepatocyte Growth Factor in Patients with Breast Cancer," *Cancer Epidemiol. Biomarkers Prev.*, 14(3):715-7 (2005)) and non-small cell lung cancer (Siegfried, et al.,
15 "The Clinical Significance of Hepatocyte Growth Factor for Non-Small Cell Lung Cancer," *Ann. Thorac. Surg.*, 66:1915-8 (1998)). Thus, measurement of the HGF biomarker, particularly as a secreted gene product, is an easy and inexpensive tool available to health care providers in prognosis and determining appropriateness of certain courses of treatment.

20 As is apparent to one of skill in the art, gene expression can be measured by detecting the presence or absence, or presence and/or absolute or relative quantity of a gene expression product (e.g., RNA, mRNA, or the protein or polypeptide transcript) or the alteration in gene copy number. In some embodiments, altered expression is likely the result of an increase in copy number. In alternative embodiment, altered expression is
25 likely the result of the loss of function of another gene such as a tumor suppressor or other negative regulator. In yet a further embodiment, expression is altered by the "turning on" of an enhancer. Accordingly, the specific method used to detect altered expression, as compared to the control or baseline, may be different and dependent on the particular biomarker selected. In yet further embodiments, the method requires analysis of gene
30 expression of one or more predetermined biomarkers by more than one method, e.g., by use of immunohistochemical and molecular techniques such as a gene chip or array.

Tables

Tables I through XX are presented below and constitute an integral part of this disclosure. In each of Tables I through XX, the biomarkers are shown with Entrez Gene ID Number (referring to the National Cancer Institute database identifier), Gene Symbol, and
5 Gene Description.

Table I is a list of biomarkers whose alteration of level of gene expression compared to baseline is indicative of activity related to Raf kinase inhibition.

Table II is a preferred subset of Table I according to one aspect of the invention, listing biomarkers generally having a higher level of alteration of gene expression compared
10 to baseline in response to Raf kinase inhibition.

Table III is more preferred subset of Table I according to one aspect of the invention, listing biomarkers generally having an even higher level, in comparison to Table II, of alteration of gene expression compared to baseline in response to Raf kinase inhibition.

15 Table IV is an even more preferred subset of Table I according to one aspect of the invention listing biomarkers generally having the highest level of alteration of gene expression compared to baseline in response to Raf kinase inhibition.

Table V is a preferred subset of Table I according to a second aspect of the invention, listing biomarkers whose gene product is secreted.

20 Table VI is a preferred subset of Table I according to a third aspect of the invention, listing biomarkers generally exhibiting a high level of alteration compared to baseline and whose gene product is secreted.

Table VII is a preferred subset of Table I according to a fourth aspect of the invention, listing biomarkers generally exhibiting a measurably sustained high level of
25 alteration compared to baseline.

Table VIII is a list of biomarkers according to yet another aspect of the invention whose alteration of level of gene expression compared to baseline is indicative of activity related to Raf kinase inhibition. Table VIII lists the 7345 biomarkers whose gene expression level was deemed significantly altered using an alternate analysis method than
30 that used to generate Tables I through VII.

Table IX is a preferred subset of Table VIII and lists biomarkers with most significant alteration levels at each step of the analysis.

Table X is a subset of Table IX showing that portion of biomarkers identified in Table IX that are preferably down-regulated.

5 Table XI is a subset of Table IX showing that portion of biomarkers identified in Table IX that are preferably up-regulated.

Table XII is a preferred subset of Table IX according to another aspect of the invention, listing biomarkers whose gene product is likely to be secreted.

10 Table XIII is a subset of Table XII, showing that portion of biomarkers identified in Table XII that are preferably down-regulated.

Table XIV is a subset of Table XII, showing that portion of biomarkers identified in Table XII that are preferably up-regulated.

Table XV is a preferred subset of Table IX according to another aspect of the invention, listing biomarkers whose gene product is likely to be located on a cell surface.

15 Table XVI is a subset of Table XV, showing that portion of biomarkers identified in Table XV that are preferably down-regulated.

Table XVII is a subset of Table XV, showing that portion of biomarkers identified in Table XV that are preferably up-regulated.

20 Table XVIII is a preferred list of biomarkers according to yet another aspect of the invention. Table XVIII lists biomarkers that are transporters and/or glycolysis pathway members and whose down-regulation compared to baseline is indicative of activity related to Raf kinase inhibition and tumor regression.

25 Table XIX is a preferred list of biomarkers according to yet another aspect of the invention. Table XIX lists biomarkers that are transporters and/or glycolysis pathway members and whose up-regulation compared to baseline is indicative of activity related to Raf kinase inhibition and tumor regression.

Table XX is a preferred list of biomarkers taken from Tables XVIII and XIX.

TABLE I

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	1	A1BG	alpha-1-B glycoprotein
2.	16	AARS	alanyl-tRNA synthetase
3.	26	ABP1	amiloride binding protein 1 (amine oxidase (copper-containing))
4.	39	ACAT2	acetyl-Coenzyme A acetyltransferase 2 (acetoacetyl Coenzyme A thiolase)
5.	55	ACPP	acid phosphatase, prostate
6.	108	ADCY2	adenylate cyclase 2 (brain)
7.	133	ADM	adrenomedullin
8.	150	ADRA2A	adrenergic, alpha-2A-, receptor
9.	187	AGTRL1	angiotensin II receptor-like 1
10.	284	ANGPT1	angiopoietin 1
11.	290	ANPEP	alanyl (membrane) aminopeptidase (aminopeptidase N, aminopeptidase M, microsomal aminopeptidase, CD13, p150)
12.	316	AOX1	aldehyde oxidase 1
13.	332	BIRC5	baculoviral IAP repeat-containing 5 (survivin)
14.	348	APOE	apolipoprotein E
15.	354	KLK3	kallikrein 3, (prostate specific antigen)
16.	358	AQP1	aquaporin 1 (channel-forming integral protein, 28kDa)
17.	360	AQP3	aquaporin 3
18.	374	AREG	amphiregulin (schwannoma-derived growth factor)
19.	384	ARG2	arginase, type II
20.	412	STS	steroid sulfatase (microsomal), arylsulfatase C, isozyme S
21.	440	ASNS	asparagine synthetase
22.	445	ASS	argininosuccinate synthetase
23.	468	ATF4	activating transcription factor 4 (tax-responsive enhancer element B67)
24.	487	ATP2A1	ATPase, Ca++ transporting, cardiac muscle, fast twitch 1
25.	491	ATP2B2	ATPase, Ca++ transporting, plasma membrane 2
26.	586	BCAT1	branched chain aminotransferase 1, cytosolic
27.	664	BNIP3	BCL2/adenovirus E1B 19kDa interacting protein 3
28.	665	BNIP3L	BCL2/adenovirus E1B 19kDa interacting protein 3-like
29.	699	BUB1	BUB1 budding uninhibited by benzimidazoles 1 homolog (yeast)
30.	701	BUB1B	BUB1 budding uninhibited by benzimidazoles 1 homolog beta (yeast)
31.	722	C4BPA	complement component 4 binding protein, alpha
32.	759	CA1	carbonic anhydrase I
33.	796	CALCA	calcitonin/calcitonin-related polypeptide, alpha

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
34.	810	CALML3	calmodulin-like 3
35.	828	CAPS	calcyphosine
36.	833	CARS	cysteinyl-tRNA synthetase
37.	875	CBS	cystathionine-beta-synthase
38.	891	CCNB1	cyclin B1
39.	934	CD24	CD24 antigen (small cell lung carcinoma cluster 4 antigen)
40.	965	CD58	CD58 antigen, (lymphocyte function-associated antigen 3)
41.	966	CD59	CD59 antigen p18-20 (antigen identified by monoclonal antibodies 16.3A5, EJ16, EJ30, EL32 and G344)
42.	983	CDC2	cell division cycle 2, G1 to S and G2 to M
43.	991	CDC20	CDC20 cell division cycle 20 homolog (S. cerevisiae)
44.	1052	CEBPD	CCAAT/enhancer binding protein (C/EBP), delta
45.	1054	CEBPG	CCAAT/enhancer binding protein (C/EBP), gamma
46.	1058	CENPA	centromere protein A, 17kDa
47.	1063	CENPF	centromere protein F, 350/400ka (mitosin)
48.	1111	CHEK1	CHK1 checkpoint homolog (S. pombe)
49.	1164	CKS2	CDC28 protein kinase regulatory subunit 2
50.	1174	AP1S1	adaptor-related protein complex 1, sigma 1 subunit
51.	1208	CLPS	colipase, pancreatic
52.	1236	CCR7	chemokine (C-C motif) receptor 7
53.	1287	COL4A5	collagen, type IV, alpha 5 (Alport syndrome)
54.	1293	COL6A3	collagen, type VI, alpha 3
55.	1301	COL11A1	collagen, type XI, alpha 1
56.	1306	COL15A1	collagen, type XV, alpha 1
57.	1356	CP	ceruloplasmin (ferroxidase)
58.	1373	CPS1	carbamoyl-phosphate synthetase 1, mitochondrial
59.	1404	HAPLN1	hyaluronan and proteoglycan link protein 1
60.	1472	CST4	cystatin S
61.	1496	CTNNA2	catenin (cadherin-associated protein), alpha 2
62.	1520	CTSS	cathepsin S
63.	1555	CYP2B6	cytochrome P450, family 2, subfamily B, polypeptide 6
64.	1591	CYP24A1	cytochrome P450, family 24, subfamily A, polypeptide 1
65.	1604	DAF	decay accelerating factor for complement (CD55, Cromer blood group system)
66.	1649	DDIT3	DNA-damage-inducible transcript 3
67.	1746	DLX2	distal-less homeo box 2
68.	1803	DPP4	dipeptidylpeptidase 4 (CD26, adenosine deaminase complexing protein 2)
69.	1831	TSC22D3	TSC22 domain family, member 3
70.	1832	DSP	desmoplakin

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
71.	1843	DUSP1	dual specificity phosphatase 1
72.	1847	DUSP5	dual specificity phosphatase 5
73.	1902	EDG2	endothelial differentiation, lysophosphatidic acid G-protein-coupled receptor, 2
74.	1908	EDN3	endothelin 3
75.	1909	EDNRA	endothelin receptor type A
76.	1915	EEF1A1	eukaryotic translation elongation factor 1 alpha 1
77.	1937	EEF1G	eukaryotic translation elongation factor 1 gamma
78.	1948	EFNB2	ephrin-B2
79.	2026	ENO2	enolase 2 (gamma, neuronal)
80.	2028	ENPEP	glutamyl aminopeptidase (aminopeptidase A)
81.	2065	ERBB3	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
82.	2151	F2RL2	coagulation factor II (thrombin) receptor- like 2
83.	2152	F3	coagulation factor III (thromboplastin, tissue factor)
84.	2153	F5	coagulation factor V (proaccelerin, labile factor)
85.	2171	FABP5	fatty acid binding protein 5 (psoriasis- associated)
86.	2173	FABP7	fatty acid binding protein 7, brain
87.	2258	FGF13	fibroblast growth factor 13
88.	2267	FGL1	fibrinogen-like 1
89.	2315	MLANA	melan-A
90.	2326	FMO1	flavin containing monooxygenase 1
91.	2331	FMOD	fibromodulin
92.	2596	GAP43	growth associated protein 43
93.	2617	GARS	glycyl-tRNA synthetase
94.	2625	GATA3	GATA binding protein 3
95.	2632	GBE1	glucan (1,4-alpha-), branching enzyme 1 (glycogen branching enzyme, Andersen disease, glycogen storage disease type IV)
96.	2669	GEM	GTP binding protein overexpressed in skeletal muscle
97.	2706	GJB2	gap junction protein, beta 2, 26kDa (connexin 26)
98.	2730	GCLM	glutamate-cysteine ligase, modifier subunit
99.	2778	GNAS	GNAS complex locus
100.	2788	GNG7	guanine nucleotide binding protein (G protein), gamma 7
101.	2887	GRB10	growth factor receptor-bound protein 10
102.	2891	GRIA2	glutamate receptor, ionotropic, AMPA 2
103.	2919	CXCL1	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
104.	2938	GSTA1	glutathione S-transferase A1
105.	2998	GYS2	glycogen synthase 2 (liver)
106.	3039	HBA1	hemoglobin, alpha 1
107.	3040	HBA2	hemoglobin, alpha 2

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
108.	3050	HBZ	hemoglobin, zeta
109.	3053	SERPIND1	serpin peptidase inhibitor, clade D (heparin cofactor), member 1
110.	3079	CFHL1P	complement factor H-related 1 pseudogene
111.	3082	HGF	hepatocyte growth factor (hepapoietin A; scatter factor)
112.	3117	HLA-DQA1	major histocompatibility complex, class II, DQ alpha 1
113.	3128	HLA-DRB6	major histocompatibility complex, class II, DR beta 6 (pseudogene)
114.	3148	HMGB2	high-mobility group box 2
115.	3159	HMGA1	high mobility group AT-hook 1
116.	3161	HMMR	hyaluronan-mediated motility receptor (RHAMM)
117.	3176	HNMT	histamine N-methyltransferase
118.	3241	HPCAL1	hippocalcin-like 1
119.	3251	HPRT1	hypoxanthine phosphoribosyltransferase 1 (Lesch-Nyhan syndrome)
120.	3291	HSD11B2	hydroxysteroid (11-beta) dehydrogenase 2
121.	3376	IARS	isoleucine-tRNA synthetase
122.	3397	ID1	inhibitor of DNA binding 1, dominant negative helix-loop-helix protein
123.	3400	ID4	inhibitor of DNA binding 4, dominant negative helix-loop-helix protein
124.	3423	IDS	iduronate 2-sulfatase (Hunter syndrome)
125.	3460	IFNGR2	interferon gamma receptor 2 (interferon gamma transducer 1)
126.	3488	IGFBP5	insulin-like growth factor binding protein 5
127.	3535	IGL@	immunoglobulin lambda locus
128.	3576	IL8	interleukin 8
129.	3624	INHBA	inhibin, beta A (activin A, activin AB alpha polypeptide)
130.	3625	INHBB	inhibin, beta B (activin AB beta polypeptide)
131.	3638	INSIG1	insulin induced gene 1
132.	3669	ISG20	interferon stimulated exonuclease gene 20kDa
133.	3678	ITGA5	integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
134.	3696	ITGB8	integrin, beta 8
135.	3697	ITIH1	inter-alpha (globulin) inhibitor H1
136.	3783	KCNN4	potassium intermediate/small conductance calcium-activated channel, subfamily N, member 4
137.	3838	KPNA2	karyopherin alpha 2 (RAG cohort 1, importin alpha 1)
138.	3855	KRT7	keratin 7
139.	3910	LAMA4	laminin, alpha 4
140.	3929	LBP	lipopolysaccharide binding protein
141.	3949	LDLR	low density lipoprotein receptor (familial hypercholesterolemia)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
142.	3957	LGALS2	lectin, galactoside-binding, soluble, 2 (galectin 2)
143.	3963	LGALS7	lectin, galactoside-binding, soluble, 7 (galectin 7)
144.	3976	LIF	leukemia inhibitory factor (cholinergic differentiation factor)
145.	4017	LOXL2	lysyl oxidase-like 2
146.	4023	LPL	lipoprotein lipase
147.	4069	LYZ	lysozyme (renal amyloidosis)
148.	4071	TM4SF1	transmembrane 4 L six family member 1
149.	4085	MAD2L1	MAD2 mitotic arrest deficient-like 1 (yeast)
150.	4094	MAF	v-maf musculoaponeurotic fibrosarcoma oncogene homolog (avian)
151.	4141	MARS	methionine-tRNA synthetase
152.	4155	MBP	myelin basic protein
153.	4256	MGP	matrix Gla protein
154.	4493	MT1E	metallothionein 1E (functional)
155.	4501	MT1X	metallothionein 1X
156.	4502	MT2A	metallothionein 2A
157.	4629	MYH11	myosin, heavy polypeptide 11, smooth muscle
158.	4703	NEB	nebulin
159.	4747	NEFL	neurofilament, light polypeptide 68kDa
160.	4824	NKX3-1	NK3 transcription factor related, locus 1 (Drosophila)
161.	4885	NPTX2	neuronal pentraxin II
162.	4907	NT5E	5'-nucleotidase, ecto (CD73)
163.	4921	DDR2	discoidin domain receptor family, member 2
164.	4922	NTS	neurotensin
165.	4969	OGN	osteo glycin (osteoinductive factor, mimecan)
166.	5054	SERPINE1	serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1
167.	5106	PCK2	phosphoenolpyruvate carboxykinase 2 (mitochondrial)
168.	5122	PCSK1	proprotein convertase subtilisin/kexin type 1
169.	5163	PDK1	pyruvate dehydrogenase kinase, isoenzyme 1
170.	5168	ENPP2	ectonucleotide pyrophosphatase/phosphodiesterase 2 (autotaxin)
171.	5176	SERPINF1	serpin peptidase inhibitor, clade F (alpha-2 antiplasmin, pigment epithelium derived factor), member 1
172.	5210	PFKFB4	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4
173.	5223	PGAM1	phosphoglycerate mutase 1 (brain)
174.	5225	PGC	progastricsin (pepsinogen C)
175.	5228	PGF	placental growth factor, vascular endothelial growth factor-related protein
176.	5230	PGK1	phosphoglycerate kinase 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
177.	5308	PITX2	paired-like homeodomain transcription factor 2
178.	5329	PLAUR	plasminogen activator, urokinase receptor
179.	5534	PPP3R1	protein phosphatase 3 (formerly 2B), regulatory subunit B, 19kDa, alpha isoform (calcineurin B, type I)
180.	5554	PRH1	proline-rich protein HaeIII subfamily 1
181.	5635	PRPSAP1	phosphoribosyl pyrophosphate synthetase-associated protein 1
182.	5644	PRSS1	protease, serine, 1 (trypsin 1)
183.	5646	PRSS3	protease, serine, 3 (mesotrypsin)
184.	5723	PSPH	phosphoserine phosphatase
185.	5743	PTGS2	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
186.	5803	PTPRZ1	protein tyrosine phosphatase, receptor-type, Z polypeptide 1
187.	5806	PTX3	pentraxin-related gene, rapidly induced by IL-1 beta
188.	5983	RFC3	replication factor C (activator 1) 3, 38kDa
189.	5996	RGS1	regulator of G-protein signalling 1
190.	5997	RGS2	regulator of G-protein signalling 2, 24kDa
191.	5999	RGS4	regulator of G-protein signalling 4
192.	6036	RNASE2	ribonuclease, RNase A family, 2 (liver, eosinophil-derived neurotoxin)
193.	6192	RPS4Y1	ribosomal protein S4, Y-linked 1
194.	6206	RPS12	ribosomal protein S12
195.	6241	RRM2	ribonucleotide reductase M2 polypeptide
196.	6284	S100A13	S100 calcium binding protein A13
197.	6301	SARS	seryl-tRNA synthetase
198.	6307	SC4MOL	sterol-C4-methyl oxidase-like
199.	6326	SCN2A2	sodium channel, voltage-gated, type II, alpha 2
200.	6374	CXCL5	chemokine (C-X-C motif) ligand 5
201.	6383	SDC2	syndecan 2 (heparan sulfate proteoglycan 1, cell surface-associated, fibroglycan)
202.	6406	SEMG1	semenogelin I
203.	6414	SEPP1	selenoprotein P, plasma, 1
204.	6440	SFTPC	surfactant, pulmonary-associated protein C
205.	6472	SHMT2	serine hydroxymethyltransferase 2 (mitochondrial)
206.	6489	ST8SIA1	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 1
207.	6491	SIL	TAL1 (SCL) interrupting locus
208.	6509	SLC1A4	solute carrier family 1 (glutamate/neutral amino acid transporter), member 4
209.	6515	SLC2A3	solute carrier family 2 (facilitated glucose transporter), member 3
210.	6520	SLC3A2	solute carrier family 3 (activators of dibasic and neutral amino acid transport), member 2

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
211.	6526	SLC5A3	solute carrier family 5 (inositol transporters), member 3
212.	6529	SLC6A1	solute carrier family 6 (neurotransmitter transporter, GABA), member 1
213.	6541	SLC7A1	solute carrier family 7 (cationic amino acid transporter, y+ system), member 1
214.	6546	SLC8A1	solute carrier family 8 (sodium/calcium exchanger), member 1
215.	6558	SLC12A2	solute carrier family 12 (sodium/potassium/chloride transporters), member 2
216.	6563	SLC14A1	solute carrier family 14 (urea transporter), member 1 (Kidd blood group)
217.	6574	SLC20A1	solute carrier family 20 (phosphate transporter), member 1
218.	6590	SLPI	secretory leukocyte peptidase inhibitor
219.	6616	SNAP25	synaptosomal-associated protein, 25kDa
220.	6624	FSCN1	fascin homolog 1, actin-bundling protein (Strongylocentrotus purpuratus)
221.	6648	SOD2	superoxide dismutase 2, mitochondrial
222.	6695	SPOCK	sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican)
223.	6706	SPRR2G	small proline-rich protein 2G
224.	6781	STC1	stanniocalcin 1
225.	6783	SULT1E1	sulfotransferase family 1E, estrogen-preferring, member 1
226.	6857	SYT1	synaptotagmin I
227.	6863	TAC1	tachykinin, precursor 1 (substance K, substance P, neurokinin 1, neurokinin 2, neuromedin L, neurokinin alpha, neuropeptide K, neuropeptide gamma)
228.	6917	TCEA1	transcription elongation factor A (SII), 1
229.	6990	TCTE1L	t-complex-associated-testis-expressed 1-like
230.	7039	TGFA	transforming growth factor, alpha
231.	7076	TIMP1	TIMP metalloproteinase inhibitor 1
232.	7078	TIMP3	TIMP metalloproteinase inhibitor 3 (Sorsby fundus dystrophy, pseudoinflammatory)
233.	7128	TNFAIP3	tumor necrosis factor, alpha-induced protein 3
234.	7130	TNFAIP6	tumor necrosis factor, alpha-induced protein 6
235.	7135	TNNI1	troponin I, skeletal, slow
236.	7145	TNS1	tensin 1
237.	7150	TOP1	topoisomerase (DNA) I
238.	7153	TOP2A	topoisomerase (DNA) II alpha 170kDa
239.	7164	TPD52L1	tumor protein D52-like 1
240.	7169	TPM2	tropomyosin 2 (beta)
241.	7185	TRAF1	TNF receptor-associated factor 1
242.	7262	PHLDA2	pleckstrin homology-like domain, family A, member 2
243.	7298	TYMS	thymidylate synthetase
244.	7299	TYR	tyrosinase (oculocutaneous albinism IA)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
245.	7453	WARS	tryptophanyl-tRNA synthetase
246.	7804	LRP8	low density lipoprotein receptor-related protein 8, apolipoprotein e receptor
247.	7980	TFPI2	tissue factor pathway inhibitor 2
248.	8115	TCL1A	T-cell leukemia/lymphoma 1A
249.	8140	SLC7A5	solute carrier family 7 (cationic amino acid transporter, y+ system), member 5
250.	8324	FZD7	frizzled homolog 7 (Drosophila)
251.	8364	HIST1H4C	histone 1, H4c
252.	8406	SRPX	sushi-repeat-containing protein, X-linked
253.	8424	BBOX1	butyrobetaine (gamma), 2-oxoglutarate dioxygenase (gamma-butyrobetaine hydroxylase) 1
254.	8440	NCK2	NCK adaptor protein 2
255.	8473	OGT	O-linked N-acetylglucosamine (GlcNAc) transferase (UDP-N-acetylglucosamine:polypeptide-N-acetylglucosaminyl transferase)
256.	8553	BHLHB2	basic helix-loop-helix domain containing, class B, 2
257.	8565	YARS	tyrosyl-tRNA synthetase
258.	8572	PDLIM4	PDZ and LIM domain 4
259.	8600	TNFSF11	tumor necrosis factor (ligand) superfamily, member 11
260.	8642	DCHS1	dachsous 1 (Drosophila)
261.	8653	DDX3Y	DEAD (Asp-Glu-Ala-Asp) box polypeptide 3, Y-linked
262.	8781	PSPHL	phosphoserine phosphatase-like
263.	8828	NRP2	neuropilin 2
264.	8836	GGH	gamma-glutamyl hydrolase (conjugase, folylpolygammaglutamyl hydrolase)
265.	8854	ALDH1A2	aldehyde dehydrogenase 1 family, member A2
266.	8870	IER3	immediate early response 3
267.	8871	SYNJ2	synaptojanin 2
268.	9052	GPRC5A	G protein-coupled receptor, family C, group 5, member A
269.	9055	PRC1	protein regulator of cytokinesis 1
270.	9075	CLDN2	claudin 2
271.	9118	INA	internexin neuronal intermediate filament protein, alpha
272.	9123	SLC16A3	solute carrier family 16 (monocarboxylic acid transporters), member 3
273.	9133	CCNB2	cyclin B2
274.	9134	CCNE2	cyclin E2
275.	9181	ARHGEF2	rho/rac guanine nucleotide exchange factor (GEF) 2
276.	9212	AURKB	aurora kinase B
277.	9232	PTTG1	pituitary tumor-transforming 1
278.	9236	CCPG1	cell cycle progression 1
279.	9262	STK17B	serine/threonine kinase 17b (apoptosis-inducing)
280.	9314	KLF4	Kruppel-like factor 4 (gut)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
281.	9404	LPXN	leupaxin
282.	9415	FADS2	fatty acid desaturase 2
283.	9435	CHST2	carbohydrate (N-acetylglucosamine-6-O) sulfotransferase 2
284.	9447	AIM2	absent in melanoma 2
285.	9472	AKAP6	A kinase (PRKA) anchor protein 6
286.	9488	PIGB	phosphatidylinositol glycan, class B
287.	9493	KIF23	kinesin family member 23
288.	9497	SLC4A7	solute carrier family 4, sodium bicarbonate cotransporter, member 7
289.	9536	PTGES	prostaglandin E synthase
290.	9582	APOBEC3B	apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 3B
291.	9768	KIAA0101	KIAA0101
292.	9787	DLG7	discs, large homolog 7 (Drosophila)
293.	9837	PSF1	DNA replication complex GINS protein PSF1
294.	9848	MFAP3L	microfibrillar-associated protein 3-like
295.	9928	KIF14	kinesin family member 14
296.	9945	GFPT2	glutamine-fructose-6-phosphate transaminase 2
297.	9976	CLEC2B	C-type lectin domain family 2, member B
298.	10053	AP1M2	adaptor-related protein complex 1, mu 2 subunit
299.	10105	PPIF	peptidylprolyl isomerase F (cyclophilin F)
300.	10112	KIF20A	kinesin family member 20A
301.	10123	ARL7	ADP-ribosylation factor-like 7
302.	10135	PBEF1	pre-B-cell colony enhancing factor 1
303.	10158	PDZK1IP1	PDZK1 interacting protein 1
304.	10212	DDX39	DEAD (Asp-Glu-Ala-Asp) box polypeptide 39
305.	10216	PRG4	proteoglycan 4
306.	10234	LRRC17	leucine rich repeat containing 17
307.	10397	NDRG1	N-myc downstream regulated gene 1
308.	10468	FST	follicle-stimulating hormone receptor-like 1
309.	10537	UBD	ubiquitin D
310.	10628	TXNIP	thioredoxin interacting protein
311.	10675	CSPG5	chondroitin sulfate proteoglycan 5 (neuroglycan C)
312.	10762	NUP50	nucleoporin 50kDa
313.	10786	SLC17A3	solute carrier family 17 (sodium phosphate), member 3
314.	10797	MTHFD2	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 2, methenyltetrahydrofolate cyclohydrolase
315.	10802	SEC24A	SEC24 related gene family, member A (S. cerevisiae)
316.	10875	FGL2	fibrinogen-like 2
317.	10962	MLLT11	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila); translocated to, 11
318.	11010	GLIPR1	GLI pathogenesis-related 1 (glioma)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
319.	11065	UBE2C	ubiquitin-conjugating enzyme E2C
320.	11069	RAPGEF4	Rap guanine nucleotide exchange factor (GEF) 4
321.	11075	STMN2	stathmin-like 2
322.	11130	ZWINT	ZW10 interactor
323.	11202	KLK8	kallikrein 8 (neuropsin/ovasin)
324.	11260	XPOT	exportin, tRNA (nuclear export receptor for tRNAs)
325.	11341	SCRG1	scrapie responsive protein 1
326.	22822	PHLDA1	pleckstrin homology-like domain, family A, member 1
327.	22858	ICK	intestinal cell (MAK-like) kinase
328.	22974	TPX2	TPX2, microtubule-associated, homolog (Xenopus laevis)
329.	23034	SAMD4	sterile alpha motif domain containing 4
330.	23245	ASTN2	astrotactin 2
331.	23301	EHBP1	EH domain binding protein 1
332.	23336	DMN	desmuslin
333.	23474	ETHE1	ethylmalonic encephalopathy 1
334.	23596	OPN3	opsin 3 (encephalopsin, panopsin)
335.	23600	AMACR	alpha-methylacyl-CoA racemase
336.	23650	TRIM29	tripartite motif-containing 29
337.	23657	SLC7A11	solute carrier family 7, (cationic amino acid transporter, y+ system) member 11
338.	24137	KIF4A	kinesin family member 4A
339.	25992	SNED1	sushi, nidogen and EGF-like domains 1
340.	26166	RGS22	regulator of G-protein signalling 22
341.	26207	PITPNC1	phosphatidylinositol transfer protein, cytoplasmic 1
342.	26227	PHGDH	phosphoglycerate dehydrogenase
343.	26355	E2IG5	growth and transformation-dependent protein
344.	26471	P8	p8 protein (candidate of metastasis 1)
345.	26575	RGS17	regulator of G-protein signalling 17
346.	27303	RBMS3	RNA binding motif, single stranded interacting protein
347.	27324	TNRC9	trinucleotide repeat containing 9
348.	28231	SLCO4A1	solute carrier organic anion transporter family, member 4A1
349.	28902	IGKV1D-13	immunoglobulin kappa variable 1D-13
350.	29028	ATAD2	ATPase family, AAA domain containing 2
351.	29089	UBE2T	ubiquitin-conjugating enzyme E2T (putative)
352.	29091	STXBP6	syntaxin binding protein 6 (amisyn)
353.	29116	MYLIP	myosin regulatory light chain interacting protein
354.	29127	RACGAP1	Rac GTPase activating protein 1
355.	29128	UHRF1	ubiquitin-like, containing PHD and RING finger domains, 1
356.	29802	VPREB3	pre-B lymphocyte gene 3

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
357.	29923	HIG2	hypoxia-inducible protein 2
358.	29968	PSAT1	phosphoserine aminotransferase 1
359.	29969	MDFIC	MyoD family inhibitor domain containing
360.	30001	ERO1L	ERO1-like (<i>S. cerevisiae</i>)
361.	30812	SOX8	SRX (sex determining region Y)-box 8
362.	50848	F11R	F11 receptor
363.	50852	TRAT1	T cell receptor associated transmembrane adaptor 1
364.	51129	ANGPTL4	angiopoietin-like 4
365.	51155	HN1	hematological and neurological expressed 1
366.	51175	TUBE1	tubulin, epsilon 1
367.	51203	NUSAP1	nucleolar and spindle associated protein 1
368.	51299	NRN1	neuritin 1
369.	51312	SLC25A37	solute carrier family 25, member 37
370.	51512	GTSE1	G-2 and S-phase expressed 1
371.	51778	MYOZ2	myozenin 2
372.	53831	GPR84	G protein-coupled receptor 84
373.	54097	FAM3B	family with sequence similarity 3, member B
374.	54443	ANLN	anillin, actin binding protein (scraps homolog, <i>Drosophila</i>)
375.	54532	USP53	ubiquitin specific peptidase 53
376.	54549	SDK2	sidekick homolog 2 (chicken)
377.	54583	EGLN1	egl nine homolog 1 (<i>C. elegans</i>)
378.	54658	UGT1A1	UDP glucuronosyltransferase 1 family, polypeptide A1
379.	54886	PRG-3	plasticity related gene 3
380.	54898	ELOVL2	elongation of very long chain fatty acids (FEN1/Elo2, SUR4/Elo3, yeast)-like 2
381.	54928	IMPAD1	inositol monophosphatase domain containing 1
382.	55026	FAM70A	family with sequence similarity 70, member A
383.	55076	TMEM45A	transmembrane protein 45A
384.	55117	SLC6A15	solute carrier family 6, member 15
385.	55165	C10orf3	chromosome 10 open reading frame 3
386.	55240	STEAP3	STEAP family member 3
387.	55243	KIRREL	kin of IRRE like (<i>Drosophila</i>)
388.	55355	DKFZp762E1312	hypothetical protein DKFZp762E1312
389.	55366	LGR4	leucine-rich repeat-containing G protein-coupled receptor 4
390.	55586	MIOX	myo-inositol oxygenase
391.	55635	DEPDC1	DEP domain containing 1
392.	55691	FRMD4A	FERM domain containing 4A
393.	55857	C20orf19	chromosome 20 open reading frame 19
394.	55872	PBK	PDZ binding kinase
395.	56172	ANKH	ankylosis, progressive homolog (mouse)
396.	56704	JPH1	junctionophilin 1
397.	56892	C8orf4	chromosome 8 open reading frame 4
398.	56899	EB-1	E2a-Pbx1-associated protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
399.	56925	LXN	latexin
400.	56937	TMEPAI	transmembrane, prostate androgen induced RNA
401.	57082	CASC5	cancer susceptibility candidate 5
402.	57214	KIAA1199	KIAA1199
403.	57333	RCN3	reticulocalbin 3, EF-hand calcium binding domain
404.	57405	SPBC25	spindle pole body component 25 homolog (S. cerevisiae)
405.	57419	SLC24A3	solute carrier family 24 (sodium/potassium/calcium exchanger), member 3
406.	57535	KIAA1324	KIAA1324
407.	57687	KIAA1576	KIAA1576 protein
408.	57761	TRIB3	tribbles homolog 3 (Drosophila)
409.	58489	LOC58489	hypothetical protein from EUROIMAGE 588495
410.	59272	ACE2	angiotensin I converting enzyme (peptidyl-dipeptidase A) 2
411.	59353	TMEM35	transmembrane protein 35
412.	64005	MYO1G	myosin IG
413.	64151	HCAP-G	chromosome condensation protein G
414.	65125	WNK1	WNK lysine deficient protein kinase 1
415.	79019	C22orf18	chromosome 22 open reading frame 18
416.	79054	TRPM8	transient receptor potential cation channel, subfamily M, member 8
417.	79094	MGC4504	hypothetical protein MGC4504
418.	79099	MGC5618	hypothetical protein MGC5618
419.	79170	MGC11242	hypothetical protein MGC11242
420.	79191	IRX3	iroquois homeobox protein 3
421.	79682	MLF1IP	MLF1 interacting protein
422.	79733	E2F8	E2F transcription factor 8
423.	79801	SHCBP1	SHC SH2-domain binding protein 1
424.	80005	DOCK5	dedicator of cytokinesis 5
425.	80709	AKNA	AT-hook transcription factor
426.	81578	COL21A1	collagen, type XXI, alpha 1
427.	81611	ANP32E	acidic (leucine-rich) nuclear phosphoprotein 32 family, member E
428.	81671	TMEM49	transmembrane protein 49
429.	81848	SPRY4	sprouty homolog 4 (Drosophila)
430.	81930	KIF18A	kinesin family member 18A
431.	83468	GLT8D2	glycosyltransferase 8 domain containing 2
432.	83540	CDCA1	cell division cycle associated 1
433.	83667	SESN2	sestrin 2
434.	83690	CRISPLD1	cysteine-rich secretory protein LCCL domain containing 1
435.	83872	HMCN1	hemicentin 1
436.	83888	KSP37	Ksp37 protein
437.	84153	AYP1	AYP1 protein
438.	84296	SLD5	SLD5 homolog

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
439.	84333	PCGF5	polycomb group ring finger 5
440.	84634	GPR54	G protein-coupled receptor 54
441.	84735	CNDP1	carnosine dipeptidase 1 (metallopeptidase M20 family)
442.	84837	C14orf128	chromosome 14 open reading frame 128
443.	89886	SLAMF9	SLAM family member 9
444.	92370	ACPL2	acid phosphatase-like 2
445.	92747	C20orf114	chromosome 20 open reading frame 114
446.	93664	CADPS2	Ca ²⁺ -dependent activator protein for secretion 2
447.	94122	SYTL5	synaptotagmin-like 5
448.	114614	BIC	BIC transcript
449.	114805	GALNT13	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylglucosaminyltransferase 13 (GalNAc-T13)
450.	114815	SORCS1	sortilin-related VPS10 domain containing receptor 1
451.	116496	C1orf24	chromosome 1 open reading frame 24
452.	128239	IQGAP3	IQ motif containing GTPase activating protein 3
453.	131566	DCBLD2	discoidin, CUB and LCCL domain containing 2
454.	134429	STARD4	START domain containing 4, sterol regulated
455.	135228	CD109	CD109 antigen (Gv platelet alloantigens)
456.	138065	RNF183	ring finger protein 183
457.	140576	S100A16	S100 calcium binding protein A16
458.	140597	TCEAL2	transcription elongation factor A (SII)-like 2
459.	143098	MPP7	membrane protein, palmitoylated 7 (MAGUK p55 subfamily member 7)
460.	144195	SLC2A14	solute carrier family 2 (facilitated glucose transporter), member 14
461.	146909	LOC146909	hypothetical protein LOC146909
462.	150468	FLJ40629	hypothetical protein FLJ40629
463.	154043	CNKSR3	CNKSR family member 3
464.	160335	DKFZp762A217	hypothetical protein DKFZp762A217
465.	160419	FLJ35821	hypothetical protein FLJ35821
466.	160428	ALDH1L2	aldehyde dehydrogenase 1 family, member L2
467.	162394	MGC19764	hypothetical protein MGC19764
468.	171546	C14orf147	chromosome 14 open reading frame 147
469.	200844	FLJ42117	FLJ42117 protein
470.	202451	LOC202451	hypothetical protein LOC202451
471.	206338	FLJ90650	laeverin
472.	219699	UNC5B	unc-5 homolog B (C. elegans)
473.	220296	FLJ25530	hepatocyte cell adhesion molecule
474.	221687	RNF182	ring finger protein 182
475.	222553	SLC35F1	solute carrier family 35, member F1
476.	253981	LOC253981	hypothetical protein LOC253981
477.	259266	ASPM	asp (abnormal spindle)-like, microcephaly associated (Drosophila)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
478.	260436	C4orf7	chromosome 4 open reading frame 7
479.	283131	TncRNA	trophoblast-derived noncoding RNA
480.	283824	LOC283824	hypothetical protein LOC283824
481.	285628	LOC285628	hypothetical protein LOC285628
482.	285735	LOC285735	hypothetical protein LOC285735
483.	340719	NANOS1	nanos homolog 1 (Drosophila)
484.	347733	TUBB-PARALOG	tubulin, beta polypeptide paralog
485.	353322	ANKRD37	ankyrin repeat domain 37
486.	388677	NOTCH2NL	Notch homolog 2 (Drosophila) N-terminal like
487.	389429	LOC389429	hypothetical LOC389429
488.	400172	LOC400172	similar to KIAA1641 protein; melanoma-associated antigen; CLL-associated antigen KW-1
489.	401151	LOC401151	hypothetical gene supported by BC062741
490.	404203	SPINK6	serine peptidase inhibitor, Kazal type 6

TABLE II

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	55	ACPP	acid phosphatase, prostate
2.	133	ADM	adrenomedullin
3.	332	BIRC5	baculoviral IAP repeat-containing 5 (survivin)
4.	348	APOE	apolipoprotein E
5.	358	AQP1	aquaporin 1 (channel-forming integral protein, 28kDa)
6.	374	AREG	amphiregulin (schwannoma-derived growth factor)
7.	440	ASNS	asparagine synthetase
8.	445	ASS	argininosuccinate synthetase
9.	468	ATF4	activating transcription factor 4 (tax-responsive enhancer element B67)
10.	487	ATP2A1	ATPase, Ca++ transporting, cardiac muscle, fast twitch 1
11.	491	ATP2B2	ATPase, Ca++ transporting, plasma membrane 2
12.	586	BCAT1	branched chain aminotransferase 1, cytosolic
13.	664	BNIP3	BCL2/adenovirus E1B 19kDa interacting protein 3
14.	701	BUB1B	BUB1 budding uninhibited by benzimidazoles 1 homolog beta (yeast)
15.	759	CA1	carbonic anhydrase I
16.	875	CBS	cystathionine-beta-synthase
17.	891	CCNB1	cyclin B1
18.	965	CD58	CD58 antigen, (lymphocyte function-associated antigen 3)
19.	983	CDC2	cell division cycle 2, G1 to S and G2 to M

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
20.	1063	CENPF	centromere protein F, 350/400ka (mitosin)
21.	1293	COL6A3	collagen, type VI, alpha 3
22.	1301	COL11A1	collagen, type XI, alpha 1
23.	1306	COL15A1	collagen, type XV, alpha 1
24.	1356	CP	ceruloplasmin (ferroxidase)
25.	1472	CST4	cystatin S
26.	1591	CYP24A1	cytochrome P450, family 24, subfamily A, polypeptide 1
27.	1746	DLX2	distal-less homeo box 2
28.	1908	EDN3	endothelin 3
29.	2026	ENO2	enolase 2 (gamma, neuronal)
30.	2151	F2RL2	coagulation factor II (thrombin) receptor-like 2
31.	2152	F3	coagulation factor III (thromboplastin, tissue factor)
32.	2315	MLANA	melan-A
33.	2596	GAP43	growth associated protein 43
34.	2669	GEM	GTP binding protein overexpressed in skeletal muscle
35.	2778	GNAS	GNAS complex locus
36.	2887	GRB10	growth factor receptor-bound protein 10
37.	2919	CXCL1	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
38.	3039	HBA1	hemoglobin, alpha 1
39.	3040	HBA2	hemoglobin, alpha 2
40.	3079	CFHL1P	complement factor H-related 1 pseudogene
41.	3082	HGF	hepatocyte growth factor (hepapoietin A; scatter factor)
42.	3117	HLA-DQA1	major histocompatibility complex, class II, DQ alpha 1
43.	3161	HMMR	hyaluronan-mediated motility receptor (RHAMM)
44.	3291	HSD11B2	hydroxysteroid (11-beta) dehydrogenase 2
45.	3397	ID1	inhibitor of DNA binding 1, dominant negative helix-loop-helix protein
46.	3576	IL8	interleukin 8
47.	3624	INHBA	inhibin, beta A (activin A, activin AB alpha polypeptide)
48.	3625	INHBB	inhibin, beta B (activin AB beta polypeptide)
49.	3910	LAMA4	laminin, alpha 4
50.	3929	LBP	lipopolysaccharide binding protein
51.	3949	LDLR	low density lipoprotein receptor (familial hypercholesterolemia)
52.	3957	LGALS2	lectin, galactoside-binding, soluble, 2 (galectin 2)
53.	3963	LGALS7	lectin, galactoside-binding, soluble, 7 (galectin 7)
54.	3976	LIF	leukemia inhibitory factor (cholinergic differentiation factor)
55.	4017	LOXL2	lysyl oxidase-like 2
56.	4069	LYZ	lysozyme (renal amyloidosis)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
57.	4256	MGP	matrix Gla protein
58.	4629	MYH11	myosin, heavy polypeptide 11, smooth muscle
59.	4747	NEFL	neurofilament, light polypeptide 68kDa
60.	4885	NPTX2	neuronal pentraxin II
61.	4907	NT5E	5'-nucleotidase, ecto (CD73)
62.	4921	DDR2	discoidin domain receptor family, member 2
63.	4922	NTS	neurotensin
64.	4969	OGN	osteoglycin (osteoinductive factor, mimecan)
65.	5122	PCSK1	proprotein convertase subtilisin/kexin type 1
66.	5210	PFKFB4	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4
67.	5225	PGC	progastricsin (pepsinogen C)
68.	5329	PLAUR	plasminogen activator, urokinase receptor
69.	5554	PRH1	proline-rich protein HaeIII subfamily 1
70.	5743	PTGS2	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
71.	5806	PTX3	pentraxin-related gene, rapidly induced by IL-1 beta
72.	5996	RGS1	regulator of G-protein signalling 1
73.	5997	RGS2	regulator of G-protein signalling 2, 24kDa
74.	6192	RPS4Y1	ribosomal protein S4, Y-linked 1
75.	6241	RRM2	ribonucleotide reductase M2 polypeptide
76.	6301	SARS	seryl-tRNA synthetase
77.	6374	CXCL5	chemokine (C-X-C motif) ligand 5
78.	6383	SDC2	syndecan 2 (heparan sulfate proteoglycan 1, cell surface-associated, fibroglycan)
79.	6414	SEPP1	selenoprotein P, plasma, 1
80.	6440	SFTPC	surfactant, pulmonary-associated protein C
81.	6509	SLC1A4	solute carrier family 1 (glutamate/neutral amino acid transporter), member 4
82.	6515	SLC2A3	solute carrier family 2 (facilitated glucose transporter), member 3
83.	6529	SLC6A1	solute carrier family 6 (neurotransmitter transporter, GABA), member 1
84.	6648	SOD2	superoxide dismutase 2, mitochondrial
85.	6695	SPOCK	sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican)
86.	6706	SPRR2G	small proline-rich protein 2G
87.	6781	STC1	stanniocalcin 1
88.	6857	SYT1	synaptotagmin I
89.	6863	TAC1	tachykinin, precursor 1 (substance K, substance P, neurokinin 1, neurokinin 2, neuromedin L, neurokinin alpha, neuropeptide K, neuropeptide gamma)
90.	6990	TCTE1L	t-complex-associated-testis-expressed 1-like

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
91.	7078	TIMP3	TIMP metalloproteinase inhibitor 3 (Sorsby fundus dystrophy, pseudoinflammatory)
92.	7153	TOP2A	topoisomerase (DNA) II alpha 170kDa
93.	7299	TYR	tyrosinase (oculocutaneous albinism IA)
94.	7453	WARS	tryptophanyl-tRNA synthetase
95.	7980	TFPI2	tissue factor pathway inhibitor 2
96.	8424	BBOX1	butyrobetaine (gamma), 2-oxoglutarate dioxygenase (gamma-butyrobetaine hydroxylase) 1
97.	8600	TNFSF11	tumor necrosis factor (ligand) superfamily, member 11
98.	8870	IER3	immediate early response 3
99.	9055	PRC1	protein regulator of cytokinesis 1
100.	9075	CLDN2	claudin 2
101.	9118	INA	internexin neuronal intermediate filament protein, alpha
102.	9123	SLC16A3	solute carrier family 16 (monocarboxylic acid transporters), member 3
103.	9133	CCNB2	cyclin B2
104.	9181	ARHGEF2	rho/rac guanine nucleotide exchange factor (GEF) 2
105.	9236	CCPG1	cell cycle progression 1
106.	9447	AIM2	absent in melanoma 2
107.	9488	PIGB	phosphatidylinositol glycan, class B
108.	9768	KIAA0101	KIAA0101
109.	9945	GFPT2	glutamine-fructose-6-phosphate transaminase 2
110.	10216	PRG4	proteoglycan 4
111.	10234	LRRC17	leucine rich repeat containing 17
112.	10468	FST	follicle-stimulating hormone receptor
113.	10628	TXNIP	thioredoxin interacting protein
114.	10797	MTHFD2	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 2, methenyltetrahydrofolate cyclohydrolase
115.	10875	FGL2	fibrinogen-like 2
116.	11065	UBE2C	ubiquitin-conjugating enzyme E2C
117.	11069	RAPGEF4	Rap guanine nucleotide exchange factor (GEF) 4
118.	11075	STMN2	stathmin-like 2
119.	11202	KLK8	kallikrein 8 (neuropsin/ovasin)
120.	11341	SCRG1	scrapie responsive protein 1
121.	23657	SLC7A11	solute carrier family 7, (cationic amino acid transporter, y+ system) member 11
122.	26227	PHGDH	phosphoglycerate dehydrogenase
123.	26471	P8	p8 protein (candidate of metastasis 1)
124.	28902	IGKV1D-13	immunoglobulin kappa variable 1D-13
125.	29091	STXBP6	syntaxin binding protein 6 (amisyn)
126.	29923	HIG2	hypoxia-inducible protein 2
127.	29968	PSAT1	phosphoserine aminotransferase 1
128.	50848	F11R	F11 receptor

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
129.	50852	TRAT1	T cell receptor associated transmembrane adaptor 1
130.	51203	NUSAP1	nucleolar and spindle associated protein 1
131.	51778	MYOZ2	myozenin 2
132.	54443	ANLN	anillin, actin binding protein (scraps homolog, Drosophila)
133.	54549	SDK2	sidekick homolog 2 (chicken)
134.	54658	UGT1A1	UDP glucuronosyltransferase 1 family, polypeptide A1
135.	55165	C10orf3	chromosome 10 open reading frame 3
136.	55355	DKFZp762E1312	hypothetical protein DKFZp762E1312
137.	55635	DEPDC1	DEP domain containing 1
138.	55691	FRMD4A	FERM domain containing 4A
139.	55872	PBK	PDZ binding kinase
140.	56892	C8orf4	chromosome 8 open reading frame 4
141.	56937	TMEPAI	transmembrane, prostate androgen induced RNA
142.	57214	KIAA1199	KIAA1199
143.	57687	KIAA1576	KIAA1576 protein
144.	57761	TRIB3	tribbles homolog 3 (Drosophila)
145.	64005	MYO1G	myosin IG
146.	79170	MGC11242	hypothetical protein MGC11242
147.	79801	SHCBP1	SHC SH2-domain binding protein 1
148.	83540	CDCA1	cell division cycle associated 1
149.	83690	CRISPLD1	cysteine-rich secretory protein LCCL domain containing 1
150.	83872	HMCN1	hemicentin 1
151.	92370	ACPL2	acid phosphatase-like 2
152.	93664	CADPS2	Ca ²⁺ -dependent activator protein for secretion 2
153.	94122	SYTL5	synaptotagmin-like 5
154.	143098	MPP7	membrane protein, palmitoylated 7 (MAGUK p55 subfamily member 7)
155.	144195	SLC2A14	solute carrier family 2 (facilitated glucose transporter), member 14
156.	150468	FLJ40629	hypothetical protein FLJ40629
157.	160335	DKFZp762A217	hypothetical protein DKFZp762A217
158.	160428	ALDH1L2	aldehyde dehydrogenase 1 family, member L2
159.	219699	UNC5B	unc-5 homolog B (C. elegans)
160.	260436	C4orf7	chromosome 4 open reading frame 7
161.	285628	LOC285628	hypothetical protein LOC285628
162.	347733	TUBB-PARALOG	tubulin, beta polypeptide paralog
163.	388677	NOTCH2NL	Notch homolog 2 (Drosophila) N-terminal like
164.	389429	LOC389429	hypothetical LOC389429
165.	401151	LOC401151	hypothetical gene supported by BC062741

TABLE III

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	358	AQP1	aquaporin 1 (channel-forming integral protein, 28kDa)
2.	440	ASNS	asparagine synthetase
3.	445	ASS	argininosuccinate synthetase
4.	1306	COL15A1	collagen, type XV, alpha 1
5.	1591	CYP24A1	cytochrome P450, family 24, subfamily A, polypeptide 1
6.	1908	EDN3	endothelin 3
7.	2596	GAP43	growth associated protein 43
8.	3079	CFHL1P	complement factor H-related 1 pseudogene
9.	3082	HGF	hepatocyte growth factor (hepapoietin A; scatter factor)
10.	3397	ID1	inhibitor of DNA binding 1, dominant negative helix-loop-helix protein
11.	3576	IL8	interleukin 8
12.	3624	INHBA	inhibin, beta A (activin A, activin AB alpha polypeptide)
13.	3910	LAMA4	laminin, alpha 4
14.	3963	LGALS7	lectin, galactoside-binding, soluble, 7 (galectin 7)
15.	3976	LIF	leukemia inhibitory factor (cholinergic differentiation factor)
16.	4069	LYZ	lysozyme (renal amyloidosis)
17.	4629	MYH11	myosin, heavy polypeptide 11, smooth muscle
18.	4747	NEFL	neurofilament, light polypeptide 68kDa
19.	4922	NTS	neurotensin
20.	5225	PGC	progastricsin (pepsinogen C)
21.	5806	PTX3	pentraxin-related gene, rapidly induced by IL-1 beta
22.	5996	RGS1	regulator of G-protein signalling 1
23.	6192	RPS4Y1	ribosomal protein S4, Y-linked 1
24.	6241	RRM2	ribonucleotide reductase M2 polypeptide
25.	6383	SDC2	syndecan 2 (heparan sulfate proteoglycan 1, cell surface-associated, fibroglycan)
26.	6414	SEPP1	selenoprotein P, plasma, 1
27.	6440	SFTPC	surfactant, pulmonary-associated protein C
28.	6781	STC1	stanniocalcin 1
29.	7980	TFPI2	tissue factor pathway inhibitor 2
30.	9075	CLDN2	claudin 2
31.	9768	KIAA0101	KIAA0101
32.	9945	GFPT2	glutamine-fructose-6-phosphate transaminase 2
33.	10468	FST	follicle-stimulating hormone receptor-like 1
34.	11075	STMN2	stathmin-like 2
35.	26227	PHGDH	phosphoglycerate dehydrogenase
36.	28902	IGKV1D-13	immunoglobulin kappa variable 1D-13

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
37.	29968	PSAT1	phosphoserine aminotransferase 1
38.	54658	UGT1A1	UDP glucuronosyltransferase 1 family, polypeptide A1
39.	56892	C8orf4	chromosome 8 open reading frame 4
40.	57214	KIAA1199	KIAA1199
41.	57687	KIAA1576	KIAA1576 protein
42.	94122	SYTL5	synaptotagmin-like 5
43.	160428	ALDH1L2	aldehyde dehydrogenase 1 family, member L2
44.	219699	UNC5B	unc-5 homolog B (C. elegans)
45.	260436	C4orf7	chromosome 4 open reading frame 7

TABLE IV

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	3082	HGF	hepatocyte growth factor (hepapoietin A; scatter factor)
2.	11075	STMN2	stathmin-like 2
3.	56892	C8orf4	chromosome 8 open reading frame 4
4.	260436	C4orf7	chromosome 4 open reading frame 7

TABLE V

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	1	A1BG	alpha-1-B glycoprotein
2.	55	ACPP	acid phosphatase, prostate
3.	133	ADM	adrenomedullin
4.	284	ANGPT1	angiopoietin 1
5.	348	APOE	apolipoprotein E
6.	354	KLK3	kallikrein 3, (prostate specific antigen)
7.	374	AREG	amphiregulin (schwannoma-derived growth factor)
8.	722	C4BPA	complement component 4 binding protein, alpha
9.	796	CALCA	calcitonin/calcitonin-related polypeptide, alpha
10.	1208	CLPS	colipase, pancreatic
11.	1287	COL4A5	collagen, type IV, alpha 5 (Alport syndrome)
12.	1293	COL6A3	collagen, type VI, alpha 3
13.	1301	COL11A1	collagen, type XI, alpha 1
14.	1306	COL15A1	collagen, type XV, alpha 1
15.	1356	CP	ceruloplasmin (ferroxidase)
16.	1404	HAPLN1	hyaluronan and proteoglycan link protein 1
17.	1520	CTSS	cathepsin S

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
18.	1604	DAF	decay accelerating factor for complement (CD55, Cromer blood group system)
19.	1908	EDN3	endothelin 3
20.	2153	F5	coagulation factor V (proaccelerin, labile factor)
21.	2258	FGF13	fibroblast growth factor 13
22.	2331	FMOD	fibromodulin
23.	2778	GNAS	GNAS complex locus
24.	2919	CXCL1	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
25.	3053	SERPIND1	serpin peptidase inhibitor, clade D (heparin cofactor), member 1
26.	3082	HGF	hepatocyte growth factor (hepapoietin A; scatter factor)
27.	3488	IGFBP5	insulin-like growth factor binding protein 5
28.	3576	IL8	interleukin 8
29.	3624	INHBA	inhibin, beta A (activin A, activin AB alpha polypeptide)
30.	3625	INHBB	inhibin, beta B (activin AB beta polypeptide)
31.	3697	ITIH1	inter-alpha (globulin) inhibitor H1
32.	3910	LAMA4	laminin, alpha 4
33.	3929	LBP	lipopolysaccharide binding protein
34.	3976	LIF	leukemia inhibitory factor (cholinergic differentiation factor)
35.	4017	LOXL2	lysyl oxidase-like 2
36.	4023	LPL	lipoprotein lipase
37.	4069	LYZ	lysozyme (renal amyloidosis)
38.	4256	MGP	matrix Gla protein
39.	4922	NTS	neurotensin
40.	4969	OGN	osteo glycin (osteoinductive factor, mimecan)
41.	5054	SERPINE1	serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1
42.	5176	SERPINF1	serpin peptidase inhibitor, clade F (alpha-2 antiplasmin, pigment epithelium derived factor), member 1
43.	5225	PGC	progastricsin (pepsinogen C)
44.	5228	PGF	placental growth factor, vascular endothelial growth factor-related protein
45.	5644	PRSS1	protease, serine, 1 (trypsin 1)
46.	5646	PRSS3	protease, serine, 3 (mesotrypsin)
47.	5806	PTX3	pentraxin-related gene, rapidly induced by IL-1 beta
48.	6036	RNASE2	ribonuclease, RNase A family, 2 (liver, eosinophil-derived neurotoxin)
49.	6374	CXCL5	chemokine (C-X-C motif) ligand 5
50.	6406	SEMG1	semenogelin I
51.	6414	SEPP1	selenoprotein P, plasma, 1
52.	6440	SFTPC	surfactant, pulmonary-associated protein C

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
53.	6590	SLPI	secretory leukocyte peptidase inhibitor
54.	6695	SPOCK	sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican)
55.	6781	STC1	stanniocalcin 1
56.	6863	TAC1	tachykinin, precursor 1 (substance K, substance P, neurokinin 1, neurokinin 2, neuromedin L, neurokinin alpha, neuropeptide K, neuropeptide gamma)
57.	7039	TGFA	transforming growth factor, alpha
58.	7076	TIMP1	TIMP metalloproteinase inhibitor 1
59.	7078	TIMP3	TIMP metalloproteinase inhibitor 3 (Sorsby fundus dystrophy, pseudoinflammatory)
60.	7130	TNFAIP6	tumor necrosis factor, alpha-induced protein 6
61.	7980	TFPI2	tissue factor pathway inhibitor 2
62.	8565	YARS	tyrosyl-tRNA synthetase
63.	8600	TNFSF11	tumor necrosis factor (ligand) superfamily, member 11
64.	10135	PBEF1	pre-B-cell colony enhancing factor 1
65.	10158	PDZK1IP1	PDZK1 interacting protein 1
66.	10216	PRG4	proteoglycan 4
67.	10468	FST	follicle-stimulating hormone receptor
68.	10675	CSPG5	chondroitin sulfate proteoglycan 5 (neuroglycan C)
69.	11010	GLIPR1	GLI pathogenesis-related 1 (glioma)
70.	11202	KLK8	kallikrein 8 (neuropsin/ovasin)
71.	11341	SCRG1	scrapie responsive protein 1
72.	25992	SNED1	sushi, nidogen and EGF-like domains 1
73.	51129	ANGPTL4	angiopoietin-like 4
74.	54097	FAM3B	family with sequence similarity 3, member B
75.	81578	COL21A1	collagen, type XXI, alpha 1
76.	83690	CRISPLD1	cysteine-rich secretory protein LCCL domain containing 1
77.	260436	C4orf7	chromosome 4 open reading frame 7

TABLE VI

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	1306	COL15A1	collagen, type XV, alpha 1
2.	1908	EDN3	endothelin 3
3.	3082	HGF	hepatocyte growth factor (hepapoietin A; scatter factor)
4.	3576	IL8	interleukin 8
5.	3624	INHBA	inhibin, beta A (activin A, activin AB alpha polypeptide)
6.	3910	LAMA4	laminin, alpha 4
7.	3976	LIF	leukemia inhibitory factor (cholinergic differentiation factor)
8.	4069	LYZ	lysozyme (renal amyloidosis)

9.	4922	NTS	neurotensin
10.	5225	PGC	progastricsin (pepsinogen C)
11.	5806	PTX3	pentraxin-related gene, rapidly induced by IL-1 beta
12.	6414	SEPP1	selenoprotein P, plasma, 1
13.	6440	SFTPC	surfactant, pulmonary-associated protein C
14.	6781	STC1	stanniocalcin 1
15.	7980	TFPI2	tissue factor pathway inhibitor 2
16.	10468	FST	follicle-stimulating hormone receptor
17.	260436	C4orf7	chromosome 4 open reading frame 7

TABLE VII

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	16	AARS	alanyl-tRNA synthetase
2.	39	ACAT2	acetyl-Coenzyme A acetyltransferase 2 (acetoacetyl Coenzyme A thiolase)
3.	133	ADM	adrenomedullin
4.	332	BIRC5	baculoviral IAP repeat-containing 5 (survivin)
5.	374	AREG	amphiregulin (schwannoma-derived growth factor)
6.	440	ASNS	asparagine synthetase
7.	445	ASS	argininosuccinate synthetase
8.	468	ATF4	activating transcription factor 4 (tax-responsive enhancer element B67)
9.	586	BCAT1	branched chain aminotransferase 1, cytosolic
10.	699	BUB1	BUB1 budding uninhibited by benzimidazoles 1 homolog (yeast)
11.	701	BUB1B	BUB1 budding uninhibited by benzimidazoles 1 homolog beta (yeast)
12.	833	CARS	cysteinyl-tRNA synthetase
13.	875	CBS	cystathionine-beta-synthase
14.	891	CCNB1	cyclin B1
15.	965	CD58	CD58 antigen, (lymphocyte function-associated antigen 3)
16.	983	CDC2	cell division cycle 2, G1 to S and G2 to M
17.	991	CDC20	CDC20 cell division cycle 20 homolog (S. cerevisiae)
18.	1054	CEBPG	CCAAT/enhancer binding protein (C/EBP), gamma
19.	1063	CENPF	centromere protein F, 350/400ka (mitosin)
20.	1111	CHEK1	CHK1 checkpoint homolog (S. pombe)
21.	1164	CKS2	CDC28 protein kinase regulatory subunit 2
22.	1174	AP1S1	adaptor-related protein complex 1, sigma 1 subunit
23.	1306	COL15A1	collagen, type XV, alpha 1
24.	1356	CP	ceruloplasmin (ferroxidase)
25.	1472	CST4	cystatin S

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
26.	1831	TSC22D3	TSC22 domain family, member 3
27.	1843	DUSP1	dual specificity phosphatase 1
28.	2065	ERBB3	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
29.	2171	FABP5	fatty acid binding protein 5 (psoriasis- associated)
30.	2315	MLANA	melan-A
31.	2596	GAP43	growth associated protein 43
32.	2617	GARS	glycyl-tRNA synthetase
33.	2669	GEM	GTP binding protein overexpressed in skeletal muscle
34.	2778	GNAS	GNAS complex locus
35.	3053	SERPIND1	serpin peptidase inhibitor, clade D (heparin cofactor), member 1
36.	3082	HGF	hepatocyte growth factor (hepapoietin A; scatter factor)
37.	3159	HMGA1	high mobility group AT-hook 1
38.	3241	HPCAL1	hippocalcin-like 1
39.	3251	HPRT1	hypoxanthine phosphoribosyltransferase 1 (Lesch-Nyhan syndrome)
40.	3376	IARS	isoleucine-tRNA synthetase
41.	3460	IFNGR2	interferon gamma receptor 2 (interferon gamma transducer 1)
42.	3576	IL8	interleukin 8
43.	3624	INHBA	inhibin, beta A (activin A, activin AB alpha polypeptide)
44.	3638	INSIG1	insulin induced gene 1
45.	3678	ITGA5	integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
46.	3696	ITGB8	integrin, beta 8
47.	3783	KCNN4	potassium intermediate/small conductance calcium-activated channel, subfamily N, member 4
48.	3838	KPNA2	karyopherin alpha 2 (RAG cohort 1, importin alpha 1)
49.	3949	LDLR	low density lipoprotein receptor (familial hypercholesterolemia)
50.	3976	LIF	leukemia inhibitory factor (cholinergic differentiation factor)
51.	4085	MAD2L1	MAD2 mitotic arrest deficient-like 1 (yeast)
52.	4141	MARS	methionine-tRNA synthetase
53.	4493	MT1E	metallothionein 1E (functional)
54.	4501	MT1X	metallothionein 1X
55.	4502	MT2A	metallothionein 2A
56.	4921	DDR2	discoidin domain receptor family, member 2
57.	5106	PCK2	phosphoenolpyruvate carboxykinase 2 (mitochondrial)
58.	5122	PCSK1	proprotein convertase subtilisin/kexin type 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
59.	5210	PFKFB4	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4
60.	5223	PGAM1	phosphoglycerate mutase 1 (brain)
61.	5230	PGK1	phosphoglycerate kinase 1
62.	5329	PLAUR	plasminogen activator, urokinase receptor
63.	5635	PRPSAP1	phosphoribosyl pyrophosphate synthetase-associated protein 1
64.	5646	PRSS3	protease, serine, 3 (mesotrypsin)
65.	5743	PTGS2	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
66.	5983	RFC3	replication factor C (activator 1) 3, 38kDa
67.	5997	RGS2	regulator of G-protein signalling 2, 24kDa
68.	6241	RRM2	ribonucleotide reductase M2 polypeptide
69.	6301	SARS	seryl-tRNA synthetase
70.	6307	SC4MOL	sterol-C4-methyl oxidase-like
71.	6472	SHMT2	serine hydroxymethyltransferase 2 (mitochondrial)
72.	6509	SLC1A4	solute carrier family 1 (glutamate/neutral amino acid transporter), member 4
73.	6515	SLC2A3	solute carrier family 2 (facilitated glucose transporter), member 3
74.	6520	SLC3A2	solute carrier family 3 (activators of dibasic and neutral amino acid transport), member 2
75.	6541	SLC7A1	solute carrier family 7 (cationic amino acid transporter, y+ system), member 1
76.	6590	SLPI	secretory leukocyte peptidase inhibitor
77.	6648	SOD2	superoxide dismutase 2, mitochondrial
78.	6781	STC1	stanniocalcin 1
79.	6917	TCEA1	transcription elongation factor A (SII), 1
80.	6990	TCTE1L	t-complex-associated-testis-expressed 1-like
81.	7076	TIMP1	TIMP metalloproteinase inhibitor 1
82.	7130	TNFAIP6	tumor necrosis factor, alpha-induced protein 6
83.	7153	TOP2A	topoisomerase (DNA) II alpha 170kDa
84.	7298	TYMS	thymidylate synthetase
85.	7453	WARS	tryptophanyl-tRNA synthetase
86.	7804	LRP8	low density lipoprotein receptor-related protein 8, apolipoprotein e receptor
87.	7980	TFPI2	tissue factor pathway inhibitor 2
88.	8140	SLC7A5	solute carrier family 7 (cationic amino acid transporter, y+ system), member 5
89.	8364	HIST1H4C	histone 1, H4c
90.	8473	OGT	O-linked N-acetylglucosamine (GlcNAc) transferase (UDP-N-acetylglucosamine:polypeptide-N-acetylglucosaminyl transferase)
91.	8553	BHLHB2	basic helix-loop-helix domain containing, class B, 2

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
92.	8565	YARS	tyrosyl-tRNA synthetase
93.	8572	PDLIM4	PDZ and LIM domain 4
94.	8781	PSPHL	phosphoserine phosphatase-like
95.	8828	NRP2	neuropilin 2
96.	8870	IER3	immediate early response 3
97.	9055	PRC1	protein regulator of cytokinesis 1
98.	9123	SLC16A3	solute carrier family 16 (monocarboxylic acid transporters), member 3
99.	9134	CCNE2	cyclin E2
100.	9181	ARHGEF2	rho/rac guanine nucleotide exchange factor (GEF) 2
101.	9212	AURKB	aurora kinase B
102.	9232	PTTG1	pituitary tumor-transforming 1
103.	9236	CCPG1	cell cycle progression 1
104.	9314	KLF4	Kruppel-like factor 4 (gut)
105.	9404	LPXN	leupaxin
106.	9435	CHST2	carbohydrate (N-acetylglucosamine-6-O) sulfotransferase 2
107.	9447	AIM2	absent in melanoma 2
108.	9493	KIF23	kinesin family member 23
109.	9497	SLC4A7	solute carrier family 4, sodium bicarbonate cotransporter, member 7
110.	9768	KIAA0101	KIAA0101
111.	9837	PSF1	DNA replication complex GINS protein PSF1
112.	9928	KIF14	kinesin family member 14
113.	10112	KIF20A	kinesin family member 20A
114.	10123	ARL7	ADP-ribosylation factor-like 7
115.	10212	DDX39	DEAD (Asp-Glu-Ala-Asp) box polypeptide 39
116.	10216	PRG4	proteoglycan 4
117.	10628	TXNIP	thioredoxin interacting protein
118.	10797	MTHFD2	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 2, methenyltetrahydrofolate cyclohydrolase
119.	10802	SEC24A	SEC24 related gene family, member A (S. cerevisiae)
120.	11065	UBE2C	ubiquitin-conjugating enzyme E2C
121.	11075	STMN2	stathmin-like 2
122.	11130	ZWINT	ZW10 interactor
123.	11202	KLK8	kallikrein 8 (neuropsin/ovasin)
124.	11260	XPOT	exportin, tRNA (nuclear export receptor for tRNAs)
125.	11341	SCRG1	scrapie responsive protein 1
126.	22974	TPX2	TPX2, microtubule-associated, homolog (Xenopus laevis)
127.	23245	ASTN2	astrotactin 2
128.	23301	EHBP1	EH domain binding protein 1
129.	23600	AMACR	alpha-methylacyl-CoA racemase
130.	23657	SLC7A11	solute carrier family 7, (cationic amino acid transporter, y+ system) member 11

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
131.	24137	KIF4A	kinesin family member 4A
132.	25992	SNED1	sushi, nidogen and EGF-like domains 1
133.	26227	PHGDH	phosphoglycerate dehydrogenase
134.	26355	E2IG5	growth and transformation-dependent protein
135.	26471	P8	p8 protein (candidate of metastasis 1)
136.	26575	RGS17	regulator of G-protein signalling 17
137.	28231	SLC04A1	solute carrier organic anion transporter family, member 4A1
138.	29028	ATAD2	ATPase family, AAA domain containing 2
139.	29089	UBE2T	ubiquitin-conjugating enzyme E2T (putative)
140.	29127	RACGAP1	Rac GTPase activating protein 1
141.	29128	UHRF1	ubiquitin-like, containing PHD and RING finger domains, 1
142.	29923	HIG2	hypoxia-inducible protein 2
143.	29968	PSAT1	phosphoserine aminotransferase 1
144.	29969	MDFIC	MyoD family inhibitor domain containing
145.	30001	ERO1L	ERO1-like (S. cerevisiae)
146.	51129	ANGPTL4	angiopoietin-like 4
147.	51155	HN1	hematological and neurological expressed 1
148.	51175	TUBE1	tubulin, epsilon 1
149.	51203	NUSAP1	nucleolar and spindle associated protein 1
150.	51312	SLC25A37	solute carrier family 25, member 37
151.	54097	FAM3B	family with sequence similarity 3, member B
152.	54443	ANLN	anillin, actin binding protein (scraps homolog, Drosophila)
153.	54532	USP53	ubiquitin specific peptidase 53
154.	54928	IMPAD1	inositol monophosphatase domain containing 1
155.	55076	TMEM45A	transmembrane protein 45A
156.	55355	DKFZp762E1312	hypothetical protein DKFZp762E1312
157.	55691	FRMD4A	FERM domain containing 4A
158.	55857	C20orf19	chromosome 20 open reading frame 19
159.	55872	PBK	PDZ binding kinase
160.	57082	CASC5	cancer susceptibility candidate 5
161.	57214	KIAA1199	KIAA1199
162.	57333	RCN3	reticulocalbin 3, EF-hand calcium binding domain
163.	57405	SPBC25	spindle pole body component 25 homolog (S. cerevisiae)
164.	57687	KIAA1576	KIAA1576 protein
165.	57761	TRIB3	tribbles homolog 3 (Drosophila)
166.	58489	LOC58489	hypothetical protein from EUROIMAGE 588495
167.	64151	HCAP-G	chromosome condensation protein G
168.	79019	C22orf18	chromosome 22 open reading frame 18
169.	79094	MGC4504	hypothetical protein MGC4504
170.	79682	MLF1IP	MLF1 interacting protein
171.	79801	SHCBP1	SHC SH2-domain binding protein 1
172.	80709	AKNA	AT-hook transcription factor

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
173.	83540	CDCA1	cell division cycle associated 1
174.	83667	SESN2	sestrin 2
175.	84837	C14orf128	chromosome 14 open reading frame 128
176.	114614	BIC	BIC transcript
177.	116496	C1orf24	chromosome 1 open reading frame 24
178.	134429	STARD4	START domain containing 4, sterol regulated
179.	144195	SLC2A14	solute carrier family 2 (facilitated glucose transporter), member 14
180.	146909	LOC146909	hypothetical protein LOC146909
181.	150468	FLJ40629	hypothetical protein FLJ40629
182.	160335	DKFZp762A217	hypothetical protein DKFZp762A217
183.	160428	ALDH1L2	aldehyde dehydrogenase 1 family, member L2
184.	200844	FLJ42117	FLJ42117 protein
185.	259266	ASPM	asp (abnormal spindle)-like, microcephaly associated (Drosophila)
186.	285628	LOC285628	hypothetical protein LOC285628
187.	347733	TUBB-PARALOG	tubulin, beta polypeptide paralog
188.	353322	ANKRD37	ankyrin repeat domain 37
189.	388677	NOTCH2NL	Notch homolog 2 (Drosophila) N-terminal like

TABLE VIII

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	2	A2M	alpha-2-macroglobulin
2.	12	SERPINA3	serine (or cysteine) proteinase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 3
3.	14	AAMP	angio-associated, migratory cell protein
4.	16	AARS	alanyl-tRNA synthetase
5.	19	ABCA1	ATP-binding cassette, sub-family A (ABC1), member 1
6.	20	ABCA2	ATP-binding cassette, sub-family A (ABC1), member 2
7.	23	ABCF1	ATP-binding cassette, sub-family F (GCN20), member 1
8.	25	ABL1	v-abl Abelson murine leukemia viral oncogene homolog 1
9.	26	ABP1	amiloride binding protein 1 (amine oxidase (copper-containing))
10.	31	ACACA	acetyl-Coenzyme A carboxylase alpha
11.	32	ACACB	acetyl-Coenzyme A carboxylase beta
12.	33	ACADL	acyl-Coenzyme A dehydrogenase, long chain
13.	36	ACADSB	acyl-Coenzyme A dehydrogenase, short/branched chain
14.	37	ACADVL	acyl-Coenzyme A dehydrogenase, very long chain

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
15.	39		acetyl-Coenzyme A acetyltransferase 2 (acetoacetyl Coenzyme A thiolase)
16.	47	ACLY	ATP citrate lyase
17.	48	ACO1	aconitase 1, soluble
18.	52	ACP1	acid phosphatase 1, soluble
19.	53	ACP2	acid phosphatase 2, lysosomal
20.	54	ACP5	acid phosphatase 5, tartrate resistant
21.	55	ACPP	acid phosphatase, prostate
22.	60	ACTB	actin, beta
23.	71	ACTG1	actin, gamma 1
24.	81	ACTN4	actinin, alpha 4
25.	86	ACTL6A	actin-like 6A
26.	87	ACTN1	actinin, alpha 1
27.	90	ACVR1	activin A receptor, type I
28.	91	ACVR1B	activin A receptor, type IB
29.	92	ACVR2A	activin A receptor, type IIA
30.	94	ACVRL1	activin A receptor type II-like 1
31.	95	ACY1	aminoacylase 1
32.	102	ADAM10	a disintegrin and metalloproteinase domain 10
33.	104	ADARB1	adenosine deaminase, RNA-specific, B1 (RED1 homolog rat)
34.	107	ADCY1	adenylate cyclase 1 (brain)
35.	111	ADCY5	adenylate cyclase 5
36.	112	ADCY6	adenylate cyclase 6
37.	113	ADCY7	adenylate cyclase 7
38.	114	ADCY8	adenylate cyclase 8 (brain)
39.	115	ADCY9	adenylate cyclase 9
40.	118	ADD1	adducin 1 (alpha)
41.	120	ADD3	adducin 3 (gamma)
42.	123	ADFP	adipose differentiation-related protein
43.	125	ADH1B	alcohol dehydrogenase IB (class I), beta polypeptide
44.	128	ADH5	alcohol dehydrogenase 5 (class III), chi polypeptide
45.	132	ADK	adenosine kinase
46.	133	ADM	adrenomedullin
47.	141	ADPRH	ADP-ribosylarginine hydrolase
48.	143	PARP4	poly (ADP-ribose) polymerase family, member 4
49.	150	ADRA2A	adrenergic, alpha-2A-, receptor
50.	156	ADRBK1	adrenergic, beta, receptor kinase 1
51.	158	ADSL	adenylosuccinate lyase
52.	159	ADSS	adenylosuccinate synthase
53.	160	AP2A1	adaptor-related protein complex 2, alpha 1 subunit
54.	161	AP2A2	adaptor-related protein complex 2, alpha 2 subunit
55.	164	AP1G1	adaptor-related protein complex 1, gamma 1 subunit
56.	166	AES	amino-terminal enhancer of split
57.	175	AGA	aspartylglucosaminidase

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
58.	176	AGC1	aggrecan 1 (chondroitin sulfate proteoglycan 1, large aggregating proteoglycan, antigen identified by monoclonal antibody A0122)
59.	187	AGTRL1	angiotensin II receptor-like 1
60.	196	AHR	aryl hydrocarbon receptor
61.	199	AIF1	allograft inflammatory factor 1
62.	202	AIM1	absent in melanoma 1
63.	203	AK1	adenylate kinase 1
64.	204	AK2	adenylate kinase 2
65.	205	AK3L1	adenylate kinase 3-like 1
66.	208	AKT2	v-akt murine thymoma viral oncogene homolog 2
67.	220	ALDH1A3	aldehyde dehydrogenase 1 family, member A3
68.	224	ALDH3A2	aldehyde dehydrogenase 3 family, member A2
69.	226	ALDOA	aldolase A, fructose-bisphosphate
70.	230	ALDOC	aldolase C, fructose-bisphosphate
71.	238	ALK	anaplastic lymphoma kinase (Ki-1)
72.	245	ALOX12P2	arachidonate 12-lipoxygenase pseudogene 2
73.	247	ALOX15B	arachidonate 15-lipoxygenase, second type
74.	262	AMD1	adenosylmethionine decarboxylase 1
75.	267	AMFR	autocrine motility factor receptor
76.	271	AMPD2	adenosine monophosphate deaminase 2 (isoform L)
77.	272	AMPD3	adenosine monophosphate deaminase (isoform E)
78.	274	BIN1	bridging integrator 1
79.	275	AMT	aminomethyltransferase (glycine cleavage system protein T)
80.	284	ANGPT1	angiopoietin 1
81.	286	ANK1	ankyrin 1, erythrocytic
82.	287	ANK2	ankyrin 2, neuronal
83.	288	ANK3	ankyrin 3, node of Ranvier (ankyrin G)
84.	290	ANPEP	alanyl (membrane) aminopeptidase (aminopeptidase N, aminopeptidase M, microsomal aminopeptidase, CD13, p150)
85.	291	SLC25A4	solute carrier family 25 (mitochondrial carrier; adenine nucleotide translocator), member 4
86.	292	SLC25A5	solute carrier family 25 (mitochondrial carrier; adenine nucleotide translocator), member 5
87.	302	ANXA2	annexin A2
88.	304	ANXA2P2	annexin A2 pseudogene 2
89.	307	ANXA4	annexin A4
90.	309	ANXA6	annexin A6
91.	311	ANXA11	annexin A11
92.	317	APAF1	apoptotic protease activating factor
93.	321	APBA2	amyloid beta (A4) precursor protein-binding, family A, member 2 (X11-like)
94.	322	APBB1	amyloid beta (A4) precursor protein-binding, family B, member 1 (Fe65)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
95.	323	APBB2	amyloid beta (A4) precursor protein-binding, family B, member 2 (Fe65-like)
96.	324	APC	adenomatosis polyposis coli
97.	327	APEH	N-acylaminoacyl-peptide hydrolase
98.	329	BIRC2	baculoviral IAP repeat-containing 2
99.	330	BIRC3	baculoviral IAP repeat-containing 3
100.	331	BIRC4	baculoviral IAP repeat-containing 4
101.	332	BIRC5	baculoviral IAP repeat-containing 5 (survivin)
102.	334	APLP2	amyloid beta (A4) precursor-like protein 2
103.	341	APOC1	apolipoprotein C-I
104.	344	APOC2	apolipoprotein C-II
105.	348	APOE	apolipoprotein E
106.	351	APP	amyloid beta (A4) precursor protein (protease nexin-II, Alzheimer disease)
107.	355	FAS	Fas (TNF receptor superfamily, member 6)
108.	357	APXL	apical protein-like (Xenopus laevis)
109.	358	AQP1	aquaporin 1 (channel-forming integral protein, 28kDa)
110.	360	AQP3	aquaporin 3
111.	361	AQP4	aquaporin 4
112.	362	AQP5	aquaporin 5
113.	366	AQP9	aquaporin 9
114.	369	ARAF	v-raf murine sarcoma 3611 viral oncogene homolog
115.	372	ARCN1	archain 1
116.	373	TRIM23	tripartite motif-containing 23
117.	374	AREG	amphiregulin (schwannoma-derived growth factor)
118.	375	ARF1	ADP-ribosylation factor 1
119.	377	ARF3	ADP-ribosylation factor 3
120.	378	ARF4	ADP-ribosylation factor 4
121.	382	ARF6	ADP-ribosylation factor 6
122.	384	ARG2	arginase, type II
123.	388	RHOB	ras homolog gene family, member B
124.	390	RND3	Rho family GTPase 3
125.	394	ARHGAP5	Rho GTPase activating protein 5
126.	395	ARHGAP6	Rho GTPase activating protein 6
127.	396	ARHGDIA	Rho GDP dissociation inhibitor (GDI) alpha
128.	397	ARHGDIB	Rho GDP dissociation inhibitor (GDI) beta
129.	400	ARL1	ADP-ribosylation factor-like 1
130.	403	ARL3	ADP-ribosylation factor-like 3
131.	409	ARRB2	arrestin, beta 2
132.	412	STS	steroid sulfatase (microsomal), arylsulfatase C, isozyme S
133.	414	ARSD	arylsulfatase D
134.	415	ARSE	arylsulfatase E (chondrodysplasia punctata 1)
135.	427	ASAH1	N-acylsphingosine amidohydrolase (acid ceramidase) 1
136.	435	ASL	argininosuccinate lyase

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
137.	440	ASNS	asparagine synthetase
138.	444	ASPH	aspartate beta-hydroxylase
139.	445	ASS	argininosuccinate synthetase
140.	463	ATBF1	AT-binding transcription factor 1
141.	466	ATF1	activating transcription factor 1
142.	467	ATF3	activating transcription factor 3
143.	468	ATF4	activating transcription factor 4 (tax-responsive enhancer element B67)
144.	471	ATIC	5-aminoimidazole-4-carboxamide ribonucleotide formyltransferase/IMP cyclohydrolase
145.	473	RERE	arginine-glutamic acid dipeptide (RE) repeats
146.	475	ATOX1	ATX1 antioxidant protein 1 homolog (yeast)
147.	476	ATP1A1	ATPase, Na ⁺ /K ⁺ transporting, alpha 1 polypeptide
148.	481	ATP1B1	ATPase, Na ⁺ /K ⁺ transporting, beta 1 polypeptide
149.	483	ATP1B3	ATPase, Na ⁺ /K ⁺ transporting, beta 3 polypeptide
150.	488	ATP2A2	ATPase, Ca ⁺⁺ transporting, cardiac muscle, slow twitch 2
151.	489	ATP2A3	ATPase, Ca ⁺⁺ transporting, ubiquitous
152.	490	ATP2B1	ATPase, Ca ⁺⁺ transporting, plasma membrane 1
153.	493	ATP2B4	ATPase, Ca ⁺⁺ transporting, plasma membrane 4
154.	501	ALDH7A1	aldehyde dehydrogenase 7 family, member A1
155.	506	ATP5B	ATP synthase, H ⁺ transporting, mitochondrial F1 complex, beta polypeptide
156.	513	ATP5D	ATP synthase, H ⁺ transporting, mitochondrial F1 complex, delta subunit
157.	515	ATP5F1	ATP synthase, H ⁺ transporting, mitochondrial F0 complex, subunit b, isoform 1
158.	516	ATP5G1	ATP synthase, H ⁺ transporting, mitochondrial F0 complex, subunit c (subunit 9), isoform 1
159.	517	ATP5G2	ATP synthase, H ⁺ transporting, mitochondrial F0 complex, subunit c (subunit 9), isoform 2
160.	518	ATP5G3	ATP synthase, H ⁺ transporting, mitochondrial F0 complex, subunit c (subunit 9) isoform 3
161.	521	ATP5I	ATP synthase, H ⁺ transporting, mitochondrial F0 complex, subunit e
162.	522	ATP5J	ATP synthase, H ⁺ transporting, mitochondrial F0 complex, subunit F6
163.	523	ATP6V1A	ATPase, H ⁺ transporting, lysosomal 70kDa, V1 subunit A
164.	527	ATP6V0C	ATPase, H ⁺ transporting, lysosomal 16kDa, V0 subunit c

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
165.	528	ATP6V1C1	ATPase, H ⁺ transporting, lysosomal 42kDa, V1 subunit C, isoform 1
166.	529	ATP6V1E1	ATPase, H ⁺ transporting, lysosomal 31kDa, V1 subunit E isoform 1
167.	533	ATP6V0B	ATPase, H ⁺ transporting, lysosomal 21kDa, V0 subunit c''
168.	535	ATP6V0A1	ATPase, H ⁺ transporting, lysosomal V0 subunit a isoform 1
169.	540	ATP7B	ATPase, Cu ⁺⁺ transporting, beta polypeptide (Wilson disease)
170.	545	ATR	ataxia telangiectasia and Rad3 related
171.	546	ATRX	alpha thalassemia/mental retardation syndrome X-linked (RAD54 homolog, S. cerevisiae)
172.	550	AUP1	ancient ubiquitous protein 1
173.	558	AXL	AXL receptor tyrosine kinase
174.	567	B2M	beta-2-microglobulin
175.	571	BACH1	BTB and CNC homology 1, basic leucine zipper transcription factor 1
176.	576	BAI2	brain-specific angiogenesis inhibitor 2
177.	577	BAI3	brain-specific angiogenesis inhibitor 3
178.	578	BAK1	BCL2-antagonist/killer 1
179.	580	BARD1	BRCA1 associated RING domain 1
180.	581	BAX	BCL2-associated X protein
181.	582	BBS1	Bardet-Biedl syndrome 1
182.	583	BBS2	Bardet-Biedl syndrome 2
183.	586	BCAT1	branched chain aminotransferase 1, cytosolic
184.	587	BCAT2	branched chain aminotransferase 2, mitochondrial
185.	593	BCKDHA	branched chain keto acid dehydrogenase E1, alpha polypeptide (maple syrup urine disease)
186.	595	CCND1	cyclin D1 (PRAD1: parathyroid adenomatosis 1)
187.	596	BCL2	B-cell CLL/lymphoma 2
188.	597	BCL2A1	BCL2-related protein A1
189.	604	BCL6	B-cell CLL/lymphoma 6 (zinc finger protein 51)
190.	607	BCL9	B-cell CLL/lymphoma 9
191.	613	BCR	breakpoint cluster region
192.	633	BGN	biglycan
193.	634	CEACAM1	carcinoembryonic antigen-related cell adhesion molecule 1 (biliary glycoprotein)
194.	635	BHMT	betaine-homocysteine methyltransferase
195.	636	BICD1	bicaudal D homolog 1 (Drosophila)
196.	637	BID	BH3 interacting domain death agonist
197.	638	BIK	BCL2-interacting killer (apoptosis-inducing)
198.	639	PRDM1	PR domain containing 1, with ZNF domain
199.	641	BLM	Bloom syndrome
200.	642	BLMH	bleomycin hydrolase

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
201.	644	BLVRA	biliverdin reductase A
202.	645	BLVRB	biliverdin reductase B (flavin reductase (NADPH))
203.	648	PCGF4	polycomb group ring finger 4
204.	650	BMP2	bone morphogenetic protein 2
205.	652	BMP4	bone morphogenetic protein 4
206.	654	BMP6	bone morphogenetic protein 6
207.	655	BMP7	bone morphogenetic protein 7 (osteogenic protein 1)
208.	657	BMPR1A	bone morphogenetic protein receptor, type IA
209.	659	BMPR2	bone morphogenetic protein receptor, type II (serine/threonine kinase)
210.	661	POLR3D	polymerase (RNA) III (DNA directed) polypeptide D, 44kDa
211.	664	BNIP3	BCL2/adenovirus E1B 19kDa interacting protein 3
212.	665	BNIP3L	BCL2/adenovirus E1B 19kDa interacting protein 3-like
213.	667	DST	dystonin
214.	669	BPGM	2,3-bisphosphoglycerate mutase
215.	670	BPHL	biphenyl hydrolase-like (serine hydrolase; breast epithelial mucin-associated antigen)
216.	672	BRCA1	breast cancer 1, early onset
217.	673	BRAF	v-raf murine sarcoma viral oncogene homolog B1
218.	675	BRCA2	breast cancer 2, early onset
219.	677	ZFP36L1	zinc finger protein 36, C3H type-like 1
220.	686	BTD	biotinidase
221.	688	KLF5	Kruppel-like factor 5 (intestinal)
222.	694	BTG1	B-cell translocation gene 1, anti-proliferative
223.	699	BUB1	BUB1 budding uninhibited by benzimidazoles 1 homolog (yeast)
224.	701	BUB1B	BUB1 budding uninhibited by benzimidazoles 1 homolog beta (yeast)
225.	705	BYSL	bystin-like
226.	706	BZRP	benzodiazapine receptor (peripheral)
227.	708	C1QBP	complement component 1, q subcomponent binding protein
228.	713	C1QB	complement component 1, q subcomponent, beta polypeptide
229.	714	C1QG	complement component 1, q subcomponent, gamma polypeptide
230.	727	C5	complement component 5
231.	734	C8orf1	chromosome 8 open reading frame 1
232.	740	MRPL49	mitochondrial ribosomal protein L49
233.	744	C11orf8	chromosome 11 open reading frame 8
234.	746	C11orf10	chromosome 11 open reading frame 10
235.	757	TMEM50B	transmembrane protein 50B
236.	759	CA1	carbonic anhydrase I
237.	771	CA12	carbonic anhydrase XII
238.	776	CACNA1D	calcium channel, voltage-dependent, L type, alpha 1D subunit

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
239.	780	DDR1	discoidin domain receptor family, member 1
240.	782	CACNB1	calcium channel, voltage-dependent, beta 1 subunit
241.	783	CACNB2	calcium channel, voltage-dependent, beta 2 subunit
242.	788	SLC25A20	solute carrier family 25 (carnitine/acylcarnitine translocase), member 20
243.	800	CALD1	caldesmon 1
244.	801	CALM1	calmodulin 1 (phosphorylase kinase, delta)
245.	808	CALM3	calmodulin 3 (phosphorylase kinase, delta)
246.	811	CALR	calreticulin
247.	813	CALU	calumenin
248.	814	CAMK4	calcium/calmodulin-dependent protein kinase IV
249.	817	CAMK2D	calcium/calmodulin-dependent protein kinase (CaM kinase) II delta
250.	820	CAMP	cathelicidin antimicrobial peptide
251.	821	CANX	calnexin
252.	825	CAPN3	calpain 3, (p94)
253.	828	CAPS	calcyphosine
254.	831	CAST	calpastatin
255.	832	CAPZB	capping protein (actin filament) muscle Z-line, beta
256.	833	CARS	cysteinyl-tRNA synthetase
257.	835	CASP2	caspase 2, apoptosis-related cysteine protease (neural precursor cell expressed, developmentally down- regulated 2)
258.	836	CASP3	caspase 3, apoptosis-related cysteine protease
259.	840	CASP7	caspase 7, apoptosis-related cysteine protease
260.	842	CASP9	caspase 9, apoptosis-related cysteine protease
261.	847	CAT	catalase
262.	857	CAV1	caveolin 1, caveolae protein, 22kDa
263.	858	CAV2	caveolin 2
264.	859	CAV3	caveolin 3
265.	860	RUNX2	runt-related transcription factor 2
266.	861	RUNX1	runt-related transcription factor 1 (acute myeloid leukemia 1; aml1 oncogene)
267.	862	RUNX1T1	runt-related transcription factor 1; translocated to, 1 (cyclin D-related)
268.	864	RUNX3	runt-related transcription factor 3
269.	865	CBFB	core-binding factor, beta subunit
270.	867	CBL	Cas-Br-M (murine) ecotropic retroviral transforming sequence
271.	868	CBLB	Cas-Br-M (murine) ecotropic retroviral transforming sequence b
272.	873	CBR1	carbonyl reductase 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
273.	874	CBR3	carbonyl reductase 3
274.	875	CBS	cystathionine-beta-synthase
275.	890	CCNA2	cyclin A2
276.	891	CCNB1	cyclin B1
277.	892	CCNC	cyclin C
278.	894	CCND2	cyclin D2
279.	896	CCND3	cyclin D3
280.	898	CCNE1	cyclin E1
281.	899	CCNF	cyclin F
282.	902	CCNH	cyclin H
283.	904	CCNT1	cyclin T1
284.	908	CCT6A	chaperonin containing TCP1, subunit 6A (zeta 1)
285.	910	CD1B	CD1B antigen, b polypeptide
286.	911	CD1C	CD1C antigen, c polypeptide
287.	917	CD3G	CD3G antigen, gamma polypeptide (TiT3 complex)
288.	919	CD3Z	CD3Z antigen, zeta polypeptide (TiT3 complex)
289.	925	CD8A	CD8 antigen, alpha polypeptide (p32)
290.	928	CD9	CD9 antigen (p24)
291.	942	CD86	CD86 antigen (CD28 antigen ligand 2, B7-2 antigen)
292.	945	CD33	CD33 antigen (gp67)
293.	947	CD34	CD34 antigen
294.	949	SCARB1	scavenger receptor class B, member 1
295.	950	SCARB2	scavenger receptor class B, member 2
296.	951	CD37	CD37 antigen
297.	955	ENTPD6	ectonucleoside triphosphate diphosphohydrolase 6 (putative function)
298.	957	ENTPD5	ectonucleoside triphosphate diphosphohydrolase 5
299.	958	CD40	CD40 antigen (TNF receptor superfamily member 5)
300.	960	CD44	CD44 antigen (homing function and Indian blood group system)
301.	961	CD47	CD47 antigen (Rh-related antigen, integrin-associated signal transducer)
302.	963	CD53	CD53 antigen
303.	965	CD58	CD58 antigen, (lymphocyte function-associated antigen 3)
304.	966	CD59	CD59 antigen p18-20 (antigen identified by monoclonal antibodies 16.3A5, EJ16, EJ30, EL32 and G344)
305.	970	TNFSF7	tumor necrosis factor (ligand) superfamily, member 7
306.	973	CD79A	CD79A antigen (immunoglobulin-associated alpha)
307.	975	CD81	CD81 antigen (target of antiproliferative antibody 1)
308.	976	CD97	CD97 antigen
309.	977	CD151	CD151 antigen
310.	983	CDC2	cell division cycle 2, G1 to S and G2 to M

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
311.	987	LRBA	LPS-responsive vesicle trafficking, beach and anchor containing
312.	988	CDC5L	CDC5 cell division cycle 5-like (S. pombe)
313.	989	38602	septin 7
314.	990	CDC6	CDC6 cell division cycle 6 homolog (S. cerevisiae)
315.	991	CDC20	CDC20 cell division cycle 20 homolog (S. cerevisiae)
316.	993	CDC25A	cell division cycle 25A
317.	994	CDC25B	cell division cycle 25B
318.	995	CDC25C	cell division cycle 25C
319.	996	CDC27	cell division cycle 27
320.	998	CDC42	cell division cycle 42 (GTP binding protein, 25kDa)
321.	1001	CDH3	cadherin 3, type 1, P-cadherin (placental)
322.	1009	CDH11	cadherin 11, type 2, OB-cadherin (osteoblast)
323.	1012	CDH13	cadherin 13, H-cadherin (heart)
324.	1017	CDK2	cyclin-dependent kinase 2
325.	1018	CDK3	cyclin-dependent kinase 3
326.	1020	CDK5	cyclin-dependent kinase 5
327.	1021	CDK6	cyclin-dependent kinase 6
328.	1022	CDK7	cyclin-dependent kinase 7 (MO15 homolog, Xenopus laevis, cdk-activating kinase)
329.	1025	CDK9	cyclin-dependent kinase 9 (CDC2-related kinase)
330.	1026	CDKN1A	cyclin-dependent kinase inhibitor 1A (p21, Cip1)
331.	1027	CDKN1B	cyclin-dependent kinase inhibitor 1B (p27, Kip1)
332.	1028	CDKN1C	cyclin-dependent kinase inhibitor 1C (p57, Kip2)
333.	1031	CDKN2C	cyclin-dependent kinase inhibitor 2C (p18, inhibits CDK4)
334.	1033	CDKN3	cyclin-dependent kinase inhibitor 3 (CDK2-associated dual specificity phosphatase)
335.	1039	CDR2	cerebellar degeneration-related protein 2, 62kDa
336.	1044	CDX1	caudal type homeo box transcription factor 1
337.	1050	CEBPA	CCAAT/enhancer binding protein (C/EBP), alpha
338.	1051	CEBPB	CCAAT/enhancer binding protein (C/EBP), beta
339.	1052	CEBPD	CCAAT/enhancer binding protein (C/EBP), delta
340.	1054	CEBPG	CCAAT/enhancer binding protein (C/EBP), gamma
341.	1058	CENPA	centromere protein A, 17kDa
342.	1059	CENPB	centromere protein B, 80kDa
343.	1060	CENPC1	centromere protein C 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
344.	1062	CENPE	centromere protein E, 312kDa
345.	1063	CENPF	centromere protein F, 350/400ka (mitosin)
346.	1069	CETN2	centrin, EF-hand protein, 2
347.	1070	CETN3	centrin, EF-hand protein, 3 (CDC31 homolog, yeast)
348.	1071	CETP	cholesteryl ester transfer protein, plasma
349.	1072	CFL1	cofilin 1 (non-muscle)
350.	1073	CFL2	cofilin 2 (muscle)
351.	1075	CTSC	cathepsin C
352.	1102	RCBTB2	regulator of chromosome condensation (RCC1) and BTB (POZ) domain containing protein 2
353.	1104	RCC1	regulator of chromosome condensation 1
354.	1106	CHD2	chromodomain helicase DNA binding protein 2
355.	1107	CHD3	chromodomain helicase DNA binding protein 3
356.	1108	CHD4	chromodomain helicase DNA binding protein 4
357.	1111	CHEK1	CHK1 checkpoint homolog (S. pombe)
358.	1112	CHES1	checkpoint suppressor 1
359.	1116	CHI3L1	chitinase 3-like 1 (cartilage glycoprotein-39)
360.	1119	CHKA	choline kinase alpha
361.	1120	CHKB	choline kinase beta
362.	1121	CHM	choroideremia (Rab escort protein 1)
363.	1122	CHML	choroideremia-like (Rab escort protein 2)
364.	1123	CHN1	chimerin (chimaerin) 1
365.	1130	LYST	lysosomal trafficking regulator
366.	1138	CHRNA5	cholinergic receptor, nicotinic, alpha polypeptide 5
367.	1153	CIRBP	cold inducible RNA binding protein
368.	1154	CISH	cytokine inducible SH2-containing protein
369.	1163	CKS1B	CDC28 protein kinase regulatory subunit 1B
370.	1164	CKS2	CDC28 protein kinase regulatory subunit 2
371.	1173	AP2M1	adaptor-related protein complex 2, mu 1 subunit
372.	1174	AP1S1	adaptor-related protein complex 1, sigma 1 subunit
373.	1175	AP2S1	adaptor-related protein complex 2, sigma 1 subunit
374.	1176	AP3S1	adaptor-related protein complex 3, sigma 1 subunit
375.	1182	CLCN3	chloride channel 3
376.	1186	CLCN7	chloride channel 7
377.	1192	CLIC1	chloride intracellular channel 1
378.	1200	TPP1	tripeptidyl peptidase I
379.	1201	CLN3	ceroid-lipofuscinosis, neuronal 3, juvenile (Batten, Spielmeyer-Vogt disease)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
380.	1203	CLN5	ceroid-lipofuscinosis, neuronal 5
381.	1211	CLTA	clathrin, light polypeptide (Lca)
382.	1236	CCR7	chemokine (C-C motif) receptor 7
383.	1240	CMKLR1	chemokine-like receptor 1
384.	1241	LTB4R	leukotriene B4 receptor
385.	1263	PLK3	polo-like kinase 3 (Drosophila)
386.	1267	CNP	2',3'-cyclic nucleotide 3' phosphodiesterase
387.	1270	CNTF	ciliary neurotrophic factor
388.	1272	CNTN1	contactin 1
389.	1278	COL1A2	collagen, type I, alpha 2
390.	1281	COL3A1	collagen, type III, alpha 1 (Ehlers- Danlos syndrome type IV, autosomal dominant)
391.	1282	COL4A1	collagen, type IV, alpha 1
392.	1284	COL4A2	collagen, type IV, alpha 2
393.	1287	COL4A5	collagen, type IV, alpha 5 (Alport syndrome)
394.	1290	COL5A2	collagen, type V, alpha 2
395.	1291	COL6A1	collagen, type VI, alpha 1
396.	1292	COL6A2	collagen, type VI, alpha 2
397.	1293	COL6A3	collagen, type VI, alpha 3
398.	1296	COL8A2	collagen, type VIII, alpha 2
399.	1298	COL9A2	collagen, type IX, alpha 2
400.	1302	COL11A2	collagen, type XI, alpha 2
401.	1303	COL12A1	collagen, type XII, alpha 1
402.	1306	COL15A1	collagen, type XV, alpha 1
403.	1307	COL16A1	collagen, type XVI, alpha 1
404.	1312	COMT	catechol-O-methyltransferase
405.	1314	COPA	coatamer protein complex, subunit alpha
406.	1316	KLF6	Kruppel-like factor 6
407.	1317	SLC31A1	solute carrier family 31 (copper transporters), member 1
408.	1327	COX4I1	cytochrome c oxidase subunit IV isoform 1
409.	1329	COX5B	cytochrome c oxidase subunit Vb
410.	1340	COX6B1	cytochrome c oxidase subunit Vib polypeptide 1 (ubiquitous)
411.	1349	COX7B	cytochrome c oxidase subunit VIIb
412.	1350	COX7C	cytochrome c oxidase subunit VIIc
413.	1353	COX11	COX11 homolog, cytochrome c oxidase assembly protein (yeast)
414.	1355	COX15	COX15 homolog, cytochrome c oxidase assembly protein (yeast)
415.	1362	CPD	carboxypeptidase D
416.	1369	CPN1	carboxypeptidase N, polypeptide 1, 50kD
417.	1371	CPOX	coproporphyrinogen oxidase
418.	1373	CPS1	carbamoyl-phosphate synthetase 1, mitochondrial
419.	1374	CPT1A	carnitine palmitoyltransferase 1A (liver)
420.	1375	CPT1B	carnitine palmitoyltransferase 1B (muscle)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
421.	1376	CPT2	carnitine palmitoyltransferase II
422.	1385	CREB1	cAMP responsive element binding protein 1
423.	1387	CREBBP	CREB binding protein (Rubinstein-Taybi syndrome)
424.	1388	CREBL1	cAMP responsive element binding protein-like 1
425.	1390	CREM	cAMP responsive element modulator
426.	1400	CRMP1	collapsin response mediator protein 1
427.	1404	HAPLN1	hyaluronan and proteoglycan link protein 1
428.	1407	CRY1	cryptochrome 1 (photolyase-like)
429.	1408	CRY2	cryptochrome 2 (photolyase-like)
430.	1410	CRYAB	crystallin, alpha B
431.	1429	CRYZ	crystallin, zeta (quinone reductase)
432.	1431	CS	citrate synthase
433.	1434	CSE1L	CSE1 chromosome segregation 1-like (yeast)
434.	1452	CSNK1A1	casein kinase 1, alpha 1
435.	1453	CSNK1D	casein kinase 1, delta
436.	1454	CSNK1E	casein kinase 1, epsilon
437.	1457	CSNK2A1	casein kinase 2, alpha 1 polypeptide
438.	1459	CSNK2A2	casein kinase 2, alpha prime polypeptide
439.	1462	CSPG2	chondroitin sulfate proteoglycan 2 (versican)
440.	1465	CSRP1	cysteine and glycine-rich protein 1
441.	1466	CSRP2	cysteine and glycine-rich protein 2
442.	1469	CST1	cystatin SN
443.	1471	CST3	cystatin C (amyloid angiopathy and cerebral hemorrhage)
444.	1472	CST4	cystatin S
445.	1475	CSTA	cystatin A (stefin A)
446.	1476	CSTB	cystatin B (stefin B)
447.	1478	CSTF2	cleavage stimulation factor, 3' pre-RNA, subunit 2, 64kDa
448.	1479	CSTF3	cleavage stimulation factor, 3' pre-RNA, subunit 3, 77kDa
449.	1482	NKX2-5	NK2 transcription factor related, locus 5 (Drosophila)
450.	1485	CTAG1B	cancer/testis antigen 1B
451.	1488	CTBP2	C-terminal binding protein 2
452.	1489	CTF1	cardiotrophin 1
453.	1490	CTGF	connective tissue growth factor
454.	1491	CTH	cystathionase (cystathionine gamma-lyase)
455.	1493	CTLA4	cytotoxic T-lymphocyte-associated protein 4
456.	1495	CTNNA1	catenin (cadherin-associated protein), alpha 1, 102kDa
457.	1497	CTNS	cystinosis, nephropathic
458.	1499	CTNNB1	catenin (cadherin-associated protein), beta 1, 88kDa
459.	1500	CTNND1	catenin (cadherin-associated protein), delta 1
460.	1503	CTPS	CTP synthase

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
461.	1508	CTSB	cathepsin B
462.	1513	CTSK	cathepsin K (pseudosyndactylism)
463.	1514	CTSL	cathepsin L
464.	1519	CTSO	cathepsin O
465.	1520	CTSS	cathepsin S
466.	1522	CTSZ	cathepsin Z
467.	1525	CXADR	coxsackie virus and adenovirus receptor
468.	1534	CYB561	cytochrome b-561
469.	1535	CYBA	cytochrome b-245, alpha polypeptide
470.	1536	CYBB	cytochrome b-245, beta polypeptide (chronic granulomatous disease)
471.	1548	CYP2A6	cytochrome P450, family 2, subfamily A, polypeptide 6
472.	1571	CYP2E1	cytochrome P450, family 2, subfamily E, polypeptide 1
473.	1580	CYP4B1	cytochrome P450, family 4, subfamily B, polypeptide 1
474.	1591	CYP24A1	cytochrome P450, family 24, subfamily A, polypeptide 1
475.	1592	CYP26A1	cytochrome P450, family 26, subfamily A, polypeptide 1
476.	1593	CYP27A1	cytochrome P450, family 27, subfamily A, polypeptide 1
477.	1594	CYP27B1	cytochrome P450, family 27, subfamily B, polypeptide 1
478.	1595	CYP51A1	cytochrome P450, family 51, subfamily A, polypeptide 1
479.	1601	DAB2	disabled homolog 2, mitogen-responsive phosphoprotein (Drosophila)
480.	1603	DAD1	defender against cell death 1
481.	1604	DAF	decay accelerating factor for complement (CD55, Crimmer blood group system)
482.	1605	DAG1	dystroglycan 1 (dystrophin-associated glycoprotein 1)
483.	1606	DGKA	diacylglycerol kinase, alpha 80kDa
484.	1609	DGKQ	diacylglycerol kinase, theta 110kDa
485.	1611	DAP	death-associated protein
486.	1615	DARS	aspartyl-tRNA synthetase
487.	1616	DAXX	death-associated protein 6
488.	1622	DBI	diazepam binding inhibitor (GABA receptor modulator, acyl-Coenzyme A binding protein)
489.	1627	DBN1	drebrin 1
490.	1629	DBT	dihydrolipoamide branched chain transacylase E2
491.	1632	DCI	dodecenoyl-Coenzyme A delta isomerase (3,2 trans-enoyl-Coenzyme A isomerase)
492.	1633	DCK	deoxycytidine kinase
493.	1638	DCT	dopachrome tautomerase (dopachrome delta-isomerase, tyrosine-related protein 2)
494.	1643	DDB2	damage-specific DNA binding protein 2, 48kDa

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
495.	1645	AKR1C1	aldo-keto reductase family 1, member C1 (dihydrodiol dehydrogenase 1; 20-alpha (3-alpha)-hydroxysteroid dehydrogenase)
496.	1646	AKR1C2	aldo-keto reductase family 1, member C2 (dihydrodiol dehydrogenase 2; bile acid binding protein; 3-alpha hydroxysteroid dehydrogenase, type III)
497.	1647	GADD45A	growth arrest and DNA-damage-inducible, alpha
498.	1649	DDIT3	DNA-damage-inducible transcript 3
499.	1652	DDT	D-dopachrome tautomerase
500.	1653	DDX1	DEAD (Asp-Glu-Ala-Asp) box polypeptide 1
501.	1654	DDX3X	DEAD (Asp-Glu-Ala-Asp) box polypeptide 3, X-linked
502.	1655	DDX5	DEAD (Asp-Glu-Ala-Asp) box polypeptide 5
503.	1657	DMXL1	Dmx-like 1
504.	1660	DHX9	DEAH (Asp-Glu-Ala-His) box polypeptide 9
505.	1663	DDX11	DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide 11 (CHL1-like helicase homolog, <i>S. cerevisiae</i>)
506.	1665	DHX15	DEAH (Asp-Glu-Ala-His) box polypeptide 15
507.	1676	DFFA	DNA fragmentation factor, 45kDa, alpha polypeptide
508.	1687	DFNA5	deafness, autosomal dominant 5
509.	1690	COCH	coagulation factor C homolog, cochlin (<i>Limulus polyphemus</i>)
510.	1716	DGUOK	deoxyguanosine kinase
511.	1717	DHCR7	7-dehydrocholesterol reductase
512.	1718	DHCR24	24-dehydrocholesterol reductase
513.	1719	DHFR	dihydrofolate reductase
514.	1725	DHPS	deoxyhypusine synthase
515.	1727	DIA1	diaphorase (NADH) (cytochrome b-5 reductase)
516.	1728	NQO1	NAD(P)H dehydrogenase, quinone 1
517.	1729	DIAPH1	diaphanous homolog 1 (<i>Drosophila</i>)
518.	1730	DIAPH2	diaphanous homolog 2 (<i>Drosophila</i>)
519.	1736	DKC1	dyskeratosis congenita 1, dyskerin
520.	1737	DLAT	dihydrolipoamide S-acetyltransferase (E2 component of pyruvate dehydrogenase complex)
521.	1738	DLD	dihydrolipoamide dehydrogenase (E3 component of pyruvate dehydrogenase complex, 2-oxo-glutarate complex, branched chain keto acid dehydrogenase complex)
522.	1739	DLG1	discs, large homolog 1 (<i>Drosophila</i>)
523.	1744	DLSTP	dihydrolipoamide S-succinyltransferase pseudogene (E2 component of 2-oxo-glutarate complex)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
524.	1745	DLX1	distal-less homeo box 1
525.	1746	DLX2	distal-less homeo box 2
526.	1756	DMD	dystrophin (muscular dystrophy, Duchenne and Becker types)
527.	1762	DMWD	dystrophia myotonica-containing WD repeat motif
528.	1763	DNA2L	DNA2 DNA replication helicase 2-like (yeast)
529.	1774	DNASE1L1	deoxyribonuclease I-like 1
530.	1777	DNASE2	deoxyribonuclease II, lysosomal
531.	1778	DNCH1	dynein, cytoplasmic, heavy polypeptide 1
532.	1781	DNCI2	dynein, cytoplasmic, intermediate polypeptide 2
533.	1783	DNCLI2	dynein, cytoplasmic, light intermediate polypeptide 2
534.	1785	DNM2	dynamins 2
535.	1786	DNMT1	DNA (cytosine-5-)-methyltransferase 1
536.	1793	DOCK1	dedicator of cytokinesis 1
537.	1797	DOM3Z	dom-3 homolog Z (C. elegans)
538.	1798	DPAGT1	dolichyl-phosphate (UDP-N-acetylglucosamine) N-acetylglucosaminophosphotransferase 1 (GlcNAc-1-P transferase)
539.	1801	DPH1	DPH1 homolog (S. cerevisiae)
540.	1802	DPH2	DPH2 homolog (S. cerevisiae)
541.	1806	DPYD	dihydropyrimidine dehydrogenase
542.	1808	DPYSL2	dihydropyrimidinase-like 2
543.	1809	DPYSL3	dihydropyrimidinase-like 3
544.	1810	DR1	down-regulator of transcription 1, TBP-binding (negative cofactor 2)
545.	1822	ATN1	atrophin 1
546.	1824	DSC2	desmocollin 2
547.	1827	DSCR1	Down syndrome critical region gene 1
548.	1829	DSG2	desmoglein 2
549.	1830	DSG3	desmoglein 3 (pemphigus vulgaris antigen)
550.	1831	TSC22D3	TSC22 domain family, member 3
551.	1832	DSP	desmoplakin
552.	1836	SLC26A2	solute carrier family 26 (sulfate transporter), member 2
553.	1837	DTNA	dystrobrevin, alpha
554.	1840	DTX1	deltex homolog 1 (Drosophila)
555.	1841	DTYMK	deoxythymidylate kinase (thymidylate kinase)
556.	1842	ECM2	extracellular matrix protein 2, female organ and adipocyte specific
557.	1843	DUSP1	dual specificity phosphatase 1
558.	1844	DUSP2	dual specificity phosphatase 2
559.	1845	DUSP3	dual specificity phosphatase 3 (vaccinia virus phosphatase VH1-related)
560.	1846	DUSP4	dual specificity phosphatase 4
561.	1847	DUSP5	dual specificity phosphatase 5
562.	1848	DUSP6	dual specificity phosphatase 6
563.	1854	DUT	dUTP pyrophosphatase

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
564.	1855	DVL1	dishevelled, dsh homolog 1 (Drosophila)
565.	1856	DVL2	dishevelled, dsh homolog 2 (Drosophila)
566.	1857	DVL3	dishevelled, dsh homolog 3 (Drosophila)
567.	1861	TOR1A	torsin family 1, member A (torsin A)
568.	1870	E2F2	E2F transcription factor 2
569.	1871	E2F3	E2F transcription factor 3
570.	1879	EBF	early B-cell factor
571.	1891	ECH1	enoyl Coenzyme A hydratase 1, peroxisomal
572.	1892	ECHS1	enoyl Coenzyme A hydratase, short chain, 1, mitochondrial
573.	1893	ECM1	extracellular matrix protein 1
574.	1894	ECT2	epithelial cell transforming sequence 2 oncogene
575.	1902	EDG2	endothelial differentiation, lysophosphatidic acid G-protein-coupled receptor, 2
576.	1903	EDG3	endothelial differentiation, sphingolipid G-protein-coupled receptor, 3
577.	1908	EDN3	endothelin 3
578.	1909	EDNRA	endothelin receptor type A
579.	1910	EDNRB	endothelin receptor type B
580.	1911	PHC1	polyhomeotic-like 1 (Drosophila)
581.	1912	PHC2	polyhomeotic-like 2 (Drosophila)
582.	1915	EEF1A1	eukaryotic translation elongation factor 1 alpha 1
583.	1917	EEF1A2	eukaryotic translation elongation factor 1 alpha 2
584.	1936	EEF1D	eukaryotic translation elongation factor 1 delta (guanine nucleotide exchange protein)
585.	1937	EEF1G	eukaryotic translation elongation factor 1 gamma
586.	1939	LGTN	ligatin
587.	1942	EFNA1	ephrin-A1
588.	1948	EFNB2	ephrin-B2
589.	1949	EFNB3	ephrin-B3
590.	1951	CELSR3	cadherin, EGF LAG seven-pass G-type receptor 3 (flamingo homolog, Drosophila)
591.	1954	EGFL4	EGF-like-domain, multiple 4
592.	1955	EGFL5	EGF-like-domain, multiple 5
593.	1956	EGFR	epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)
594.	1958	EGR1	early growth response 1
595.	1959	EGR2	early growth response 2 (Krox-20 homolog, Drosophila)
596.	1960	EGR3	early growth response 3
597.	1964	EIF1AX	eukaryotic translation initiation factor 1A, X-linked

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
598.	1965	EIF2S1	eukaryotic translation initiation factor 2, subunit 1 alpha, 35kDa
599.	1967	EIF2B1	eukaryotic translation initiation factor 2B, subunit 1 alpha, 26kDa
600.	1968	EIF2S3	eukaryotic translation initiation factor 2, subunit 3 gamma, 52kDa
601.	1973	EIF4A1	eukaryotic translation initiation factor 4A, isoform 1
602.	1974	EIF4A2	eukaryotic translation initiation factor 4A, isoform 2
603.	1975	EIF4B	eukaryotic translation initiation factor 4B
604.	1977	EIF4E	eukaryotic translation initiation factor 4E
605.	1978	EIF4EBP1	eukaryotic translation initiation factor 4E binding protein 1
606.	1979	EIF4EBP2	eukaryotic translation initiation factor 4E binding protein 2
607.	1982	EIF4G2	eukaryotic translation initiation factor 4 gamma, 2
608.	1983	EIF5	eukaryotic translation initiation factor 5
609.	1984	EIF5A	eukaryotic translation initiation factor 5A
610.	1994	ELAVL1	ELAV (embryonic lethal, abnormal vision, Drosophila)-like 1 (Hu antigen R)
611.	1997	ELF1	E74-like factor 1 (ets domain transcription factor)
612.	1998	ELF2	E74-like factor 2 (ets domain transcription factor)
613.	2001	ELF5	E74-like factor 5 (ets domain transcription factor)
614.	2002	ELK1	ELK1, member of ETS oncogene family
615.	2009	EML1	echinoderm microtubule associated protein like 1
616.	2012	EMP1	epithelial membrane protein 1
617.	2013	EMP2	epithelial membrane protein 2
618.	2014	EMP3	epithelial membrane protein 3
619.	2017	CTTN	cortactin
620.	2023	ENO1	enolase 1, (alpha)
621.	2026	ENO2	enolase 2 (gamma, neuronal)
622.	2027	ENO3	enolase 3 (beta, muscle)
623.	2028	ENPEP	glutamyl aminopeptidase (aminopeptidase A)
624.	2029	ENSA	endosulfine alpha
625.	2030	SLC29A1	solute carrier family 29 (nucleoside transporters), member 1
626.	2034	EPAS1	endothelial PAS domain protein 1
627.	2036	EPB41L1	erythrocyte membrane protein band 4.1-like 1
628.	2037	EPB41L2	erythrocyte membrane protein band 4.1-like 2
629.	2040	STOM	stomatin
630.	2042	EPHA3	EPH receptor A3
631.	2043	EPHA4	EPH receptor A4

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
632.	2048	EPHB2	EPH receptor B2
633.	2049	EPHB3	EPH receptor B3
634.	2052	EPHX1	epoxide hydrolase 1, microsomal (xenobiotic)
635.	2053	EPHX2	epoxide hydrolase 2, cytoplasmic
636.	2054	EPIM	epimorphin
637.	2055	CLN8	ceroid-lipofuscinosis, neuronal 8 (epilepsy, progressive with mental retardation)
638.	2058	EPRS	glutamyl-prolyl-tRNA synthetase
639.	2060	EPS15	epidermal growth factor receptor pathway substrate 15
640.	2063	NR2F6	nuclear receptor subfamily 2, group F, member 6
641.	2064	ERBB2	v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)
642.	2065	ERBB3	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
643.	2067	ERCC1	excision repair cross-complementing rodent repair deficiency, complementation group 1 (includes overlapping antisense sequence)
644.	2071	ERCC3	excision repair cross-complementing rodent repair deficiency, complementation group 3 (xeroderma pigmentosum group B complementing)
645.	2073	ERCC5	excision repair cross-complementing rodent repair deficiency, complementation group 5 (xeroderma pigmentosum, complementation group G (Cockayne syndrome))
646.	2077	ERF	Ets2 repressor factor
647.	2079	ERH	enhancer of rudimentary homolog (Drosophila)
648.	2098	ESD	esterase D/formylglutathione hydrolase
649.	2107	ETF1	eukaryotic translation termination factor 1
650.	2108	ETFA	electron-transfer-flavoprotein, alpha polypeptide (glutaric aciduria II)
651.	2109	ETFB	electron-transfer-flavoprotein, beta polypeptide
652.	2110	ETFDH	electron-transferring-flavoprotein dehydrogenase
653.	2113	ETS1	v-ets erythroblastosis virus E26 oncogene homolog 1 (avian)
654.	2115	ETV1	ets variant gene 1
655.	2117	ETV3	ets variant gene 3
656.	2119	ETV5	ets variant gene 5 (ets-related molecule)
657.	2120	ETV6	ets variant gene 6 (TEL oncogene)
658.	2121	EVC	Ellis van Creveld syndrome
659.	2123	EVI2A	ecotropic viral integration site 2A
660.	2124	EVI2B	ecotropic viral integration site 2B
661.	2130	EWSR1	Ewing sarcoma breakpoint region 1
662.	2131	EXT1	exostoses (multiple) 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
663.	2135	EXTL2	exostoses (multiple)-like 2
664.	2138	EYA1	eyes absent homolog 1 (Drosophila)
665.	2140	EYA3	eyes absent homolog 3 (Drosophila)
666.	2145	EZH1	enhancer of zeste homolog 1 (Drosophila)
667.	2146	EZH2	enhancer of zeste homolog 2 (Drosophila)
668.	2149	F2R	coagulation factor II (thrombin) receptor
669.	2153	F5	coagulation factor V (proaccelerin, labile factor)
670.	2157	F8	coagulation factor VIII, procoagulant component (hemophilia A)
671.	2161	F12	coagulation factor XII (Hageman factor)
672.	2171	FABP5	fatty acid binding protein 5 (psoriasis-associated)
673.	2172	FABP6	fatty acid binding protein 6, ileal (gastrotropin)
674.	2173	FABP7	fatty acid binding protein 7, brain
675.	2177	FANCD2	Fanconi anemia, complementation group D2
676.	2180	ACSL1	acyl-CoA synthetase long-chain family member 1
677.	2181	ACSL3	acyl-CoA synthetase long-chain family member 3
678.	2182	ACSL4	acyl-CoA synthetase long-chain family member 4
679.	2185	PTK2B	PTK2B protein tyrosine kinase 2 beta
680.	2186	FALZ	fetal Alzheimer antigen
681.	2188	FANCF	Fanconi anemia, complementation group F
682.	2189	FANCG	Fanconi anemia, complementation group G
683.	2191	FAP	fibroblast activation protein, alpha
684.	2192	FBLN1	fibulin 1
685.	2193	FARSLA	phenylalanine-tRNA synthetase-like, alpha subunit
686.	2194	FASN	fatty acid synthase
687.	2195	FAT	FAT tumor suppressor homolog 1 (Drosophila)
688.	2200	FBN1	fibrillin 1 (Marfan syndrome)
689.	2203	FBP1	fructose-1,6-bisphosphatase 1
690.	2209	FCGR1A	Fc fragment of IgG, high affinity Ia, receptor (CD64)
691.	2212	FCGR2A	Fc fragment of IgG, low affinity IIa, receptor (CD32)
692.	2213	FCGR2B	Fc fragment of IgG, low affinity IIb, receptor (CD32)
693.	2215	FCGR3B	Fc fragment of IgG, low affinity IIIb, receptor (CD16b)
694.	2217	FCGRT	Fc fragment of IgG, receptor, transporter, alpha
695.	2222	FDFT1	farnesyl-diphosphate farnesyltransferase 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
696.	2224	FDPS	farnesyl diphosphate synthase (farnesyl pyrophosphate synthetase, dimethylallyltranstransferase, geranyltranstransferase)
697.	2230	FDX1	ferredoxin 1
698.	2232	FDXR	ferredoxin reductase
699.	2235	FECH	ferrochelatase (protoporphyrin)
700.	2237	FEN1	flap structure-specific endonuclease 1
701.	2239	GPC4	glypican 4
702.	2242	FES	feline sarcoma oncogene
703.	2245	FGD1	FYVE, RhoGEF and PH domain containing 1 (faciogenital dysplasia)
704.	2246	FGF1	fibroblast growth factor 1 (acidic)
705.	2247	FGF2	fibroblast growth factor 2 (basic)
706.	2258	FGF13	fibroblast growth factor 13
707.	2260	FGFR1	fibroblast growth factor receptor 1 (fms-related tyrosine kinase 2, Pfeiffer syndrome)
708.	2271	FH	fumarate hydratase
709.	2273	FHL1	four and a half LIM domains 1
710.	2280	FKBP1A	FK506 binding protein 1A, 12kDa
711.	2286	FKBP2	FK506 binding protein 2, 13kDa
712.	2287	FKBP3	FK506 binding protein 3, 25kDa
713.	2288	FKBP4	FK506 binding protein 4, 59kDa
714.	2289	FKBP5	FK506 binding protein 5
715.	2294	FOXF1	forkhead box F1
716.	2297	FOXD1	forkhead box D1
717.	2308	FOXO1A	forkhead box O1A (rhabdomyosarcoma)
718.	2313	FLI1	Friend leukemia virus integration 1
719.	2314	FLII	flightless I homolog (Drosophila)
720.	2315	MLANA	melan-A
721.	2317	FLNB	filamin B, beta (actin binding protein 278)
722.	2319	FLOT2	flotillin 2
723.	2321	FLT1	fms-related tyrosine kinase 1 (vascular endothelial growth factor/vascular permeability factor receptor)
724.	2329	FMO4	flavin containing monooxygenase 4
725.	2331	FMOD	fibromodulin
726.	2332	FMR1	fragile X mental retardation 1
727.	2335	FN1	fibronectin 1
728.	2342	FNTB	farnesyltransferase, CAAX box, beta
729.	2353	FOS	v-fos FBJ murine osteosarcoma viral oncogene homolog
730.	2483	FRG1	FSHD region gene 1
731.	2491	FSHPRH1	FSH primary response (LRPR1 homolog, rat) 1
732.	2495	FTH1	ferritin, heavy polypeptide 1
733.	2509	FTHP1	ferritin, heavy polypeptide pseudogene 1
734.	2512	FTL	ferritin, light polypeptide
735.	2519	FUCA2	fucosidase, alpha-L- 2, plasma
736.	2521	FUS	fusion (involved in t(12;16) in malignant liposarcoma)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
737.	2523	FUT1	fucosyltransferase 1 (galactoside 2- alpha-L-fucosyltransferase)
738.	2530	FUT8	fucosyltransferase 8 (alpha (1,6) fucosyltransferase)
739.	2533	FYB	FYN binding protein (FYB-120/130)
740.	2534	FYN	FYN oncogene related to SRC, FGR, YES
741.	2535	FZD2	frizzled homolog 2 (Drosophila)
742.	2537	G1P3	interferon, alpha-inducible protein (clone IFI-6-16)
743.	2539	G6PD	glucose-6-phosphate dehydrogenase
744.	2547	XRCC6	X-ray repair complementing defective repair in Chinese hamster cells 6 (Ku autoantigen, 70kDa)
745.	2548	GAA	glucosidase, alpha; acid (Pompe disease, glycogen storage disease type II)
746.	2549	GAB1	GRB2-associated binding protein 1
747.	2550	GABBR1	gamma-aminobutyric acid (GABA) B receptor, 1
748.	2551	GABPA	GA binding protein transcription factor, alpha subunit 60kDa
749.	2553	GABPB2	GA binding protein transcription factor, beta subunit 2
750.	2562	GABRB3	gamma-aminobutyric acid (GABA) A receptor, beta 3
751.	2565	GABRG1	gamma-aminobutyric acid (GABA) A receptor, gamma 1
752.	2566	GABRG2	gamma-aminobutyric acid (GABA) A receptor, gamma 2
753.	2568	GABRP	gamma-aminobutyric acid (GABA) A receptor, pi
754.	2571	GAD1	glutamate decarboxylase 1 (brain, 67kDa)
755.	2572	GAD2	glutamate decarboxylase 2 (pancreatic islets and brain, 65kDa)
756.	2574	GAGE2	G antigen 2
757.	2580	GAK	cyclin G associated kinase
758.	2581	GALC	galactosylceramidase (Krabbe disease)
759.	2582	GALE	UDP-galactose-4-epimerase
760.	2584	GALK1	galactokinase 1
761.	2589	GALNT1	UDP-N-acetyl-alpha-D- galactosamine:polypeptide N- acetylgalactosaminyltransferase 1 (GalNAc-T1)
762.	2590	GALNT2	UDP-N-acetyl-alpha-D- galactosamine:polypeptide N- acetylgalactosaminyltransferase 2 (GalNAc-T2)
763.	2592	GALT	galactose-1-phosphate uridylyltransferase
764.	2596	GAP43	growth associated protein 43
765.	2597	GAPDH	glyceraldehyde-3-phosphate dehydrogenase
766.	2617	GARS	glycyl-tRNA synthetase

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
767.	2618	GART	phosphoribosylglycinamide formyltransferase, phosphoribosylglycinamide synthetase, phosphoribosylaminoimidazole synthetase
768.	2619	GAS1	growth arrest-specific 1
769.	2621	GAS6	growth arrest-specific 6
770.	2622	GAS8	growth arrest-specific 8
771.	2624	GATA2	GATA binding protein 2
772.	2625	GATA3	GATA binding protein 3
773.	2626	GATA4	GATA binding protein 4
774.	2632	GBE1	glucan (1,4-alpha-), branching enzyme 1 (glycogen branching enzyme, Andersen disease, glycogen storage disease type IV)
775.	2633	GBP1	guanylate binding protein 1, interferon-inducible, 67kDa
776.	2634	GBP2	guanylate binding protein 2, interferon-inducible
777.	2648	GCN5L2	GCN5 general control of amino-acid synthesis 5-like 2 (yeast)
778.	2649	NR6A1	nuclear receptor subfamily 6, group A, member 1
779.	2651	GCNT2	glucosaminyl (N-acetyl) transferase 2, I-branching enzyme
780.	2653	GCSH	glycine cleavage system protein H (aminomethyl carrier)
781.	2664	GDI1	GDP dissociation inhibitor 1
782.	2665	GDI2	GDP dissociation inhibitor 2
783.	2669	GEM	GTP binding protein overexpressed in skeletal muscle
784.	2673	GFPT1	glutamine-fructose-6-phosphate transaminase 1
785.	2677	GGCX	gamma-glutamyl carboxylase
786.	2678	GGT1	gamma-glutamyltransferase 1
787.	2683	B4GALT1	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 1
788.	2690	GHR	growth hormone receptor
789.	2702	GJA5	gap junction protein, alpha 5, 40kDa (connexin 40)
790.	2717	GLA	galactosidase, alpha
791.	2729	GCLC	glutamate-cysteine ligase, catalytic subunit
792.	2730	GCLM	glutamate-cysteine ligase, modifier subunit
793.	2731	GLDC	glycine dehydrogenase (decarboxylating; glycine decarboxylase, glycine cleavage system protein P)
794.	2733	GLE1L	GLE1 RNA export mediator-like (yeast)
795.	2734	GLG1	golgi apparatus protein 1
796.	2737	GLI3	GLI-Kruppel family member GLI3 (Greig cephalopolysyndactyly syndrome)
797.	2739	GLO1	glyoxalase I
798.	2744	GLS	glutaminase
799.	2745	GLRX	glutaredoxin (thioltransferase)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
800.	2746	GLUD1	glutamate dehydrogenase 1
801.	2760	GM2A	GM2 ganglioside activator
802.	2764	GMFB	glia maturation factor, beta
803.	2767	GNA11	guanine nucleotide binding protein (G protein), alpha 11 (Gq class)
804.	2768	GNA12	guanine nucleotide binding protein (G protein) alpha 12
805.	2773	GNAI3	guanine nucleotide binding protein (G protein), alpha inhibiting activity polypeptide 3
806.	2775	GNAO1	guanine nucleotide binding protein (G protein), alpha activating activity polypeptide 0
807.	2778	GNAS	GNAS complex locus
808.	2782	GNB1	guanine nucleotide binding protein (G protein), beta polypeptide 1
809.	2786	GNG4	guanine nucleotide binding protein (G protein), gamma 4
810.	2788	GNG7	guanine nucleotide binding protein (G protein), gamma 7
811.	2791	GNG11	guanine nucleotide binding protein (G protein), gamma 11
812.	2799	GNS	glucosamine (N-acetyl)-6-sulfatase (Sanfilippo disease IIID)
813.	2801	GOLGA2	golgi autoantigen, golgin subfamily a, 2
814.	2802	GOLGA3	golgi autoantigen, golgin subfamily a, 3
815.	2805	GOT1	glutamic-oxaloacetic transaminase 1, soluble (aspartate aminotransferase 1)
816.	2806	GOT2	glutamic-oxaloacetic transaminase 2, mitochondrial (aspartate aminotransferase 2)
817.	2817	GPC1	glypican 1
818.	2820	GPD2	glycerol-3-phosphate dehydrogenase 2 (mitochondrial)
819.	2821	GPI	glucose phosphate isomerase
820.	2822	GPLD1	glycosylphosphatidylinositol specific phospholipase D1
821.	2826	CCR10	chemokine (C-C motif) receptor 10
822.	2842	GPR19	G protein-coupled receptor 19
823.	2861	GPR37	G protein-coupled receptor 37 (endothelin receptor type B-like)
824.	2868	GRK4	G protein-coupled receptor kinase 4
825.	2869	GRK5	G protein-coupled receptor kinase 5
826.	2872	MKNK2	MAP kinase interacting serine/threonine kinase 2
827.	2876	GPX1	glutathione peroxidase 1
828.	2879	GPX4	glutathione peroxidase 4 (phospholipid hydroperoxidase)
829.	2885	GRB2	growth factor receptor-bound protein 2
830.	2887	GRB10	growth factor receptor-bound protein 10
831.	2889	RAPGEF1	Rap guanine nucleotide exchange factor (GEF) 1
832.	2891	GRIA2	glutamate receptor, ionotropic, AMPA 2

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
833.	2896	GRN	granulin
834.	2907	GRINA	glutamate receptor, ionotropic, N-methyl D-aspartate-associated protein 1 (glutamate binding)
835.	2908	NR3C1	nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)
836.	2919	CXCL1	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
837.	2920	CXCL2	chemokine (C-X-C motif) ligand 2
838.	2923	PDIA3	protein disulfide isomerase family A, member 3
839.	2926	GRSF1	G-rich RNA sequence binding factor 1
840.	2932	GSK3B	glycogen synthase kinase 3 beta
841.	2934	GSN	gelsolin (amyloidosis, Finnish type)
842.	2935	GSPT1	G1 to S phase transition 1
843.	2936	GSR	glutathione reductase
844.	2937	GSS	glutathione synthetase
845.	2941	GSTA4	glutathione S-transferase A4
846.	2947	GSTM3	glutathione S-transferase M3 (brain)
847.	2948	GSTM4	glutathione S-transferase M4
848.	2952	GSTT1	glutathione S-transferase theta 1
849.	2953	GSTT2	glutathione S-transferase theta 2
850.	2954	GSTZ1	glutathione transferase zeta 1 (maleylacetoacetate isomerase)
851.	2956	MSH6	mutS homolog 6 (E. coli)
852.	2957	GTF2A1	general transcription factor IIA, 1, 19/37kDa
853.	2958	GTF2A2	general transcription factor IIA, 2, 12kDa
854.	2959	GTF2B	general transcription factor IIB
855.	2961	GTF2E2	general transcription factor IIE, polypeptide 2, beta 34kDa
856.	2962	GTF2F1	general transcription factor IIF, polypeptide 1, 74kDa
857.	2965	GTF2H1	general transcription factor IIH, polypeptide 1, 62kDa
858.	2966	GTF2H2	general transcription factor IIH, polypeptide 2, 44kDa
859.	2969	GTF2I	general transcription factor II, i
860.	2975	GTF3C1	general transcription factor IIIC, polypeptide 1, alpha 220kDa
861.	2976	GTF3C2	general transcription factor IIIC, polypeptide 2, beta 110kDa
862.	2987	GUK1	guanylate kinase 1
863.	2990	GUSB	glucuronidase, beta
864.	2992	GYG	glycogenin
865.	2994	GYPB	glycophorin B (includes Ss blood group)
866.	2995	GYPC	glycophorin C (Gerbich blood group)
867.	2997	GYS1	glycogen synthase 1 (muscle)
868.	3005	H1F0	H1 histone family, member 0
869.	3012	HIST1H2AE	histone 1, H2ae
870.	3014	H2AFX	H2A histone family, member X
871.	3015	H2AFZ	H2A histone family, member Z
872.	3017	HIST1H2BD	histone 1, H2bd

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
873.	3020	H3F3A	H3 histone, family 3A
874.	3021	H3F3B	H3 histone, family 3B (H3.3B)
875.	3029	HAGH	hydroxyacylglutathione hydrolase
876.	3033	HADHSC	L-3-hydroxyacyl-Coenzyme A dehydrogenase, short chain
877.	3035	HARS	histidyl-tRNA synthetase
878.	3037	HAS2	hyaluronan synthase 2
879.	3052	HCCS	holocytochrome c synthase (cytochrome c heme-lyase)
880.	3053	SERPIND1	serine (or cysteine) proteinase inhibitor, clade D (heparin cofactor), member 1
881.	3066	HDAC2	histone deacetylase 2
882.	3068	HDGF	hepatoma-derived growth factor (high-mobility group protein 1-like)
883.	3069	HDLBP	high density lipoprotein binding protein (vigilin)
884.	3070	HELLS	helicase, lymphoid-specific
885.	3071	HEM1	hematopoietic protein 1
886.	3073	HEXA	hexosaminidase A (alpha polypeptide)
887.	3074	HEXB	hexosaminidase B (beta polypeptide)
888.	3075	CFH	complement factor H
889.	3082	HGF	hepatocyte growth factor (hepapoietin A; scatter factor)
890.	3093	HIP2	huntingtin interacting protein 2
891.	3098	HK1	hexokinase 1
892.	3099	HK2	hexokinase 2
893.	3105	HLA-A	major histocompatibility complex, class I, A
894.	3106	HLA-B	major histocompatibility complex, class I, B
895.	3107	HLA-C	major histocompatibility complex, class I, C
896.	3115	HLA-DPB1	major histocompatibility complex, class II, DP beta 1
897.	3117	HLA-DQA1	major histocompatibility complex, class II, DQ alpha 1
898.	3123	HLA-DRB1	major histocompatibility complex, class II, DR beta 1
899.	3126	HLA-DRB4	major histocompatibility complex, class II, DR beta 4
900.	3133	HLA-E	major histocompatibility complex, class I, E
901.	3135	HLA-G	HLA-G histocompatibility antigen, class I, G
902.	3140	MR1	major histocompatibility complex, class I-related
903.	3145	HMBS	hydroxymethylbilane synthase
904.	3146	HMGB1	high-mobility group box 1
905.	3148	HMGB2	high-mobility group box 2
906.	3149	HMGB3	high-mobility group box 3
907.	3155	HMGCL	3-hydroxymethyl-3-methylglutaryl-Coenzyme A lyase (hydroxymethylglutaricaciduria)
908.	3156	HMGCR	3-hydroxy-3-methylglutaryl-Coenzyme A reductase

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
909.	3157	HMGCS1	3-hydroxy-3-methylglutaryl-Coenzyme A synthase 1 (soluble)
910.	3159	HMGA1	high mobility group AT-hook 1
911.	3161	HMMR	hyaluronan-mediated motility receptor (RHAMM)
912.	3162	HMOX1	heme oxygenase (decycling) 1
913.	3163	HMOX2	heme oxygenase (decycling) 2
914.	3172	HNF4A	hepatocyte nuclear factor 4, alpha
915.	3176	HNMT	histamine N-methyltransferase
916.	3177	SLC29A2	solute carrier family 29 (nucleoside transporters), member 2
917.	3178	HNRPA1	heterogeneous nuclear ribonucleoprotein A1
918.	3181	HNRPA2B1	heterogeneous nuclear ribonucleoprotein A2/B1
919.	3182	HNRPAB	heterogeneous nuclear ribonucleoprotein A/B
920.	3183	HNRPC	heterogeneous nuclear ribonucleoprotein C (C1/C2)
921.	3184	HNRPD	heterogeneous nuclear ribonucleoprotein D (AU-rich element RNA binding protein 1, 37kDa)
922.	3187	HNRPH1	heterogeneous nuclear ribonucleoprotein H1 (H)
923.	3188	HNRPH2	heterogeneous nuclear ribonucleoprotein H2 (H')
924.	3189	HNRPH3	heterogeneous nuclear ribonucleoprotein H3 (2H9)
925.	3190	HNRPK	heterogeneous nuclear ribonucleoprotein K
926.	3191	HNRPL	heterogeneous nuclear ribonucleoprotein L
927.	3192	HNRPU	heterogeneous nuclear ribonucleoprotein U (scaffold attachment factor A)
928.	3198	HOXA1	homeo box A1
929.	3200	HOXA3	homeo box A3
930.	3206	HOXA10	homeo box A10
931.	3212	HOXB2	homeo box B2
932.	3217	HOXB7	homeo box B7
933.	3219	HOXB9	homeo box B9
934.	3223	HOXC6	homeo box C6
935.	3232	HOXD3	homeo box D3
936.	3234	HOXD8	homeo box D8
937.	3239	HOXD13	homeo box D13
938.	3241	HPCAL1	hippocalcin-like 1
939.	3248	HPGD	hydroxyprostaglandin dehydrogenase 15-(NAD)
940.	3249	HPN	hepsin (transmembrane protease, serine 1)
941.	3251	HPRT1	hypoxanthine phosphoribosyltransferase 1 (Lesch-Nyhan syndrome)
942.	3257	HPS1	Hermansky-Pudlak syndrome 1
943.	3265	HRAS	v-Ha-ras Harvey rat sarcoma viral oncogene homolog
944.	3267	HRB	HIV-1 Rev binding protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
945.	3269	HRH1	histamine receptor H1
946.	3275	HRMT1L1	HMT1 hnRNP methyltransferase-like 1 (<i>S. cerevisiae</i>)
947.	3276	HRMT1L2	HMT1 hnRNP methyltransferase-like 2 (<i>S. cerevisiae</i>)
948.	3280	HES1	hairy and enhancer of split 1, (<i>Drosophila</i>)
949.	3281	HSBP1	heat shock factor binding protein 1
950.	3291	HSD11B2	hydroxysteroid (11-beta) dehydrogenase 2
951.	3292	HSD17B1	hydroxysteroid (17-beta) dehydrogenase 1
952.	3293	HSD17B3	hydroxysteroid (17-beta) dehydrogenase 3
953.	3295	HSD17B4	hydroxysteroid (17-beta) dehydrogenase 4
954.	3298	HSF2	heat shock transcription factor 2
955.	3300	DNAJB2	DnaJ (Hsp40) homolog, subfamily B, member 2
956.	3301	DNAJA1	DnaJ (Hsp40) homolog, subfamily A, member 1
957.	3303	HSPA1A	heat shock 70kDa protein 1A
958.	3304	HSPA1B	heat shock 70kDa protein 1B
959.	3305	HSPA1L	heat shock 70kDa protein 1-like
960.	3308	HSPA4	heat shock 70kDa protein 4
961.	3309	HSPA5	heat shock 70kDa protein 5 (glucose- regulated protein, 78kDa)
962.	3310	HSPA6	heat shock 70kDa protein 6 (HSP70B')
963.	3312	HSPA8	heat shock 70kDa protein 8
964.	3313	HSPA9B	heat shock 70kDa protein 9B (mortalin- 2)
965.	3320	HSPCA	heat shock 90kDa protein 1, alpha
966.	3321	IGSF3	immunoglobulin superfamily, member 3
967.	3326	HSPCB	heat shock 90kDa protein 1, beta
968.	3329	HSPD1	heat shock 60kDa protein 1 (chaperonin)
969.	3336	HSPE1	heat shock 10kDa protein 1 (chaperonin 10)
970.	3337	DNAJB1	DnaJ (Hsp40) homolog, subfamily B, member 1
971.	3338	DNAJC4	DnaJ (Hsp40) homolog, subfamily C, member 4
972.	3364	HUS1	HUS1 checkpoint homolog (<i>S. pombe</i>)
973.	3371	TNC	tenascin C (hexabrachion)
974.	3376	IARS	isoleucine-tRNA synthetase
975.	3382	ICA1	islet cell autoantigen 1, 69kDa
976.	3383	ICAM1	intercellular adhesion molecule 1 (CD54), human rhinovirus receptor
977.	3385	ICAM3	intercellular adhesion molecule 3
978.	3397	ID1	inhibitor of DNA binding 1, dominant negative helix-loop-helix protein
979.	3399	ID3	inhibitor of DNA binding 3, dominant negative helix-loop-helix protein
980.	3400	ID4	inhibitor of DNA binding 4, dominant negative helix-loop-helix protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
981.	3417	IDH1	isocitrate dehydrogenase 1 (NADP+), soluble
982.	3418	IDH2	isocitrate dehydrogenase 2 (NADP+), mitochondrial
983.	3420	IDH3B	isocitrate dehydrogenase 3 (NAD+) beta
984.	3421	IDH3G	isocitrate dehydrogenase 3 (NAD+) gamma
985.	3422	IDI1	isopentenyl-diphosphate delta isomerase
986.	3423	IDS	iduronate 2-sulfatase (Hunter syndrome)
987.	3425	IDUA	iduronidase, alpha-L-
988.	3428	IFI16	interferon, gamma-inducible protein 16
989.	3430	IFI35	interferon-induced protein 35
990.	3431	SP110	SP110 nuclear body protein
991.	3433	IFIT2	interferon-induced protein with tetratricopeptide repeats 2
992.	3459	IFNGR1	interferon gamma receptor 1
993.	3460	IFNGR2	interferon gamma receptor 2 (interferon gamma transducer 1)
994.	3475	IFRD1	interferon-related developmental regulator 1
995.	3479	IGF1	insulin-like growth factor 1 (somatomedin C)
996.	3482	IGF2R	insulin-like growth factor 2 receptor
997.	3486	IGFBP3	insulin-like growth factor binding protein 3
998.	3487	IGFBP4	insulin-like growth factor binding protein 4
999.	3488	IGFBP5	insulin-like growth factor binding protein 5
1000.	3490	IGFBP7	insulin-like growth factor binding protein 7
1001.	3491	CYR61	cysteine-rich, angiogenic inducer, 61
1002.	3495	IGHD	immunoglobulin heavy constant delta
1003.	3508	IGHMBP2	immunoglobulin mu binding protein 2
1004.	3514	IGKC	immunoglobulin kappa constant
1005.	3516	RBPSUH	recombining binding protein suppressor of hairless (Drosophila)
1006.	3550	IK	IK cytokine, down-regulator of HLA II
1007.	3551	IKBKB	inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta
1008.	3556	IL1RAP	interleukin 1 receptor accessory protein
1009.	3576	IL8	interleukin 8
1010.	3588	IL10RB	interleukin 10 receptor, beta
1011.	3589	IL11	interleukin 11
1012.	3597	IL13RA1	interleukin 13 receptor, alpha 2
1013.	3598	IL13RA2	interleukin 13 receptor, alpha 2
1014.	3601	IL15RA	interleukin 15 receptor, alpha
1015.	3607	FOXK2	forkhead box K2
1016.	3608	ILF2	interleukin enhancer binding factor 2, 45kDa
1017.	3609	ILF3	interleukin enhancer binding factor 3, 90kDa

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1018.	3612	IMPA1	inositol(myo)-1(or 4)-monophosphatase 1
1019.	3615	IMPDH2	IMP (inosine monophosphate) dehydrogenase 2
1020.	3621	ING1	inhibitor of growth family, member 1
1021.	3622	ING2	inhibitor of growth family, member 2
1022.	3624	INHBA	inhibin, beta A (activin A, activin AB alpha polypeptide)
1023.	3628	INPP1	inositol polyphosphate-1-phosphatase
1024.	3633	INPP5B	inositol polyphosphate-5-phosphatase, 75kDa
1025.	3636	INPPL1	inositol polyphosphate phosphatase-like 1
1026.	3638	INSIG1	insulin induced gene 1
1027.	3652	IPP	intracisternal A particle-promoted polypeptide
1028.	3653	IPW	imprinted in Prader-Willi syndrome
1029.	3654	IRAK1	interleukin-1 receptor-associated kinase 1
1030.	3655	ITGA6	integrin, alpha 6
1031.	3656	IRAK2	interleukin-1 receptor-associated kinase 2
1032.	3658	IREB2	iron-responsive element binding protein 2
1033.	3659	IRF1	interferon regulatory factor 1
1034.	3660	IRF2	interferon regulatory factor 2
1035.	3662	IRF4	interferon regulatory factor 4
1036.	3663	IRF5	interferon regulatory factor 5
1037.	3669	ISG20	interferon stimulated exonuclease gene 20kDa
1038.	3671	ISLR	immunoglobulin superfamily containing leucine-rich repeat
1039.	3673	ITGA2	integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor)
1040.	3675	ITGA3	integrin, alpha 3 (antigen CD49C, alpha 3 subunit of VLA-3 receptor)
1041.	3676	ITGA4	integrin, alpha 4 (antigen CD49D, alpha 4 subunit of VLA-4 receptor)
1042.	3678	ITGA5	integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
1043.	3685	ITGAV	integrin, alpha V (vitronectin receptor, alpha polypeptide, antigen CD51)
1044.	3688	ITGB1	integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12)
1045.	3690	ITGB3	integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61)
1046.	3692	ITGB4BP	integrin beta 4 binding protein
1047.	3693	ITGB5	integrin, beta 5
1048.	3696	ITGB8	integrin, beta 8
1049.	3698	ITIH2	inter-alpha (globulin) inhibitor H2
1050.	3699	ITIH3	inter-alpha (globulin) inhibitor H3
1051.	3703	ITM1	integral membrane protein 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1052.	3704	ITPA	inosine triphosphatase (nucleoside triphosphate pyrophosphatase)
1053.	3705	ITPK1	inositol 1,3,4-triphosphate 5/6 kinase
1054.	3708	ITPR1	inositol 1,4,5-triphosphate receptor, type 1
1055.	3710	ITPR3	inositol 1,4,5-triphosphate receptor, type 3
1056.	3712	IVD	isovaleryl Coenzyme A dehydrogenase
1057.	3725	JUN	v-jun sarcoma virus 17 oncogene homolog (avian)
1058.	3726	JUNB	jun B proto-oncogene
1059.	3727	JUND	jun D proto-oncogene
1060.	3728	JUP	junction plakoglobin
1061.	3732	CD82	CD82 antigen
1062.	3735	KARS	lysyl-tRNA synthetase
1063.	3745	KCNB1	potassium voltage-gated channel, Shab-related subfamily, member 1
1064.	3755	KCNG1	potassium voltage-gated channel, subfamily G, member 1
1065.	3760	KCNJ3	potassium inwardly-rectifying channel, subfamily J, member 3
1066.	3766	KCNJ10	potassium inwardly-rectifying channel, subfamily J, member 10
1067.	3773	KCNJ16	potassium inwardly-rectifying channel, subfamily J, member 16
1068.	3778	KCNMA1	potassium large conductance calcium-activated channel, subfamily M, alpha member 1
1069.	3779	KCNMB1	potassium large conductance calcium-activated channel, subfamily M, beta member 1
1070.	3782	KCNN3	potassium intermediate/small conductance calcium-activated channel, subfamily N, member 3
1071.	3783	KCNN4	potassium intermediate/small conductance calcium-activated channel, subfamily N, member 4
1072.	3790	KCNS3	potassium voltage-gated channel, delayed-rectifier, subfamily S, member 3
1073.	3791	KDR	kinase insert domain receptor (a type III receptor tyrosine kinase)
1074.	3796	KIF2	kinesin heavy chain member 2
1075.	3797	KIF3C	kinesin family member 3C
1076.	3798	KIF5A	kinesin family member 5A
1077.	3800	KIF5C	kinesin family member 5C
1078.	3824	KLRD1	killer cell lectin-like receptor subfamily D, member 1
1079.	3831	KNS2	kinesin 2 60/70kDa
1080.	3832	KIF11	kinesin family member 11
1081.	3833	KIFC1	kinesin family member C1
1082.	3835	KIF22	kinesin family member 22
1083.	3836	KPNA1	karyopherin alpha 1 (importin alpha 5)
1084.	3838	KPNA2	karyopherin alpha 2 (RAG cohort 1, importin alpha 1)
1085.	3839	KPNA3	karyopherin alpha 3 (importin alpha 4)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1086.	3840	KPNA4	karyopherin alpha 4 (importin alpha 3)
1087.	3842	TNPO1	transportin 1
1088.	3843	RANBP5	RAN binding protein 5
1089.	3845	KRAS	v-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog
1090.	3853	KRT6A	keratin 6A
1091.	3858	KRT10	keratin 10 (epidermolytic hyperkeratosis; keratosis palmaris et plantaris)
1092.	3872	KRT17	keratin 17
1093.	3895	KTN1	kinectin 1 (kinesin receptor)
1094.	3910	LAMA4	laminin, alpha 4
1095.	3911	LAMA5	laminin, alpha 5
1096.	3913	LAMB2	laminin, beta 2 (laminin S)
1097.	3915	LAMC1	laminin, gamma 1 (formerly LAMB2)
1098.	3920	LAMP2	lysosomal-associated membrane protein 2
1099.	3925	STMN1	stathmin 1/oncoprotein 18
1100.	3930	LBR	lamin B receptor
1101.	3932	LCK	lymphocyte-specific protein tyrosine kinase
1102.	3937	LCP2	lymphocyte cytosolic protein 2 (SH2 domain containing leukocyte protein of 76kDa)
1103.	3939	LDHA	lactate dehydrogenase A
1104.	3949	LDLR	low density lipoprotein receptor (familial hypercholesterolemia)
1105.	3953	LEPR	leptin receptor
1106.	3955	LFNG	lunatic fringe homolog (Drosophila)
1107.	3956	LGALS1	lectin, galactoside-binding, soluble, 1 (galectin 1)
1108.	3957	LGALS2	lectin, galactoside-binding, soluble, 2 (galectin 2)
1109.	3958	LGALS3	lectin, galactoside-binding, soluble, 3 (galectin 3)
1110.	3959	LGALS3BP	lectin, galactoside-binding, soluble, 3 binding protein
1111.	3963	LGALS7	lectin, galactoside-binding, soluble, 7 (galectin 7)
1112.	3964	LGALS8	lectin, galactoside-binding, soluble, 8 (galectin 8)
1113.	3976	LIF	leukemia inhibitory factor (cholinergic differentiation factor)
1114.	3981	LIG4	ligase IV, DNA, ATP-dependent
1115.	3984	LIMK1	LIM domain kinase 1
1116.	3987	LIMS1	LIM and senescent cell antigen-like domains 1
1117.	3988	LIPA	lipase A, lysosomal acid, cholesterol esterase (Wolman disease)
1118.	3992	FADS1	fatty acid desaturase 1
1119.	3993	LLGL2	lethal giant larvae homolog 2 (Drosophila)
1120.	3995	FADS3	fatty acid desaturase 3
1121.	3996	LLGL1	lethal giant larvae homolog 1 (Drosophila)
1122.	3998	LMAN1	lectin, mannose-binding, 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1123.	4000	LMNA	lamin A/C
1124.	4001	LMNB1	lamin B1
1125.	4012	LNPEP	leucyl/cystinyl aminopeptidase
1126.	4013	LOH11CR2A	loss of heterozygosity, 11, chromosomal region 2, gene A
1127.	4016	LOXL1	lysyl oxidase-like 1
1128.	4017	LOXL2	lysyl oxidase-like 2
1129.	4023	LPL	lipoprotein lipase
1130.	4026	LPP	LIM domain containing preferred translocation partner in lipoma
1131.	4034	LRCH4	leucine-rich repeats and calponin homology (CH) domain containing 4
1132.	4035	LRP1	low density lipoprotein-related protein 1 (alpha-2-macroglobulin receptor)
1133.	4037	LRP3	low density lipoprotein receptor- related protein 3
1134.	4043	LRPAP1	low density lipoprotein receptor- related protein associated protein 1
1135.	4047	LSS	lanosterol synthase (2,3- oxidosqualene-lanosterol cyclase)
1136.	4052	LTBP1	latent transforming growth factor beta binding protein 1
1137.	4053	LTBP2	latent transforming growth factor beta binding protein 2
1138.	4054	LTBP3	latent transforming growth factor beta binding protein 3
1139.	4055	LTBR	lymphotoxin beta receptor (TNFR superfamily, member 3)
1140.	4061	LY6E	lymphocyte antigen 6 complex, locus E
1141.	4063	LY9	lymphocyte antigen 9
1142.	4071	TM4SF1	transmembrane 4 L six family member 1
1143.	4074	M6PR	mannose-6-phosphate receptor (cation dependent)
1144.	4076	M11S1	membrane component, chromosome 11, surface marker 1
1145.	4077	NBR1	neighbor of BRCA1 gene 1
1146.	4081	MAB21L1	mab-21-like 1 (C. elegans)
1147.	4082	MARCKS	myristoylated alanine-rich protein kinase C substrate
1148.	4084	MXD1	MAX dimerization protein 1
1149.	4085	MAD2L1	MAD2 mitotic arrest deficient-like 1 (yeast)
1150.	4088	SMAD3	SMAD, mothers against DPP homolog 3 (Drosophila)
1151.	4092	SMAD7	SMAD, mothers against DPP homolog 7 (Drosophila)
1152.	4094	MAF	v-maf musculoaponeurotic fibrosarcoma oncogene homolog (avian)
1153.	4097	MAFG	v-maf musculoaponeurotic fibrosarcoma oncogene homolog G (avian)
1154.	4101	MAGEA2	melanoma antigen family A, 2
1155.	4102	MAGEA3	melanoma antigen family A, 3
1156.	4103	MAGEA4	melanoma antigen family A, 4
1157.	4109	MAGEA10	melanoma antigen family A, 10
1158.	4111	MAGEA12	melanoma antigen family A, 12

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1159.	4122	MAN2A2	mannosidase, alpha, class 2A, member 2
1160.	4125	MAN2B1	mannosidase, alpha, class 2B, member 1
1161.	4129	MAOB	monoamine oxidase B
1162.	4131	MAP1B	microtubule-associated protein 1B
1163.	4134	MAP4	microtubule-associated protein 4
1164.	4135	MAP6	microtubule-associated protein 6
1165.	4140	MARK3	MAP/microtubule affinity-regulating kinase 3
1166.	4141	MARS	methionine-tRNA synthetase
1167.	4143	MAT1A	methionine adenosyltransferase I, alpha
1168.	4144	MAT2A	methionine adenosyltransferase II, alpha
1169.	4150	MAZ	MYC-associated zinc finger protein (purine-binding transcription factor)
1170.	4152	MBD1	methyl-CpG binding domain protein 1
1171.	4155	MBP	myelin basic protein
1172.	4157	MC1R	melanocortin 1 receptor (alpha melanocyte stimulating hormone receptor)
1173.	4158	MC2R	melanocortin 2 receptor (adrenocorticotrophic hormone)
1174.	4162	MCAM	melanoma cell adhesion molecule
1175.	4163	MCC	mutated in colorectal cancers
1176.	4170	MCL1	myeloid cell leukemia sequence 1 (BCL2-related)
1177.	4171	MCM2	MCM2 minichromosome maintenance deficient 2, mitotin (<i>S. cerevisiae</i>)
1178.	4172	MCM3	MCM3 minichromosome maintenance deficient 3 (<i>S. cerevisiae</i>)
1179.	4173	MCM4	MCM4 minichromosome maintenance deficient 4 (<i>S. cerevisiae</i>)
1180.	4174	MCM5	MCM5 minichromosome maintenance deficient 5, cell division cycle 46 (<i>S. cerevisiae</i>)
1181.	4175	MCM6	MCM6 minichromosome maintenance deficient 6 (MIS5 homolog, <i>S. pombe</i>) (<i>S. cerevisiae</i>)
1182.	4176	MCM7	MCM7 minichromosome maintenance deficient 7 (<i>S. cerevisiae</i>)
1183.	4179	MCP	membrane cofactor protein (CD46, trophoblast-lymphocyte cross-reactive antigen)
1184.	4190	MDH1	malate dehydrogenase 1, NAD (soluble)
1185.	4192	MDK	midkine (neurite growth-promoting factor 2)
1186.	4193	MDM2	Mdm2, transformed 3T3 cell double minute 2, p53 binding protein (mouse)
1187.	4194	MDM4	Mdm4, transformed 3T3 cell double minute 4, p53 binding protein (mouse)
1188.	4199	ME1	malic enzyme 1, NADP(+)-dependent, cytosolic
1189.	4200	ME2	malic enzyme 2, NAD(+)-dependent, mitochondrial
1190.	4201	MEA1	male-enhanced antigen 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1191.	4204	MECP2	methyl CpG binding protein 2 (Rett syndrome)
1192.	4208	MEF2C	MADS box transcription enhancer factor 2, polypeptide C (myocyte enhancer factor 2C)
1193.	4211	MEIS1	Meis1, myeloid ecotropic viral integration site 1 homolog (mouse)
1194.	4213	MEIS4	Meis1, myeloid ecotropic viral integration site 1 homolog 4 (mouse)
1195.	4216	MAP3K4	mitogen-activated protein kinase kinase kinase 4
1196.	4218	RAB8A	RAB8A, member RAS oncogene family
1197.	4223	MEOX2	mesenchyme homeo box 2 (growth arrest-specific homeo box)
1198.	4233	MET	met proto-oncogene (hepatocyte growth factor receptor)
1199.	4236	MFAP1	microfibrillar-associated protein 1
1200.	4237	MFAP2	microfibrillar-associated protein 2
1201.	4238	MFAP3	microfibrillar-associated protein 3
1202.	4239	MFAP4	microfibrillar-associated protein 4
1203.	4240	MFGE8	milk fat globule-EGF factor 8 protein
1204.	4241	MFI2	antigen p97 (melanoma associated) identified by monoclonal antibodies 133.2 and 96.5
1205.	4245	MGAT1	mannosyl (alpha-1,3-)-glycoprotein beta-1,2-N-acetylglucosaminyltransferase
1206.	4247	MGAT2	mannosyl (alpha-1,6-)-glycoprotein beta-1,2-N-acetylglucosaminyltransferase
1207.	4253	CTAGE5	CTAGE family, member 5
1208.	4254	KITLG	KIT ligand
1209.	4256	MGP	matrix Gla protein
1210.	4259	MGST3	microsomal glutathione S-transferase 3
1211.	4282	MIF	macrophage migration inhibitory factor (glycosylation-inhibiting factor)
1212.	4285	MIPEP	mitochondrial intermediate peptidase
1213.	4287	ATXN3	ataxin 3
1214.	4288	MKI67	antigen identified by monoclonal antibody Ki-67
1215.	4289	MKLN1	muskelin 1, intracellular mediator containing kelch motifs
1216.	4291	MLF1	myeloid leukemia factor 1
1217.	4293	MAP3K9	mitogen-activated protein kinase kinase kinase 9
1218.	4294	MAP3K10	mitogen-activated protein kinase kinase kinase 10
1219.	4297	MLL	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila)
1220.	4300	MLLT3	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila); translocated to, 3
1221.	4301	MLLT4	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila); translocated to, 4

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1222.	4302	MLLT6	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, <i>Drosophila</i>); translocated to, 6
1223.	4312	MMP1	matrix metalloproteinase 1 (interstitial collagenase)
1224.	4322	MMP13	matrix metalloproteinase 13 (collagenase 3)
1225.	4323	MMP14	matrix metalloproteinase 14 (membrane-inserted)
1226.	4324	MMP15	matrix metalloproteinase 15 (membrane-inserted)
1227.	4325	MMP16	matrix metalloproteinase 16 (membrane-inserted)
1228.	4329	ALDH6A1	aldehyde dehydrogenase 6 family, member A1
1229.	4331	MNAT1	menage a trois 1 (CAK assembly factor)
1230.	4335	MNT	MAX binding protein
1231.	4336	MOBP	myelin-associated oligodendrocyte basic protein
1232.	4343	MOV10	Mov10, Moloney leukemia virus 10, homolog (mouse)
1233.	4345	CD200	CD200 antigen
1234.	4357	MPST	mercaptopyruvate sulfurtransferase
1235.	4359	MPZ	myelin protein zero (Charcot-Marie-Tooth neuropathy 1B)
1236.	4361	MRE11A	MRE11 meiotic recombination 11 homolog A (<i>S. cerevisiae</i>)
1237.	4430	MYO1B	myosin IB
1238.	4435	CITED1	Cbp/p300-interacting transactivator, with Glu/Asp-rich carboxy-terminal domain, 1
1239.	4436	MSH2	mutS homolog 2, colon cancer, nonpolyposis type 1 (<i>E. coli</i>)
1240.	4437	MSH3	mutS homolog 3 (<i>E. coli</i>)
1241.	4439	MSH5	mutS homolog 5 (<i>E. coli</i>)
1242.	4478	MSN	moesin
1243.	4485	MST1	macrophage stimulating 1 (hepatocyte growth factor-like)
1244.	4488	MSX2	msh homeo box homolog 2 (<i>Drosophila</i>)
1245.	4493	MT1E	metallothionein 1E (functional)
1246.	4494	MT1F	metallothionein 1F (functional)
1247.	4495	MT1G	metallothionein 1G
1248.	4496	MT1H	metallothionein 1H
1249.	4501	MT1X	metallothionein 1X
1250.	4502	MT2A	metallothionein 2A
1251.	4507	MTAP	methylthioadenosine phosphorylase
1252.	4515	MTCP1	mature T-cell proliferation 1
1253.	4520	MTF1	metal-regulatory transcription factor 1
1254.	4521	NUDT1	nudix (nucleoside diphosphate linked moiety X)-type motif 1
1255.	4522	MTHFD1	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 1, methenyltetrahydrofolate cyclohydrolase, formyltetrahydrofolate synthetase

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1256.	4528	MTIF2	mitochondrial translational initiation factor 2
1257.	4534	MTM1	myotubularin 1
1258.	4548	MTR	5-methyltetrahydrofolate-homocysteine methyltransferase
1259.	4552	MTRR	5-methyltetrahydrofolate-homocysteine methyltransferase reductase
1260.	4589	MUC7	mucin 7, salivary
1261.	4591	TRIM37	tripartite motif-containing 37
1262.	4599	MX1	myxovirus (influenza virus) resistance 1, interferon-inducible protein p78 (mouse)
1263.	4600	MX2	myxovirus (influenza virus) resistance 2 (mouse)
1264.	4601	MXI1	MAX interactor 1
1265.	4602	MYB	v-myb myeloblastosis viral oncogene homolog (avian)
1266.	4603	MYBL1	v-myb myeloblastosis viral oncogene homolog (avian)-like 1
1267.	4604	MYBPC1	myosin binding protein C, slow type
1268.	4605	MYBL2	v-myb myeloblastosis viral oncogene homolog (avian)-like 2
1269.	4609	MYC	v-myc myelocytomatosis viral oncogene homolog (avian)
1270.	4616	GADD45B	growth arrest and DNA-damage-inducible, beta
1271.	4626	MYH8	myosin, heavy polypeptide 8, skeletal muscle, perinatal
1272.	4627	MYH9	myosin, heavy polypeptide 9, non-muscle
1273.	4628	MYH10	myosin, heavy polypeptide 10, non-muscle
1274.	4629	MYH11	myosin, heavy polypeptide 11, smooth muscle
1275.	4635	MYL4	myosin, light polypeptide 4, alkali; atrial, embryonic
1276.	4638	MYLK	myosin, light polypeptide kinase
1277.	4641	MYO1C	myosin IC
1278.	4642	MYO1D	myosin ID
1279.	4643	MYO1E	myosin IE
1280.	4644	MYO5A	myosin VA (heavy polypeptide 12, myoxin)
1281.	4651	MYO10	myosin X
1282.	4659	PPP1R12A	protein phosphatase 1, regulatory (inhibitor) subunit 12A
1283.	4664	NAB1	NGFI-A binding protein 1 (EGR1 binding protein 1)
1284.	4666	NACA	nascent-polypeptide-associated complex alpha polypeptide
1285.	4668	NAGA	N-acetylgalactosaminidase, alpha-
1286.	4669	NAGLU	N-acetylglucosaminidase, alpha- (Sanfilippo disease IIIB)
1287.	4670	HNRPM	heterogeneous nuclear ribonucleoprotein M
1288.	4671	BIRC1	baculoviral IAP repeat-containing 1
1289.	4673	NAP1L1	nucleosome assembly protein 1-like 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1290.	4675	NAP1L3	nucleosome assembly protein 1-like 3
1291.	4676	NAP1L4	nucleosome assembly protein 1-like 4
1292.	4677	NARS	asparaginyl-tRNA synthetase
1293.	4678	NASP	nuclear autoantigenic sperm protein (histone-binding)
1294.	4683	NBN	nibrin
1295.	4686	NCBP1	nuclear cap binding protein subunit 1, 80kDa
1296.	4688	NCF2	neutrophil cytosolic factor 2 (65kDa, chronic granulomatous disease, autosomal 2)
1297.	4689	NCF4	neutrophil cytosolic factor 4, 40kDa
1298.	4691	NCL	nucleolin
1299.	4693	NDP	Norrie disease (pseudoglioma)
1300.	4694	NDUFA1	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 1, 7.5kDa
1301.	4695	NDUFA2	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 2, 8kDa
1302.	4696	NDUFA3	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 3, 9kDa
1303.	4701	NDUFA7	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 7, 14.5kDa
1304.	4702	NDUFA8	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 8, 19kDa
1305.	4703	NEB	nebulin
1306.	4704	NDUFA9	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 9, 39kDa
1307.	4705	NDUFA10	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 10, 42kDa
1308.	4706	NDUFAB1	NADH dehydrogenase (ubiquinone) 1, alpha/beta subcomplex, 1, 8kDa
1309.	4708	NDUFB2	NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 2, 8kDa
1310.	4709	NDUFB3	NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 3, 12kDa
1311.	4710	NDUFB4	NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 4, 15kDa
1312.	4712	NDUFB6	NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 6, 17kDa
1313.	4713	NDUFB7	NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 7, 18kDa
1314.	4714	NDUFB8	NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 8, 19kDa
1315.	4715	NDUFB9	NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 9, 22kDa
1316.	4716	NDUFB10	NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 10, 22kDa
1317.	4717	NDUFC1	NADH dehydrogenase (ubiquinone) 1, subcomplex unknown, 1, 6kDa
1318.	4718	NDUFC2	NADH dehydrogenase (ubiquinone) 1, subcomplex unknown, 2, 14.5kDa
1319.	4719	NDUFS1	NADH dehydrogenase (ubiquinone) Fe-S protein 1, 75kDa (NADH-coenzyme Q reductase)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1320.	4720	NDUFS2	NADH dehydrogenase (ubiquinone) Fe-S protein 2, 49kDa (NADH-coenzyme Q reductase)
1321.	4722	NDUFS3	NADH dehydrogenase (ubiquinone) Fe-S protein 3, 30kDa (NADH-coenzyme Q reductase)
1322.	4725	NDUFS5	NADH dehydrogenase (ubiquinone) Fe-S protein 5, 15kDa (NADH-coenzyme Q reductase)
1323.	4726	NDUFS6	NADH dehydrogenase (ubiquinone) Fe-S protein 6, 13kDa (NADH-coenzyme Q reductase)
1324.	4728	NDUFS8	NADH dehydrogenase (ubiquinone) Fe-S protein 8, 23kDa (NADH-coenzyme Q reductase)
1325.	4729	NDUFV2	NADH dehydrogenase (ubiquinone) flavoprotein 2, 24kDa
1326.	4731	NDUFV3	NADH dehydrogenase (ubiquinone) flavoprotein 3, 10kDa
1327.	4733	DRG1	developmentally regulated GTP binding protein 1
1328.	4734	NEDD4	neural precursor cell expressed, developmentally down-regulated 4
1329.	4735	38597	septin 2
1330.	4738	NEDD8	neural precursor cell expressed, developmentally down-regulated 8
1331.	4739	NEDD9	neural precursor cell expressed, developmentally down-regulated 9
1332.	4747	NEFL	neurofilament, light polypeptide 68kDa
1333.	4750	NEK1	NIMA (never in mitosis gene a)-related kinase 1
1334.	4751	NEK2	NIMA (never in mitosis gene a)-related kinase 2
1335.	4752	NEK3	NIMA (never in mitosis gene a)-related kinase 3
1336.	4756	NEO1	neogenin homolog 1 (chicken)
1337.	4758	NEU1	sialidase 1 (lysosomal sialidase)
1338.	4760	NEUROD1	neurogenic differentiation 1
1339.	4771	NF2	neurofibromin 2 (bilateral acoustic neuroma)
1340.	4772	NFATC1	nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 1
1341.	4774	NFIA	nuclear factor I/A
1342.	4779	NFE2L1	nuclear factor (erythroid-derived 2)-like 1
1343.	4780	NFE2L2	nuclear factor (erythroid-derived 2)-like 2
1344.	4781	NFIB	nuclear factor I/B
1345.	4782	NFIC	nuclear factor I/C (CCAAT-binding transcription factor)
1346.	4783	NFIL3	nuclear factor, interleukin 3 regulated
1347.	4784	NFIX	nuclear factor I/X (CCAAT-binding transcription factor)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1348.	4790	NFKB1	nuclear factor of kappa light polypeptide gene enhancer in B-cells 1 (p105)
1349.	4792	NFKBIA	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
1350.	4793	NFKBIB	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, beta
1351.	4794	NFKBIE	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, epsilon
1352.	4799	NFX1	nuclear transcription factor, X-box binding 1
1353.	4800	NFYA	nuclear transcription factor Y, alpha
1354.	4801	NFYB	nuclear transcription factor Y, beta
1355.	4802	NFYC	nuclear transcription factor Y, gamma
1356.	4809	NHP2L1	NHP2 non-histone chromosome protein 2-like 1 (<i>S. cerevisiae</i>)
1357.	4810	NHS	Nance-Horan syndrome (congenital cataracts and dental anomalies)
1358.	4814	NINJ1	ninjurin 1
1359.	4815	NINJ2	ninjurin 2
1360.	4820	NKTR	natural killer-tumor recognition sequence
1361.	4826	NNAT	neuronatin
1362.	4828	NMB	neuromedin B
1363.	4830	NME1	non-metastatic cells 1, protein (NM23A) expressed in
1364.	4833	NME4	non-metastatic cells 4, protein expressed in
1365.	4835	NQO2	NAD(P)H dehydrogenase, quinone 2
1366.	4836	NMT1	N-myristoyltransferase 1
1367.	4837	NNMT	nicotinamide N-methyltransferase
1368.	4839	NOL1	nucleolar protein 1, 120kDa
1369.	4841	NONO	non-POU domain containing, octamer-binding
1370.	4846	NOS3	nitric oxide synthase 3 (endothelial cell)
1371.	4848	CNOT2	CCR4-NOT transcription complex, subunit 2
1372.	4853	NOTCH2	Notch homolog 2 (<i>Drosophila</i>)
1373.	4856	NOV	nephroblastoma overexpressed gene
1374.	4857	NOVA1	neuro-oncological ventral antigen 1
1375.	4860	NP	nucleoside phosphorylase
1376.	4862	NPAS2	neuronal PAS domain protein 2
1377.	4863	NPAT	nuclear protein, ataxia-telangiectasia locus
1378.	4869	NPM1	nucleophosmin (nucleolar phosphoprotein B23, numatrin)
1379.	4882	NPR2	natriuretic peptide receptor B/guanylate cyclase B (atrionatriuretic peptide receptor B)
1380.	4884	NPTX1	neuronal pentraxin I
1381.	4885	NPTX2	neuronal pentraxin II

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1382.	4891	SLC11A2	solute carrier family 11 (proton-coupled divalent metal ion transporters), member 2
1383.	4893	NRAS	neuroblastoma RAS viral (v-ras) oncogene homolog
1384.	4898	NRD1	nardilysin (N-arginine dibasic convertase)
1385.	4902	NRTN	neurturin
1386.	4904	NSEP1	nuclease sensitive element binding protein 1
1387.	4907	NT5E	5'-nucleotidase, ecto (CD73)
1388.	4908	NTF3	neurotrophin 3
1389.	4916	NTRK3	neurotrophic tyrosine kinase, receptor, type 3
1390.	4919	ROR1	receptor tyrosine kinase-like orphan receptor 1
1391.	4921	DDR2	discoidin domain receptor family, member 2
1392.	4922	NTS	neurotensin
1393.	4923	NTSR1	neurotensin receptor 1 (high affinity)
1394.	4924	NUCB1	nucleobindin 1
1395.	4925	NUCB2	nucleobindin 2
1396.	4926	NUMA1	nuclear mitotic apparatus protein 1
1397.	4929	NR4A2	nuclear receptor subfamily 4, group A, member 2
1398.	4942	OAT	ornithine aminotransferase (gyrate atrophy)
1399.	4947	OAZ2	ornithine decarboxylase antizyme 2
1400.	4952	OCRL	oculocerebrorenal syndrome of Lowe
1401.	4953	ODC1	ornithine decarboxylase 1
1402.	4968	OGG1	8-oxoguanine DNA glycosylase
1403.	4982	TNFRSF11B	tumor necrosis factor receptor superfamily, member 11b (osteoprotegerin)
1404.	4998	ORC1L	origin recognition complex, subunit 1-like (yeast)
1405.	4999	ORC2L	origin recognition complex, subunit 2-like (yeast)
1406.	5001	ORC5L	origin recognition complex, subunit 5-like (yeast)
1407.	5002	SLC22A18	solute carrier family 22 (organic cation transporter), member 18
1408.	5016	OVGP1	oviductal glycoprotein 1, 120kDa (mucin 9, oviductin)
1409.	5017	OVOL1	ovo-like 1(Drosophila)
1410.	5025	P2RX4	purinergic receptor P2X, ligand-gated ion channel, 4
1411.	5027	P2RX7	purinergic receptor P2X, ligand-gated ion channel, 7
1412.	5033	P4HA1	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha polypeptide I
1413.	5036	PA2G4	proliferation-associated 2G4, 38kDa
1414.	5042	PABPC3	poly(A) binding protein, cytoplasmic 3

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1415.	5047	PAEP	progesterone-associated endometrial protein (placental protein 14, pregnancy-associated endometrial alpha-2-globulin, alpha uterine protein)
1416.	5048	PAFAH1B1	platelet-activating factor acetylhydrolase, isoform Ib, alpha subunit 45kDa
1417.	5050	PAFAH1B3	platelet-activating factor acetylhydrolase, isoform Ib, gamma subunit 29kDa
1418.	5052	PRDX1	peroxiredoxin 1
1419.	5054	SERPINE1	serine (or cysteine) proteinase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1
1420.	5055	SERPINE2	serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 2
1421.	5058	PAK1	p21/Cdc42/Rac1-activated kinase 1 (STE20 homolog, yeast)
1422.	5062	PAK2	p21 (CDKN1A)-activated kinase 2
1423.	5066	PAM	peptidylglycine alpha-amidating monooxygenase
1424.	5080	PAX6	paired box gene 6 (aniridia, keratitis)
1425.	5089	PBX2	pre-B-cell leukemia transcription factor 2
1426.	5090	PBX3	pre-B-cell leukemia transcription factor 3
1427.	5094	PCBP2	poly(rC) binding protein 2
1428.	5096	PCCB	propionyl Coenzyme A carboxylase, beta polypeptide
1429.	5098	PCDHGC3	protocadherin gamma subfamily C, 3
1430.	5099	PCDH7	BH-protocadherin (brain-heart)
1431.	5101	PCDH9	protocadherin 9
1432.	5106	PCK2	phosphoenolpyruvate carboxykinase 2 (mitochondrial)
1433.	5108	PCM1	pericentriolar material 1
1434.	5110	PCMT1	protein-L-isoaspartate (D-aspartate) O-methyltransferase
1435.	5111	PCNA	proliferating cell nuclear antigen
1436.	5118	PCOLCE	procollagen C-endopeptidase enhancer
1437.	5122	PCSK1	proprotein convertase subtilisin/kexin type 1
1438.	5127	PCTK1	PCTAIRE protein kinase 1
1439.	5134	PDCD2	programmed cell death 2
1440.	5142	PDE4B	phosphodiesterase 4B, cAMP-specific (phosphodiesterase E4 duncce homolog, Drosophila)
1441.	5150	PDE7A	phosphodiesterase 7A
1442.	5151	PDE8A	phosphodiesterase 8A
1443.	5154	PDGFA	platelet-derived growth factor alpha polypeptide
1444.	5160	PDHA1	pyruvate dehydrogenase (lipoamide) alpha 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1445.	5162	PDHB	pyruvate dehydrogenase (lipoamide) beta
1446.	5163	PDK1	pyruvate dehydrogenase kinase, isoenzyme 1
1447.	5167	ENPP1	ectonucleotide pyrophosphatase/phosphodiesterase 1
1448.	5168	ENPP2	ectonucleotide pyrophosphatase/phosphodiesterase 2 (autotaxin)
1449.	5169	ENPP3	ectonucleotide pyrophosphatase/phosphodiesterase 3
1450.	5170	PDPK1	3-phosphoinositide dependent protein kinase-1
1451.	5176	SERPINF1	serine (or cysteine) proteinase inhibitor, clade F (alpha-2 antiplasmin, pigment epithelium derived factor), member 1
1452.	5187	PER1	period homolog 1 (Drosophila)
1453.	5189	PEX1	peroxisome biogenesis factor 1
1454.	5192	PEX10	peroxisome biogenesis factor 10
1455.	5194	PEX13	peroxisome biogenesis factor 13
1456.	5198	PFAS	phosphoribosylformylglycinamidine synthase (FGAR amidotransferase)
1457.	5202	PFDN2	prefoldin 2
1458.	5207	PFKFB1	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 1
1459.	5208	PFKFB2	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2
1460.	5209	PFKFB3	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 3
1461.	5210	PFKFB4	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4
1462.	5211	PFKL	phosphofructokinase, liver
1463.	5212	VIT	vitrin
1464.	5213	PFKM	phosphofructokinase, muscle
1465.	5214	PFKP	phosphofructokinase, platelet
1466.	5218	PFTK1	PFTAIR protein kinase 1
1467.	5223	PGAM1	phosphoglycerate mutase 1 (brain)
1468.	5225	PGC	progastricsin (pepsinogen C)
1469.	5226	PGD	phosphogluconate dehydrogenase
1470.	5228	PGF	placental growth factor, vascular endothelial growth factor-related protein
1471.	5230	PGK1	phosphoglycerate kinase 1
1472.	5236	PGM1	phosphoglucomutase 1
1473.	5238	PGM3	phosphoglucomutase 3
1474.	5245	PHB	prohibitin
1475.	5250	SLC25A3	solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 3
1476.	5252	PHF1	PHD finger protein 1
1477.	5253	PHF2	PHD finger protein 2
1478.	5256	PHKA2	phosphorylase kinase, alpha 2 (liver)
1479.	5257	PHKB	phosphorylase kinase, beta

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1480.	5265	SERPINA1	serine (or cysteine) proteinase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1
1481.	5271	SERPINB8	serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 8
1482.	5277	PIGA	phosphatidylinositol glycan, class A (paroxysmal nocturnal hemoglobinuria)
1483.	5281	PIGF	phosphatidylinositol glycan, class F
1484.	5287	PIK3C2B	phosphoinositide-3-kinase, class 2, beta polypeptide
1485.	5289	PIK3C3	phosphoinositide-3-kinase, class 3
1486.	5291	PIK3CB	phosphoinositide-3-kinase, catalytic, beta polypeptide
1487.	5293	PIK3CD	phosphoinositide-3-kinase, catalytic, delta polypeptide
1488.	5295	PIK3R1	phosphoinositide-3-kinase, regulatory subunit 1 (p85 alpha)
1489.	5297	PIK4CA	phosphatidylinositol 4-kinase, catalytic, alpha polypeptide
1490.	5298	PIK4CB	phosphatidylinositol 4-kinase, catalytic, beta polypeptide
1491.	5300	PIN1	protein (peptidyl-prolyl cis/trans isomerase) NIMA-interacting 1
1492.	5304	PIP	prolactin-induced protein
1493.	5306	PITPNA	phosphatidylinositol transfer protein, alpha
1494.	5310	PKD1	polycystic kidney disease 1 (autosomal dominant)
1495.	5311	PKD2	polycystic kidney disease 2 (autosomal dominant)
1496.	5315	PKM2	pyruvate kinase, muscle
1497.	5316	PKNOX1	PBX/knotted 1 homeobox 1
1498.	5317	PKP1	plakophilin 1 (ectodermal dysplasia/skin fragility syndrome)
1499.	5321	PLA2G4A	phospholipase A2, group IVA (cytosolic, calcium-dependent)
1500.	5324	PLAG1	pleiomorphic adenoma gene 1
1501.	5329	PLAUR	plasminogen activator, urokinase receptor
1502.	5336	PLCG2	phospholipase C, gamma 2 (phosphatidylinositol-specific)
1503.	5337	PLD1	phospholipase D1, phosphatidylcholine-specific
1504.	5342	PLGLB1	plasminogen-like B1
1505.	5347	PLK1	polo-like kinase 1 (Drosophila)
1506.	5349	FXYD3	FXYD domain containing ion transport regulator 3
1507.	5351	PLOD1	procollagen-lysine 1, 2-oxoglutarate 5-dioxygenase 1
1508.	5354	PLP1	proteolipid protein 1 (Pelizaeus-Merzbacher disease, spastic paraplegia 2, uncomplicated)
1509.	5355	PLP2	proteolipid protein 2 (colonic epithelium-enriched)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1510.	5356	PLRG1	pleiotropic regulator 1 (PRL1 homolog, Arabidopsis)
1511.	5357	PLS1	plastin 1 (I isoform)
1512.	5358	PLS3	plastin 3 (T isoform)
1513.	5359	PLSCR1	phospholipid scramblase 1
1514.	5360	PLTP	phospholipid transfer protein
1515.	5361	PLXNA1	plexin A1
1516.	5364	PLXNB1	plexin B1
1517.	5365	PLXNB3	plexin B3
1518.	5366	PMAIP1	phorbol-12-myristate-13-acetate-induced protein 1
1519.	5367	PMCH	pro-melanin-concentrating hormone
1520.	5372	PMM1	phosphomannomutase 1
1521.	5375	PMP2	peripheral myelin protein 2
1522.	5376	PMP22	peripheral myelin protein 22
1523.	5379	PMS2L1	postmeiotic segregation increased 2-like 1
1524.	5380	PMS2L2	postmeiotic segregation increased 2-like 2
1525.	5382	PMS2L4	postmeiotic segregation increased 2-like 4
1526.	5393	EXOSC9	exosome component 9
1527.	5394	EXOSC10	exosome component 10
1528.	5411	PNN	pinin, desmosome associated protein
1529.	5412	UBL3	ubiquitin-like 3
1530.	5422	POLA	polymerase (DNA directed), alpha
1531.	5423	POLB	polymerase (DNA directed), beta
1532.	5424	POLD1	polymerase (DNA directed), delta 1, catalytic subunit 125kDa
1533.	5425	POLD2	polymerase (DNA directed), delta 2, regulatory subunit 50kDa
1534.	5427	POLE2	polymerase (DNA directed), epsilon 2 (p59 subunit)
1535.	5430	POLR2A	polymerase (RNA) II (DNA directed) polypeptide A, 220kDa
1536.	5431	POLR2B	polymerase (RNA) II (DNA directed) polypeptide B, 140kDa
1537.	5432	POLR2C	polymerase (RNA) II (DNA directed) polypeptide C, 33kDa
1538.	5433	POLR2D	polymerase (RNA) II (DNA directed) polypeptide D
1539.	5434	POLR2E	polymerase (RNA) II (DNA directed) polypeptide E, 25kDa
1540.	5435	POLR2F	polymerase (RNA) II (DNA directed) polypeptide F
1541.	5437	POLR2H	polymerase (RNA) II (DNA directed) polypeptide H
1542.	5439	POLR2J	polymerase (RNA) II (DNA directed) polypeptide J, 13.3kDa
1543.	5440	POLR2K	polymerase (RNA) II (DNA directed) polypeptide K, 7.0kDa
1544.	5441	POLR2L	polymerase (RNA) II (DNA directed) polypeptide L, 7.6kDa
1545.	5445	PON2	paraoxonase 2
1546.	5454	POU3F2	POU domain, class 3, transcription factor 2

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1547.	5464	PP	pyrophosphatase (inorganic)
1548.	5469	PPARBP	PPAR binding protein
1549.	5471	PPAT	phosphoribosyl pyrophosphate amidotransferase
1550.	5478	PPIA	peptidylprolyl isomerase A (cyclophilin A)
1551.	5479	PPIB	peptidylprolyl isomerase B (cyclophilin B)
1552.	5481	PPID	peptidylprolyl isomerase D (cyclophilin D)
1553.	5494	PPM1A	protein phosphatase 1A (formerly 2C), magnesium-dependent, alpha isoform
1554.	5495	PPM1B	protein phosphatase 1B (formerly 2C), magnesium-dependent, beta isoform
1555.	5496	PPM1G	protein phosphatase 1G (formerly 2C), magnesium-dependent, gamma isoform
1556.	5498	PPOX	protoporphyrinogen oxidase
1557.	5499	PPP1CA	protein phosphatase 1, catalytic subunit, alpha isoform
1558.	5500	PPP1CB	protein phosphatase 1, catalytic subunit, beta isoform
1559.	5507	PPP1R3C	protein phosphatase 1, regulatory (inhibitor) subunit 3C
1560.	5510	PPP1R7	protein phosphatase 1, regulatory subunit 7
1561.	5515	PPP2CA	protein phosphatase 2 (formerly 2A), catalytic subunit, alpha isoform
1562.	5516	PPP2CB	protein phosphatase 2 (formerly 2A), catalytic subunit, beta isoform
1563.	5518	PPP2R1A	protein phosphatase 2 (formerly 2A), regulatory subunit A (PR 65), alpha isoform
1564.	5519	PPP2R1B	protein phosphatase 2 (formerly 2A), regulatory subunit A (PR 65), beta isoform
1565.	5520	PPP2R2A	protein phosphatase 2 (formerly 2A), regulatory subunit B (PR 52), alpha isoform
1566.	5521	PPP2R2B	protein phosphatase 2 (formerly 2A), regulatory subunit B (PR 52), beta isoform
1567.	5524	PPP2R4	protein phosphatase 2A, regulatory subunit B' (PR 53)
1568.	5525	PPP2R5A	protein phosphatase 2, regulatory subunit B (B56), alpha isoform
1569.	5527	PPP2R5C	protein phosphatase 2, regulatory subunit B (B56), gamma isoform
1570.	5530	PPP3CA	protein phosphatase 3 (formerly 2B), catalytic subunit, alpha isoform (calcineurin A alpha)
1571.	5531	PPP4C	protein phosphatase 4 (formerly X), catalytic subunit
1572.	5532	PPP3CB	protein phosphatase 3 (formerly 2B), catalytic subunit, beta isoform (calcineurin A beta)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1573.	5533	PPP3CC	protein phosphatase 3 (formerly 2B), catalytic subunit, gamma isoform (calcineurin A gamma)
1574.	5534	PPP3R1	protein phosphatase 3 (formerly 2B), regulatory subunit B, 19kDa, alpha isoform (calcineurin B, type I)
1575.	5536	PPP5C	protein phosphatase 5, catalytic subunit
1576.	5544	PRB3	proline-rich protein BstNI subfamily 3
1577.	5549	PRELP	proline arginine-rich end leucine-rich repeat protein
1578.	5552	PRG1	proteoglycan 1, secretory granule
1579.	5557	PRIM1	primase, polypeptide 1, 49kDa
1580.	5558	PRIM2A	primase, polypeptide 2A, 58kDa
1581.	5562	PRKAA1	protein kinase, AMP-activated, alpha 1 catalytic subunit
1582.	5564	PRKAB1	protein kinase, AMP-activated, beta 1 non-catalytic subunit
1583.	5565	PRKAB2	protein kinase, AMP-activated, beta 2 non-catalytic subunit
1584.	5571	PRKAG1	protein kinase, AMP-activated, gamma 1 non-catalytic subunit
1585.	5573	PRKAR1A	protein kinase, cAMP-dependent, regulatory, type I, alpha (tissue specific extinguisher 1)
1586.	5577	PRKAR2B	protein kinase, cAMP-dependent, regulatory, type II, beta
1587.	5578	PRKCA	protein kinase C, alpha
1588.	5581	PRKCE	protein kinase C, epsilon
1589.	5584	PRKCI	protein kinase C, iota
1590.	5587	PRKD1	protein kinase D1
1591.	5590	PRKCZ	protein kinase C, zeta
1592.	5597	MAPK6	mitogen-activated protein kinase 6
1593.	5599	MAPK8	mitogen-activated protein kinase 8
1594.	5601	MAPK9	mitogen-activated protein kinase 9
1595.	5602	MAPK10	mitogen-activated protein kinase 10
1596.	5604	MAP2K1	mitogen-activated protein kinase kinase 1
1597.	5606	MAP2K3	mitogen-activated protein kinase kinase 3
1598.	5607	MAP2K5	mitogen-activated protein kinase kinase 5
1599.	5611	DNAJC3	DnaJ (Hsp40) homolog, subfamily C, member 3
1600.	5612	PRKRIR	protein-kinase, interferon-inducible double stranded RNA dependent inhibitor, repressor of (P58 repressor)
1601.	5613	PRKX	protein kinase, X-linked
1602.	5621	PRNP	prion protein (p27-30) (Creutzfeldt-Jakob disease, Gerstmann-Strausler-Scheinker syndrome, fatal familial insomnia)
1603.	5627	PROS1	protein S (alpha)
1604.	5630	PRPH	peripherin

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1605.	5631	PRPS1	phosphoribosyl pyrophosphate synthetase 1
1606.	5634	PRPS2	phosphoribosyl pyrophosphate synthetase 2
1607.	5635	PRPSAP1	phosphoribosyl pyrophosphate synthetase-associated protein 1
1608.	5645	PRSS2	protease, serine, 2 (trypsin 2)
1609.	5646	PRSS3	protease, serine, 3 (mesotrypsin)
1610.	5654	PRSS11	protease, serine, 11 (IGF binding)
1611.	5664	PSEN2	presenilin 2 (Alzheimer disease 4)
1612.	5682	PSMA1	proteasome (prosome, macropain) subunit, alpha type, 1
1613.	5683	PSMA2	proteasome (prosome, macropain) subunit, alpha type, 2
1614.	5684	PSMA3	proteasome (prosome, macropain) subunit, alpha type, 3
1615.	5685	PSMA4	proteasome (prosome, macropain) subunit, alpha type, 4
1616.	5686	PSMA5	proteasome (prosome, macropain) subunit, alpha type, 5
1617.	5687	PSMA6	proteasome (prosome, macropain) subunit, alpha type, 6
1618.	5688	PSMA7	proteasome (prosome, macropain) subunit, alpha type, 7
1619.	5689	PSMB1	proteasome (prosome, macropain) subunit, beta type, 1
1620.	5690	PSMB2	proteasome (prosome, macropain) subunit, beta type, 2
1621.	5691	PSMB3	proteasome (prosome, macropain) subunit, beta type, 3
1622.	5693	PSMB5	proteasome (prosome, macropain) subunit, beta type, 5
1623.	5695	PSMB7	proteasome (prosome, macropain) subunit, beta type, 7
1624.	5700	PSMC1	proteasome (prosome, macropain) 26S subunit, ATPase, 1
1625.	5701	PSMC2	proteasome (prosome, macropain) 26S subunit, ATPase, 2
1626.	5702	PSMC3	proteasome (prosome, macropain) 26S subunit, ATPase, 3
1627.	5704	PSMC4	proteasome (prosome, macropain) 26S subunit, ATPase, 4
1628.	5705	PSMC5	proteasome (prosome, macropain) 26S subunit, ATPase, 5
1629.	5706	PSMC6	proteasome (prosome, macropain) 26S subunit, ATPase, 6
1630.	5707	PSMD1	proteasome (prosome, macropain) 26S subunit, non-ATPase, 1
1631.	5708	PSMD2	proteasome (prosome, macropain) 26S subunit, non-ATPase, 2
1632.	5709	PSMD3	proteasome (prosome, macropain) 26S subunit, non-ATPase, 3
1633.	5710	PSMD4	proteasome (prosome, macropain) 26S subunit, non-ATPase, 4
1634.	5713	PSMD7	proteasome (prosome, macropain) 26S subunit, non-ATPase, 7 (Mov34 homolog)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1635.	5714	PSMD8	proteasome (prosome, macropain) 26S subunit, non-ATPase, 8
1636.	5715	PSMD9	proteasome (prosome, macropain) 26S subunit, non-ATPase, 9
1637.	5717	PSMD11	proteasome (prosome, macropain) 26S subunit, non-ATPase, 11
1638.	5718	PSMD12	proteasome (prosome, macropain) 26S subunit, non-ATPase, 12
1639.	5719	PSMD13	proteasome (prosome, macropain) 26S subunit, non-ATPase, 13
1640.	5723	PSPH	phosphoserine phosphatase
1641.	5725	PTBP1	polypyrimidine tract binding protein 1
1642.	5727	PTCH	patched homolog (Drosophila)
1643.	5728	PTEN	phosphatase and tensin homolog (mutated in multiple advanced cancers 1)
1644.	5733	PTGER3	prostaglandin E receptor 3 (subtype EP3)
1645.	5738	PTGFRN	prostaglandin F2 receptor negative regulator
1646.	5739	PTGIR	prostaglandin I2 (prostacyclin) receptor (IP)
1647.	5743	PTGS2	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
1648.	5745	PTH1R	parathyroid hormone receptor 1
1649.	5747	PTK2	PTK2 protein tyrosine kinase 2
1650.	5753	PTK6	PTK6 protein tyrosine kinase 6
1651.	5754	PTK7	PTK7 protein tyrosine kinase 7
1652.	5756	PTK9	PTK9 protein tyrosine kinase 9
1653.	5757	PTMA	prothymosin, alpha (gene sequence 28)
1654.	5763	PTMS	parathymosin
1655.	5764	PTN	pleiotrophin (heparin binding growth factor 8, neurite growth-promoting factor 1)
1656.	5770	PTPN1	protein tyrosine phosphatase, non-receptor type 1
1657.	5771	PTPN2	protein tyrosine phosphatase, non-receptor type 2
1658.	5774	PTPN3	protein tyrosine phosphatase, non-receptor type 3
1659.	5775	PTPN4	protein tyrosine phosphatase, non-receptor type 4 (megakaryocyte)
1660.	5781	PTPN11	protein tyrosine phosphatase, non-receptor type 11 (Noonan syndrome 1)
1661.	5783	PTPN13	protein tyrosine phosphatase, non-receptor type 13 (APO-1/CD95 (Fas)-associated phosphatase)
1662.	5786	PTPRA	protein tyrosine phosphatase, receptor type, A
1663.	5791	PTPRE	protein tyrosine phosphatase, receptor type, E
1664.	5792	PTPRF	protein tyrosine phosphatase, receptor type, F
1665.	5793	PTPRG	protein tyrosine phosphatase, receptor type, G

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1666.	5794	PTPRH	protein tyrosine phosphatase, receptor type, H
1667.	5795	PTPRJ	protein tyrosine phosphatase, receptor type, J
1668.	5796	PTPRK	protein tyrosine phosphatase, receptor type, K
1669.	5800	PTPRO	protein tyrosine phosphatase, receptor type, O
1670.	5803	PTPRZ1	protein tyrosine phosphatase, receptor-type, Z polypeptide 1
1671.	5805	PTS	6-pyruvoyltetrahydropterin synthase
1672.	5806	PTX3	pentraxin-related gene, rapidly induced by IL-1 beta
1673.	5810	RAD1	RAD1 homolog (S. pombe)
1674.	5813	PURA	purine-rich element binding protein A
1675.	5814	PURB	purine-rich element binding protein B
1676.	5816	PVALB	parvalbumin
1677.	5817	PVR	poliovirus receptor
1678.	5820	PVT1	Pvt1 oncogene homolog, MYC activator (mouse)
1679.	5822	PWP2H	PWP2 periodic tryptophan protein homolog (yeast)
1680.	5825	ABCD3	ATP-binding cassette, sub-family D (ALD), member 3
1681.	5828	PXMP3	peroxisomal membrane protein 3, 35kDa (Zellweger syndrome)
1682.	5829	PXN	paxillin
1683.	5831	PYCR1	pyrroline-5-carboxylate reductase 1
1684.	5832	ALDH18A1	aldehyde dehydrogenase 18 family, member A1
1685.	5836	PYGL	phosphorylase, glycogen; liver (Hers disease, glycogen storage disease type VI)
1686.	5858	PZP	pregnancy-zone protein
1687.	5860	QDPR	quinoid dihydropteridine reductase
1688.	5861	RAB1A	RAB1A, member RAS oncogene family
1689.	5862	RAB2	RAB2, member RAS oncogene family
1690.	5863	RGL2	ral guanine nucleotide dissociation stimulator-like 2
1691.	5864	RAB3A	RAB3A, member RAS oncogene family
1692.	5865	RAB3B	RAB3B, member RAS oncogene family
1693.	5867	RAB4A	RAB4A, member RAS oncogene family
1694.	5868	RAB5A	RAB5A, member RAS oncogene family
1695.	5870	RAB6A	RAB6A, member RAS oncogene family
1696.	5873	RAB27A	RAB27A, member RAS oncogene family
1697.	5874	RAB27B	RAB27B, member RAS oncogene family
1698.	5876	RABGGTB	Rab geranylgeranyltransferase, beta subunit
1699.	5877	RABIF	RAB interacting factor
1700.	5878	RAB5C	RAB5C, member RAS oncogene family
1701.	5879	RAC1	ras-related C3 botulinum toxin substrate 1 (rho family, small GTP binding protein Rac1)
1702.	5884	RAD17	RAD17 homolog (S. pombe)
1703.	5885	RAD21	RAD21 homolog (S. pombe)
1704.	5886	RAD23A	RAD23 homolog A (S. cerevisiae)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1705.	5887	RAD23B	RAD23 homolog B (<i>S. cerevisiae</i>)
1706.	5888	RAD51	RAD51 homolog (RecA homolog, <i>E. coli</i>) (<i>S. cerevisiae</i>)
1707.	5889	RAD51C	RAD51 homolog C (<i>S. cerevisiae</i>)
1708.	5891	RAGE	renal tumor antigen
1709.	5898	RALA	v-ral simian leukemia viral oncogene homolog A (ras related)
1710.	5899	RALB	v-ral simian leukemia viral oncogene homolog B (ras related; GTP binding protein)
1711.	5901	RAN	RAN, member RAS oncogene family
1712.	5902	RANBP1	RAN binding protein 1
1713.	5903	RANBP2	RAN binding protein 2
1714.	5905	RANGAP1	Ran GTPase activating protein 1
1715.	5906	RAP1A	RAP1A, member of RAS oncogene family
1716.	5908	RAP1B	RAP1B, member of RAS oncogene family
1717.	5909	RAP1GA1	RAP1, GTPase activating protein 1
1718.	5910	RAP1GDS1	RAP1, GTP-GDP dissociation stimulator 1
1719.	5914	RARA	retinoic acid receptor, alpha
1720.	5915	RARB	retinoic acid receptor, beta
1721.	5916	RARG	retinoic acid receptor, gamma
1722.	5917	RARS	arginyl-tRNA synthetase
1723.	5921	RASA1	RAS p21 protein activator (GTPase activating protein) 1
1724.	5925	RB1	retinoblastoma 1 (including osteosarcoma)
1725.	5926	ARID4A	AT rich interactive domain 4A (RBP1-like)
1726.	5930	RBBP6	retinoblastoma binding protein 6
1727.	5931	RBBP7	retinoblastoma binding protein 7
1728.	5937	RBMS1	RNA binding motif, single stranded interacting protein 1
1729.	5939	RBMS2	RNA binding motif, single stranded interacting protein 2
1730.	5954	RCN1	reticulocalbin 1, EF-hand calcium binding domain
1731.	5965	RECQL	RecQ protein-like (DNA helicase Q1-like)
1732.	5967	REG1A	regenerating islet-derived 1 alpha (pancreatic stone protein, pancreatic thread protein)
1733.	5973	RENBP	renin binding protein
1734.	5980	REV3L	REV3-like, catalytic subunit of DNA polymerase zeta (yeast)
1735.	5981	RFC1	replication factor C (activator 1) 1, 145kDa
1736.	5982	RFC2	replication factor C (activator 1) 2, 40kDa
1737.	5983	RFC3	replication factor C (activator 1) 3, 38kDa
1738.	5984	RFC4	replication factor C (activator 1) 4, 37kDa
1739.	5985	RFC5	replication factor C (activator 1) 5, 36.5kDa
1740.	5987	RFP	ret finger protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1741.	5993	RFX5	regulatory factor X, 5 (influences HLA class II expression)
1742.	5994	RFXAP	regulatory factor X-associated protein
1743.	5997	RGS2	regulator of G-protein signalling 2, 24kDa
1744.	5998	RGS3	regulator of G-protein signalling 3
1745.	5999	RGS4	regulator of G-protein signalling 4
1746.	6004	RGS16	regulator of G-protein signalling 16
1747.	6006	RHCE	Rhesus blood group, CcEe antigens
1748.	6013	RLN1	relaxin 1
1749.	6015	RING1	ring finger protein 1
1750.	6016	RIT1	Ras-like without CAAX 1
1751.	6017	RLBP1	retinaldehyde binding protein 1
1752.	6038	RNASE4	ribonuclease, RNase A family, 4
1753.	6039	RNASE6	ribonuclease, RNase A family, k6
1754.	6041	RNASEL	ribonuclease L (2',5'-oligoadenylate synthetase-dependent)
1755.	6047	RNF4	ring finger protein 4
1756.	6048	RNF5	ring finger protein 5
1757.	6050	RNH1	ribonuclease/angiogenin inhibitor 1
1758.	6059	ABCE1	ATP-binding cassette, sub-family E (OABP), member 1
1759.	6091	ROBO1	roundabout, axon guidance receptor, homolog 1 (Drosophila)
1760.	6100	RP9	retinitis pigmentosa 9 (autosomal dominant)
1761.	6103	RPGR	retinitis pigmentosa GTPase regulator
1762.	6117	RPA1	replication protein A1, 70kDa
1763.	6118	RPA2	replication protein A2, 32kDa
1764.	6119	RPA3	replication protein A3, 14kDa
1765.	6122	RPL3	ribosomal protein L3
1766.	6124	RPL4	ribosomal protein L4
1767.	6125	RPL5	ribosomal protein L5
1768.	6129	RPL7	ribosomal protein L7
1769.	6130	RPL7A	ribosomal protein L7a
1770.	6133	RPL9	ribosomal protein L9
1771.	6134	RPL10	ribosomal protein L10
1772.	6137	RPL13	ribosomal protein L13
1773.	6139	RPL17	ribosomal protein L17
1774.	6146	RPL22	ribosomal protein L22
1775.	6147	RPL23A	ribosomal protein L23a
1776.	6150	MRPL23	mitochondrial ribosomal protein L23
1777.	6154	RPL26	ribosomal protein L26
1778.	6156	RPL30	ribosomal protein L30
1779.	6158	RPL28	ribosomal protein L28
1780.	6160	RPL31	ribosomal protein L31
1781.	6166	RPL36AL	ribosomal protein L36a-like
1782.	6167	RPL37	ribosomal protein L37
1783.	6170	RPL39	ribosomal protein L39
1784.	6175	RPLP0	ribosomal protein, large, P0
1785.	6182	MRPL12	mitochondrial ribosomal protein L12
1786.	6187	RPS2	ribosomal protein S2
1787.	6188	RPS3	ribosomal protein S3
1788.	6189	RPS3A	ribosomal protein S3A
1789.	6191	RPS4X	ribosomal protein S4, X-linked

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1790.	6194	RPS6	ribosomal protein S6
1791.	6195	RPS6KA1	ribosomal protein S6 kinase, 90kDa, polypeptide 1
1792.	6196	RPS6KA2	ribosomal protein S6 kinase, 90kDa, polypeptide 2
1793.	6198	RPS6KB1	ribosomal protein S6 kinase, 70kDa, polypeptide 1
1794.	6202	RPS8	ribosomal protein S8
1795.	6206	RPS12	ribosomal protein S12
1796.	6207	RPS13	ribosomal protein S13
1797.	6223	RPS19	ribosomal protein S19
1798.	6224	RPS20	ribosomal protein S20
1799.	6228	RPS23	ribosomal protein S23
1800.	6230	RPS25	ribosomal protein S25
1801.	6231	RPS26	ribosomal protein S26
1802.	6238	RRBP1	ribosome binding protein 1 homolog 180kDa (dog)
1803.	6240	RRM1	ribonucleotide reductase M1 polypeptide
1804.	6241	RRM2	ribonucleotide reductase M2 polypeptide
1805.	6248	RSC1A1	regulatory solute carrier protein, family 1, member 1
1806.	6249	RSN	restin (Reed-Steinberg cell-expressed intermediate filament-associated protein)
1807.	6252	RTN1	reticulon 1
1808.	6256	RXRA	retinoid X receptor, alpha
1809.	6257	RXRB	retinoid X receptor, beta
1810.	6258	RXRG	retinoid X receptor, gamma
1811.	6259	RYK	RYK receptor-like tyrosine kinase
1812.	6271	S100A1	S100 calcium binding protein A1
1813.	6272	SORT1	sortilin 1
1814.	6273	S100A2	S100 calcium binding protein A2
1815.	6274	S100A3	S100 calcium binding protein A3
1816.	6275	S100A4	S100 calcium binding protein A4 (calcium protein, calvasculin, metastasin, murine placental homolog)
1817.	6281	S100A10	S100 calcium binding protein A10 (annexin II ligand, calpactin I, light polypeptide (p11))
1818.	6282	S100A11	S100 calcium binding protein A11 (calgizzarin)
1819.	6284	S100A13	S100 calcium binding protein A13
1820.	6285	S100B	S100 calcium binding protein, beta (neural)
1821.	6293	VPS52	vacuolar protein sorting 52 (yeast)
1822.	6294	SAFB	scaffold attachment factor B
1823.	6297	SALL2	sal-like 2 (Drosophila)
1824.	6299	SALL1	sal-like 1 (Drosophila)
1825.	6301	SARS	seryl-tRNA synthetase
1826.	6302	SAS	sarcoma amplified sequence
1827.	6303	SAT	spermidine/spermine N1-acetyltransferase
1828.	6305	SBF1	SET binding factor 1
1829.	6307	SC4MOL	sterol-C4-methyl oxidase-like

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1830.	6310	ATXN1	ataxin 1
1831.	6322	SCML1	sex comb on midleg-like 1 (Drosophila)
1832.	6335	SCN9A	sodium channel, voltage-gated, type IX, alpha
1833.	6341	SCO1	SCO cytochrome oxidase deficient homolog 1 (yeast)
1834.	6342	SCP2	sterol carrier protein 2
1835.	6352	CCL5	chemokine (C-C motif) ligand 5
1836.	6356	CCL11	chemokine (C-C motif) ligand 11
1837.	6357	CCL13	chemokine (C-C motif) ligand 13
1838.	6362	CCL18	chemokine (C-C motif) ligand 18 (pulmonary and activation-regulated)
1839.	6364	CCL20	chemokine (C-C motif) ligand 20
1840.	6374	CXCL5	chemokine (C-X-C motif) ligand 5
1841.	6376	CX3CL1	chemokine (C-X3-C motif) ligand 1
1842.	6383	SDC2	syndecan 2 (heparan sulfate proteoglycan 1, cell surface-associated, fibroglycan)
1843.	6385	SDC4	syndecan 4 (amphiglycan, ryudocan)
1844.	6386	SDCBP	syndecan binding protein (syntenin)
1845.	6389	SDHA	succinate dehydrogenase complex, subunit A, flavoprotein (Fp)
1846.	6390	SDHB	succinate dehydrogenase complex, subunit B, iron sulfur (Ip)
1847.	6391	SDHC	succinate dehydrogenase complex, subunit C, integral membrane protein, 15kDa
1848.	6396	SEC13L1	SEC13-like 1 (S. cerevisiae)
1849.	6397	SEC14L1	SEC14-like 1 (S. cerevisiae)
1850.	6400	SEL1L	sel-1 suppressor of lin-12-like (C. elegans)
1851.	6402	SELL	selectin L (lymphocyte adhesion molecule 1)
1852.	6414	SEPP1	selenoprotein P, plasma, 1
1853.	6416	MAP2K4	mitogen-activated protein kinase kinase 4
1854.	6418	SET	SET translocation (myeloid leukemia-associated)
1855.	6421	SFPQ	splicing factor proline/glutamine rich (polypyrimidine tract binding protein associated)
1856.	6422	SFRP1	secreted frizzled-related protein 1
1857.	6426	SFRS1	splicing factor, arginine/serine-rich 1 (splicing factor 2, alternate splicing factor)
1858.	6427	SFRS2	splicing factor, arginine/serine-rich 2
1859.	6428	SFRS3	splicing factor, arginine/serine-rich 3
1860.	6429	SFRS4	splicing factor, arginine/serine-rich 4
1861.	6430	SFRS5	splicing factor, arginine/serine-rich 5
1862.	6431	SFRS6	splicing factor, arginine/serine-rich 6

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1863.	6432	SFRS7	splicing factor, arginine/serine-rich 7, 35kDa
1864.	6434	SFRS10	splicing factor, arginine/serine-rich 10 (transformer 2 homolog, Drosophila)
1865.	6440	SFTPC	surfactant, pulmonary-associated protein C
1866.	6443	SGCB	sarcoglycan, beta (43kDa dystrophin-associated glycoprotein)
1867.	6444	SGCD	sarcoglycan, delta (35kDa dystrophin-associated glycoprotein)
1868.	6446	SGK	serum/glucocorticoid regulated kinase
1869.	6450	SH3BGR	SH3 domain binding glutamic acid-rich protein
1870.	6451	SH3BGRL	SH3 domain binding glutamic acid-rich protein like
1871.	6453	ITSN1	intersectin 1 (SH3 domain protein)
1872.	6455	SH3GL1	SH3-domain GRB2-like 1
1873.	6461	SHB	Src homology 2 domain containing adaptor protein B
1874.	6464	SHC1	SHC (Src homology 2 domain containing) transforming protein 1
1875.	6468	FBXW4	F-box and WD-40 domain protein 4
1876.	6470	SHMT1	serine hydroxymethyltransferase 1 (soluble)
1877.	6472	SHMT2	serine hydroxymethyltransferase 2 (mitochondrial)
1878.	6477	SIAH1	seven in absentia homolog 1 (Drosophila)
1879.	6478	SIAH2	seven in absentia homolog 2 (Drosophila)
1880.	6480	ST6GAL1	ST6 beta-galactosamide alpha-2,6-sialyltransferase 1
1881.	6482	ST3GAL1	ST3 beta-galactoside alpha-2,3-sialyltransferase 1
1882.	6484	ST3GAL4	ST3 beta-galactoside alpha-2,3-sialyltransferase 4
1883.	6489	ST8SIA1	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 1
1884.	6490	SILV	silver homolog (mouse)
1885.	6491	SIL	TAL1 (SCL) interrupting locus
1886.	6494	SIPA1	signal-induced proliferation-associated gene 1
1887.	6498	SKIL	SKI-like
1888.	6502	SKP2	S-phase kinase-associated protein 2 (p45)
1889.	6504	SLAMF1	signaling lymphocytic activation molecule family member 1
1890.	6505	SLC1A1	solute carrier family 1 (neuronal/epithelial high affinity glutamate transporter, system Xag), member 1
1891.	6508	SLC4A3	solute carrier family 4, anion exchanger, member 3
1892.	6509	SLC1A4	solute carrier family 1 (glutamate/neutral amino acid transporter), member 4

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1893.	6510	SLC1A5	solute carrier family 1 (neutral amino acid transporter), member 5
1894.	6512	SLC1A7	solute carrier family 1 (glutamate transporter), member 7
1895.	6513	SLC2A1	solute carrier family 2 (facilitated glucose transporter), member 1
1896.	6515	SLC2A3	solute carrier family 2 (facilitated glucose transporter), member 3
1897.	6520	SLC3A2	solute carrier family 3 (activators of dibasic and neutral amino acid transport), member 2
1898.	6525	SMTN	smoothelin
1899.	6526	SLC5A3	solute carrier family 5 (inositol transporters), member 3
1900.	6533	SLC6A6	solute carrier family 6 (neurotransmitter transporter, taurine), member 6
1901.	6535	SLC6A8	solute carrier family 6 (neurotransmitter transporter, creatine), member 8
1902.	6541	SLC7A1	solute carrier family 7 (cationic amino acid transporter, γ^+ system), member 1
1903.	6547	SLC8A3	solute carrier family 8 (sodium-calcium exchanger), member 3
1904.	6548	SLC9A1	solute carrier family 9 (sodium/hydrogen exchanger), isoform 1 (antiporter, Na^+/H^+ , amiloride sensitive)
1905.	6558	SLC12A2	solute carrier family 12 (sodium/potassium/chloride transporters), member 2
1906.	6563	SLC14A1	solute carrier family 14 (urea transporter), member 1 (Kidd blood group)
1907.	6566	SLC16A1	solute carrier family 16 (monocarboxylic acid transporters), member 1
1908.	6567	SLC16A2	solute carrier family 16 (monocarboxylic acid transporters), member 2
1909.	6573	SLC19A1	solute carrier family 19 (folate transporter), member 1
1910.	6574	SLC20A1	solute carrier family 20 (phosphate transporter), member 1
1911.	6575	SLC20A2	solute carrier family 20 (phosphate transporter), member 2
1912.	6576	SLC25A1	solute carrier family 25 (mitochondrial carrier; citrate transporter), member 1
1913.	6581	SLC22A3	solute carrier family 22 (extraneuronal monoamine transporter), member 3
1914.	6583	SLC22A4	solute carrier family 22 (organic cation transporter), member 4
1915.	6584	SLC22A5	solute carrier family 22 (organic cation transporter), member 5

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1916.	6591	SNAI2	snail homolog 2 (Drosophila)
1917.	6595	SMARCA2	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 2
1918.	6597	SMARCA4	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 4
1919.	6598	SMARCB1	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily b, member 1
1920.	6599	SMARCC1	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily c, member 1
1921.	6605	SMARCE1	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily e, member 1
1922.	6606	SMN1	survival of motor neuron 1, telomeric
1923.	6610	SMPD2	sphingomyelin phosphodiesterase 2, neutral membrane (neutral sphingomyelinase)
1924.	6611	SMS	spermine synthase
1925.	6612	SUMO3	SMT3 suppressor of mif two 3 homolog 3 (yeast)
1926.	6613	SUMO2	SMT3 suppressor of mif two 3 homolog 2 (yeast)
1927.	6617	SNAPC1	small nuclear RNA activating complex, polypeptide 1, 43kDa
1928.	6619	SNAPC3	small nuclear RNA activating complex, polypeptide 3, 50kDa
1929.	6622	SNCA	synuclein, alpha (non A4 component of amyloid precursor)
1930.	6623	SNCG	synuclein, gamma (breast cancer-specific protein 1)
1931.	6624	FSCN1	fascin homolog 1, actin-bundling protein (Strongylocentrotus purpuratus)
1932.	6626	SNRPA	small nuclear ribonucleoprotein polypeptide A
1933.	6627	SNRPA1	small nuclear ribonucleoprotein polypeptide A'
1934.	6628	SNRPB	small nuclear ribonucleoprotein polypeptides B and B1
1935.	6631	SNRPC	small nuclear ribonucleoprotein polypeptide C
1936.	6632	SNRPD1	small nuclear ribonucleoprotein D1 polypeptide 16kDa
1937.	6633	SNRPD2	small nuclear ribonucleoprotein D2 polypeptide 16.5kDa
1938.	6634	SNRPD3	small nuclear ribonucleoprotein D3 polypeptide 18kDa
1939.	6635	SNRPE	small nuclear ribonucleoprotein polypeptide E
1940.	6636	SNRPF	small nuclear ribonucleoprotein polypeptide F
1941.	6637	SNRPG	small nuclear ribonucleoprotein polypeptide G

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1942.	6638	SNRPN	small nuclear ribonucleoprotein polypeptide N
1943.	6641	SNTB1	syntrophin, beta 1 (dystrophin-associated protein A1, 59kDa, basic component 1)
1944.	6642	SNX1	sorting nexin 1
1945.	6645	SNTB2	syntrophin, beta 2 (dystrophin-associated protein A1, 59kDa, basic component 2)
1946.	6646	SOAT1	sterol O-acyltransferase (acyl-Coenzyme A: cholesterol acyltransferase) 1
1947.	6647	SOD1	superoxide dismutase 1, soluble (amyotrophic lateral sclerosis 1 (adult))
1948.	6648	SOD2	superoxide dismutase 2, mitochondrial
1949.	6649	SOD3	superoxide dismutase 3, extracellular
1950.	6651	SON	SON DNA binding protein
1951.	6653	SORL1	sortilin-related receptor, L(DLR class) A repeats-containing
1952.	6655	SOS2	son of sevenless homolog 2 (Drosophila)
1953.	6658	SOX3	SRY (sex determining region Y)-box 3
1954.	6659	SOX4	SRY (sex determining region Y)-box 4
1955.	6660	SOX5	SRY (sex determining region Y)-box 5
1956.	6662	SOX9	SRY (sex determining region Y)-box 9 (campomelic dysplasia, autosomal sex-reversal)
1957.	6663	SOX10	SRY (sex determining region Y)-box 10
1958.	6667	SP1	Sp1 transcription factor
1959.	6668	SP2	Sp2 transcription factor
1960.	6670	SP3	Sp3 transcription factor
1961.	6672	SP100	nuclear antigen Sp100
1962.	6674	SPAG1	sperm associated antigen 1
1963.	6675	UAP1	UDP-N-acetylglucosamine pyrophosphorylase 1
1964.	6676	SPAG4	sperm associated antigen 4
1965.	6678	SPARC	secreted protein, acidic, cysteine-rich (osteonectin)
1966.	6687	SPG7	spastic paraplegia 7, paraplegin (pure and complicated autosomal recessive)
1967.	6695	SPOCK	sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican)
1968.	6700	SPRR2A	small proline-rich protein 2A
1969.	6711	SPTBN1	spectrin, beta, non-erythrocytic 1
1970.	6713	SQLE	squalene epoxidase
1971.	6715	SRD5A1	steroid-5-alpha-reductase, alpha polypeptide 1 (3-oxo-5 alpha-steroid delta 4-dehydrogenase alpha 1)
1972.	6717	SRI	sorcin
1973.	6720	SREBF1	sterol regulatory element binding transcription factor 1
1974.	6721	SREBF2	sterol regulatory element binding transcription factor 2

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1975.	6722	SRF	serum response factor (c-fos serum response element-binding transcription factor)
1976.	6723	SRM	spermidine synthase
1977.	6728	SRP19	signal recognition particle 19kDa
1978.	6729	SRP54	signal recognition particle 54kDa
1979.	6731	SRP72	signal recognition particle 72kDa
1980.	6732	SRPK1	SFRS protein kinase 1
1981.	6733	SRPK2	SFRS protein kinase 2
1982.	6734	SRPR	signal recognition particle receptor ('docking protein')
1983.	6741	SSB	Sjogren syndrome antigen B (autoantigen La)
1984.	6742	SSBP1	single-stranded DNA binding protein 1
1985.	6744	SSFA2	sperm specific antigen 2
1986.	6745	SSR1	signal sequence receptor, alpha (translocon-associated protein alpha)
1987.	6746	SSR2	signal sequence receptor, beta (translocon-associated protein beta)
1988.	6747	SSR3	signal sequence receptor, gamma (translocon-associated protein gamma)
1989.	6748	SSR4	signal sequence receptor, delta (translocon-associated protein delta)
1990.	6749	SSRP1	structure specific recognition protein 1
1991.	6754	SSTR4	somatostatin receptor 4
1992.	6757	SSX2	synovial sarcoma, X breakpoint 2
1993.	6759	SSX4	synovial sarcoma, X breakpoint 4
1994.	6760	SS18	synovial sarcoma translocation, chromosome 18
1995.	6764	ST5	suppression of tumorigenicity 5
1996.	6772	STAT1	signal transducer and activator of transcription 1, 91kDa
1997.	6774	STAT3	signal transducer and activator of transcription 3 (acute-phase response factor)
1998.	6776	STAT5A	signal transducer and activator of transcription 5A
1999.	6777	STAT5B	signal transducer and activator of transcription 5B
2000.	6778	STAT6	signal transducer and activator of transcription 6, interleukin-4 induced
2001.	6780	STAU	staufen, RNA binding protein (Drosophila)
2002.	6781	STC1	stanniocalcin 1
2003.	6782	STCH	stress 70 protein chaperone, microsome-associated, 60kDa
2004.	6785	ELOVL4	elongation of very long chain fatty acids (FEN1/Elo2, SUR4/Elo3, yeast)-like 4
2005.	6789	STK4	serine/threonine kinase 4
2006.	6790	STK6	serine/threonine kinase 6
2007.	6793	STK10	serine/threonine kinase 10
2008.	6794	STK11	serine/threonine kinase 11 (Peutz-Jeghers syndrome)
2009.	6804	STX1A	syntaxin 1A (brain)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2010.	6809	STX3A	syntaxin 3A
2011.	6810	STX4A	syntaxin 4A (placental)
2012.	6812	STXBP1	syntaxin binding protein 1
2013.	6814	STXBP3	syntaxin binding protein 3
2014.	6821	SUOX	sulfite oxidase
2015.	6830	SUPT6H	suppressor of Ty 6 homolog (S. cerevisiae)
2016.	6834	SURF1	surfeit 1
2017.	6836	SURF4	surfeit 4
2018.	6840	SVIL	supervillin
2019.	6843	VAMP1	vesicle-associated membrane protein 1 (synaptobrevin 1)
2020.	6844	VAMP2	vesicle-associated membrane protein 2 (synaptobrevin 2)
2021.	6856	SYPL1	synaptophysin-like 1
2022.	6857	SYT1	synaptotagmin I
2023.	6863	TAC1	tachykinin, precursor 1 (substance K, substance P, neurokinin 1, neurokinin 2, neuromedin L, neurokinin alpha, neuropeptide K, neuropeptide gamma)
2024.	6873	TAF2	TAF2 RNA polymerase II, TATA box binding protein (TBP)-associated factor, 150kDa
2025.	6880	TAF9	TAF9 RNA polymerase II, TATA box binding protein (TBP)-associated factor, 32kDa
2026.	6882	TAF11	TAF11 RNA polymerase II, TATA box binding protein (TBP)-associated factor, 28kDa
2027.	6885	MAP3K7	mitogen-activated protein kinase kinase kinase 7
2028.	6886	TAL1	T-cell acute lymphocytic leukemia 1
2029.	6892	TAPBP	TAP binding protein (tapasin)
2030.	6894	TARBP1	TAR (HIV) RNA binding protein 1
2031.	6897	TARS	threonyl-tRNA synthetase
2032.	6901	TAZ	tafazzin (cardiomyopathy, dilated 3A (X-linked); endocardial fibroelastosis 2; Barth syndrome)
2033.	6902	TBCA	tubulin-specific chaperone a
2034.	6905	TBCE	tubulin-specific chaperone e
2035.	6909	TBX2	T-box 2
2036.	6916	TBXAS1	thromboxane A synthase 1 (platelet, cytochrome P450, family 5, subfamily A)
2037.	6917	TCEA1	transcription elongation factor A (SII), 1
2038.	6919	TCEA2	transcription elongation factor A (SII), 2
2039.	6921	TCEB1	transcription elongation factor B (SIII), polypeptide 1 (15kDa, elongin C)
2040.	6924	TCEB3	transcription elongation factor B (SIII), polypeptide 3 (110kDa, elongin A)
2041.	6925	TCF4	transcription factor 4
2042.	6926	TBX3	T-box 3 (ulnar mammary syndrome)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2043.	6928	TCF2	transcription factor 2, hepatic; LF-B3; variant hepatic nuclear factor
2044.	6929	TCF3	transcription factor 3 (E2A immunoglobulin enhancer binding factors E12/E47)
2045.	6934	TCF7L2	transcription factor 7-like 2 (T-cell specific, HMG-box)
2046.	6935	TCF8	transcription factor 8 (represses interleukin 2 expression)
2047.	6936	C2orf3	chromosome 2 open reading frame 3
2048.	6940	ZNF354A	zinc finger protein 354A
2049.	6941	TCF19	transcription factor 19 (SC1)
2050.	6944	TCFL1	transcription factor-like 1
2051.	6945	MLX	MAX-like protein X
2052.	6949	TCOF1	Treacher Collins-Franceschetti syndrome 1
2053.	6950	TCP1	t-complex 1
2054.	6955	TRA@	T cell receptor alpha locus
2055.	6988	TCTA	T-cell leukemia translocation altered gene
2056.	6990	TCTE1L	t-complex-associated-testis-expressed 1-like
2057.	6996	TDG	thymine-DNA glycosylase
2058.	7003	TEAD1	TEA domain family member 1 (SV40 transcriptional enhancer factor)
2059.	7004	TEAD4	TEA domain family member 4
2060.	7008	TEF	thyrotrophic embryonic factor
2061.	7009	TEGT	testis enhanced gene transcript (BAX inhibitor 1)
2062.	7011	TEP1	telomerase-associated protein 1
2063.	7013	TERF1	telomeric repeat binding factor (NIMA-interacting) 1
2064.	7014	TERF2	telomeric repeat binding factor 2
2065.	7018	TF	transferrin
2066.	7019	TFAM	transcription factor A, mitochondrial
2067.	7020	TFAP2A	transcription factor AP-2 alpha (activating enhancer binding protein 2 alpha)
2068.	7021	TFAP2B	transcription factor AP-2 beta (activating enhancer binding protein 2 beta)
2069.	7022	TFAP2C	transcription factor AP-2 gamma (activating enhancer binding protein 2 gamma)
2070.	7025	NR2F1	nuclear receptor subfamily 2, group F, member 1
2071.	7026	NR2F2	nuclear receptor subfamily 2, group F, member 2
2072.	7027	TFDP1	transcription factor Dp-1
2073.	7035	TFPI	tissue factor pathway inhibitor (lipoprotein-associated coagulation inhibitor)
2074.	7037	TFRC	transferrin receptor (p90, CD71)
2075.	7039	TGFA	transforming growth factor, alpha
2076.	7040	TGFB1	transforming growth factor, beta 1 (Camurati-Engelmann disease)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2077.	7045	TGFBI	transforming growth factor, beta-induced, 68kDa
2078.	7048	TGFB2	transforming growth factor, beta receptor II (70/80kDa)
2079.	7050	TGIF	TGFB-induced factor (TALE family homeobox)
2080.	7052	TGM2	transglutaminase 2 (C polypeptide, protein-glutamine-gamma-glutamyltransferase)
2081.	7057	THBS1	thrombospondin 1
2082.	7059	THBS3	thrombospondin 3
2083.	7067	THRA	thyroid hormone receptor, alpha (erythroblastic leukemia viral (v-erb-a) oncogene homolog, avian)
2084.	7071	KLF10	Kruppel-like factor 10
2085.	7072	TIA1	TIA1 cytotoxic granule-associated RNA binding protein
2086.	7073	TIAL1	TIA1 cytotoxic granule-associated RNA binding protein-like 1
2087.	7074	TIAM1	T-cell lymphoma invasion and metastasis 1
2088.	7076	TIMP1	tissue inhibitor of metalloproteinase 1 (erythroid potentiating activity, collagenase inhibitor)
2089.	7077	TIMP2	tissue inhibitor of metalloproteinase 2
2090.	7078	TIMP3	tissue inhibitor of metalloproteinase 3 (Sorsby fundus dystrophy, pseudoinflammatory)
2091.	7082	TJP1	tight junction protein 1 (zona occludens 1)
2092.	7083	TK1	thymidine kinase 1, soluble
2093.	7084	TK2	thymidine kinase 2, mitochondrial
2094.	7086	TKT	transketolase (Wernicke-Korsakoff syndrome)
2095.	7088	TLE1	transducin-like enhancer of split 1 (E(sp1) homolog, Drosophila)
2096.	7089	TLE2	transducin-like enhancer of split 2 (E(sp1) homolog, Drosophila)
2097.	7090	TLE3	transducin-like enhancer of split 3 (E(sp1) homolog, Drosophila)
2098.	7094	TLN1	talin 1
2099.	7095	TLOC1	translocation protein 1
2100.	7098	TLR3	toll-like receptor 3
2101.	7099	TLR4	toll-like receptor 4
2102.	7101	NR2E1	nuclear receptor subfamily 2, group E, member 1
2103.	7105	TSPAN6	tetraspanin 6
2104.	7111	TMOD1	tropomodulin 1
2105.	7112	TMPO	thymopoietin
2106.	7113	TMPRSS2	transmembrane protease, serine 2
2107.	7128	TNFAIP3	tumor necrosis factor, alpha-induced protein 3
2108.	7130	TNFAIP6	tumor necrosis factor, alpha-induced protein 6
2109.	7138	TNNT1	troponin T1, skeletal, slow

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2110.	7140	TNNT3	troponin T3, skeletal, fast
2111.	7145	TNS1	tensin 1
2112.	7148	TNXB	tenascin XB
2113.	7150	TOP1	topoisomerase (DNA) I
2114.	7153	TOP2A	topoisomerase (DNA) II alpha 170kDa
2115.	7155	TOP2B	topoisomerase (DNA) II beta 180kDa
2116.	7157	TP53	tumor protein p53 (Li-Fraumeni syndrome)
2117.	7162	TPBG	trophoblast glycoprotein
2118.	7163	TPD52	tumor protein D52
2119.	7164	TPD52L1	tumor protein D52-like 1
2120.	7165	TPD52L2	tumor protein D52-like 2
2121.	7167	TPI1	triosephosphate isomerase 1
2122.	7168	TPM1	tropomyosin 1 (alpha)
2123.	7170	TPM3	tropomyosin 3
2124.	7171	TPM4	tropomyosin 4
2125.	7172	TPMT	thiopurine S-methyltransferase
2126.	7174	TPP2	tripeptidyl peptidase II
2127.	7175	TPR	translocated promoter region (to activated MET oncogene)
2128.	7178	TPT1	tumor protein, translationally-controlled 1
2129.	7179	TPTE	transmembrane phosphatase with tensin homology
2130.	7180	CRISP2	cysteine-rich secretory protein 2
2131.	7184	TRA1	tumor rejection antigen (gp96) 1
2132.	7185	TRAF1	TNF receptor-associated factor 1
2133.	7188	TRAF5	TNF receptor-associated factor 5
2134.	7203	CCT3	chaperonin containing TCP1, subunit 3 (gamma)
2135.	7204	TRIO	triple functional domain (PTPRF interacting)
2136.	7216	TRO	trophinin
2137.	7220	TRPC1	transient receptor potential cation channel, subfamily C, member 1
2138.	7226	TRPM2	transient receptor potential cation channel, subfamily M, member 2
2139.	7227	TRPS1	trichorhinophalangeal syndrome I
2140.	7247	TSN	translin
2141.	7248	TSC1	tuberous sclerosis 1
2142.	7257	TSNAX	translin-associated factor X
2143.	7262	PHLDA2	pleckstrin homology-like domain, family A, member 2
2144.	7263	TST	thiosulfate sulfurtransferase (rhodanese)
2145.	7264	TSTA3	tissue specific transplantation antigen P35B
2146.	7265	TTC1	tetratricopeptide repeat domain 1
2147.	7267	TTC3	tetratricopeptide repeat domain 3
2148.	7268	TTC4	tetratricopeptide repeat domain 4
2149.	7270	TTF1	transcription termination factor, RNA polymerase I
2150.	7272	TTK	TTK protein kinase
2151.	7275	TUB	tubby homolog (mouse)
2152.	7278	TUBA2	tubulin, alpha 2
2153.	7283	TUBG1	tubulin, gamma 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2154.	7284	TUFM	Tu translation elongation factor, mitochondrial
2155.	7286	TUFT1	tuftelin 1
2156.	7291	TWIST1	twist homolog 1 (acrocephalosyndactyly 3; Saethre-Chotzen syndrome) (Drosophila)
2157.	7295	TXN	thioredoxin
2158.	7296	TXNRD1	thioredoxin reductase 1
2159.	7298	TYMS	thymidylate synthetase
2160.	7299	TYR	tyrosinase (oculocutaneous albinism IA)
2161.	7301	TYRO3	TYRO3 protein tyrosine kinase
2162.	7307	U2AF1	U2(RNU2) small nuclear RNA auxiliary factor 1
2163.	7311	UBA52	ubiquitin A-52 residue ribosomal protein fusion product 1
2164.	7316	UBC	ubiquitin C
2165.	7318	UBE1L	ubiquitin-activating enzyme E1-like
2166.	7319	UBE2A	ubiquitin-conjugating enzyme E2A (RAD6 homolog)
2167.	7320	UBE2B	ubiquitin-conjugating enzyme E2B (RAD6 homolog)
2168.	7322	UBE2D2	ubiquitin-conjugating enzyme E2D 2 (UBC4/5 homolog, yeast)
2169.	7323	UBE2D3	ubiquitin-conjugating enzyme E2D 3 (UBC4/5 homolog, yeast)
2170.	7325	UBE2E2	ubiquitin-conjugating enzyme E2E 2 (UBC4/5 homolog, yeast)
2171.	7326	UBE2G1	ubiquitin-conjugating enzyme E2G 1 (UBC7 homolog, C. elegans)
2172.	7327	UBE2G2	ubiquitin-conjugating enzyme E2G 2 (UBC7 homolog, yeast)
2173.	7328	UBE2H	ubiquitin-conjugating enzyme E2H (UBC8 homolog, yeast)
2174.	7329	UBE2I	ubiquitin-conjugating enzyme E2I (UBC9 homolog, yeast)
2175.	7332	UBE2L3	ubiquitin-conjugating enzyme E2L 3
2176.	7334	UBE2N	ubiquitin-conjugating enzyme E2N (UBC13 homolog, yeast)
2177.	7335	UBE2V1	ubiquitin-conjugating enzyme E2 variant 1
2178.	7336	UBE2V2	ubiquitin-conjugating enzyme E2 variant 2
2179.	7341	SUMO1	SMT3 suppressor of mif two 3 homolog 1 (yeast)
2180.	7342	UBP1	upstream binding protein 1 (LBP-1a)
2181.	7343	UBTF	upstream binding transcription factor, RNA polymerase I
2182.	7347	UCHL3	ubiquitin carboxyl-terminal esterase L3 (ubiquitin thiolesterase)
2183.	7353	UFD1L	ubiquitin fusion degradation 1-like
2184.	7355	SLC35A2	solute carrier family 35 (UDP- galactose transporter), member A2
2185.	7357	UGCG	UDP-glucose ceramide glucosyltransferase

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2186.	7368	UGT8	UDP glycosyltransferase 8 (UDP-galactose ceramide galactosyltransferase)
2187.	7371	UCK2	uridine-cytidine kinase 2
2188.	7372	UMPS	uridine monophosphate synthetase (orotate phosphoribosyl transferase and orotidine-5'-decarboxylase)
2189.	7374	UNG	uracil-DNA glycosylase
2190.	7378	UPP1	uridine phosphorylase 1
2191.	7381	UQCRB	ubiquinol-cytochrome c reductase binding protein
2192.	7384	UQCRC1	ubiquinol-cytochrome c reductase core protein I
2193.	7385	UQCRC2	ubiquinol-cytochrome c reductase core protein II
2194.	7386	UQCRFS1	ubiquinol-cytochrome c reductase, Rieske iron-sulfur polypeptide 1
2195.	7388	UQCRH	ubiquinol-cytochrome c reductase hinge protein
2196.	7398	USP1	ubiquitin specific protease 1
2197.	7402	UTRN	utrophin (homologous to dystrophin)
2198.	7403	UTX	ubiquitously transcribed tetratricopeptide repeat, X chromosome
2199.	7411	VBP1	von Hippel-Lindau binding protein 1
2200.	7415	VCP	valosin-containing protein
2201.	7416	VDAC1	voltage-dependent anion channel 1
2202.	7417	VDAC2	voltage-dependent anion channel 2
2203.	7419	VDAC3	voltage-dependent anion channel 3
2204.	7421	VDR	vitamin D (1,25- dihydroxyvitamin D3) receptor
2205.	7422	VEGF	vascular endothelial growth factor
2206.	7423	VEGFB	vascular endothelial growth factor B
2207.	7425	VGF	VGF nerve growth factor inducible
2208.	7431	VIM	vimentin
2209.	7433	VIPR1	vasoactive intestinal peptide receptor 1
2210.	7436	VLDLR	very low density lipoprotein receptor
2211.	7439	VMD2	vitelliform macular dystrophy 2 (Best disease, bestrophin)
2212.	7442	TRPV1	transient receptor potential cation channel, subfamily V, member 1
2213.	7443	VRK1	vaccinia related kinase 1
2214.	7444	VRK2	vaccinia related kinase 2
2215.	7447	VSNL1	visinin-like 1
2216.	7453	WARS	tryptophanyl-tRNA synthetase
2217.	7456	WASPIP	Wiskott-Aldrich syndrome protein interacting protein
2218.	7458	WBSCR1	Williams-Beuren syndrome chromosome region 1
2219.	7462	LAT2	linker for activation of T cells family, member 2
2220.	7464	CORO2A	coronin, actin binding protein, 2A
2221.	7465	WEE1	WEE1 homolog (S. pombe)
2222.	7466	WFS1	Wolfram syndrome 1 (wolframin)
2223.	7468	WHSC1	Wolf-Hirschhorn syndrome candidate 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2224.	7474	WNT5A	wingless-type MMTV integration site family, member 5A
2225.	7485	WRB	tryptophan rich basic protein
2226.	7486	WRN	Werner syndrome
2227.	7490	WT1	Wilms tumor 1
2228.	7494	XBP1	X-box binding protein 1
2229.	7503	XIST	X (inactive)-specific transcript
2230.	7508	XPC	xeroderma pigmentosum, complementation group C
2231.	7511	XPNPEP1	X-prolyl aminopeptidase (aminopeptidase P) 1, soluble
2232.	7515	XRCC1	X-ray repair complementing defective repair in Chinese hamster cells 1
2233.	7518	XRCC4	X-ray repair complementing defective repair in Chinese hamster cells 4
2234.	7520	XRCC5	X-ray repair complementing defective repair in Chinese hamster cells 5 (double-strand-break rejoining; Ku autoantigen, 80kDa)
2235.	7528	YY1	YY1 transcription factor
2236.	7529	YWHAB	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, beta polypeptide
2237.	7532	YWHAG	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, gamma polypeptide
2238.	7533	YWHAH	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, eta polypeptide
2239.	7534	YWHAZ	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, zeta polypeptide
2240.	7536	SF1	splicing factor 1
2241.	7542	ZFPL1	zinc finger protein-like 1
2242.	7545	ZIC1	Zic family member 1 (odd-paired homolog, Drosophila)
2243.	7551	ZNF3	zinc finger protein 3 (A8-51)
2244.	7553	ZNF7	zinc finger protein 7 (KOX 4, clone HF.16)
2245.	7555	ZNF9	zinc finger protein 9 (a cellular retroviral nucleic acid binding protein)
2246.	7561	ZNF14	zinc finger protein 14 (KOX 6)
2247.	7571	ZNF23	zinc finger protein 23 (KOX 16)
2248.	7580	ZNF32	zinc finger protein 32 (KOX 30)
2249.	7581	ZNF33A	zinc finger protein 33A
2250.	7586	ZKSCAN1	zinc finger with KRAB and SCAN domains 1
2251.	7593	ZNF42	zinc finger protein 42 (myeloid-specific retinoic acid-responsive)
2252.	7596	ZNF45	zinc finger protein 45
2253.	7627	ZNF75A	zinc finger protein 75a
2254.	7639	ZNF85	zinc finger protein 85 (HPF4, HTF1)
2255.	7699	ZNF140	zinc finger protein 140 (clone pHZ-39)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2256.	7703	PCGF2	polycomb group ring finger 2
2257.	7706	TRIM25	tripartite motif-containing 25
2258.	7716	ZNF161	zinc finger protein 161
2259.	7728	ZNF175	zinc finger protein 175
2260.	7730	ZNF177	zinc finger protein 177
2261.	7738	ZNF184	zinc finger protein 184 (Kruppel-like)
2262.	7743	ZNF189	zinc finger protein 189
2263.	7750	ZNF198	zinc finger protein 198
2264.	7756	ZNF207	zinc finger protein 207
2265.	7763	ZA20D2	zinc finger, A20 domain containing 2
2266.	7767	ZNF224	zinc finger protein 224
2267.	7769	ZNF226	zinc finger protein 226
2268.	7776	ZNF236	zinc finger protein 236
2269.	7779	SLC30A1	solute carrier family 30 (zinc transporter), member 1
2270.	7781	SLC30A3	solute carrier family 30 (zinc transporter), member 3
2271.	7786	MAP3K12	mitogen-activated protein kinase kinase kinase 12
2272.	7791	ZYX	zyxin
2273.	7798	LUZP1	leucine zipper protein 1
2274.	7799	PRDM2	PR domain containing 2, with ZNF domain
2275.	7803	PTP4A1	protein tyrosine phosphatase type IVA, member 1
2276.	7804	LRP8	low density lipoprotein receptor-related protein 8, apolipoprotein e receptor
2277.	7812	UNR	upstream of NRAS
2278.	7813	EVI5	ecotropic viral integration site 5
2279.	7818	DAP3	death associated protein 3
2280.	7844	RNF103	ring finger protein 103
2281.	7846	TUBA3	tubulin, alpha 3
2282.	7849	PAX8	paired box gene 8
2283.	7852	CXCR4	chemokine (C-X-C motif) receptor 4
2284.	7857	SCG2	secretogranin II (chromogranin C)
2285.	7873	ARMET	arginine-rich, mutated in early stage tumors
2286.	7879	RAB7	RAB7, member RAS oncogene family
2287.	7884	SLBP	stem-loop (histone) binding protein
2288.	7903	ST8SIA4	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 4
2289.	7905	C5orf18	chromosome 5 open reading frame 18
2290.	7913	DEK	DEK oncogene (DNA binding)
2291.	7915	ALDH5A1	aldehyde dehydrogenase 5 family, member A1 (succinate-semialdehyde dehydrogenase)
2292.	7918	BAT4	HLA-B associated transcript 4
2293.	7922	SLC39A7	solute carrier family 39 (zinc transporter), member 7
2294.	7923	HSD17B8	hydroxysteroid (17-beta) dehydrogenase 8
2295.	7936	RDBP	RD RNA binding protein
2296.	7975	MAFK	v-maf musculoaponeurotic fibrosarcoma oncogene homolog K (avian)
2297.	7976	FZD3	frizzled homolog 3 (Drosophila)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2298.	7978	MTERF	mitochondrial transcription termination factor
2299.	7979	SHFM1	split hand/foot malformation (ectrodactyly) type 1
2300.	7980	TFPI2	tissue factor pathway inhibitor 2
2301.	7993	D8S2298E	reproduction 8
2302.	7994	MYST3	MYST histone acetyltransferase (monocytic leukemia) 3
2303.	8028	MLLT10	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila); translocated to, 10
2304.	8029	CUBN	cubilin (intrinsic factor-cobalamin receptor)
2305.	8030	CCDC6	coiled-coil domain containing 6
2306.	8036	SHOC2	soc-2 suppressor of clear homolog (C. elegans)
2307.	8038	ADAM12	a disintegrin and metalloproteinase domain 12 (meltrin alpha)
2308.	8050	PDHX	pyruvate dehydrogenase complex, component X
2309.	8061	FOSL1	FOS-like antigen 1
2310.	8073	PTP4A2	protein tyrosine phosphatase type IVA, member 2
2311.	8078	USP5	ubiquitin specific protease 5 (isopeptidase T)
2312.	8079	MLF2	myeloid leukemia factor 2
2313.	8085	MLL2	myeloid/lymphoid or mixed-lineage leukemia 2
2314.	8089	YEATS4	YEATS domain containing 4
2315.	8091	HMGA2	high mobility group AT-hook 2
2316.	8092	CART1	cartilage paired-class homeoprotein 1
2317.	8100	TTC10	tetratricopeptide repeat domain 10
2318.	8125	ANP32A	acidic (leucine-rich) nuclear phosphoprotein 32 family, member A
2319.	8131	C16orf35	chromosome 16 open reading frame 35
2320.	8140	SLC7A5	solute carrier family 7 (cationic amino acid transporter, y+ system), member 5
2321.	8148	TAF15	TAF15 RNA polymerase II, TATA box binding protein (TBP)-associated factor, 68kDa
2322.	8165	AKAP1	A kinase (PRKA) anchor protein 1
2323.	8178	ELL	elongation factor RNA polymerase II
2324.	8187	ZNF239	zinc finger protein 239
2325.	8192	CLPP	ClpP caseinolytic protease, ATP-dependent, proteolytic subunit homolog (E. coli)
2326.	8195	MKKS	McKusick-Kaufman syndrome
2327.	8202	NCOA3	nuclear receptor coactivator 3
2328.	8204	NRIP1	nuclear receptor interacting protein 1
2329.	8209	C21orf33	chromosome 21 open reading frame 33
2330.	8218	CLTCL1	clathrin, heavy polypeptide-like 1
2331.	8220	DGCR14	DiGeorge syndrome critical region gene 14
2332.	8233	U2AF1L2	U2(RNU2) small nuclear RNA auxiliary factor 1-like 2

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2333.	8237	USP11	ubiquitin specific protease 11
2334.	8239	USP9X	ubiquitin specific protease 9, X-linked (fat facets-like, Drosophila)
2335.	8243	SMC1L1	SMC1 structural maintenance of chromosomes 1-like 1 (yeast)
2336.	8260	ARD1A	ARD1 homolog A, N-acetyltransferase (<i>S. cerevisiae</i>)
2337.	8263	F8A1	coagulation factor VIII-associated (intronic transcript) 1
2338.	8266	UBL4	ubiquitin-like 4
2339.	8289	ARID1A	AT rich interactive domain 1A (SWI-like)
2340.	8293	SERF1A	small EDRK-rich factor 1A (telomeric)
2341.	8301	PICALM	phosphatidylinositol binding clathrin assembly protein
2342.	8302	KLRC4	killer cell lectin-like receptor subfamily C, member 4
2343.	8303	SNN	stannin
2344.	8309	ACOX2	acyl-Coenzyme A oxidase 2, branched chain
2345.	8312	AXIN1	axin 1
2346.	8314	BAP1	BRCA1 associated protein-1 (ubiquitin carboxy-terminal hydrolase)
2347.	8315	BRAP	BRCA1 associated protein
2348.	8317	CDC7	CDC7 cell division cycle 7 (<i>S. cerevisiae</i>)
2349.	8318	CDC45L	CDC45 cell division cycle 45-like (<i>S. cerevisiae</i>)
2350.	8321	FZD1	frizzled homolog 1 (<i>Drosophila</i>)
2351.	8322	FZD4	frizzled homolog 4 (<i>Drosophila</i>)
2352.	8324	FZD7	frizzled homolog 7 (<i>Drosophila</i>)
2353.	8325	FZD8	frizzled homolog 8 (<i>Drosophila</i>)
2354.	8331	HIST1H2AJ	histone 1, H2aj
2355.	8334	HIST1H2AC	histone 1, H2ac
2356.	8337	HIST2H2AA	histone 2, H2aa
2357.	8339	HIST1H2BG	histone 1, H2bg
2358.	8343	HIST1H2BF	histone 1, H2bf
2359.	8344	HIST1H2BE	histone 1, H2be
2360.	8349	HIST2H2BE	histone 2, H2be
2361.	8364	HIST1H4C	histone 1, H4c
2362.	8370	HIST2H4	histone 2, H4
2363.	8379	MAD1L1	MAD1 mitotic arrest deficient-like 1 (yeast)
2364.	8396	PIP5K2B	phosphatidylinositol-4-phosphate 5-kinase, type II, beta
2365.	8398	PLA2G6	phospholipase A2, group VI (cytosolic, calcium-independent)
2366.	8402	SLC25A11	solute carrier family 25 (mitochondrial carrier; oxoglutarate carrier), member 11
2367.	8405	SPOP	speckle-type POZ protein
2368.	8406	SRPX	sushi-repeat-containing protein, X-linked
2369.	8407	TAGLN2	transgelin 2
2370.	8411	EEA1	early endosome antigen 1, 162kD

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2371.	8412	BCAR3	breast cancer anti-estrogen resistance 3
2372.	8428	STK24	serine/threonine kinase 24 (STE20 homolog, yeast)
2373.	8434	RECK	reversion-inducing-cysteine-rich protein with kazal motifs
2374.	8438	RAD54L	RAD54-like (<i>S. cerevisiae</i>)
2375.	8440	NCK2	NCK adaptor protein 2
2376.	8445	DYRK2	dual-specificity tyrosine-(Y)-phosphorylation regulated kinase 2
2377.	8446	DUSP11	dual specificity phosphatase 11 (RNA/RNP complex 1-interacting)
2378.	8449	DHX16	DEAH (Asp-Glu-Ala-His) box polypeptide 16
2379.	8450	CUL4B	cullin 4B
2380.	8452	CUL3	cullin 3
2381.	8453	CUL2	cullin 2
2382.	8455	ATRNL	attractin
2383.	8460	TPST1	tyrosylprotein sulfotransferase 1
2384.	8462	KLF11	Kruppel-like factor 11
2385.	8463	TEAD2	TEA domain family member 2
2386.	8470	ARGBP2	Arg/Abl-interacting protein ArgBP2
2387.	8473	OGT	O-linked N-acetylglucosamine (GlcNAc) transferase (UDP-N-acetylglucosamine:polypeptide-N-acetylglucosaminyl transferase)
2388.	8476	CDC42BPA	CDC42 binding protein kinase alpha (DMPK-like)
2389.	8479	HIRIP3	HIRA interacting protein 3
2390.	8480	RAE1	RAE1 RNA export 1 homolog (<i>S. pombe</i>)
2391.	8483	CILP	cartilage intermediate layer protein, nucleotide pyrophosphohydrolase
2392.	8487	SIP1	survival of motor neuron protein interacting protein 1
2393.	8491	MAP4K3	mitogen-activated protein kinase kinase kinase 3
2394.	8495	PPFIBP2	PTPRF interacting protein, binding protein 2 (liprin beta 2)
2395.	8496	PPFIBP1	PTPRF interacting protein, binding protein 1 (liprin beta 1)
2396.	8498	RANBP3	RAN binding protein 3
2397.	8500	PPFIA1	protein tyrosine phosphatase, receptor type, f polypeptide (PTPRF), interacting protein (liprin), alpha 1
2398.	8502	PKP4	plakophilin 4
2399.	8503	PIK3R3	phosphoinositide-3-kinase, regulatory subunit 3 (p55, gamma)
2400.	8504	PEX3	peroxisomal biogenesis factor 3
2401.	8506	CNTNAP1	contactin associated protein 1
2402.	8507	ENC1	ectodermal-neural cortex (with BTB-like domain)
2403.	8513	LIPF	lipase, gastric
2404.	8515	ITGA10	integrin, alpha 10
2405.	8517	IKBKG	inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase gamma

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2406.	8519	IFITM1	interferon induced transmembrane protein 1 (9-27)
2407.	8520	HAT1	histone acetyltransferase 1
2408.	8522	GAS7	growth arrest-specific 7
2409.	8530	CST7	cystatin F (leukocystatin)
2410.	8531	CSDA	cold shock domain protein A
2411.	8533	COPS3	COP9 constitutive photomorphogenic homolog subunit 3 (Arabidopsis)
2412.	8534	CHST1	carbohydrate (keratan sulfate Gal-6) sulfotransferase 1
2413.	8535	CBX4	chromobox homolog 4 (Pc class homolog, Drosophila)
2414.	8539	API5	apoptosis inhibitor 5
2415.	8540	AGPS	alkylglycerone phosphate synthase
2416.	8543	LMO4	LIM domain only 4
2417.	8544	PIR	pirin (iron-binding nuclear protein)
2418.	8545	CGGBP1	CGG triplet repeat binding protein 1
2419.	8546	AP3B1	adaptor-related protein complex 3, beta 1 subunit
2420.	8550	MAPKAPK5	mitogen-activated protein kinase-activated protein kinase 5
2421.	8553	BHLHB2	basic helix-loop-helix domain containing, class B, 2
2422.	8555	CDC14B	CDC14 cell division cycle 14 homolog B (S. cerevisiae)
2423.	8559	PRPF18	PRP18 pre-mRNA processing factor 18 homolog (yeast)
2424.	8560	DEGS1	degenerative spermatocyte homolog 1, lipid desaturase (Drosophila)
2425.	8562	DENR	density-regulated protein
2426.	8563	C22orf19	chromosome 22 open reading frame 19
2427.	8564	KMO	kynurenine 3-monooxygenase (kynurenine 3-hydroxylase)
2428.	8565	YARS	tyrosyl-tRNA synthetase
2429.	8566	PDXK	pyridoxal (pyridoxine, vitamin B6) kinase
2430.	8567	MADD	MAP-kinase activating death domain
2431.	8570	KHSRP	KH-type splicing regulatory protein (FUSE binding protein 2)
2432.	8572	PDLIM4	PDZ and LIM domain 4
2433.	8573	CASK	calcium/calmodulin-dependent serine protein kinase (MAGUK family)
2434.	8574	AKR7A2	aldo-keto reductase family 7, member A2 (aflatoxin aldehyde reductase)
2435.	8575	PRKRA	protein kinase, interferon-inducible double stranded RNA dependent activator
2436.	8577	TMEFF1	transmembrane protein with EGF-like and two follistatin-like domains 1
2437.	8600	TNFSF11	tumor necrosis factor (ligand) superfamily, member 11
2438.	8602	C4orf9	chromosome 4 open reading frame 9
2439.	8604	SLC25A12	solute carrier family 25 (mitochondrial carrier, Aralar), member 12
2440.	8607	RUVBL1	RuvB-like 1 (E. coli)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2441.	8609	KLF7	Kruppel-like factor 7 (ubiquitous)
2442.	8611	PPAP2A	phosphatidic acid phosphatase type 2A
2443.	8613	PPAP2B	phosphatidic acid phosphatase type 2B
2444.	8614	STC2	stanniocalcin 2
2445.	8618	CADPS	Ca ²⁺ -dependent secretion activator
2446.	8621	CDC2L5	cell division cycle 2-like 5 (cholinesterase-related cell division controller)
2447.	8623	ASMTL	acetylserotonin O-methyltransferase- like
2448.	8625	RFXANK	regulatory factor X-associated ankyrin-containing protein
2449.	8629	JRK	jerky homolog (mouse)
2450.	8634	RTCD1	RNA terminal phosphate cyclase domain 1
2451.	8635	RNASET2	ribonuclease T2
2452.	8641	PCDHGB4	protocadherin gamma subfamily B, 4
2453.	8642	DCHS1	dachsous 1 (Drosophila)
2454.	8644	AKR1C3	aldo-keto reductase family 1, member C3 (3-alpha hydroxysteroid dehydrogenase, type II)
2455.	8645	KCNK5	potassium channel, subfamily K, member 5
2456.	8648	NCOA1	nuclear receptor coactivator 1
2457.	8650	NUMB	numb homolog (Drosophila)
2458.	8655	DNCL1	dynein, cytoplasmic, light polypeptide 1
2459.	8658	TNKS	tankyrase, TRF1-interacting ankyrin- related ADP-ribose polymerase
2460.	8660	IRS2	insulin receptor substrate 2
2461.	8662	EIF3S9	eukaryotic translation initiation factor 3, subunit 9 eta, 116kDa
2462.	8663	EIF3S8	eukaryotic translation initiation factor 3, subunit 8, 110kDa
2463.	8664	EIF3S7	eukaryotic translation initiation factor 3, subunit 7 zeta, 66/67kDa
2464.	8665	EIF3S5	eukaryotic translation initiation factor 3, subunit 5 epsilon, 47kDa
2465.	8666	EIF3S4	eukaryotic translation initiation factor 3, subunit 4 delta, 44kDa
2466.	8668	EIF3S2	eukaryotic translation initiation factor 3, subunit 2 beta, 36kDa
2467.	8671	SLC4A4	solute carrier family 4, sodium bicarbonate cotransporter, member 4
2468.	8672	EIF4G3	eukaryotic translation initiation factor 4 gamma, 3
2469.	8674	VAMP4	vesicle-associated membrane protein 4
2470.	8675	STX16	syntaxin 16
2471.	8676	STX11	syntaxin 11
2472.	8677	STX10	syntaxin 10
2473.	8682	PEA15	phosphoprotein enriched in astrocytes 15
2474.	8683	SFRS9	splicing factor, arginine/serine-rich 9
2475.	8690	JRKL	jerky homolog-like (mouse)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2476.	8692	HYAL2	hyaluronoglucosaminidase 2
2477.	8693	GALNT4	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 4 (GalNAc-T4)
2478.	8703	B4GALT3	UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide 3
2479.	8714	ABCC3	ATP-binding cassette, sub-family C (CFTR/MRP), member 3
2480.	8717	TRADD	TNFRSF1A-associated via death domain
2481.	8720	MBTPS1	membrane-bound transcription factor protease, site 1
2482.	8722	CTSF	cathepsin F
2483.	8723	SNX4	sorting nexin 4
2484.	8727	CTNNAL1	catenin (cadherin-associated protein), alpha-like 1
2485.	8728	ADAM19	a disintegrin and metalloproteinase domain 19 (meltrin beta)
2486.	8731	RNMT	RNA (guanine-7-) methyltransferase
2487.	8732	RNGTT	RNA guanylyltransferase and 5'-phosphatase
2488.	8733	GPAA1	GPAA1P anchor attachment protein 1 homolog (yeast)
2489.	8737	RIPK1	receptor (TNFRSF)-interacting serine-threonine kinase 1
2490.	8741	TNFSF13	tumor necrosis factor (ligand) superfamily, member 13
2491.	8745	ADAM23	a disintegrin and metalloproteinase domain 23
2492.	8751	ADAM15	a disintegrin and metalloproteinase domain 15 (metargidin)
2493.	8763	CD164	CD164 antigen, sialomucin
2494.	8764	TNFRSF14	tumor necrosis factor receptor superfamily, member 14 (herpesvirus entry mediator)
2495.	8766	RAB11A	RAB11A, member RAS oncogene family
2496.	8767	RIPK2	receptor-interacting serine-threonine kinase 2
2497.	8772	FADD	Fas (TNFRSF6)-associated via death domain
2498.	8773	SNAP23	synaptosomal-associated protein, 23kDa
2499.	8774	NAPG	N-ethylmaleimide-sensitive factor attachment protein, gamma
2500.	8777	MPDZ	multiple PDZ domain protein
2501.	8780	RIOK3	RIO kinase 3 (yeast)
2502.	8781	PSPHL	phosphoserine phosphatase-like
2503.	8786	RGS11	regulator of G-protein signalling 11
2504.	8795	TNFRSF10B	tumor necrosis factor receptor superfamily, member 10b
2505.	8798	DYRK4	dual-specificity tyrosine-(Y)-phosphorylation regulated kinase 4
2506.	8799	PEX11B	peroxisomal biogenesis factor 11B
2507.	8801	SUCLG2	succinate-CoA ligase, GDP-forming, beta subunit

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2508.	8802	SUCLG1	succinate-CoA ligase, GDP-forming, alpha subunit
2509.	8804	CREG1	cellular repressor of E1A-stimulated genes 1
2510.	8805	TRIM24	tripartite motif-containing 24
2511.	8807	IL18RAP	interleukin 18 receptor accessory protein
2512.	8815	BANF1	barrier to autointegration factor 1
2513.	8817	FGF18	fibroblast growth factor 18
2514.	8818	DPM2	dolichyl-phosphate mannosyltransferase polypeptide 2, regulatory subunit
2515.	8819	SAP30	sin3-associated polypeptide, 30kDa
2516.	8821	INPP4B	inositol polyphosphate-4-phosphatase, type II, 105kDa
2517.	8824	CES2	carboxylesterase 2 (intestine, liver)
2518.	8826	IQGAP1	IQ motif containing GTPase activating protein 1
2519.	8828	NRP2	neuropilin 2
2520.	8829	NRP1	neuropilin 1
2521.	8832	CD84	CD84 antigen (leukocyte antigen)
2522.	8833	GMPS	guanine monophosphate synthetase
2523.	8834	C17orf35	chromosome 17 open reading frame 35
2524.	8835	SOCS2	suppressor of cytokine signaling 2
2525.	8836	GGH	gamma-glutamyl hydrolase (conjugase, folylpolyglutamate hydrolase)
2526.	8837	CFLAR	CASP8 and FADD-like apoptosis regulator
2527.	8838	WISP3	WNT1 inducible signaling pathway protein 3
2528.	8846	ALKBH	alkB, alkylation repair homolog (E. coli)
2529.	8847	DLEU2	deleted in lymphocytic leukemia, 2
2530.	8848	TSC22D1	TSC22 domain family, member 1
2531.	8850	PCAF	p300/CBP-associated factor
2532.	8851	CDK5R1	cyclin-dependent kinase 5, regulatory subunit 1 (p35)
2533.	8853	DDEF2	development and differentiation enhancing factor 2
2534.	8859	STK19	serine/threonine kinase 19
2535.	8863	PER3	period homolog 3 (Drosophila)
2536.	8869	ST3GAL5	ST3 beta-galactoside alpha-2,3-sialyltransferase 5
2537.	8870	IER3	immediate early response 3
2538.	8871	SYNJ2	synaptojanin 2
2539.	8872	C10orf7	chromosome 10 open reading frame 7
2540.	8874	ARHGEF7	Rho guanine nucleotide exchange factor (GEF) 7
2541.	8877	SPHK1	sphingosine kinase 1
2542.	8878	SQSTM1	sequestosome 1
2543.	8879	SGPL1	sphingosine-1-phosphate lyase 1
2544.	8880	FUBP1	far upstream element (FUSE) binding protein 1
2545.	8881	CDC16	CDC16 cell division cycle 16 homolog (S. cerevisiae)
2546.	8882	ZNF259	zinc finger protein 259

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2547.	8883	APPBP1	amyloid beta precursor protein binding protein 1
2548.	8884	SLC5A6	solute carrier family 5 (sodium-dependent vitamin transporter), member 6
2549.	8886	DDX18	DEAD (Asp-Glu-Ala-Asp) box polypeptide 18
2550.	8887	TAX1BP1	Tax1 (human T-cell leukemia virus type I) binding protein 1
2551.	8890	EIF2B4	eukaryotic translation initiation factor 2B, subunit 4 delta, 67kDa
2552.	8891	EIF2B3	eukaryotic translation initiation factor 2B, subunit 3 gamma, 58kDa
2553.	8894	EIF2S2	eukaryotic translation initiation factor 2, subunit 2 beta, 38kDa
2554.	8896	G10	maternal G10 transcript
2555.	8897	MTMR3	myotubularin related protein 3
2556.	8900	CCNA1	cyclin A1
2557.	8904	CPNE1	copine I
2558.	8905	AP1S2	adaptor-related protein complex 1, sigma 2 subunit
2559.	8907	AP1M1	adaptor-related protein complex 1, mu 1 subunit
2560.	8908	GYG2	glycogenin 2
2561.	8910	SGCE	sarcoglycan, epsilon
2562.	8914	TIMELESS	timeless homolog (Drosophila)
2563.	8915	BCL10	B-cell CLL/lymphoma 10
2564.	8924	HERC2	hect domain and RLD 2
2565.	8925	HERC1	hect (homologous to the E6-AP (UBE3A) carboxyl terminus) domain and RCC1 (CHC1)-like domain (RLD) 1
2566.	8927	BSN	bassoon (presynaptic cytomatrix protein)
2567.	8930	MBD4	methyl-CpG binding domain protein 4
2568.	8932	MBD2	methyl-CpG binding domain protein 2
2569.	8933	CXX1	CAAX box 1
2570.	8934	RAB7L1	RAB7, member RAS oncogene family-like 1
2571.	8935	SCAP2	src family associated phosphoprotein 2
2572.	8936	WASF1	WAS protein family, member 1
2573.	8943	AP3D1	adaptor-related protein complex 3, delta 1 subunit
2574.	8945	BTRC	beta-transducin repeat containing
2575.	8974	P4HA2	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha polypeptide II
2576.	8976	WASL	Wiskott-Aldrich syndrome-like
2577.	8989	TRPA1	transient receptor potential cation channel, subfamily A, member 1
2578.	8994	LIMD1	LIM domains containing 1
2579.	8996	NOL3	nucleolar protein 3 (apoptosis repressor with CARD domain)
2580.	8997	KALRN	kalirin, RhoGEF kinase
2581.	9001	HAP1	huntingtin-associated protein 1 (neuroan 1)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2582.	9015	TAF1A	TATA box binding protein (TBP)- associated factor, RNA polymerase I, A, 48kDa
2583.	9016	SLC25A14	solute carrier family 25 (mitochondrial carrier, brain), member 14
2584.	9019	MPZL1	myelin protein zero-like 1
2585.	9021	SOCS3	suppressor of cytokine signaling 3
2586.	9025	RNF8	ring finger protein 8
2587.	9026	HIP1R	huntingtin interacting protein-1- related
2588.	9037	SEMA5A	sema domain, seven thrombospondin repeats (type 1 and type 1-like), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 5A
2589.	9040	UBE2M	ubiquitin-conjugating enzyme E2M (UBC12 homolog, yeast)
2590.	9043	SPAG9	sperm associated antigen 9
2591.	9049	AIP	aryl hydrocarbon receptor interacting protein
2592.	9052	GPRC5A	G protein-coupled receptor, family C, group 5, member A
2593.	9054	NFS1	NFS1 nitrogen fixation 1 (S. cerevisiae)
2594.	9055	PRC1	protein regulator of cytokinesis 1
2595.	9057	SLC7A6	solute carrier family 7 (cationic amino acid transporter, y ⁺ system), member 6
2596.	9060	PAPSS2	3'-phosphoadenosine 5'-phosphosulfate synthase 2
2597.	9063	PIAS2	protein inhibitor of activated STAT, 2
2598.	9064	MAP3K6	mitogen-activated protein kinase kinase kinase 6
2599.	9068	ANGPTL1	angiopoietin-like 1
2600.	9069	CLDN12	claudin 12
2601.	9070	ASH2L	ash2 (absent, small, or homeotic)-like (Drosophila)
2602.	9075	CLDN2	claudin 2
2603.	9091	PIGQ	phosphatidylinositol glycan, class Q
2604.	9097	USP14	ubiquitin specific protease 14 (tRNA- guanine transglycosylase)
2605.	9098	USP6	ubiquitin specific protease 6 (Tre-2 oncogene)
2606.	9099	USP2	ubiquitin specific protease 2
2607.	9100	USP10	ubiquitin specific protease 10
2608.	9103	FCGR2C	Fc fragment of IgG, low affinity IIc, receptor for (CD32)
2609.	9107	MTMR6	myotubularin related protein 6
2610.	9111	NMI	N-myc (and STAT) interactor
2611.	9112	MTA1	metastasis associated 1
2612.	9114	ATP6V0D1	ATPase, H ⁺ transporting, lysosomal 38kDa, V0 subunit d isoform 1
2613.	9122	SLC16A4	solute carrier family 16 (monocarboxylic acid transporters), member 4

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2614.	9123	SLC16A3	solute carrier family 16 (monocarboxylic acid transporters), member 3
2615.	9125	RQCD1	RCD1 required for cell differentiation1 homolog (S. pombe)
2616.	9126	CSPG6	chondroitin sulfate proteoglycan 6 (bamacan)
2617.	9128	PRPF4	PRP4 pre-mRNA processing factor 4 homolog (yeast)
2618.	9129	PRPF3	PRP3 pre-mRNA processing factor 3 homolog (yeast)
2619.	9130	FAM50A	family with sequence similarity 50, member A
2620.	9131	PDCD8	programmed cell death 8 (apoptosis- inducing factor)
2621.	9133	CCNB2	cyclin B2
2622.	9134	CCNE2	cyclin E2
2623.	9135	RABEP1	rabaptin, RAB GTPase binding effector protein 1
2624.	9136	RNU3IP2	RNA, U3 small nucleolar interacting protein 2
2625.	9139	CBFA2T2	core-binding factor, runt domain, alpha subunit 2; translocated to, 2
2626.	9140	APG12L	APG12 autophagy 12-like (S. cerevisiae)
2627.	9141	PDCD5	programmed cell death 5
2628.	9143	SYNGR3	synaptogyrin 3
2629.	9144	SYNGR2	synaptogyrin 2
2630.	9145	SYNGR1	synaptogyrin 1
2631.	9146	HGS	hepatocyte growth factor-regulated tyrosine kinase substrate
2632.	9147	SDCCAG1	serologically defined colon cancer antigen 1
2633.	9156	EXO1	exonuclease 1
2634.	9158	FIBP	fibroblast growth factor (acidic) intracellular binding protein
2635.	9167	COX7A2L	cytochrome c oxidase subunit VIIa polypeptide 2 like
2636.	9168	TMSB10	thymosin, beta 10
2637.	9169	SFRS2IP	splicing factor, arginine/serine-rich 2, interacting protein
2638.	9170	EDG4	endothelial differentiation, lysophosphatidic acid G-protein- coupled receptor, 4
2639.	9173	IL1RL1	interleukin 1 receptor-like 1
2640.	9180	OSMR	oncostatin M receptor
2641.	9181	ARHGEF2	rho/rac guanine nucleotide exchange factor (GEF) 2
2642.	9183	ZW10	ZW10 homolog, centromere/kinetochore protein (Drosophila)
2643.	9184	BUB3	BUB3 budding uninhibited by benzimidazoles 3 homolog (yeast)
2644.	9188	DDX21	DEAD (Asp-Glu-Ala-Asp) box polypeptide 21
2645.	9202	ZNF262	zinc finger protein 262
2646.	9203	ZNF261	zinc finger protein 261

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2647.	9204	ZNF258	zinc finger protein 258
2648.	9208	LRRFIP1	leucine rich repeat (in FLII) interacting protein 1
2649.	9209	LRRFIP2	leucine rich repeat (in FLII) interacting protein 2
2650.	9212	AURKB	aurora kinase B
2651.	9215	LARGE	like-glycosyltransferase
2652.	9217	VAPB	VAMP (vesicle-associated membrane protein)-associated protein B and C
2653.	9220	TIAF1	TGFB1-induced anti-apoptotic factor 1
2654.	9221	NOLC1	nucleolar and coiled-body phosphoprotein 1
2655.	9227	LRAT	lecithin retinol acyltransferase (phosphatidylcholine--retinol O- acyltransferase)
2656.	9232	PTTG1	pituitary tumor-transforming 1
2657.	9235	IL32	interleukin 32
2658.	9236	CCPG1	cell cycle progression 1
2659.	9249	DHRS3	dehydrogenase/reductase (SDR family) member 3
2660.	9252	RPS6KA5	ribosomal protein S6 kinase, 90kDa, polypeptide 5
2661.	9255	SCYE1	small inducible cytokine subfamily E, member 1 (endothelial monocyte- activating)
2662.	9260	PDLIM7	PDZ and LIM domain 7 (enigma)
2663.	9261	MAPKAPK2	mitogen-activated protein kinase- activated protein kinase 2
2664.	9262	STK17B	serine/threonine kinase 17b (apoptosis-inducing)
2665.	9263	STK17A	serine/threonine kinase 17a (apoptosis-inducing)
2666.	9266	PSCD2	pleckstrin homology, Sec7 and coiled- coil domains 2 (cytohesin-2)
2667.	9276	COPB2	coatamer protein complex, subunit beta 2 (beta prime)
2668.	9277	WDR46	WD repeat domain 46
2669.	9282	CRSP2	cofactor required for Sp1 transcriptional activation, subunit 2, 150kDa
2670.	9284	NPIP	nuclear pore complex interacting protein
2671.	9289	GPR56	G protein-coupled receptor 56
2672.	9295	SFRS11	splicing factor, arginine/serine-rich 11
2673.	9296	ATP6V1F	ATPase, H ⁺ transporting, lysosomal 14kDa, V1 subunit F
2674.	9306	SOCS6	suppressor of cytokine signaling 6
2675.	9308	CD83	CD83 antigen (activated B lymphocytes, immunoglobulin superfamily)
2676.	9314	KLF4	Kruppel-like factor 4 (gut)
2677.	9315	C5orf13	chromosome 5 open reading frame 13
2678.	9318	COPS2	COP9 constitutive photomorphogenic homolog subunit 2 (Arabidopsis)
2679.	9319	TRIP13	thyroid hormone receptor interactor 13

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2680.	9324	HMG3	high mobility group nucleosomal binding domain 3
2681.	9330	GTF3C3	general transcription factor IIIC, polypeptide 3, 102kDa
2682.	9331	B4GALT6	UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide 6
2683.	9334	B4GALT5	UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide 5
2684.	9337	CNOT8	CCR4-NOT transcription complex, subunit 8
2685.	9338	TCEAL1	transcription elongation factor A (SII)-like 1
2686.	9341	VAMP3	vesicle-associated membrane protein 3 (cellubrevin)
2687.	9342	SNAP29	synaptosomal-associated protein, 29kDa
2688.	9343	U5-116KD	U5 snRNP-specific protein, 116 kD
2689.	9349	RPL23	ribosomal protein L23
2690.	9354	UBE4A	ubiquitination factor E4A (UFD2 homolog, yeast)
2691.	9360	PPIG	peptidyl-prolyl isomerase G (cyclophilin G)
2692.	9361	PRSS15	protease, serine, 15
2693.	9364	RAB28	RAB28, member RAS oncogene family
2694.	9367	RAB9A	RAB9A, member RAS oncogene family
2695.	9373	PLAA	phospholipase A2-activating protein
2696.	9374	PPT2	palmitoyl-protein thioesterase 2
2697.	9375	TM9SF2	transmembrane 9 superfamily member 2
2698.	9391	WDR39	WD repeat domain 39
2699.	9399	STOML1	stomatin (EPB72)-like 1
2700.	9400	RECQL5	RecQ protein-like 5
2701.	9402	GRAP2	GRB2-related adaptor protein 2
2702.	9404	LPXN	leupaxin
2703.	9406	ZNF265	zinc finger protein 265
2704.	9411	ARHGAP29	Rho GTPase activating protein 29
2705.	9412	SURB7	SRB7 suppressor of RNA polymerase B homolog (yeast)
2706.	9413	C9orf61	chromosome 9 open reading frame 61
2707.	9415	FADS2	fatty acid desaturase 2
2708.	9419	CRIPT	postsynaptic protein CRIPT
2709.	9422	ZNF264	zinc finger protein 264
2710.	9425	CDYL	chromodomain protein, Y-like
2711.	9429	ABCG2	ATP-binding cassette, sub-family G (WHITE), member 2
2712.	9435	CHST2	carbohydrate (N-acetylglucosamine-6-O) sulfotransferase 2
2713.	9436	NCR2	natural cytotoxicity triggering receptor 2
2714.	9444	QKI	quaking homolog, KH domain RNA binding (mouse)
2715.	9445	ITM2B	integral membrane protein 2B
2716.	9446	GSTO1	glutathione S-transferase omega 1
2717.	9447	AIM2	absent in melanoma 2
2718.	9448	MAP4K4	mitogen-activated protein kinase kinase kinase 4
2719.	9453	GGPS1	geranylgeranyl diphosphate synthase 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2720.	9454	HOMER3	homer homolog 3 (Drosophila)
2721.	9455	HOMER2	homer homolog 2 (Drosophila)
2722.	9456	HOMER1	homer homolog 1 (Drosophila)
2723.	9462	RASAL2	RAS protein activator like 2
2724.	9466	IL27RA	interleukin 27 receptor, alpha
2725.	9467	SH3BP5	SH3-domain binding protein 5 (BTK-associated)
2726.	9469	CHST3	carbohydrate (chondroitin 6) sulfotransferase 3
2727.	9470	EIF4E2	eukaryotic translation initiation factor 4E member 2
2728.	9472	AKAP6	A kinase (PRKA) anchor protein 6
2729.	9474	APG5L	APG5 autophagy 5-like (S. cerevisiae)
2730.	9481	SLC25A27	solute carrier family 25, member 27
2731.	9487	PIGL	phosphatidylinositol glycan, class L
2732.	9488	PIGB	phosphatidylinositol glycan, class B
2733.	9493	KIF23	kinesin family member 23
2734.	9497	SLC4A7	solute carrier family 4, sodium bicarbonate cotransporter, member 7
2735.	9500	MAGED1	melanoma antigen family D, 1
2736.	9510	ADAMTS1	a disintegrin-like and metalloprotease (reprolysin type) with thrombospondin type 1 motif, 1
2737.	9512	PMPCB	peptidase (mitochondrial processing) beta
2738.	9517	SPTLC2	serine palmitoyltransferase, long chain base subunit 2
2739.	9518	GDF15	growth differentiation factor 15
2740.	9519	TBPL1	TBP-like 1
2741.	9520	NPEPPS	aminopeptidase puromycin sensitive
2742.	9521	EEF1E1	eukaryotic translation elongation factor 1 epsilon 1
2743.	9522	SCAMP1	secretory carrier membrane protein 1
2744.	9524	GPSN2	glycoprotein, synaptic 2
2745.	9527	GOSR1	golgi SNAP receptor complex member 1
2746.	9530	BAG4	BCL2-associated athanogene 4
2747.	9531	BAG3	BCL2-associated athanogene 3
2748.	9532	BAG2	BCL2-associated athanogene 2
2749.	9533	POLR1C	polymerase (RNA) I polypeptide C, 30kDa
2750.	9535	GMFG	glia maturation factor, gamma
2751.	9536	PTGES	prostaglandin E synthase
2752.	9537	TP53I11	tumor protein p53 inducible protein 11
2753.	9538	EI24	etoposide induced 2.4 mRNA
2754.	9540	TP53I3	tumor protein p53 inducible protein 3
2755.	9545	RAB3D	RAB3D, member RAS oncogene family
2756.	9551	ATP5J2	ATP synthase, H ⁺ transporting, mitochondrial F0 complex, subunit f, isoform 2
2757.	9553	MRPL33	mitochondrial ribosomal protein L33
2758.	9554	SEC22L1	SEC22 vesicle trafficking protein-like 1 (S. cerevisiae)
2759.	9555	H2AFY	H2A histone family, member Y
2760.	9556	C14orf2	chromosome 14 open reading frame 2
2761.	9557	CHD1L	chromodomain helicase DNA binding protein 1-like

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2762.	9559	VPS26	vacuolar protein sorting 26 (yeast)
2763.	9562	MINPP1	multiple inositol polyphosphate histidine phosphatase, 1
2764.	9563	H6PD	hexose-6-phosphate dehydrogenase (glucose 1-dehydrogenase)
2765.	9568	GPR51	G protein-coupled receptor 51
2766.	9569	GTF2IRD1	GTF2I repeat domain containing 1
2767.	9570	GOSR2	golgi SNAP receptor complex member 2
2768.	9572	NR1D1	nuclear receptor subfamily 1, group D, member 1
2769.	9577	BRE	brain and reproductive organ-expressed (TNFRSF1A modulator)
2770.	9581	PREPL	prolyl endopeptidase-like
2771.	9582	APOBEC3B	apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 3B
2772.	9584	RNPC2	RNA-binding region (RNP1, RRM) containing 2
2773.	9586	CREB5	cAMP responsive element binding protein 5
2774.	9587	MAD2L1BP	MAD2L1 binding protein
2775.	9588	PRDX6	peroxiredoxin 6
2776.	9589	WTAP	Wilms tumor 1 associated protein
2777.	9590	AKAP12	A kinase (PRKA) anchor protein (gravin) 12
2778.	9592	IER2	immediate early response 2
2779.	9601	PDIA4	protein disulfide isomerase family A, member 4
2780.	9603	NFE2L3	nuclear factor (erythroid-derived 2)- like 3
2781.	9611	NCOR1	nuclear receptor co-repressor 1
2782.	9612	NCOR2	nuclear receptor co-repressor 2
2783.	9618	TRAF4	TNF receptor-associated factor 4
2784.	9620	CELSR1	cadherin, EGF LAG seven-pass G-type receptor 1 (flamingo homolog, Drosophila)
2785.	9622	KLK4	kallikrein 4 (prostase, enamel matrix, prostate)
2786.	9625	AATK	apoptosis-associated tyrosine kinase
2787.	9631	NUP155	nucleoporin 155kDa
2788.	9637	FEZ2	fasciculation and elongation protein zeta 2 (zygin II)
2789.	9638	FEZ1	fasciculation and elongation protein zeta 1 (zygin I)
2790.	9639	ARHGEF10	Rho guanine nucleotide exchange factor (GEF) 10
2791.	9643	MORF4L2	mortality factor 4 like 2
2792.	9644	SH3MD1	SH3 multiple domains 1
2793.	9645	MICAL2	microtubule associated monooxygenase, calponin and LIM domain containing 2
2794.	9648	GCC2	GRIP and coiled-coil domain containing 2
2795.	9650	CHPPR	chondrocyte protein with a poly- proline region
2796.	9652	KIAA0372	KIAA0372
2797.	9653	HS2ST1	heparan sulfate 2-O-sulfotransferase 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2798.	9654	TTLL4	tubulin tyrosine ligase-like family, member 4
2799.	9655	SOCS5	suppressor of cytokine signaling 5
2800.	9656	MDC1	mediator of DNA damage checkpoint 1
2801.	9657	IQCB1	IQ motif containing B1
2802.	9659	PDE4DIP	phosphodiesterase 4D interacting protein (myomegalin)
2803.	9663	LPIN2	lipin 2
2804.	9666	DZIP3	zinc finger DAZ interacting protein 3
2805.	9669	EIF5B	eukaryotic translation initiation factor 5B
2806.	9670	IPO13	importin 13
2807.	9672	SDC3	syndecan 3 (N-syndecan)
2808.	9673	KIAA0446	KIAA0446 gene product
2809.	9674	KIAA0040	KIAA0040
2810.	9677	KIAA0377	KIAA0377 gene product
2811.	9683	N4BP1	Nedd4 binding protein 1
2812.	9685	ENTH	enthoprotin
2813.	9686	VGLL4	vestigial like 4 (Drosophila)
2814.	9687	GREB1	GREB1 protein
2815.	9688	NUP93	nucleoporin 93kDa
2816.	9689	BZW1	basic leucine zipper and W2 domains 1
2817.	9690	UBE3C	ubiquitin protein ligase E3C
2818.	9692	KIAA0391	KIAA0391
2819.	9693	RAPGEF2	Rap guanine nucleotide exchange factor (GEF) 2
2820.	9695	EDEM1	ER degradation enhancer, mannosidase alpha-like 1
2821.	9697	TRAM2	translocation associated membrane protein 2
2822.	9698	PUM1	pumilio homolog 1 (Drosophila)
2823.	9700	ESPL1	extra spindle poles like 1 (S. cerevisiae)
2824.	9701	KIAA0685	KIAA0685
2825.	9702	PIG8	translokine
2826.	9703	KIAA0100	KIAA0100 gene product
2827.	9706	ULK2	unc-51-like kinase 2 (C. elegans)
2828.	9709	HERPUD1	homocysteine-inducible, endoplasmic reticulum stress-inducible, ubiquitin-like domain member 1
2829.	9712	USP6NL	USP6 N-terminal like
2830.	9715	KIAA0773	KIAA0773 gene product
2831.	9724	UTP14C	UTP14, U3 small nucleolar ribonucleoprotein, homolog C (yeast)
2832.	9725	KIAA0792	KIAA0792
2833.	9727	RAB11FIP3	RAB11 family interacting protein 3 (class II)
2834.	9728	KIAA0256	KIAA0256 gene product
2835.	9731	KIAA0562	glycine-, glutamate-, thienylcyclohexylpiperidine-binding protein
2836.	9732	DOCK4	dedicator of cytokinesis 4
2837.	9733	SART3	squamous cell carcinoma antigen recognised by T cells 3
2838.	9735	KNTC1	kinetochore associated 1
2839.	9736	USP34	ubiquitin specific protease 34

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2840.	9738	CP110	CP110 protein
2841.	9741	LAPTM4A	lysosomal-associated protein transmembrane 4 alpha
2842.	9743	RICS	Rho GTPase-activating protein
2843.	9745	ZNF536	zinc finger protein 536
2844.	9747	KIAA0738	KIAA0738 gene product
2845.	9760	TOX	thymus high mobility group box protein TOX
2846.	9761	KIAA0152	KIAA0152
2847.	9762	ProSAPiP1	ProSAPiP1 protein
2848.	9764	KIAA0513	KIAA0513
2849.	9768	KIAA0101	KIAA0101
2850.	9771	RAPGEF5	Rap guanine nucleotide exchange factor (GEF) 5
2851.	9772	KIAA0195	KIAA0195 gene product
2852.	9774	BCLAF1	BCL2-associated transcription factor 1
2853.	9775	DDX48	DEAD (Asp-Glu-Ala-Asp) box polypeptide 48
2854.	9776	KIAA0652	KIAA0652 gene product
2855.	9777	TM9SF4	transmembrane 9 superfamily protein member 4
2856.	9778	KIAA0232	KIAA0232 gene product
2857.	9779	TBC1D5	TBC1 domain family, member 5
2858.	9781	RNF144	ring finger protein 144
2859.	9782	MATR3	matrin 3
2860.	9783	RIMS3	regulating synaptic membrane exocytosis 3
2861.	9784	SNX17	sorting nexin 17
2862.	9787	DLG7	discs, large homolog 7 (Drosophila)
2863.	9789	SPCS2	signal peptidase complex subunit 2 homolog (S. cerevisiae)
2864.	9790	BMS1L	BMS1-like, ribosome assembly protein (yeast)
2865.	9792	SERTAD2	SERTA domain containing 2
2866.	9797	TATDN2	TatD DNase domain containing 2
2867.	9804	TOMM20	translocase of outer mitochondrial membrane 20 homolog (yeast)
2868.	9807	IHPK1	inositol hexaphosphate kinase 1
2869.	9810	RNF40	ring finger protein 40
2870.	9811	KIAA0427	KIAA0427
2871.	9812	KIAA0141	KIAA0141
2872.	9813	KIAA0494	KIAA0494 gene product
2873.	9815	GIT2	G protein-coupled receptor kinase interactor 2
2874.	9816	KIAA0133	KIAA0133
2875.	9817	KEAP1	kelch-like ECH-associated protein 1
2876.	9818	NUPL1	nucleoporin like 1
2877.	9819	TSC22D2	TSC22 domain family, member 2
2878.	9821	RB1CC1	RB1-inducible coiled-coil 1
2879.	9824	ARHGAP11A	Rho GTPase activating protein 11A
2880.	9829	DNAJC6	DnaJ (Hsp40) homolog, subfamily C, member 6
2881.	9831	ZNF623	zinc finger protein 623
2882.	9833	MELK	maternal embryonic leucine zipper kinase

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2883.	9837	PSF1	DNA replication complex GINS protein PSF1
2884.	9839	ZFHX1B	zinc finger homeobox 1b
2885.	9844	ELMO1	engulfment and cell motility 1 (ced-12 homolog, <i>C. elegans</i>)
2886.	9846	GAB2	GRB2-associated binding protein 2
2887.	9847	KIAA0528	KIAA0528 gene product
2888.	9848	MFAP3L	microfibrillar-associated protein 3-like
2889.	9851	KIAA0753	KIAA0753 gene product
2890.	9855	FARP2	FERM, RhoGEF and pleckstrin domain protein 2
2891.	9857	CAP350	centrosome-associated protein 350
2892.	9858	KIAA0649	KIAA0649
2893.	9859	KIAA0470	KIAA0470
2894.	9861	PSMD6	proteasome (prosome, macropain) 26S subunit, non-ATPase, 6
2895.	9862	THRAP4	thyroid hormone receptor associated protein 4
2896.	9863	MAGI2	membrane associated guanylate kinase, WW and PDZ domain containing 2
2897.	9865	KIAA0644	KIAA0644 gene product
2898.	9867	PJA2	praja 2, RING-H2 motif containing
2899.	9868	TOMM70A	translocase of outer mitochondrial membrane 70 homolog A (yeast)
2900.	9869	SETDB1	SET domain, bifurcated 1
2901.	9873	FCHSD2	FCH and double SH3 domains 2
2902.	9874	TLK1	tousled-like kinase 1
2903.	9878	C14orf92	chromosome 14 open reading frame 92
2904.	9879	DDX46	DEAD (Asp-Glu-Ala-Asp) box polypeptide 46
2905.	9881	LBA1	lupus brain antigen 1
2906.	9882	TBC1D4	TBC1 domain family, member 4
2907.	9885	OSBPL2	oxysterol binding protein-like 2
2908.	9886	RHOBTB1	Rho-related BTB domain containing 1
2909.	9887	C1orf16	chromosome 1 open reading frame 16
2910.	9891	NUAK1	NUAK family, SNF1-like kinase, 1
2911.	9897	KIAA0196	KIAA0196 gene product
2912.	9898	UBAP2L	ubiquitin associated protein 2-like
2913.	9900	SV2A	synaptic vesicle glycoprotein 2A
2914.	9903	KLHL21	kelch-like 21 (<i>Drosophila</i>)
2915.	9906	SLC35E2	solute carrier family 35, member E2
2916.	9908	G3BP2	Ras-GTPase activating protein SH3 domain-binding protein 2
2917.	9910	RABGAP1L	RAB GTPase activating protein 1-like
2918.	9911	TMCC2	transmembrane and coiled-coil domains 2
2919.	9913	SUPT7L	suppressor of Ty 7 (<i>S. cerevisiae</i>)-like
2920.	9915	ARNT2	aryl-hydrocarbon receptor nuclear translocator 2
2921.	9917	FAM20B	family with sequence similarity 20, member B
2922.	9918	CNAP1	chromosome condensation-related SMC-associated protein 1
2923.	9920	KIAA0711	KIAA0711 gene product

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2924	9921	RNF10	ring finger protein 10
2925.	9922	IQSEC1	IQ motif and Sec7 domain 1
2926.	9926	LPGAT1	lysophosphatidylglycerol acyltransferase 1
2927	9928	KIF14	kinesin family member 14
2928.	9933	KIAA0020	KIAA0020
2929.	9935	MAFB	v-maf musculoaponeurotic fibrosarcoma oncogene homolog B (avian)
2930.	9936	CD302	CD302 antigen
2931.	9939	RBM8A	RNA binding motif protein 8A
2932.	9941	ENDOGL1	endonuclease G-like 1
2933.	9943	OXSRI	oxidative-stress responsive 1
2934.	9945	GFPT2	glutamine-fructose-6-phosphate transaminase 2
2935.	9946	CRYZL1	crystallin, zeta (quinone reductase)- like 1
2936.	9948	WDR1	WD repeat domain 1
2937.	9949	AMMECR1	Alport syndrome, mental retardation, midface hypoplasia and elliptocytosis chromosomal region, gene 1
2938.	9950	GOLGA5	golgi autoantigen, golgin subfamily a, 5
2939.	9955	HS3ST3A1	heparan sulfate (glucosamine) 3-O- sulfotransferase 3A1
2940.	9956	HS3ST2	heparan sulfate (glucosamine) 3-O- sulfotransferase 2
2941.	9957	HS3ST1	heparan sulfate (glucosamine) 3-O- sulfotransferase 1
2942.	9958	USP15	ubiquitin specific protease 15
2943.	9960	USP3	ubiquitin specific protease 3
2944.	9961	MVP	major vault protein
2945.	9962	SLC23A2	solute carrier family 23 (nucleobase transporters), member 2
2946.	9968	MED12	mediator of RNA polymerase II transcription, subunit 12 homolog (yeast)
2947.	9969	THRAP1	thyroid hormone receptor associated protein 1
2948.	9972	NUP153	nucleoporin 153kDa
2949.	9973	CCS	copper chaperone for superoxide dismutase
2950.	9975	NR1D2	nuclear receptor subfamily 1, group D, member 2
2951.	9976	CLEC2B	C-type lectin domain family 2, member B
2952.	9978	RBX1	ring-box 1
2953.	9987	HNRPD	heterogeneous nuclear ribonucleoprotein D-like
2954.	9988	DMTF1	cyclin D binding myb-like transcription factor 1
2955.	9991	ROD1	ROD1 regulator of differentiation 1 (S. pombe)
2956.	9997	SCO2	SCO cytochrome oxidase deficient homolog 2 (yeast)
2957.	10000	AKT3	v-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2958.	10001	MED6	mediator of RNA polymerase II transcription, subunit 6 homolog (yeast)
2959.	10007	GNPDA1	glucosamine-6-phosphate deaminase 1
2960.	10008	KCNE3	potassium voltage-gated channel, Isk-related family, member 3
2961.	10009	ZBTB33	zinc finger and BTB domain containing 33
2962.	10010	TANK	TRAF family member-associated NFkB activator
2963.	10013	HDAC6	histone deacetylase 6
2964.	10014	HDAC5	histone deacetylase 5
2965.	10015	PDCD6IP	programmed cell death 6 interacting protein
2966.	10016	PDCD6	programmed cell death 6
2967.	10018	BCL2L11	BCL2-like 11 (apoptosis facilitator)
2968.	10019	LNK	lymphocyte adaptor protein
2969.	10020	GNE	glucosamine (UDP-N-acetyl)-2-epimerase/N-acetylmannosamine kinase
2970.	10024	TROAP	trophinin associated protein (tastin)
2971.	10026	PIGK	phosphatidylinositol glycan, class K
2972.	10036	CHAF1A	chromatin assembly factor 1, subunit A (p150)
2973.	10038	PARP2	poly (ADP-ribose) polymerase family, member 2
2974.	10040	TOM1L1	target of myb1-like 1 (chicken)
2975.	10042	HMG2L1	high-mobility group protein 2-like 1
2976.	10048	RANBP9	RAN binding protein 9
2977.	10049	DNAJB6	DnaJ (Hsp40) homolog, subfamily B, member 6
2978.	10050	SLC17A4	solute carrier family 17 (sodium phosphate), member 4
2979.	10051	SMC4L1	SMC4 structural maintenance of chromosomes 4-like 1 (yeast)
2980.	10052	GJA7	gap junction protein, alpha 7, 45kDa (connexin 45)
2981.	10054	UBA2	SUMO-1 activating enzyme subunit 2
2982.	10055	SAE1	SUMO-1 activating enzyme subunit 1
2983.	10057	ABCC5	ATP-binding cassette, sub-family C (CFTR/MRP), member 5
2984.	10059	DNM1L	dynamitin 1-like
2985.	10061	ABCF2	ATP-binding cassette, sub-family F (GCN20), member 2
2986.	10062	NR1H3	nuclear receptor subfamily 1, group H, member 3
2987.	10063	COX17	COX17 homolog, cytochrome c oxidase assembly protein (yeast)
2988.	10067	SCAMP3	secretory carrier membrane protein 3
2989.	10072	DPP3	dipeptidylpeptidase 3
2990.	10075	HUWE1	HECT, UBA and WWE domain containing 1
2991.	10079	ATP9A	ATPase, Class II, type 9A
2992.	10082	GPC6	glypican 6
2993.	10084	PQBP1	polyglutamine binding protein 1
2994.	10085	EDIL3	EGF-like repeats and discoidin I-like domains 3

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
2995.	10092	ARPC5	actin related protein 2/3 complex, subunit 5, 16kDa
2996.	10093	ARPC4	actin related protein 2/3 complex, subunit 4, 20kDa
2997.	10094	ARPC3	actin related protein 2/3 complex, subunit 3, 21kDa
2998.	10096	ACTR3	ARP3 actin-related protein 3 homolog (yeast)
2999.	10097	ACTR2	ARP2 actin-related protein 2 homolog (yeast)
3000.	10099	TSPAN3	tetraspanin 3
3001.	10102	TSFM	Ts translation elongation factor, mitochondrial
3002.	10105	PPIF	peptidylprolyl isomerase F (cyclophilin F)
3003.	10106	CTDSP2	CTD (carboxy-terminal domain, RNA polymerase II, polypeptide A) small phosphatase 2
3004.	10109	ARPC2	actin related protein 2/3 complex, subunit 2, 34kDa
3005.	10110	SGK2	serum/glucocorticoid regulated kinase 2
3006.	10111	RAD50	RAD50 homolog (<i>S. cerevisiae</i>)
3007.	10112	KIF20A	kinesin family member 20A
3008.	10116	FEM1B	fem-1 homolog b (<i>C. elegans</i>)
3009.	10120	ACTR1B	ARP1 actin-related protein 1 homolog B, centractin beta (yeast)
3010.	10121	ACTR1A	ARP1 actin-related protein 1 homolog A, centractin alpha (yeast)
3011.	10123	ARL7	ADP-ribosylation factor-like 7
3012.	10124	ARL4	ADP-ribosylation factor-like 4
3013.	10126	DNAL4	dynein, axonemal, light polypeptide 4
3014.	10128	LRPPRC	leucine-rich PPR-motif containing
3015.	10130	PDIA6	protein disulfide isomerase family A, member 6
3016.	10131	TRAP1	TNF receptor-associated protein 1
3017.	10133	OPTN	optineurin
3018.	10134	BCAP31	B-cell receptor-associated protein 31
3019.	10135	PBEF1	pre-B-cell colony enhancing factor 1
3020.	10137	RBM12	RNA binding motif protein 12
3021.	10140	TOB1	transducer of ERBB2, 1
3022.	10144	FAM13A1	family with sequence similarity 13, member A1
3023.	10146	G3BP	Ras-GTPase-activating protein SH3- domain-binding protein
3024.	10147	SFRS14	splicing factor, arginine/serine-rich 14
3025.	10150	MBNL2	muscleblind-like 2 (<i>Drosophila</i>)
3026.	10151	HNRPA3P1	heterogeneous nuclear ribonucleoprotein A3 pseudogene 1
3027.	10152	ABI2	abl interactor 2
3028.	10153	CEBPZ	CCAAT/enhancer binding protein zeta
3029.	10154	PLXNC1	plexin C1
3030.	10156	RASA4	RAS p21 protein activator 4

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3031.	10161	P2RY5	purinergic receptor P2Y, G-protein coupled, 5
3032.	10165	SLC25A13	solute carrier family 25, member 13 (citrin)
3033.	10166	SLC25A15	solute carrier family 25 (mitochondrial carrier; ornithine transporter) member 15
3034.	10169	SERF2	small EDRK-rich factor 2
3035.	10170	DHRS9	dehydrogenase/reductase (SDR family) member 9
3036.	10171	RCL1	RNA terminal phosphate cyclase-like 1
3037.	10179	RBM7	RNA binding motif protein 7
3038.	10181	RBM5	RNA binding motif protein 5
3039.	10184	LHFPL2	lipoma HMGIC fusion partner-like 2
3040.	10189	THOC4	THO complex 4
3041.	10193	RNF41	ring finger protein 41
3042.	10194	SDCCAG33	serologically defined colon cancer antigen 33
3043.	10195	ALG3	asparagine-linked glycosylation 3 homolog (yeast, alpha-1,3-mannosyltransferase)
3044.	10196	HRMT1L3	HMT1 hnRNP methyltransferase-like 3 (<i>S. cerevisiae</i>)
3045.	10197	PSME3	proteasome (prosome, macropain) activator subunit 3 (PA28 gamma; Ki)
3046.	10198	MPHOSPH9	M-phase phosphoprotein 9
3047.	10199	MPHOSPH10	M-phase phosphoprotein 10 (U3 small nucleolar ribonucleoprotein)
3048.	10200	MPHOSPH6	M-phase phosphoprotein 6
3049.	10204	NUTF2	nuclear transport factor 2
3050.	10205	EVA1	epithelial V-like antigen 1
3051.	10206	RFP2	ret finger protein 2
3052.	10208	C13orf22	chromosome 13 open reading frame 22
3053.	10209	SUI1	putative translation initiation factor
3054.	10211	FLOT1	flotillin 1
3055.	10212	DDX39	DEAD (Asp-Glu-Ala-Asp) box polypeptide 39
3056.	10213	PSMD14	proteasome (prosome, macropain) 26S subunit, non-ATPase, 14
3057.	10215	OLIG2	oligodendrocyte lineage transcription factor 2
3058.	10216	PRG4	proteoglycan 4
3059.	10217	CTDSPL	CTD (carboxy-terminal domain, RNA polymerase II, polypeptide A) small phosphatase-like
3060.	10221	TRIB1	tribbles homolog 1 (<i>Drosophila</i>)
3061.	10226	M6PRBP1	mannose-6-phosphate receptor binding protein 1
3062.	10227	TETTRAN	tetracycline transporter-like protein
3063.	10229	COQ7	coenzyme Q7 homolog, ubiquinone (yeast)
3064.	10230	NBR2	neighbor of BRCA1 gene 2
3065.	10234	LRRC17	leucine rich repeat containing 17
3066.	10236	HNRPR	heterogeneous nuclear ribonucleoprotein R
3067.	10237	SLC35B1	solute carrier family 35, member B1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3068.	10238	WDR68	WD repeat domain 68
3069.	10240	MRPS31	mitochondrial ribosomal protein S31
3070.	10241	NDP52	nuclear domain 10 protein
3071.	10243	GPHN	gephyrin
3072.	10244	RABEPK	Rab9 effector protein with kelch motifs
3073.	10248	POP7	processing of precursor 7, ribonuclease P subunit (<i>S. cerevisiae</i>)
3074.	10249	GLYAT	glycine-N-acyltransferase
3075.	10250	SRRM1	serine/arginine repetitive matrix 1
3076.	10252	SPRY1	sprouty homolog 1, antagonist of FGF signaling (<i>Drosophila</i>)
3077.	10253	SPRY2	sprouty homolog 2 (<i>Drosophila</i>)
3078.	10254	STAM2	signal transducing adaptor molecule (SH3 domain and ITAM motif) 2
3079.	10261	IGSF6	immunoglobulin superfamily, member 6
3080.	10262	SF3B4	splicing factor 3b, subunit 4, 49kDa
3081.	10265	IRX5	iroquois homeobox protein 5
3082.	10268	RAMP3	receptor (calcitonin) activity modifying protein 3
3083.	10273	STUB1	STIP1 homology and U-box containing protein 1
3084.	10274	STAG1	stromal antigen 1
3085.	10278	EFS	embryonal Fyn-associated substrate
3086.	10280	OPRS1	opioid receptor, sigma 1
3087.	10282	BET1	BET1 homolog (<i>S. cerevisiae</i>)
3088.	10284	SAP18	sin3-associated polypeptide, 18kDa
3089.	10285	SMNDC1	survival motor neuron domain containing 1
3090.	10287	RGS19	regulator of G-protein signalling 19
3091.	10289	GC20	translation factor suil1 homolog
3092.	10290	APEG1	aortic preferentially expressed gene 1
3093.	10291	SF3A1	splicing factor 3a, subunit 1, 120kDa
3094.	10294	DNAJA2	DnaJ (Hsp40) homolog, subfamily A, member 2
3095.	10295	BCKDK	branched chain ketoacid dehydrogenase kinase
3096.	10296	MAEA	macrophage erythroblast attacher
3097.	10298	PAK4	p21(CDKN1A)-activated kinase 4
3098.	10299	38417	membrane-associated ring finger (C3HC4) 6
3099.	10300	KATNB1	katanin p80 (WD repeat containing) subunit B 1
3100.	10301	DLEU1	deleted in lymphocytic leukemia, 1
3101.	10308	ZNF267	zinc finger protein 267
3102.	10313	RTN3	reticulon 3
3103.	10318	TNIP1	TNFAIP3 interacting protein 1
3104.	10319	LAMC3	laminin, gamma 3
3105.	10320	ZNFN1A1	zinc finger protein, subfamily 1A, 1 (Ikaros)
3106.	10328	NOC4	neighbor of COX4
3107.	10330	TMEM4	transmembrane protein 4
3108.	10336	PCGF3	polycomb group ring finger 3
3109.	10342	TFG	TRK-fused gene
3110.	10350	ABCA9	ATP-binding cassette, sub-family A (ABC1), member 9

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3111.	10362	HMG20B	high-mobility group 20B
3112.	10365	KLF2	Kruppel-like factor 2 (lung)
3113.	10371	SEMA3A	sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3A
3114.	10376	K-ALPHA-1	tubulin, alpha, ubiquitous
3115.	10380	BPNT1	3'(2'), 5'-bisphosphate nucleotidase 1
3116.	10381	TUBB3	tubulin, beta 3
3117.	10383	TUBB2	tubulin, beta, 2
3118.	10384	BTN3A3	butyrophilin, subfamily 3, member A3
3119.	10389	SCML2	sex comb on midleg-like 2 (Drosophila)
3120.	10391	CORO2B	coronin, actin binding protein, 2B
3121.	10393	ANAPC10	anaphase promoting complex subunit 10
3122.	10395	DLC1	deleted in liver cancer 1
3123.	10397	NDRG1	N-myc downstream regulated gene 1
3124.	10402	ST3GAL6	ST3 beta-galactoside alpha-2,3-sialyltransferase 6
3125.	10403	KNTC2	kinetochore associated 2
3126.	10404	PGCP	plasma glutamate carboxypeptidase
3127.	10413	YAP1	Yes-associated protein 1, 65kDa
3128.	10417	SPON2	spondin 2, extracellular matrix protein
3129.	10418	SPON1	spondin 1, extracellular matrix protein
3130.	10419	SKB1	SKB1 homolog (S. pombe)
3131.	10420	TESK2	testis-specific kinase 2
3132.	10421	CD2BP2	CD2 antigen (cytoplasmic tail) binding protein 2
3133.	10424	PGRMC2	progesterone receptor membrane component 2
3134.	10430	NIFIE14	seven transmembrane domain protein
3135.	10431	TIMM23	translocase of inner mitochondrial membrane 23 homolog (yeast)
3136.	10434	LYPLA1	lysophospholipase I
3137.	10435	CDC42EP2	CDC42 effector protein (Rho GTPase binding) 2
3138.	10436	C2F	C2f protein
3139.	10440	TIMM17A	translocase of inner mitochondrial membrane 17 homolog A (yeast)
3140.	10443	PFAAP5	phosphonoformate immuno-associated protein 5
3141.	10449	ACAA2	acetyl-Coenzyme A acyltransferase 2 (mitochondrial 3-oxoacyl-Coenzyme A thiolase)
3142.	10451	VAV3	vav 3 oncogene
3143.	10455	PECI	peroxisomal D3,D2-enoyl-CoA isomerase
3144.	10456	HAX1	HCLS1 associated protein X-1
3145.	10457	GPNMB	glycoprotein (transmembrane) nmb
3146.	10458	BAIAP2	BAI1-associated protein 2
3147.	10460	TACC3	transforming, acidic coiled-coil containing protein 3
3148.	10465	PPIH	peptidyl prolyl isomerase H (cyclophilin H)
3149.	10466	COG5	component of oligomeric golgi complex 5
3150.	10467	ZNHIT1	zinc finger, HIT domain containing 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3151.	10468	FST	follicle-stimulating hormone receptor
3152.	10471	HKE2	HLA class II region expressed gene KE2
3153.	10472	ZNF238	zinc finger protein 238
3154.	10473	HMG4	high mobility group nucleosomal binding domain 4
3155.	10475	TRIM38	tripartite motif-containing 38
3156.	10476	ATP5H	ATP synthase, H ⁺ transporting, mitochondrial F0 complex, subunit d
3157.	10478	SLC25A17	solute carrier family 25 (mitochondrial carrier; peroxisomal membrane protein, 34kDa), member 17
3158.	10481	HOXB13	homeo box B13
3159.	10483	SEC23B	Sec23 homolog B (<i>S. cerevisiae</i>)
3160.	10484	SEC23A	Sec23 homolog A (<i>S. cerevisiae</i>)
3161.	10486	CAP2	CAP, adenylate cyclase-associated protein, 2 (yeast)
3162.	10487	CAP1	CAP, adenylate cyclase-associated protein 1 (yeast)
3163.	10488	CREB3	cAMP responsive element binding protein 3
3164.	10489	LRR41	leucine rich repeat containing 41
3165.	10492	SYNCRIP	synaptotagmin binding, cytoplasmic RNA interacting protein
3166.	10493	VAT1	vesicle amine transport protein 1 homolog (<i>T. californica</i>)
3167.	10495	COVA1	cytosolic ovarian carcinoma antigen 1
3168.	10497	UNC13B	unc-13 homolog B (<i>C. elegans</i>)
3169.	10499	NCOA2	nuclear receptor coactivator 2
3170.	10501	SEMA6B	sema domain, transmembrane domain (TM), and cytoplasmic domain, (semaphorin) 6B
3171.	10507	SEMA4D	sema domain, immunoglobulin domain (Ig), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 4D
3172.	10509	SEMA4B	sema domain, immunoglobulin domain (Ig), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 4B
3173.	10512	SEMA3C	sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3C
3174.	10513	APPBP2	amyloid beta precursor protein (cytoplasmic tail) binding protein 2
3175.	10519	CIB1	calcium and integrin binding 1 (calmyrin)
3176.	10521	DDX17	DEAD (Asp-Glu-Ala-Asp) box polypeptide 17
3177.	10523	CHERP	calcium homeostasis endoplasmic reticulum protein
3178.	10524	HTATIP	HIV-1 Tat interacting protein, 60kDa
3179.	10525	HYOU1	hypoxia up-regulated 1
3180.	10527	IPO7	importin 7
3181.	10528	NOL5A	nucleolar protein 5A (56kDa with KKE/D repeat)
3182.	10531	PITRM1	pitrilysin metalloproteinase 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3183.	10535	RNASEH2A	ribonuclease H2, large subunit
3184.	10539	TXNL2	thioredoxin-like 2
3185.	10540	DCTN2	dynactin 2 (p50)
3186.	10541	ANP32B	acidic (leucine-rich) nuclear phosphoprotein 32 family, member B
3187.	10542	HBXIP	hepatitis B virus x interacting protein
3188.	10544	PROCR	protein C receptor, endothelial (EPCR)
3189.	10549	PRDX4	peroxiredoxin 4
3190.	10551	AGR2	anterior gradient 2 homolog (Xenopus laevis)
3191.	10552	ARPC1A	actin related protein 2/3 complex, subunit 1A, 41kDa
3192.	10553	HTATIP2	HIV-1 Tat interactive protein 2, 30kDa
3193.	10554	AGPAT1	1-acylglycerol-3-phosphate O-acyltransferase 1 (lysophosphatidic acid acyltransferase, alpha)
3194.	10555	AGPAT2	1-acylglycerol-3-phosphate O-acyltransferase 2 (lysophosphatidic acid acyltransferase, beta)
3195.	10556	RPP30	ribonuclease P/MRP 30kDa subunit
3196.	10559	SLC35A1	solute carrier family 35 (CMP-sialic acid transporter), member A1
3197.	10560	SLC19A2	solute carrier family 19 (thiamine transporter), member 2
3198.	10565	ARFGEF1	ADP-ribosylation factor guanine nucleotide-exchange factor 1 (brefeldin A-inhibited)
3199.	10572	SIVA	CD27-binding (Siva) protein
3200.	10573	MRPL28	mitochondrial ribosomal protein L28
3201.	10574	CCT7	chaperonin containing TCP1, subunit 7 (eta)
3202.	10575	CCT4	chaperonin containing TCP1, subunit 4 (delta)
3203.	10576	CCT2	chaperonin containing TCP1, subunit 2 (beta)
3204.	10577	NPC2	Niemann-Pick disease, type C2
3205.	10579	TACC2	transforming, acidic coiled-coil containing protein 2
3206.	10580	SORBS1	sorbin and SH3 domain containing 1
3207.	10592	SMC2L1	SMC2 structural maintenance of chromosomes 2-like 1 (yeast)
3208.	10594	PRPF8	PRP8 pre-mRNA processing factor 8 homolog (yeast)
3209.	10597	SEDLP	spondyloepiphyseal dysplasia, late, pseudogene
3210.	10598	AHSA1	AHA1, activator of heat shock 90kDa protein ATPase homolog 1 (yeast)
3211.	10600	USP16	ubiquitin specific protease 16
3212.	10602	CDC42EP3	CDC42 effector protein (Rho GTPase binding) 3
3213.	10605	PAIP1	poly(A) binding protein interacting protein 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3214.	10606	PAICS	phosphoribosylaminoimidazole carboxylase, phosphoribosylaminoimidazole succinocarboxamide synthetase
3215.	10608	MXD4	MAX dimerization protein 4
3216.	10609	SC65	synaptonemal complex protein SC65
3217.	10610	ST6GALNAC2	ST6 (alpha-N-acetyl-neuraminy1-2,3- beta-galactosyl-1,3)-N- acetylglactosaminide alpha-2,6- sialyltransferase 2
3218.	10611	PDLIM5	PDZ and LIM domain 5
3219.	10613	SPFH1	SPFH domain family, member 1
3220.	10614	HEXIM1	hexamethylene bis-acetamide inducible 1
3221.	10615	SPAG5	sperm associated antigen 5
3222.	10616	C20orf18	chromosome 20 open reading frame 18
3223.	10617	STAMPB	STAM binding protein
3224.	10618	TGOLN2	trans-golgi network protein 2
3225.	10623	POLR3C	polymerase (RNA) III (DNA directed) polypeptide C (62kD)
3226.	10625	IVNS1ABP	influenza virus NS1A binding protein
3227.	10626	TRIM16	tripartite motif-containing 16
3228.	10627	MRCL3	myosin regulatory light chain MRCL3
3229.	10628	TXNIP	thioredoxin interacting protein
3230.	10634	GAS2L1	growth arrest-specific 2 like 1
3231.	10635	RAD51AP1	RAD51 associated protein 1
3232.	10638	SPHAR	S-phase response (cyclin-related)
3233.	10641	TUSC4	tumor suppressor candidate 4
3234.	10643	IMP-3	IGF-II mRNA-binding protein 3
3235.	10645	CAMKK2	calcium/calmodulin-dependent protein kinase kinase 2, beta
3236.	10651	MTX2	metaxin 2
3237.	10652	YKT6	SNARE protein Ykt6
3238.	10654	PMVK	phosphomevalonate kinase
3239.	10655	DMRT2	doublesex and mab-3 related transcription factor 2
3240.	10656	KHDRBS3	KH domain containing, RNA binding, signal transduction associated 3
3241.	10657	KHDRBS1	KH domain containing, RNA binding, signal transduction associated 1
3242.	10658	CUGBP1	CUG triplet repeat, RNA binding protein 1
3243.	10659	CUGBP2	CUG triplet repeat, RNA binding protein 2
3244.	10668	CGRRF1	cell growth regulator with ring finger domain 1
3245.	10670	RRAGA	Ras-related GTP binding A
3246.	10672	GNA13	guanine nucleotide binding protein (G protein), alpha 13
3247.	10673	TNFSF13B	tumor necrosis factor (ligand) superfamily, member 13b
3248.	10675	CSPG5	chondroitin sulfate proteoglycan 5 (neuroglycan C)
3249.	10677	AVIL	advillin
3250.	10678	B3GNT1	UDP-GlcNAc:betaGal beta-1,3-N- acetylglucosaminyltransferase 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3251.	10681	GNB5	guanine nucleotide binding protein (G protein), beta 5
3252.	10682	EBP	emopamil binding protein (sterol isomerase)
3253.	10686	CLDN16	claudin 16
3254.	10693	CCT6B	chaperonin containing TCP1, subunit 6B (zeta 2)
3255.	10694	CCT8	chaperonin containing TCP1, subunit 8 (theta)
3256.	10695	TNRC5	trinucleotide repeat containing 5
3257.	10714	POLD3	polymerase (DNA-directed), delta 3, accessory subunit
3258.	10718	NRG3	neuregulin 3
3259.	10721	POLQ	polymerase (DNA directed), theta
3260.	10723	SLC12A7	solute carrier family 12 (potassium/chloride transporters), member 7
3261.	10724	MGEA5	meningioma expressed antigen 5 (hyaluronidase)
3262.	10725	NFAT5	nuclear factor of activated T-cells 5, tonicity-responsive
3263.	10726	NUDC	nuclear distribution gene C homolog (A. nidulans)
3264.	10728	PTGES3	prostaglandin E synthase 3 (cytosolic)
3265.	10730	YME1L1	YME1-like 1 (S. cerevisiae)
3266.	10732	TCFL5	transcription factor-like 5 (basic helix-loop-helix)
3267.	10733	PLK4	polo-like kinase 4 (Drosophila)
3268.	10735	STAG2	stromal antigen 2
3269.	10741	RBBP9	retinoblastoma binding protein 9
3270.	10743	RAI1	retinoic acid induced 1
3271.	10745	PHTF1	putative homeodomain transcription factor 1
3272.	10746	MAP3K2	mitogen-activated protein kinase kinase kinase 2
3273.	10747	MASP2	mannan-binding lectin serine protease 2
3274.	10750	GRAP	GRB2-related adaptor protein
3275.	10752	CHL1	cell adhesion molecule with homology to L1CAM (close homolog of L1)
3276.	10762	NUP50	nucleoporin 50kDa
3277.	10763	NES	nestin
3278.	10765	JARID1B	Jumonji, AT rich interactive domain 1B (RBP2-like)
3279.	10767	HBS1L	HBS1-like (S. cerevisiae)
3280.	10768	AHCYL1	S-adenosylhomocysteine hydrolase-like 1
3281.	10771	ZMYND11	zinc finger, MYND domain containing 11
3282.	10772	FUSIP1	FUS interacting protein (serine-arginine rich) 1
3283.	10775	POP4	processing of precursor 4, ribonuclease P/MRP subunit (S. cerevisiae)
3284.	10776	ARPP-19	cyclic AMP phosphoprotein, 19 kD
3285.	10777	ARPP-21	cyclic AMP-regulated phosphoprotein, 21 kD

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3286.	10778	ZNF271	zinc finger protein 271
3287.	10781	ZNF266	zinc finger protein 266
3288.	10782	ZNF274	zinc finger protein 274
3289.	10783	NEK6	NIMA (never in mitosis gene a)-related kinase 6
3290.	10785	WDR4	WD repeat domain 4
3291.	10795	ZNF268	zinc finger protein 268
3292.	10797	MTHFD2	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 2, methenyltetrahydrofolate cyclohydrolase
3293.	10799	RPP40	ribonuclease P 40kDa subunit
3294.	10801	38604	septin 9
3295.	10802	SEC24A	SEC24 related gene family, member A (<i>S. cerevisiae</i>)
3296.	10806	SDCCAG8	serologically defined colon cancer antigen 8
3297.	10807	SDCCAG3	serologically defined colon cancer antigen 3
3298.	10808	HSPH1	heat shock 105kDa/110kDa protein 1
3299.	10813	UTP14A	UTP14, U3 small nucleolar ribonucleoprotein, homolog A (yeast)
3300.	10826	C5orf4	chromosome 5 open reading frame 4
3301.	10840	ALDH1L1	aldehyde dehydrogenase 1 family, member L1
3302.	10841	FTCD	formiminotransferase cyclodeaminase
3303.	10842	C7orf16	chromosome 7 open reading frame 16
3304.	10845	CLPX	ClpX caseinolytic protease X homolog (<i>E. coli</i>)
3305.	10856	RUVBL2	RuvB-like 2 (<i>E. coli</i>)
3306.	10873	ME3	malic enzyme 3, NADP(+)-dependent, mitochondrial
3307.	10875	FGL2	fibrinogen-like 2
3308.	10884	MRPS30	mitochondrial ribosomal protein S30
3309.	10885	WDR3	WD repeat domain 3
3310.	10888	GPR83	G protein-coupled receptor 83
3311.	10890	RAB10	RAB10, member RAS oncogene family
3312.	10892	MALT1	mucosa associated lymphoid tissue lymphoma translocation gene 1
3313.	10897	YIF1A	Yip1 interacting factor homolog A (<i>S. cerevisiae</i>)
3314.	10899	JTB	jumping translocation breakpoint
3315.	10903	MTMR11	myotubularin related protein 11
3316.	10905	MAN1A2	mannosidase, alpha, class 1A, member 2
3317.	10907	TXNL4A	thioredoxin-like 4A
3318.	10910	SUGT1	SGT1, suppressor of G2 allele of SKP1 (<i>S. cerevisiae</i>)
3319.	10911	UTS2	urotensin 2
3320.	10914	PAPOLA	poly(A) polymerase alpha
3321.	10915	TCERG1	transcription elongation regulator 1
3322.	10916	MAGED2	melanoma antigen family D, 2
3323.	10920	COPS8	COP9 constitutive photomorphogenic homolog subunit 8 (<i>Arabidopsis</i>)
3324.	10921	RNPS1	RNA binding protein S1, serine-rich domain
3325.	10922	FASTK	Fas-activated serine/threonine kinase

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3326.	10923	PC4	activated RNA polymerase II transcription cofactor 4
3327.	10924	SMPDL3A	sphingomyelin phosphodiesterase, acid-like 3A
3328.	10926	ASK	activator of S phase kinase
3329.	10927	SPIN	spindlin
3330.	10928	RALBP1	ralA binding protein 1
3331.	10929	SRP46	Splicing factor, arginine/serine-rich, 46kD
3332.	10930	APOBEC2	apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 2
3333.	10933	MORF4L1	mortality factor 4 like 1
3334.	10935	PRDX3	peroxiredoxin 3
3335.	10938	EHD1	EH-domain containing 1
3336.	10943	MSL3L1	male-specific lethal 3-like 1 (Drosophila)
3337.	10944	SMAP	small acidic protein
3338.	10945	KDELRL1	KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein retention receptor 1
3339.	10946	SF3A3	splicing factor 3a, subunit 3, 60kDa
3340.	10947	AP3M2	adaptor-related protein complex 3, mu 2 subunit
3341.	10949	HNRPA0	heterogeneous nuclear ribonucleoprotein A0
3342.	10950	BTG3	BTG family, member 3
3343.	10952	SEC61B	Sec61 beta subunit
3344.	10953	TOMM34	translocase of outer mitochondrial membrane 34
3345.	10954	PDIA5	protein disulfide isomerase family A, member 5
3346.	10955	TDE1	tumor differentially expressed 1
3347.	10956	OS9	amplified in osteosarcoma
3348.	10959	RNP24	coated vesicle membrane protein
3349.	10961	C12orf8	chromosome 12 open reading frame 8
3350.	10962	MLLT11	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila); translocated to, 11
3351.	10963	STIP1	stress-induced-phosphoprotein 1 (Hsp70/Hsp90-organizing protein)
3352.	10966	RAB40B	RAB40B, member RAS oncogene family
3353.	10969	EBNA1BP2	EBNA1 binding protein 2
3354.	10970	CKAP4	cytoskeleton-associated protein 4
3355.	10971	YWHAQ	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, theta polypeptide
3356.	10972	TMP21	transmembrane trafficking protein
3357.	10973	ASCC3	activating signal cointegrator 1 complex subunit 3
3358.	10978	HEAB	ATP/GTP-binding protein
3359.	10979	PLEKHC1	pleckstrin homology domain containing, family C (with FERM domain) member 1
3360.	10980	COPS6	COP9 constitutive photomorphogenic homolog subunit 6 (Arabidopsis)
3361.	10981	RAB32	RAB32, member RAS oncogene family
3362.	10983	CCNI	cyclin I

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3363.	10985	GCN1L1	GCN1 general control of amino-acid synthesis 1-like 1 (yeast)
3364.	10988	METAP2	methionyl aminopeptidase 2
3365.	10989	IMMT	inner membrane protein, mitochondrial (mitofilin)
3366.	10991	SLC38A3	solute carrier family 38, member 3
3367.	10992	SF3B2	splicing factor 3b, subunit 2, 145kDa
3368.	10994	ILVBL	ilvB (bacterial acetolactate synthase)-like
3369.	10998	SLC27A5	solute carrier family 27 (fatty acid transporter), member 5
3370.	11000	SLC27A3	solute carrier family 27 (fatty acid transporter), member 3
3371.	11004	KIF2C	kinesin family member 2C
3372.	11007	DIPA	hepatitis delta antigen-interacting protein A
3373.	11010	GLIPR1	GLI pathogenesis-related 1 (glioma)
3374.	11014	KDEL2	KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein retention receptor 2
3375.	11015	KDEL3	KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein retention receptor 3
3376.	11017	RY1	putative nucleic acid binding protein RY-1
3377.	11019	LIAS	lipoic acid synthetase
3378.	11020	RABL4	RAB, member of RAS oncogene family-like 4
3379.	11021	RAB35	RAB35, member RAS oncogene family
3380.	11022	TDRKH	tudor and KH domain containing
3381.	11030	RBPM5	RNA binding protein with multiple splicing
3382.	11031	RAB31	RAB31, member RAS oncogene family
3383.	11033	CENTA1	centaurin, alpha 1
3384.	11034	DSTN	destrin (actin depolymerizing factor)
3385.	11046	SLC35D2	solute carrier family 35, member D2
3386.	11047	ADRM1	adhesion regulating molecule 1
3387.	11049	YDD19	YDD19 protein
3388.	11051	NUDT21	nudix (nucleoside diphosphate linked moiety X)-type motif 21
3389.	11052	CPSF6	cleavage and polyadenylation specific factor 6, 68kDa
3390.	11057	ABHD2	abhydrolase domain containing 2
3391.	11059	WWP1	WW domain containing E3 ubiquitin protein ligase 1
3392.	11060	WWP2	WW domain containing E3 ubiquitin protein ligase 2
3393.	11062	DUS4L	dihydrouridine synthase 4-like (S. cerevisiae)
3394.	11065	UBE2C	ubiquitin-conjugating enzyme E2C
3395.	11067	C10orf10	chromosome 10 open reading frame 10
3396.	11069	RAPGEF4	Rap guanine nucleotide exchange factor (GEF) 4
3397.	11073	TOPBP1	topoisomerase (DNA) II binding protein 1
3398.	11075	STMN2	stathmin-like 2
3399.	11078	HRIHFB2122	Tara-like protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3400.	11079	RER1	RER1 retention in endoplasmic reticulum 1 homolog (<i>S. cerevisiae</i>)
3401.	11080	DNAJB4	DnaJ (Hsp40) homolog, subfamily B, member 4
3402.	11082	ESM1	endothelial cell-specific molecule 1
3403.	11083	DATF1	death associated transcription factor 1
3404.	11091	WDR5	WD repeat domain 5
3405.	11092	C9orf9	chromosome 9 open reading frame 9
3406.	11094	C9orf7	chromosome 9 open reading frame 7
3407.	11098	PRSS23	protease, serine, 23
3408.	11100	HNRPUL1	heterogeneous nuclear ribonucleoprotein U-like 1
3409.	11103	HRB2	HIV-1 rev binding protein 2
3410.	11108	PRDM4	PR domain containing 4
3411.	11112	HIBADH	3-hydroxyisobutyrate dehydrogenase
3412.	11113	CIT	citron (rho-interacting, serine/threonine kinase 21)
3413.	11116	FGFR1OP	FGFR1 oncogene partner
3414.	11117	EMILIN1	elastin microfibril interfacer 1
3415.	11118	BTN3A2	butyrophilin, subfamily 3, member A2
3416.	11119	BTN3A1	butyrophilin, subfamily 3, member A1
3417.	11124	FAF1	Fas (TNFRSF6) associated factor 1
3418.	11128	POLR3A	polymerase (RNA) III (DNA directed) polypeptide A, 155kDa
3419.	11130	ZWINT	ZW10 interactor
3420.	11135	CDC42EP1	CDC42 effector protein (Rho GTPase binding) 1
3421.	11136	SLC7A9	solute carrier family 7 (cationic amino acid transporter, γ^+ system), member 9
3422.	11137	PWP1	PWP1 homolog (<i>S. cerevisiae</i>)
3423.	11138	TBC1D8	TBC1 domain family, member 8 (with GRAM domain)
3424.	11140	CDC37	CDC37 cell division cycle 37 homolog (<i>S. cerevisiae</i>)
3425.	11143	MYST2	MYST histone acetyltransferase 2
3426.	11147	HHLA3	HERV-H LTR-associating 3
3427.	11149	BVES	blood vessel epicardial substance
3428.	11151	CORO1A	coronin, actin binding protein, 1A
3429.	11152	WDR45	WD repeat domain 45
3430.	11157	LSM6	LSM6 homolog, U6 small nuclear RNA associated (<i>S. cerevisiae</i>)
3431.	11158	RABL2B	RAB, member of RAS oncogene family-like 2B
3432.	11160	SPFH2	SPFH domain family, member 2
3433.	11161	C14orf1	chromosome 14 open reading frame 1
3434.	11163	NUDT4	nudix (nucleoside diphosphate linked moiety X)-type motif 4
3435.	11164	NUDT5	nudix (nucleoside diphosphate linked moiety X)-type motif 5
3436.	11168	PSIP1	PC4 and SFRS1 interacting protein 1
3437.	11169	WDHD1	WD repeat and HMG-box DNA binding protein 1
3438.	11170	TU3A	TU3A protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3439.	11171	STRAP	serine/threonine kinase receptor associated protein
3440.	11174	ADAMTS6	a disintegrin-like and metalloprotease (reprolysin type) with thrombospondin type 1 motif, 6
3441.	11177	BAZ1A	bromodomain adjacent to zinc finger domain, 1A
3442.	11178	LZTS1	leucine zipper, putative tumor suppressor 1
3443.	11180	WDR6	WD repeat domain 6
3444.	11182	SLC2A6	solute carrier family 2 (facilitated glucose transporter), member 6
3445.	11183	MAP4K5	mitogen-activated protein kinase kinase kinase 5
3446.	11184	MAP4K1	mitogen-activated protein kinase kinase kinase 1
3447.	11188	NISCH	nischarin
3448.	11191	PTENP1	phosphatase and tensin homolog (mutated in multiple advanced cancers 1), pseudogene 1
3449.	11193	WBP4	WW domain binding protein 4 (formin binding protein 21)
3450.	11196	SEC23IP	SEC23 interacting protein
3451.	11198	SUPT16H	suppressor of Ty 16 homolog (S. cerevisiae)
3452.	11200	CHEK2	CHK2 checkpoint homolog (S. pombe)
3453.	11212	PROSC	proline synthetase co-transcribed homolog (bacterial)
3454.	11214	AKAP13	A kinase (PRKA) anchor protein 13
3455.	11221	DUSP10	dual specificity phosphatase 10
3456.	11222	MRPL3	mitochondrial ribosomal protein L3
3457.	11223	MSTP9	macrophage stimulating, pseudogene 9
3458.	11224	RPL35	ribosomal protein L35
3459.	11227	GALNT5	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 5 (GalNAc-T5)
3460.	11228	C12orf2	chromosome 12 open reading frame 2
3461.	11231	SEC63	SEC63-like (S. cerevisiae)
3462.	11232	POLG2	polymerase (DNA directed), gamma 2, accessory subunit
3463.	11234	HPS5	Hermansky-Pudlak syndrome 5
3464.	11235	PDCD10	programmed cell death 10
3465.	11244	ZHX1	zinc fingers and homeoboxes 1
3466.	11248	NXPH3	neurexophilin 3
3467.	11252	PACSIN2	protein kinase C and casein kinase substrate in neurons 2
3468.	11253	MAN1B1	mannosidase, alpha, class 1B, member 1
3469.	11257	TP53AP1	TP53 activated protein 1
3470.	11259	DOC1	downregulated in ovarian cancer 1
3471.	11260	XPOT	exportin, tRNA (nuclear export receptor for tRNAs)
3472.	11261	CHP	calcium binding protein P22
3473.	11266	DUSP12	dual specificity phosphatase 12
3474.	11270	NRM	nurim (nuclear envelope membrane protein)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3475.	11274	USP18	ubiquitin specific protease 18
3476.	11275	KLHL2	kelch-like 2, Mayven (Drosophila)
3477.	11276	AP1GBP1	AP1 gamma subunit binding protein 1
3478.	11282	MGAT4B	mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N- acetylglucosaminyltransferase, isoenzyme B
3479.	11311	VPS45A	vacuolar protein sorting 45A (yeast)
3480.	11313	LYPLA2	lysophospholipase II
3481.	11315	PARK7	Parkinson disease (autosomal recessive, early onset) 7
3482.	11316	COPE	coatomer protein complex, subunit epsilon
3483.	11319	HSGT1	suppressor of <i>S. cerevisiae</i> gcr2
3484.	11321	XAB1	XPA binding protein 1
3485.	11322	EVER1	epidermodysplasia verruciformis 1
3486.	11328	FKBP9	FK506 binding protein 9, 63 kDa
3487.	11329	STK38	serine/threonine kinase 38
3488.	11332	BACH	brain acyl-CoA hydrolase
3489.	11333	PDAP1	PDGFA associated protein 1
3490.	11336	SEC6L1	SEC6-like 1 (<i>S. cerevisiae</i>)
3491.	11337	GABARAP	GABA(A) receptor-associated protein
3492.	11338	U2AF2	U2 (RNU2) small nuclear RNA auxiliary factor 2
3493.	11339	OIP5	Opa interacting protein 5
3494.	11341	SCRG1	scrapie responsive protein 1
3495.	11342	RNF13	ring finger protein 13
3496.	11343	MGLL	monoglyceride lipase
3497.	11344	PTK9L	PTK9L protein tyrosine kinase 9-like (A6-related protein)
3498.	11345	GABARAPL2	GABA(A) receptor-associated protein- like 2
3499.	22794	CASC3	cancer susceptibility candidate 3
3500.	22800	RRAS2	related RAS viral (r-ras) oncogene homolog 2
3501.	22803	XRN2	5'-3' exoribonuclease 2
3502.	22808	MRAS	muscle RAS oncogene homolog
3503.	22818	COPZ1	coatomer protein complex, subunit zeta 1
3504.	22821	RASA3	RAS p21 protein activator 3
3505.	22822	PHLDA1	pleckstrin homology-like domain, family A, member 1
3506.	22823	MTF2	metal response element binding transcription factor 2
3507.	22824	HSPA4L	heat shock 70kDa protein 4-like
3508.	22826	DNAJC8	DnaJ (Hsp40) homolog, subfamily C, member 8
3509.	22827	SIAHBP1	fuse-binding protein-interacting repressor
3510.	22829	NLGN4Y	neuroligin 4, Y-linked
3511.	22836	RHOBTB3	Rho-related BTB domain containing 3
3512.	22837	COBLL1	COBL-like 1
3513.	22839	DLGAP4	discs, large (Drosophila) homolog- associated protein 4
3514.	22841	RAB11FIP2	RAB11 family interacting protein 2 (class I)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3515.	22843	PPM1E	protein phosphatase 1E (PP2C domain containing)
3516.	22848	AAK1	AP2 associated kinase 1
3517.	22850	KIAA0863	KIAA0863 protein
3518.	22856	CHSY1	carbohydrate (chondroitin) synthase 1
3519.	22858	ICK	intestinal cell (MAK-like) kinase
3520.	22859	LPHN1	latrophilin 1
3521.	22862	FNDC3A	fibronectin type III domain containing 3A
3522.	22863	KIAA0831	KIAA0831
3523.	22864	KIAA1002	KIAA1002 protein
3524.	22872	SEC31L1	SEC31-like 1 (<i>S. cerevisiae</i>)
3525.	22873	DZIP1	DAZ interacting protein 1
3526.	22876	INPP5F	inositol polyphosphate-5-phosphatase F
3527.	22880	MORC2	MORC family CW-type zinc finger 2
3528.	22881	ANKRD6	ankyrin repeat domain 6
3529.	22882	ZHX2	zinc fingers and homeoboxes 2
3530.	22883	CLSTN1	calsyntenin 1
3531.	22885	ABLIM3	actin binding LIM protein family, member 3
3532.	22887	FOXJ3	forkhead box J3
3533.	22891	ZNF365	zinc finger protein 365
3534.	22894	KIAA1008	KIAA1008
3535.	22900	CARD8	caspase recruitment domain family, member 8
3536.	22901	KIAA1001	Arylsulfatase G
3537.	22902	RIPX	rap2 interacting protein x
3538.	22903	BTBD3	BTB (POZ) domain containing 3
3539.	22905	EPN2	epsin 2
3540.	22906	OIP106	OGT (O-Glc-NAc transferase)-interacting protein 106 KDa
3541.	22907	DHX30	DEAH (Asp-Glu-Ala-His) box polypeptide 30
3542.	22909	KIAA1018	KIAA1018 protein
3543.	22913	RALY	RNA binding protein (autoantigenic, hnRNP-associated with lethal yellow)
3544.	22916	NCBP2	nuclear cap binding protein subunit 2, 20kDa
3545.	22919	MAPRE1	microtubule-associated protein, RP/EB family, member 1
3546.	22920	KIFAP3	kinesin-associated protein 3
3547.	22921	MSRB2	methionine sulfoxide reductase B2
3548.	22926	ATF6	activating transcription factor 6
3549.	22927	HABP4	hyaluronan binding protein 4
3550.	22928	SEPHS2	selenophosphate synthetase 2
3551.	22929	SEPHS1	selenophosphate synthetase 1
3552.	22930	RAB3GAP	RAB3 GTPase-activating protein
3553.	22931	RAB18	RAB18, member RAS oncogene family
3554.	22932	POMZP3	POM (POM121 homolog, rat) and ZP3 fusion
3555.	22936	ELL2	elongation factor, RNA polymerase II, 2
3556.	22937	SCAP	SREBP cleavage-activating protein
3557.	22938	SKIIP	SKI interacting protein
3558.	22948	CCT5	chaperonin containing TCP1, subunit 5 (epsilon)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3559.	22949	LTB4DH	leukotriene B4 12-hydroxydehydrogenase
3560.	22950	SLC4A1AP	solute carrier family 4 (anion exchanger), member 1, adaptor protein
3561.	22953	P2RX2	purinergic receptor P2X, ligand-gated ion channel, 2
3562.	22955	SCMH1	sex comb on midleg homolog 1 (Drosophila)
3563.	22974	TPX2	TPX2, microtubule-associated protein homolog (Xenopus laevis)
3564.	22976	PAXIP1	PAX interacting (with transcription-activation domain) protein 1
3565.	22978	NT5C2	5'-nucleotidase, cytosolic II
3566.	22981	KIAA0980	KIAA0980 protein
3567.	22982	KIAA0934	KIAA0934
3568.	22995	Cep152	KIAA0912 protein
3569.	22999	RIMS1	regulating synaptic membrane exocytosis 1
3570.	23001	WDFY3	WD repeat and FYVE domain containing 3
3571.	23008	KIAA0265	KIAA0265 protein
3572.	23013	SPEN	spen homolog, transcriptional regulator (Drosophila)
3573.	23014	FBXO21	F-box protein 21
3574.	23015	GM88	88-kDa golgi protein
3575.	23016	EXOSC7	exosome component 7
3576.	23019	CNOT1	CCR4-NOT transcription complex, subunit 1
3577.	23022	KIAA0992	palladin
3578.	23023	TMCC1	transmembrane and coiled-coil domains 1
3579.	23026	MYR8	myosin heavy chain Myr 8
3580.	23028	AOF2	amine oxidase (flavin containing) domain 2
3581.	23029	RBM34	RNA binding motif protein 34
3582.	23030	JMJD2B	jumonji domain containing 2B
3583.	23034	SAMD4	sterile alpha motif domain containing 4
3584.	23038	WDTC1	WD and tetratricopeptide repeats 1
3585.	23039	XPO7	exportin 7
3586.	23043	TNIK	TRAF2 and NCK interacting kinase
3587.	23045	KIAA0826	KIAA0826
3588.	23047	APRIN	androgen-induced proliferation inhibitor
3589.	23048	FNBP1	formin binding protein 1
3590.	23052	KIAA0830	KIAA0830 protein
3591.	23054	NCOA6	nuclear receptor coactivator 6
3592.	23056	KIAA0754	KIAA0754 protein
3593.	23057	NMNAT2	nicotinamide nucleotide adenyltransferase 2
3594.	23061	KIAA0676	KIAA0676 protein
3595.	23062	GGA2	golgi associated, gamma adaptin ear containing, ARF binding protein 2
3596.	23063	KIAA0261	KIAA0261
3597.	23065	KIAA0090	KIAA0090
3598.	23067	KIAA1076	KIAA1076 protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3599.	23071	TXNDC4	thioredoxin domain containing 4 (endoplasmic reticulum)
3600.	23074	KIAA0701	KIAA0701 protein
3601.	23077	MYCBP2	MYC binding protein 2
3602.	23078	KIAA0564	KIAA0564 protein
3603.	23080	KIAA0241	KIAA0241 protein
3604.	23081	JMJD2C	jumonji domain containing 2C
3605.	23089	PEG10	paternally expressed 10
3606.	23090	ZNF423	zinc finger protein 423
3607.	23092	ARHGAP26	Rho GTPase activating protein 26
3608.	23095	KIF1B	kinesin family member 1B
3609.	23097	CDC2L6	cell division cycle 2-like 6 (CDK8-like)
3610.	23099	ZNF297B	zinc finger protein 297B
3611.	23102	KIAA1055	KIAA1055 protein
3612.	23109	DDN	dendrin
3613.	23112	TNRC6B	trinucleotide repeat containing 6B
3614.	23113	PARC	p53-associated parkin-like cytoplasmic protein
3615.	23116	KIAA0423	KIAA0423
3616.	23118	MAP3K7IP2	mitogen-activated protein kinase kinase kinase 7 interacting protein 2
3617.	23119	HIC2	hypermethylated in cancer 2
3618.	23120	ATP10B	ATPase, Class V, type 10B
3619.	23122	CLASP2	cytoplasmic linker associated protein 2
3620.	23125	CAMTA2	calmodulin binding transcription activator 2
3621.	23126	POGZ	pogo transposable element with ZNF domain
3622.	23127	GLT25D2	glycosyltransferase 25 domain containing 2
3623.	23129	PLXND1	plexin D1
3624.	23131	KIAA0553	KIAA0553 protein
3625.	23132	SRISNF2L	KIAA0809 protein
3626.	23136	EPB41L3	erythrocyte membrane protein band 4.1-like 3
3627.	23137	SMC5L1	SMC5 structural maintenance of chromosomes 5-like 1 (yeast)
3628.	23139	MAST2	microtubule associated serine/threonine kinase 2
3629.	23140	ZZEF1	zinc finger, ZZ-type with EF hand domain 1
3630.	23141	KIAA0692	KIAA0692 protein
3631.	23142	KIAA0276	KIAA0276 protein
3632.	23152	CIC	capicua homolog (Drosophila)
3633.	23155	MCLC	Mid-1-related chloride channel 1
3634.	23157	38601	septin 6
3635.	23158	KIAA0882	KIAA0882 protein
3636.	23164	M-RIP	myosin phosphatase-Rho interacting protein
3637.	23165	NUP205	nucleoporin 205kDa
3638.	23167	KIAA0143	KIAA0143 protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3639.	23169	SLC35D1	solute carrier family 35 (UDP-glucuronic acid/UDP-N-acetylgalactosamine dual transporter), member D1
3640.	23170	KIAA0153	KIAA0153 protein
3641.	23171	GPD1L	glycerol-3-phosphate dehydrogenase 1-like
3642.	23173	METAP1	methionyl aminopeptidase 1
3643.	23175	LPIN1	lipin 1
3644.	23176	38603	septin 8
3645.	23177	KIAA0582	KIAA0582
3646.	23180	RAFTLIN	raft-linking protein
3647.	23190	UBXD2	UBX domain containing 2
3648.	23191	CYFIP1	cytoplasmic FMR1 interacting protein 1
3649.	23192	APG4B	APG4 autophagy 4 homolog B (<i>S. cerevisiae</i>)
3650.	23195	MDN1	MDN1, midasin homolog (yeast)
3651.	23196	C9orf10	chromosome 9 open reading frame 10
3652.	23198	PSME4	proteasome (prosome, macropain) activator subunit 4
3653.	23200	ATP11B	ATPase, Class VI, type 11B
3654.	23203	PMPCA	peptidase (mitochondrial processing) alpha
3655.	23204	ARL6IP	ADP-ribosylation factor-like 6 interacting protein
3656.	23208	SYT11	synaptotagmin XI
3657.	23210	PTDSR	phosphatidylserine receptor
3658.	23212	RRS1	RRS1 ribosome biogenesis regulator homolog (<i>S. cerevisiae</i>)
3659.	23213	SULF1	sulfatase 1
3660.	23214	XPO6	exportin 6
3661.	23215	BAT2D1	BAT2 domain containing 1
3662.	23216	TBC1D1	TBC1 (tre-2/USP6, BUB2, cdc16) domain family, member 1
3663.	23219	FBXO28	F-box protein 28
3664.	23221	RHOBTB2	Rho-related BTB domain containing 2
3665.	23223	KIAA0690	KIAA0690
3666.	23229	ARHGEF9	Cdc42 guanine nucleotide exchange factor (GEF) 9
3667.	23231	KIAA0746	KIAA0746 protein
3668.	23233	SEC15L2	SEC15-like 2 (<i>S. cerevisiae</i>)
3669.	23234	DNAJC9	DnaJ (Hsp40) homolog, subfamily C, member 9
3670.	23235	SNF1LK2	SNF1-like kinase 2
3671.	23236	PLCB1	phospholipase C, beta 1 (phosphoinositide-specific)
3672.	23239	PHLPP	PH domain and leucine rich repeat protein phosphatase
3673.	23240	KIAA0922	KIAA0922 protein
3674.	23241	PACS2	phosphofurin acidic cluster sorting protein 2
3675.	23243	ANKRD28	ankyrin repeat domain 28
3676.	23244	SCC-112	SCC-112 protein
3677.	23245	ASTN2	astrotactin 2
3678.	23246	BOP1	block of proliferation 1
3679.	23250	ATP11A	ATPase, Class VI, type 11A

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3680.	23253	ANKRD12	ankyrin repeat domain 12
3681.	23255	KIAA0802	KIAA0802
3682.	23256	SCFD1	sec1 family domain containing 1
3683.	23259	DDHD2	DDHD domain containing 2
3684.	23263	MCF2L	MCF.2 cell line derived transforming sequence-like
3685.	23265	EXOC7	exocyst complex component 7
3686.	23268	DNMBP	dynammin binding protein
3687.	23270	TSPYL4	TSPY-like 4
3688.	23271	CAMSAP1L1	calmodulin regulated spectrin-associated protein 1-like 1
3689.	23272	RAP140	retinoblastoma-associated protein 140
3690.	23275	POFUT2	protein O-fucosyltransferase 2
3691.	23277	KIAA0664	KIAA0664 protein
3692.	23286	KIBRA	KIBRA protein
3693.	23294	ANKS1	ankyrin repeat and sterile alpha motif domain containing 1
3694.	23299	BICD2	bicaudal D homolog 2 (Drosophila)
3695.	23300	ASCIZ	ATM/ATR-Substrate Chk2-Interacting Zn2+-finger protein
3696.	23301	EHBP1	EH domain binding protein 1
3697.	23304	UBR2	ubiquitin protein ligase E3 component n-recogin 2
3698.	23306	KIAA0286	KIAA0286 protein
3699.	23309	SIN3B	SIN3 homolog B, transcription regulator (yeast)
3700.	23310	hCAP-D3	KIAA0056 protein
3701.	23312	DMXL2	Dmx-like 2
3702.	23313	C22orf9	chromosome 22 open reading frame 9
3703.	23317	DNAJC13	DnaJ (Hsp40) homolog, subfamily C, member 13
3704.	23318	ZCCHC11	zinc finger, CCHC domain containing 11
3705.	23321	TRIM2	tripartite motif-containing 2
3706.	23324	MAN2B2	mannosidase, alpha, class 2B, member 2
3707.	23325	KIAA1033	KIAA1033
3708.	23327	NEDD4L	neural precursor cell expressed, developmentally down-regulated 4-like
3709.	23328	SASH1	SAM and SH3 domain containing 1
3710.	23331	KIAA1043	KIAA1043 protein
3711.	23333	KIAA0877	KIAA0877 protein
3712.	23336	DMN	desmuslin
3713.	23339	VPS39	vacuolar protein sorting 39 (yeast)
3714.	23344	FAM62A	family with sequence similarity 62 (C2 domain containing), member A
3715.	23345	SYNE1	spectrin repeat containing, nuclear envelope 1
3716.	23347	SMCHD1	structural maintenance of chromosomes flexible hinge domain containing 1
3717.	23350	SR140	U2-associated SR140 protein
3718.	23351	KIAA0323	KIAA0323
3719.	23354	KIAA0841	KIAA0841
3720.	23355	KIAA0804	KIAA0804
3721.	23357	KIAA0759	KIAA0759
3722.	23358	USP24	ubiquitin specific protease 24
3723.	23361	ZNF629	zinc finger protein 629

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3724.	23362	PSD3	pleckstrin and Sec7 domain containing 3
3725.	23363	KIAA0657	KIAA0657 protein
3726.	23365	ARHGEF12	Rho guanine nucleotide exchange factor (GEF) 12
3727.	23366	KIAA0895	KIAA0895 protein
3728.	23367	LARP1	La ribonucleoprotein domain family, member 1
3729.	23368	PPP1R13B	protein phosphatase 1, regulatory (inhibitor) subunit 13B
3730.	23369	PUM2	pumilio homolog 2 (Drosophila)
3731.	23371	TENC1	tensin like C1 domain containing phosphatase (tensin 2)
3732.	23376	KIAA0776	KIAA0776
3733.	23380	SRGAP2	SLIT-ROBO Rho GTPase activating protein 2
3734.	23381	EST1B	Est1p-like protein B
3735.	23382	KIAA0828	KIAA0828 protein
3736.	23383	KIAA0892	KIAA0892
3737.	23384	KIAA0376	KIAA0376 protein
3738.	23387	KIAA0999	KIAA0999 protein
3739.	23389	THRAP2	thyroid hormone receptor associated protein 2
3740.	23390	ZDHHC17	zinc finger, DHHC-type containing 17
3741.	23392	KIAA0368	KIAA0368
3742.	23394	ADNP	activity-dependent neuroprotector
3743.	23395	LARS2	leucyl-tRNA synthetase 2, mitochondrial
3744.	23397	BRN1	barren homolog (Drosophila)
3745.	23399	DULLARD	dullard homolog (Xenopus laevis)
3746.	23404	EXOSC2	exosome component 2
3747.	23405	DICER1	Dicer1, Dcr-1 homolog (Drosophila)
3748.	23406	COTL1	coactosin-like 1 (Dictyostelium)
3749.	23408	SIRT5	sirtuin (silent mating type information regulation 2 homolog) 5 (S. cerevisiae)
3750.	23410	SIRT3	sirtuin (silent mating type information regulation 2 homolog) 3 (S. cerevisiae)
3751.	23413	FREQ	frequenin homolog (Drosophila)
3752.	23416	KCNH3	potassium voltage-gated channel, subfamily H (eag-related), member 3
3753.	23421	ITGB3BP	integrin beta 3 binding protein (beta3-endonexin)
3754.	23423	TMED3	transmembrane emp24 domain containing 3
3755.	23424	TDRD7	tudor domain containing 7
3756.	23428	SLC7A8	solute carrier family 7 (cationic amino acid transporter, y+ system), member 8
3757.	23429	RYBP	RING1 and YY1 binding protein
3758.	23431	AP4E1	adaptor-related protein complex 4, epsilon 1 subunit
3759.	23432	GPR161	G protein-coupled receptor 161
3760.	23433	RHOQ	ras homolog gene family, member Q
3761.	23435	TARDBP	TAR DNA binding protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3762.	23438	HARSL	histidyl-tRNA synthetase-like
3763.	23443	SLC35A3	solute carrier family 35 (UDP-N-acetylglucosamine (UDP-GlcNAc) transporter), member A3
3764.	23452	ANGPTL2	angiopoietin-like 2
3765.	23460	ABCA6	ATP-binding cassette, sub-family A (ABC1), member 6
3766.	23461	ABCA5	ATP-binding cassette, sub-family A (ABC1), member 5
3767.	23463	ICMT	isoprenylcysteine carboxyl methyltransferase
3768.	23466	CBX6	chromobox homolog 6
3769.	23468	CBX5	chromobox homolog 5 (HP1 alpha homolog, Drosophila)
3770.	23469	PHF3	PHD finger protein 3
3771.	23471	TRAM1	translocation associated membrane protein 1
3772.	23473	CAPN7	calpain 7
3773.	23474	ETHE1	ethylmalonic encephalopathy 1
3774.	23475	QPRT	quinolinate phosphoribosyltransferase (nicotinate-nucleotide pyrophosphorylase (carboxylating))
3775.	23478	SEC11L1	SEC11-like 1 (<i>S. cerevisiae</i>)
3776.	23479	NIFUN	NifU-like N-terminal domain containing
3777.	23480	SEC61G	Sec61 gamma subunit
3778.	23483	TGDS	TDP-glucose 4,6-dehydratase
3779.	23484	LEPROTL1	leptin receptor overlapping transcript-like 1
3780.	23492	CBX7	chromobox homolog 7
3781.	23493	HEY2	hairy/enhancer-of-split related with YRPW motif 2
3782.	23499	MACF1	microtubule-actin crosslinking factor 1
3783.	23503	ZFYVE26	zinc finger, FYVE domain containing 26
3784.	23505	RW1	RW1 protein
3785.	23506	KIAA0240	KIAA0240
3786.	23510	KCTD2	potassium channel tetramerisation domain containing 2
3787.	23512	SUZ12	suppressor of zeste 12 homolog (<i>Drosophila</i>)
3788.	23516	SLC39A14	solute carrier family 39 (zinc transporter), member 14
3789.	23517	SKIV2L2	superkiller viralicidic activity 2-like 2 (<i>S. cerevisiae</i>)
3790.	23521	RPL13A	ribosomal protein L13a
3791.	23522	MYST4	MYST histone acetyltransferase (monocytic leukemia) 4
3792.	23523	CABIN1	calcineurin binding protein 1
3793.	23524	SRRM2	serine/arginine repetitive matrix 2
3794.	23528	ZNF281	zinc finger protein 281
3795.	23531	MMD	monocyte to macrophage differentiation-associated
3796.	23533	PIK3R5	phosphoinositide-3-kinase, regulatory subunit 5, p101
3797.	23534	TNPO3	transportin 3

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3798.	23539	SLC16A8	solute carrier 16 (monocarboxylic acid transporters), member 8
3799.	23541	SEC14L2	SEC14-like 2 (<i>S. cerevisiae</i>)
3800.	23543	RBM9	RNA binding motif protein 9
3801.	23548	OSRF	osmosis responsive factor
3802.	23550	PSD4	pleckstrin and Sec7 domain containing 4
3803.	23555	TSPAN15	tetraspanin 15
3804.	23557	SNAPAP	SNAP-associated protein
3805.	23559	WBP1	WW domain binding protein 1
3806.	23560	GTPBP4	GTP binding protein 4
3807.	23564	DDAH2	dimethylarginine dimethylaminohydrolase 2
3808.	23568	ARL2BP	ADP-ribosylation factor-like 2 binding protein
3809.	23576	DDAH1	dimethylarginine dimethylaminohydrolase 1
3810.	23582	CCNDBP1	cyclin D-type binding-protein 1
3811.	23584	VSIG2	V-set and immunoglobulin domain containing 2
3812.	23585	TMEM50A	transmembrane protein 50A
3813.	23587	DERP6	S-phase 2 protein
3814.	23588	KLHDC2	kelch domain containing 2
3815.	23589	CARHSP1	calcium regulated heat stable protein 1, 24kDa
3816.	23590	TPRT	trans-prenyltransferase
3817.	23594	ORC6L	origin recognition complex, subunit 6 homolog-like (yeast)
3818.	23595	ORC3L	origin recognition complex, subunit 3-like (yeast)
3819.	23596	OPN3	opsin 3 (encephalopsin, panopsin)
3820.	23597	ACATE2	acyl-Coenzyme A thioesterase 2, mitochondrial
3821.	23598	ZNF278	zinc finger protein 278
3822.	23600	AMACR	alpha-methylacyl-CoA racemase
3823.	23601	CLEC5A	C-type lectin domain family 5, member A
3824.	23603	CORO1C	coronin, actin binding protein, 1C
3825.	23608	MKRN1	makorin, ring finger protein, 1
3826.	23612	PHLDA3	pleckstrin homology-like domain, family A, member 3
3827.	23613	PRKCBP1	protein kinase C binding protein 1
3828.	23621	BACE1	beta-site APP-cleaving enzyme 1
3829.	23632	CA14	carbonic anhydrase XIV
3830.	23635	SSBP2	single-stranded DNA binding protein 2
3831.	23636	NUP62	nucleoporin 62kDa
3832.	23645	PPP1R15A	protein phosphatase 1, regulatory (inhibitor) subunit 15A
3833.	23646	PLD3	phospholipase D family, member 3
3834.	23647	ARFIP2	ADP-ribosylation factor interacting protein 2 (arfaptin 2)
3835.	23657	SLC7A11	solute carrier family 7, (cationic amino acid transporter, y+ system) member 11
3836.	23658	LSM5	LSM5 homolog, U6 small nuclear RNA associated (<i>S. cerevisiae</i>)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3837.	23659	LYPLA3	lysophospholipase 3 (lysosomal phospholipase A2)
3838.	23670	TMEM2	transmembrane protein 2
3839.	23678	SGKL	serum/glucocorticoid regulated kinase-like
3840.	23682	RAB38	RAB38, member RAS oncogene family
3841.	23683	PRKD3	protein kinase D3
3842.	23705	IGSF4	immunoglobulin superfamily, member 4
3843.	23708	GSPT2	G1 to S phase transition 2
3844.	23731	C9orf5	chromosome 9 open reading frame 5
3845.	23741	CRI1	CREBBP/EP300 inhibitor 1
3846.	23753	SDF2L1	stromal cell-derived factor 2-like 1
3847.	23759	PPIL2	peptidylprolyl isomerase (cyclophilin)-like 2
3848.	23760	PITPNB	phosphatidylinositol transfer protein, beta
3849.	23762	OSBP2	oxysterol binding protein 2
3850.	23764	MAFF	v-maf musculoaponeurotic fibrosarcoma oncogene homolog F (avian)
3851.	23766	GABARAPL3	GABA(A) receptors associated protein like 3
3852.	23767	FLRT3	fibronectin leucine rich transmembrane protein 3
3853.	23768	FLRT2	fibronectin leucine rich transmembrane protein 2
3854.	23770	FKBP8	FK506 binding protein 8, 38kDa
3855.	23774	BRD1	bromodomain containing 1
3856.	23779	ARHGAP8	Rho GTPase activating protein 8
3857.	23786	BCL2L13	BCL2-like 13 (apoptosis facilitator)
3858.	23787	MTCH1	mitochondrial carrier homolog 1 (C. elegans)
3859.	23788	MTCH2	mitochondrial carrier homolog 2 (C. elegans)
3860.	24137	KIF4A	kinesin family member 4A
3861.	24139	EML2	echinoderm microtubule associated protein like 2
3862.	24140	FTSJ1	FtsJ homolog 1 (E. coli)
3863.	24141	C20orf103	chromosome 20 open reading frame 103
3864.	24142	NAT6	N-acetyltransferase 6
3865.	24146	CLDN15	claudin 15
3866.	24147	FJX1	four jointed box 1 (Drosophila)
3867.	24148	C20orf14	chromosome 20 open reading frame 14
3868.	24150	TP53TG3	TP53TG3 protein
3869.	25758	G2	G2 protein
3870.	25764	HYPK	Huntingtin interacting protein K
3871.	25766	HYPC	Huntingtin interacting protein C
3872.	25776	PGEA1	PKD2 interactor, golgi and endoplasmic reticulum associated 1
3873.	25777	UNC84B	unc-84 homolog B (C. elegans)
3874.	25778	RIPK5	receptor interacting protein kinase 5
3875.	25782	RAB3-GAP150	rab3 GTPase-activating protein, non-catalytic subunit (150kD)
3876.	25788	RAD54B	RAD54 homolog B (S. cerevisiae)
3877.	25792	CIZ1	CDKN1A interacting zinc finger protein 1
3878.	25793	FBXO7	F-box protein 7

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3879.	25796	PGLS	6-phosphogluconolactonase
3880.	25798	BRI3	brain protein I3
3881.	25800	SLC39A6	solute carrier family 39 (zinc transporter), member 6
3882.	25803	SPDEF	SAM pointed domain containing ets transcription factor
3883.	25804	LSM4	LSM4 homolog, U6 small nuclear RNA associated (<i>S. cerevisiae</i>)
3884.	25809	TTLL1	tubulin tyrosine ligase-like family, member 1
3885.	25813	CGI-51	CGI-51 protein
3886.	25814	ATXN10	ataxin 10
3887.	25816	TNFAIP8	tumor necrosis factor, alpha-induced protein 8
3888.	25821	MTO1	mitochondrial translation optimization 1 homolog (<i>S. cerevisiae</i>)
3889.	25824	PRDX5	peroxiredoxin 5
3890.	25825	BACE2	beta-site APP-cleaving enzyme 2
3891.	25828	TXN2	thioredoxin 2
3892.	25831	HECTD1	HECT domain containing 1
3893.	25836	NIPBL	Nipped-B homolog (<i>Drosophila</i>)
3894.	25837	RAB26	RAB26, member RAS oncogene family
3895.	25842	ASF1A	ASF1 anti-silencing function 1 homolog A (<i>S. cerevisiae</i>)
3896.	25843	PREI3	preimplantation protein 3
3897.	25844	YIPF3	Yip1 domain family, member 3
3898.	25845	DKFZP564I1171	DKFZP564I1171 protein
3899.	25851	DKFZP434B0335	DKFZP434B0335 protein
3900.	25852	ARMC8	armadillo repeat containing 8
3901.	25854	DKFZP564J102	DKFZP564J102 protein
3902.	25865	PRKD2	protein kinase D2
3903.	25871	C3orf17	chromosome 3 open reading frame 17
3904.	25873	RPL36	ribosomal protein L36
3905.	25875	LETMD1	LETMD1 domain containing 1
3906.	25879	WDSOF1	WD repeats and SOF1 domain containing
3907.	25880	C16orf51	chromosome 16 open reading frame 51
3908.	25890	ABI3BP	ABI gene family, member 3 (NESH) binding protein
3909.	25891	DKFZP586H2123	regeneration associated muscle protease
3910.	25894	PLEKHG4	pleckstrin homology domain containing, family G (with RhoGef domain) member 4
3911.	25898	RCHY1	ring finger and CHY zinc finger domain containing 1
3912.	25900	HOM-TES-103	HOM-TES-103 tumor antigen-like
3913.	25902	MTHFD1L	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 1-like
3914.	25907	RIS1	Ras-induced senescence 1
3915.	25909	AHCTF1	AT hook containing transcription factor 1
3916.	25911	RP11-529I10.4	deleted in a mouse model of primary ciliary dyskinesia
3917.	25912	C1orf43	chromosome 1 open reading frame 43
3918.	25913	POT1	POT1 protection of telomeres 1 homolog (<i>S. pombe</i>)
3919.	25915	DKFZP564J0123	nuclear protein E3-3

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3920.	25917	THUMPD3	THUMP domain containing 3
3921.	25921	ZDHHC5	zinc finger, DHHC-type containing 5
3922.	25923	DKFZP564J0863	DKFZP564J0863 protein
3923.	25925	ZNF521	zinc finger protein 521
3924.	25926	DKFZP586L0724	DKFZP586L0724 protein
3925.	25927	C2orf32	chromosome 2 open reading frame 32
3926.	25932	CLIC4	chloride intracellular channel 4
3927.	25934	NIPSNAP3A	nipsnap homolog 3A (C. elegans)
3928.	25937	WWTR1	WW domain containing transcription regulator 1
3929.	25940	DKFZP564F0522	DKFZP564F0522 protein
3930.	25941	C18orf10	chromosome 18 open reading frame 10
3931.	25943	C20orf194	chromosome 20 open reading frame 194
3932.	25945	PVRL3	poliovirus receptor-related 3
3933.	25948	KBTBD2	kelch repeat and BTB (POZ) domain containing 2
3934.	25953	MR-1	myofibrillogenesis regulator 1
3935.	25957	C6orf111	chromosome 6 open reading frame 111
3936.	25959	ANKRD25	ankyrin repeat domain 25
3937.	25960	GPR124	G protein-coupled receptor 124
3938.	25966	C21orf25	chromosome 21 open reading frame 25
3939.	25972	UNC50	unc-50 homolog (C. elegans)
3940.	25976	TIPARP	TCDD-inducible poly(ADP-ribose) polymerase
3941.	25978	CHMP2B	chromatin modifying protein 2B
3942.	25981	DNAH1	dynein, axonemal, heavy polypeptide 1
3943.	25987	TSK	tsukushi
3944.	25992	SNED1	sushi, nidogen and EGF-like domains 1
3945.	25994	HIG1	likely ortholog of mouse hypoxia induced gene 1
3946.	25996	DKFZP566E144	small fragment nuclease
3947.	25999	CLIPR-59	CLIP-170-related protein
3948.	26000	TBC1D10B	TBC1 domain family, member 10B
3949.	26001	RNF167	ring finger protein 167
3950.	26003	GORASP2	golgi reassembly stacking protein 2, 55kDa
3951.	26005	DKFZP586P0123	DKFZP586P0123 protein
3952.	26007	DKFZP586B1621	DKFZP586B1621 protein
3953.	26009	ZZZ3	zinc finger, ZZ-type containing 3
3954.	26010	DNAPTP6	DNA polymerase-transactivated protein 6
3955.	26012	NELF	nasal embryonic LHRH factor
3956.	26017	FAM32A	family with sequence similarity 32, member A
3957.	26019	UPF2	UPF2 regulator of nonsense transcripts homolog (yeast)
3958.	26022	DKFZP564K1964	DKFZP564K1964 protein
3959.	26025	PCDHGA12	protocadherin gamma subfamily A, 12
3960.	26031	OSBPL3	oxysterol binding protein-like 3
3961.	26035	GLCE	glucuronyl C5-epimerase
3962.	26039	SS18L1	synovial sarcoma translocation gene on chromosome 18-like 1
3963.	26040	SETBP1	SET binding protein 1
3964.	26043	KIAA0794	KIAA0794 protein
3965.	26045	LRRTM2	leucine rich repeat transmembrane neuronal 2

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
3966.	26051	PPP1R16B	protein phosphatase 1, regulatory (inhibitor) subunit 16B
3967.	26054	SENP6	SUMO1/sentrin specific protease 6
3968.	26056	RAB11FIP5	RAB11 family interacting protein 5 (class I)
3969.	26057	ANKRD17	ankyrin repeat domain 17
3970.	26061	HPCL2	2-hydroxyphytanoyl-CoA lyase
3971.	26064	RAI14	retinoic acid induced 14
3972.	26071	DKFZP564B147	DKFZP564B147 protein
3973.	26073	POLDIP2	polymerase (DNA-directed), delta interacting protein 2
3974.	26074	C20orf26	chromosome 20 open reading frame 26
3975.	26080	DKFZP434B061	DKFZP434B061 protein
3976.	26084	SGEF	Src homology 3 domain-containing guanine nucleotide exchange factor
3977.	26091	HERC4	hect domain and RLD 4
3978.	26097	C1orf77	chromosome 1 open reading frame 77
3979.	26100	WIPI-2	WIPI49-like protein 2
3980.	26115	DKFZP564D166	putative ankyrin-repeat containing protein
3981.	26118	WSB1	WD repeat and SOCS box-containing 1
3982.	26121	PRPF31	PRP31 pre-mRNA processing factor 31 homolog (yeast)
3983.	26122	EPC2	enhancer of polycomb homolog 2 (Drosophila)
3984.	26123	C10orf61	chromosome 10 open reading frame 61
3985.	26127	FGFR1OP2	FGFR1 oncogene partner 2
3986.	26135	PAI-RBP1	PAI-1 mRNA binding protein
3987.	26136	TES	testis derived transcript (3 LIM domains)
3988.	26137	ZBTB20	zinc finger and BTB domain containing 20
3989.	26140	TTLL3	tubulin tyrosine ligase-like family, member 3
3990.	26147	PHF19	PHD finger protein 19
3991.	26152	ZNF337	zinc finger protein 337
3992.	26155	DKFZP564C186	DKFZP564C186 protein
3993.	26156	RSL1D1	ribosomal L1 domain containing 1
3994.	26160	SLB	selective LIM binding factor, rat homolog
3995.	26164	GTPBP5	GTP binding protein 5 (putative)
3996.	26167	PCDHB5	protocadherin beta 5
3997.	26175	C14orf109	chromosome 14 open reading frame 109
3998.	26191	PTPN22	protein tyrosine phosphatase, non-receptor type 22 (lymphoid)
3999.	26207	PITPNC1	phosphatidylinositol transfer protein, cytoplasmic 1
4000.	26223	FBXL21	F-box and leucine-rich repeat protein 21
4001.	26225	ARL5	ADP-ribosylation factor-like 5
4002.	26227	PHGDH	phosphoglycerate dehydrogenase
4003.	26229	B3GAT3	beta-1,3-glucuronyltransferase 3 (glucuronosyltransferase I)
4004.	26230	TIAM2	T-cell lymphoma invasion and metastasis 2

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4005.	26233	FBXL6	F-box and leucine-rich repeat protein 6
4006.	26234	FBXL5	F-box and leucine-rich repeat protein 5
4007.	26249	KLHL3	kelch-like 3 (Drosophila)
4008.	26258	PLDN	pallidin homolog (mouse)
4009.	26260	FBXO25	F-box protein 25
4010.	26262	TSPAN17	tetraspanin 17
4011.	26263	FBXO22	F-box protein 22
4012.	26267	FBXO10	F-box protein 10
4013.	26268	FBXO9	F-box protein 9
4014.	26271	FBXO5	F-box protein 5
4015.	26273	FBXO3	F-box protein 3
4016.	26276	VPS33B	vacuolar protein sorting 33B (yeast)
4017.	26278	SACS	spastic ataxia of Charlevoix-Saguenay (sacsin)
4018.	26285	CLDN17	claudin 17
4019.	26286	ARFGAP3	ADP-ribosylation factor GTPase activating protein 3
4020.	26292	MYCBP	c-myc binding protein
4021.	26297	DELGEF	deafness locus associated putative guanine nucleotide exchange factor
4022.	26298	EHF	ets homologous factor
4023.	26354	GNL3	guanine nucleotide binding protein-like 3 (nucleolar)
4024.	26355	E2IG5	growth and transformation-dependent protein
4025.	26468	LHX6	LIM homeobox 6
4026.	26470	SEZ6L2	seizure related 6 homolog (mouse)-like 2
4027.	26471	P8	p8 protein (candidate of metastasis 1)
4028.	26472	PPP1R14B	protein phosphatase 1, regulatory (inhibitor) subunit 14B
4029.	26497	OR10D3P	olfactory receptor, family 10, subfamily D, member 3 pseudogene
4030.	26502	NARF	nuclear prelamin A recognition factor
4031.	26503	SLC17A5	solute carrier family 17 (anion/sugar transporter), member 5
4032.	26511	CHIC2	cysteine-rich hydrophobic domain 2
4033.	26517	TIMM13	translocase of inner mitochondrial membrane 13 homolog (yeast)
4034.	26519	TIMM10	translocase of inner mitochondrial membrane 10 homolog (yeast)
4035.	26520	TIMM9	translocase of inner mitochondrial membrane 9 homolog (yeast)
4036.	26521	TIMM8B	translocase of inner mitochondrial membrane 8 homolog B (yeast)
4037.	26524	LATS2	LATS, large tumor suppressor, homolog 2 (Drosophila)
4038.	26525	IL1F5	interleukin 1 family, member 5 (delta)
4039.	26528	DAZAP1	DAZ associated protein 1
4040.	26575	RGS17	regulator of G-protein signalling 17
4041.	26577	PCOLCE2	procollagen C-endopeptidase enhancer 2
4042.	26579	MYEOV	myeloma overexpressed gene (in a subset of t(11;14) positive multiple myelomas)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4043.	26586	CKAP2	cytoskeleton associated protein 2
4044.	26589	MRPL46	mitochondrial ribosomal protein L46
4045.	26608	TBL2	transducin (beta)-like 2
4046.	26628	OR7E47P	olfactory receptor, family 7, subfamily E, member 47 pseudogene
4047.	26636	OR7E37P	olfactory receptor, family 7, subfamily E, member 37 pseudogene
4048.	26716	OR2H1	olfactory receptor, family 2, subfamily H, member 1
4049.	26751	SH3YL1	SH3 domain containing, Ysc84-like 1 (<i>S. cerevisiae</i>)
4050.	26873	OPLAH	5-oxoprolinase (ATP-hydrolysing)
4051.	26959	HBP1	HMG-box transcription factor 1
4052.	26960	NBEA	Neurobeachin
4053.	26973	CHORDC1	cysteine and histidine-rich domain (CHORD)-containing, zinc binding protein 1
4054.	26986	PABPC1	poly(A) binding protein, cytoplasmic 1
4055.	26994	RNF11	ring finger protein 11
4056.	26995	TRUB2	TruB pseudouridine (psi) synthase homolog 2 (<i>E. coli</i>)
4057.	26996	GPR160	G protein-coupled receptor 160
4058.	26999	CYFIP2	cytoplasmic FMR1 interacting protein 2
4059.	27000	ZRF1	zuotin related factor 1
4060.	27005	USP21	ubiquitin specific protease 21
4061.	27013	C2orf24	chromosome 2 open reading frame 24
4062.	27018	NGFRAP1	nerve growth factor receptor (TNFRSF16) associated protein 1
4063.	27020	SDFR1	stromal cell derived factor receptor 1
4064.	27030	MLH3	mutL homolog 3 (<i>E. coli</i>)
4065.	27031	NPHP3	nephronophthisis 3 (adolescent)
4066.	27034	ACAD8	acyl-Coenzyme A dehydrogenase family, member 8
4067.	27036	SIGLEC7	sialic acid binding Ig-like lectin 7
4068.	27040	LAT	linker for activation of T cells
4069.	27042	C1orf107	chromosome 1 open reading frame 107
4070.	27065	D4S234E	DNA segment on chromosome 4 (unique) 234 expressed sequence
4071.	27067	STAU2	staufen, RNA binding protein, homolog 2 (<i>Drosophila</i>)
4072.	27069	GHITM	growth hormone inducible transmembrane protein
4073.	27074	LAMP3	lysosomal-associated membrane protein 3
4074.	27075	TSPAN13	tetraspanin 13
4075.	27085	MTBP	Mdm2, transformed 3T3 cell double minute 2, p53 binding protein (mouse) binding protein, 104kDa
4076.	27086	FOXP1	forkhead box P1
4077.	27089	QP-C	low molecular mass ubiquinone-binding protein (9.5kD)
4078.	27092	CACNG4	calcium channel, voltage-dependent, gamma subunit 4
4079.	27101	CACYBP	calcyclin binding protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4080.	27102	EIF2AK1	eukaryotic translation initiation factor 2-alpha kinase 1
4081.	27115	PDE7B	phosphodiesterase 7B
4082.	27122	DKK3	dickkopf homolog 3 (Xenopus laevis)
4083.	27125	AFF4	AF4/FMR2 family, member 4
4084.	27131	SNX5	sorting nexin 5
4085.	27132	CPNE7	copine VII
4086.	27148	STK36	serine/threonine kinase 36 (fused homolog, Drosophila)
4087.	27154	BRPF3	bromodomain and PHD finger containing, 3
4088.	27161	EIF2C2	eukaryotic translation initiation factor 2C, 2
4089.	27165	GLS2	glutaminase 2 (liver, mitochondrial)
4090.	27166	PX19	px19-like protein
4091.	27185	DISC1	disrupted in schizophrenia 1
4092.	27230	SERP1	stress-associated endoplasmic reticulum protein 1
4093.	27233	SULT1C2	sulfotransferase family, cytosolic, 1C, member 2
4094.	27236	ARFIP1	ADP-ribosylation factor interacting protein 1 (arfaptin 1)
4095.	27238	GPKOW	G patch domain and KOW motifs
4096.	27241	B1	parathyroid hormone-responsive B1 gene
4097.	27242	TNFRSF21	tumor necrosis factor receptor superfamily, member 21
4098.	27243	CHMP2A	chromatin modifying protein 2A
4099.	27244	SESN1	sestrin 1
4100.	27248	C2orf30	chromosome 2 open reading frame 30
4101.	27250	PDCD4	programmed cell death 4 (neoplastic transformation inhibitor)
4102.	27252	KLHL20	kelch-like 20 (Drosophila)
4103.	27257	LSM1	LSM1 homolog, U6 small nuclear RNA associated (S. cerevisiae)
4104.	27258	LSM3	LSM3 homolog, U6 small nuclear RNA associated (S. cerevisiae)
4105.	27286	SRPX2	sushi-repeat-containing protein, X-linked 2
4106.	27289	RND1	Rho family GTPase 1
4107.	27292	HSA9761	dimethyladenosine transferase
4108.	27301	APEX2	APEX nuclease (apurinic/apyrimidinic endonuclease) 2
4109.	27303	RBMS3	RNA binding motif, single stranded interacting protein
4110.	27315	FRAG1	FGF receptor activating protein 1
4111.	27316	RBMX	RNA binding motif protein, X-linked
4112.	27332	ZNF638	zinc finger protein 638
4113.	27333	GOLPH4	golgi phosphoprotein 4
4114.	27335	EIF3S12	eukaryotic translation initiation factor 3, subunit 12
4115.	27336	HTATSF1	HIV TAT specific factor 1
4116.	27338	UBE2S	ubiquitin-conjugating enzyme E2S
4117.	27339	PRPF19	PRP19/PSO4 pre-mRNA processing factor 19 homolog (S. cerevisiae)
4118.	27341	CGI-96	CGI-96 protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4119.	27345	KCNMB4	potassium large conductance calcium-activated channel, subfamily M, beta member 4
4120.	27346	MAC30	hypothetical protein MAC30
4121.	27348	TOR1B	torsin family 1, member B (torsin B)
4122.	27349	MT	malonyl-CoA:acyl carrier protein transacylase, mitochondrial
4123.	27430	MAT2B	methionine adenosyltransferase II, beta
4124.	27433	TOR2A	torsin family 2, member A
4125.	27436	EML4	echinoderm microtubule associated protein like 4
4126.	27440	CECR5	cat eye syndrome chromosome region, candidate 5
4127.	28231	SLCO4A1	solute carrier organic anion transporter family, member 4A1
4128.	28639	TRBC1	T cell receptor beta constant 1
4129.	28831	IGLJ3	immunoglobulin lambda joining 3
4130.	28951	TRIB2	tribbles homolog 2 (Drosophila)
4131.	28955	DEXI	dexamethasone-induced transcript
4132.	28957	MRPS28	mitochondrial ribosomal protein S28
4133.	28960	DCPS	decapping enzyme, scavenger
4134.	28962	OSTM1	osteopetrosis associated transmembrane protein 1
4135.	28966	SNX24	sorting nexin 24
4136.	28969	BZW2	basic leucine zipper and W2 domains 2
4137.	28970	PTD012	PTD012 protein
4138.	28971	PTD015	PTD015 protein
4139.	28972	SPCS1	signal peptidase complex subunit 1 homolog (S. cerevisiae)
4140.	28973	MRPS18B	mitochondrial ribosomal protein S18B
4141.	28974	HSPC023	HSPC023 protein
4142.	28977	MRPL42	mitochondrial ribosomal protein L42
4143.	28981	CDV1	carnitine deficiency-associated, expressed in ventricle 1
4144.	28982	FLVCR	feline leukemia virus subgroup C cellular receptor
4145.	28985	MCTS1	malignant T cell amplified sequence 1
4146.	28989	AD-003	AD-003 protein
4147.	28991	COMMD5	COMM domain containing 5
4148.	28992	LRP16	LRP16 protein
4149.	28998	MRPL13	mitochondrial ribosomal protein L13
4150.	29005	PRO1073	PRO1073 protein
4151.	29015	SLC43A3	solute carrier family 43, member 3
4152.	29028	ATAD2	ATPase family, AAA domain containing 2
4153.	29057	TMEM29	transmembrane protein 29
4154.	29058	C20orf30	chromosome 20 open reading frame 30
4155.	29062	HSPC049	HSPC049 protein
4156.	29066	ZC3H7A	zinc finger CCCH-type containing 7A
4157.	29068	BTBD15	BTB (POZ) domain containing 15
4158.	29070	HSPC065	HSPC065 protein
4159.	29071	C1GALT1C1	C1GALT1-specific chaperone 1
4160.	29074	MRPL18	mitochondrial ribosomal protein L18
4161.	29079	MED4	mediator of RNA polymerase II transcription, subunit 4 homolog (yeast)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4162.	29082	CHMP4A	chromatin modifying protein 4A
4163.	29083	HSPC135	HSPC135 protein
4164.	29085	PHPT1	phosphohistidine phosphatase 1
4165.	29086	HSPC142	HSPC142 protein
4166.	29088	MRPL15	mitochondrial ribosomal protein L15
4167.	29089	UBE2T	ubiquitin-conjugating enzyme E2T (putative)
4168.	29090	C18orf55	chromosome 18 open reading frame 55
4169.	29091	STXBP6	syntaxin binding protein 6 (amisyn)
4170.	29093	MRPL22	mitochondrial ribosomal protein L22
4171.	29094	HSPC159	HSPC159 protein
4172.	29095	ORMDL2	ORM1-like 2 (<i>S. cerevisiae</i>)
4173.	29100	HSPC171	HSPC171 protein
4174.	29101	SSU72	Ssu72 RNA polymerase II CTD phosphatase homolog (yeast)
4175.	29102	RNASEN	ribonuclease III, nuclear
4176.	29105	GTL3	gene trap locus 3 (mouse)
4177.	29107	NXT1	NTF2-like export factor 1
4178.	29109	FHOD1	formin homology 2 domain containing 1
4179.	29110	TBK1	TANK-binding kinase 1
4180.	29113	C6orf15	chromosome 6 open reading frame 15
4181.	29115	HCNGP	transcriptional regulator protein
4182.	29116	MYLIP	myosin regulatory light chain interacting protein
4183.	29123	ANKRD11	ankyrin repeat domain 11
4184.	29127	RACGAP1	Rac GTPase activating protein 1
4185.	29128	UHRF1	ubiquitin-like, containing PHD and RING finger domains, 1
4186.	29761	USP25	ubiquitin specific protease 25
4187.	29766	TMOD3	tropomodulin 3 (ubiquitous)
4188.	29777	ABT1	activator of basal transcription 1
4189.	29780	PARVB	parvin, beta
4190.	29793	TI-227H	hypothetical protein TI-227H
4191.	29803	REPIN1	replication initiator 1
4192.	29842	TFCP2L1	transcription factor CP2-like 1
4193.	29843	SENP1	SUMO1/sentrin specific protease 1
4194.	29844	TFPT	TCF3 (E2A) fusion partner (in childhood Leukemia)
4195.	29855	UBN1	ubinuclein 1
4196.	29880	ALG5	asparagine-linked glycosylation 5 homolog (yeast, dolichyl-phosphate beta-glucosyltransferase)
4197.	29881	NPC1L1	NPC1 (Niemann-Pick disease, type C1, gene)-like 1
4198.	29883	CNOT7	CCR4-NOT transcription complex, subunit 7
4199.	29886	SNX8	sorting nexin 8
4200.	29887	SNX10	sorting nexin 10
4201.	29889	GNL2	guanine nucleotide binding protein-like 2 (nucleolar)
4202.	29893	TBPIP	TBP-1 interacting protein
4203.	29894	CPSF1	cleavage and polyadenylation specific factor 1, 160kDa
4204.	29899	GPSM2	G-protein signalling modulator 2 (AGS3-like, <i>C. elegans</i>)
4205.	29901	SAC3D1	SAC3 domain containing 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4206.	29902	HSU79274	protein predicted by clone 23733
4207.	29909	GPR171	G protein-coupled receptor 171
4208.	29920	PYCR2	pyrroline-5-carboxylate reductase family, member 2
4209.	29922	NME7	non-metastatic cells 7, protein expressed in (nucleoside-diphosphate kinase)
4210.	29923	HIG2	hypoxia-inducible protein 2
4211.	29927	SEC61A1	Sec61 alpha 1 subunit (<i>S. cerevisiae</i>)
4212.	29929	ALG6	asparagine-linked glycosylation 6 homolog (yeast, alpha-1,3-glucosyltransferase)
4213.	29943	PADI1	peptidyl arginine deiminase, type I
4214.	29944	PNMA3	paraneoplastic antigen MA3
4215.	29945	ANAPC4	anaphase promoting complex subunit 4
4216.	29946	SERTAD3	SERTA domain containing 3
4217.	29950	SERTAD1	SERTA domain containing 1
4218.	29952	DPP7	dipeptidylpeptidase 7
4219.	29956	LASS2	LAG1 longevity assurance homolog 2 (<i>S. cerevisiae</i>)
4220.	29957	SLC25A24	solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 24
4221.	29959	NRBP	nuclear receptor binding protein
4222.	29964	C6orf49	chromosome 6 open reading frame 49
4223.	29966	STRN3	striatin, calmodulin binding protein 3
4224.	29967	LRP12	low density lipoprotein-related protein 12
4225.	29968	PSAT1	phosphoserine aminotransferase 1
4226.	29969	MDFIC	MyoD family inhibitor domain containing
4227.	29970	SCHIP1	schwannomin interacting protein 1
4228.	29978	UBQLN2	ubiquilin 2
4229.	29979	UBQLN1	ubiquilin 1
4230.	29980	DONSON	downstream neighbor of SON
4231.	29982	NRBF2	nuclear receptor binding factor 2
4232.	29985	SLC39A3	solute carrier family 39 (zinc transporter), member 3
4233.	29989	OBP2B	odorant binding protein 2B
4234.	29990	PILRB	paired immunoglobulin-like type 2 receptor beta
4235.	29994	BAZ2B	bromodomain adjacent to zinc finger domain, 2B
4236.	29995	LMCD1	LIM and cysteine-rich domains 1
4237.	29997	GLTSCR2	glioma tumor suppressor candidate region gene 2
4238.	30000	TNPO2	transportin 2 (importin 3, karyopherin beta 2b)
4239.	30001	ERO1L	ERO1-like (<i>S. cerevisiae</i>)
4240.	30011	SH3KBP1	SH3-domain kinase binding protein 1
4241.	30812	SOX8	SRY (sex determining region Y)-box 8
4242.	30817	EMR2	egf-like module containing, mucin-like, hormone receptor-like 2
4243.	30834	ZNRD1	zinc ribbon domain containing, 1
4244.	30835	CD209	CD209 antigen
4245.	30836	ERBP	estrogen receptor binding protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4246.	30844	EHD4	EH-domain containing 4
4247.	30846	EHD2	EH-domain containing 2
4248.	30850	HUMPPA	paraneoplastic antigen
4249.	30968	STOML2	stomatin (EPB72)-like 2
4250.	49854	ZNF295	zinc finger protein 295
4251.	49855	ZNF291	zinc finger protein 291
4252.	49856	WDR8	WD repeat domain 8
4253.	50484	RRM2B	ribonucleotide reductase M2 B (TP53 inducible)
4254.	50507	NOX4	NADPH oxidase 4
4255.	50509	COL5A3	collagen, type V, alpha 3
4256.	50515	CHST11	carbohydrate (chondroitin 4) sulfotransferase 11
4257.	50626	CYHR1	cysteine and histidine rich 1
4258.	50628	GEMIN4	gem (nuclear organelle) associated protein 4
4259.	50650	ARHGEF3	Rho guanine nucleotide exchange factor (GEF) 3
4260.	50804	MYEF2	myelin expression factor 2
4261.	50807	DDEF1	development and differentiation enhancing factor 1
4262.	50808	AK3	adenylate kinase 3
4263.	50809	HP1BP3	heterochromatin protein 1, binding protein 3
4264.	50810	HDGFRP3	hepatoma-derived growth factor, related protein 3
4265.	50813	COPS7A	COP9 constitutive photomorphogenic homolog subunit 7A (Arabidopsis)
4266.	50814	NSDHL	NAD(P) dependent steroid dehydrogenase-like
4267.	50853	VILL	villin-like
4268.	50854	C6orf48	chromosome 6 open reading frame 48
4269.	50859	SPOCK3	sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican) 3
4270.	50862	RNF141	ring finger protein 141
4271.	50863	HNT	neurotrimin
4272.	50865	HEBP1	heme binding protein 1
4273.	51000	SLC35B3	solute carrier family 35, member B3
4274.	51002	CGI-121	CGI-121 protein
4275.	51003	MED31	mediator of RNA polymerase II transcription, subunit 31 homolog (yeast)
4276.	51004	COQ6	coenzyme Q6 homolog (yeast)
4277.	51008	ASCC1	activating signal cointegrator 1 complex subunit 1
4278.	51010	EXOSC3	exosome component 3
4279.	51011	FAHD2A	fumarylacetoacetate hydrolase domain containing 2A
4280.	51012	C20orf45	chromosome 20 open reading frame 45
4281.	51014	TMED7	transmembrane emp24 protein transport domain containing 7
4282.	51018	CGI-115	CGI-115 protein
4283.	51021	MRPS16	mitochondrial ribosomal protein S16
4284.	51022	GLRX2	glutaredoxin 2
4285.	51024	TTC11	tetratricopeptide repeat domain 11

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4286.	51026	GOLT1B	golgi transport 1 homolog B (<i>S. cerevisiae</i>)
4287.	51028	C13orf9	chromosome 13 open reading frame 9
4288.	51029	C1orf121	chromosome 1 open reading frame 121
4289.	51053	GMNN	geminin, DNA replication inhibitor
4290.	51056	LAP3	leucine aminopeptidase 3
4291.	51060	TXNDC12	thioredoxin domain containing 12 (endoplasmic reticulum)
4292.	51062	SPG3A	spastic paraplegia 3A (autosomal dominant)
4293.	51068	NMD3	NMD3 homolog (<i>S. cerevisiae</i>)
4294.	51070	NOSIP	nitric oxide synthase interacting protein
4295.	51072	C2orf4	chromosome 2 open reading frame 4
4296.	51073	MRPL4	mitochondrial ribosomal protein L4
4297.	51077	C14orf111	chromosome 14 open reading frame 111
4298.	51079	GRIM19	cell death-regulatory protein GRIM19
4299.	51081	MRPS7	mitochondrial ribosomal protein S7
4300.	51082	POLR1D	polymerase (RNA) I polypeptide D, 16kDa
4301.	51084	CRYL1	crystallin, lambda 1
4302.	51088	KLHL5	kelch-like 5 (<i>Drosophila</i>)
4303.	51091	SLA/LP	soluble liver antigen/liver pancreas antigen
4304.	51092	SIDT2	SID1 transmembrane family, member 2
4305.	51094	ADIPOR1	adiponectin receptor 1
4306.	51095	TRNT1	tRNA nucleotidyl transferase, CCA-adding, 1
4307.	51096	WDR50	WD repeat domain 50
4308.	51097	SCCPDH	saccharopine dehydrogenase (putative)
4309.	51098	C20orf9	chromosome 20 open reading frame 9
4310.	51099	ABHD5	abhydrolase domain containing 5
4311.	51100	SH3GLB1	SH3-domain GRB2-like endophilin B1
4312.	51103	NDUFAF1	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, assembly factor 1
4313.	51105	PHF20L1	PHD finger protein 20-like 1
4314.	51106	TFB1M	transcription factor B1, mitochondrial
4315.	51107	APH1A	anterior pharynx defective 1 homolog A (<i>C. elegans</i>)
4316.	51108	DREV1	DORA reverse strand protein 1
4317.	51111	SUV420H1	suppressor of variegation 4-20 homolog 1 (<i>Drosophila</i>)
4318.	51112	TTC15	tetratricopeptide repeat domain 15
4319.	51114	ZDHHC9	zinc finger, DHHC-type containing 9
4320.	51115	CGI-90	CGI-90 protein
4321.	51116	MRPS2	mitochondrial ribosomal protein S2
4322.	51117	COQ4	coenzyme Q4 homolog (yeast)
4323.	51118	UTP11L	UTP11-like, U3 small nucleolar ribonucleoprotein, (yeast)
4324.	51121	RPL26L1	ribosomal protein L26-like 1
4325.	51122	COMMD2	COMM domain containing 2
4326.	51123	LOC51123	HSPC038 protein
4327.	51124	IER3IP1	immediate early response 3 interacting protein 1
4328.	51125	GOLGA7	golgi autoantigen, golgin subfamily a, 7

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4329.	51126	NAT5	N-acetyltransferase 5 (ARD1 homolog, <i>S. cerevisiae</i>)
4330.	51128	SARA2	SAR1a gene homolog 2 (<i>S. cerevisiae</i>)
4331.	51129	ANGPTL4	angiopoietin-like 4
4332.	51130	ASB3	ankyrin repeat and SOCS box-containing 3
4333.	51131	PHF11	PHD finger protein 11
4334.	51133	KCTD3	potassium channel tetramerisation domain containing 3
4335.	51136	LOC51136	PTD016 protein
4336.	51141	INSIG2	insulin induced gene 2
4337.	51142	CHCHD2	coiled-coil-helix-coiled-coil-helix domain containing 2
4338.	51143	DNCL11	dynein, cytoplasmic, light intermediate polypeptide 1
4339.	51144	HSD17B12	hydroxysteroid (17-beta) dehydrogenase 12
4340.	51150	SDF4	stromal cell derived factor 4
4341.	51151	MATP	membrane associated transporter
4342.	51154	C1orf33	chromosome 1 open reading frame 33
4343.	51155	HN1	hematological and neurological expressed 1
4344.	51157	ZNF580	zinc finger protein 580
4345.	51161	C3orf18	chromosome 3 open reading frame 18
4346.	51163	DBR1	debranching enzyme homolog 1 (<i>S. cerevisiae</i>)
4347.	51167	NCB5OR	NADPH cytochrome B5 oxidoreductase
4348.	51172	NAGPA	N-acetylglucosamine-1-phosphodiester alpha-N-acetylglucosaminidase
4349.	51174	TUBD1	tubulin, delta 1
4350.	51175	TUBE1	tubulin, epsilon 1
4351.	51176	LEF1	lymphoid enhancer-binding factor 1
4352.	51182	HSPA14	heat shock 70kDa protein 14
4353.	51184	MGC14560	protein x 0004
4354.	51185	CRBN	cereblon
4355.	51186	WBP5	WW domain binding protein 5
4356.	51187	C15orf15	chromosome 15 open reading frame 15
4357.	51192	CKLF	chemokine-like factor
4358.	51193	ZNF639	zinc finger protein 639
4359.	51199	NIN	ninein (GSK3B interacting protein)
4360.	51201	ZDHHC2	zinc finger, DHHC-type containing 2
4361.	51202	DDX47	DEAD (Asp-Glu-Ala-Asp) box polypeptide 47
4362.	51203	NUSAP1	nucleolar and spindle associated protein 1
4363.	51204	LOC51204	clone HQ0477 PR00477p
4364.	51205	ACP6	acid phosphatase 6, lysophosphatidic
4365.	51208	CLDN18	claudin 18
4366.	51209	RAB9B	RAB9B, member RAS oncogene family
4367.	51218	C14orf87	chromosome 14 open reading frame 87
4368.	51226	COPZ2	coatamer protein complex, subunit zeta 2
4369.	51230	PHF20	PHD finger protein 20
4370.	51232	CRIM1	cysteine-rich motor neuron 1
4371.	51234	LOC51234	hypothetical protein LOC51234
4372.	51241	C14orf112	chromosome 14 open reading frame 112

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4373.	51246	SCOTIN	scotin
4374.	51247	PAIP2	poly(A) binding protein interacting protein 2
4375.	51248	PDZK11	PDZ domain containing 11
4376.	51251	NT5C3	5'-nucleotidase, cytosolic III
4377.	51253	MRPL37	mitochondrial ribosomal protein L37
4378.	51255	LOC51255	hypothetical protein LOC51255
4379.	51256	TBC1D7	TBC1 domain family, member 7
4380.	51258	MRPL51	mitochondrial ribosomal protein L51
4381.	51259	MGC13379	HSPC244
4382.	51260	CXorf26	chromosome X open reading frame 26
4383.	51263	MRPL30	mitochondrial ribosomal protein L30
4384.	51264	MRPL27	mitochondrial ribosomal protein L27
4385.	51267	CLEC1A	C-type lectin domain family 1, member A
4386.	51271	UBAP1	ubiquitin associated protein 1
4387.	51274	KLF3	Kruppel-like factor 3 (basic)
4388.	51275	FLJ39616	apoptosis-related protein PNAS-1
4389.	51276	ZNF571	zinc finger protein 571
4390.	51278	IER5	immediate early response 5
4391.	51282	SCAND1	SCAN domain containing 1
4392.	51283	BFAR	bifunctional apoptosis regulator
4393.	51290	PTX1	PTX1 protein
4394.	51292	GMPR2	guanosine monophosphate reductase 2
4395.	51293	CD320	CD320 antigen
4396.	51298	THEG	Theg homolog (mouse)
4397.	51299	NRN1	neuritin 1
4398.	51304	ZDHHC3	zinc finger, DHHC-type containing 3
4399.	51306	C5orf5	chromosome 5 open reading frame 5
4400.	51308	C5orf19	chromosome 5 open reading frame 19
4401.	51312	SLC25A37	solute carrier family 25, member 37
4402.	51315	LOC51315	hypothetical protein LOC51315
4403.	51318	MRPL35	mitochondrial ribosomal protein L35
4404.	51319	RSRC1	arginine/serine-rich coiled-coil 1
4405.	51321	LOC51321	hypothetical protein LOC51321
4406.	51322	WAC	WW domain containing adaptor with coiled-coil
4407.	51326	LOC51326	ADP-ribosylation factor-like
4408.	51330	TNFRSF12A	tumor necrosis factor receptor superfamily, member 12A
4409.	51332	SPTBN5	spectrin, beta, non-erythrocytic 5
4410.	51335	NEUGRIN	mesenchymal stem cell protein DSC92
4411.	51343	FZR1	fizzy/cell division cycle 20 related 1 (Drosophila)
4412.	51347	TAOK3	TAO kinase 3
4413.	51350	KRT2B	cytokeratin 2
4414.	51362	CDC40	cell division cycle 40 homolog (yeast)
4415.	51365	PLA1A	phospholipase A1 member A
4416.	51371	C13orf12	chromosome 13 open reading frame 12
4417.	51373	MRPS17	mitochondrial ribosomal protein S17
4418.	51377	UCHL5	ubiquitin carboxyl-terminal hydrolase L5
4419.	51379	CRLF3	cytokine receptor-like factor 3
4420.	51380	CSAD	cysteine sulfinic acid decarboxylase
4421.	51382	ATP6V1D	ATPase, H ⁺ transporting, lysosomal 34kDa, V1 subunit D

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4422.	51385	ZNF589	zinc finger protein 589
4423.	51388	CGI-37	comparative gene identification transcript 37
4424.	51393	TRPV2	transient receptor potential cation channel, subfamily V, member 2
4425.	51397	COMMD10	COMM domain containing 10
4426.	51398	PTD008	PTD008 protein
4427.	51399	TRAPPC4	trafficking protein particle complex 4
4428.	51400	PME-1	protein phosphatase methylesterase-1
4429.	51406	NOL7	nucleolar protein 7, 27kDa
4430.	51409	HEMK1	HemK methyltransferase family member 1
4431.	51411	BIN2	bridging integrator 2
4432.	51412	ACTL6B	actin-like 6B
4433.	51421	AMOTL2	angiomotin like 2
4434.	51426	POLK	polymerase (DNA directed) kappa
4435.	51428	DDX41	DEAD (Asp-Glu-Ala-Asp) box polypeptide 41
4436.	51429	SNX9	sorting nexin 9
4437.	51430	C1orf9	chromosome 1 open reading frame 9
4438.	51433	ANAPC5	anaphase promoting complex subunit 5
4439.	51434	ANAPC7	anaphase promoting complex subunit 7
4440.	51441	YTHDF2	YTH domain family, member 2
4441.	51454	GULP1	GULP, engulfment adaptor PTB domain containing 1
4442.	51455	REV1L	REV1-like (yeast)
4443.	51460	SFMBT1	Scm-like with four mbt domains 1
4444.	51465	UBE2J1	ubiquitin-conjugating enzyme E2, J1 (UBC6 homolog, yeast)
4445.	51474	EPLIN	epithelial protein lost in neoplasm beta
4446.	51478	HSD17B7	hydroxysteroid (17-beta) dehydrogenase 7
4447.	51479	ANKFY1	ankyrin repeat and FYVE domain containing 1
4448.	51491	HSPC111	hypothetical protein HSPC111
4449.	51493	HSPC117	hypothetical protein HSPC117
4450.	51495	HSPC121	butyrate-induced transcript 1
4451.	51496	HSPC129	hypothetical protein HSPC129
4452.	51497	TH1L	TH1-like (Drosophila)
4453.	51499	P53CSV	p53-inducible cell-survival factor
4454.	51504	HSPC152	hypothetical protein HSPC152
4455.	51507	C20orf43	chromosome 20 open reading frame 43
4456.	51510	CHMP5	chromatin modifying protein 5
4457.	51512	GTSE1	G-2 and S-phase expressed 1
4458.	51514	DTL	denticleless homolog (Drosophila)
4459.	51520	LARS	leucyl-tRNA synthetase
4460.	51523	CXXC5	CXXC finger 5
4461.	51524	HSPC196	hypothetical protein HSPC196
4462.	51526	C20orf111	chromosome 20 open reading frame 111
4463.	51527	C14orf129	chromosome 14 open reading frame 129
4464.	51528	C14orf100	chromosome 14 open reading frame 100
4465.	51530	ZC3HC1	zinc finger, C3HC-type containing 1
4466.	51534	C6orf55	chromosome 6 open reading frame 55
4467.	51535	PPHLN1	periphilin 1
4468.	51537	MTP18	mitochondrial protein 18 kDa
4469.	51538	PS1D	putative S1 RNA binding domain protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4470.	51542	VPS54	vacuolar protein sorting 54 (yeast)
4471.	51545	ZNF581	zinc finger protein 581
4472.	51552	RAB14	RAB14, member RAS oncogene family
4473.	51560	RAB6B	RAB6B, member RAS oncogene family
4474.	51562	MBIP	MAP3K12 binding inhibitory protein 1
4475.	51567	TTRAP	TRAF and TNF receptor associated protein
4476.	51569	UFM1	ubiquitin-fold modifier 1
4477.	51573	MIR16	membrane interacting protein of RGS16
4478.	51575	C20orf6	chromosome 20 open reading frame 6
4479.	51582	AZIN1	antizyme inhibitor 1
4480.	51585	PCF11	pre-mRNA cleavage complex II protein Pcf11
4481.	51586	PCQAP	PC2 (positive cofactor 2, multiprotein complex) glutamine/Q-rich-associated protein
4482.	51593	ARS2	arsenate resistance protein ARS2
4483.	51594	NAG	neuroblastoma-amplified protein
4484.	51601	LIPT1	lipoyltransferase 1
4485.	51602	NOP5/NOP58	nucleolar protein NOP5/NOP58
4486.	51603	KIAA0859	KIAA0859
4487.	51605	CGI-09	CGI-09 protein
4488.	51606	ATP6V1H	ATPase, H ⁺ transporting, lysosomal 50/57kDa, V1 subunit H
4489.	51608	C7orf20	chromosome 7 open reading frame 20
4490.	51611	CGI-30	CGI-30 protein
4491.	51616	TAF9L	TAF9-like RNA polymerase II, TATA box binding protein (TBP)-associated factor, 31kDa
4492.	51619	UBE2D4	ubiquitin-conjugating enzyme E2D 4 (putative)
4493.	51621	KLF13	Kruppel-like factor 13
4494.	51622	C7orf28A	chromosome 7 open reading frame 28A
4495.	51634	RBMX2	RNA binding motif protein, X-linked 2
4496.	51639	SF3B14	splicing factor 3B, 14 kDa subunit
4497.	51643	CGI-119	CGI-119 protein
4498.	51645	PPIL1	peptidylprolyl isomerase (cyclophilin)-like 1
4499.	51646	YPEL5	yippee-like 5 (Drosophila)
4500.	51647	CGI-128	CGI-128 protein
4501.	51649	MRPS23	mitochondrial ribosomal protein S23
4502.	51651	BIT1	Bcl-2 inhibitor of transcription
4503.	51654	CDK5RAP1	CDK5 regulatory subunit associated protein 1
4504.	51657	DUSP24	dual specificity phosphatase 24 (putative)
4505.	51659	Pfs2	DNA replication complex GINS protein PSF2
4506.	51661	FKBP7	FK506 binding protein 7
4507.	51663	ZFR	zinc finger RNA binding protein
4508.	51665	ASB1	ankyrin repeat and SOCS box-containing 1
4509.	51667	NYREN18	NEDD8 ultimate buster-1
4510.	51668	C1orf41	chromosome 1 open reading frame 41

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4511.	51678	MPP6	membrane protein, palmitoylated 6 (MAGUK p55 subfamily member 6)
4512.	51690	LSM7	LSM7 homolog, U6 small nuclear RNA associated (<i>S. cerevisiae</i>)
4513.	51692	CPSF3	cleavage and polyadenylation specific factor 3, 73kDa
4514.	51693	HSPC176	hematopoietic stem/progenitor cells 176
4515.	51696	HECA	headcase homolog (<i>Drosophila</i>)
4516.	51701	NLK	nemo like kinase
4517.	51703	ACSL5	acyl-CoA synthetase long-chain family member 5
4518.	51704	GPRC5B	G protein-coupled receptor, family C, group 5, member B
4519.	51706	NQO3A2	NAD(P)H:quinone oxidoreductase type 3, polypeptide A2
4520.	51710	ZNF44	zinc finger protein 44 (KOX 7)
4521.	51714	SELT	selenoprotein T
4522.	51719	CAB39	calcium binding protein 39
4523.	51720	RAP80	receptor associated protein 80
4524.	51726	DNAJB11	DnaJ (Hsp40) homolog, subfamily B, member 11
4525.	51727	CMPK	cytidylate kinase
4526.	51728	POLR3K	polymerase (RNA) III (DNA directed) polypeptide K, 12.3 kDa
4527.	51729	WBP11	WW domain binding protein 11
4528.	51741	WWOX	WW domain containing oxidoreductase
4529.	51742	ARID4B	AT rich interactive domain 4B (RBP1-like)
4530.	51747	CROP	cisplatin resistance-associated overexpressed protein
4531.	51752	ARTS-1	type 1 tumor necrosis factor receptor shedding aminopeptidase regulator
4532.	51761	ATP8A2	ATPase, aminophospholipid transporter-like, Class I, type 8A, member 2
4533.	51762	RAB8B	RAB8B, member RAS oncogene family
4534.	51763	SKIP	skeletal muscle and kidney enriched inositol phosphatase
4535.	51765	MASK	Mst3 and SOK1-related kinase
4536.	51768	TM7SF3	transmembrane 7 superfamily member 3
4537.	51776	ZAK	sterile alpha motif and leucine zipper containing kinase AZK
4538.	51778	MYOZ2	myozenin 2
4539.	51805	COQ3	coenzyme Q3 homolog, methyltransferase (yeast)
4540.	51806	CALML5	calmodulin-like 5
4541.	51809	GALNT7	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 7 (GalNAc-T7)
4542.	53335	BCL11A	B-cell CLL/lymphoma 11A (zinc finger protein)
4543.	53342	IL17D	interleukin 17D
4544.	53346	TM6SF1	transmembrane 6 superfamily member 1
4545.	53349	ZFYVE1	zinc finger, FYVE domain containing 1
4546.	53635	PTOV1	prostate tumor overexpressed gene 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4547.	53637	EDG8	endothelial differentiation, sphingolipid G-protein-coupled receptor, 8
4548.	53822	FXYP7	FXYP domain containing ion transport regulator 7
4549.	53827	FXYP5	FXYP domain containing ion transport regulator 5
4550.	53831	GPR84	G protein-coupled receptor 84
4551.	53832	IL20RA	interleukin 20 receptor, alpha
4552.	53838	C11orf24	chromosome 11 open reading frame 24
4553.	53840	TRIM34	tripartite motif-containing 34
4554.	53916	RAB4B	RAB4B, member RAS oncogene family
4555.	53918	PELO	pelota homolog (Drosophila)
4556.	53944	CSNK1G1	casein kinase 1, gamma 1
4557.	53981	CPSF2	cleavage and polyadenylation specific factor 2, 100kDa
4558.	54014	BRWD1	bromodomain and WD repeat domain containing 1
4559.	54069	C21orf45	chromosome 21 open reading frame 45
4560.	54093	C21orf18	chromosome 21 open reading frame 18
4561.	54097	FAM3B	family with sequence similarity 3, member B
4562.	54101	RIPK4	receptor-interacting serine-threonine kinase 4
4563.	54103	LOC54103	hypothetical protein LOC54103
4564.	54107	POLE3	polymerase (DNA directed), epsilon 3 (p17 subunit)
4565.	54108	CHRA1	chromatin accessibility complex 1
4566.	54145	H2BFS	H2B histone family, member S
4567.	54148	MRPL39	mitochondrial ribosomal protein L39
4568.	54165	RP42	RP42 homolog
4569.	54187	NANS	N-acetylneuraminic acid synthase (sialic acid synthase)
4570.	54205	CYCS	cytochrome c, somatic
4571.	54206	MIG-6	Gene 33/Mig-6 (MIG-6)
4572.	54209	TREM2	triggering receptor expressed on myeloid cells 2
4573.	54210	TREM1	triggering receptor expressed on myeloid cells 1
4574.	54331	GNG2	guanine nucleotide binding protein (G protein), gamma 2
4575.	54344	DPM3	dolichyl-phosphate mannosyltransferase polypeptide 3
4576.	54360	CYTL1	cytokine-like 1
4577.	54386	TERF2IP	telomeric repeat binding factor 2, interacting protein
4578.	54407	SLC38A2	solute carrier family 38, member 2
4579.	54414	CSE-C	cytosolic sialic acid 9-O- acetyltransferase homolog
4580.	54431	DNAJC10	DnaJ (Hsp40) homolog, subfamily C, member 10
4581.	54432	YIPF1	Yip1 domain family, member 1
4582.	54433	NOLA1	nucleolar protein family A, member 1 (H/ACA small nucleolar RNPs)
4583.	54441	DKFZP434A0131	DKFZp434A0131 protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4584.	54442	KCTD5	potassium channel tetramerisation domain containing 5
4585.	54443	ANLN	anillin, actin binding protein (scraps homolog, Drosophila)
4586.	54455	FBXO42	F-box protein 42
4587.	54460	MRPS21	mitochondrial ribosomal protein S21
4588.	54462	KIAA1128	KIAA1128
4589.	54463	FLJ20152	hypothetical protein FLJ20152
4590.	54467	ANKIB1	ankyrin repeat and IBR domain containing 1
4591.	54469	ZA20D3	zinc finger, A20 domain containing 3
4592.	54478	FAM64A	family with sequence similarity 64, member A
4593.	54480	CSGlcA-T	chondroitin sulfate glucuronyltransferase
4594.	54494	FLJ20010	hypothetical protein FLJ20010
4595.	54495	TXNDC10	thioredoxin domain containing 10
4596.	54499	TMCC4	transmembrane and coiled-coil domains 4
4597.	54504	CPVL	carboxypeptidase, vitellogenic-like
4598.	54505	DHX29	DEAH (Asp-Glu-Ala-His) box polypeptide 29
4599.	54512	EXOSC4	exosome component 4
4600.	54516	MTRF1L	mitochondrial translational release factor 1-like
4601.	54518	APBB1IP	amyloid beta (A4) precursor protein-binding, family B, member 1 interacting protein
4602.	54530	FLJ20054	hypothetical protein FLJ20054
4603.	54532	USP53	ubiquitin specific protease 53
4604.	54534	MRPL50	mitochondrial ribosomal protein L50
4605.	54537	FAM35A	family with sequence similarity 35, member A
4606.	54539	NDUFB11	NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 11, 17.3kDa
4607.	54540	FLJ10404	hypothetical protein FLJ10404
4608.	54541	DDIT4	DNA-damage-inducible transcript 4
4609.	54543	TOMM7	translocase of outer mitochondrial membrane 7 homolog (yeast)
4610.	54545	MTMR12	myotubularin related protein 12
4611.	54549	SDK2	sidekick homolog 2 (chicken)
4612.	54558	SPATA6	spermatogenesis associated 6
4613.	54583	EGLN1	egl nine homolog 1 (C. elegans)
4614.	54602	NDFIP2	Nedd4 family interacting protein 2
4615.	54606	DDX56	DEAD (Asp-Glu-Ala-Asp) box polypeptide 56
4616.	54617	INO80	homolog of yeast INO80
4617.	54620	FBXL19	F-box and leucine-rich repeat protein 19
4618.	54623	PD2	hypothetical protein F23149_1
4619.	54625	PARP14	poly (ADP-ribose) polymerase family, member 14
4620.	54629	FAM63B	family with sequence similarity 63, member B
4621.	54662	TBC1D13	TBC1 domain family, member 13
4622.	54663	WDR74	WD repeat domain 74

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4623.	54664	FLJ11273	hypothetical protein FLJ11273
4624.	54675	C20orf155	chromosome 20 open reading frame 155
4625.	54676	GTPBP2	GTP binding protein 2
4626.	54682	MANSC1	MANSC domain containing 1
4627.	54700	RRN3	RRN3 RNA polymerase I transcription factor homolog (yeast)
4628.	54704	PPM2C	protein phosphatase 2C, magnesium-dependent, catalytic subunit
4629.	54726	HSHIN1	HIV-1 induced protein HIN-1
4630.	54732	TMED9	transmembrane emp24 protein transport domain containing 9
4631.	54741	LEPROT	leptin receptor overlapping transcript
4632.	54742	LY6K	lymphocyte antigen 6 complex, locus K
4633.	54751	FBLIM1	filamin binding LIM protein 1
4634.	54753	DKFZp434J1015	hypothetical protein DKFZp434J1015
4635.	54757	FAM20A	family with sequence similarity 20, member A
4636.	54758	KLHDC4	kelch domain containing 4
4637.	54763	ROPN1	ropporin, rhophilin associated protein 1
4638.	54764	ZRANB1	zinc finger, RAN-binding domain containing 1
4639.	54765	TRIM44	tripartite motif-containing 44
4640.	54780	C10orf86	chromosome 10 open reading frame 86
4641.	54788	DNAJB12	DnaJ (Hsp40) homolog, subfamily B, member 12
4642.	54793	KCTD9	potassium channel tetramerisation domain containing 9
4643.	54795	TRPM4	transient receptor potential cation channel, subfamily M, member 4
4644.	54796	BNC2	basonuclin 2
4645.	54800	DRE1	DRE1 protein
4646.	54801	FAM29A	family with sequence similarity 29, member A
4647.	54805	CNNM2	cyclin M2
4648.	54806	AHI1	Abelson helper integration site
4649.	54808	DYM	dymeclin
4650.	54812	AFTIPHILIN	aftiphilin protein
4651.	54815	GATAD2A	GATA zinc finger domain containing 2A
4652.	54816	SUHW4	suppressor of hairy wing homolog 4 (Drosophila)
4653.	54819	ZCCHC10	zinc finger, CCHC domain containing 10
4654.	54821	FLJ20105	FLJ20105 protein
4655.	54822	TRPM7	transient receptor potential cation channel, subfamily M, member 7
4656.	54823	C1orf26	chromosome 1 open reading frame 26
4657.	54826	FLJ20125	hypothetical protein FLJ20125
4658.	54828	BCAS3	breast carcinoma amplified sequence 3
4659.	54829	ASPN	asporin (LRR class 1)
4660.	54832	VPS13C	vacuolar protein sorting 13C (yeast)
4661.	54839	LRRC49	leucine rich repeat containing 49
4662.	54841	BIVM	basic, immunoglobulin-like variable motif containing
4663.	54842	FLJ20160	FLJ20160 protein
4664.	54845	FLJ20171	hypothetical protein FLJ20171
4665.	54849	FLJ20186	hypothetical protein FLJ20186

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4666.	54850	FBXL12	F-box and leucine-rich repeat protein 12
4667.	54851	FGIF	fetal globin-inducing factor
4668.	54852	PAQR5	progesterin and adipoQ receptor family member V
4669.	54857	GDPD2	glycerophosphodiester phosphodiesterase domain containing 2
4670.	54865	GPATC4	G patch domain containing 4
4671.	54866	PPP1R14D	protein phosphatase 1, regulatory (inhibitor) subunit 14D
4672.	54869	EPS8L1	EPS8-like 1
4673.	54870	FLJ20259	FLJ20259 protein
4674.	54878	DPP8	dipeptidylpeptidase 8
4675.	54879	ST7L	suppression of tumorigenicity 7 like
4676.	54881	TEX10	testis expressed sequence 10
4677.	54882	ANKHD1	ankyrin repeat and KH domain containing 1
4678.	54884	RetSat	all-trans-13,14-dihydroretinol saturase
4679.	54885	FLJ20298	FLJ20298 protein
4680.	54887	C6orf107	chromosome 6 open reading frame 107
4681.	54888	NSUN2	NOL1/NOP2/Sun domain family, member 2
4682.	54890	FLJ20308	hypothetical protein FLJ20308
4683.	54892	LUZP5	leucine zipper protein 5
4684.	54898	ELOVL2	elongation of very long chain fatty acids (FEN1/Elo2, SUR4/Elo3, yeast)-like 2
4685.	54899	PXK	PX domain containing serine/threonine kinase
4686.	54904	WHSC1L1	Wolf-Hirschhorn syndrome candidate 1-like 1
4687.	54908	FLJ20364	hypothetical protein FLJ20364
4688.	54910	SEMA4C	sema domain, immunoglobulin domain (Ig), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 4C
4689.	54913	RPP25	ribonuclease P 25kDa subunit
4690.	54914	KIAA1797	KIAA1797
4691.	54916	C14orf101	chromosome 14 open reading frame 101
4692.	54918	CKLFSF6	chemokine-like factor super family 6
4693.	54926	UBE2R2	ubiquitin-conjugating enzyme E2R 2
4694.	54927	CHCHD3	coiled-coil-helix-coiled-coil-helix domain containing 3
4695.	54928	IMPA3	myo-inositol monophosphatase A3
4696.	54931	RG9MTD1	RNA (guanine-9-) methyltransferase domain containing 1
4697.	54935	DUSP23	dual specificity phosphatase 23
4698.	54936	ADPRHL2	ADP-ribosylhydrolase like 2
4699.	54939	COMMD4	COMM domain containing 4
4700.	54946	SLC41A3	solute carrier family 41, member 3
4701.	54947	FLJ20481	hypothetical protein FLJ20481
4702.	54948	MRPL16	mitochondrial ribosomal protein L16
4703.	54951	COMMD8	COMM domain containing 8
4704.	54953	C1orf27	chromosome 1 open reading frame 27
4705.	54961	SSH3	slingshot homolog 3 (Drosophila)
4706.	54962	FLJ20516	timeless-interacting protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4707.	54963	UCKL1	uridine-cytidine kinase 1-like 1
4708.	54964	C1orf56	chromosome 1 open reading frame 56
4709.	54965	PIGX	phosphatidylinositol glycan, class X
4710.	54968	FLJ20533	hypothetical protein FLJ20533
4711.	54969	FLJ20534	hypothetical protein FLJ20534
4712.	54970	TTC12	tetratricopeptide repeat domain 12
4713.	54971	BANP	BTG3 associated nuclear protein
4714.	54972	HSPA5BP1	heat shock 70kDa protein 5 (glucose-regulated protein, 78kDa) binding protein 1
4715.	54973	CPSF3L	cleavage and polyadenylation specific factor 3-like
4716.	54978	C2orf18	chromosome 2 open reading frame 18
4717.	54980	FLJ20558	hypothetical protein FLJ20558
4718.	54982	CLN6	ceroid-lipofuscinosis, neuronal 6, late infantile, variant
4719.	54985	HCFC1R1	host cell factor C1 regulator 1 (XP01 dependant)
4720.	54986	ULK4	unc-51-like kinase 4 (C. elegans)
4721.	54987	C1orf123	chromosome 1 open reading frame 123
4722.	54988	FLJ20581	hypothetical protein FLJ20581
4723.	54989	FLJ20582	hypothetical protein FLJ20582
4724.	54994	C20orf11	chromosome 20 open reading frame 11
4725.	54997	TSC	hypothetical protein FLJ20607
4726.	54998	AKIP	aurora-A kinase interacting protein
4727.	55000	TUG1	taurine upregulated gene 1
4728.	55002	C13orf11	chromosome 13 open reading frame 11
4729.	55003	PAK1IP1	PAK1 interacting protein 1
4730.	55005	C6orf96	chromosome 6 open reading frame 96
4731.	55006	FLJ20628	hypothetical protein FLJ20628
4732.	55010	FLJ20641	hypothetical protein FLJ20641
4733.	55011	FLJ20643	hypothetical protein FLJ20643
4734.	55014	STX17	syntaxin 17
4735.	55017	C14orf119	chromosome 14 open reading frame 119
4736.	55024	BANK1	B-cell scaffold protein with ankyrin repeats 1
4737.	55026	FLJ20716	hypothetical protein FLJ20716
4738.	55028	HLC-8	lung cancer-related protein 8
4739.	55031	USP47	ubiquitin specific protease 47
4740.	55032	SLC35A5	solute carrier family 35, member A5
4741.	55033	FKBP14	FK506 binding protein 14, 22 kDa
4742.	55034	MOCOS	molybdenum cofactor sulfurase
4743.	55037	FLJ20758	FLJ20758 protein
4744.	55038	CDCA4	cell division cycle associated 4
4745.	55039	FLJ20772	hypothetical protein FLJ20772
4746.	55041	PLEKHB2	pleckstrin homology domain containing, family B (evectins) member 2
4747.	55048	VPS37C	vacuolar protein sorting 37C (yeast)
4748.	55049	FLJ20850	hypothetical protein FLJ20850
4749.	55052	MRPL20	mitochondrial ribosomal protein L20
4750.	55054	APG16L	APG16 autophagy 16-like (S. cerevisiae)
4751.	55055	FLJ10036	Zwilch
4752.	55063	ZCWPW1	zinc finger, CW type with PWWP domain 1
4753.	55069	FLJ10099	hypothetical protein FLJ10099

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4754.	55071	C9orf40	chromosome 9 open reading frame 40
4755.	55074	OXR1	oxidation resistance 1
4756.	55075	UACA	uveal autoantigen with coiled-coil domains and ankyrin repeats
4757.	55076	TMEM45A	transmembrane protein 45A
4758.	55081	ESRRBL1	estrogen-related receptor beta like 1
4759.	55082	FLJ10154	hypothetical protein FLJ10154
4760.	55084	FLJ10159	hypothetical protein FLJ10159
4761.	55086	FLJ10178	hypothetical protein FLJ10178
4762.	55101	FLJ10241	hypothetical protein FLJ10241
4763.	55103	RALGPS2	Ral GEF with PH domain and SH3 binding motif 2
4764.	55105	GPATC2	G patch domain containing 2
4765.	55107	TMEM16A	transmembrane protein 16A
4766.	55109	AGGF1	angiogenic factor with G patch and FHA domains 1
4767.	55110	FLJ10292	mago-nashi homolog
4768.	55113	FLJ10307	hypothetical protein FLJ10307
4769.	55114	ARHGAP17	Rho GTPase activating protein 17
4770.	55117	SLC6A15	solute carrier family 6, member 15
4771.	55120	FANCL	Fanconi anemia, complementation group L
4772.	55128	TRIM68	tripartite motif-containing 68
4773.	55129	FLJ10375	hypothetical protein FLJ10375
4774.	55131	RBM28	RNA binding motif protein 28
4775.	55132	LARP2	La ribonucleoprotein domain family, member 2
4776.	55139	FLJ10415	hypothetical protein FLJ10415
4777.	55143	CDCA8	cell division cycle associated 8
4778.	55144	LRRC8D	leucine rich repeat containing 8 family, member D
4779.	55146	ZDHHC4	zinc finger, DHHC-type containing 4
4780.	55148	C14orf130	chromosome 14 open reading frame 130
4781.	55149	PAPD1	PAP associated domain containing 1
4782.	55151	TMEM38B	transmembrane protein 38B
4783.	55152	DALRD3	DALR anticodon binding domain containing 3
4784.	55154	MST	misato
4785.	55156	ARMC1	armadillo repeat containing 1
4786.	55159	RFWD3	ring finger and WD repeat domain 3
4787.	55161	TMEM33	transmembrane protein 33
4788.	55164	SHQ1	SHQ1 homolog (<i>S. cerevisiae</i>)
4789.	55165	C10orf3	chromosome 10 open reading frame 3
4790.	55166	C6orf139	chromosome 6 open reading frame 139
4791.	55168	MRPS18A	mitochondrial ribosomal protein S18A
4792.	55170	HRMT1L6	HMT1 hnRNP methyltransferase-like 6 (<i>S. cerevisiae</i>)
4793.	55171	FLJ10560	hypothetical protein FLJ10560
4794.	55172	C14orf104	chromosome 14 open reading frame 104
4795.	55173	MRPS10	mitochondrial ribosomal protein S10
4796.	55178	RNMTL1	RNA methyltransferase like 1
4797.	55183	RIF1	RAP1 interacting factor homolog (yeast)
4798.	55187	VPS13D	vacuolar protein sorting 13D (yeast)
4799.	55188	hSyn	brain synembryn

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4800.	55191	NADSYN1	NAD synthetase 1
4801.	55197	P15RS	hypothetical protein FLJ10656
4802.	55204	GOLPH3L	golgi phosphoprotein 3-like
4803.	55205	ZNF532	zinc finger protein 532
4804.	55206	SBNO1	sno, strawberry notch homolog 1 (Drosophila)
4805.	55207	ARL10C	ADP-ribosylation factor-like 10C
4806.	55209	FLJ10707	hypothetical protein FLJ10707
4807.	55210	ATAD3A	ATPase family, AAA domain containing 3A
4808.	55212	BBS7	Bardet-Biedl syndrome 7
4809.	55213	RCBTB1	regulator of chromosome condensation (RCC1) and BTB (POZ) domain containing protein 1
4810.	55214	LEPREL1	leprecan-like 1
4811.	55215	FLJ10719	hypothetical protein FLJ10719
4812.	55218	C14orf114	chromosome 14 open reading frame 114
4813.	55223	TRIM62	tripartite motif-containing 62
4814.	55224	ETNK2	ethanolamine kinase 2
4815.	55225	KIAA1579	hypothetical protein FLJ10770
4816.	55227	LRRC1	leucine rich repeat containing 1
4817.	55229	PANK4	pantothenate kinase 4
4818.	55230	USP40	ubiquitin specific protease 40
4819.	55233	MOBK1B	MOB1, Mps One Binder kinase activator-like 1B (yeast)
4820.	55236	FLJ10808	hypothetical protein FLJ10808
4821.	55239	FLJ10826	hypothetical protein FLJ10826
4822.	55240	STEAP3	STEAP family member 3
4823.	55243	KIRREL	kin of IRRE like (Drosophila)
4824.	55245	C20orf44	chromosome 20 open reading frame 44
4825.	55246	FLJ10853	hypothetical protein FLJ10853
4826.	55247	NEIL3	nei endonuclease VIII-like 3 (E. coli)
4827.	55250	STATIP1	signal transducer and activator of transcription 3 interacting protein 1
4828.	55253	RSAFD1	radical S-adenosyl methionine and flavodoxin domains 1
4829.	55254	TMEM39A	transmembrane protein 39A
4830.	55255	WDR41	WD repeat domain 41
4831.	55256	MTCBP-1	membrane-type 1 matrix metalloproteinase cytoplasmic tail binding protein-1
4832.	55257	C20orf20	chromosome 20 open reading frame 20
4833.	55258	FLJ10916	hypothetical protein FLJ10916
4834.	55266	TMEM19	transmembrane protein 19
4835.	55268	ECHDC2	enoyl Coenzyme A hydratase domain containing 2
4836.	55269	PSPC1	paraspeckle component 1
4837.	55270	NUDT15	nudix (nucleoside diphosphate linked moiety X)-type motif 15
4838.	55272	C15orf12	chromosome 15 open reading frame 12
4839.	55273	FLJ10970	hypothetical protein FLJ10970
4840.	55274	PHF10	PHD finger protein 10
4841.	55276	PGM2	phosphoglucomutase 2
4842.	55278	QRSL1	glutaminyl-tRNA synthase (glutamine-hydrolyzing)-like 1
4843.	55279	ZNF654	zinc finger protein 654

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4844.	55281	FLJ11000	hypothetical protein FLJ11000
4845.	55283	MCOLN3	mucolipin 3
4846.	55284	FLJ11011	hypothetical protein FLJ11011
4847.	55286	FLJ11017	hypothetical protein FLJ11017
4848.	55288	RHOT1	ras homolog gene family, member T1
4849.	55297	FLJ11088	GGA binding partner
4850.	55299	BXDC2	brix domain containing 2
4851.	55300	PI4K2B	phosphatidylinositol 4-kinase type-II beta
4852.	55308	DDX19L	DEAD (Asp-Glu-Ala-As) box polypeptide 19-like
4853.	55311	ZNF444	zinc finger protein 444
4854.	55312	RFK	riboflavin kinase
4855.	55313	FLJ11151	hypothetical protein FLJ11151
4856.	55314	FLJ11155	hypothetical protein FLJ11155
4857.	55320	C14orf106	chromosome 14 open reading frame 106
4858.	55322	FLJ11193	hypothetical protein FLJ11193
4859.	55323	LARP6	La ribonucleoprotein domain family, member 6
4860.	55325	FLJ11200	hypothetical protein FLJ11200
4861.	55326	AGPAT5	1-acylglycerol-3-phosphate O-acyltransferase 5 (lysophosphatidic acid acyltransferase, epsilon)
4862.	55327	LIN7C	lin-7 homolog C (C. elegans)
4863.	55331	PHCA	phytoceramidase, alkaline
4864.	55332	FLJ11259	hypothetical protein FLJ11259
4865.	55333	SYNJ2BP	synaptojanin 2 binding protein
4866.	55334	SLC39A9	solute carrier family 39 (zinc transporter), member 9
4867.	55337	FLJ11286	hypothetical protein FLJ11286
4868.	55339	WDR33	WD repeat domain 33
4869.	55340	GIMAP5	GTPase, IMAP family member 5
4870.	55341	FLJ11301	hypothetical protein FLJ11301
4871.	55347	ABHD10	abhydrolase domain containing 10
4872.	55349	CHDH	choline dehydrogenase
4873.	55352	HSA272196	hypothetical protein, clone 2746033
4874.	55353	LAPTM4B	lysosomal associated protein transmembrane 4 beta
4875.	55355	DKFZp762E1312	hypothetical protein DKFZp762E1312
4876.	55356	SLC22A15	solute carrier family 22 (organic cation transporter), member 15
4877.	55361	PI4KII	phosphatidylinositol 4-kinase type II
4878.	55364	IMPACT	hypothetical protein IMPACT
4879.	55366	LGR4	leucine-rich repeat-containing G protein-coupled receptor 4
4880.	55379	PRO1855	hypothetical protein PRO1855
4881.	55384	MEG3	maternally expressed 3
4882.	55388	MCM10	MCM10 minichromosome maintenance deficient 10 (S. cerevisiae)
4883.	55422	ZNF331	zinc finger protein 331
4884.	55425	KIAA1704	KIAA1704
4885.	55437	ALS2CR2	amyotrophic lateral sclerosis 2 (juvenile) chromosome region, candidate 2
4886.	55450	CAMK2N1	calcium/calmodulin-dependent protein kinase II inhibitor 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4887.	55471	PRO1853	hypothetical protein PRO1853
4888.	55486	PSARL	presenilin associated, rhomboid-like
4889.	55500	ETNK1	ethanolamine kinase 1
4890.	55501	CHST12	carbohydrate (chondroitin 4) sulfotransferase 12
4891.	55504	TNFRSF19	tumor necrosis factor receptor superfamily, member 19
4892.	55505	NOLA3	nucleolar protein family A, member 3 (H/ACA small nucleolar RNPs)
4893.	55521	TRIM36	tripartite motif-containing 36
4894.	55527	FEM1A	fem-1 homolog a (C.elegans)
4895.	55529	DKFZp7620076	hypothetical protein DKFZp7620076
4896.	55531	ELMOD1	ELMO domain containing 1
4897.	55540	IL17RB	interleukin 17 receptor B
4898.	55552	HSZFP36	ZFP-36 for a zinc finger protein
4899.	55558	PLXNA3	plexin A3
4900.	55559	UIP1	26S proteasome-associated UCH interacting protein 1
4901.	55565	LOC55565	hypothetical protein LOC55565
4902.	55567	DNAH3	dynein, axonemal, heavy polypeptide 3
4903.	55568	GALNT10	UDP-N-acetyl-alpha-D- galactosamine:polypeptide N- acetylgalactosaminyltransferase 10 (GalNAc-T10)
4904.	55571	C2orf29	chromosome 2 open reading frame 29
4905.	55572	H17	hypothetical protein H17
4906.	55573	H41	hypothetical protein H41
4907.	55577	NAGK	N-acetylglucosamine kinase
4908.	55578	FAM48A	family with sequence similarity 48, member A
4909.	55585	UBE2Q	ubiquitin-conjugating enzyme E2Q (putative)
4910.	55589	BMP2K	BMP2 inducible kinase
4911.	55591	VEZATIN	transmembrane protein vezatin
4912.	55599	RNPC3	RNA-binding region (RNP1, RRM) containing 3
4913.	55601	FLJ20035	hypothetical protein FLJ20035
4914.	55603	FAM46A	family with sequence similarity 46, member A
4915.	55604	LRRC16	leucine rich repeat containing 16
4916.	55605	KIF21A	kinesin family member 21A
4917.	55607	PPP1R9A	protein phosphatase 1, regulatory (inhibitor) subunit 9A
4918.	55608	ANKRD10	ankyrin repeat domain 10
4919.	55609	SUHW3	suppressor of hairy wing homolog 3 (Drosophila)
4920.	55612	C20orf42	chromosome 20 open reading frame 42
4921.	55614	C20orf23	chromosome 20 open reading frame 23
4922.	55616	DDEFL1	development and differentiation enhancing factor-like 1
4923.	55617	C20orf13	chromosome 20 open reading frame 13
4924.	55621	FLJ20244	hypothetical protein FLJ20244
4925.	55622	FLJ20272	hypothetical protein FLJ20272
4926.	55623	THUMP1	THUMP domain containing 1
4927.	55624	POMGNT1	protein O-linked mannose beta1,2-N- acetylglucosaminyltransferase

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4928.	55628	ZNF407	zinc finger protein 407
4929.	55629	PNRC2	proline-rich nuclear receptor coactivator 2
4930.	55630	SLC39A4	solute carrier family 39 (zinc transporter), member 4
4931.	55631	LRR40	leucine rich repeat containing 40
4932.	55632	KIAA1333	KIAA1333
4933.	55634	ZNF673	zinc finger protein 673
4934.	55635	DEPDC1	DEP domain containing 1
4935.	55636	CHD7	chromodomain helicase DNA binding protein 7
4936.	55646	LYAR	hypothetical protein FLJ20425
4937.	55650	PIGV	phosphatidylinositol glycan, class V
4938.	55651	NOLA2	nucleolar protein family A, member 2 (H/ACA small nucleolar RNPs)
4939.	55652	FLJ20489	hypothetical protein FLJ20489
4940.	55655	NALP2	NACHT, leucine rich repeat and PYD containing 2
4941.	55658	RNF126	ring finger protein 126
4942.	55660	FNBP3	formin binding protein 3
4943.	55661	DDX27	DEAD (Asp-Glu-Ala-Asp) box polypeptide 27
4944.	55664	CDC37L1	cell division cycle 37 homolog (S. cerevisiae)-like 1
4945.	55666	NPL4	nuclear protein localization 4
4946.	55669	MFN1	mitofusin 1
4947.	55672	FLJ20719	hypothetical protein FLJ20719
4948.	55680	RUFY2	RUN and FYVE domain containing 2
4949.	55681	SCYL2	SCY1-like 2 (S. cerevisiae)
4950.	55686	DSU	dilute suppressor
4951.	55691	FRMD4A	FERM domain containing 4A
4952.	55692	LUC7L	LUC7-like (S. cerevisiae)
4953.	55699	IARS2	isoleucine-tRNA synthetase 2, mitochondrial
4954.	55703	POLR3B	polymerase (RNA) III (DNA directed) polypeptide B
4955.	55704	KIAA1212	KIAA1212
4956.	55705	IPO9	importin 9
4957.	55706	TMEM48	transmembrane protein 48
4958.	55707	NECAP2	adaptin-ear-binding coat-associated protein 2
4959.	55711	MLSTD1	male sterility domain containing 1
4960.	55714	ODZ3	odz, odd Oz/ten-m homolog 3 (Drosophila)
4961.	55715	DOK4	docking protein 4
4962.	55717	BRWD2	bromodomain and WD repeat domain containing 2
4963.	55719	C10orf6	chromosome 10 open reading frame 6
4964.	55720	FLJ10534	hypothetical protein FLJ10534
4965.	55723	ASF1B	ASF1 anti-silencing function 1 homolog B (S. cerevisiae)
4966.	55729	ATF7IP	activating transcription factor 7 interacting protein
4967.	55731	FLJ10700	hypothetical protein FLJ10700
4968.	55732	C1orf112	chromosome 1 open reading frame 112
4969.	55733	HHAT	hedgehog acyltransferase

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
4970.	55734	ZFP64	zinc finger protein 64 homolog (mouse)
4971.	55737	VPS35	vacuolar protein sorting 35 (yeast)
4972.	55739	FLJ10769	hypothetical protein FLJ10769
4973.	55741	C20orf31	chromosome 20 open reading frame 31
4974.	55742	PARVA	parvin, alpha
4975.	55744	FLJ10803	hypothetical protein FLJ10803
4976.	55745	C14orf108	chromosome 14 open reading frame 108
4977.	55748	CNDP2	CNDP dipeptidase 2 (metallopeptidase M20 family)
4978.	55752	38606	septin 11
4979.	55754	TMEM30A	transmembrane protein 30A
4980.	55756	RC74	related to CPSF subunits 74 kDa
4981.	55757	UGCGL2	UDP-glucose ceramide glucosyltransferase-like 2
4982.	55758	RCOR3	REST corepressor 3
4983.	55759	WDR12	WD repeat domain 12
4984.	55761	TTC17	tetratricopeptide repeat domain 17
4985.	55763	SEC3L1	SEC3-like 1 (<i>S. cerevisiae</i>)
4986.	55768	NGLY1	N-glycanase 1
4987.	55769	ZNF83	zinc finger protein 83 (HPF1)
4988.	55770	SEC5L1	SEC5-like 1 (<i>S. cerevisiae</i>)
4989.	55776	C6orf64	chromosome 6 open reading frame 64
4990.	55780	C6orf70	chromosome 6 open reading frame 70
4991.	55781	RIOK2	RIO kinase 2 (yeast)
4992.	55784	MCTP2	multiple C2-domains with two transmembrane regions 2
4993.	55789	DEPDC1B	DEP domain containing 1B
4994.	55791	C1orf103	chromosome 1 open reading frame 103
4995.	55793	FAM63A	family with sequence similarity 63, member A
4996.	55794	DDX28	DEAD (Asp-Glu-Ala-Asp) box polypeptide 28
4997.	55795	FLJ11305	hypothetical protein FLJ11305
4998.	55806	HR	hairless homolog (mouse)
4999.	55810	FOXJ2	forkhead box J2
5000.	55813	C17orf40	chromosome 17 open reading frame 40
5001.	55815	TSNAXIP1	translin-associated factor X interacting protein 1
5002.	55818	JMJD1A	jumonji domain containing 1A
5003.	55819	RNF130	ring finger protein 130
5004.	55823	VPS11	vacuolar protein sorting 11 (yeast)
5005.	55824	PAG1	phosphoprotein associated with glycosphingolipid microdomains 1
5006.	55827	IQWD1	IQ motif and WD repeats 1
5007.	55829	SELS	selenoprotein S
5008.	55830	GLT8D1	glycosyltransferase 8 domain containing 1
5009.	55831	LOC55831	30 kDa protein
5010.	55832	CAND1	cullin-associated and neddylation-dissociated 1
5011.	55833	UBAP2	ubiquitin associated protein 2
5012.	55835	CENPJ	centromere protein J
5013.	55836	C6orf35	chromosome 6 open reading frame 35
5014.	55839	BM039	uncharacterized bone marrow protein BM039
5015.	55843	ARHGAP15	Rho GTPase activating protein 15

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5016.	55846	MDS028	uncharacterized hematopoietic stem/progenitor cells protein MDS028
5017.	55847	C10orf70	chromosome 10 open reading frame 70
5018.	55848	C9orf46	chromosome 9 open reading frame 46
5019.	55849	GLT28D1	glycosyltransferase 28 domain containing 1
5020.	55850	MDS032	uncharacterized hematopoietic stem/progenitor cells protein MDS032
5021.	55851	PSENEN	presenilin enhancer 2 homolog (C. elegans)
5022.	55852	HT008	uncharacterized hypothalamus protein HT008
5023.	55853	C10orf110	chromosome 10 open reading frame 110
5024.	55854	LEREPO4	likely ortholog of mouse immediate early response, erythropoietin 4
5025.	55857	C20orf19	chromosome 20 open reading frame 19
5026.	55858	TPARL	TPA regulated locus
5027.	55861	C20orf35	chromosome 20 open reading frame 35
5028.	55862	ECHDC1	enoyl Coenzyme A hydratase domain containing 1
5029.	55869	HDAC8	histone deacetylase 8
5030.	55870	ASH1L	ash1 (absent, small, or homeotic)-like (Drosophila)
5031.	55871	CBWD1	COBW domain containing 1
5032.	55872	PBK	PDZ binding kinase
5033.	55884	WSB2	WD repeat and SOCS box-containing 2
5034.	55888	ZNF167	zinc finger protein 167
5035.	55893	ZNF395	zinc finger protein 395
5036.	55900	ZNF302	zinc finger protein 302
5037.	55901	THSD1	thrombospondin, type I, domain containing 1
5038.	55902	ACAS2	acetyl-Coenzyme A synthetase 2 (ADP forming)
5039.	55904	MLL5	myeloid/lymphoid or mixed-lineage leukemia 5 (trithorax homolog, Drosophila)
5040.	55905	ZNF313	zinc finger protein 313
5041.	55907	CMAS	cytidine monophosphate N-acetylneuraminic acid synthetase
5042.	55909	BIN3	bridging integrator 3
5043.	55914	ERBB2IP	erbb2 interacting protein
5044.	55915	LANCL2	LanC lantibiotic synthetase component C-like 2 (bacterial)
5045.	55916	NXT2	nuclear transport factor 2-like export factor 2
5046.	55920	RCC2	regulator of chromosome condensation 2
5047.	55929	DMAP1	DNA methyltransferase 1 associated protein 1
5048.	55930	MYO5C	myosin VC
5049.	55964	38598	septin 3
5050.	55967	DAP13	13kDa differentiation-associated protein
5051.	55968	NSFL1C	NSFL1 (p97) cofactor (p47)
5052.	55969	C20orf24	chromosome 20 open reading frame 24
5053.	55970	GNG12	guanine nucleotide binding protein (G protein), gamma 12

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5054.	55971	BAIAP2L1	BAI1-associated protein 2-like 1
5055.	55972	MCFP	mitochondrial carrier family protein
5056.	55974	LOC55974	stromal cell protein
5057.	55975	KLHL7	kelch-like 7 (Drosophila)
5058.	56005	C19orf10	chromosome 19 open reading frame 10
5059.	56104	PCDHGB1	protocadherin gamma subfamily B, 1
5060.	56105	PCDHGA11	protocadherin gamma subfamily A, 11
5061.	56121	PCDHB15	protocadherin beta 15
5062.	56122	PCDHB14	protocadherin beta 14
5063.	56126	PCDHB10	protocadherin beta 10
5064.	56130	PCDHB6	protocadherin beta 6
5065.	56131	PCDHB4	protocadherin beta 4
5066.	56135	PCDHAC1	protocadherin alpha subfamily C, 1
5067.	56143	PCDHA5	protocadherin alpha 5
5068.	56172	ANKH	ankylosis, progressive homolog (mouse)
5069.	56180	MOSPD1	motile sperm domain containing 1
5070.	56181	FAM54B	family with sequence similarity 54, member B
5071.	56242	ZNF253	zinc finger protein 253
5072.	56243	KIAA1217	KIAA1217
5073.	56255	DJ971N18.2	hypothetical protein DJ971N18.2
5074.	56259	CTNNB1	catenin, beta like 1
5075.	56262	LRR8A	leucine rich repeat containing 8 family, member A
5076.	56267	KAT3	kynurenine aminotransferase III
5077.	56270	WDR45L	WDR45-like
5078.	56288	PARD3	par-3 partitioning defective 3 homolog (C. elegans)
5079.	56339	METTL3	methyltransferase like 3
5080.	56474	CTPS2	CTP synthase II
5081.	56477	CCL28	chemokine (C-C motif) ligand 28
5082.	56478	EIF4ENIF1	eukaryotic translation initiation factor 4E nuclear import factor 1
5083.	56548	CHST7	carbohydrate (N-acetylglucosamine 6-O) sulfotransferase 7
5084.	56603	CYP26B1	cytochrome P450, family 26, subfamily B, polypeptide 1
5085.	56616	DIABLO	diablo homolog (Drosophila)
5086.	56647	BCCIP	BRCA2 and CDKN1A interacting protein
5087.	56648	EIF5A2	eukaryotic translation initiation factor 5A2
5088.	56650	C3orf4	chromosome 3 open reading frame 4
5089.	56652	PEO1	progressive external ophthalmoplegia 1
5090.	56654	NPDC1	neural proliferation, differentiation and control, 1
5091.	56655	POLE4	polymerase (DNA-directed), epsilon 4 (p12 subunit)
5092.	56658	TRIM39	tripartite motif-containing 39
5093.	56666	PANX2	pannexin 2
5094.	56674	C11orf15	chromosome 11 open reading frame 15
5095.	56675	NRIP3	nuclear receptor interacting protein 3
5096.	56681	SARA1	SAR1a gene homolog 1 (S. cerevisiae)
5097.	56683	C21orf59	chromosome 21 open reading frame 59
5098.	56704	JPH1	junctophilin 1
5099.	56731	SLC2A4RG	SLC2A4 regulator
5100.	56757	LOC56757	hypothetical protein LOC56757

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5101.	56776	FMN2	formin 2
5102.	56829	ZC3HAV1	zinc finger CCCH-type, antiviral 1
5103.	56851	C15orf24	chromosome 15 open reading frame 24
5104.	56852	RAD18	RAD18 homolog (<i>S. cerevisiae</i>)
5105.	56882	CDC42SE1	CDC42 small effector 1
5106.	56888	KCMF1	potassium channel modulatory factor 1
5107.	56889	SMBP	SM-11044 binding protein
5108.	56892	C8orf4	chromosome 8 open reading frame 4
5109.	56894	AGPAT3	1-acylglycerol-3-phosphate O-acyltransferase 3
5110.	56898	DHRS6	dehydrogenase/reductase (SDR family) member 6
5111.	56899	EB-1	E2a-Pbx1-associated protein
5112.	56900	C1orf119	chromosome 1 open reading frame 119
5113.	56902	LOC56902	putative 28 kDa protein
5114.	56906	THAP10	THAP domain containing 10
5115.	56907	SPIRE1	spire homolog 1 (<i>Drosophila</i>)
5116.	56910	STARD7	START domain containing 7
5117.	56913	C1GALT1	core 1 synthase, glycoprotein-N-acetylgalactosamine 3-beta-galactosyltransferase, 1
5118.	56915	EXOSC5	exosome component 5
5119.	56919	DHX33	DEAH (Asp-Glu-Ala-His) box polypeptide 33
5120.	56920	LOC56920	semaphorin sem2
5121.	56925	LXN	latexin
5122.	56926	NCLN	nicalin homolog (zebrafish)
5123.	56927	GPR108	G protein-coupled receptor 108
5124.	56929	FEM1C	fem-1 homolog c (<i>C.elegans</i>)
5125.	56937	TMEPAI	transmembrane, prostate androgen induced RNA
5126.	56938	ARNTL2	aryl hydrocarbon receptor nuclear translocator-like 2
5127.	56940	DUSP22	dual specificity phosphatase 22
5128.	56941	DC12	DC12 protein
5129.	56942	DC13	DC13 protein
5130.	56943	ENY2	enhancer of yellow 2 homolog (<i>Drosophila</i>)
5131.	56944	OLFML3	olfactomedin-like 3
5132.	56945	MRPS22	mitochondrial ribosomal protein S22
5133.	56946	C11orf30	chromosome 11 open reading frame 30
5134.	56947	C2orf33	chromosome 2 open reading frame 33
5135.	56950	SMYD2	SET and MYND domain containing 2
5136.	56952	PRTFDC1	phosphoribosyl transferase domain containing 1
5137.	56954	NIT2	nitrilase family, member 2
5138.	56965	PARP6	poly (ADP-ribose) polymerase family, member 6
5139.	56967	C14orf132	chromosome 14 open reading frame 132
5140.	56975	FAM20C	family with sequence similarity 20, member C
5141.	56977	STOX2	storkhead box 2
5142.	56980	PRDM10	PR domain containing 10
5143.	56984	TNFSF5IP1	tumor necrosis factor superfamily, member 5-induced protein 1
5144.	56985	MDS006	x 006 protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5145.	56987	BBX	bobby sox homolog (Drosophila)
5146.	56992	KIF15	kinesin family member 15
5147.	56993	TOMM22	translocase of outer mitochondrial membrane 22 homolog (yeast)
5148.	56995	TULP4	tubby like protein 4
5149.	56998	CTNNBIP1	catenin, beta interacting protein 1
5150.	57002	C7orf36	chromosome 7 open reading frame 36
5151.	57003	GK001	GK001 protein
5152.	57019	CIAPIN1	cytokine induced apoptosis inhibitor 1
5153.	57026	PDXP	pyridoxal (pyridoxine, vitamin B6) phosphatase
5154.	57037	ANKMY2	ankyrin repeat and MYND domain containing 2
5155.	57038	RARSL	arginyl-tRNA synthetase-like
5156.	57048	PLSCR3	phospholipid scramblase 3
5157.	57050	SAS10	disrupter of silencing 10
5158.	57060	PCBP4	poly(rC) binding protein 4
5159.	57061	HYMAI	hydatidiform mole associated and imprinted
5160.	57062	DDX24	DEAD (Asp-Glu-Ala-Asp) box polypeptide 24
5161.	57082	CASC5	cancer susceptibility candidate 5
5162.	57095	C1orf128	chromosome 1 open reading frame 128
5163.	57102	C12orf4	chromosome 12 open reading frame 4
5164.	57103	C12orf5	chromosome 12 open reading frame 5
5165.	57120	GOPC	golgi associated PDZ and coiled-coil motif containing
5166.	57122	NUP107	nucleoporin 107kDa
5167.	57129	MRPL47	mitochondrial ribosomal protein L47
5168.	57130	ATP13A1	ATPase type 13A1
5169.	57132	CHMP1B	chromatin modifying protein 1B
5170.	57134	MAN1C1	mannosidase, alpha, class 1C, member 1
5171.	57139	RGL3	ral guanine nucleotide dissociation stimulator-like 3
5172.	57142	RTN4	reticulon 4
5173.	57146	LOC57146	promethin
5174.	57148	KIAA1219	KIAA1219 protein
5175.	57149	LOC57149	hypothetical protein A-211C6.1
5176.	57153	CTL2	CTL2 protein
5177.	57154	SMURF1	SMAD specific E3 ubiquitin protein ligase 1
5178.	57157	PHTF2	putative homeodomain transcription factor 2
5179.	57167	SALL4	sal-like 4 (Drosophila)
5180.	57175	CORO1B	coronin, actin binding protein, 1B
5181.	57179	KIAA1191	KIAA1191 protein
5182.	57180	ACTR3B	ARP3 actin-related protein 3 homolog B (yeast)
5183.	57184	C15orf17	chromosome 15 open reading frame 17
5184.	57185	DJ462023.2	hypothetical protein DJ462023.2
5185.	57187	THOC2	THO complex 2
5186.	57188	ADAMTSL3	ADAMTS-like 3
5187.	57190	SEPN1	selenoprotein N, 1
5188.	57192	MCOLN1	mucolipin 1
5189.	57194	ATP10A	ATPase, Class V, type 10A
5190.	57198	ATP8B2	ATPase, Class I, type 8B, member 2

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5191.	57205	ATP10D	ATPase, Class V, type 10D
5192.	57210	KIAA1126	KIAA1126 protein
5193.	57211	GPR126	G protein-coupled receptor 126
5194.	57214	KIAA1199	KIAA1199
5195.	57216	VANGL2	vang-like 2 (van gogh, Drosophila)
5196.	57222	KIAA1181	endoplasmic reticulum-golgi intermediate compartment 32 kDa protein
5197.	57223	KIAA1387	KIAA1387 protein
5198.	57224	NHSL1	NHS-like 1
5199.	57228	LOC57228	hypothetical protein from clone 643
5200.	57234	KIAA0493	KIAA0493 protein
5201.	57235	KIAA0485	KIAA0485 protein
5202.	57237	KIAA0500	KIAA0500 protein
5203.	57291	KIAA0114	KIAA0114 gene product
5204.	57325	CSRP2BP	CSRP2 binding protein
5205.	57326	PBXIP1	pre-B-cell leukemia transcription factor interacting protein 1
5206.	57333	RCN3	reticulocalbin 3, EF-hand calcium binding domain
5207.	57343	ZNF304	zinc finger protein 304
5208.	57348	TTYH1	tweety homolog 1 (Drosophila)
5209.	57381	RHOJ	ras homolog gene family, member J
5210.	57393	TMEM27	transmembrane protein 27
5211.	57396	CLK4	CDC-like kinase 4
5212.	57403	RAB22A	RAB22A, member RAS oncogene family
5213.	57405	SPBC25	spindle pole body component 25 homolog (<i>S. cerevisiae</i>)
5214.	57407	HSCARG	HSCARG protein
5215.	57409	AD023	AD023 protein
5216.	57414	RHBDL7	rhomboid, veinlet-like 7 (Drosophila)
5217.	57418	WDR18	WD repeat domain 18
5218.	57419	SLC24A3	solute carrier family 24 (sodium/potassium/calcium exchanger), member 3
5219.	57447	NDRG2	NDRG family member 2
5220.	57456	KIAA1143	KIAA1143
5221.	57463	AMIGO1	adhesion molecule with Ig-like domain 1
5222.	57464	FAM40B	family with sequence similarity 40, member B
5223.	57465	KIAA1171	KIAA1171 protein
5224.	57472	CNOT6	CCR4-NOT transcription complex, subunit 6
5225.	57473	GM632	KIAA1196 protein
5226.	57475	PLEKHH1	pleckstrin homology domain containing, family H (with MyTH4 domain) member 1
5227.	57482	KIAA1211	KIAA1211 protein
5228.	57485	ATXN7L1	ataxin 7-like 1
5229.	57486	NLN	neurolysin (metallopeptidase M3 family)
5230.	57488	FAM62B	family with sequence similarity 62 (C2 domain containing) member B
5231.	57489	KIAA1229	KIAA1229 protein
5232.	57491	AHRR	aryl-hydrocarbon receptor repressor

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5233.	57492	ARID1B	AT rich interactive domain 1B (SWI1-like)
5234.	57494	KIAA1238	KIAA1238 protein
5235.	57496	MKL2	MKL/myocardin-like 2
5236.	57498	KIDINS220	kinase D-interacting substance of 220 kDa
5237.	57502	NLGN4X	neuroligin 4, X-linked
5238.	57507	ZNF608	zinc finger protein 608
5239.	57508	KIAA1287	KIAA1287 protein
5240.	57509	MTUS1	mitochondrial tumor suppressor 1
5241.	57510	XPO5	exportin 5
5242.	57512	GPR158	G protein-coupled receptor 158
5243.	57513	CASKIN2	CASK interacting protein 2
5244.	57514	CDGAP	Cdc42 GTPase-activating protein
5245.	57522	SRGAP1	SLIT-ROBO Rho GTPase activating protein 1
5246.	57524	CASKIN1	CASK interacting protein 1
5247.	57526	PCDH19	protocadherin 19
5248.	57531	HACE1	HECT domain and ankyrin repeat containing, E3 ubiquitin protein ligase 1
5249.	57532	182-FIP	82-kD FMRP Interacting Protein
5250.	57533	TBC1D14	TBC1 domain family, member 14
5251.	57535	KIAA1324	KIAA1324
5252.	57541	ZNF398	zinc finger protein 398
5253.	57542	KLHDC5	kelch domain containing 5
5254.	57545	KIAA1345	KIAA1345 protein
5255.	57551	TAOK1	TAO kinase 1
5256.	57552	AADACL1	arylacetamide deacetylase-like 1
5257.	57553	MICAL3	microtubule associated monooxygenase, calponin and LIM domain containing 3
5258.	57555	NLGN2	neuroligin 2
5259.	57556	SEMA6A	sema domain, transmembrane domain (TM), and cytoplasmic domain, (semaphorin) 6A
5260.	57559	AMSH-LP	associated molecule with the SH3 domain of STAM (AMSH) like protein
5261.	57561	ARRDC3	arrestin domain containing 3
5262.	57562	KIAA1377	KIAA1377 protein
5263.	57563	KLHL8	kelch-like 8 (Drosophila)
5264.	57568	SIPA1L2	signal-induced proliferation-associated 1 like 2
5265.	57569	ARHGAP20	Rho GTPase activating protein 20
5266.	57570	KIAA1393	KIAA1393
5267.	57571	KIAA1394	KIAA1394 protein
5268.	57572	DOCK6	dedicator of cytokinesis 6
5269.	57577	KIAA1407	KIAA1407
5270.	57579	KIAA1411	KIAA1411
5271.	57580	PREX1	phosphatidylinositol 3,4,5-trisphosphate-dependent RAC exchanger 1
5272.	57583	KIAA1423	KIAA1423
5273.	57584	ARHGAP21	Rho GTPase activating protein 21
5274.	57590	WDFY1	WD repeat and FYVE domain containing 1
5275.	57595	PDZK4	PDZ domain containing 4
5276.	57597	KIAA1447	KIAA1447 protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5277.	57599	WDR48	WD repeat domain 48
5278.	57600	KIAA1450	KIAA1450 protein
5279.	57605	PITPNM2	phosphatidylinositol transfer protein, membrane-associated 2
5280.	57606	KIAA1458	KIAA1458 protein
5281.	57609	KIAA1463	KIAA1463 protein
5282.	57616	ZNF537	zinc finger protein 537
5283.	57620	STIM2	stromal interaction molecule 2
5284.	57621	ZBTB2	zinc finger and BTB domain containing 2
5285.	57646	USP28	ubiquitin specific protease 28
5286.	57648	KIAA1522	KIAA1522
5287.	57650	KIAA1524	KIAA1524
5288.	57655	KIAA1533	KIAA1533
5289.	57658	CALCOCO1	calcium binding and coiled-coil domain 1
5290.	57659	ZBTB4	zinc finger and BTB domain containing 4
5291.	57664	PLEKHA4	pleckstrin homology domain containing, family A (phosphoinositide binding specific) member 4
5292.	57665	RDH14	retinol dehydrogenase 14 (all-trans and 9-cis)
5293.	57666	KIAA1545	KIAA1545 protein
5294.	57669	EPB41L5	erythrocyte membrane protein band 4.1 like 5
5295.	57670	KIAA1549	KIAA1549 protein
5296.	57674	C17orf27	chromosome 17 open reading frame 27
5297.	57679	ALS2	amyotrophic lateral sclerosis 2 (juvenile)
5298.	57680	CHD8	chromodomain helicase DNA binding protein 8
5299.	57683	KIAA1571	KIAA1571 protein
5300.	57685	KIAA1573	KIAA1573 protein
5301.	57687	KIAA1576	KIAA1576 protein
5302.	57688	ZSWIM6	zinc finger, SWIM-type containing 6
5303.	57691	KIAA1586	KIAA1586
5304.	57697	KIAA1596	KIAA1596
5305.	57701	KIAA1602	KIAA1602 protein
5306.	57704	GBA2	glucosidase, beta (bile acid) 2
5307.	57706	KIAA1608	KIAA1608
5308.	57708	MI-ER1	mesoderm induction early response 1
5309.	57722	NOPE	likely ortholog of mouse neighbor of Punc E11
5310.	57727	NCOA5	nuclear receptor coactivator 5
5311.	57728	WDR19	WD repeat domain 19
5312.	57730	KIAA1641	KIAA1641
5313.	57758	SCUBE2	signal peptide, CUB domain, EGF-like 2
5314.	57761	TRIB3	tribbles homolog 3 (Drosophila)
5315.	57787	MARK4	MAP/microtubule affinity-regulating kinase 4
5316.	57798	GATAD1	GATA zinc finger domain containing 1
5317.	57804	POLD4	polymerase (DNA-directed), delta 4
5318.	57820	CCNB1IP1	cyclin B1 interacting protein 1
5319.	57822	GRHL3	grainyhead-like 3 (Drosophila)
5320.	57826	RAP2C	RAP2C, member of RAS oncogene family

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5321.	57828	C19orf15	chromosome 19 open reading frame 15
5322.	57830	KRTAP5-8	keratin associated protein 5-8
5323.	58190	CTDSP1	CTD (carboxy-terminal domain, RNA polymerase II, polypeptide A) small phosphatase 1
5324.	58472	SQRDL	sulfide quinone reductase-like (yeast)
5325.	58473	PLEKHB1	pleckstrin homology domain containing, family B (evectins) member 1
5326.	58476	TP53INP2	tumor protein p53 inducible nuclear protein 2
5327.	58477	SRPRB	signal recognition particle receptor, B subunit
5328.	58485	TRAPPC1	trafficking protein particle complex 1
5329.	58486	LOC58486	transposon-derived Buster1 transposase-like protein gene
5330.	58488	PCTP	phosphatidylcholine transfer protein
5331.	58489	LOC58489	hypothetical protein from EUROIMAGE 588495
5332.	58493	C9orf80	chromosome 9 open reading frame 80
5333.	58499	ZNF462	zinc finger protein 462
5334.	58505	DC2	DC2 protein
5335.	58515	SELK	selenoprotein K
5336.	58516	FAM60A	family with sequence similarity 60, member A
5337.	58517	RBM25	RNA binding motif protein 25
5338.	58525	WIZ	widely-interspaced zinc finger motifs
5339.	58526	MID1IP1	MID1 interacting protein 1 (gastrulation specific G12-like (zebrafish))
5340.	58528	RRAGD	Ras-related GTP binding D
5341.	58533	SNX6	sorting nexin 6
5342.	59286	UBL5	ubiquitin-like 5
5343.	59338	PLEKHA1	pleckstrin homology domain containing, family A (phosphoinositide binding specific) member 1
5344.	59345	GNB4	guanine nucleotide binding protein (G protein), beta polypeptide 4
5345.	59349	KLHL12	kelch-like 12 (Drosophila)
5346.	59350	LGR7	leucine-rich repeat-containing G protein-coupled receptor 7
5347.	60312	AFAP	actin filament associated protein
5348.	60313	SP192	hypothetical protein SP192
5349.	60314	C12orf10	chromosome 12 open reading frame 10
5350.	60386	SLC25A19	solute carrier family 25 (mitochondrial deoxynucleotide carrier), member 19
5351.	60468	BACH2	BTB and CNC homology 1, basic leucine zipper transcription factor 2
5352.	60481	ELOVL5	ELOVL family member 5, elongation of long chain fatty acids (FEN1/Elo2, SUR4/Elo3-like, yeast)
5353.	60485	SAV1	salvador homolog 1 (Drosophila)
5354.	60487	C6orf75	chromosome 6 open reading frame 75
5355.	60488	MRPS35	mitochondrial ribosomal protein S35
5356.	60489	APOBEC3G	apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 3G

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5357.	60491	NIF3L1	NIF3 NGG1 interacting factor 3-like 1 (S. pombe)
5358.	60492	MDS025	hypothetical protein MDS025
5359.	60496	AASDHPPT	aminoadipate-semialdehyde dehydrogenase-phosphopantetheinyl transferase
5360.	60509	FLJ21839	hypothetical protein FLJ21839
5361.	60558	FLJ13220	hypothetical protein FLJ13220
5362.	60559	SPCS3	signal peptidase complex subunit 3 homolog (S. cerevisiae)
5363.	60561	RINT-1	Rad50-interacting protein 1
5364.	60592	SCOC	short coiled-coil protein
5365.	60672	IIP45	invasion inhibitory protein 45
5366.	60674	GAS5	growth arrest-specific 5
5367.	60681	FKBP10	FK506 binding protein 10, 65 kDa
5368.	60684	FLJ12716	FLJ12716 protein
5369.	60685	TEX27	testis expressed sequence 27
5370.	63027	C6orf85	chromosome 6 open reading frame 85
5371.	63826	SRR	serine racemase
5372.	63827	BCAN	brevican
5373.	63874	ABHD4	abhydrolase domain containing 4
5374.	63875	MRPL17	mitochondrial ribosomal protein L17
5375.	63876	PKNOX2	PBX/knotted 1 homeobox 2
5376.	63877	C10orf84	chromosome 10 open reading frame 84
5377.	63892	THADA	thyroid adenoma associated
5378.	63895	FAM38B	family with sequence similarity 38, member B
5379.	63897	ABC1	amplified in breast cancer 1
5380.	63898	SH2D4A	SH2 domain containing 4A
5381.	63899	NSUN3	NOL1/NOP2/Sun domain family, member 3
5382.	63901	FLJ22794	FLJ22794 protein
5383.	63905	MANBAL	mannosidase, beta A, lysosomal-like
5384.	63908	NAPB	N-ethylmaleimide-sensitive factor attachment protein, beta
5385.	63910	C20orf59	chromosome 20 open reading frame 59
5386.	63915	MUTED	muted homolog (mouse)
5387.	63916	ELMO2	engulfment and cell motility 2 (ced-12 homolog, C. elegans)
5388.	63917	GALNT11	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylglactosaminyltransferase 11 (GalNAc-T11)
5389.	63931	MRPS14	mitochondrial ribosomal protein S14
5390.	63933	C6orf79	chromosome 6 open reading frame 79
5391.	63940	GPSM3	G-protein signalling modulator 3 (AGS3-like, C. elegans)
5392.	63947	DMRTC1	DMRT-like family C1
5393.	63971	KIF13A	kinesin family member 13A
5394.	63974	NEUROD6	neurogenic differentiation 6
5395.	63977	PRDM15	PR domain containing 15
5396.	63979	FIGNL1	fidgetin-like 1
5397.	63982	TMEM16C	transmembrane protein 16C
5398.	64062	C13orf10	chromosome 13 open reading frame 10
5399.	64065	PERP	PERP, TP53 apoptosis effector
5400.	64080	RBKS	ribokinase
5401.	64081	MAWBP	MAWD binding protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5402.	64084	CLSTN2	calsyntenin 2
5403.	64087	MCCC2	methylcrotonoyl-Coenzyme A carboxylase 2 (beta)
5404.	64089	SNX16	sorting nexin 16
5405.	64093	SMOC1	SPARC related modular calcium binding 1
5406.	64105	FKSG14	leucine zipper protein FKSG14
5407.	64110	MAGEF1	melanoma antigen family F, 1
5408.	64114	PP1201	PP1201 protein
5409.	64115	C10orf54	chromosome 10 open reading frame 54
5410.	64118	DUS1L	dihydrouridine synthase 1-like (S. cerevisiae)
5411.	64121	RRAGC	Ras-related GTP binding C
5412.	64123	ELTD1	EGF, latrophilin and seven transmembrane domain containing 1
5413.	64145	ZFYVE20	zinc finger, FYVE domain containing 20
5414.	64147	KIF9	kinesin family member 9
5415.	64151	HCAP-G	chromosome condensation protein G
5416.	64172	OSGEPL1	O-sialoglycoprotein endopeptidase-like 1
5417.	64175	LEPRE1	leucine proline-enriched proteoglycan (leprecan) 1
5418.	64180	DPEP3	dipeptidase 3
5419.	64207	C14orf4	chromosome 14 open reading frame 4
5420.	64208	POPDC3	popeye domain containing 3
5421.	64215	DNAJC1	DnaJ (Hsp40) homolog, subfamily C, member 1
5422.	64216	TFB2M	transcription factor B2, mitochondrial
5423.	64218	SEMA4A	sema domain, immunoglobulin domain (Ig), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 4A
5424.	64219	PJA1	praja 1
5425.	64221	ROBO3	roundabout, axon guidance receptor, homolog 3 (Drosophila)
5426.	64222	TOR3A	torsin family 3, member A
5427.	64223	GBL	G protein beta subunit-like
5428.	64225	ARL6IP2	ADP-ribosylation factor-like 6 interacting protein 2
5429.	64231	MS4A6A	membrane-spanning 4-domains, subfamily A, member 6A
5430.	64236	PDLIM2	PDZ and LIM domain 2 (mystique)
5431.	64282	PAPD5	PAP associated domain containing 5
5432.	64283	RGNEF	Rho-guanine nucleotide exchange factor
5433.	64284	RAB17	RAB17, member RAS oncogene family
5434.	64285	RHBDF1	rhomboid family 1 (Drosophila)
5435.	64288	ZNF323	zinc finger protein 323
5436.	64318	C10orf117	chromosome 10 open reading frame 117
5437.	64319	FBS1	fibrosin 1
5438.	64327	C7orf2	chromosome 7 open reading frame 2
5439.	64328	XPO4	exportin 4
5440.	64332	NFKBIZ	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, zeta
5441.	64343	AZI2	5-azacytidine induced 2
5442.	64359	NXN	nucleoredoxin

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5443.	64393	WIG1	p53 target zinc finger protein
5444.	64395	GCL	germ cell-less homolog 1 (Drosophila)
5445.	64396	GMCL1L	germ cell-less homolog 1 (Drosophila)-like
5446.	64397	ZFP106	zinc finger protein 106 homolog (mouse)
5447.	64398	MPP5	membrane protein, palmitoylated 5 (MAGUK p55 subfamily member 5)
5448.	64400	FTS	fused toes homolog (mouse)
5449.	64409	WBSCR17	Williams-Beuren syndrome chromosome region 17
5450.	64412	ZNF336	zinc finger protein 336
5451.	64417	FLJ21657	hypothetical protein FLJ21657
5452.	64418	FLJ13576	hypothetical protein FLJ13576
5453.	64419	FLJ22405	hypothetical protein FLJ22405
5454.	64422	APG3L	APG3 autophagy 3-like (S. cerevisiae)
5455.	64427	FLJ12788	hypothetical protein FLJ12788
5456.	64429	ZDHHC6	zinc finger, DHHC-type containing 6
5457.	64431	ACTR6	ARP6 actin-related protein 6 homolog (yeast)
5458.	64432	MRPS25	mitochondrial ribosomal protein S25
5459.	64506	CPEB1	cytoplasmic polyadenylation element binding protein 1
5460.	64645	HIAT1	hippocampus abundant transcript 1
5461.	64682	ANAPC1	anaphase promoting complex subunit 1
5462.	64699	TMPRSS3	transmembrane protease, serine 3
5463.	64710	NUCKS1	nuclear casein kinase and cyclin-dependent kinase substrate 1
5464.	64743	WDR13	WD repeat domain 13
5465.	64745	FLJ20859	FLJ20859 gene
5466.	64746	ACBD3	acyl-Coenzyme A binding domain containing 3
5467.	64747	MFSD1	major facilitator superfamily domain containing 1
5468.	64750	SMURF2	SMAD specific E3 ubiquitin protein ligase 2
5469.	64754	SMYD3	SET and MYND domain containing 3
5470.	64759	TNS3	tensin 3
5471.	64762	FAM59A	family with sequence similarity 59, member A
5472.	64764	CREB3L2	cAMP responsive element binding protein 3-like 2
5473.	64766	S100PBPR	S100P binding protein Riken
5474.	64770	CCDC14	coiled-coil domain containing 14
5475.	64771	C6orf106	chromosome 6 open reading frame 106
5476.	64776	C11orf1	chromosome 11 open reading frame 1
5477.	64778	FNDC3B	fibronectin type III domain containing 3B
5478.	64780	MICAL1	microtubule associated monooxygenase, calponin and LIM domain containing 1
5479.	64781	CERK	ceramide kinase
5480.	64782	ISG20L1	interferon stimulated exonuclease gene 20kDa-like 1
5481.	64784	TORC3	transducer of regulated cAMP response element-binding protein (CREB) 3
5482.	64785	FLJ13912	hypothetical protein FLJ13912

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5483.	64786	TBC1D15	TBC1 domain family, member 15
5484.	64788	FLJ12681	hypothetical protein FLJ12681
5485.	64795	FLJ13910	hypothetical protein FLJ13910
5486.	64834	ELOVL1	elongation of very long chain fatty acids (FEN1/Elo2, SUR4/Elo3, yeast)-like 1
5487.	64840	PORCN	porcupine homolog (Drosophila)
5488.	64841	GNPNAT1	glucosamine-phosphate N-acetyltransferase 1
5489.	64843	ISL2	ISL2 transcription factor, LIM/homeodomain, (islet-2)
5490.	64847	SPATA20	spermatogenesis associated 20
5491.	64848	YTHDC2	YTH domain containing 2
5492.	64854	USP46	ubiquitin specific protease 46
5493.	64855	C9orf88	chromosome 9 open reading frame 88
5494.	64858	DCLRE1B	DNA cross-link repair 1B (PSO2 homolog, <i>S. cerevisiae</i>)
5495.	64859	FLJ22833	hypothetical protein FLJ22833
5496.	64860	ARMCX5	armadillo repeat containing, X-linked 5
5497.	64863	METTL4	methyltransferase like 4
5498.	64864	FLJ12994	hypothetical protein FLJ12994
5499.	64866	CDCP1	CUB domain containing protein 1
5500.	64895	PAPOLG	poly(A) polymerase gamma
5501.	64901	RANBP17	RAN binding protein 17
5502.	64902	AGXT2	alanine-glyoxylate aminotransferase 2
5503.	64921	CAS1	O-acetyltransferase
5504.	64924	SLC30A5	solute carrier family 30 (zinc transporter), member 5
5505.	64927	HCC-8	proto-oncogene 8
5506.	64928	MRPL14	mitochondrial ribosomal protein L14
5507.	64943	FLJ12442	hypothetical protein FLJ12442
5508.	64946	CENPH	centromere protein H
5509.	64949	MRPS26	mitochondrial ribosomal protein S26
5510.	64963	MRPS11	mitochondrial ribosomal protein S11
5511.	64965	MRPS9	mitochondrial ribosomal protein S9
5512.	64968	MRPS6	mitochondrial ribosomal protein S6
5513.	64969	MRPS5	mitochondrial ribosomal protein S5
5514.	64979	MRPL36	mitochondrial ribosomal protein L36
5515.	64981	MRPL34	mitochondrial ribosomal protein L34
5516.	64983	MRPL32	mitochondrial ribosomal protein L32
5517.	65005	MRPL9	mitochondrial ribosomal protein L9
5518.	65009	NDRG4	NDRG family member 4
5519.	65056	DKFZp761C169	vasculin
5520.	65057	ACD	adrenocortical dysplasia homolog (mouse)
5521.	65059	RAPH1	Ras association (RalGDS/AF-6) and pleckstrin homology domains 1
5522.	65062	ALS2CR4	amyotrophic lateral sclerosis 2 (juvenile) chromosome region, candidate 4
5523.	65080	MRPL44	mitochondrial ribosomal protein L44
5524.	65083	NOL6	nucleolar protein family 6 (RNA-associated)
5525.	65095	FLJ12949	hypothetical protein FLJ12949

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5526.	65109	UPF3B	UPF3 regulator of nonsense transcripts homolog B (yeast)
5527.	65110	UPF3A	UPF3 regulator of nonsense transcripts homolog A (yeast)
5528.	65123	C1orf60	chromosome 1 open reading frame 60
5529.	65124	C2orf26	chromosome 2 open reading frame 26
5530.	65125	WNK1	WNK lysine deficient protein kinase 1
5531.	65220	NADK	NAD kinase
5532.	65243	ZNF643	zinc finger protein 643
5533.	65244	SPATS2	spermatogenesis associated, serine-rich 2
5534.	65251	ZNF649	zinc finger protein 649
5535.	65258	MPPE1	metallophosphoesterase 1
5536.	65260	FLJ12439	hypothetical protein FLJ12439
5537.	65264	FLJ13855	hypothetical protein FLJ13855
5538.	65265	FLJ20989	hypothetical protein FLJ20989
5539.	65266	WNK4	WNK lysine deficient protein kinase 4
5540.	65977	PLEKHA3	pleckstrin homology domain containing, family A (phosphoinositide binding specific) member 3
5541.	65979	PHACTR4	phosphatase and actin regulator 4
5542.	65981	C1QDC1	C1q domain containing 1
5543.	65983	NS3TP2	HCV NS3-transactivated protein 2
5544.	65985	AACS	acetoacetyl-CoA synthetase
5545.	65986	ZBTB10	zinc finger and BTB domain containing 10
5546.	65990	C16orf24	chromosome 16 open reading frame 24
5547.	65991	FUNDC2	FUN14 domain containing 2
5548.	65992	C20orf116	chromosome 20 open reading frame 116
5549.	65993	MRPS34	mitochondrial ribosomal protein S34
5550.	65998	MGC3032	hypothetical protein MGC3032
5551.	66005	MGC3234	hypothetical protein MGC3234
5552.	66008	ALS2CR3	amyotrophic lateral sclerosis 2 (juvenile) chromosome region, candidate 3
5553.	66036	MTMR9	myotubularin related protein 9
5554.	66037	BOLL	bol, boule-like (Drosophila)
5555.	78988	MRP63	mitochondrial ribosomal protein 63
5556.	78991	MGC3265	hypothetical protein MGC3265
5557.	78992	YIPF2	Yip1 domain family, member 2
5558.	78997	GDAP1L1	ganglioside-induced differentiation-associated protein 1-like 1
5559.	79000	C1orf135	chromosome 1 open reading frame 135
5560.	79001	VKORC1	vitamin K epoxide reductase complex, subunit 1
5561.	79002	MGC2803	hypothetical protein MGC2803
5562.	79005	SCNM1	sodium channel modifier 1
5563.	79008	GIYD2	GIY-YIG domain containing 2
5564.	79009	DDX50	DEAD (Asp-Glu-Ala-Asp) box polypeptide 50
5565.	79012	CAMKV	CaM kinase-like vesicle-associated
5566.	79016	PCIA1	cross-immune reaction antigen PCIA1
5567.	79017	C7orf24	chromosome 7 open reading frame 24
5568.	79018	C17orf39	chromosome 17 open reading frame 39
5569.	79019	C22orf18	chromosome 22 open reading frame 18
5570.	79023	NUP37	nucleoporin 37kDa

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5571.	79026	AHNAK	AHNAK nucleoprotein (desmoyokin)
5572.	79027	ZNF655	zinc finger protein 655
5573.	79029	SPATA5L1	spermatogenesis associated 5-like 1
5574.	79031	PDCL3	phosducin-like 3
5575.	79033	PRNPIP	prion protein interacting protein
5576.	79034	C7orf26	chromosome 7 open reading frame 26
5577.	79038	ZFYVE21	zinc finger, FYVE domain containing 21
5578.	79039	DDX54	DEAD (Asp-Glu-Ala-Asp) box polypeptide 54
5579.	79042	TSEN34	tRNA splicing endonuclease 34 homolog (SEN34, <i>S. cerevisiae</i>)
5580.	79047	KCTD15	potassium channel tetramerisation domain containing 15
5581.	79048	SECISBP2	SECIS binding protein 2
5582.	79053	ALG8	asparagine-linked glycosylation 8 homolog (yeast, alpha-1,3-glucosyltransferase)
5583.	79054	TRPM8	transient receptor potential cation channel, subfamily M, member 8
5584.	79056	PRRG4	proline rich Gla (G-carboxyglutamic acid) 4 (transmembrane)
5585.	79064	MGC3196	hypothetical protein MGC3196
5586.	79070	KDELC1	KDEL (Lys-Asp-Glu-Leu) containing 1
5587.	79071	ELOVL6	ELOVL family member 6, elongation of long chain fatty acids (FEN1/Elo2, SUR4/Elo3-like, yeast)
5588.	79074	MGC5509	hypothetical protein MGC5509
5589.	79075	DCC1	defective in sister chromatid cohesion homolog 1 (<i>S. cerevisiae</i>)
5590.	79077	XTP3TPA	XTP3-transactivated protein A
5591.	79080	MGC2574	hypothetical protein MGC2574
5592.	79081	MGC2477	hypothetical protein MGC2477
5593.	79083	MLPH	melanophilin
5594.	79086	MGC2747	hypothetical protein MGC2747
5595.	79089	MGC3123	hypothetical protein MGC3123
5596.	79092	CARD14	caspase recruitment domain family, member 14
5597.	79094	MGC4504	hypothetical protein MGC4504
5598.	79098	C1orf116	chromosome 1 open reading frame 116
5599.	79099	MGC5618	hypothetical protein MGC5618
5600.	79101	MGC5306	hypothetical protein MGC5306
5601.	79133	C20orf7	chromosome 20 open reading frame 7
5602.	79135	MGC4825	hypothetical protein MGC4825
5603.	79139	DERL1	Der1-like domain family, member 1
5604.	79140	MGC1203	hypothetical protein MGC1203
5605.	79144	C20orf149	chromosome 20 open reading frame 149
5606.	79145	CHCHD7	coiled-coil-helix-coiled-coil-helix domain containing 7
5607.	79147	FKRP	fukutin related protein
5608.	79156	PLEKHF1	pleckstrin homology domain containing, family F (with FYVE domain) member 1
5609.	79158	MGC4170	MGC4170 protein
5610.	79159	MGC3731	hypothetical protein MGC3731
5611.	79174	MGC11256	hypothetical protein MGC11256
5612.	79180	EFHD2	EF hand domain family, member D2
5613.	79183	C20orf121	chromosome 20 open reading frame 121

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5614.	79184	CXorf53	chromosome X open reading frame 53
5615.	79187	FSD1	fibronectin type III and SPRY domain containing 1
5616.	79188	TMEM43	transmembrane protein 43
5617.	79269	WDR32	WD repeat domain 32
5618.	79364	ZXDC	ZXD family zinc finger C
5619.	79365	BHLHB3	basic helix-loop-helix domain containing, class B, 3
5620.	79370	BCL2L14	BCL2-like 14 (apoptosis facilitator)
5621.	79413	ZBED2	zinc finger, BED-type containing 2
5622.	79441	C4orf15	chromosome 4 open reading frame 15
5623.	79442	LRRC2	leucine rich repeat containing 2
5624.	79447	C16orf53	chromosome 16 open reading frame 53
5625.	79469	BCMSUNL	BCMS upstream neighbor-like
5626.	79568	FLJ22555	hypothetical protein FLJ22555
5627.	79572	ATP13A3	ATPase type 13A3
5628.	79581	GPR172A	G protein-coupled receptor 172A
5629.	79586	CHPF	chondroitin polymerizing factor
5630.	79589	RNF128	ring finger protein 128
5631.	79596	C13orf7	chromosome 13 open reading frame 7
5632.	79598	LRRIQ2	leucine-rich repeats and IQ motif containing 2
5633.	79600	FLJ21127	hypothetical protein FLJ21127
5634.	79602	ADIPOR2	adiponectin receptor 2
5635.	79611	FLJ21963	FLJ21963 protein
5636.	79618	FLJ21616	hypothetical protein FLJ21616
5637.	79621	FLJ11712	hypothetical protein FLJ11712
5638.	79622	C16orf33	chromosome 16 open reading frame 33
5639.	79623	GALNT14	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 14 (GalNAc-T14)
5640.	79628	SH3TC2	SH3 domain and tetratricopeptide repeats 2
5641.	79629	FLJ22709	hypothetical protein FLJ22709
5642.	79631	EFTUD1	elongation factor Tu GTP binding domain containing 1
5643.	79642	ARSJ	arylsulfatase J
5644.	79644	SRD5A2L	steroid 5 alpha-reductase 2-like
5645.	79647	C1orf108	chromosome 1 open reading frame 108
5646.	79648	MCPH1	microcephaly, primary autosomal recessive 1
5647.	79649	FLJ12649	hypothetical protein FLJ12649
5648.	79650	FLJ13154	hypothetical protein FLJ13154
5649.	79651	RHBDL6	rhomboid, veinlet-like 6 (Drosophila)
5650.	79654	HECTD3	HECT domain containing 3
5651.	79656	FLJ11588	hypothetical protein FLJ11588
5652.	79657	FLJ21908	hypothetical protein FLJ21908
5653.	79659	DNCH2	dynein, cytoplasmic, heavy polypeptide 2
5654.	79664	NARG2	NMDA receptor regulated 2
5655.	79666	PLEKHF2	pleckstrin homology domain containing, family F (with FYVE domain) member 2
5656.	79667	FLJ13197	hypothetical protein FLJ13197
5657.	79669	TTMP	TPA-induced transmembrane protein
5658.	79670	ZCCHC6	zinc finger, CCHC domain containing 6

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5659.	79671	NOD9	NOD9 protein
5660.	79672	FN3KRP	fructosamine-3-kinase-related protein
5661.	79673	ZNF329	zinc finger protein 329
5662.	79675	FLJ21901	hypothetical protein FLJ21901
5663.	79677	SMC6L1	SMC6 structural maintenance of chromosomes 6-like 1 (yeast)
5664.	79682	MLF1IP	MLF1 interacting protein
5665.	79683	ZDHHC14	zinc finger, DHHC-type containing 14
5666.	79684	FLJ23342	hypothetical protein FLJ23342
5667.	79686	C14orf139	chromosome 14 open reading frame 139
5668.	79694	MANEA	mannosidase, endo-alpha
5669.	79695	GALNT12	UDP-N-acetyl-alpha-D- galactosamine:polypeptide N- acetylgalactosaminyltransferase 12 (GalNAc-T12)
5670.	79697	C14orf169	chromosome 14 open reading frame 169
5671.	79703	FLJ22531	hypothetical protein FLJ22531
5672.	79705	LRRK1	leucine-rich repeat kinase 1
5673.	79707	FLJ23323	hypothetical protein FLJ23323
5674.	79709	GLT25D1	glycosyltransferase 25 domain containing 1
5675.	79710	MORC4	MORC family CW-type zinc finger 4
5676.	79712	GTDC1	glycosyltransferase-like domain containing 1
5677.	79713	FLJ22573	hypothetical protein FLJ22573
5678.	79714	FLJ12436	hypothetical protein FLJ12436
5679.	79716	NPEPL1	aminopeptidase-like 1
5680.	79717	FLJ11838	hypothetical protein FLJ11838
5681.	79718	TBL1XR1	transducin (beta)-like 1X-linked receptor 1
5682.	79723	SUV39H2	suppressor of variegation 3-9 homolog 2 (Drosophila)
5683.	79733	E2F8	E2F transcription factor 8
5684.	79744	ZNF419	zinc finger protein 419
5685.	79745	RSNL2	restin-like 2
5686.	79758	FLJ13639	hypothetical protein FLJ13639
5687.	79760	GEMIN7	gem (nuclear organelle) associated protein 7
5688.	79768	C15orf29	chromosome 15 open reading frame 29
5689.	79770	C5orf14	chromosome 5 open reading frame 14
5690.	79776	ZFHX4	zinc finger homeodomain 4
5691.	79777	ACBD4	acyl-Coenzyme A binding domain containing 4
5692.	79778	MICAL-L2	MICAL-like 2
5693.	79780	FLJ23518	hypothetical protein FLJ23518
5694.	79789	CLMN	calmin (calponin-like, transmembrane)
5695.	79791	FBXO31	F-box protein 31
5696.	79796	ALG9	asparagine-linked glycosylation 9 homolog (yeast, alpha 1,2 mannosyltransferase)
5697.	79797	ZNF408	zinc finger protein 408
5698.	79800	ALS2CR8	amyotrophic lateral sclerosis 2 (juvenile) chromosome region, candidate 8
5699.	79801	SHCBP1	SHC SH2-domain binding protein 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5700.	79811	FLJ13213	modulator of estrogen induced transcription
5701.	79817	MOBK12B	MOB1, Mps One Binder kinase activator-like 2B (yeast)
5702.	79819	FLJ23129	hypothetical protein FLJ23129
5703.	79822	ARHGAP28	Rho GTPase activating protein 28
5704.	79828	FLJ13984	hypothetical protein FLJ13984
5705.	79832	FLJ21924	hypothetical protein FLJ21924
5706.	79833	GEMIN6	gem (nuclear organelle) associated protein 6
5707.	79834	KIAA2002	KIAA2002 protein
5708.	79836	RNF127	ring finger protein 127
5709.	79838	TMC5	transmembrane channel-like 5
5710.	79844	ZDHHC11	zinc finger, DHHC-type containing 11
5711.	79850	FAM57A	family with sequence similarity 57, member A
5712.	79864	FLJ23554	hypothetical protein FLJ23554
5713.	79866	FLJ22624	FLJ22624 protein
5714.	79868	CXorf45	chromosome X open reading frame 45
5715.	79869	FLJ12529	pre-mRNA cleavage factor I, 59 kDa subunit
5716.	79876	UBE1DC1	ubiquitin-activating enzyme E1-domain containing 1
5717.	79877	FLJ22955	hypothetical protein FLJ22955
5718.	79888	FLJ12443	hypothetical protein FLJ12443
5719.	79892	C10orf119	chromosome 10 open reading frame 119
5720.	79893	ZNF403	zinc finger protein 403
5721.	79894	ZNF672	zinc finger protein 672
5722.	79899	FLJ14213	hypothetical protein FLJ14213
5723.	79901	CYBRD1	cytochrome b reductase 1
5724.	79902	PCNT1	pericentrin 1
5725.	79908	BTNL8	butyrophilin-like 8
5726.	79912	FLJ22028	hypothetical protein FLJ22028
5727.	79913	ACTR5	ARP5 actin-related protein 5 homolog (yeast)
5728.	79918	FLJ21148	hypothetical protein FLJ21148
5729.	79923	NANOG	Nanog homeobox
5730.	79932	KIAA0319L	KIAA0319-like
5731.	79939	SLC35E1	solute carrier family 35, member E1
5732.	79944	L2HGDH	L-2-hydroxyglutarate dehydrogenase
5733.	79951	FLJ11783	hypothetical protein FLJ11783
5734.	79954	FLJ14075	hypothetical LOC79954
5735.	79956	KIAA1815	KIAA1815
5736.	79959	C18orf9	chromosome 18 open reading frame 9
5737.	79960	PHF17	PHD finger protein 17
5738.	79963	ABCA11	ATP-binding cassette, sub-family A (ABC1), member 11 (pseudogene)
5739.	79968	WDR76	WD repeat domain 76
5740.	79971	C1orf139	chromosome 1 open reading frame 139
5741.	79974	FLJ21986	hypothetical protein FLJ21986
5742.	79977	TFCP2L3	transcription factor CP2-like 3
5743.	79982	DNAJB14	DnaJ (Hsp40) homolog, subfamily B, member 14
5744.	79987	SVEP1	sushi, von Willebrand factor type A, EGF and pentraxin domain containing 1
5745.	79989	FLJ12571	hypothetical protein FLJ12571

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5746.	79991	OBFC1	oligonucleotide/oligosaccharide-binding fold containing 1
5747.	80003	PCNXL2	pecanex-like 2 (Drosophila)
5748.	80005	DOCK5	dedicator of cytokinesis 5
5749.	80006	FLJ13611	hypothetical protein FLJ13611
5750.	80010	C9orf76	chromosome 9 open reading frame 76
5751.	80011	NIP30	NEFA-interacting nuclear protein NIP30
5752.	80013	C10orf97	chromosome 10 open reading frame 97
5753.	80014	BOMB	BH3-only member B protein
5754.	80018	FLJ13089	hypothetical protein FLJ13089
5755.	80022	MYO15B	myosin XVB, pseudogene
5756.	80025	PANK2	pantothenate kinase 2 (Hallervorden-Spatz syndrome)
5757.	80028	FBXL18	F-box and leucine-rich repeat protein 18
5758.	80031	SEMA6D	sema domain, transmembrane domain (TM), and cytoplasmic domain, (semaphorin) 6D
5759.	80036	TRPM3	transient receptor potential cation channel, subfamily M, member 3
5760.	80045	GPR157	G protein-coupled receptor 157
5761.	80055	PGAP1	GPI deacylase
5762.	80063	ATF7IP2	activating transcription factor 7 interacting protein 2
5763.	80071	CCDC15	coiled-coil domain containing 15
5764.	80095	ZNF606	zinc finger protein 606
5765.	80097	FLJ14346	hypothetical protein FLJ14346
5766.	80100	FLJ21272	hypothetical protein FLJ21272
5767.	80135	BXDC5	brix domain containing 5
5768.	80142	PTGES2	prostaglandin E synthase 2
5769.	80143	FLJ21168	hypothetical protein FLJ21168
5770.	80146	UXS1	UDP-glucuronate decarboxylase 1
5771.	80150	ASRGL1	asparaginase like 1
5772.	80154	FLJ22795	hypothetical protein FLJ22795
5773.	80155	NARG1	NMDA receptor regulated 1
5774.	80168	MOGAT2	monoacylglycerol O-acyltransferase 2
5775.	80173	CCDC2	coiled-coil domain containing 2
5776.	80183	C13orf18	chromosome 13 open reading frame 18
5777.	80196	RNF34	ring finger protein 34
5778.	80199	FLJ22688	hypothetical protein FLJ22688
5779.	80204	FBXO11	F-box protein 11
5780.	80205	CHD9	chromodomain helicase DNA binding protein 9
5781.	80206	FHOD3	formin homology 2 domain containing 3
5782.	80208	FLJ21439	hypothetical protein FLJ21439
5783.	80209	C13orf23	chromosome 13 open reading frame 23
5784.	80210	FLJ12584	melanoma/melanocyte specific protein KU-MEL-1
5785.	80212	FLJ22471	limkain beta 2
5786.	80218	MAK3	Mak3 homolog (S. cerevisiae)
5787.	80219	FLJ13448	hypothetical protein FLJ13448
5788.	80228	C7orf19	chromosome 7 open reading frame 19
5789.	80232	WDR26	WD repeat domain 26
5790.	80235	SMP3	SMP3 mannosyltransferase
5791.	80258	EFHC2	EF-hand domain (C-terminal) containing 2

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5792.	80263	TRIM45	tripartite motif-containing 45
5793.	80267	C1orf22	chromosome 1 open reading frame 22
5794.	80270	HSD3B7	hydroxy-delta-5-steroid dehydrogenase, 3 beta- and steroid delta-isomerase 7
5795.	80273	GRPEL1	GrpE-like 1, mitochondrial (E. coli)
5796.	80298	MTERFD3	MTERF domain containing 3
5797.	80301	pp9099	PH domain-containing protein
5798.	80308	PP591	FAD-synthetase
5799.	80310	PDGFD	platelet derived growth factor D
5800.	80312	CXXC6	CXXC finger 6
5801.	80314	EPC1	enhancer of polycomb homolog 1 (Drosophila)
5802.	80315	CPEB4	cytoplasmic polyadenylation element binding protein 4
5803.	80321	Cep70	p10-binding protein
5804.	80324	PUS1	pseudouridylate synthase 1
5805.	80328	ULBP2	UL16 binding protein 2
5806.	80331	DNAJC5	DnaJ (Hsp40) homolog, subfamily C, member 5
5807.	80332	ADAM33	a disintegrin and metalloproteinase domain 33
5808.	80336	C20orf119	chromosome 20 open reading frame 119
5809.	80342	TRAF3IP3	TRAF3 interacting protein 3
5810.	80344	WDR23	WD repeat domain 23
5811.	80346	C8orf20	chromosome 8 open reading frame 20
5812.	80347	COASY	Coenzyme A synthase
5813.	80349	WDR61	WD repeat domain 61
5814.	80381	CD276	CD276 antigen
5815.	80704	SLC19A3	solute carrier family 19, member 3
5816.	80709	AKNA	AT-hook transcription factor
5817.	80723	TMEM22	transmembrane protein 22
5818.	80740	LY6G6C	lymphocyte antigen 6 complex, locus G6C
5819.	80755	MGC2744	hypothetical protein MGC2744
5820.	80760	ITIH5	inter-alpha (globulin) inhibitor H5
5821.	80762	NDFIP1	Nedd4 family interacting protein 1
5822.	80772	MGC10334	hypothetical protein MGC10334
5823.	80775	MGC10993	hypothetical protein MGC10993
5824.	80777	CYB5-M	outer mitochondrial membrane cytochrome b5
5825.	80781	COL18A1	collagen, type XVIII, alpha 1
5826.	80789	KIAA1698	KIAA1698 protein
5827.	80817	KIAA1712	KIAA1712
5828.	80818	ZNF436	zinc finger protein 436
5829.	80822	KIAA1702	KIAA1702 protein
5830.	80829	ZFP91	zinc finger protein 91 homolog (mouse)
5831.	80830	APOL6	apolipoprotein L, 6
5832.	80853	KIAA1718	KIAA1718 protein
5833.	80854	SET7	SET domain-containing protein 7
5834.	80856	KIAA1715	KIAA1715
5835.	80869	HCG8	HLA complex group 8
5836.	81031	SLC2A10	solute carrier family 2 (facilitated glucose transporter), member 10
5837.	81034	MFTC	mitochondrial folate transporter/carrier
5838.	81035	COLEC12	collectin sub-family member 12

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5839.	81037	CRR9	cisplatin resistance related protein CRR9p
5840.	81488	GRINL1A	glutamate receptor, ionotropic, N-methyl D-aspartate-like 1A
5841.	81493	SYNC1	syncoilin, intermediate filament 1
5842.	81502	HM13	histocompatibility (minor) 13
5843.	81533	CDA08	T-cell immunomodulatory protein
5844.	81537	SGPP1	sphingosine-1-phosphate phosphatase 1
5845.	81539	SLC38A1	solute carrier family 38, member 1
5846.	81542	TXNDC	thioredoxin domain containing
5847.	81544	GDPD5	glycerophosphodiester phosphodiesterase domain containing 5
5848.	81545	FBXO38	F-box protein 38
5849.	81550	TDRD3	tudor domain containing 3
5850.	81554	WBSCR16	Williams-Beuren syndrome chromosome region 16
5851.	81555	YIPF5	Yip1 domain family, member 5
5852.	81557	MAGED4	melanoma antigen family D, 4
5853.	81562	LMAN2L	lectin, mannose-binding 2-like
5854.	81563	C1orf21	chromosome 1 open reading frame 21
5855.	81566	C12orf22	chromosome 12 open reading frame 22
5856.	81570	SKD3	suppressor of potassium transport defect 3
5857.	81572	PDRG1	p53 and DNA damage regulated 1
5858.	81573	DKFZP566D1346	hypothetical protein DKFZp566D1346
5859.	81603	TRIM8	tripartite motif-containing 8
5860.	81608	FIP1L1	FIP1 like 1 (<i>S. cerevisiae</i>)
5861.	81610	C20orf129	chromosome 20 open reading frame 129
5862.	81611	ANP32E	acidic (leucine-rich) nuclear phosphoprotein 32 family, member E
5863.	81619	TSPAN14	tetraspanin 14
5864.	81622	UNC93B1	unc-93 homolog B1 (<i>C. elegans</i>)
5865.	81624	DIAPH3	diaphanous homolog 3 (<i>Drosophila</i>)
5866.	81627	C1orf25	chromosome 1 open reading frame 25
5867.	81629	TSSK3	testis-specific serine kinase 3
5868.	81631	MAP1LC3B	microtubule-associated protein 1 light chain 3 beta
5869.	81669	CCNL2	cyclin L2
5870.	81671	TMEM49	transmembrane protein 49
5871.	81689	HBLD2	HESB like domain containing 2
5872.	81698	C15orf5	chromosome 15 open reading frame 5
5873.	81786	TRIM7	tripartite motif-containing 7
5874.	81790	RNF170	ring finger protein 170
5875.	81831	NETO2	neuropilin (NRP) and tolloid (TLL)-like 2
5876.	81839	VANGL1	vang-like 1 (van gogh, <i>Drosophila</i>)
5877.	81846	SBF2	SET binding factor 2
5878.	81847	RNF146	ring finger protein 146
5879.	81848	SPRY4	sprouty homolog 4 (<i>Drosophila</i>)
5880.	81853	TMEM14B	transmembrane protein 14B
5881.	81855	SFXN3	sideroflexin 3
5882.	81873	ARPC5L	actin related protein 2/3 complex, subunit 5-like
5883.	81876	RAB1B	RAB1B, member RAS oncogene family
5884.	81887	LAS1L	LAS1-like (<i>S. cerevisiae</i>)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5885.	81888	HYI	hydroxypyruvate isomerase homolog (E. coli)
5886.	81889	FAHD1	fumarylacetoacetate hydrolase domain containing 1
5887.	81892	C14orf156	chromosome 14 open reading frame 156
5888.	81894	SLC25A28	solute carrier family 25, member 28
5889.	81926	C19orf27	chromosome 19 open reading frame 27
5890.	81929	SEH1L	SEH1-like (S. cerevisiae)
5891.	81930	KIF18A	kinesin family member 18A
5892.	83442	SH3BGRL3	SH3 domain binding glutamic acid-rich protein like 3
5893.	83443	SF3B5	splicing factor 3b, subunit 5, 10kDa
5894.	83451	ABHD11	abhydrolase domain containing 11
5895.	83452	RAB33B	RAB33B, member RAS oncogene family
5896.	83461	CDCA3	cell division cycle associated 3
5897.	83464	APH1B	anterior pharynx defective 1 homolog B (C. elegans)
5898.	83468	GLT8D2	glycosyltransferase 8 domain containing 2
5899.	83540	CDCA1	cell division cycle associated 1
5900.	83542	MGC10812	hypothetical protein MGC10812
5901.	83543	C9orf58	chromosome 9 open reading frame 58
5902.	83591	DKFZP564I0422	hypothetical protein DKFZp564I0422
5903.	83593	RASSF5	Ras association (RalGDS/AF-6) domain family 5
5904.	83595	SOX7	SRY (sex determining region Y)-box 7
5905.	83598	LUZPP1	leucine zipper protein pseudogene 1
5906.	83604	TMEM47	transmembrane protein 47
5907.	83607	MGC4268	hypothetical protein MGC4268
5908.	83608	C18orf21	chromosome 18 open reading frame 21
5909.	83636	C19orf12	chromosome 19 open reading frame 12
5910.	83637	DKFZp761I2123	hypothetical protein DKFZp761I2123
5911.	83641	C10orf45	chromosome 10 open reading frame 45
5912.	83643	CCDC3	coiled-coil domain containing 3
5913.	83658	DNCL2A	dynein, cytoplasmic, light polypeptide 2A
5914.	83666	PARP9	poly (ADP-ribose) polymerase family, member 9
5915.	83667	SESN2	sestrin 2
5916.	83690	CRISPLD1	cysteine-rich secretory protein LCCL domain containing 1
5917.	83692	CD99L2	CD99 antigen-like 2
5918.	83695	MGC13204	hypothetical protein MGC13204
5919.	83697	SLC4A9	solute carrier family 4, sodium bicarbonate cotransporter, member 9
5920.	83698	CALN1	calneuron 1
5921.	83700	JAM3	junctional adhesion molecule 3
5922.	83719	YPEL3	yippee-like 3 (Drosophila)
5923.	83737	ITCH	itchy homolog E3 ubiquitin protein ligase (mouse)
5924.	83742	MARVELD1	MARVEL domain containing 1
5925.	83743	GRWD1	glutamate-rich WD repeat containing 1
5926.	83786	FKSG44	FKSG44 gene
5927.	83787	SVH	SVH protein
5928.	83850	FAM62C	family with sequence similarity 62 (C2 domain containing), member C

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5929.	83852	SETDB2	SET domain, bifurcated 2
5930.	83853	ROPN1L	ropporin 1-like
5931.	83857	ARG99	ARG99 protein
5932.	83858	ATAD3B	ATPase family, AAA domain containing 3B
5933.	83862	TMPIT	transmembrane protein induced by tumor necrosis factor alpha
5934.	83871	RAB34	RAB34, member RAS oncogene family
5935.	83872	HMCN1	hemicentin 1
5936.	83874	TBC1D10A	TBC1 domain family, member 10A
5937.	83888	KSP37	Ksp37 protein
5938.	83891	SNX25	sorting nexin 25
5939.	83892	KCTD10	potassium channel tetramerisation domain containing 10
5940.	83931	STK40	serine/threonine kinase 40
5941.	83935	AD031	AD031 protein
5942.	83937	RASSF4	Ras association (RalGDS/AF-6) domain family 4
5943.	83939	eIF2A	eukaryotic translation initiation factor (eIF) 2A
5944.	83959	SLC4A11	solute carrier family 4, sodium bicarbonate transporter-like, member 11
5945.	83989	DKFZP564D172	hypothetical protein DKFZp564D172
5946.	83990	BRIP1	BRCA1 interacting protein C-terminal helicase 1
5947.	84002	B3GNT5	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 5
5948.	84033	OBSCN	obscurin, cytoskeletal calmodulin and titin-interacting RhoGEF
5949.	84034	EMILIN2	elastin microfibril interfacer 2
5950.	84056	KATNAL1	katanin p60 subunit A-like 1
5951.	84057	GAJ	GAJ protein
5952.	84058	WDR54	WD repeat domain 54
5953.	84061	DKFZp564K142	implantation-associated protein
5954.	84062	DTNBP1	dystrobrevin binding protein 1
5955.	84065	DKFZP564D0478	hypothetical protein DKFZp564D0478
5956.	84070	DKFZP434J0113	hypothetical protein DKFZp434J0113
5957.	84078	KBTBD7	kelch repeat and BTB (POZ) domain containing 7
5958.	84084	RAB6C	RAB6C, member RAS oncogene family
5959.	84100	ARL6	ADP-ribosylation factor-like 6
5960.	84102	SLC41A2	solute carrier family 41, member 2
5961.	84105	PCBD2	6-pyruvoyl-tetrahydropterin synthase/dimerization cofactor of hepatocyte nuclear factor 1 alpha (TCF1) 2
5962.	84128	WDR75	WD repeat domain 75
5963.	84131	C9orf81	chromosome 9 open reading frame 81
5964.	84133	ZNRF3	zinc and ring finger 3
5965.	84135	FLJ12787	Src-associated protein SAW
5966.	84141	FLJ13391	hypothetical protein FLJ13391
5967.	84142	FLJ13614	hypothetical protein FLJ13614
5968.	84146	ZNF644	zinc finger protein 644
5969.	84148	MYST1	MYST histone acetyltransferase 1
5970.	84154	BXDC1	brix domain containing 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
5971.	84162	KIAA1109	KIAA1109
5972.	84171	LOXL4	lysyl oxidase-like 4
5973.	84172	POLR1B	polymerase (RNA) I polypeptide B, 128kDa
5974.	84181	CHD6	chromodomain helicase DNA binding protein 6
5975.	84182	FLJ22374	hypothetical protein FLJ22374
5976.	84186	ZCCHC7	zinc finger, CCHC domain containing 7
5977.	84188	MLSTD2	male sterility domain containing 2
5978.	84189	SLITRK6	SLIT and NTRK-like family, member 6
5979.	84191	FLJ22875	hypothetical protein FLJ22875
5980.	84193	C14orf154	chromosome 14 open reading frame 154
5981.	84196	USP48	ubiquitin specific protease 48
5982.	84206	RKHD3	ring finger and KH domain containing 3
5983.	84217	ZMYND12	zinc finger, MYND-type containing 12
5984.	84218	TBC1D3	TBC1 domain family, member 3
5985.	84220	RANBP2L1	RAN binding protein 2-like 1
5986.	84221	C21orf56	chromosome 21 open reading frame 56
5987.	84222	DKFZp434N035	hypothetical protein DKFZp434N035
5988.	84223	IQCG	IQ motif containing G
5989.	84230	LRR8C	leucine rich repeat containing 8 family, member C
5990.	84236	DKFZp547E052	hypothetical protein DKFZp547E052
5991.	84240	ZCCHC9	zinc finger, CCHC domain containing 9
5992.	84245	MGC3207	hypothetical protein MGC3207
5993.	84246	TRG20	hypothetical protein MGC5309
5994.	84248	FYTDD1	forty-two-three domain containing 1
5995.	84250	ANKRD32	ankyrin repeat domain 32
5996.	84256	FLYWCH1	FLYWCH-type zinc finger 1
5997.	84257	DKFZp761D112	hypothetical protein DKFZp761D112
5998.	84259	MGC2714	hypothetical protein MGC2714
5999.	84262	MGC10911	hypothetical protein MGC10911
6000.	84263	HSDL2	hydroxysteroid dehydrogenase like 2
6001.	84264	HAGHL	hydroxyacylglutathione hydrolase-like
6002.	84265	POLR3GL	polymerase (RNA) III (DNA directed) polypeptide G (32kD) like
6003.	84269	CHCHD5	coiled-coil-helix-coiled-coil-helix domain containing 5
6004.	84270	C9orf89	chromosome 9 open reading frame 89
6005.	84271	POLDIP3	polymerase (DNA-directed), delta interacting protein 3
6006.	84274	MGC4767	hypothetical protein MGC4767
6007.	84275	MGC4399	mitochondrial carrier protein
6008.	84276	NICN1	nicotin 1
6009.	84277	WBSCR18	Williams Beuren syndrome chromosome region 18
6010.	84279	C2orf7	chromosome 2 open reading frame 7
6011.	84282	RNF135	ring finger protein 135
6012.	84283	MGC13102	hypothetical protein MGC13102
6013.	84285	MGC11102	hypothetical protein MGC11102
6014.	84287	ZDHHC16	zinc finger, DHHC-type containing 16
6015.	84293	C10orf58	chromosome 10 open reading frame 58
6016.	84294	MGC14595	hypothetical protein MGC14595
6017.	84296	SLD5	SLD5 homolog
6018.	84298	MGC14817	hypothetical protein MGC14817
6019.	84300	C6orf125	chromosome 6 open reading frame 125

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6020.	84304	MGC13045	hypothetical protein MGC13045
6021.	84306	MGC13096	hypothetical protein MGC13096
6022.	84308	MGC3047	limitrin
6023.	84312	BRMS1L	breast cancer metastasis-suppressor 1-like
6024.	84313	MGC10540	hypothetical protein MGC10540
6025.	84314	MGC10744	hypothetical protein MGC10744
6026.	84319	MGC4308	hypothetical protein MGC4308
6027.	84321	THOC3	THO complex 3
6028.	84324	CIP29	cytokine induced protein 29 kDa
6029.	84326	MGC13114	hypothetical protein MGC13114
6030.	84327	ZBED3	zinc finger, BED-type containing 3
6031.	84328	LZIC	leucine zipper and CTNNBIP1 domain containing
6032.	84331	MGC15416	hypothetical protein MGC15416
6033.	84333	PCGF5	polycomb group ring finger 5
6034.	84334	C14orf153	chromosome 14 open reading frame 153
6035.	84335	AKT1S1	AKT1 substrate 1 (proline-rich)
6036.	84337	ELOF1	elongation factor 1 homolog (ELF1, <i>S. cerevisiae</i>)
6037.	84343	HPS3	Hermansky-Pudlak syndrome 3
6038.	84365	MKI67IP	MKI67 (FHA domain) interacting nucleolar phosphoprotein
6039.	84376	HOOK3	hook homolog 3 (<i>Drosophila</i>)
6040.	84418	ORF1-FL49	putative nuclear protein ORF1-FL49
6041.	84432	PROK1	prokineticin 1
6042.	84437	KIAA1826	KIAA1826 protein
6043.	84441	MAML2	mastermind-like 2 (<i>Drosophila</i>)
6044.	84444	DOT1L	DOT1-like, histone H3 methyltransferase (<i>S. cerevisiae</i>)
6045.	84450	ZNF512	zinc finger protein 512
6046.	84455	KIAA1799	KIAA1799 protein
6047.	84458	MLR2	ligand-dependent corepressor
6048.	84513	HTPAP	HTPAP protein
6049.	84514	LGP1	homolog of mouse LGP1
6050.	84515	MCM8	MCM8 minichromosome maintenance deficient 8 (<i>S. cerevisiae</i>)
6051.	84516	MGC3248	dynactin 4
6052.	84520	C14orf142	chromosome 14 open reading frame 142
6053.	84524	ZC3H8	zinc finger CCCH-type containing 8
6054.	84527	ZNF559	zinc finger protein 559
6055.	84529	HH114	hypothetical protein HH114
6056.	84532	ACAS2L	acetyl-Coenzyme A synthetase 2 (AMP forming)-like
6057.	84541	TA-KRP	T-cell activation kelch repeat protein
6058.	84542	KIAA1841	KIAA1841 protein
6059.	84545	MRPL43	mitochondrial ribosomal protein L43
6060.	84548	FAM11A	family with sequence similarity 11, member A
6061.	84552	PARD6G	par-6 partitioning defective 6 homolog gamma (<i>C. elegans</i>)
6062.	84553	C6orf168	chromosome 6 open reading frame 168
6063.	84557	MAP1LC3A	microtubule-associated protein 1 light chain 3 alpha
6064.	84572	GNPTG	N-acetylglucosamine-1-phosphotransferase, gamma subunit

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6065.	84617	TUBB6	tubulin, beta 6
6066.	84619	ZGPAT	zinc finger, CCCH-type with G patch domain
6067.	84629	KIAA1856	KIAA1856 protein
6068.	84630	TTBK1	tau tubulin kinase 1
6069.	84632	KIAA1914	KIAA1914
6070.	84634	GPR54	G protein-coupled receptor 54
6071.	84649	DGAT2	diacylglycerol O-acyltransferase homolog 2 (mouse)
6072.	84650	EBPL	emopamil binding protein-like
6073.	84661	LOC84661	dpy-30-like protein
6074.	84668	DRCTNNB1A	down-regulated by Ctnnb1, a
6075.	84669	USP32	ubiquitin specific protease 32
6076.	84674	CARD6	caspase recruitment domain family, member 6
6077.	84678	FBXL10	F-box and leucine-rich repeat protein 10
6078.	84679	SLC9A7	solute carrier family 9 (sodium/hydrogen exchanger), isoform 7
6079.	84680	PHACS	1-aminocyclopropane-1-carboxylate synthase
6080.	84681	HINT2	histidine triad nucleotide binding protein 2
6081.	84687	PPP1R9B	protein phosphatase 1, regulatory subunit 9B, spinophilin
6082.	84688	C9orf24	chromosome 9 open reading frame 24
6083.	84693	MCEE	methylnalonyl CoA epimerase
6084.	84695	LOXL3	lysyl oxidase-like 3
6085.	84705	GTPBP3	GTP binding protein 3 (mitochondrial)
6086.	84706	GPT2	glutamic pyruvate transaminase (alanine aminotransferase) 2
6087.	84708	LNK	ligand of numb-protein X
6088.	84722	DDA3	differential display and activated by p53
6089.	84726	KIAA0515	KIAA0515
6090.	84735	CNDP1	carnosine dipeptidase 1 (metallopeptidase M20 family)
6091.	84747	MGC5139	hypothetical protein MGC5139
6092.	84769	FKSG24	hypothetical protein MGC12972
6093.	84790	TUBA6	tubulin alpha 6
6094.	84792	MGC12966	hypothetical protein MGC12966
6095.	84795	C10orf33	chromosome 10 open reading frame 33
6096.	84798	MGC13170	multidrug resistance-related protein
6097.	84803	MGC11324	hypothetical protein MGC11324
6098.	84807	TA-NFKBH	T-cell activation NFkB-like protein
6099.	84809	MGC12760	hypothetical protein MGC12760
6100.	84812	PLCD4	phospholipase C, delta 4
6101.	84814	C9orf67	chromosome 9 open reading frame 67
6102.	84815	MGC12916	hypothetical protein MGC12916
6103.	84817	TXNL5	thioredoxin-like 5
6104.	84818	IL17RC	interleukin 17 receptor C
6105.	84820	MGC13098	hypothetical protein MGC13098
6106.	84823	LMNB2	lamin B2
6107.	84824	FCRLM1	Fc receptor-like and mucin-like 1
6108.	84833	USMG5	upregulated during skeletal muscle growth 5

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6109.	84837	C14orf128	chromosome 14 open reading frame 128
6110.	84844	PHF5A	PHD finger protein 5A
6111.	84848	MGC16121	hypothetical protein MGC16121
6112.	84853	MGC16207	hypothetical protein MGC16207
6113.	84856	MGC16291	hypothetical protein MGC16291
6114.	84858	ZNF503	zinc finger protein 503
6115.	84861	KLHL22	kelch-like 22 (Drosophila)
6116.	84864	MINA	MYC induced nuclear antigen
6117.	84869	CBR4	carbonic reductase 4
6118.	84874	ZNF514	zinc finger protein 514
6119.	84875	PARP10	poly (ADP-ribose) polymerase family, member 10
6120.	84886	FLJ14525	hypothetical protein FLJ14525
6121.	84890	C10orf22	chromosome 10 open reading frame 22
6122.	84894	LRRN6A	leucine rich repeat neuronal 6A
6123.	84898	PLXDC2	plexin domain containing 2
6124.	84899	FLJ14624	hypothetical protein FLJ14624
6125.	84900	FLJ14627	hypothetical protein FLJ14627
6126.	84901	NFATC2IP	nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 2 interacting protein
6127.	84910	FLJ14681	hypothetical protein FLJ14681
6128.	84911	ZNF382	zinc finger protein 382
6129.	84912	SLC35B4	solute carrier family 35, member B4
6130.	84913	ATOH8	atonal homolog 8 (Drosophila)
6131.	84915	FLJ14721	hypothetical protein FLJ14721
6132.	84916	CIRH1A	cirrhosis, autosomal recessive 1A (cirhin)
6133.	84918	LRP11	low density lipoprotein receptor-related protein 11
6134.	84930	MASTL	microtubule associated serine/threonine kinase-like
6135.	84933	FLJ14825	hypothetical protein FLJ14825
6136.	84937	ZNRF1	zinc and ring finger 1
6137.	84939	MUM1	melanoma associated antigen (mutated) 1
6138.	84947	SERAC1	serine active site containing 1
6139.	84950	PRPF38A	PRP38 pre-mRNA processing factor 38 (yeast) domain containing A
6140.	84954	FLJ14981	hypothetical protein FLJ14981
6141.	84955	NUDCD1	NudC domain containing 1
6142.	84959	STS-1	Cbl-interacting protein Sts-1
6143.	84960	KIAA1984	KIAA1984
6144.	84962	JUB	jub, ajuba homolog (Xenopus laevis)
6145.	84967	LSM10	LSM10, U7 small nuclear RNA associated
6146.	84969	C20orf100	chromosome 20 open reading frame 100
6147.	84973	MGC16037	hypothetical protein MGC16037
6148.	84976	DISP1	dispatched homolog 1 (Drosophila)
6149.	84986	ARHGAP19	Rho GTPase activating protein 19
6150.	84987	MGC14288	hypothetical protein MGC14288
6151.	84988	PPP1R16A	protein phosphatase 1, regulatory (inhibitor) subunit 16A
6152.	84991	RBM17	RNA binding motif protein 17
6153.	85006	C21orf124	chromosome 21 open reading frame 124
6154.	85007	MGC15875	hypothetical protein MGC15875

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6155.	85012	TCEAL3	transcription elongation factor A (SII)-like 3
6156.	85013	MGC13159	hypothetical protein MGC13159
6157.	85014	MGC14141	hypothetical protein MGC14141
6158.	85016	MGC13040	hypothetical protein MGC13040
6159.	85021	REPS1	RALBP1 associated Eps domain containing 1
6160.	85027	NID67	putative small membrane protein NID67
6161.	85028	C1orf79	chromosome 1 open reading frame 79
6162.	85236	HIST1H2BK	histone 1, H2bk
6163.	85287	KRTAP4-7	keratin associated protein 4-7
6164.	85301	COL27A1	collagen, type XXVII, alpha 1
6165.	85315	PAQR8	progesterone and adiponectin receptor family member VIII
6166.	85358	SHANK3	SH3 and multiple ankyrin repeat domains 3
6167.	85364	ZCCHC3	zinc finger, CCHC domain containing 3
6168.	85365	ALG2	asparagine-linked glycosylation 2 homolog (yeast, alpha-1,3-mannosyltransferase)
6169.	85366	MYLK2	myosin light chain kinase 2, skeletal muscle
6170.	85369	FAM40A	family with sequence similarity 40, member A
6171.	85377	MICAL-L1	MICAL-like 1
6172.	85403	EAF1	ELL associated factor 1
6173.	85413	SLC22A16	solute carrier family 22 (organic cation transporter), member 16
6174.	85414	PCANAP6	prostate cancer associated protein 6
6175.	85415	RHPN2	rhophilin, Rho GTPase binding protein 2
6176.	85440	DOCK7	dedicator of cytokinesis 7
6177.	85450	KIAA1754	KIAA1754
6178.	85451	ZC3H5	zinc finger CCCH-type containing 5
6179.	85458	DIXDC1	DIX domain containing 1
6180.	85460	KIAA1729	KIAA1729 protein
6181.	85462	KIAA1727	KIAA1727 protein
6182.	85463	ZC3H12C	zinc finger CCCH-type containing 12C
6183.	85464	SSH2	slingshot homolog 2 (Drosophila)
6184.	85465	SELI	selenoprotein I
6185.	85476	GFM1	G elongation factor, mitochondrial 1
6186.	85479	DNAJC5B	DnaJ (Hsp40) homolog, subfamily C, member 5 beta
6187.	85865	LOC85865	hypothetical protein BC004923
6188.	87178	PNPT1	polyribonucleotide nucleotidyltransferase 1
6189.	88523	LOC88523	CG016
6190.	88745	C6orf153	chromosome 6 open reading frame 153
6191.	89122	TRIM4	tripartite motif-containing 4
6192.	89781	HPS4	Hermansky-Pudlak syndrome 4
6193.	89795	NAV3	neuron navigator 3
6194.	89796	NAV1	neuron navigator 1
6195.	89797	NAV2	neuron navigator 2
6196.	89801	PPP1R3F	protein phosphatase 1, regulatory (inhibitor) subunit 3F

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6197.	89846	FGD3	FYVE, RhoGEF and PH domain containing 3
6198.	89853	C9orf28	chromosome 9 open reading frame 28
6199.	89886	SLAMF9	SLAM family member 9
6200.	89891	WDR34	WD repeat domain 34
6201.	89894	LOC89894	hypothetical protein BC000282
6202.	89910	UBE3B	ubiquitin protein ligase E3B
6203.	89927	C16orf45	chromosome 16 open reading frame 45
6204.	89932	PAPLN	papilin, proteoglycan-like sulfated glycoprotein
6205.	89941	RHOT2	ras homolog gene family, member T2
6206.	89958	C9orf140	chromosome 9 open reading frame 140
6207.	89978	MGC14798	similar to RIKEN cDNA 5730421E18 gene
6208.	90007	MIDN	midnolin
6209.	90075	ZNF30	zinc finger protein 30 (KOX 28)
6210.	90102	PHLDB2	pleckstrin homology-like domain, family B, member 2
6211.	90110	LOC90110	hypothetical protein LOC90110
6212.	90161	HS6ST2	heparan sulfate 6-O-sulfotransferase 2
6213.	90187	EMILIN3	elastin microfibril interfacer 3
6214.	90198	SBP1	HBV pre-s2 binding protein 1
6215.	90231	MGC33867	hypothetical protein MGC33867
6216.	90293	KLHL13	kelch-like 13 (Drosophila)
6217.	90321	LOC90321	hypothetical protein LOC90321
6218.	90332	XTP7	protein 7 transactivated by hepatitis B virus X antigen (HBxAg)
6219.	90333	ZNF468	zinc finger protein ZNF468
6220.	90362	MGC39325	hypothetical protein MGC39325
6221.	90379	LOC90379	hypothetical protein BC002926
6222.	90411	MCFD2	multiple coagulation factor deficiency 2
6223.	90417	C15orf23	chromosome 15 open reading frame 23
6224.	90423	ATP6V1E2	ATPase, H ⁺ transporting, lysosomal 31kDa, V1 subunit E isoform 2
6225.	90427	BMF	Bcl2 modifying factor
6226.	90441	ZNF622	zinc finger protein 622
6227.	90459	THEX1	three prime histone mRNA exonuclease 1
6228.	90462	ZNF605	zinc finger protein 605
6229.	90480	GADD45GIP1	growth arrest and DNA-damage-inducible, gamma interacting protein 1
6230.	90488	MGC17943	hypothetical protein MGC17943
6231.	90499	LOC90499	hypothetical protein LOC90499
6232.	90520	LOC90520	hypothetical protein LOC90520
6233.	90522	YIF1B	Yip1 interacting factor homolog B (S. cerevisiae)
6234.	90550	C10orf42	chromosome 10 open reading frame 42
6235.	90592	DKFZp434I1610	hypothetical protein DKFZp434I1610
6236.	90632	C6orf176	chromosome 6 open reading frame 176
6237.	90634	CG018	hypothetical gene CG018
6238.	90637	LOC90637	hypothetical protein LOC90637
6239.	90693	LOC90693	alpha-1,3(6)-mannosylglycoprotein beta-1,6-N-acetyl-glucosaminyltransferase-like
6240.	90701	SEC11L3	SEC11-like 3 (S. cerevisiae)
6241.	90861	C16orf34	chromosome 16 open reading frame 34
6242.	90871	C9orf123	chromosome 9 open reading frame 123

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6243.	90874	ZNF697	zinc finger protein 697
6244.	90952	ESAM	endothelial cell adhesion molecule
6245.	90956	ADCK2	aarF domain containing kinase 2
6246.	90990	KIFC2	kinesin family member C2
6247.	90993	CREB3L1	cAMP responsive element binding protein 3-like 1
6248.	91010	FMNL3	formin-like 3
6249.	91012	LASS5	LAG1 longevity assurance homolog 5 (S. cerevisiae)
6250.	91039	DPP9	dipeptidylpeptidase 9
6251.	91057	NY-REN-41	NY-REN-41 antigen
6252.	91107	TRIM47	tripartite motif-containing 47
6253.	91115	ZNF506	zinc finger protein 506
6254.	91137	LOC91137	hypothetical protein BC017169
6255.	91151	TIGD7	tigger transposable element derived 7
6256.	91252	SLC39A13	solute carrier family 39 (zinc transporter), member 13
6257.	91272	FAM44B	family with sequence similarity 44, member B
6258.	91283	MGC17337	similar to RIKEN cDNA 5730528L13 gene
6259.	91289	BC002942	hypothetical protein BC002942
6260.	91298	DKFZp434N2030	hypothetical protein DKFZp434N2030
6261.	91316	LOC91316	similar to bK246H3.1 (immunoglobulin lambda-like polypeptide 1, pre-B-cell specific)
6262.	91369	ANKRD40	ankyrin repeat domain 40
6263.	91392	ZNF502	zinc finger protein 502
6264.	91408	BTF3L4	basic transcription factor 3-like 4
6265.	91409	DKFZp434E2321	hypothetical protein DKFZp434E2321
6266.	91433	MGC14386	similar to cyclin-E binding protein 1 (H. sapiens)
6267.	91445	RNF185	ring finger protein 185
6268.	91452	ACBD5	acyl-Coenzyme A binding domain containing 5
6269.	91523	MGC16044	hypothetical protein MGC16044
6270.	91526	ANKRD44	ankyrin repeat domain 44
6271.	91531	DKFZp434P055	hypothetical protein DKFZp434P055
6272.	91548	LOC91548	hypothetical protein LOC91548
6273.	91574	FLJ38663	hypothetical protein FLJ38663
6274.	91582	MGC52010	hypothetical protein MGC52010
6275.	91603	CCDC16	coiled-coil domain containing 16
6276.	91612	CHURC1	churchill domain containing 1
6277.	91653	BOC	brother of CDO
6278.	91687	dJ383J4.3	hypothetical gene supported by BC007071
6279.	91694	FLJ23749	hypothetical protein FLJ23749
6280.	91749	KIAA1919	KIAA1919
6281.	91754	NEK9	NIMA (never in mitosis gene a)-related kinase 9
6282.	91782	CHMP7	CHMP family, member 7
6283.	91851	CHRD1	chordin-like 1
6284.	91860	CALML4	calmodulin-like 4
6285.	91862	MARVELD3	MARVEL domain containing 3
6286.	91947	ARRDC4	arrestin domain containing 4
6287.	91966	CXorf40	chromosome X open reading frame 40
6288.	92017	LOC92017	similar to RIKEN cDNA 4933437K13

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6289.	92092	MGC14289	similar to RIKEN cDNA 1200014N16 gene
6290.	92105	MGC16733	hypothetical gene MGC16733 similar to CG12113
6291.	92140	LYRIC	LYRIC/3D3
6292.	92170	GTP	GTP_binding protein
6293.	92196	LOC92196	similar to death-associated protein
6294.	92259	MRPS36	mitochondrial ribosomal protein S36
6295.	92335	LYK5	protein kinase LYK5
6296.	92344	SCYL1BP1	SCY1-like 1 binding protein 1
6297.	92370	ACPL2	acid phosphatase-like 2
6298.	92482	LOC92482	hypothetical protein LOC92482
6299.	92579	G6PC3	glucose 6 phosphatase, catalytic, 3
6300.	92595	MGC13138	hypothetical protein MGC13138
6301.	92597	MOBK1A	MOB1, Mps One Binder kinase activator-like 1A (yeast)
6302.	92659	LOC92659	hypothetical protein BC009233
6303.	92689	LOC92689	hypothetical protein BC001096
6304.	92703	C1orf37	chromosome 1 open reading frame 37
6305.	92737	DNER	delta-notch-like EGF repeat-containing transmembrane
6306.	92815	HIST3H2A	histone 3, H2a
6307.	92840	C19orf32	chromosome 19 open reading frame 32
6308.	92856	IMP4	IMP4, U3 small nucleolar ribonucleoprotein, homolog (yeast)
6309.	92906	HNRPLL	heterogeneous nuclear ribonucleoprotein L-like
6310.	92999	ZNF651	zinc finger protein 651
6311.	93081	LOC93081	hypothetical protein BC015148
6312.	93129	MGC13024	hypothetical protein MGC13024
6313.	93134	ZNF561	zinc finger protein 561
6314.	93166	PRDM6	PR domain containing 6
6315.	93210	PERLD1	per1-like domain containing 1
6316.	93343	LOC93343	hypothetical protein BC011840
6317.	93487	C14orf32	chromosome 14 open reading frame 32
6318.	93611	FBXO44	F-box protein 44
6319.	93621	MRFAP1	Mof4 family associated protein 1
6320.	93622	LOC93622	hypothetical protein BC006130
6321.	93627	MGC16169	hypothetical protein MGC16169
6322.	93643	TJAP1	tight junction associated protein 1 (peripheral)
6323.	93663	ARHGAP18	Rho GTPase activating protein 18
6324.	93953	ACRC	acidic repeat containing
6325.	93974	ATPIF1	ATPase inhibitory factor 1
6326.	94015	TTYH2	tweety homolog 2 (Drosophila)
6327.	94056	SYAP1	synapse associated protein 1, SAP47 homolog (Drosophila)
6328.	94081	SFXN1	sideroflexin 1
6329.	94103	ORMDL3	ORM1-like 3 (S. cerevisiae)
6330.	94104	C21orf66	chromosome 21 open reading frame 66
6331.	94107	MGC14327	hypothetical protein MGC14327
6332.	94122	SYTL5	synaptotagmin-like 5
6333.	94239	H2AFV	H2A histone family, member V
6334.	94241	TP53INP1	tumor protein p53 inducible nuclear protein 1
6335.	96626	LIMS3	LIM and senescent cell antigen-like domains 3

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6336.	96764	NCOA6IP	nuclear receptor coactivator 6 interacting protein
6337.	112464	PRKCDBP	protein kinase C, delta binding protein
6338.	112597	MGC4677	hypothetical protein MGC4677
6339.	112616	CKLFSF7	chemokine-like factor super family 7
6340.	112770	C1orf85	chromosome 1 open reading frame 85
6341.	112849	C14orf149	chromosome 14 open reading frame 149
6342.	112858	TP53RK	TP53 regulating kinase
6343.	112869	LOC112869	hypothetical protein BC011981
6344.	112936	MGC10485	hypothetical protein MGC10485
6345.	112939	BTBD14B	BTB (POZ) domain containing 14B
6346.	112942	MGC15407	similar to RIKEN cDNA 4931428D14 gene
6347.	112970	MGC20419	hypothetical protein BC012173
6348.	113115	FAM54A	family with sequence similarity 54, member A
6349.	113130	CDCA5	cell division cycle associated 5
6350.	113174	LOC113174	hypothetical protein BC012010
6351.	113201	CASC4	cancer susceptibility candidate 4
6352.	113251	LARP4	La ribonucleoprotein domain family, member 4
6353.	113263	GLCCI1	glucocorticoid induced transcript 1
6354.	113277	MGC20235	hypothetical protein MGC20235
6355.	113402	C6orf83	chromosome 6 open reading frame 83
6356.	113444	LOC113444	hypothetical protein BC011880
6357.	113451	ADC	arginine decarboxylase
6358.	113622	ADPRHL1	ADP-ribosylhydrolase like 1
6359.	113829	SLC35A4	solute carrier family 35, member A4
6360.	114035	C21orf81	chromosome 21 open reading frame 81
6361.	114049	WBSCR22	Williams Beuren syndrome chromosome region 22
6362.	114088	TRIM9	tripartite motif-containing 9
6363.	114132	SIGLEC11	sialic acid binding Ig-like lectin 11
6364.	114134	SLC2A13	solute carrier family 2 (facilitated glucose transporter), member 13
6365.	114294	LACTB	lactamase, beta
6366.	114299	PALM2	paralemmin 2
6367.	114327	EFHC1	EF-hand domain (C-terminal) containing 1
6368.	114569	MAL2	mal, T-cell differentiation protein 2
6369.	114614	BIC	BIC transcript
6370.	114659	LRR37B	leucine rich repeat containing 37B
6371.	114781	BTBD9	BTB (POZ) domain containing 9
6372.	114785	MBD6	methyl-CpG binding domain protein 6
6373.	114793	FMNL2	formin-like 2
6374.	114799	ESCO1	establishment of cohesion 1 homolog 1 (S. cerevisiae)
6375.	114805	GALNT13	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 13 (GalNAc-T13)
6376.	114815	SORCS1	sortilin-related VPS10 domain containing receptor 1
6377.	114818	KBTBD9	kelch repeat and BTB (POZ) domain containing 9
6378.	114819	KIAA1922	KIAA1922 protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6379.	114823	LENG8	leukocyte receptor cluster (LRC) member 8
6380.	114825	KIAA1935	KIAA1935 protein
6381.	114876	OSBPL1A	oxysterol binding protein-like 1A
6382.	114880	OSBPL6	oxysterol binding protein-like 6
6383.	114882	OSBPL8	oxysterol binding protein-like 8
6384.	114884	OSBPL10	oxysterol binding protein-like 10
6385.	114885	OSBPL11	oxysterol binding protein-like 11
6386.	114907	FBXO32	F-box protein 32
6387.	114915	TIGA1	TIGA1
6388.	114928	GPRASP2	G protein-coupled receptor associated sorting protein 2
6389.	115106	CCDC5	coiled-coil domain containing 5 (spindle associated)
6390.	115207	KCTD12	potassium channel tetramerisation domain containing 12
6391.	115209	OMA1	OMA1 homolog, zinc metallopeptidase (<i>S. cerevisiae</i>)
6392.	115265	DDIT4L	DNA-damage-inducible transcript 4-like
6393.	115273	MGC45806	hypothetical protein MGC45806
6394.	115290	FBXO17	F-box protein 17
6395.	115294	LOC115294	similar to hypothetical protein FLJ10883
6396.	115416	C7orf30	chromosome 7 open reading frame 30
6397.	115426	UHRF2	ubiquitin-like, containing PHD and RING finger domains, 2
6398.	115509	ZNF689	zinc finger protein 689
6399.	115557	GEFT	RAC/CDC42 exchange factor
6400.	115749	LOC115749	hypothetical protein LOC115749
6401.	115752	MGC4562	hypothetical protein MGC4562
6402.	115795	MGC40179	hypothetical protein MGC40179
6403.	115817	DHRS1	dehydrogenase/reductase (SDR family) member 1
6404.	115908	CTHRC1	collagen triple helix repeat containing 1
6405.	116028	MGC24665	hypothetical protein MGC24665
6406.	116068	LOC116068	hypothetical protein LOC116068
6407.	116092	DNTTIP1	deoxynucleotidyltransferase, terminal, interacting protein 1
6408.	116138	KLHDC3	kelch domain containing 3
6409.	116143	LOC116143	hypothetical protein BC014022
6410.	116150	C6orf68	chromosome 6 open reading frame 68
6411.	116151	C20orf108	chromosome 20 open reading frame 108
6412.	116173	CKLFSF5	chemokine-like factor super family 5
6413.	116225	ZMYND19	zinc finger, MYND-type containing 19
6414.	116228	FAM36A	family with sequence similarity 36, member A
6415.	116236	LOC116236	hypothetical protein LOC116236
6416.	116238	LOC116238	hypothetical protein BC014072
6417.	116254	C6orf72	chromosome 6 open reading frame 72
6418.	116461	C1orf19	chromosome 1 open reading frame 19
6419.	116496	C1orf24	chromosome 1 open reading frame 24
6420.	116540	MRPL53	mitochondrial ribosomal protein L53
6421.	116541	MRPL54	mitochondrial ribosomal protein L54
6422.	116829	CG012	hypothetical gene CG012
6423.	116832	RPL39L	ribosomal protein L39-like

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6424.	116843	C6orf192	chromosome 6 open reading frame 192
6425.	116983	CENTB5	centaurin, beta 5
6426.	116984	CENTD1	centaurin, delta 1
6427.	116987	CENTG2	centaurin, gamma 2
6428.	116988	CENTG3	centaurin, gamma 3
6429.	117143	TADA1L	transcriptional adaptor 1 (HFI1 homolog, yeast)-like
6430.	117145	CTMP	C-terminal modulator protein
6431.	117155	CATSPER2	cation channel, sperm associated 2
6432.	117166	WFIKKN1	WAP, follistatin/kazal, immunoglobulin, kunitz and netrin domain containing 1
6433.	117178	SSX2IP	synovial sarcoma, X breakpoint 2 interacting protein
6434.	117195	MRGPRX3	MAS-related GPR, member X3
6435.	117245	HRLP5	H-rev107-like protein 5
6436.	117246	FTSJ3	FtsJ homolog 3 (E. coli)
6437.	117248	GALNTL2	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase-like 2
6438.	117532	TMC2	transmembrane channel-like 2
6439.	117583	ALS2CR19	amyotrophic lateral sclerosis 2 (juvenile) chromosome region, candidate 19
6440.	118424	UBE2J2	ubiquitin-conjugating enzyme E2, J2 (UBC6 homolog, yeast)
6441.	118429	ANTXR2	anthrax toxin receptor 2
6442.	118471	PRAP1	proline-rich acidic protein 1
6443.	118487	CHCHD1	coiled-coil-helix-coiled-coil-helix domain containing 1
6444.	118611	C10orf90	chromosome 10 open reading frame 90
6445.	118788	PIK3AP1	phosphoinositide-3-kinase adaptor protein 1
6446.	118812	C10orf83	chromosome 10 open reading frame 83
6447.	118813	ZFYVE27	zinc finger, FYVE domain containing 27
6448.	119016	CTGLF1	centaurin, gamma-like family, member 1
6449.	119032	C10orf32	chromosome 10 open reading frame 32
6450.	119392	C10orf78	chromosome 10 open reading frame 78
6451.	119504	C10orf104	chromosome 10 open reading frame 104
6452.	119548	PNLIPRP3	pancreatic lipase-related protein 3
6453.	119587	CPXM2	carboxypeptidase X (M14 family), member 2
6454.	119710	LOC119710	hypothetical protein BC009561
6455.	120103	SLC36A4	solute carrier family 36 (proton/amino acid symporter), member 4
6456.	120114	FAT3	FAT tumor suppressor homolog 3 (Drosophila)
6457.	120196	MGC34830	hypothetical protein MGC34830
6458.	120534	FLJ38968	hypothetical protein FLJ38968
6459.	120892	LRRK2	leucine-rich repeat kinase 2
6460.	121227	LRIG3	leucine-rich repeats and immunoglobulin-like domains 3
6461.	121260	SLC15A4	solute carrier family 15, member 4
6462.	121274	ZNF641	zinc finger protein 641
6463.	121457	IKIP	IKK interacting protein
6464.	121601	TMEM16D	transmembrane protein 16D

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6465.	121665	SPPL3	signal peptide peptidase 3
6466.	122416	ANKRD9	ankyrin repeat domain 9
6467.	122509	FAM14B	family with sequence similarity 14, member B
6468.	122525	C14orf28	chromosome 14 open reading frame 28
6469.	122704	MRPL52	mitochondrial ribosomal protein L52
6470.	122769	PPIL5	peptidylprolyl isomerase (cyclophilin)-like 5
6471.	122773	KLHDC1	kelch domain containing 1
6472.	122953	JDP2	jun dimerization protein 2
6473.	123016	TTC8	tetratricopeptide repeat domain 8
6474.	123169	LOC123169	senescence downregulated leol-like
6475.	123283	TARSL2	threonyl-tRNA synthetase-like 2
6476.	123803	NTAN1	N-terminal asparagine amidase
6477.	123811	FLJ31153	hypothetical protein FLJ31153
6478.	123920	CKLFSF3	chemokine-like factor super family 3
6479.	124044	MGC26885	hypothetical protein MGC26885
6480.	124152	MGC35048	hypothetical protein MGC35048
6481.	124446	LOC124446	hypothetical protein BC017488
6482.	124454	KIAA1970	KIAA1970 protein
6483.	124491	LOC124491	LOC124491
6484.	124512	LOC124512	hypothetical protein LOC124512
6485.	124565	MGC15523	hypothetical protein MGC15523
6486.	124583	CANT1	calcium activated nucleotidase 1
6487.	124783	FLJ25414	hypothetical protein FLJ25414
6488.	124801	FLJ30656	hypothetical protein FLJ30656
6489.	124923	FLJ25006	hypothetical protein FLJ25006
6490.	124936	MGC32124	hypothetical protein MGC32124
6491.	124961	FLJ30726	hypothetical protein FLJ30726
6492.	124995	MRPL10	mitochondrial ribosomal protein L10
6493.	124997	FLJ33817	hypothetical protein FLJ33817
6494.	125058	TBC1D16	TBC1 domain family, member 16
6495.	125144	MGC40157	hypothetical protein MGC40157
6496.	125150	LOC125150	hypothetical protein LOC125150
6497.	125228	C18orf19	chromosome 18 open reading frame 19
6498.	125476	C18orf37	chromosome 18 open reading frame 37
6499.	125704	C18orf51	chromosome 18 open reading frame 51
6500.	125965	COX6B2	cytochrome c oxidase subunit VIb polypeptide 2 (testis)
6501.	125988	QIL1	QIL1 protein
6502.	126003	TRAPPC5	trafficking protein particle complex 5
6503.	126075	LOC126075	hypothetical protein LOC126075
6504.	126129	CPT1C	carnitine palmitoyltransferase 1C
6505.	126147	LOC126147	hypothetical protein BC018697
6506.	126259	MGC23244	hypothetical protein MGC23244
6507.	126272	FLJ38944	hypothetical protein FLJ38944
6508.	126282	TNFAIP8L1	tumor necrosis factor, alpha-induced protein 8-like 1
6509.	126321	C19orf28	chromosome 19 open reading frame 28
6510.	126353	C19orf21	chromosome 19 open reading frame 21
6511.	126669	SHE	Src homology 2 domain containing E
6512.	126731	C1orf96	chromosome 1 open reading frame 96
6513.	126792	B3GALT6	UDP-Gal:betaGal beta 1,3- galactosyltransferase polypeptide 6
6514.	126917	LOC126917	hypothetical protein LOC126917

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6515.	127018	LYPLAL1	lysophospholipase-like 1
6516.	127253	LOC127253	hypothetical protein BC009514
6517.	127262	LOC127262	hypothetical protein LOC127262
6518.	127435	PODN	podocan
6519.	127557	ZBTB8	zinc finger and BTB domain containing 8
6520.	127703	FLJ38984	hypothetical protein FLJ38984
6521.	127829	ARL10B	ADP-ribosylation factor-like 10B
6522.	127933	UHMK1	U2AF homology motif (UHM) kinase 1
6523.	127943	FCRLM2	Fc receptor-like and mucin-like 2
6524.	128061	C1orf131	chromosome 1 open reading frame 131
6525.	128077	LIX1L	Lix1 homolog (mouse) like
6526.	128153	LOC128153	hypothetical protein BC014608
6527.	128229	SSTK-IP	SSTK-interacting protein
6528.	128239	IQGAP3	IQ motif containing GTPase activating protein 3
6529.	128240	APOA1BP	apolipoprotein A-I binding protein
6530.	128338	MGC54289	hypothetical protein MGC54289
6531.	128486	C20orf142	chromosome 20 open reading frame 142
6532.	128853	DUSP15	dual specificity phosphatase 15
6533.	128861	C20orf71	chromosome 20 open reading frame 71
6534.	128866	CHMP4B	chromatin modifying protein 4B
6535.	128977	LOC128977	hypothetical protein LOC128977
6536.	128989	DKFZp761P1121	hypothetical protein DKFZp761P1121
6537.	129049	RUTBC2	RUN and TBC1 domain containing 2
6538.	129080	EMID1	EMI domain containing 1
6539.	129138	LOC129138	hypothetical protein BC014641
6540.	129293	LOC129293	hypothetical protein LOC129293
6541.	129303	FLJ90024	fasting-inducible integral membrane protein TM6P1
6542.	129401	NUP35	nucleoporin 35kDa
6543.	129446	CMYA3	cardiomyopathy associated 3
6544.	129607	LOC129607	hypothetical protein LOC129607
6545.	129684	CNTNAP5	contactin associated protein-like 5
6546.	129685	TBN	taube nuss homolog (mouse)
6547.	130026	ALS2CR15	amyotrophic lateral sclerosis 2 (juvenile) chromosome region, candidate 15
6548.	130029	ALS2CR16	amyotrophic lateral sclerosis 2 (juvenile) chromosome region, candidate 16
6549.	130132	C2orf11	chromosome 2 open reading frame 11
6550.	130162	FLJ31438	hypothetical protein FLJ31438
6551.	130271	PLEKHH2	pleckstrin homology domain containing, family H (with MyTH4 domain) member 2
6552.	130340	AP1S3	adaptor-related protein complex 1, sigma 3 subunit
6553.	130355	LOC130355	hypothetical protein LOC130355
6554.	130399	ACVR1C	activin A receptor, type IC
6555.	130502	LOC130502	similar to CG14894-PA
6556.	130507	ZNF650	zinc finger protein 650
6557.	130612	MGC99813	similar to RIKEN cDNA A230078I05 gene
6558.	130752	MDH1B	malate dehydrogenase 1B, NAD (soluble)
6559.	130827	FLJ30294	hypothetical protein FLJ30294

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6560.	130872	AHSA2	AHA1, activator of heat shock 90kDa protein ATPase homolog 2 (yeast)
6561.	130940	LOC130940	hypothetical protein BC015395
6562.	131076	LOC131076	hypothetical LOC131076
6563.	131408	MGC21688	hypothetical protein MGC21688
6564.	131474	CHCHD4	coiled-coil-helix-coiled-coil-helix domain containing 4
6565.	131544	DKFZp667G2110	hypothetical protein DKFZp667G2110
6566.	131566	DCBLD2	discoidin, CUB and LCCL domain containing 2
6567.	131578	LRRC15	leucine rich repeat containing 15
6568.	131616	TMEM42	transmembrane protein 42
6569.	131870	NUDT16	nudix (nucleoside diphosphate linked moiety X)-type motif 16
6570.	132720	FLJ39370	hypothetical protein FLJ39370
6571.	132789	GNPDA2	glucosamine-6-phosphate deaminase 2
6572.	132864	CPEB2	cytoplasmic polyadenylation element binding protein 2
6573.	133015	MGC29898	hypothetical protein MGC29898
6574.	133022	TRAM1L1	translocation associated membrane protein 1-like 1
6575.	133584	FLJ39155	hypothetical protein FLJ39155
6576.	133619	LOC133619	hypothetical protein MGC12103
6577.	134147	LOC134147	similar to mouse 2310016A09Rik gene
6578.	134218	DNAJA5	DnaJ homology subfamily A member 5
6579.	134265	FLJ36748	hypothetical protein FLJ36748
6580.	134266	GRPEL2	GrpE-like 2, mitochondrial (E. coli)
6581.	134429	STARD4	START domain containing 4, sterol regulated
6582.	134430	WDR36	WD repeat domain 36
6583..	134492	NUDCD2	NudC domain containing 2
6584.	134553	FLJ37562	hypothetical protein FLJ37562
6585.	135112	NCOA7	nuclear receptor coactivator 7
6586.	135114	HINT3	histidine triad nucleotide binding protein 3
6587.	135152	B3GAT2	beta-1,3-glucuronyltransferase 2 (glucuronosyltransferase S)
6588.	135228	CD109	CD109 antigen (Gov platelet alloantigens)
6589.	135293	ACY1L2	aminoacylase 1-like 2
6590.	135398	C6orf141	chromosome 6 open reading frame 141
6591.	136319	MTPN	myotrophin
6592.	136371	ASB10	ankyrin repeat and SOCS box-containing 10
6593.	136647	C7orf11	chromosome 7 open reading frame 11
6594.	136895	C7orf31	chromosome 7 open reading frame 31
6595.	137392	LOC137392	similar to CG6405 gene product
6596.	137492	FLJ32642	hepatocellular carcinoma related protein 1
6597.	137682	MGC40214	hypothetical protein MGC40214
6598.	137695	FLJ32370	hypothetical protein FLJ32370
6599.	137872	ADHFE1	alcohol dehydrogenase, iron containing, 1
6600.	137886	LOC137886	hypothetical protein LOC137886
6601.	137964	DKFZp586M1819	putative lysophosphatidic acid acyltransferase

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6602.	137994	LETM2	leucine zipper-EF-hand containing transmembrane protein 2
6603.	138050	FLJ32731	hypothetical protein FLJ32731
6604.	138065	RNF183	ring finger protein 183
6605.	138199	C9orf41	chromosome 9 open reading frame 41
6606.	139231	CXorf39	chromosome X open reading frame 39
6607.	139322	CXorf33	chromosome X open reading frame 33
6608.	139341	FUNDC1	FUN14 domain containing 1
6609.	139818	DOCK11	dedicator of cytokinesis 11
6610.	140461	ASB8	ankyrin repeat and SOCS box-containing 8
6611.	140465	MLC1SA	myosin light chain 1 slow a
6612.	140467	ZNF358	zinc finger protein 358
6613.	140576	S100A16	S100 calcium binding protein A16
6614.	140606	SELM	selenoprotein M
6615.	140612	ZFP28	zinc finger protein 28 homolog (mouse)
6616.	140628	GATA5	GATA binding protein 5
6617.	140685	BTBD4	BTB (POZ) domain containing 4
6618.	140688	C20orf112	chromosome 20 open reading frame 112
6619.	140706	C20orf160	chromosome 20 open reading frame 160
6620.	140738	TMEM37	transmembrane protein 37
6621.	140739	NCE2	NEDD8-conjugating enzyme
6622.	140809	SRXN1	sulfiredoxin 1 homolog (S. cerevisiae)
6623.	140823	C20orf52	chromosome 20 open reading frame 52
6624.	140883	SUHW2	suppressor of hairy wing homolog 2 (Drosophila)
6625.	140885	PTPNS1	protein tyrosine phosphatase, non-receptor type substrate 1
6626.	140901	STK35	serine/threonine kinase 35
6627.	142678	MIB2	mindbomb homolog 2 (Drosophila)
6628.	142680	SLC34A3	solute carrier family 34 (sodium phosphate), member 3
6629.	143279	HECTD2	HECT domain containing 2
6630.	143458	LOC143458	hypothetical protein LOC143458
6631.	143503	OR51E1	olfactory receptor, family 51, subfamily E, member 1
6632.	143662	MUC15	mucin 15
6633.	143684	MGC33371	hypothetical protein MGC33371
6634.	143686	SESN3	sestrin 3
6635.	143689	PIWIL4	piwi-like 4 (Drosophila)
6636.	143872	FLJ32810	hypothetical protein FLJ32810
6637.	143888	KDEL2	KDEL (Lys-Asp-Glu-Leu) containing 2
6638.	143903	LOC143903	layilin
6639.	144110	FLJ90119	hypothetical protein FLJ90119
6640.	144165	PRICKLE1	prickle-like 1 (Drosophila)
6641.	144193	MGC35366	hypothetical protein MGC35366
6642.	144195	SLC2A14	solute carrier family 2 (facilitated glucose transporter), member 14
6643.	144348	ZNF664	zinc finger protein 664
6644.	144363	LOC144363	hypothetical protein LOC144363
6645.	144402	CPNE8	copine VIII
6646.	144438	LOC144438	hypothetical protein LOC144438
6647.	144455	E2F7	E2F transcription factor 7
6648.	144571	LOC144571	hypothetical protein LOC144571
6649.	144811	FLJ38725	hypothetical protein FLJ38725
6650.	144871	LOC144871	hypothetical protein LOC144871

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6651.	145173	B3GTL	beta 3-glycosyltransferase-like
6652.	145225	C14orf83	chromosome 14 open reading frame 83
6653.	145389	SLC38A6	solute carrier family 38, member 6
6654.	145508	C14orf145	chromosome 14 open reading frame 145
6655.	145567	TTC7B	tetratricopeptide repeat domain 7B
6656.	145581	LRFN5	leucine rich repeat and fibronectin type III domain containing 5
6657.	145786	LOC145786	hypothetical protein LOC145786
6658.	145788	FLJ27352	hypothetical LOC145788
6659.	145815	MGC18216	hypothetical protein MGC18216
6660.	145837	LOC145837	hypothetical protein LOC145837
6661.	145842	LOC145842	hypothetical protein LOC145842
6662.	146174	C16orf52	chromosome 16 open reading frame 52
6663.	146198	ZFP90	zinc finger protein 90 homolog (mouse)
6664.	146223	CKLFSF4	chemokine-like factor super family 4
6665.	146346	LOC146346	hypothetical protein LOC146346
6666.	146456	TMED6	transmembrane emp24 protein transport domain containing 6
6667.	146540	FLJ32130	hypothetical protein FLJ32130
6668.	146542	ZNF688	zinc finger protein 688
6669.	146691	TOM1L2	target of myb1-like 2 (chicken)
6670.	146722	CD300LF	CD300 antigen like family member F
6671.	146754	FLJ46675	FLJ46675 protein
6672.	146894	CD300LG	CD300 antigen like family member G
6673.	146909	LOC146909	hypothetical protein LOC146909
6674.	147007	C17orf32	chromosome 17 open reading frame 32
6675.	147040	KCTD11	potassium channel tetramerisation domain containing 11
6676.	147138	EVER2	epidermodysplasia verruciformis 2
6677.	147179	WIRE	WIRE protein
6678.	147343	LOC147343	hypothetical protein LOC147343
6679.	147700	KLC2L	kinesin light chain 2-like
6680.	147727	LOC147727	hypothetical protein LOC147727
6681.	147929	ZNF565	zinc finger protein 565
6682.	147947	ZNF542	zinc finger protein 542
6683.	147965	LOC147965	hypothetical protein LOC147965
6684.	148066	ZNRF4	zinc and ring finger 4
6685.	148103	ZNF599	zinc finger protein 599
6686.	148156	ZNF558	zinc finger protein 558
6687.	148170	CDC42EP5	CDC42 effector protein (Rho GTPase binding) 5
6688.	148203	LOC148203	hypothetical protein LOC148203
6689.	148266	ZNF569	zinc finger protein 569
6690.	148327	CREB3L4	cAMP responsive element binding protein 3-like 4
6691.	148362	C1orf58	chromosome 1 open reading frame 58
6692.	148398	SAMD11	sterile alpha motif domain containing 11
6693.	148418	LOC148418	dnaj-like protein
6694.	148423	C1orf52	chromosome 1 open reading frame 52
6695.	148479	PHF13	PHD finger protein 13
6696.	148789	B3GALNT2	UDP-GalNAc:betaGlcNAc beta 1,3-galactosaminyltransferase, polypeptide 2
6697.	148808	DKFZp761N1114	hypothetical protein DKFZp761N1114
6698.	149076	FLJ25476	FLJ25476 protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6699.	149111	CNIH3	cornichon homolog 3 (Drosophila)
6700.	149461	CLDN19	claudin 19
6701.	149603	RNF187	ring finger protein 187
6702.	149699	C20orf65	chromosome 20 open reading frame 65
6703.	149832	LOC149832	hypothetical protein LOC149832
6704.	149951	COMMD7	COMM domain containing 7
6705.	149986	FAM61B	family with sequence similarity 61, member B
6706.	150094	SNF1LK	SNF1-like kinase
6707.	150166	LOC150166	hypothetical protein LOC150166
6708.	150274	HSC20	J-type co-chaperone HSC20
6709.	150290	DUSP18	dual specificity phosphatase 18
6710.	150465	TTL	tubulin tyrosine ligase
6711.	150468	FLJ40629	hypothetical protein FLJ40629
6712.	150472	CBWD2	COBW domain containing 2
6713.	150519	FLJ30428	similar to hypothetical protein A230046P18; cDNA sequence BC055759
6714.	150678	MYEOV2	myeloma overexpressed 2
6715.	150759	LOC150759	hypothetical protein LOC150759
6716.	150771	KIAA1754L	KIAA1754-like
6717.	150946	FAM59B	family with sequence similarity 59, member B
6718.	150967	DKFZp434H1419	hypothetical protein DKFZp434H1419
6719.	151011	38605	septin 10
6720.	151050	FLJ23861	hypothetical protein FLJ23861
6721.	151162	LOC151162	hypothetical protein LOC151162
6722.	151188	ARL6IP6	ADP-ribosylation-like factor 6 interacting protein 6
6723.	151194	LOC151194	similar to hepatocellular carcinoma-associated antigen HCA557b
6724.	151195	FLJ40432	hypothetical protein FLJ40432
6725.	151246	SGOL2	shugoshin-like 2 (S. pombe)
6726.	151258	FLJ39822	hypothetical protein FLJ39822
6727.	151295	SLC23A3	solute carrier family 23 (nucleobase transporters), member 3
6728.	151516	FLJ25084	hypothetical protein FLJ25084
6729.	151534	LOC151534	hypothetical protein BC009264
6730.	151613	TTC14	tetratricopeptide repeat domain 14
6731.	151636	DTX3L	deltex 3-like (Drosophila)
6732.	151887	URB	steroid sensitive gene 1
6733.	151903	CCDC12	coiled-coil domain containing 12
6734.	151963	LOC151963	similar to BcDNA:GH11415 gene product
6735.	151987	PPP4R2	protein phosphatase 4, regulatory subunit 2
6736.	152006	RNF38	ring finger protein 38
6737.	152015	ROPN1B	ropporin, rhophilin associated protein 1B
6738.	152100	MGC61571	hypothetical protein MGC61571
6739.	152137	C3orf6	chromosome 3 open reading frame 6
6740.	152189	CKLFSF8	chemokine-like factor super family 8
6741.	152217	LOC152217	hypothetical protein BC007882
6742.	152404	IGSF11	immunoglobulin superfamily, member 11
6743.	152485	LOC152485	hypothetical protein LOC152485
6744.	152503	SH3D19	SH3 domain protein D19
6745.	152518	NFXL1	nuclear transcription factor, X-box binding-like 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6746.	152573	LOC152573	hypothetical protein BC012029
6747.	152579	SCFD2	sec1 family domain containing 2
6748.	152756	FLJ31659	hypothetical protein FLJ31659
6749.	153090	DAB2IP	DAB2 interacting protein
6750.	153222	LOC153222	adult retina protein
6751.	153241	FLJ36090	hypothetical protein FLJ36090
6752.	153339	MGC23909	hypothetical protein MGC23909
6753.	153396	MGC33214	hypothetical protein MGC33214
6754.	153527	ZMAT2	zinc finger, matrin type 2
6755.	153579	BTNL9	butyrophilin-like 9
6756.	153684	LOC153684	hypothetical protein LOC153684
6757.	153811	LOC153811	hypothetical protein LOC153811
6758.	154007	C6orf151	chromosome 6 open reading frame 151
6759.	154043	CNKSR3	CNKSR family member 3
6760.	154091	SLC2A12	solute carrier family 2 (facilitated glucose transporter), member 12
6761.	154141	OACT1	O-acyltransferase (membrane bound) domain containing 1
6762.	154467	C6orf129	chromosome 6 open reading frame 129
6763.	154807	VKORC1L1	vitamin K epoxide reductase complex, subunit 1-like 1
6764.	154810	AMOTL1	angiomotin like 1
6765.	155368	WBSCR27	Williams Beuren syndrome chromosome region 27
6766.	155400	WBSCR20B	Williams-Beuren Syndrome critical region protein 20 copy B
6767.	155435	RBM33	RNA binding motif protein 33
6768.	157285	DKFZp761P0423	hypothetical protein DKFZp761P0423
6769.	157313	CDCA2	cell division cycle associated 2
6770.	157378	LOC157378	hypothetical protein BC017881
6771.	157506	RDH10	retinol dehydrogenase 10 (all-trans)
6772.	157570	ESCO2	establishment of cohesion 1 homolog 2 (S. cerevisiae)
6773.	157574	FBXO16	F-box protein 16
6774.	157638	NSE2	breast cancer membrane protein 101
6775.	157680	VPS13B	vacuolar protein sorting 13B (yeast)
6776.	157695	INM01	hypothetical protein INM01
6777.	157697	LOC157697	hypothetical protein LOC157697
6778.	157773	FLJ25402	hypothetical protein FLJ25402
6779.	157922	CAMSAP1	calmodulin regulated spectrin-associated protein 1
6780.	157983	C9orf66	chromosome 9 open reading frame 66
6781.	158067	C9orf98	chromosome 9 open reading frame 98
6782.	158135	C9orf20	chromosome 9 open reading frame 20
6783.	158293	C9orf100S	chromosome 9 open reading frame 10 opposite strand
6784.	158358	KIAA2026	KIAA2026
6785.	158563	LOC158563	hypothetical protein LOC158563
6786.	158586	ZXDB	zinc finger, X-linked, duplicated B
6787.	158747	MOSPD2	motile sperm domain containing 2
6788.	158852	CT45-2	cancer/testis antigen CT45-2
6789.	159090	LOC159090	similar to hypothetical protein MGC17347
6790.	160335	DKFZp762A217	hypothetical protein DKFZp762A217
6791.	160418	SMILE	SMILE protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6792.	160428	ALDH1L2	aldehyde dehydrogenase 1 family, member L2
6793.	160518	MGC24039	hypothetical protein MGC24039
6794.	160760	TA-PP2C	T-cell activation protein phosphatase 2C
6795.	161527	LOC161527	hypothetical protein LOC161527
6796.	161582	DYX1C1	dyslexia susceptibility 1 candidate 1
6797.	161742	SPRED1	sprouty-related, EVH1 domain containing 1
6798.	162282	FLJ38335	hypothetical protein FLJ38335
6799.	162394	MGC19764	hypothetical protein MGC19764
6800.	162461	FLJ33318	hypothetical protein FLJ33318
6801.	162515	SLC16A11	solute carrier family 16 (monocarboxylic acid transporters), member 11
6802.	162681	C18orf54	chromosome 18 open reading frame 54
6803.	162962	FLJ16287	FLJ16287 protein
6804.	162966	ZNF600	zinc finger protein 600
6805.	162967	ZFPL	zinc finger protein like
6806.	162972	ZNF550	zinc finger protein 550
6807.	162989	DEDD2	death effector domain containing 2
6808.	162993	LOC162993	hypothetical protein LOC162993
6809.	163050	ZNF564	zinc finger protein 564
6810.	163126	CRI2	CREBBP/EP300 inhibitor 2
6811.	163175	LGI4	leucine-rich repeat LGI family, member 4
6812.	163732	CITED4	Cbp/p300-interacting transactivator, with Glu/Asp-rich carboxy-terminal domain, 4
6813.	163778	SPRR4	small proline rich protein 4
6814.	163859	C1orf55	chromosome 1 open reading frame 55
6815.	163882	C1orf71	chromosome 1 open reading frame 71
6816.	165055	FLJ32745	hypothetical protein FLJ32745
6817.	166336	PRICKLE2	prickle-like 2 (Drosophila)
6818.	166379	FLJ35630	hypothetical protein FLJ35630
6819.	166647	GPR125	G protein-coupled receptor 125
6820.	166968	FLJ35954	hypothetical protein FLJ35954
6821.	166979	FLJ37927	CDC20-like protein
6822.	167153	PAPD4	PAP associated domain containing 4
6823.	167227	DCP2	DCP2 decapping enzyme homolog (S. cerevisiae)
6824.	167359	MGC42105	hypothetical protein MGC42105
6825.	167681	PRSS35	protease, serine, 35
6826.	168374	ZNF92	zinc finger protein 92 (HTF12)
6827.	168455	FLJ36031	hypothetical protein FLJ36031
6828.	168667	BMPER	BMP-binding endothelial regulator precursor protein
6829.	169044	COL22A1	collagen, type XXII, alpha 1
6830.	169270	ZNF596	zinc finger protein 596
6831.	169611	OLFML2A	olfactomedin-like 2A
6832.	169834	LOC169834	hypothetical protein LOC169834
6833.	169981	SPIN3	spindlin family, member 3
6834.	170384	FUT11	fucosyltransferase 11 (alpha (1,3) fucosyltransferase)
6835.	170487	C20orf134	chromosome 20 open reading frame 134

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6836.	170506	DHX36	DEAH (Asp-Glu-Ala-His) box polypeptide 36
6837.	170690	ADAMTS16	a disintegrin-like and metalloprotease (reprolysin type) with thrombospondin type 1 motif, 16
6838.	170692	ADAMTS18	a disintegrin-like and metalloprotease (reprolysin type) with thrombospondin type 1 motif, 18
6839.	170954	KIAA1949	KIAA1949
6840.	171017	ZNF384	zinc finger protein 384
6841.	171023	ASXL1	additional sex combs like 1 (Drosophila)
6842.	171425	CLYBL	citrate lyase beta like
6843.	171546	C14orf147	chromosome 14 open reading frame 147
6844.	171586	ABHD3	abhydrolase domain containing 3
6845.	192669	EIF2C3	eukaryotic translation initiation factor 2C, 3
6846.	192683	SCAMP5	secretory carrier membrane protein 5
6847.	195827	C9orf21	chromosome 9 open reading frame 21
6848.	195828	ZNF367	zinc finger protein 367
6849.	196051	PPAPDC1	phosphatidic acid phosphatase type 2 domain containing 1
6850.	196394	LOC196394	hypothetical protein LOC196394
6851.	196403	DTX3	deltex 3 homolog (Drosophila)
6852.	196463	LOC196463	hypothetical protein LOC196463
6853.	196513	DCP1B	DCP1 decapping enzyme homolog B (S. cerevisiae)
6854.	196515	FLJ30092	AF-1 specific protein phosphatase
6855.	197131	UBR1	ubiquitin protein ligase E3 component n-recogin 1
6856.	197259	MLKL	mixed lineage kinase domain-like
6857.	197336	LOC197336	similar to RIKEN cDNA 3230401M21 [Mus musculus]
6858.	199692	ZNF627	zinc finger protein 627
6859.	199704	ZNF585A	zinc finger protein 585A
6860.	199746	U2AF1L3	U2(RNU2) small nuclear RNA auxiliary factor 1-like 3
6861.	199777	ZNF626	zinc finger protein 626
6862.	199786	BCNP1	B-cell novel protein 1
6863.	200030	LOC200030	hypothetical protein LOC200030
6864.	200035	NUDT17	nudix (nucleoside diphosphate linked moiety X)-type motif 17
6865.	200058	FLJ23867	hypothetical protein FLJ23867
6866.	200095	C1orf67	chromosome 1 open reading frame 67
6867.	200373	LOC200373	similar to hypothetical protein
6868.	200504	GDDR	down-regulated in gastric cancer GDDR
6869.	200576	PIP5K3	phosphatidylinositol-3-phosphate/phosphatidylinositol 5-kinase, type III
6870.	200844	FLJ42117	FLJ42117 protein
6871.	200916	RPL22L1	ribosomal protein L22-like 1
6872.	200933	FBXO45	F-box protein 45
6873.	200942	MGC35097	hypothetical protein MGC35097
6874.	201134	MGC33887	hypothetical protein MGC33887
6875.	201158	LOC201158	similar to CGI-148 protein
6876.	201161	PRR6	proline rich 6

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6877.	201164	LOC201164	similar to CG12314 gene product
6878.	201254	STRA13	stimulated by retinoic acid 13 homolog (mouse)
6879.	201266	SLC39A11	solute carrier family 39 (metal ion transporter), member 11
6880.	201283	FLJ32065	hypothetical protein FLJ32065
6881.	201475	RAB12	RAB12, member RAS oncogene family
6882.	201484	LOC201484	hypothetical LOC201484
6883.	201562	PTPLB	protein tyrosine phosphatase-like (proline instead of catalytic arginine), member b
6884.	201595	SIMP	source of immunodominant MHC-associated peptides
6885.	201626	2'-PDE	2'-phosphodiesterase
6886.	201627	FLJ34969	hypothetical protein FLJ34969
6887.	201725	LOC201725	hypothetical protein LOC201725
6888.	201780	SLC10A4	solute carrier family 10 (sodium/bile acid cotransporter family), member 4
6889.	201895	LOC201895	hypothetical protein LOC201895
6890.	201931	FLJ38482	hypothetical protein FLJ38482
6891.	201965	MGC10198	hypothetical protein MGC10198
6892.	202018	FLJ90013	hypothetical protein FLJ90013
6893.	202020	FLJ39653	hypothetical protein FLJ39653
6894.	202025	DKFZp667E0512	hypothetical protein DKFZp667E0512
6895.	202374	STK32A	serine/threonine kinase 32A
6896.	203068	TUBB	tubulin, beta polypeptide
6897.	203069	LOC203069	hypothetical protein LOC203069
6898.	203080	C8orf5	chromosome 8 open reading frame 5
6899.	203107	LOC203107	hypothetical protein LOC203107
6900.	203190	LGI3	leucine-rich repeat LGI family, member 3
6901.	203197	C9orf91	chromosome 9 open reading frame 91
6902.	203228	C9orf72	chromosome 9 open reading frame 72
6903.	203427	LOC203427	similar to solute carrier family 25 , member 16
6904.	203547	LOC203547	hypothetical protein LOC203547
6905.	204851	HIPK1	homeodomain interacting protein kinase 1
6906.	205327	FLJ38973	hypothetical protein FLJ38973
6907.	205428	MGC33365	hypothetical protein MGC33365
6908.	219285	SAMD9L	sterile alpha motif domain containing 9-like
6909.	219287	FLJ25477	hypothetical protein FLJ25477
6910.	219402	MTIF3	mitochondrial translational initiation factor 3
6911.	219404	MGC9850	hypothetical protein MGC9850
6912.	219539	YPEL4	yippee-like 4 (Drosophila)
6913.	219541	MED19	mediator of RNA polymerase II transcription, subunit 19 homolog (yeast)
6914.	219595	PSMAL	prostate-specific membrane antigen-like
6915.	219654	C10orf56	chromosome 10 open reading frame 56
6916.	219699	UNC5B	unc-5 homolog B (C. elegans)
6917.	219844	HYLS1	hydrolethalus syndrome 1
6918.	219902	MGC17839	hypothetical protein MGC17839

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6919.	219927	MRPL21	mitochondrial ribosomal protein L21
6920.	219988	FLJ36874	hypothetical protein FLJ36874
6921.	220002	CYBASC3	cytochrome b, ascorbate dependent 3
6922.	220042	FLJ25416	hypothetical protein FLJ25416
6923.	220134	C18orf24	chromosome 18 open reading frame 24
6924.	220213	OTUD1	OTU domain containing 1
6925.	220323	NS5ATP13TP2	NS5ATP13TP2 protein
6926.	220594	LOC220594	TL132 protein
6927.	220766	KIAA0470L	KIAA0470-like
6928.	220906	LOC220906	hypothetical protein LOC220906
6929.	220930	LOC220930	hypothetical protein LOC220930
6930.	220988	HNRPA3	heterogeneous nuclear ribonucleoprotein A3
6931.	221035	C10orf74	chromosome 10 open reading frame 74
6932.	221037	JMJD1C	jumonji domain containing 1C
6933.	221061	C10orf38	chromosome 10 open reading frame 38
6934.	221092	DKFZp762N1910	hypothetical protein DKFZp762N1910
6935.	221184	CPNE2	copine II
6936.	221294	NT5C2L1	5'-nucleotidase, cytosolic II-like 1
6937.	221322	C6orf170	chromosome 6 open reading frame 170
6938.	221336	C6orf65	chromosome 6 open reading frame 65
6939.	221362	LOC221362	hypothetical protein LOC221362
6940.	221442	LOC221442	hypothetical protein LOC221442
6941.	221443	C6orf130	chromosome 6 open reading frame 130
6942.	221477	C6orf89	chromosome 6 open reading frame 89
6943.	221481	C6orf81	chromosome 6 open reading frame 81
6944.	221491	C6orf1	chromosome 6 open reading frame 1
6945.	221545	C6orf136	chromosome 6 open reading frame 136
6946.	221656	AOF1	amine oxidase (flavin containing) domain 1
6947.	221687	RNF182	ring finger protein 182
6948.	221692	PHACTR1	phosphatase and actin regulator 1
6949.	221718	MGC40222	hypothetical protein MGC40222
6950.	221749	C6orf145	chromosome 6 open reading frame 145
6951.	221830	TWISTNB	TWIST neighbor
6952.	221895	JAZF1	juxtaposed with another zinc finger gene 1
6953.	221908	MGC22793	hypothetical protein MGC22793
6954.	221955	LOC221955	KCCR13L
6955.	222068	TMED4	transmembrane emp24 protein transport domain containing 4
6956.	222223	KIAA1324L	KIAA1324-like
6957.	222229	DKFZp434K1815	hypothetical protein DKFZp434K1815
6958.	222235	FBXL13	F-box and leucine-rich repeat protein 13
6959.	222236	NAPE-PLD	N-acyl-phosphatidylethanolamine- hydrolyzing phospholipase D
6960.	222553	SLC35F1	solute carrier family 35, member F1
6961.	222658	C6orf69	chromosome 6 open reading frame 69
6962.	222663	SCUBE3	signal peptide, CUB domain, EGF-like 3
6963.	225689	MAPK15	mitogen-activated protein kinase 15
6964.	245973	ATP6V1C2	ATPase, H+ transporting, lysosomal 42kDa, V1 subunit C isoform 2
6965.	246100	CTAG1A	cancer/testis antigen 1A
6966.	246184	CDC26	cell division cycle 26
6967.	246243	RNASEH1	ribonuclease H1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6968.	246329	STAC3	SH3 and cysteine rich domain 3
6969.	246721	POLR2J2	DNA directed RNA polymerase II polypeptide J-related gene
6970.	246777	SPESP1	sperm equatorial segment protein 1
6971.	252839	TMEM9	transmembrane protein 9
6972.	252983	STXBP4	syntaxin binding protein 4
6973.	252995	FNDC5	fibronectin type III domain containing 5
6974.	253152	ABHD7	abhydrolase domain containing 7
6975.	253461	ZBTB38	zinc finger and BTB domain containing 38
6976.	253512	SLC25A30	solute carrier family 25, member 30
6977.	253558	LYCAT	lysocardiolipin acyltransferase
6978.	253725	FAM21C	family with sequence similarity 21, member C
6979.	253782	LASS6	LAG1 longevity assurance homolog 6 (S. cerevisiae)
6980.	253827	MSRB3	methionine sulfoxide reductase B3
6981.	253943	YTHDF3	YTH domain family, member 3
6982.	253959	GARNL1	GTPase activating Rap/RanGAP domain-like 1
6983.	253970	LOC253970	hypothetical protein LOC253970
6984.	253981	LOC253981	hypothetical protein LOC253981
6985.	253982	LOC253982	hypothetical protein LOC253982
6986.	254102	EHBP1L1	EH domain binding protein 1-like 1
6987.	254122	FLJ30934	hypothetical protein FLJ30934
6988.	254427	C10orf47	chromosome 10 open reading frame 47
6989.	254531	LOC254531	PLSC domain containing protein
6990.	254778	MGC33510	hypothetical protein MGC33510
6991.	254863	MGC40107	hypothetical protein MGC40107
6992.	255027	FLJ39599	hypothetical protein FLJ39599
6993.	255326	LOC255326	hypothetical protein LOC255326
6994.	255458	LOC255458	hypothetical protein LOC255458
6995.	255520	ELMOD2	ELMO domain containing 2
6996.	255758	MGC33212	hypothetical protein MGC33212
6997.	255919	FLJ38101	hypothetical protein FLJ38101
6998.	256306	DKFZp762H185	hypothetical protein DKFZp762H185
6999.	256435	ST6GALNAC3	ST6 (alpha-N-acetyl-neuraminy1-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 3
7000.	256643	CXorf23	chromosome X open reading frame 23
7001.	256764	WDR72	WD repeat domain 72
7002.	257019	FRMD3	FERM domain containing 3
7003.	257103	C21orf86	chromosome 21 open reading frame 86
7004.	257106	ARHGAP30	Rho GTPase activating protein 30
7005.	257218	SHPRH	SNF2 histone linker PHD RING helicase
7006.	257313	UTS2D	urotensin 2 domain containing
7007.	257358	LOC257358	hypothetical protein LOC257358
7008.	257415	MGC40405	hypothetical protein MGC40405
7009.	258010	DKFZp313A2432	hypothetical protein DKFZp313A2432
7010.	259230	TMEM23	transmembrane protein 23
7011.	259266	ASPM	asp (abnormal spindle)-like, microcephaly associated (Drosophila)
7012.	260294	WBSCR20C	Williams Beuren syndrome chromosome region 20C

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7013.	260436	C4orf7	chromosome 4 open reading frame 7
7014.	261726	TIPRL	TIP41, TOR signalling pathway regulator-like (<i>S. cerevisiae</i>)
7015.	266655	FLJ35348	FLJ35348
7016.	282679	AQP11	aquaporin 11
7017.	282809	WDR51B	WD repeat domain 51B
7018.	282991	BLOC1S2	biogenesis of lysosome-related organelles complex-1, subunit 2
7019.	282996	RBM20	RNA binding motif protein 20
7020.	283050	LOC283050	hypothetical protein LOC283050
7021.	283070	LOC283070	hypothetical protein LOC283070
7022.	283131	TncRNA	trophoblast-derived noncoding RNA
7023.	283177	LOC283177	hypothetical protein LOC283177
7024.	283208	P4HA3	procollagen-proline, 2-oxoglutarate 4- dioxygenase (proline 4-hydroxylase), alpha polypeptide III
7025.	283209	PGM2L1	phosphoglucomutase 2-like 1
7026.	283219	LOC283219	hypothetical protein LOC283219
7027.	283232	LOC283232	hypothetical protein LOC283232
7028.	283254	FLJ32675	hypothetical protein FLJ32675
7029.	283349	RASSF3	Ras association (RalGDS/AF-6) domain family 3
7030.	283352	LOC283352	hypothetical protein LOC283352
7031.	283357	LOC283357	hypothetical protein LOC283357
7032.	283377	LOC283377	hypothetical protein LOC283377
7033.	283417	FLJ32949	hypothetical protein FLJ32949
7034.	283454	LOC283454	hypothetical protein LOC283454
7035.	283463	MUC19	mucin 19
7036.	283481	LOC283481	hypothetical protein LOC283481
7037.	283489	C13orf8	chromosome 13 open reading frame 8
7038.	283492	FLJ25694	hypothetical protein FLJ25694
7039.	283554	DKFZp762F0713	hypothetical protein DKFZp762F0713
7040.	283578	TMED8	transmembrane emp24 domain containing 8
7041.	283658	LOC283658	hypothetical protein LOC283658
7042.	283680	LOC283680	hypothetical protein LOC283680
7043.	283683	LOC283683	hypothetical protein LOC283683
7044.	283685	FLJ36144	hypothetical protein FLJ36144
7045.	283728	LOC283728	hypothetical protein LOC283728
7046.	283742	FLJ38426	hypothetical protein FLJ38426
7047.	283788	LOC283788	hypothetical protein LOC283788
7048.	283820	NOMO2	NODAL modulator 2
7049.	283824	LOC283824	hypothetical protein LOC283824
7050.	283846	DKFZp547E087	PI-3-kinase-related kinase SMG-1-like similar to prepro-Neuropeptide W polypeptide
7051.	283869	PPL8	
7052.	283870	MGC21830	hypothetical protein MGC21830
7053.	283871	LOC283871	hypothetical protein LOC283871
7054.	283899	FLJ90652	hypothetical protein FLJ90652
7055.	283991	MGC29814	hypothetical protein MGC29814
7056.	284004	FLJ23825	hypothetical protein FLJ23825
7057.	284018	LOC284018	hypothetical protein LOC284018
7058.	284040	FLJ36674	hypothetical protein FLJ36674
7059.	284058	LOC284058	LOC284058 protein
7060.	284076	FLJ35808	hypothetical protein FLJ35808

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
7061.	284119	PTRF	polymerase I and transcript release factor
7062.	284129	SLC26A11	solute carrier family 26, member 11
7063.	284184	LOC284184	hypothetical LOC284184
7064.	284186	FLJ38792	hypothetical protein FLJ38792
7065.	284214	LOC284214	hypothetical protein LOC284214
7066.	284252	KCTD1	potassium channel tetramerisation domain containing 1
7067.	284262	LOC284262	hypothetical protein LOC284262
7068.	284273	ZADH2	zinc binding alcohol dehydrogenase, domain containing 2
7069.	284309	FLJ38288	hypothetical protein FLJ38288
7070.	284325	FLJ41131	FLJ41131 protein
7071.	284340	UNQ473	DMC
7072.	284345	PHLDB3	pleckstrin homology-like domain, family B, member 3
7073.	284356	LOC284356	hypothetical protein LOC284356
7074.	284361	LOC284361	hypothetical protein LOC284361
7075.	284370	ZNF615	zinc finger protein 615
7076.	284406	ZNF545	zinc finger protein 545
7077.	284408	LOC284408	hypothetical protein LOC284408
7078.	284422	LOC284422	similar to HSPC323
7079.	284454	LOC284454	hypothetical protein LOC284454
7080.	284465	LOC284465	hypothetical protein LOC284465
7081.	284561	LOC284561	hypothetical protein LOC284561
7082.	284591	LOC284591	hypothetical protein LOC284591
7083.	284611	LOC284611	hypothetical protein LOC284611
7084.	284615	ANKRD34	ankyrin repeat domain 34
7085.	284680	Clorf111	chromosome 1 open reading frame 111
7086.	284701	LOC284701	hypothetical protein LOC284701
7087.	284805	FLJ33706	hypothetical protein FLJ33706
7088.	284900	KIAA1648	KIAA1648 protein
7089.	284926	LOC284926	hypothetical protein LOC284926
7090.	284939	LOC284939	hypothetical protein LOC284939
7091.	284952	LOC284952	hypothetical protein LOC284952
7092.	284996	RNF149	ring finger protein 149
7093.	285190	DKFZp686P0288	similar to Ran-binding protein 2
7094.	285237	MGC26717	hypothetical protein MGC26717
7095.	285331	LOC285331	hypothetical protein LOC285331
7096.	285343	C3orf23	chromosome 3 open reading frame 23
7097.	285440	CYP4V2	cytochrome P450, family 4, subfamily V, polypeptide 2
7098.	285458	LOC285458	hypothetical protein LOC285458
7099.	285550	LOC285550	hypothetical protein LOC285550
7100.	285605	FLJ33977	hypothetical protein FLJ33977
7101.	285628	LOC285628	hypothetical protein LOC285628
7102.	285668	FLJ37543	hypothetical protein FLJ37543
7103.	285672	FLJ36754	hypothetical protein FLJ36754
7104.	285735	LOC285735	hypothetical protein LOC285735
7105.	285761	DCBLD1	discoidin, CUB and LCCL domain containing 1
7106.	285827	LOC285827	hypothetical protein LOC285827
7107.	285958	LOC285958	hypothetical protein LOC285958
7108.	285987	FLJ34048	hypothetical protein FLJ34048
7109.	286006	FLJ39575	hypothetical protein FLJ39575
7110.	286023	FLJ40288	hypothetical protein FLJ40288

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
7111.	286025	LOC286025	hypothetical protein LOC286025
7112.	286044	LOC286044	hypothetical protein LOC286044
7113.	286077	FLJ46072	FLJ46072 protein
7114.	286097	EFHA2	EF hand domain family, member A2
7115.	286301	MGC42630	hypothetical protein MGC42630
7116.	286333	C9orf109	chromosome 9 open reading frame 109
7117.	286343	C9orf150	chromosome 9 open reading frame 150
7118.	286437	LOC286437	hypothetical protein LOC286437
7119.	286440	LOC286440	hypothetical protein LOC286440
7120.	286451	YIPF6	Yip1 domain family, member 6
7121.	286499	RP1-32F7.2	hypothetical protein FLJ37659
7122.	286505	LOC286505	hypothetical protein LOC286505
7123.	286527	MGC39900	hypothetical protein MGC39900
7124.	286826	LIN9	lin-9 homolog (C. elegans)
7125.	286827	TRIM59	tripartite motif-containing 59
7126.	317662	KIAA0974	KIAA0974
7127.	317762	C14orf65	chromosome 14 open reading frame 65
7128.	326625	MMAB	methylmalonic aciduria (cobalamin deficiency) cblB type
7129.	326626	PTMAP7	prothymosin, alpha pseudogene 7
7130.	338328	LOC338328	high density lipoprotein-binding protein
7131.	338657	DLNB14	similar to DLNB14
7132.	339005	LOC339005	hypothetical protein LOC339005
7133.	339047	LOC339047	hypothetical protein LOC339047
7134.	339175	FLJ12760	hypothetical protein FLJ12760
7135.	339229	LOC339229	hypothetical protein LOC339229
7136.	339263	LOC339263	hypothetical protein LOC339263
7137.	339287	LOC339287	hypothetical protein LOC339287
7138.	339324	ZFP260	zinc finger protein 260
7139.	339400	LOC339400	hypothetical protein LOC339400
7140.	339487	ZBTB80S	zinc finger and BTB domain containing 8 opposite strand
7141.	339745	LOC339745	hypothetical protein LOC339745
7142.	339803	LOC339803	hypothetical protein LOC339803
7143.	339804	LOC339804	hypothetical gene supported by AK075484; BC014578
7144.	339834	LOC339834	hypothetical protein LOC339834
7145.	339983	FLJ37478	hypothetical protein FLJ37478
7146.	340348	MGC50844	hypothetical protein MGC50844
7147.	340371	NRBP2	nuclear receptor binding protein 2
7148.	340481	ZDHHC21	zinc finger, DHHC-type containing 21
7149.	340547	VSIG1	V-set and immunoglobulin domain containing 1
7150.	340719	NANOS1	nanos homolog 1 (Drosophila)
7151.	341640	FREM2	FRAS1 related extracellular matrix protein 2
7152.	342035	COLM	collomin
7153.	342184	FMN1	formin 1
7154.	342908	ZNF404	zinc finger protein 404
7155.	342979	LOC342979	hypothetical LOC342979
7156.	343099	CCDC18	coiled-coil domain containing 18
7157.	344558	SH3MD4	SH3 multiple domains 4
7158.	345462	DKFZp686E2433	similar to hypothetical protein 9630041N07
7159.	345630	LOC345630	similar to fibrillarin

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7160.	345757	UNQ1912	HGS_RE408
7161.	346653	LOC346653	hypothetical protein LOC346653
7162.	346887	LOC346887	similar to solute carrier family 16 (monocarboxylic acid transporters), member 14
7163.	347733	RP11-506K6.1	tubulin, beta polypeptide paralog
7164.	347734	SLC35B2	solute carrier family 35, member B2
7165.	347862	FLJ34283	hypothetical protein FLJ34283
7166.	348093	RBPMS2	RNA binding protein with multiple splicing 2
7167.	348235	FAM33A	family with sequence similarity 33, member A
7168.	348477	KIAA0268	C219-reactive peptide
7169.	348801	LOC348801	hypothetical protein LOC348801
7170.	348938	ICHTHYIN	ichthyin protein
7171.	349338	LOC349338	CXYorf1-related protein
7172.	352909	LOC352909	similar to hypothetical testis protein from macaque
7173.	353274	ZNF445	zinc finger protein 445
7174.	353281	SLRN	synleurin
7175.	353322	ANKRD37	ankyrin repeat domain 37
7176.	353355	ZNF233	zinc finger protein 233
7177.	353376	TICAM2	toll-like receptor adaptor molecule 2
7178.	353513	VCY1B	variable charge, Y-linked 1B
7179.	359845	MGC45871	hypothetical protein MGC45871
7180.	359948	IRF2BP2	interferon regulatory factor 2 binding protein 2
7181.	373156	GSTK1	glutathione S-transferase kappa 1
7182.	374443	LOC374443	CLR pseudogene
7183.	374491	LOC374491	TPTE and PTEN homologous inositol lipid phosphatase pseudogene
7184.	374655	DKFZp547K1113	hypothetical protein DKFZp547K1113
7185.	374666	FLJ25222	CXYorf1-related protein
7186.	374819	FLJ34306	FLJ34306 protein
7187.	374868	ATP9B	ATPase, Class II, type 9B
7188.	374882	UNQ501	MBC3205
7189.	374969	LOC374969	hypothetical protein LOC374969
7190.	375056	UNQ6077	AAAP6077
7191.	375061	MGC15887	hypothetical gene supported by BC009447
7192.	375189	PFN4	profilin family, member 4
7193.	375444	FLJ32363	FLJ32363 protein
7194.	375593	TRIM50B	tripartite motif-containing 50B
7195.	375612	LHFPL3	lipoma HMGIC fusion partner-like 3
7196.	375743	PTAR1	protein prenyltransferase alpha subunit repeat containing 1
7197.	375757	C9orf119	chromosome 9 open reading frame 119
7198.	375790	AGRN	agrin
7199.	376267	RAB15	RAB15, member RAS oncogene family
7200.	376497	SLC27A1	solute carrier family 27 (fatty acid transporter), member 1
7201.	377711	KIAA1833	hypothetical protein KIAA1833
7202.	378708	APITD1	apoptosis-inducing, TAF9-like domain 1
7203.	378805	FLJ43663	hypothetical protein FLJ43663
7204.	386757	FLJ43855	similar to sodium- and chloride-dependent creatine transporter

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
7205.	387032	ZNF307	zinc finger protein 307
7206.	387066	C6orf160	chromosome 6 open reading frame 160
7207.	387103	C6orf173	chromosome 6 open reading frame 173
7208.	387263	C6orf120	chromosome 6 open reading frame 120
7209.	387509	GPR153	G protein-coupled receptor 153
7210.	387521	Kua	ubiquitin-conjugating enzyme variant Kua
7211.	387816	LOC387816	similar to hypothetical protein
7212.	387826	LOC387826	hypothetical LOC387826
7213.	387914	TMEM46	transmembrane protein 46
7214.	387921	LOC387921	similar to RIKEN cDNA 8030451K01
7215.	388115	FLJ43339	FLJ43339 protein
7216.	388135	LOC388135	similar to RIKEN cDNA 6030419C18 gene
7217.	388272	LOC388272	similar to RIKEN cDNA 4921524J17
7218.	388335	LOC388335	similar to RIKEN cDNA A730055C05 gene
7219.	388403	YPEL2	yippee-like 2 (Drosophila)
7220.	388503	LOC388503	similar to Complement C3 precursor
7221.	388508	LOC388508	similar to ribosomal protein L17
7222.	388610	LOC388610	hypothetical LOC388610
7223.	388650	LOC388650	hypothetical LOC388650
7224.	388662	SLC6A17	solute carrier family 6, member 17
7225.	388677	NOTCH2NL	Notch homolog 2 (Drosophila) N-terminal like
7226.	388722	C1orf53	chromosome 1 open reading frame 53
7227.	388753	C1orf31	chromosome 1 open reading frame 31
7228.	388796	LOC388796	hypothetical LOC388796
7229.	388886	LOC388886	similar to hypothetical protein LOC192734
7230.	388962	BOLA3	bola-like 3 (E. coli)
7231.	389114	ZNF662	zinc finger protein 662
7232.	389129	LOC389129	similar to CG9996-PA
7233.	389337	FLJ41603	FLJ41603 protein
7234.	389347	LOC389347	similar to KIAA0752 protein
7235.	389429	LOC389429	hypothetical LOC389429
7236.	389541	LOC389541	similar to CG14977-PA
7237.	389650	LOC389650	hypothetical LOC389650
7238.	389659	LOC389659	hypothetical gene supported by BC028018
7239.	389741	MGC21881	hypothetical protein MGC21881
7240.	389831	LOC389831	hypothetical gene supported by AL713796
7241.	389834	LOC389834	hypothetical gene supported by AK123403
7242.	389835	FAM72A	family with sequence similarity 72, member A
7243.	389906	LOC389906	similar to Serine/threonine-protein kinase PRKX (Protein kinase PKX1)
7244.	390916	NUDT19	nudix (nucleoside diphosphate linked moiety X)-type motif 19
7245.	399491	LOC399491	LOC399491 protein
7246.	399665	C9orf132	chromosome 9 open reading frame 132
7247.	399694	RaLP	rai-like protein
7248.	399917	LOC399917	similar to polymerase
7249.	399933	LOC399933	hypothetical LOC399933
7250.	399979	SNX19	sorting nexin 19
7251.	400322	D15F37	D15F37 gene

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
7252.	400368	LOC400368	hypothetical gene supported by BC031266
7253.	400410	LOC400410	similar to cervical cancer suppressor-1
7254.	400451	LOC400451	hypothetical gene supported by AK075564; BC060873
7255.	400566	LOC400566	hypothetical gene supported by AK128660
7256.	400618	FLJ37644	hypothetical gene supported by AK094963
7257.	400621	LOC400621	hypothetical LOC400621
7258.	400642	LOC400642	hypothetical gene supported by BC041875; BX648984
7259.	400657	LOC400657	hypothetical gene supported by BC036588
7260.	400690	LOC400690	hypothetical gene supported by AK092138
7261.	400713	LOC400713	zinc finger-like
7262.	400726	LOC400726	hypothetical gene supported by AK093729; BC062355; BX647918; NM_198284
7263.	400741	LOC400741	hypothetical LOC400741
7264.	400843	LOC400843	hypothetical LOC400843
7265.	400924	LOC400924	hypothetical gene supported by AK056895
7266.	400948	LOC400948	similar to RIKEN cDNA 2310016E02
7267.	400999	FLJ42351	hypothetical gene supported by AK124342
7268.	401022	LOC401022	hypothetical LOC401022
7269.	401074	LOC401074	hypothetical LOC401074
7270.	401151	LOC401151	hypothetical gene supported by BC062741
7271.	401152	LOC401152	HCV F-transactivated protein 1
7272.	401466	LOC401466	hypothetical gene supported by BC055092
7273.	401504	LOC401504	hypothetical gene supported by AK091718
7274.	401505	C9orf105	chromosome 9 open reading frame 105
7275.	401548	LOC401548	hypothetical protein LOC401548
7276.	402578	LOC402578	hypothetical LOC402578
7277.	402617	LOC402617	hypothetical LOC402617
7278.	403313	LOC403313	phosphatidic acid phosphatase type 2 domain containing 2
7279.	404093	CUEDC1	CUE domain containing 1
7280.	404203	SPINK6	serine protease inhibitor, Kazal type 6
7281.	404281	YY2	YY2 transcription factor
7282.	404636	FAM45A	family with sequence similarity 45, member A
7283.	404672	GTF2H5	general transcription factor IIH, polypeptide 5
7284.	404734	MASK-BP3	MASK-4E-BP3 alternate reading frame gene
7285.	406991	MIRN21	microRNA 21
7286.	414328	C9orf103	chromosome 9 open reading frame 103
7287.	414777	HCG18	HLA complex group 18

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
7288.	415116	PIM3	pim-3 oncogene
7289.	432395	C4B	complement component 4B, telomeric
7290.	439921	TMAP1	transmembrane anchor protein 1
7291.	440078	FAM66C	family with sequence similarity 66, member C
7292.	440085	LOC440085	similar to prothymosin alpha
7293.	440117	LOC440117	hypothetical gene supported by BC037858
7294.	440123	LOC440123	LOC440123
7295.	440145	LOC440145	similar to RIKEN cDNA 2410129H14
7296.	440160	LOC440160	hypothetical gene supported by AK022914; AK095211; BC016035; BC041856; BX248778
7297.	440232	LOC440232	similar to hect domain and RLD 2
7298.	440234	LOC440234	similar to hypothetical protein
7299.	440243	LOC440243	similar to hypothetical protein FLJ36144
7300.	440270	LOC440270	golgin-67
7301.	440345	LOC440345	hypothetical protein LOC440345
7302.	440350	LOC440350	similar to nuclear pore complex interacting protein
7303.	440388	LOC440388	similar to coenzyme A diphosphatase
7304.	440400	MGC71993	similar to DNA segment, Chr 11, Brigham & Womens Genetics 0434 expressed
7305.	440416	LOC440416	hypothetical gene supported by BC072410
7306.	440434	LOC440434	hypothetical protein FLJ11822
7307.	440450	LOC440450	LOC440450
7308.	440457	LOC440457	hypothetical LOC440457
7309.	440465	FLJ90757	FLJ90757 protein
7310.	440470	LOC440470	hypothetical gene supported by AK093729; BX647918
7311.	440572	LOC440572	hypothetical gene supported by BC033316
7312.	440574	LOC440574	similar to protein of fungal metazoan origin like (11.1 kD) (2C514)
7313.	440603	FLJ22588	OTTHUMP00000013724
7314.	440672	NUDT4P1	nudix (nucleoside diphosphate linked moiety X)-type motif 4 pseudogene 1
7315.	440675	LOC440675	hypothetical LOC440675
7316.	440894	LOC440894	hypothetical protein LOC440894
7317.	440928	LOC440928	hypothetical gene supported by AK096649
7318.	440944	LOC440944	hypothetical gene supported by AK128398
7319.	440952	FLJ33065	hypothetical gene supported by AK057627; BC031275; BC045736
7320.	440957	LOC440957	similar to CG32736-PA
7321.	440971	LOC440971	similar to Zinc finger protein Rlf (Rearranged L-myc fusion gene protein) (Zn-15 related protein)
7322.	440995	LOC440995	hypothetical gene supported by BC034933; BC068085
7323.	441000	LOC441000	hypothetical gene supported by AK097080; AL117642; BC047304; BC054485

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
7324.	441024	MTHFD2L	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 2-like
7325.	441178	LOC441178	hypothetical LOC441178
7326.	441244	LOC441244	chaperonin containing TCP1, subunit 6A-like
7327.	441295	OR2A9P	olfactory receptor, family 2, subfamily A, member 9 pseudogene
7328.	441297	LOC441297	LOC441297
7329.	441423	LOC441423	LOC441423
7330.	441951	HSUP1	similar to RPE-spondin
7331.	442871	C11orf32	chromosome 11 open reading frame 32
7332.	445571	CBWD3	COBW domain containing 3
7333.	445815	PALM2-AKAP2	PALM2-AKAP2 protein
7334.	492311	LOC492311	similar to bovine IgA regulatory protein
7335.	493753	MGC52110	hypothetical protein MGC52110
7336.	493812	HCG11	HLA complex group 11
7337.	493856	LOC493856	similar to RIKEN cDNA 1500009M05 gene
7338.	493869	LOC493869	similar to RIKEN cDNA 2310016C16
7339.	494115	RBMXL1	RNA binding motif protein, X-linked-like 1
7340.	494143	LOC494143	similar to RIKEN cDNA 2510006C20 gene
7341.	541565	LOC541565	hypothetical LOC541565 protein
7342.	541578	LOC541578	hypothetical LOC541578 protein
7343.	548593	GIYD1	GIY-YIG domain containing 1
7344.	552900	BOLA2	bolA-like 2 (E. coli)
7345.	554175	LOC554175	hypothetical LOC554175

TABLE IX

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	16	AARS	alanyl-tRNA synthetase
2.	5825	ABCD3	ATP-binding cassette, sub-family D (ALD), member 3
3.	55347	ABHD10	abhydrolase domain containing 10
4.	39	ACAT2	acetyl-Coenzyme A acetyltransferase 2 (acetoacetyl Coenzyme A thiolase)
5.	51205	ACP6	acid phosphatase 6, lysophosphatidic
6.	92370	ACPL2	acid phosphatase-like 2
7.	55	ACPP	acid phosphatase, prostate
8.	8728	ADAM19	a disintegrin and metalloproteinase domain 19 (meltrin beta)
9.	120	ADD3	adducin 3 (gamma)
10.	133	ADM	adrenomedullin
11.	150	ADRA2A	adrenergic, alpha-2A-, receptor
12.	187	AGTRL1	angiotensin II receptor-like 1
13.	9447	AIM2	absent in melanoma 2
14.	160428	ALDH1L2	aldehyde dehydrogenase 1 family, member L2
15.	23600	AMACR	alpha-methylacyl-CoA racemase
16.	284	ANGPT1	angiopoietin 1
17.	51129	ANGPTL4	angiopoietin-like 4

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
18.	56172	ANKH	ankylosis, progressive homolog (mouse)
19.	29123	ANKRD11	ankyrin repeat domain 11
20.	84250	ANKRD32	ankyrin repeat domain 32
21.	353322	ANKRD37	ankyrin repeat domain 37
22.	54443	ANLN	anillin, actin binding protein (scraps homolog, Drosophila)
23.	81611	ANP32E	acidic (leucine-rich) nuclear phosphoprotein 32 family, member E
24.	1174	AP1S1	adaptor-related protein complex 1, sigma 1 subunit
25.	161	AP2A2	adaptor-related protein complex 2, alpha 2 subunit
26.	9582	APOBEC3B	apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 3B
27.	348	APOE	apolipoprotein E
28.	80830	APOL6	apolipoprotein L, 6
29.	358	AQP1	aquaporin 1 (channel-forming integral protein, 28kDa)
30.	360	AQP3	aquaporin 3
31.	374	AREG	amphiregulin (schwannoma-derived growth factor)
32.	384	ARG2	arginase, type II
33.	9181	ARHGEF2	rho/rac guanine nucleotide exchange factor (GEF) 2
34.	10123	ARL7	ADP-ribosylation factor-like 7
35.	7873	ARMET	arginine-rich, mutated in early stage tumors
36.	10926	ASK	activator of S phase kinase
37.	440	ASNS	asparagine synthetase
38.	444	ASPH	aspartate beta-hydroxylase
39.	259266	ASPM	asp (abnormal spindle)-like, microcephaly associated (Drosophila)
40.	445	ASS	argininosuccinate synthetase
41.	23245	ASTN2	astrotactin 2
42.	29028	ATAD2	ATPase family, AAA domain containing 2
43.	468	ATF4	activating transcription factor 4 (tax-responsive enhancer element B67)
44.	533	ATP6V0B	ATPase, H ⁺ transporting, lysosomal 21kDa, V0 subunit c''
45.	9212	AURKB	aurora kinase B
46.	9331	B4GALT6	UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide 6
47.	25825	BACE2	beta-site APP-cleaving enzyme 2
48.	571	BACH1	BTB and CNC homology 1, basic leucine zipper transcription factor 1
49.	10134	BCAP31	B-cell receptor-associated protein 31
50.	586	BCAT1	branched chain aminotransferase 1, cytosolic
51.	10018	BCL2L11	BCL2-like 11 (apoptosis facilitator)
52.	8553	BHLHB2	basic helix-loop-helix domain containing, class B, 2
53.	114614	BIC	BIC transcript

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
54.	638	BIK	BCL2-interacting killer (apoptosis-inducing)
55.	330	BIRC3	baculoviral IAP repeat-containing 3
56.	332	BIRC5	baculoviral IAP repeat-containing 5 (survivin)
57.	55839	BM039	uncharacterized bone marrow protein BM039
58.	650	BMP2	bone morphogenetic protein 2
59.	664	BNIP3	BCL2/adenovirus E1B 19kDa interacting protein 3
60.	665	BNIP3L	BCL2/adenovirus E1B 19kDa interacting protein 3-like
61.	23397	BRRN1	barren homolog (Drosophila)
62.	55717	BRWD2	bromodomain and WD repeat domain containing 2
63.	694	BTG1	B-cell translocation gene 1, anti-proliferative
64.	10950	BTG3	BTG family, member 3
65.	701	BUB1B	BUB1 budding uninhibited by benzimidazoles 1 homolog beta (yeast)
66.	55165	C10orf3	chromosome 10 open reading frame 3
67.	118611	C10orf90	chromosome 10 open reading frame 90
68.	744	C11orf8	chromosome 11 open reading frame 8
69.	171546	C14orf147	chromosome 14 open reading frame 147
70.	90417	C15orf23	chromosome 15 open reading frame 23
71.	56913	C1GALT1	core 1 synthase, glycoprotein-N-acetylgalactosamine 3-beta-galactosyltransferase, 1
72.	116496	C1orf24	chromosome 1 open reading frame 24
73.	81610	C20orf129	chromosome 20 open reading frame 129
74.	55612	C20orf42	chromosome 20 open reading frame 42
75.	79019	C22orf18	chromosome 22 open reading frame 18
76.	260436	C4orf7	chromosome 4 open reading frame 7
77.	54887	C6orf107	chromosome 6 open reading frame 107
78.	387103	C6orf173	chromosome 6 open reading frame 173
79.	50854	C6orf48	chromosome 6 open reading frame 48
80.	29964	C6orf49	chromosome 6 open reading frame 49
81.	401505	C9orf105	chromosome 9 open reading frame 105
82.	759	CA1	carbonic anhydrase I
83.	820	CAMP	cathelicidin antimicrobial peptide
84.	23125	CAMTA2	calmodulin binding transcription activator 2
85.	828	CAPS	calcyphosine
86.	832	CAPZB	capping protein (actin filament) muscle Z-line, beta
87.	833	CARS	cysteinyl-tRNA synthetase
88.	57082	CASC5	cancer susceptibility candidate 5
89.	857	CAV1	caveolin 1, caveolae protein, 22kDa
90.	875	CBS	cystathionine-beta-synthase
91.	891	CCNB1	cyclin B1
92.	9133	CCNB2	cyclin B2
93.	9134	CCNE2	cyclin E2
94.	9236	CCPG1	cell cycle progression 1
95.	10574	CCT7	chaperonin containing TCP1, subunit 7 (eta)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
96.	10694	CCT8	chaperonin containing TCP1, subunit 8 (theta)
97.	135228	CD109	CD109 antigen (Gov platelet alloantigens)
98.	961	CD47	CD47 antigen (Rh-related antigen, integrin-associated signal transducer)
99.	965	CD58	CD58 antigen, (lymphocyte function-associated antigen 3)
100.	966	CD59	CD59 antigen p18-20 (antigen identified by monoclonal antibodies 16.3A5, EJ16, EJ30, EL32 and G344)
101.	983	CDC2	cell division cycle 2, G1 to S and G2 to M
102.	991	CDC20	CDC20 cell division cycle 20 homolog (S. cerevisiae)
103.	993	CDC25A	cell division cycle 25A
104.	990	CDC6	CDC6 cell division cycle 6 homolog (S. cerevisiae)
105.	83540	CDCA1	cell division cycle associated 1
106.	55038	CDCA4	cell division cycle associated 4
107.	1051	CEBPB	CCAAT/enhancer binding protein (C/EBP), beta
108.	1052	CEBPD	CCAAT/enhancer binding protein (C/EBP), delta
109.	1054	CEBPG	CCAAT/enhancer binding protein (C/EBP), gamma
110.	1063	CENPF	centromere protein F, 350/400ka (mitosin)
111.	1111	CHEK1	CHK1 checkpoint homolog (S. pombe)
112.	91851	CHRD1	chordin-like 1
113.	50515	CHST11	carbohydrate (chondroitin 4) sulfotransferase 11
114.	9435	CHST2	carbohydrate (N-acetylglucosamine-6-O) sulfotransferase 2
115.	26586	CKAP2	cytoskeleton associated protein 2
116.	1164	CKS2	CDC28 protein kinase regulatory subunit 2
117.	51208	CLDN18	claudin 18
118.	9976	CLEC2B	C-type lectin domain family 2, member B
119.	79789	CLMN	calmin (calponin-like, transmembrane)
120.	149111	CNIH3	cornichon homolog 3 (Drosophila)
121.	154043	CNKSR3	CNKSR family member 3
122.	1306	COL15A1	collagen, type XV, alpha 1
123.	169044	COL22A1	collagen, type XXII, alpha 1
124.	1282	COL4A1	collagen, type IV, alpha 1
125.	1293	COL6A3	collagen, type VI, alpha 3
126.	1312	COMT	catechol-O-methyltransferase
127.	10920	COPS8	COP9 constitutive photomorphogenic homolog subunit 8 (Arabidopsis)
128.	10063	COX17	COX17 homolog, cytochrome c oxidase assembly protein (yeast)
129.	51692	CPSF3	cleavage and polyadenylation specific factor 3, 73kDa
130.	1374	CPT1A	carnitine palmitoyltransferase 1A (liver)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
131.	54480	CSG1cA-T	chondroitin sulfate glucuronyltransferase
132.	1462	CSPG2	chondroitin sulfate proteoglycan 2 (versican)
133.	1469	CST1	cystatin SN
134.	1491	CTH	cystathionase (cystathionine gamma- lyase)
135.	1520	CTSS	cathepsin S
136.	2919	CXCL1	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
137.	6374	CXCL5	chemokine (C-X-C motif) ligand 5
138.	7852	CXCR4	chemokine (C-X-C motif) receptor 4
139.	1591	CYP24A1	cytochrome P450, family 24, subfamily A, polypeptide 1
140.	1593	CYP27A1	cytochrome P450, family 27, subfamily A, polypeptide 1
141.	285440	CYP4V2	cytochrome P450, family 4, subfamily V, polypeptide 2
142.	1604	DAF	decay accelerating factor for complement (CD55, Cromer blood group system)
143.	131566	DCBLD2	discoidin, CUB and LCCL domain containing 2
144.	1638	DCT	dopachrome tautomerase (dopachrome delta-isomerase, tyrosine-related protein 2)
145.	1649	DDIT3	DNA-damage-inducible transcript 3
146.	54541	DDIT4	DNA-damage-inducible transcript 4
147.	4921	DDR2	discoidin domain receptor family, member 2
148.	10212	DDX39	DEAD (Asp-Glu-Ala-Asp) box polypeptide 39
149.	55635	DEPDC1	DEP domain containing 1
150.	1716	DGUOK	deoxyguanosine kinase
151.	55355	DKFZp762E1312	hypothetical protein DKFZp762E1312
152.	9787	DLG7	discs, large homolog 7 (Drosophila)
153.	1745	DLX1	distal-less homeo box 1
154.	1746	DLX2	distal-less homeo box 2
155.	3337	DNAJB1	DnaJ (Hsp40) homolog, subfamily B, member 1
156.	64215	DNAJC1	DnaJ (Hsp40) homolog, subfamily C, member 1
157.	92737	DNER	delta-notch-like EGF repeat-containing transmembrane
158.	116092	DNTTIP1	deoxynucleotidyltransferase, terminal, interacting protein 1
159.	80005	DOCK5	dedicator of cytokinesis 5
160.	1832	DSP	desmoplakin
161.	51514	DTL	denticleless homolog (Drosophila)
162.	1841	DTYMK	deoxythymidylate kinase (thymidylate kinase)
163.	1843	DUSP1	dual specificity phosphatase 1
164.	1847	DUSP5	dual specificity phosphatase 5
165.	1848	DUSP6	dual specificity phosphatase 6

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
166.	26355	E2IG5	growth and transformation-dependent protein
167.	1842	ECM2	extracellular matrix protein 2, female organ and adipocyte specific
168.	1908	EDN3	endothelin 3
169.	1909	EDNRA	endothelin receptor type A
170.	1942	EFNA1	ephrin-A1
171.	54583	EGLN1	egl nine homolog 1 (C. elegans)
172.	1958	EGR1	early growth response 1
173.	23301	EHBP1	EH domain binding protein 1
174.	8894	EIF2S2	eukaryotic translation initiation factor 2, subunit 2 beta, 38kDa
175.	22936	ELL2	elongation factor, RNA polymerase II, 2
176.	2026	ENO2	enolase 2 (gamma, neuronal)
177.	2029	ENSA	endosulfine alpha
178.	2058	EPRS	glutamyl-prolyl-tRNA synthetase
179.	2065	ERBB3	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
180.	30001	ERO1L	ERO1-like (S. cerevisiae)
181.	157570	ESCO2	establishment of cohesion 1 homolog 2 (S. cerevisiae)
182.	2109	ETFB	electron-transfer-flavoprotein, beta polypeptide
183.	54512	EXOSC4	exosome component 4
184.	54097	FAM3B	family with sequence similarity 3, member B
185.	389835	FAM72A	family with sequence similarity 72, member A
186.	2191	FAP	fibroblast activation protein, alpha
187.	222235	FBXL13	F-box and leucine-rich repeat protein 13
188.	26234	FBXL5	F-box and leucine-rich repeat protein 5
189.	114907	FBXO32	F-box protein 32
190.	26271	FBXO5	F-box protein 5
191.	84824	FCRLM1	Fc receptor-like and mucin-like 1
192.	2224	FDPS	farnesyl diphosphate synthase (farnesyl pyrophosphate synthetase, dimethylallyltransferase, geranyltransferase)
193.	2237	FEN1	flap structure-specific endonuclease 1
194.	9638	FEZ1	fasciculation and elongation protein zeta 1 (zygin I)
195.	2246	FGF1	fibroblast growth factor 1 (acidic)
196.	2258	FGF13	fibroblast growth factor 13
197.	83786	FKSG44	FKSG44 gene
198.	55744	FLJ10803	hypothetical protein FLJ10803
199.	55236	FLJ10808	hypothetical protein FLJ10808
200.	55273	FLJ10970	hypothetical protein FLJ10970
201.	54947	FLJ20481	hypothetical protein FLJ20481
202.	54962	FLJ20516	timeless-interacting protein
203.	55026	FLJ20716	hypothetical protein FLJ20716
204.	220042	FLJ25416	hypothetical protein FLJ25416
205.	145788	FLJ27352	hypothetical LOC145788
206.	162282	FLJ38335	hypothetical protein FLJ38335
207.	150468	FLJ40629	hypothetical protein FLJ40629
208.	200844	FLJ42117	FLJ42117 protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
209.	2335	FN1	fibronectin 1
210.	55691	FRMD4A	FERM domain containing 4A
211.	10468	FST	follicle-stimulating
212.	170384	FUT11	fucosyltransferase 11 (alpha (1,3) fucosyltransferase)
213.	2589	GALNT1	UDP-N-acetyl-alpha-D- galactosamine:polypeptide N- acetylgalactosaminyltransferase 1 (GalNAc-T1)
214.	8693	GALNT4	UDP-N-acetyl-alpha-D- galactosamine:polypeptide N- acetylgalactosaminyltransferase 4 (GalNAc-T4)
215.	2596	GAP43	growth associated protein 43
216.	2617	GARS	glycyl-tRNA synthetase
217.	60674	GAS5	growth arrest-specific 5
218.	2730	GCLM	glutamate-cysteine ligase, modifier subunit
219.	9518	GDF15	growth differentiation factor 15
220.	2669	GEM	GTP binding protein overexpressed in skeletal muscle
221.	79833	GEMIN6	gem (nuclear organelle) associated protein 6
222.	2673	GFPT1	glutamine-fructose-6-phosphate transaminase 1
223.	9945	GFPT2	glutamine-fructose-6-phosphate transaminase 2
224.	2717	GLA	galactosidase, alpha
225.	2731	GLDC	glycine dehydrogenase (decarboxylating; glycine decarboxylase, glycine cleavage system protein P)
226.	11010	GLIPR1	GLI pathogenesis-related 1 (glioma)
227.	2739	GLO1	glyoxalase I
228.	51022	GLRX2	glutaredoxin 2
229.	51053	GMNN	geminin, DNA replication inhibitor
230.	2778	GNAS	GNAS complex locus
231.	2805	GOT1	glutamic-oxaloacetic transaminase 1, soluble (aspartate aminotransferase 1)
232.	54865	GPATC4	G patch domain containing 4
233.	84634	GPR54	G protein-coupled receptor 54
234.	53831	GPR84	G protein-coupled receptor 84
235.	9052	GPRC5A	G protein-coupled receptor, family C, group 5, member A
236.	2887	GRB10	growth factor receptor-bound protein 10
237.	9446	GSTO1	glutathione S-transferase omega 1
238.	51512	GTSE1	G-2 and S-phase expressed 1
239.	3014	H2AFX	H2A histone family, member X
240.	9555	H2AFY	H2A histone family, member Y
241.	1404	HAPLN1	hyaluronan and proteoglycan link protein 1
242.	3037	HAS2	hyaluronan synthase 2
243.	64151	HCAP-G	chromosome condensation protein G
244.	3052	HCCS	holocytochrome c synthase (cytochrome c heme-lyase)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
245.	9709	HERPUD1	homocysteine-inducible, endoplasmic reticulum stress-inducible, ubiquitin-like domain member 1
246.	3082	HGF	hepatocyte growth factor (hepapoietin A; scatter factor)
247.	29923	HIG2	hypoxia-inducible protein 2
248.	8334	HIST1H2AC	histone 1, H2ac
249.	8349	HIST2H2BE	histone 2, H2be
250.	3098	HK1	hexokinase 1
251.	3099	HK2	hexokinase 2
252.	83872	HMCN1	hemicentin 1
253.	3159	HMGA1	high mobility group AT-hook 1
254.	3146	HMGB1	high-mobility group box 1
255.	3148	HMGB2	high-mobility group box 2
256.	3156	HMGCR	3-hydroxy-3-methylglutaryl-Coenzyme A reductase
257.	3157	HMGCS1	3-hydroxy-3-methylglutaryl-Coenzyme A synthase 1 (soluble)
258.	3161	HMMR	hyaluronan-mediated motility receptor (RHAMM)
259.	51155	HN1	hematological and neurological expressed 1
260.	3176	HNMT	histamine N-methyltransferase
261.	9955	HS3ST3A1	heparan sulfate (glucosamine) 3-O-sulfotransferase 3A1
262.	51478	HSD17B7	hydroxysteroid (17-beta) dehydrogenase 7
263.	3303	HSPA1A	heat shock 70kDa protein 1A
264.	3304	HSPA1B	heat shock 70kDa protein 1B
265.	3308	HSPA4	heat shock 70kDa protein 4
266.	3313	HSPA9B	heat shock 70kDa protein 9B (mortalin-2)
267.	51491	HSPC111	hypothetical protein HSPC111
268.	3336	HSPE1	heat shock 10kDa protein 1 (chaperonin 10)
269.	10808	HSPH1	heat shock 105kDa/110kDa protein 1
270.	25764	HYPK	Huntingtin interacting protein K
271.	3376	IARS	isoleucine-tRNA synthetase
272.	3383	ICAM1	intercellular adhesion molecule 1 (CD54), human rhinovirus receptor
273.	23463	ICMT	isoprenylcysteine carboxyl methyltransferase
274.	3397	ID1	inhibitor of DNA binding 1, dominant negative helix-loop-helix protein
275.	3399	ID3	inhibitor of DNA binding 3, dominant negative helix-loop-helix protein
276.	3400	ID4	inhibitor of DNA binding 4, dominant negative helix-loop-helix protein
277.	3421	IDH3G	isocitrate dehydrogenase 3 (NAD+) gamma
278.	3422	IDI1	isopentenyl-diphosphate delta isomerase
279.	8870	IER3	immediate early response 3
280.	51124	IER3IP1	immediate early response 3 interacting protein 1
281.	8519	IFITM1	interferon induced transmembrane protein 1 (9-27)
282.	3459	IFNGR1	interferon gamma receptor 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
283.	3460	IFNGR2	interferon gamma receptor 2 (interferon gamma transducer 1)
284.	3475	IFRD1	interferon-related developmental regulator 1
285.	3486	IGFBP3	insulin-like growth factor binding protein 3
286.	3488	IGFBP5	insulin-like growth factor binding protein 5
287.	3490	IGFBP7	insulin-like growth factor binding protein 7
288.	121457	IKIP	IKK interacting protein
289.	3589	IL11	interleukin 11
290.	3598	IL13RA2	interleukin 13 receptor, alpha 2
291.	9466	IL27RA	interleukin 27 receptor, alpha
292.	3576	IL8	interleukin 8
293.	54928	IMPA3	myo-inositol monophosphatase A3
294.	3624	INHBA	inhibin, beta A (activin A, activin AB alpha polypeptide)
295.	3633	INPP5B	inositol polyphosphate-5-phosphatase, 75kDa
296.	3638	INSIG1	insulin induced gene 1
297.	51141	INSIG2	insulin induced gene 2
298.	128239	IQGAP3	IQ motif containing GTPase activating protein 3
299.	3656	IRAK2	interleukin-1 receptor-associated kinase 2
300.	3678	ITGA5	integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
301.	3696	ITGB8	integrin, beta 8
302.	122953	JDP2	jun dimerization protein 2
303.	56704	JPH1	junctophilin 1
304.	3726	JUNB	jun B proto-oncogene
305.	3755	KCNG1	potassium voltage-gated channel, subfamily G, member 1
306.	3783	KCNN4	potassium intermediate/small conductance calcium-activated channel, subfamily N, member 4
307.	3790	KCNS3	potassium voltage-gated channel, delayed-rectifier, subfamily S, member 3
308.	79070	KDELC1	KDEL (Lys-Asp-Glu-Leu) containing 1
309.	9674	KIAA0040	KIAA0040
310.	9768	KIAA0101	KIAA0101
311.	9865	KIAA0644	KIAA0644 gene product
312.	57214	KIAA1199	KIAA1199
313.	57687	KIAA1576	KIAA1576 protein
314.	10112	KIF20A	kinesin family member 20A
315.	9493	KIF23	kinesin family member 23
316.	24137	KIF4A	kinesin family member 4A
317.	55243	KIRREL	kin of IRRE like (Drosophila)
318.	9314	KLF4	Kruppel-like factor 4 (gut)
319.	10403	KNTC2	kinetochore associated 2
320.	3838	KPNA2	karyopherin alpha 2 (RAG cohort 1, importin alpha 1)
321.	3910	LAMA4	laminin, alpha 4

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
322.	55915	LANCL2	LanC lantibiotic synthetase component C-like 2 (bacterial)
323.	55323	LARP6	La ribonucleoprotein domain family, member 6
324.	3939	LDHA	lactate dehydrogenase A
325.	3949	LDLR	low density lipoprotein receptor (familial hypercholesterolemia)
326.	3976	LIF	leukemia inhibitory factor (cholinergic differentiation factor)
327.	4001	LMNB1	lamin B1
328.	10019	LNK	lymphocyte adaptor protein
329.	84708	LNK	ligand of numb-protein X
330.	146909	LOC146909	hypothetical protein LOC146909
331.	253981	LOC253981	hypothetical protein LOC253981
332.	285628	LOC285628	hypothetical protein LOC285628
333.	339047	LOC339047	hypothetical protein LOC339047
334.	345630	LOC345630	similar to fibrillarin
335.	389906	LOC389906	similar to Serine/threonine-protein kinase PRKX (Protein kinase PKX1)
336.	401151	LOC401151	hypothetical gene supported by BC062741
337.	440145	LOC440145	similar to RIKEN cDNA 2410129H14
338.	51234	LOC51234	hypothetical protein LOC51234
339.	58489	LOC58489	hypothetical protein from EUROIMAGE 588495
340.	92689	LOC92689	hypothetical protein BC001096
341.	4013	LOH11CR2A	loss of heterozygosity, 11, chromosomal region 2, gene A
342.	4017	LOXL2	lysyl oxidase-like 2
343.	7804	LRP8	low density lipoprotein receptor-related protein 8, apolipoprotein e receptor
344.	26045	LRRTM2	leucine rich repeat transmembrane neuronal 2
345.	4052	LTBP1	latent transforming growth factor beta binding protein 1
346.	10226	M6PRBP1	mannose-6-phosphate receptor binding protein 1
347.	4085	MAD2L1	MAD2 mitotic arrest deficient-like 1 (yeast)
348.	4094	MAF	v-maf musculoaponeurotic fibrosarcoma oncogene homolog (avian)
349.	9500	MAGED1	melanoma antigen family D, 1
350.	4141	MARS	methionine-tRNA synthetase
351.	4170	MCL1	myeloid cell leukemia sequence 1 (BCL2-related)
352.	55388	MCM10	MCM10 minichromosome maintenance deficient 10 (S. cerevisiae)
353.	4171	MCM2	MCM2 minichromosome maintenance deficient 2, mitotin (S. cerevisiae)
354.	4173	MCM4	MCM4 minichromosome maintenance deficient 4 (S. cerevisiae)
355.	4174	MCM5	MCM5 minichromosome maintenance deficient 5, cell division cycle 46 (S. cerevisiae)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
356.	4175	MCM6	MCM6 minichromosome maintenance deficient 6 (MIS5 homolog, <i>S. pombe</i>) (<i>S. cerevisiae</i>)
357.	4176	MCM7	MCM7 minichromosome maintenance deficient 7 (<i>S. cerevisiae</i>)
358.	29969	MDFIC	MyoD family inhibitor domain containing
359.	55384	MEG3	maternally expressed 3
360.	84314	MGC10744	hypothetical protein MGC10744
361.	162394	MGC19764	hypothetical protein MGC19764
362.	221718	MGC40222	hypothetical protein MGC40222
363.	79094	MGC4504	hypothetical protein MGC4504
364.	79099	MGC5618	hypothetical protein MGC5618
365.	130612	MGC99813	similar to RIKEN cDNA A230078I05 gene
366.	406991	MIRN21	microRNA 21
367.	8195	MKKS	McKusick-Kaufman syndrome
368.	79682	MLF1IP	MLF1 interacting protein
369.	10962	MLLT11	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, <i>Drosophila</i>); translocated to, 11
370.	23531	MMD	monocyte to macrophage differentiation-associated
371.	4312	MMP1	matrix metalloproteinase 1 (interstitial collagenase)
372.	55034	MOCOS	molybdenum cofactor sulfurase
373.	117195	MRGPRX3	MAS-related GPR, member X3
374.	51263	MRPL30	mitochondrial ribosomal protein L30
375.	54148	MRPL39	mitochondrial ribosomal protein L39
376.	4501	MT1X	metallothionein 1X
377.	25902	MTHFD1L	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 1-like
378.	10797	MTHFD2	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 2, methenyltetrahydrofolate cyclohydrolase
379.	25821	MTO1	mitochondrial translation optimization 1 homolog (<i>S. cerevisiae</i>)
380.	4589	MUC7	mucin 7, salivary
381.	51778	MYOZ2	myozenin 2
382.	4677	NARS	asparaginyl-tRNA synthetase
383.	10230	NBR2	neighbor of BRCA1 gene 2
384.	10397	NDRG1	N-myc downstream regulated gene 1
385.	4747	NEFL	neurofilament, light polypeptide 68kDa
386.	4751	NEK2	NIMA (never in mitosis gene a)-related kinase 2
387.	4779	NFE2L1	nuclear factor (erythroid-derived 2)-like 1
388.	4837	NNMT	nicotinamide N-methyltransferase
389.	51070	NOSIP	nitric oxide synthase interacting protein
390.	388677	NOTCH2NL	Notch homolog 2 (<i>Drosophila</i>) N-terminal like
391.	4856	NOV	nephroblastoma overexpressed gene
392.	4884	NPTX1	neuronal pentraxin I
393.	4885	NPTX2	neuronal pentraxin II
394.	4929	NR4A2	nuclear receptor subfamily 4, group A, member 2
395.	8828	NRP2	neuropilin 2

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
396.	157638	NSE2	breast cancer membrane protein 101
397.	4907	NT5E	5'-nucleotidase, ecto (CD73)
398.	4922	NTS	neurotensin
399.	10726	NUDC	nuclear distribution gene C homolog (A. nidulans)
400.	55270	NUDT15	nudix (nucleoside diphosphate linked moiety X)-type motif 15
401.	10762	NUP50	nucleoporin 50kDa
402.	9818	NUPL1	nucleoporin like 1
403.	51203	NUSAP1	nucleolar and spindle associated protein 1
404.	8473	OGT	O-linked N-acetylglucosamine (GlcNAc) transferase (UDP-N-acetylglucosamine:polypeptide-N-acetylglucosaminyl transferase)
405.	10215	OLIG2	oligodendrocyte lineage transcription factor 2
406.	5033	P4HA1	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha polypeptide I
407.	26471	P8	p8 protein (candidate of metastasis 1)
408.	54852	PAQR5	progesterin and adipoQ receptor family member V
409.	85315	PAQR8	progesterin and adipoQ receptor family member VIII
410.	10135	PBEF1	pre-B-cell colony enhancing factor 1
411.	55872	PBK	PDZ binding kinase
412.	5106	PCK2	phosphoenolpyruvate carboxykinase 2 (mitochondrial)
413.	5111	PCNA	proliferating cell nuclear antigen
414.	5122	PCSK1	proprotein convertase subtilisin/kexin type 1
415.	10130	PDIA6	protein disulfide isomerase family A, member 6
416.	5163	PDK1	pyruvate dehydrogenase kinase, isoenzyme 1
417.	8572	PDLIM4	PDZ and LIM domain 4
418.	5209	PFKFB3	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 3
419.	5210	PFKFB4	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4
420.	51659	Pfs2	DNA replication complex GINS protein PSF2
421.	5223	PGAM1	phosphoglycerate mutase 1 (brain)
422.	5230	PGK1	phosphoglycerate kinase 1
423.	26227	PHGDH	phosphoglycerate dehydrogenase
424.	7262	PHLDA2	pleckstrin homology-like domain, family A, member 2
425.	9488	PIGB	phosphatidylinositol glycan, class B
426.	26207	PITPNC1	phosphatidylinositol transfer protein, cytoplasmic 1
427.	51365	PLA1A	phospholipase A1 member A
428.	5329	PLAUR	plasminogen activator, urokinase receptor
429.	5376	PMP22	peripheral myelin protein 22
430.	119548	PNLIPRP3	pancreatic lipase-related protein 3

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
431.	51728	POLR3K	polymerase (RNA) III (DNA directed) polypeptide K, 12.3 kDa
432.	8613	PPAP2B	phosphatidic acid phosphatase type 2B
433.	10105	PPIF	peptidylprolyl isomerase F (cyclophilin F)
434.	22843	PPM1E	protein phosphatase 1E (PP2C domain containing)
435.	5534	PPP3R1	protein phosphatase 3 (formerly 2B), regulatory subunit B, 19kDa, alpha isoform (calcineurin B, type I)
436.	9055	PRC1	protein regulator of cytokinesis 1
437.	5565	PRKAB2	protein kinase, AMP-activated, beta 2 non-catalytic subunit
438.	5635	PRPSAP1	phosphoribosyl pyrophosphate synthetase-associated protein 1
439.	9361	PRSS15	protease, serine, 15
440.	29968	PSAT1	phosphoserine aminotransferase 1
441.	9837	PSF1	DNA replication complex GINS protein PSF1
442.	5704	PSMC4	proteasome (prosome, macropain) 26S subunit, ATPase, 4
443.	5705	PSMC5	proteasome (prosome, macropain) 26S subunit, ATPase, 5
444.	5723	PSPH	phosphoserine phosphatase
445.	8781	PSPHL	phosphoserine phosphatase-like
446.	23210	PTDSR	phosphatidylserine receptor
447.	9536	PTGES	prostaglandin E synthase
448.	5743	PTGS2	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
449.	5757	PTMA	prothymosin, alpha (gene sequence 28)
450.	5806	PTX3	pentraxin-related gene, rapidly induced by IL-1 beta
451.	5831	PYCR1	pyrroline-5-carboxylate reductase 1
452.	29127	RACGAP1	Rac GTPase activating protein 1
453.	5901	RAN	RAN, member RAS oncogene family
454.	5954	RCN1	reticulocalbin 1, EF-hand calcium binding domain
455.	57333	RCN3	reticulocalbin 3, EF-hand calcium binding domain
456.	5965	RECQL	RecQ protein-like (DNA helicase Q1- like)
457.	5982	RFC2	replication factor C (activator 1) 2, 40kDa
458.	5983	RFC3	replication factor C (activator 1) 3, 38kDa
459.	5985	RFC5	replication factor C (activator 1) 5, 36.5kDa
460.	5997	RGS2	regulator of G-protein signalling 2, 24kDa
461.	5999	RGS4	regulator of G-protein signalling 4
462.	54101	RIPK4	receptor-interacting serine-threonine kinase 4
463.	25907	RIS1	Ras-induced senescence 1
464.	390	RND3	Rho family GTPase 3
465.	9781	RNF144	ring finger protein 144

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
466.	221687	RNF182	ring finger protein 182
467.	347733	RP11-506K6.1	tubulin, beta polypeptide paralog
468.	6196	RPS6KA2	ribosomal protein S6 kinase, 90kDa, polypeptide 2
469.	6241	RRM2	ribonucleotide reductase M2 polypeptide
470.	10313	RTN3	reticulon 3
471.	6284	S100A13	S100 calcium binding protein A13
472.	6301	SARS	seryl-tRNA synthetase
473.	6307	SC4MOL	sterol-C4-methyl oxidase-like
474.	949	SCARB1	scavenger receptor class B, member 1
475.	7857	SCG2	secretogranin II (chromogranin C)
476.	6335	SCN9A	sodium channel, voltage-gated, type IX, alpha
477.	11341	SCRG1	scrapie responsive protein 1
478.	6383	SDC2	syndecan 2 (heparan sulfate proteoglycan 1, cell surface-associated, fibroglycan)
479.	23753	SDF2L1	stromal cell-derived factor 2-like 1
480.	10802	SEC24A	SEC24 related gene family, member A (S. cerevisiae)
481.	5265	SERPINA1	serine (or cysteine) proteinase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1
482.	5055	SERPINB2	serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 2
483.	5054	SERPINE1	serine (or cysteine) proteinase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1
484.	5176	SERPINF1	serine (or cysteine) proteinase inhibitor, clade F (alpha-2 antiplasmin, pigment epithelium derived factor), member 1
485.	83667	SESN2	sestrin 2
486.	6422	SFRP1	secreted frizzled-related protein 1
487.	6427	SFRS2	splicing factor, arginine/serine-rich 2
488.	6432	SFRS7	splicing factor, arginine/serine-rich 7, 35kDa
489.	79801	SHCBP1	SHC SH2-domain binding protein 1
490.	6472	SHMT2	serine hydroxymethyltransferase 2 (mitochondrial)
491.	6490	SILV	silver homolog (mouse)
492.	89886	SLAMF9	SLAM family member 9
493.	6563	SLC14A1	solute carrier family 14 (urea transporter), member 1 (Kidd blood group)
494.	9123	SLC16A3	solute carrier family 16 (monocarboxylic acid transporters), member 3
495.	6509	SLC1A4	solute carrier family 1 (glutamate/neutral amino acid transporter), member 4
496.	6510	SLC1A5	solute carrier family 1 (neutral amino acid transporter), member 5
497.	6574	SLC20A1	solute carrier family 20 (phosphate transporter), member 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
498.	55356	SLC22A15	solute carrier family 22 (organic cation transporter), member 15
499.	6583	SLC22A4	solute carrier family 22 (organic cation transporter), member 4
500.	57419	SLC24A3	solute carrier family 24 (sodium/potassium/calcium exchanger), member 3
501.	51312	SLC25A37	solute carrier family 25, member 37
502.	6513	SLC2A1	solute carrier family 2 (facilitated glucose transporter), member 1
503.	81031	SLC2A10	solute carrier family 2 (facilitated glucose transporter), member 10
504.	114134	SLC2A13	solute carrier family 2 (facilitated glucose transporter), member 13
505.	144195	SLC2A14	solute carrier family 2 (facilitated glucose transporter), member 14
506.	6515	SLC2A3	solute carrier family 2 (facilitated glucose transporter), member 3
507.	11182	SLC2A6	solute carrier family 2 (facilitated glucose transporter), member 6
508.	222553	SLC35F1	solute carrier family 35, member F1
509.	6520	SLC3A2	solute carrier family 3 (activators of dibasic and neutral amino acid transport), member 2
510.	29015	SLC43A3	solute carrier family 43, member 3
511.	9497	SLC4A7	solute carrier family 4, sodium bicarbonate cotransporter, member 7
512.	6526	SLC5A3	solute carrier family 5 (inositol transporters), member 3
513.	55117	SLC6A15	solute carrier family 6, member 15
514.	6541	SLC7A1	solute carrier family 7 (cationic amino acid transporter, y ⁺ system), member 1
515.	23657	SLC7A11	solute carrier family 7, (cationic amino acid transporter, y ⁺ system) member 11
516.	8140	SLC7A5	solute carrier family 7 (cationic amino acid transporter, y ⁺ system), member 5
517.	28231	SLC04A1	solute carrier organic anion transporter family, member 4A1
518.	84296	SLD5	SLD5 homolog
519.	84189	SLITRK6	SLIT and NTRK-like family, member 6
520.	25992	SNED1	sushi, nidogen and EGF-like domains 1
521.	6627	SNRPA1	small nuclear ribonucleoprotein polypeptide A'
522.	6628	SNRPB	small nuclear ribonucleoprotein polypeptides B and B1
523.	6632	SNRPD1	small nuclear ribonucleoprotein D1 polypeptide 16kDa
524.	6636	SNRPF	small nuclear ribonucleoprotein polypeptide F
525.	27131	SNX5	sorting nexin 5
526.	6648	SOD2	superoxide dismutase 2, mitochondrial
527.	30812	SOX8	SRY (sex determining region Y)-box 8
528.	6678	SPARC	secreted protein, acidic, cysteine-rich (osteonectin)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
529.	57405	SPBC25	spindle pole body component 25 homolog (S. cerevisiae)
530.	6695	SPOCK	sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican)
531.	81848	SPRY4	sprouty homolog 4 (Drosophila)
532.	6713	SQLE	squalene epoxidase
533.	8406	SRPX	sushi-repeat-containing protein, X-linked
534.	6484	ST3GAL4	ST3 beta-galactoside alpha-2,3-sialyltransferase 4
535.	8869	ST3GAL5	ST3 beta-galactoside alpha-2,3-sialyltransferase 5
536.	10610	ST6GALNAC2	ST6 (alpha-N-acetyl-neuraminy1-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 2
537.	134429	STARD4	START domain containing 4, sterol regulated
538.	6781	STC1	stanniocalcin 1
539.	55240	STEAP3	STEAP family member 3
540.	9262	STK17B	serine/threonine kinase 17b (apoptosis-inducing)
541.	11075	STMN2	stathmin-like 2
542.	29091	STXBP6	syntaxin binding protein 6 (amisyn)
543.	8871	SYNJ2	synaptojanin 2
544.	6857	SYT1	synaptotagmin I
545.	94122	SYTL5	synaptotagmin-like 5
546.	6863	TAC1	tachykinin, precursor 1 (substance K, substance P, neurokinin 1, neurokinin 2, neuromedin L, neurokinin alpha, neuropeptide K, neuropeptide gamma)
547.	6897	TARS	threonyl-tRNA synthetase
548.	6926	TBX3	T-box 3 (ulnar mammary syndrome)
549.	6917	TCEA1	transcription elongation factor A (SII), 1
550.	6990	TCTE1L	t-complex-associated-testis-expressed 1-like
551.	26136	TES	testis derived transcript (3 LIM domains)
552.	51106	TFB1M	transcription factor B1, mitochondrial
553.	7027	TFDP1	transcription factor Dp-1
554.	7980	TFPI2	tissue factor pathway inhibitor 2
555.	7039	TGFA	transforming growth factor, alpha
556.	7040	TGFB1	transforming growth factor, beta 1 (Camurati-Engelmann disease)
557.	7045	TGFB1	transforming growth factor, beta-induced, 68kDa
558.	7057	THBS1	thrombospondin 1
559.	10189	THOC4	THO complex 4
560.	7076	TIMP1	tissue inhibitor of metalloproteinase 1 (erythroid potentiating activity, collagenase inhibitor)
561.	7078	TIMP3	tissue inhibitor of metalloproteinase 3 (Sorsby fundus dystrophy, pseudoinflammatory)
562.	4071	TM4SF1	transmembrane 4 L six family member 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
563.	55076	TMEM45A	transmembrane protein 45A
564.	81671	TMEM49	transmembrane protein 49
565.	56937	TMEPAI	transmembrane, prostate androgen induced RNA
566.	7112	TMPO	thymopoietin
567.	283131	TncRNA	trophoblast-derived noncoding RNA
568.	7128	TNFAIP3	tumor necrosis factor, alpha-induced protein 3
569.	7130	TNFAIP6	tumor necrosis factor, alpha-induced protein 6
570.	51330	TNFRSF12A	tumor necrosis factor receptor superfamily, member 12A
571.	27242	TNFRSF21	tumor necrosis factor receptor superfamily, member 21
572.	8600	TNFSF11	tumor necrosis factor (ligand) superfamily, member 11
573.	7150	TOP1	topoisomerase (DNA) I
574.	7153	TOP2A	topoisomerase (DNA) II alpha 170kDa
575.	7155	TOP2B	topoisomerase (DNA) II beta 180kDa
576.	22974	TPX2	TPX2, microtubule-associated protein homolog (<i>Xenopus laevis</i>)
577.	7185	TRAF1	TNF receptor-associated factor 1
578.	57761	TRIB3	tribbles homolog 3 (<i>Drosophila</i>)
579.	23321	TRIM2	tripartite motif-containing 2
580.	9319	TRIP13	thyroid hormone receptor interactor 13
581.	79054	TRPM8	transient receptor potential cation channel, subfamily M, member 8
582.	8848	TSC22D1	TSC22 domain family, member 1
583.	1831	TSC22D3	TSC22 domain family, member 3
584.	51175	TUBE1	tubulin, epsilon 1
585.	10628	TXNIP	thioredoxin interacting protein
586.	7298	TYMS	thymidylate synthetase
587.	6675	UAP1	UDP-N-acetylglucosamine pyrophosphorylase 1
588.	11065	UBE2C	ubiquitin-conjugating enzyme E2C
589.	27338	UBE2S	ubiquitin-conjugating enzyme E2S
590.	29089	UBE2T	ubiquitin-conjugating enzyme E2T (putative)
591.	51377	UCHL5	ubiquitin carboxyl-terminal hydrolase L5
592.	29128	UHRF1	ubiquitin-like, containing PHD and RING finger domains, 1
593.	219699	UNC5B	unc-5 homolog B (<i>C. elegans</i>)
594.	54532	USP53	ubiquitin specific protease 53
595.	79001	VKORC1	vitamin K epoxide reductase complex, subunit 1
596.	7439	VMD2	vitelliform macular dystrophy 2 (Best disease, bestrophin)
597.	7443	VRK1	vaccinia related kinase 1
598.	7447	VSNL1	visinin-like 1
599.	7453	WARS	tryptophanyl-tRNA synthetase
600.	9391	WDR39	WD repeat domain 39
601.	65125	WNK1	WNK lysine deficient protein kinase 1
602.	25937	WWTR1	WW domain containing transcription regulator 1
603.	7494	XBP1	X-box binding protein 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
604.	11260	XPOT	exportin, tRNA (nuclear export receptor for tRNAs)
605.	8565	YARS	tyrosyl-tRNA synthetase
606.	84327	ZBED3	zinc finger, BED-type containing 3
607.	84524	ZC3H8	zinc finger CCCH-type containing 8
608.	195828	ZNF367	zinc finger protein 367
609.	11130	ZWINT	ZW10 interactor

TABLE X

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	55347	ABHD10	abhydrolase domain containing 10
2.	55	ACPP	acid phosphatase, prostate
3.	8728	ADAM19	a disintegrin and metalloproteinase domain 19 (meltrin beta)
4.	187	AGTRL1	angiotensin II receptor-like 1
5.	23600	AMACR	alpha-methylacyl-CoA racemase
6.	51129	ANGPTL4	angiopoietin-like 4
7.	1174	AP1S1	adaptor-related protein complex 1, sigma 1 subunit
8.	10123	ARL7	ADP-ribosylation factor-like 7
9.	7873	ARMET	arginine-rich, mutated in early stage tumors
10.	444	ASPH	aspartate beta-hydroxylase
11.	9331	B4GALT6	UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide 6
12.	571	BACH1	BTB and CNC homology 1, basic leucine zipper transcription factor 1
13.	8553	BHLHB2	basic helix-loop-helix domain containing, class B, 2
14.	638	BIK	BCL2-interacting killer (apoptosis-inducing)
15.	665	BNIP3L	BCL2/adenovirus E1B 19kDa interacting protein 3-like
16.	10950	BTG3	BTG family, member 3
17.	961	CD47	CD47 antigen (Rh-related antigen, integrin-associated signal transducer)
18.	965	CD58	CD58 antigen, (lymphocyte function-associated antigen 3)
19.	966	CD59	CD59 antigen p18-20 (antigen identified by monoclonal antibodies 16.3A5, EJ16, EJ30, EL32 and G344)
20.	993	CDC25A	cell division cycle 25A
21.	1052	CEBPD	CCAAT/enhancer binding protein (C/EBP), delta
22.	50515	CHST11	carbohydrate (chondroitin 4) sulfotransferase 11
23.	9976	CLEC2B	C-type lectin domain family 2, member B
24.	169044	COL22A1	collagen, type XXII, alpha 1
25.	131566	DCBLD2	discoidin, CUB and LCCL domain containing 2
26.	3337	DNAJB1	DnaJ (Hsp40) homolog, subfamily B, member 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
27.	116092	DNTTIP1	deoxynucleotidyltransferase, terminal, interacting protein 1
28.	80005	DOCK5	dedicator of cytokinesis 5
29.	1847	DUSP5	dual specificity phosphatase 5
30.	1848	DUSP6	dual specificity phosphatase 6
31.	26355	E2IG5	growth and transformation-dependent protein
32.	1909	EDNRA	endothelin receptor type A
33.	54583	EGLN1	egl nine homolog 1 (C. elegans)
34.	23301	EHBP1	EH domain binding protein 1
35.	54097	FAM3B	family with sequence similarity 3, member B
36.	114907	FBXO32	F-box protein 32
37.	55236	FLJ10808	hypothetical protein FLJ10808
38.	55691	FRMD4A	FERM domain containing 4A
39.	170384	FUT11	fucosyltransferase 11 (alpha (1,3) fucosyltransferase)
40.	8693	GALNT4	UDP-N-acetyl-alpha-D- galactosamine:polypeptide N- acetylgalactosaminyltransferase 4 (GalNAc-T4)
41.	2596	GAP43	growth associated protein 43
42.	2730	GCLM	glutamate-cysteine ligase, modifier subunit
43.	11010	GLIPR1	GLI pathogenesis-related 1 (glioma)
44.	9052	GPRC5A	G protein-coupled receptor, family C, group 5, member A
45.	3099	HK2	hexokinase 2
46.	3156	HMGCR	3-hydroxy-3-methylglutaryl-Coenzyme A reductase
47.	3157	HMGCS1	3-hydroxy-3-methylglutaryl-Coenzyme A synthase 1 (soluble)
48.	9955	HS3ST3A1	heparan sulfate (glucosamine) 3-O- sulfotransferase 3A1
49.	51478	HSD17B7	hydroxysteroid (17-beta) dehydrogenase 7
50.	10808	HSPH1	heat shock 105kDa/110kDa protein 1
51.	3397	ID1	inhibitor of DNA binding 1, dominant negative helix-loop-helix protein
52.	3422	IDI1	isopentenyl-diphosphate delta isomerase
53.	3460	IFNGR2	interferon gamma receptor 2 (interferon gamma transducer 1)
54.	3589	IL11	interleukin 11
55.	54928	IMPA3	myo-inositol monophosphatase A3
56.	3638	INSIG1	insulin induced gene 1
57.	51141	INSIG2	insulin induced gene 2
58.	3696	ITGB8	integrin, beta 8
59.	3726	JUNB	jun B proto-oncogene
60.	3783	KCNN4	potassium intermediate/small conductance calcium-activated channel, subfamily N, member 4
61.	9674	KIAA0040	KIAA0040
62.	57687	KIAA1576	KIAA1576 protein
63.	3939	LDHA	lactate dehydrogenase A
64.	3949	LDLR	low density lipoprotein receptor (familial hypercholesterolemia)
65.	10019	LNK	lymphocyte adaptor protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
66.	92689	LOC92689	hypothetical protein BC001096
67.	7804	LRP8	low density lipoprotein receptor-related protein 8, apolipoprotein e receptor
68.	4170	MCL1	myeloid cell leukemia sequence 1 (BCL2-related)
69.	55388	MCM10	MCM10 minichromosome maintenance deficient 10 (<i>S. cerevisiae</i>)
70.	29969	MDFIC	MyoD family inhibitor domain containing
71.	23531	MMD	monocyte to macrophage differentiation-associated
72.	4501	MT1X	metallothionein 1X
73.	4747	NEFL	neurofilament, light polypeptide 68kDa
74.	388677	NOTCH2NL	Notch homolog 2 (<i>Drosophila</i>) N-terminal like
75.	4907	NT5E	5'-nucleotidase, ecto (CD73)
76.	4922	NTS	neurotensin
77.	10762	NUP50	nucleoporin 50kDa
78.	9818	NUPL1	nucleoporin like 1
79.	10215	OLIG2	oligodendrocyte lineage transcription factor 2
80.	5033	P4HA1	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha polypeptide I
81.	54852	PAQR5	progesterone and adiponectin receptor family member V
82.	5163	PDK1	pyruvate dehydrogenase kinase, isoenzyme 1
83.	8572	PDLIM4	PDZ and LIM domain 4
84.	5209	PFKFB3	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 3
85.	5230	PGK1	phosphoglycerate kinase 1
86.	7262	PHLDA2	pleckstrin homology-like domain, family A, member 2
87.	5329	PLAUR	plasminogen activator, urokinase receptor
88.	119548	PNLIPRP3	pancreatic lipase-related protein 3
89.	8613	PPAP2B	phosphatidic acid phosphatase type 2B
90.	10105	PPIF	peptidylprolyl isomerase F (cyclophilin F)
91.	5534	PPP3R1	protein phosphatase 3 (formerly 2B), regulatory subunit B, 19kDa, alpha isoform (calcineurin B, type I)
92.	23210	PTDSR	phosphatidylserine receptor
93.	5965	RECQL	RecQ protein-like (DNA helicase Q1-like)
94.	5997	RGS2	regulator of G-protein signalling 2, 24kDa
95.	25907	RIS1	Ras-induced senescence 1
96.	390	RND3	Rho family GTPase 3
97.	6307	SC4MOL	sterol-C4-methyl oxidase-like
98.	10802	SEC24A	SEC24 related gene family, member A (<i>S. cerevisiae</i>)
99.	6563	SLC14A1	solute carrier family 14 (urea transporter), member 1 (Kidd blood group)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
100.	9123	SLC16A3	solute carrier family 16 (monocarboxylic acid transporters), member 3
101.	6574	SLC20A1	solute carrier family 20 (phosphate transporter), member 1
102.	6583	SLC22A4	solute carrier family 22 (organic cation transporter), member 4
103.	51312	SLC25A37	solute carrier family 25, member 37
104.	6513	SLC2A1	solute carrier family 2 (facilitated glucose transporter), member 1
105.	114134	SLC2A13	solute carrier family 2 (facilitated glucose transporter), member 13
106.	9497	SLC4A7	solute carrier family 4, sodium bicarbonate cotransporter, member 7
107.	6526	SLC5A3	solute carrier family 5 (inositol transporters), member 3
108.	55117	SLC6A15	solute carrier family 6, member 15
109.	28231	SLC04A1	solute carrier organic anion transporter family, member 4A1
110.	27131	SNX5	sorting nexin 5
111.	6713	SQLE	squalene epoxidase
112.	134429	STARD4	START domain containing 4, sterol regulated
113.	55240	STEAP3	STEAP family member 3
114.	8871	SYNJ2	synaptojanin 2
115.	6926	TBX3	T-box 3 (ulnar mammary syndrome)
116.	6990	TCTE1L	t-complex-associated-testis-expressed 1-like
117.	7057	THBS1	thrombospondin 1
118.	4071	TM4SF1	transmembrane 4 L six family member 1
119.	55076	TMEM45A	transmembrane protein 45A
120.	81671	TMEM49	transmembrane protein 49
121.	51330	TNFRSF12A	tumor necrosis factor receptor superfamily, member 12A
122.	7185	TRAF1	TNF receptor-associated factor 1
123.	195828	ZNF367	zinc finger protein 367
124.	5825	ABCD3	ATP-binding cassette, sub-family D (ALD), member 3
125.	39	ACAT2	acetyl-Coenzyme A acetyltransferase 2 (acetoacetyl Coenzyme A thiolase)
126.	51205	ACP6	acid phosphatase 6, lysophosphatidic
127.	92370	ACPL2	acid phosphatase-like 2
128.	9447	AIM2	absent in melanoma 2
129.	56172	ANKH	ankylosis, progressive homolog (mouse)
130.	84250	ANKRD32	ankyrin repeat domain 32
131.	54443	ANLN	anillin, actin binding protein (scraps homolog, Drosophila)
132.	81611	ANP32E	acidic (leucine-rich) nuclear phosphoprotein 32 family, member E
133.	9582	APOBEC3B	apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 3B
134.	10926	ASK	activator of S phase kinase
135.	259266	ASPM	asp (abnormal spindle)-like, microcephaly associated (Drosophila)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
136.	29028	ATAD2	ATPase family, AAA domain containing 2
137.	533	ATP6V0B	ATPase, H ⁺ transporting, lysosomal 21kDa, V0 subunit c''
138.	9212	AURKB	aurora kinase B
139.	25825	BACE2	beta-site APP-cleaving enzyme 2
140.	10134	BCAP31	B-cell receptor-associated protein 31
141.	114614	BIC	BIC transcript
142.	332	BIRC5	baculoviral IAP repeat-containing 5 (survivin)
143.	55839	BM039	uncharacterized bone marrow protein BM039
144.	23397	BRRN1	barren homolog (Drosophila)
145.	694	BTG1	B-cell translocation gene 1, anti- proliferative
146.	701	BUB1B	BUB1 budding uninhibited by benzimidazoles 1 homolog beta (yeast)
147.	55165	C10orf3	chromosome 10 open reading frame 3
148.	171546	C14orf147	chromosome 14 open reading frame 147
149.	90417	C15orf23	chromosome 15 open reading frame 23
150.	81610	C20orf129	chromosome 20 open reading frame 129
151.	79019	C22orf18	chromosome 22 open reading frame 18
152.	387103	C6orf173	chromosome 6 open reading frame 173
153.	29964	C6orf49	chromosome 6 open reading frame 49
154.	401505	C9orf105	chromosome 9 open reading frame 105
155.	828	CAPS	calcyphosine
156.	832	CAPZB	capping protein (actin filament) muscle Z-line, beta
157.	57082	CASC5	cancer susceptibility candidate 5
158.	891	CCNB1	cyclin B1
159.	9133	CCNB2	cyclin B2
160.	9134	CCNE2	cyclin E2
161.	10574	CCT7	chaperonin containing TCP1, subunit 7 (eta)
162.	10694	CCT8	chaperonin containing TCP1, subunit 8 (theta)
163.	135228	CD109	CD109 antigen (Gov platelet alloantigens)
164.	983	CDC2	cell division cycle 2, G1 to S and G2 to M
165.	991	CDC20	CDC20 cell division cycle 20 homolog (S. cerevisiae)
166.	990	CDC6	CDC6 cell division cycle 6 homolog (S. cerevisiae)
167.	83540	CDCA1	cell division cycle associated 1
168.	55038	CDCA4	cell division cycle associated 4
169.	1063	CENPF	centromere protein F, 350/400ka (mitosin)
170.	1111	CHEK1	CHK1 checkpoint homolog (S. pombe)
171.	91851	CHRD1	chordin-like 1
172.	9435	CHST2	carbohydrate (N-acetylglucosamine-6-O) sulfotransferase 2
173.	26586	CKAP2	cytoskeleton associated protein 2
174.	1164	CKS2	CDC28 protein kinase regulatory subunit 2
175.	149111	CNIH3	cornichon homolog 3 (Drosophila)
176.	1282	COL4A1	collagen, type IV, alpha 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
177.	1293	COL6A3	collagen, type VI, alpha 3
178.	10920	COPS8	COP9 constitutive photomorphogenic homolog subunit 8 (Arabidopsis)
179.	10063	COX17	COX17 homolog, cytochrome c oxidase assembly protein (yeast)
180.	51692	CPSF3	cleavage and polyadenylation specific factor 3, 73kDa
181.	54480	CSGlcA-T	chondroitin sulfate glucuronyltransferase
182.	1462	CSPG2	chondroitin sulfate proteoglycan 2 (versican)
183.	1469	CST1	cystatin SN
184.	1591	CYP24A1	cytochrome P450, family 24, subfamily A, polypeptide 1
185.	1604	DAF	decay accelerating factor for complement (CD55, Cromer blood group system)
186.	10212	DDX39	DEAD (Asp-Glu-Ala-Asp) box polypeptide 39
187.	55635	DEPDC1	DEP domain containing 1
188.	1716	DGUOK	deoxyguanosine kinase
189.	55355	DKFZp762E1312	hypothetical protein DKFZp762E1312
190.	9787	DLG7	discs, large homolog 7 (Drosophila)
191.	1745	DLX1	distal-less homeo box 1
192.	1746	DLX2	distal-less homeo box 2
193.	64215	DNAJC1	DnaJ (Hsp40) homolog, subfamily C, member 1
194.	51514	DTL	denticleless homolog (Drosophila)
195.	1841	DTYMK	deoxythymidylate kinase (thymidylate kinase)
196.	1908	EDN3	endothelin 3
197.	1942	EFNA1	ephrin-A1
198.	1958	EGR1	early growth response 1
199.	2029	ENSA	endosulfine alpha
200.	157570	ESCO2	establishment of cohesion 1 homolog 2 (S. cerevisiae)
201.	2109	ETFB	electron-transfer-flavoprotein, beta polypeptide
202.	54512	EXOSC4	exosome component 4
203.	389835	FAM72A	family with sequence similarity 72, member A
204.	2191	FAP	fibroblast activation protein, alpha
205.	222235	FBXL13	F-box and leucine-rich repeat protein 13
206.	26271	FBXO5	F-box protein 5
207.	84824	FCRLM1	Fc receptor-like and mucin-like 1
208.	2224	FDPS	farnesyl diphosphate synthase (farnesyl pyrophosphate synthetase, dimethylallyltranstransferase, geranyltranstransferase)
209.	2237	FEN1	flap structure-specific endonuclease 1
210.	2246	FGF1	fibroblast growth factor 1 (acidic)
211.	2258	FGF13	fibroblast growth factor 13
212.	83786	FKSG44	FKSG44 gene
213.	55744	FLJ10803	hypothetical protein FLJ10803
214.	54962	FLJ20516	timeless-interacting protein
215.	55026	FLJ20716	hypothetical protein FLJ20716
216.	220042	FLJ25416	hypothetical protein FLJ25416

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
217.	150468	FLJ40629	hypothetical protein FLJ40629
218.	200844	FLJ42117	FLJ42117 protein
219.	2335	FN1	fibronectin 1
220.	2589	GALNT1	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 1 (GalNAc-T1)
221.	2669	GEM	GTP binding protein overexpressed in skeletal muscle
222.	79833	GEMIN6	gem (nuclear organelle) associated protein 6
223.	2717	GLA	galactosidase, alpha
224.	2731	GLDC	glycine dehydrogenase (decarboxylating; glycine decarboxylase, glycine cleavage system protein P)
225.	2739	GLO1	glyoxalase I
226.	51053	GMNN	geminin, DNA replication inhibitor
227.	2778	GNAS	GNAS complex locus
228.	54865	GPATC4	G patch domain containing 4
229.	9446	GSTO1	glutathione S-transferase omega 1
230.	51512	GTSE1	G-2 and S-phase expressed 1
231.	3014	H2AFX	H2A histone family, member X
232.	9555	H2AFY	H2A histone family, member Y
233.	1404	HAPLN1	hyaluronan and proteoglycan link protein 1
234.	64151	HCAP-G	chromosome condensation protein G
235.	3052	HCCS	holocytochrome c synthase (cytochrome c heme-lyase)
236.	3098	HK1	hexokinase 1
237.	3159	HMGA1	high mobility group AT-hook 1
238.	3146	HMGB1	high-mobility group box 1
239.	3148	HMGB2	high-mobility group box 2
240.	3161	HMMR	hyaluronan-mediated motility receptor (RHAMM)
241.	51155	HN1	hematological and neurological expressed 1
242.	3308	HSPA4	heat shock 70kDa protein 4
243.	51491	HSPC111	hypothetical protein HSPC111
244.	3336	HSPE1	heat shock 10kDa protein 1 (chaperonin 10)
245.	25764	HYPK	Huntingtin interacting protein K
246.	23463	ICMT	isoprenylcysteine carboxyl methyltransferase
247.	3399	ID3	inhibitor of DNA binding 3, dominant negative helix-loop-helix protein
248.	3421	IDH3G	isocitrate dehydrogenase 3 (NAD+) gamma
249.	51124	IER3IP1	immediate early response 3 interacting protein 1
250.	8519	IFITM1	interferon induced transmembrane protein 1 (9-27)
251.	3488	IGFBP5	insulin-like growth factor binding protein 5
252.	121457	IKIP	IKK interacting protein
253.	3598	IL13RA2	interleukin 13 receptor, alpha 2
254.	9466	IL27RA	interleukin 27 receptor, alpha

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
255.	128239	IQGAP3	IQ motif containing GTPase activating protein 3
256.	79070	KDELC1	KDEL (Lys-Asp-Glu-Leu) containing 1
257.	9768	KIAA0101	KIAA0101
258.	9865	KIAA0644	KIAA0644 gene product
259.	57214	KIAA1199	KIAA1199
260.	10112	KIF20A	kinesin family member 20A
261.	9493	KIF23	kinesin family member 23
262.	24137	KIF4A	kinesin family member 4A
263.	10403	KNTC2	kinetochore associated 2
264.	3838	KPNA2	karyopherin alpha 2 (RAG cohort 1, importin alpha 1)
265.	3910	LAMA4	laminin, alpha 4
266.	55915	LANCL2	LanC lantibiotic synthetase component C-like 2 (bacterial)
267.	4001	LMNB1	lamin B1
268.	146909	LOC146909	hypothetical protein LOC146909
269.	389906	LOC389906	similar to Serine/threonine-protein kinase PRKX (Protein kinase PKX1)
270.	401151	LOC401151	hypothetical gene supported by BC062741
271.	440145	LOC440145	similar to RIKEN cDNA 2410129H14
272.	51234	LOC51234	hypothetical protein LOC51234
273.	58489	LOC58489	hypothetical protein from EUROIMAGE 588495
274.	4013	LOH11CR2A	loss of heterozygosity, 11, chromosomal region 2, gene A
275.	26045	LRRTM2	leucine rich repeat transmembrane neuronal 2
276.	10226	M6PRBP1	mannose-6-phosphate receptor binding protein 1
277.	4085	MAD2L1	MAD2 mitotic arrest deficient-like 1 (yeast)
278.	4094	MAF	v-maf musculoaponeurotic fibrosarcoma oncogene homolog (avian)
279.	9500	MAGED1	melanoma antigen family D, 1
280.	4171	MCM2	MCM2 minichromosome maintenance deficient 2, mitotin (<i>S. cerevisiae</i>)
281.	4173	MCM4	MCM4 minichromosome maintenance deficient 4 (<i>S. cerevisiae</i>)
282.	4174	MCM5	MCM5 minichromosome maintenance deficient 5, cell division cycle 46 (<i>S. cerevisiae</i>)
283.	4175	MCM6	MCM6 minichromosome maintenance deficient 6 (MIS5 homolog, <i>S. pombe</i>) (<i>S. cerevisiae</i>)
284.	4176	MCM7	MCM7 minichromosome maintenance deficient 7 (<i>S. cerevisiae</i>)
285.	55384	MEG3	maternally expressed 3
286.	84314	MGC10744	hypothetical protein MGC10744
287.	406991	MIRN21	microRNA 21
288.	8195	MKKS	McKusick-Kaufman syndrome
289.	79682	MLF1IP	MLF1 interacting protein

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
290.	10962	MLLT11	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, <i>Drosophila</i>); translocated to, 11
291.	51263	MRPL30	mitochondrial ribosomal protein L30
292.	54148	MRPL39	mitochondrial ribosomal protein L39
293.	51778	MYOZ2	myozenin 2
294.	4751	NEK2	NIMA (never in mitosis gene a)-related kinase 2
295.	4837	NNMT	nicotinamide N-methyltransferase
296.	51070	NOSIP	nitric oxide synthase interacting protein
297.	4856	NOV	nephroblastoma overexpressed gene
298.	4929	NR4A2	nuclear receptor subfamily 4, group A, member 2
299.	157638	NSE2	breast cancer membrane protein 101
300.	10726	NUDC	nuclear distribution gene C homolog (<i>A. nidulans</i>)
301.	55270	NUDT15	nudix (nucleoside diphosphate linked moiety X)-type motif 15
302.	51203	NUSAP1	nucleolar and spindle associated protein 1
303.	55872	PBK	PDZ binding kinase
304.	5111	PCNA	proliferating cell nuclear antigen
305.	5122	PCSK1	proprotein convertase subtilisin/kexin type 1
306.	10130	PDIA6	protein disulfide isomerase family A, member 6
307.	51659	Pfs2	DNA replication complex GINS protein PSF2
308.	5223	PGAM1	phosphoglycerate mutase 1 (brain)
309.	26207	PITPNC1	phosphatidylinositol transfer protein, cytoplasmic 1
310.	51365	PLA1A	phospholipase A1 member A
311.	51728	POLR3K	polymerase (RNA) III (DNA directed) polypeptide K, 12.3 kDa
312.	9055	PRC1	protein regulator of cytokinesis 1
313.	9837	PSF1	DNA replication complex GINS protein PSF1
314.	5704	PSMC4	proteasome (prosome, macropain) 26S subunit, ATPase, 4
315.	5705	PSMC5	proteasome (prosome, macropain) 26S subunit, ATPase, 5
316.	9536	PTGES	prostaglandin E synthase
317.	5757	PTMA	prothymosin, alpha (gene sequence 28)
318.	29127	RACGAP1	Rac GTPase activating protein 1
319.	5901	RAN	RAN, member RAS oncogene family
320.	57333	RCN3	reticulocalbin 3, EF-hand calcium binding domain
321.	5982	RFC2	replication factor C (activator 1) 2, 40kDa
322.	5983	RFC3	replication factor C (activator 1) 3, 38kDa
323.	5985	RFC5	replication factor C (activator 1) 5, 36.5kDa
324.	5999	RGS4	regulator of G-protein signalling 4

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
325.	54101	RIPK4	receptor-interacting serine-threonine kinase 4
326.	9781	RNF144	ring finger protein 144
327.	221687	RNF182	ring finger protein 182
328.	6241	RRM2	ribonucleotide reductase M2 polypeptide
329.	6284	S100A13	S100 calcium binding protein A13
330.	949	SCARB1	scavenger receptor class B, member 1
331.	7857	SCG2	secretogranin II (chromogranin C)
332.	23753	SDF2L1	stromal cell-derived factor 2-like 1
333.	5054	SERPINE1	serine (or cysteine) proteinase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1
334.	6422	SFRP1	secreted frizzled-related protein 1
335.	6427	SFRS2	splicing factor, arginine/serine-rich 2
336.	6432	SFRS7	splicing factor, arginine/serine-rich 7, 35kDa
337.	79801	SHCBP1	SHC SH2-domain binding protein 1
338.	6490	SILV	silver homolog (mouse)
339.	57419	SLC24A3	solute carrier family 24 (sodium/potassium/calcium exchanger), member 3
340.	11182	SLC2A6	solute carrier family 2 (facilitated glucose transporter), member 6
341.	29015	SLC43A3	solute carrier family 43, member 3
342.	84296	SLD5	SLD5 homolog
343.	25992	SNED1	sushi, nidogen and EGF-like domains 1
344.	6627	SNRPA1	small nuclear ribonucleoprotein polypeptide A'
345.	6628	SNRPB	small nuclear ribonucleoprotein polypeptides B and B1
346.	6632	SNRPD1	small nuclear ribonucleoprotein D1 polypeptide 16kDa
347.	6636	SNRPF	small nuclear ribonucleoprotein polypeptide F
348.	6678	SPARC	secreted protein, acidic, cysteine-rich (osteonectin)
349.	57405	SPBC25	spindle pole body component 25 homolog (<i>S. cerevisiae</i>)
350.	81848	SPRY4	sprouty homolog 4 (<i>Drosophila</i>)
351.	8406	SRPX	sushi-repeat-containing protein, X-linked
352.	6484	ST3GAL4	ST3 beta-galactoside alpha-2,3-sialyltransferase 4
353.	8869	ST3GAL5	ST3 beta-galactoside alpha-2,3-sialyltransferase 5
354.	9262	STK17B	serine/threonine kinase 17b (apoptosis-inducing)
355.	94122	SYTL5	synaptotagmin-like 5
356.	51106	TFB1M	transcription factor B1, mitochondrial
357.	7027	TFDP1	transcription factor Dp-1
358.	7039	TGFA	transforming growth factor, alpha
359.	7040	TGFB1	transforming growth factor, beta 1 (Camurati-Engelmann disease)
360.	7045	TGFBI	transforming growth factor, beta-induced, 68kDa
361.	10189	THOC4	THO complex 4

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
362.	7076	TIMP1	tissue inhibitor of metalloproteinase 1 (erythroid potentiating activity, collagenase inhibitor)
363.	56937	TMEPAI	transmembrane, prostate androgen induced RNA
364.	7112	TMPO	thymopoietin
365.	283131	TncRNA	trophoblast-derived noncoding RNA
366.	7130	TNFAIP6	tumor necrosis factor, alpha-induced protein 6
367.	27242	TNFRSF21	tumor necrosis factor receptor superfamily, member 21
368.	7150	TOP1	topoisomerase (DNA) I
369.	7153	TOP2A	topoisomerase (DNA) II alpha 170kDa
370.	22974	TPX2	TPX2, microtubule-associated protein homolog (<i>Xenopus laevis</i>)
371.	9319	TRIP13	thyroid hormone receptor interactor 13
372.	79054	TRPM8	transient receptor potential cation channel, subfamily M, member 8
373.	8848	TSC22D1	TSC22 domain family, member 1
374.	7298	TYMS	thymidylate synthetase
375.	6675	UAP1	UDP-N-acetylglucosamine pyrophosphorylase 1
376.	11065	UBE2C	ubiquitin-conjugating enzyme E2C
377.	27338	UBE2S	ubiquitin-conjugating enzyme E2S
378.	29089	UBE2T	ubiquitin-conjugating enzyme E2T (putative)
379.	51377	UCHL5	ubiquitin carboxyl-terminal hydrolase L5
380.	29128	UHRF1	ubiquitin-like, containing PHD and RING finger domains, 1
381.	54532	USP53	ubiquitin specific protease 53
382.	79001	VKORC1	vitamin K epoxide reductase complex, subunit 1
383.	7443	VRK1	vaccinia related kinase 1
384.	7447	VSNL1	visinin-like 1
385.	9391	WDR39	WD repeat domain 39
386.	25937	WWTR1	WW domain containing transcription regulator 1
387.	84524	ZC3H8	zinc finger CCCH-type containing 8
388.	11130	ZWINT	ZW10 interactor
389.	133	ADM	adrenomedullin
390.	284	ANGPT1	angiopoietin 1
391.	353322	ANKRD37	ankyrin repeat domain 37
392.	374	AREG	amphiregulin (schwannoma-derived growth factor)
393.	384	ARG2	arginase, type II
394.	330	BIRC3	baculoviral IAP repeat-containing 3
395.	650	BMP2	bone morphogenetic protein 2
396.	664	BNIP3	BCL2/adenovirus E1B 19kDa interacting protein 3
397.	55612	C20orf42	chromosome 20 open reading frame 42
398.	260436	C4orf7	chromosome 4 open reading frame 7
399.	51208	CLDN18	claudin 18
400.	154043	CNKSR3	CNKSR family member 3
401.	1520	CTSS	cathepsin S

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
402.	2919	CXCL1	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
403.	6374	CXCL5	chemokine (C-X-C motif) ligand 5
404.	7852	CXCR4	chemokine (C-X-C motif) receptor 4
405.	1832	DSP	desmoplakin
406.	1843	DUSP1	dual specificity phosphatase 1
407.	22936	ELL2	elongation factor, RNA polymerase II, 2
408.	2026	ENO2	enolase 2 (gamma, neuronal)
409.	30001	ERO1L	ERO1-like (<i>S. cerevisiae</i>)
410.	9945	GFPT2	glutamine-fructose-6-phosphate transaminase 2
411.	84634	GPR54	G protein-coupled receptor 54
412.	53831	GPR84	G protein-coupled receptor 84
413.	2887	GRB10	growth factor receptor-bound protein 10
414.	3037	HAS2	hyaluronan synthase 2
415.	3082	HGF	hepatocyte growth factor (hepapoietin A; scatter factor)
416.	29923	HIG2	hypoxia-inducible protein 2
417.	3303	HSPA1A	heat shock 70kDa protein 1A
418.	3304	HSPA1B	heat shock 70kDa protein 1B
419.	3383	ICAM1	intercellular adhesion molecule 1 (CD54), human rhinovirus receptor
420.	8870	IER3	immediate early response 3
421.	3486	IGFBP3	insulin-like growth factor binding protein 3
422.	3490	IGFBP7	insulin-like growth factor binding protein 7
423.	3576	IL8	interleukin 8
424.	3624	INHBA	inhibin, beta A (activin A, activin AB alpha polypeptide)
425.	3656	IRAK2	interleukin-1 receptor-associated kinase 2
426.	3678	ITGA5	integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
427.	56704	JPH1	junctionophilin 1
428.	3976	LIF	leukemia inhibitory factor (cholinergic differentiation factor)
429.	285628	LOC285628	hypothetical protein LOC285628
430.	4017	LOXL2	lysyl oxidase-like 2
431.	79099	MGC5618	hypothetical protein MGC5618
432.	117195	MRGPRX3	MAS-related GPR, member X3
433.	10397	NDRG1	N-myc downstream regulated gene 1
434.	4884	NPTX1	neuronal pentraxin I
435.	4885	NPTX2	neuronal pentraxin II
436.	8828	NRP2	neuropilin 2
437.	10135	PBEF1	pre-B-cell colony enhancing factor 1
438.	5210	PFKFB4	6-phosphofructo-2-kinase/fructose-2,6- biphosphatase 4
439.	5743	PTGS2	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
440.	5806	PTX3	pentraxin-related gene, rapidly induced by IL-1 beta

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
441.	5265	SERPINA1	serine (or cysteine) proteinase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1
442.	5055	SERPINB2	serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 2
443.	89886	SLAMF9	SLAM family member 9
444.	144195	SLC2A14	solute carrier family 2 (facilitated glucose transporter), member 14
445.	6515	SLC2A3	solute carrier family 2 (facilitated glucose transporter), member 3
446.	6648	SOD2	superoxide dismutase 2, mitochondrial
447.	6695	SPOCK	sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican)
448.	6781	STC1	stanniocalcin 1
449.	11075	STMN2	stathmin-like 2
450.	7980	TFPI2	tissue factor pathway inhibitor 2
451.	7078	TIMP3	tissue inhibitor of metalloproteinase 3 (Sorsby fundus dystrophy, pseudoinflammatory)
452.	7128	TNFAIP3	tumor necrosis factor, alpha-induced protein 3
453.	8600	TNFSF11	tumor necrosis factor (ligand) superfamily, member 11

TABLE XI

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	161	AP2A2	adaptor-related protein complex 2, alpha 2 subunit
2.	348	APOE	apolipoprotein E
3.	80830	APOL6	apolipoprotein L, 6
4.	10018	BCL2L11	BCL2-like 11 (apoptosis facilitator)
5.	55717	BRWD2	bromodomain and WD repeat domain containing 2
6.	56913	C1GALT1	core 1 synthase, glycoprotein-N-acetylgalactosamine 3-beta-galactosyltransferase, 1
7.	54887	C6orf107	chromosome 6 open reading frame 107
8.	50854	C6orf48	chromosome 6 open reading frame 48
9.	820	CAMP	cathelicidin antimicrobial peptide
10.	23125	CAMTA2	calmodulin binding transcription activator 2
11.	1051	CEBPB	CCAAT/enhancer binding protein (C/EBP), beta
12.	1312	COMT	catechol-O-methyltransferase
13.	1374	CPT1A	carnitine palmitoyltransferase 1A (liver)
14.	1491	CTH	cystathionase (cystathionine gamma-lyase)
15.	1593	CYP27A1	cytochrome P450, family 27, subfamily A, polypeptide 1
16.	285440	CYP4V2	cytochrome P450, family 4, subfamily V, polypeptide 2
17.	1649	DDIT3	DNA-damage-inducible transcript 3
18.	54541	DDIT4	DNA-damage-inducible transcript 4
19.	8894	EIF2S2	eukaryotic translation initiation factor 2, subunit 2 beta, 38kDa

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
20.	2065	ERBB3	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
21.	55273	FLJ10970	hypothetical protein FLJ10970
22.	145788	FLJ27352	hypothetical LOC145788
23.	60674	GAS5	growth arrest-specific 5
24.	9518	GDF15	growth differentiation factor 15
25.	51022	GLRX2	glutaredoxin 2
26.	2805	GOT1	glutamic-oxaloacetic transaminase 1, soluble (aspartate aminotransferase 1)
27.	8334	HIST1H2A C	histone 1, H2ac
28.	8349	HIST2H2B E	histone 2, H2be
29.	3459	IFNGR1	interferon gamma receptor 1
30.	3633	INPP5B	inositol polyphosphate-5-phosphatase, 75kDa
31.	122953	JDP2	jun dimerization protein 2
32.	3790	KCNS3	potassium voltage-gated channel, delayed-rectifier, subfamily S, member 3
33.	339047	LOC33904 7	hypothetical protein LOC339047
34.	345630	LOC34563 0	similar to fibrillarin
35.	4052	LTBP1	latent transforming growth factor beta binding protein 1
36.	162394	MGC19764	hypothetical protein MGC19764
37.	221718	MGC40222	hypothetical protein MGC40222
38.	130612	MGC99813	similar to RIKEN cDNA A230078I05 gene
39.	55034	MOCOS	molybdenum cofactor sulfurase
40.	25902	MTHFD1L	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 1-like
41.	25821	MTO1	mitochondrial translation optimization 1 homolog (S. cerevisiae)
42.	4677	NARS	asparaginyl-tRNA synthetase
43.	10230	NBR2	neighbor of BRCA1 gene 2
44.	26471	P8	p8 protein (candidate of metastasis 1)
45.	85315	PAQR8	progesterin and adipoQ receptor family member VIII
46.	22843	PPM1E	protein phosphatase 1E (PP2C domain containing)
47.	9361	PRSS15	protease, serine, 15
48.	5831	PYCR1	pyrroline-5-carboxylate reductase 1
49.	6196	RPS6KA2	ribosomal protein S6 kinase, 90kDa, polypeptide 2
50.	6335	SCN9A	sodium channel, voltage-gated, type IX, alpha
51.	5176	SERPINF1	serine (or cysteine) proteinase inhibitor, clade F (alpha-2 antiplasmin, pigment epithelium derived factor), member 1
52.	83667	SESN2	sestrin 2
53.	6510	SLC1A5	solute carrier family 1 (neutral amino acid transporter), member 5
54.	55356	SLC22A15	solute carrier family 22 (organic cation transporter), member 15
55.	81031	SLC2A10	solute carrier family 2 (facilitated glucose transporter), member 10
56.	84189	SLITRK6	SLIT and NTRK-like family, member 6

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
57.	6897	TARS	threonyl-tRNA synthetase
58.	7155	TOP2B	topoisomerase (DNA) II beta 180kDa
59.	10628	TXNIP	thioredoxin interacting protein
60.	7439	VMD2	vitelliform macular dystrophy 2 (Best disease, bestrophin)
61.	84327	ZBED3	zinc finger, BED-type containing 3
62.	16	AARS	alanyl-tRNA synthetase
63.	120	ADD3	adducin 3 (gamma)
64.	150	ADRA2A	adrenergic, alpha-2A-, receptor
65.	29123	ANKRD11	ankyrin repeat domain 11
66.	360	AQP3	aquaporin 3
67.	9181	ARHGEF2	rho/rac guanine nucleotide exchange factor (GEF) 2
68.	440	ASNS	asparagine synthetase
69.	445	ASS	argininosuccinate synthetase
70.	23245	ASTN2	astrotactin 2
71.	468	ATF4	activating transcription factor 4 (tax-responsive enhancer element B67)
72.	586	BCAT1	branched chain aminotransferase 1, cytosolic
73.	118611	C10orf90	chromosome 10 open reading frame 90
74.	744	C11orf8	chromosome 11 open reading frame 8
75.	116496	C1orf24	chromosome 1 open reading frame 24
76.	833	CARS	cysteinyl-tRNA synthetase
77.	857	CAV1	caveolin 1, caveolae protein, 22kDa
78.	875	CBS	cystathionine-beta-synthase
79.	1054	CEBPG	CCAAT/enhancer binding protein (C/EBP), gamma
80.	79789	CLMN	calmin (calponin-like, transmembrane)
81.	1638	DCT	dopachrome tautomerase (dopachrome delta-isomerase, tyrosine-related protein 2)
82.	4921	DDR2	discoidin domain receptor family, member 2
83.	92737	DNER	delta-notch-like EGF repeat-containing transmembrane
84.	1842	ECM2	extracellular matrix protein 2, female organ and adipocyte specific
85.	2058	EPRS	glutamyl-prolyl-tRNA synthetase
86.	26234	FBXL5	F-box and leucine-rich repeat protein 5
87.	9638	FEZ1	fasciculation and elongation protein zeta 1 (zygin I)
88.	54947	FLJ20481	hypothetical protein FLJ20481
89.	162282	FLJ38335	hypothetical protein FLJ38335
90.	10468	FST	follicle-stimulating hormone receptor
91.	2617	GARS	glycyl-tRNA synthetase
92.	2673	GFPT1	glutamine-fructose-6-phosphate transaminase 1
93.	9709	HERPUD1	homocysteine-inducible, endoplasmic reticulum stress-inducible, ubiquitin-like domain member 1
94.	83872	HMCN1	hemicentin 1
95.	3176	HNMT	histamine N-methyltransferase
96.	3313	HSPA9B	heat shock 70kDa protein 9B (mortalin-2)
97.	3376	IARS	isoleucine-tRNA synthetase
98.	3400	ID4	inhibitor of DNA binding 4, dominant negative helix-loop-helix protein
99.	3475	IFRD1	interferon-related developmental regulator 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
100.	3755	KCNG1	potassium voltage-gated channel, subfamily G, member 1
101.	55243	KIRREL	kin of IRRE like (Drosophila)
102.	9314	KLF4	Kruppel-like factor 4 (gut)
103.	55323	LARP6	La ribonucleoprotein domain family, member 6
104.	84708	LNK	ligand of numb-protein X
105.	253981	LOC253981	hypothetical protein LOC253981
106.	4141	MARS	methionine-tRNA synthetase
107.	79094	MGC4504	hypothetical protein MGC4504
108.	4312	MMP1	matrix metalloproteinase 1 (interstitial collagenase)
109.	10797	MTHFD2	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 2, methenyltetrahydrofolate cyclohydrolase
110.	4589	MUC7	mucin 7, salivary
111.	4779	NFE2L1	nuclear factor (erythroid-derived 2)-like 1
112.	8473	OGT	O-linked N-acetylglucosamine (GlcNAc) transferase (UDP-N-acetylglucosamine:polypeptide-N-acetylglucosaminyl transferase)
113.	5106	PCK2	phosphoenolpyruvate carboxykinase 2 (mitochondrial)
114.	26227	PHGDH	phosphoglycerate dehydrogenase
115.	5376	PMP22	peripheral myelin protein 22
116.	5565	PRKAB2	protein kinase, AMP-activated, beta 2 non-catalytic subunit
117.	5635	PRPSAP1	phosphoribosyl pyrophosphate synthetase-associated protein 1
118.	29968	PSAT1	phosphoserine aminotransferase 1
119.	5723	PSPH	phosphoserine phosphatase
120.	8781	PSPHL	phosphoserine phosphatase-like
121.	5954	RCN1	reticulocalbin 1, EF-hand calcium binding domain
122.	347733	RP11-506K6.1	tubulin, beta polypeptide paralog
123.	10313	RTN3	reticulon 3
124.	6301	SARS	seryl-tRNA synthetase
125.	6472	SHMT2	serine hydroxymethyltransferase 2 (mitochondrial)
126.	6509	SLC1A4	solute carrier family 1 (glutamate/neutral amino acid transporter), member 4
127.	222553	SLC35F1	solute carrier family 35, member F1
128.	6520	SLC3A2	solute carrier family 3 (activators of dibasic and neutral amino acid transport), member 2
129.	6541	SLC7A1	solute carrier family 7 (cationic amino acid transporter, y+ system), member 1
130.	23657	SLC7A11	solute carrier family 7, (cationic amino acid transporter, y+ system) member 11
131.	8140	SLC7A5	solute carrier family 7 (cationic amino acid transporter, y+ system), member 5
132.	30812	SOX8	SRY (sex determining region Y)-box 8
133.	10610	ST6GALNA C2	ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 2

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
134.	29091	STXBP6	syntaxin binding protein 6 (amisyn)
135.	6857	SYT1	synaptotagmin I
136.	6863	TAC1	tachykinin, precursor 1 (substance K, substance P, neurokinin 1, neurokinin 2, neuromedin L, neurokinin alpha, neuropeptide K, neuropeptide gamma)
137.	6917	TCEA1	transcription elongation factor A (SII), 1
138.	26136	TES	testis derived transcript (3 LIM domains)
139.	57761	TRIB3	tribbles homolog 3 (Drosophila)
140.	23321	TRIM2	tripartite motif-containing 2
141.	1831	TSC22D3	TSC22 domain family, member 3
142.	51175	TUBE1	tubulin, epsilon 1
143.	7453	WARS	tryptophanyl-tRNA synthetase
144.	65125	WNK1	WNK lysine deficient protein kinase 1
145.	7494	XBP1	X-box binding protein 1
146.	11260	XPOT	exportin, tRNA (nuclear export receptor for tRNAs)
147.	8565	YARS	tyrosyl-tRNA synthetase
148.	160428	ALDH1L2	aldehyde dehydrogenase 1 family, member L2
149.	358	AQP1	aquaporin 1 (channel-forming integral protein, 28kDa)
150.	759	CA1	carbonic anhydrase I
151.	9236	CCPG1	cell cycle progression 1
152.	1306	COL15A1	collagen, type XV, alpha 1
153.	9488	PIGB	phosphatidylinositol glycan, class B
154.	11341	SCRG1	scrapie responsive protein 1
155.	6383	SDC2	syndecan 2 (heparan sulfate proteoglycan 1, cell surface-associated, fibroglycan)
156.	219699	UNC5B	unc-5 homolog B (C. elegans)

TABLE XII

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	5825	ABCD3	ATP-binding cassette, sub-family D (ALD), member 3
2.	55347	ABHD10	abhydrolase domain containing 10
3.	51205	ACP6	acid phosphatase 6, lysophosphatidic
4.	92370	ACPL2	acid phosphatase-like 2
5.	55	ACPP	acid phosphatase, prostate
6.	8728	ADAM19	a disintegrin and metalloproteinase domain 19 (meltrin beta)
7.	133	ADM	adrenomedullin
8.	284	ANGPT1	angiopoietin 1
9.	51129	ANGPTL4	angiopoietin-like 4
10.	56172	ANKH	ankylosis, progressive homolog (mouse)
11.	348	APOE	apolipoprotein E
12.	80830	APOL6	apolipoprotein L, 6
13.	358	AQP1	aquaporin 1 (channel-forming integral protein, 28kDa)
14.	360	AQP3	aquaporin 3
15.	374	AREG	amphiregulin (schwannoma-derived growth factor)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
16.	7873	ARMET	arginine-rich, mutated in early stage tumors
17.	23245	ASTN2	astrotactin 2
18.	533	ATP6V0B	ATPase, H ⁺ transporting, lysosomal 21kDa, V0 subunit c''
19.	9331	B4GALT6	UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide 6
20.	25825	BACE2	beta-site APP-cleaving enzyme 2
21.	10134	BCAP31	B-cell receptor-associated protein 31
22.	650	BMP2	bone morphogenetic protein 2
23.	171546	C14orf147	chromosome 14 open reading frame 147
24.	56913	C1GALT1	core 1 synthase, glycoprotein-N-acetylgalactosamine 3-beta-galactosyltransferase, 1
25.	260436	C4orf7	chromosome 4 open reading frame 7
26.	820	CAMP	cathelicidin antimicrobial peptide
27.	135228	CD109	CD109 antigen (Gov platelet alloantigens)
28.	961	CD47	CD47 antigen (Rh-related antigen, integrin-associated signal transducer)
29.	965	CD58	CD58 antigen, (lymphocyte function-associated antigen 3)
30.	966	CD59	CD59 antigen p18-20 (antigen identified by monoclonal antibodies 16.3A5, EJ16, EJ30, EL32 and G344)
31.	91851	CHRD1	chordin-like 1
32.	50515	CHST11	carbohydrate (chondroitin 4) sulfotransferase 11
33.	51208	CLDN18	claudin 18
34.	9976	CLEC2B	C-type lectin domain family 2, member B
35.	149111	CNIH3	cornichon homolog 3 (Drosophila)
36.	1306	COL15A1	collagen, type XV, alpha 1
37.	169044	COL22A1	collagen, type XXII, alpha 1
38.	1282	COL4A1	collagen, type IV, alpha 1
39.	1293	COL6A3	collagen, type VI, alpha 3
40.	1312	COMT	catechol-O-methyltransferase
41.	54480	CSG1A-T	chondroitin sulfate glucuronyltransferase
42.	1462	CSPG2	chondroitin sulfate proteoglycan 2 (versican)
43.	1469	CST1	cystatin SN
44.	1520	CTSS	cathepsin S
45.	2919	CXCL1	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
46.	6374	CXCL5	chemokine (C-X-C motif) ligand 5
47.	285440	CYP4V2	cytochrome P450, family 4, subfamily V, polypeptide 2
48.	1604	DAF	decay accelerating factor for complement (CD55, Cromer blood group system)
49.	131566	DCBLD2	discoidin, CUB and LCCL domain containing 2
50.	1638	DCT	dopachrome tautomerase (dopachrome delta-isomerase, tyrosine-related protein 2)
51.	4921	DDR2	discoidin domain receptor family, member 2
52.	92737	DNER	delta-notch-like EGF repeat-containing transmembrane

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
53.	1842	ECM2	extracellular matrix protein 2, female organ and adipocyte specific
54.	1908	EDN3	endothelin 3
55.	1909	EDNRA	endothelin receptor type A
56.	1942	EFNA1	ephrin-A1
57.	2065	ERBB3	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
58.	30001	ERO1L	ERO1-like (S. cerevisiae)
59.	54097	FAM3B	family with sequence similarity 3, member B
60.	389835	FAM72A	family with sequence similarity 72, member A
61.	2191	FAP	fibroblast activation protein, alpha
62.	84824	FCRLM1	Fc receptor-like and mucin-like 1
63.	2224	FDPS	farnesyl diphosphate synthase (farnesyl pyrophosphate synthetase, dimethylallyltranstransferase, geranyltranstransferase)
64.	2246	FGF1	fibroblast growth factor 1 (acidic)
65.	2258	FGF13	fibroblast growth factor 13
66.	55744	FLJ10803	hypothetical protein FLJ10803
67.	220042	FLJ25416	hypothetical protein FLJ25416
68.	2335	FN1	fibronectin 1
69.	10468	FST	folliculin
70.	170384	FUT11	fucosyltransferase 11 (alpha (1,3) fucosyltransferase)
71.	2589	GALNT1	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 1 (GalNAc-T1)
72.	8693	GALNT4	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 4 (GalNAc-T4)
73.	9518	GDF15	growth differentiation factor 15
74.	2717	GLA	galactosidase, alpha
75.	11010	GLIPR1	GLI pathogenesis-related 1 (glioma)
76.	2778	GNAS	GNAS complex locus
77.	1404	HAPLN1	hyaluronan and proteoglycan link protein 1
78.	3037	HAS2	hyaluronan synthase 2
79.	3082	HGF	hepatocyte growth factor (hepatopoietin A; scatter factor)
80.	29923	HIG2	hypoxia-inducible protein 2
81.	83872	HMCN1	hemicentin 1
82.	3156	HMGCR	3-hydroxy-3-methylglutaryl-Coenzyme A reductase
83.	9955	HS3ST3A1	heparan sulfate (glucosamine) 3-O-sulfotransferase 3A1
84.	51478	HSD17B7	hydroxysteroid (17-beta) dehydrogenase 7
85.	3383	ICAM1	intercellular adhesion molecule 1 (CD54), human rhinovirus receptor
86.	23463	ICMT	isoprenylcysteine carboxyl methyltransferase
87.	51124	IER3IP1	immediate early response 3 interacting protein 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
88.	3459	IFNGR1	interferon gamma receptor 1
89.	3460	IFNGR2	interferon gamma receptor 2 (interferon gamma transducer 1)
90.	3486	IGFBP3	insulin-like growth factor binding protein 3
91.	3488	IGFBP5	insulin-like growth factor binding protein 5
92.	3490	IGFBP7	insulin-like growth factor binding protein 7
93.	3589	IL11	interleukin 11
94.	3598	IL13RA2	interleukin 13 receptor, alpha 2
95.	9466	IL27RA	interleukin 27 receptor, alpha
96.	3576	IL8	interleukin 8
97.	54928	IMPA3	myo-inositol monophosphatase A3
98.	3624	INHBA	inhibin, beta A (activin A, activin AB alpha polypeptide)
99.	3678	ITGA5	integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
100.	3696	ITGB8	integrin, beta 8
101.	79070	KDEL1	KDEL (Lys-Asp-Glu-Leu) containing 1
102.	9865	KIAA0644	KIAA0644 gene product
103.	57214	KIAA1199	KIAA1199
104.	55243	KIRREL	kin of IRRE like (Drosophila)
105.	3910	LAMA4	laminin, alpha 4
106.	3949	LDLR	low density lipoprotein receptor (familial hypercholesterolemia)
107.	3976	LIF	leukemia inhibitory factor (cholinergic differentiation factor)
108.	10019	LNK	lymphocyte adaptor protein
109.	84708	LNK	ligand of numb-protein X
110.	4017	LOXL2	lysyl oxidase-like 2
111.	7804	LRP8	low density lipoprotein receptor-related protein 8, apolipoprotein e receptor
112.	26045	LRRTM2	leucine rich repeat transmembrane neuronal 2
113.	4052	LTBP1	latent transforming growth factor beta binding protein 1
114.	84314	MGC10744	hypothetical protein MGC10744
115.	4312	MMP1	matrix metalloproteinase 1 (interstitial collagenase)
116.	4501	MT1X	metallothionein 1X
117.	4589	MUC7	mucin 7, salivary
118.	388677	NOTCH2NL	Notch homolog 2 (Drosophila) N-terminal like
119.	4856	NOV	nephroblastoma overexpressed gene
120.	4884	NPTX1	neuronal pentraxin I
121.	4885	NPTX2	neuronal pentraxin II
122.	8828	NRP2	neuropilin 2
123.	4907	NT5E	5'-nucleotidase, ecto (CD73)
124.	4922	NTS	neurotensin
125.	5033	P4HA1	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha polypeptide I

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
126.	85315	PAQR8	progesterin and adipoQ receptor family member VIII
127.	10135	PBEF1	pre-B-cell colony enhancing factor 1
128.	5122	PCSK1	proprotein convertase subtilisin/kexin type 1
129.	10130	PDIA6	protein disulfide isomerase family A, member 6
130.	51365	PLA1A	phospholipase A1 member A
131.	5329	PLAUR	plasminogen activator, urokinase receptor
132.	5376	PMP22	peripheral myelin protein 22
133.	119548	PNLIPRP3	pancreatic lipase-related protein 3
134.	9536	PTGES	prostaglandin E synthase
135.	5806	PTX3	pentraxin-related gene, rapidly induced by IL-1 beta
136.	5831	PYCR1	pyrroline-5-carboxylate reductase 1
137.	5954	RCN1	reticulocalbin 1, EF-hand calcium binding domain
138.	57333	RCN3	reticulocalbin 3, EF-hand calcium binding domain
139.	25907	RIS1	Ras-induced senescence 1
140.	10313	RTN3	reticulon 3
141.	949	SCARB1	scavenger receptor class B, member 1
142.	7857	SCG2	secretogranin II (chromogranin C)
143.	11341	SCRG1	scrapie responsive protein 1
144.	6383	SDC2	syndecan 2 (heparan sulfate proteoglycan 1, cell surface-associated, fibroglycan)
145.	23753	SDF2L1	stromal cell-derived factor 2-like 1
146.	5265	SERPINA1	serine (or cysteine) proteinase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1
147.	5055	SERPINB2	serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 2
148.	5054	SERPINE1	serine (or cysteine) proteinase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1
149.	5176	SERPINF1	serine (or cysteine) proteinase inhibitor, clade F (alpha-2 antiplasmin, pigment epithelium derived factor), member 1
150.	6422	SFRP1	secreted frizzled-related protein 1
151.	6490	SILV	silver homolog (mouse)
152.	89886	SLAMF9	SLAM family member 9
153.	6574	SLC20A1	solute carrier family 20 (phosphate transporter), member 1
154.	55356	SLC22A15	solute carrier family 22 (organic cation transporter), member 15
155.	57419	SLC24A3	solute carrier family 24 (sodium/potassium/calcium exchanger), member 3
156.	81031	SLC2A10	solute carrier family 2 (facilitated glucose transporter), member 10
157.	6515	SLC2A3	solute carrier family 2 (facilitated glucose transporter), member 3

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
158.	29015	SLC43A3	solute carrier family 43, member 3
159.	6526	SLC5A3	solute carrier family 5 (inositol transporters), member 3
160.	84189	SLITRK6	SLIT and NTRK-like family, member 6
161.	25992	SNED1	sushi, nidogen and EGF-like domains 1
162.	6678	SPARC	secreted protein, acidic, cysteine-rich (osteonectin)
163.	6695	SPOCK	sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican)
164.	6713	SQLE	squalene epoxidase
165.	8406	SRPX	sushi-repeat-containing protein, X-linked
166.	6484	ST3GAL4	ST3 beta-galactoside alpha-2,3-sialyltransferase 4
167.	8869	ST3GAL5	ST3 beta-galactoside alpha-2,3-sialyltransferase 5
168.	10610	ST6GALNAC 2	ST6 (alpha-N-acetyl-neuraminy-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 2
169.	6781	STC1	stanniocalcin 1
170.	55240	STEAP3	STEAP family member 3
171.	6863	TAC1	tachykinin, precursor 1 (substance K, substance P, neurokinin 1, neurokinin 2, neuromedin L, neurokinin alpha, neuropeptide K, neuropeptide gamma)
172.	7980	TFPI2	tissue factor pathway inhibitor 2
173.	7039	TGFA	transforming growth factor, alpha
174.	7040	TGFB1	transforming growth factor, beta 1 (Camurati-Engelmann disease)
175.	7045	TGFB1	transforming growth factor, beta-induced, 68kDa
176.	7057	THBS1	thrombospondin 1
177.	7076	TIMP1	tissue inhibitor of metalloproteinase 1 (erythroid potentiating activity, collagenase inhibitor)
178.	7078	TIMP3	tissue inhibitor of metalloproteinase 3 (Sorsby fundus dystrophy, pseudoinflammatory)
179.	4071	TM4SF1	transmembrane 4 L six family member 1
180.	55076	TMEM45A	transmembrane protein 45A
181.	56937	TMEPAI	transmembrane, prostate androgen induced RNA
182.	7130	TNFAIP6	tumor necrosis factor, alpha-induced protein 6
183.	51330	TNFRSF12A	tumor necrosis factor receptor superfamily, member 12A
184.	27242	TNFRSF21	tumor necrosis factor receptor superfamily, member 21
185.	8600	TNFSF11	tumor necrosis factor (ligand) superfamily, member 11
186.	219699	UNC5B	unc-5 homolog B (C. elegans)
187.	79001	VKORC1	vitamin K epoxide reductase complex, subunit 1
188.	8565	YARS	tyrosyl-tRNA synthetase

TABLE XIII

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	55347	ABHD10	abhydrolase domain containing 10
2.	55	ACPP	acid phosphatase, prostate
3.	8728	ADAM19	a disintegrin and metalloproteinase domain 19 (meltrin beta)
4.	51129	ANGPTL4	angiopoietin-like 4
5.	7873	ARMET	arginine-rich, mutated in early stage tumors
6.	9331	B4GALT6	UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide 6
7.	961	CD47	CD47 antigen (Rh-related antigen, integrin-associated signal transducer)
8.	965	CD58	CD58 antigen, (lymphocyte function-associated antigen 3)
9.	966	CD59	CD59 antigen p18-20 (antigen identified by monoclonal antibodies 16.3A5, EJ16, EJ30, EL32 and G344)
10.	50515	CHST11	carbohydrate (chondroitin 4) sulfotransferase 11
11.	9976	CLEC2B	C-type lectin domain family 2, member B
12.	169044	COL22A1	collagen, type XXII, alpha 1
13.	131566	DCBLD2	discoidin, CUB and LCCL domain containing 2
14.	1909	EDNRA	endothelin receptor type A
15.	54097	FAM3B	family with sequence similarity 3, member B
16.	170384	FUT11	fucosyltransferase 11 (alpha (1,3) fucosyltransferase)
17.	8693	GALNT4	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 4 (GalNAc-T4)
18.	11010	GLIPR1	GLI pathogenesis-related 1 (glioma)
19.	3156	HMGCR	3-hydroxy-3-methylglutaryl-Coenzyme A reductase
20.	9955	HS3ST3A1	heparan sulfate (glucosamine) 3-O-sulfotransferase 3A1
21.	51478	HSD17B7	hydroxysteroid (17-beta) dehydrogenase 7
22.	3460	IFNGR2	interferon gamma receptor 2 (interferon gamma transducer 1)
23.	3589	IL11	interleukin 11
24.	54928	IMPA3	myo-inositol monophosphatase A3
25.	3696	ITGB8	integrin, beta 8
26.	3949	LDLR	low density lipoprotein receptor (familial hypercholesterolemia)
27.	10019	LNK	lymphocyte adaptor protein
28.	7804	LRP8	low density lipoprotein receptor-related protein 8, apolipoprotein e receptor
29.	4501	MT1X	metallothionein 1X
30.	388677	NOTCH2NL	Notch homolog 2 (Drosophila) N-terminal like
31.	4907	NT5E	5'-nucleotidase, ecto (CD73)
32.	4922	NTS	neurotensin
33.	5033	P4HA1	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha polypeptide I

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
34.	5329	PLAUR	plasminogen activator, urokinase receptor
35.	119548	PNLIPRP3	pancreatic lipase-related protein 3
36.	25907	RIS1	Ras-induced senescence 1
37.	6574	SLC20A1	solute carrier family 20 (phosphate transporter), member 1
38.	6526	SLC5A3	solute carrier family 5 (inositol transporters), member 3
39.	6713	SQLE	squalene epoxidase
40.	55240	STEAP3	STEAP family member 3
41.	7057	THBS1	thrombospondin 1
42.	4071	TM4SF1	transmembrane 4 L six family member 1
43.	55076	TMEM45A	transmembrane protein 45A
44.	51330	TNFRSF12A	tumor necrosis factor receptor superfamily, member 12A
45.	5825	ABCD3	ATP-binding cassette, sub-family D (ALD), member 3
46.	51205	ACP6	acid phosphatase 6, lysophosphatidic
47.	92370	ACPL2	acid phosphatase-like 2
48.	56172	ANKH	ankylosis, progressive homolog (mouse)
49.	533	ATP6V0B	ATPase, H ⁺ transporting, lysosomal 21kDa, V0 subunit c''
50.	25825	BACE2	beta-site APP-cleaving enzyme 2
51.	10134	BCAP31	B-cell receptor-associated protein 31
52.	171546	C14orf147	chromosome 14 open reading frame 147
53.	135228	CD109	CD109 antigen (Gov platelet alloantigens)
54.	91851	CHRD1	chordin-like 1
55.	149111	CNIH3	cornichon homolog 3 (Drosophila)
56.	1282	COL4A1	collagen, type IV, alpha 1
57.	1293	COL6A3	collagen, type VI, alpha 3
58.	54480	CSG1cA-T	chondroitin sulfate glucuronyltransferase
59.	1462	CSPG2	chondroitin sulfate proteoglycan 2 (versican)
60.	1469	CST1	cystatin SN
61.	1604	DAF	decay accelerating factor for complement (CD55, Cromer blood group system)
62.	1908	EDN3	endothelin 3
63.	1942	EFNA1	ephrin-A1
64.	389835	FAM72A	family with sequence similarity 72, member A
65.	2191	FAP	fibroblast activation protein, alpha
66.	84824	FCRLM1	Fc receptor-like and mucin-like 1
67.	2224	FDPS	farnesyl diphosphate synthase (farnesyl pyrophosphate synthetase, dimethylallyltranstransferase, geranyltranstransferase)
68.	2246	FGF1	fibroblast growth factor 1 (acidic)
69.	2258	FGF13	fibroblast growth factor 13
70.	55744	FLJ10803	hypothetical protein FLJ10803
71.	220042	FLJ25416	hypothetical protein FLJ25416
72.	2335	FN1	fibronectin 1
73.	2589	GALNT1	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 1 (GalNAc-T1)
74.	2717	GLA	galactosidase, alpha
75.	2778	GNAS	GNAS complex locus

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
76.	1404	HAPLN1	hyaluronan and proteoglycan link protein 1
77.	23463	ICMT	isoprenylcysteine carboxyl methyltransferase
78.	51124	IER3IP1	immediate early response 3 interacting protein 1
79.	3488	IGFBP5	insulin-like growth factor binding protein 5
80.	3598	IL13RA2	interleukin 13 receptor, alpha 2
81.	9466	IL27RA	interleukin 27 receptor, alpha
82.	79070	KDELC1	KDEL (Lys-Asp-Glu-Leu) containing 1
83.	9865	KIAA0644	KIAA0644 gene product
84.	57214	KIAA1199	KIAA1199
85.	3910	LAMA4	laminin, alpha 4
86.	26045	LRRTM2	leucine rich repeat transmembrane neuronal 2
87.	84314	MGC10744	hypothetical protein MGC10744
88.	4856	NOV	nephroblastoma overexpressed gene
89.	5122	PCSK1	proprotein convertase subtilisin/kexin type 1
90.	10130	PDIA6	protein disulfide isomerase family A, member 6
91.	51365	PLA1A	phospholipase A1 member A
92.	9536	PTGES	prostaglandin E synthase
93.	57333	RCN3	reticulocalbin 3, EF-hand calcium binding domain
94.	949	SCARB1	scavenger receptor class B, member 1
95.	7857	SCG2	secretogranin II (chromogranin C)
96.	23753	SDF2L1	stromal cell-derived factor 2-like 1
97.	5054	SERPINE1	serine (or cysteine) proteinase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1
98.	6422	SFRP1	secreted frizzled-related protein 1
99.	6490	SILV	silver homolog (mouse)
100.	57419	SLC24A3	solute carrier family 24 (sodium/potassium/calcium exchanger), member 3
101.	29015	SLC43A3	solute carrier family 43, member 3
102.	25992	SNED1	sushi, nidogen and EGF-like domains 1
103.	6678	SPARC	secreted protein, acidic, cysteine-rich (osteonectin)
104.	8406	SRPX	sushi-repeat-containing protein, X-linked
105.	6484	ST3GAL4	ST3 beta-galactoside alpha-2,3- sialyltransferase 4
106.	8869	ST3GAL5	ST3 beta-galactoside alpha-2,3- sialyltransferase 5
107.	7039	TGFA	transforming growth factor, alpha
108.	7040	TGFB1	transforming growth factor, beta 1 (Camurati-Engelmann disease)
109.	7045	TGFBI	transforming growth factor, beta-induced, 68kDa
110.	7076	TIMP1	tissue inhibitor of metalloproteinase 1 (erythroid potentiating activity, collagenase inhibitor)
111.	56937	TMEPAI	transmembrane, prostate androgen induced RNA

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
112.	7130	TNFAIP6	tumor necrosis factor, alpha-induced protein 6
113.	27242	TNFRSF21	tumor necrosis factor receptor superfamily, member 21
114.	79001	VKORC1	vitamin K epoxide reductase complex, subunit 1
115.	133	ADM	adrenomedullin
116.	284	ANGPT1	angiopoietin 1
117.	374	AREG	amphiregulin (schwannoma-derived growth factor)
118.	650	BMP2	bone morphogenetic protein 2
119.	260436	C4orf7	chromosome 4 open reading frame 7
120.	51208	CLDN18	claudin 18
121.	1520	CTSS	cathepsin S
122.	2919	CXCL1	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
123.	6374	CXCL5	chemokine (C-X-C motif) ligand 5
124.	30001	ERO1L	ERO1-like (<i>S. cerevisiae</i>)
125.	3037	HAS2	hyaluronan synthase 2
126.	3082	HGF	hepatocyte growth factor (hepapoietin A; scatter factor)
127.	29923	HIG2	hypoxia-inducible protein 2
128.	3383	ICAM1	intercellular adhesion molecule 1 (CD54), human rhinovirus receptor
129.	3486	IGFBP3	insulin-like growth factor binding protein 3
130.	3490	IGFBP7	insulin-like growth factor binding protein 7
131.	3576	IL8	interleukin 8
132.	3624	INHBA	inhibin, beta A (activin A, activin AB alpha polypeptide)
133.	3678	ITGA5	integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
134.	3976	LIF	leukemia inhibitory factor (cholinergic differentiation factor)
135.	4017	LOXL2	lysyl oxidase-like 2
136.	4884	NPTX1	neuronal pentraxin I
137.	4885	NPTX2	neuronal pentraxin II
138.	8828	NRP2	neuropilin 2
139.	10135	PBEF1	pre-B-cell colony enhancing factor 1
140.	5806	PTX3	pentraxin-related gene, rapidly induced by IL-1 beta
141.	5265	SERPINA1	serine (or cysteine) proteinase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1
142.	5055	SERPINB2	serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 2
143.	89886	SLAMF9	SLAM family member 9
144.	6515	SLC2A3	solute carrier family 2 (facilitated glucose transporter), member 3
145.	6695	SPOCK	sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican)
146.	6781	STC1	stanniocalcin 1
147.	7980	TFPI2	tissue factor pathway inhibitor 2

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
148.	7078	TIMP3	tissue inhibitor of metalloproteinase 3 (Sorsby fundus dystrophy, pseudoinflammatory)
149.	8600	TNFSF11	tumor necrosis factor (ligand) superfamily, member 11

TABLE XIV

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	348	APOE	apolipoprotein E
2.	80830	APOL6	apolipoprotein L, 6
3.	56913	C1GALT1	core 1 synthase, glycoprotein-N- acetylgalactosamine 3-beta- galactosyltransferase, 1
4.	820	CAMP	cathelicidin antimicrobial peptide
5.	1312	COMT	catechol-O-methyltransferase
6.	285440	CYP4V2	cytochrome P450, family 4, subfamily V, polypeptide 2
7.	2065	ERBB3	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
8.	9518	GDF15	growth differentiation factor 15
9.	3459	IFNGR1	interferon gamma receptor 1
10.	4052	LTBP1	latent transforming growth factor beta binding protein 1
11.	85315	PAQR8	progesterin and adipoQ receptor family member VIII
12.	5831	PYCR1	pyrroline-5-carboxylate reductase 1
13.	5176	SERPINF1	serine (or cysteine) proteinase inhibitor, clade F (alpha-2 antiplasmin, pigment epithelium derived factor), member 1
14.	55356	SLC22A15	solute carrier family 22 (organic cation transporter), member 15
15.	81031	SLC2A10	solute carrier family 2 (facilitated glucose transporter), member 10
16.	84189	SLITRK6	SLIT and NTRK-like family, member 6
17.	360	AQP3	aquaporin 3
18.	23245	ASTN2	astrotactin 2
19.	1638	DCT	dopachrome tautomerase (dopachrome delta- isomerase, tyrosine-related protein 2)
20.	4921	DDR2	discoidin domain receptor family, member 2
21.	92737	DNER	delta-notch-like EGF repeat-containing transmembrane
22.	1842	ECM2	extracellular matrix protein 2, female organ and adipocyte specific
23.	10468	FST	follicle-stimulating hormone receptor-like 1
24.	83872	HMCN1	hemicentin 1
25.	55243	KIRREL	kin of IRRE like (Drosophila)
26.	84708	LNK	ligand of numb-protein X
27.	4312	MMP1	matrix metalloproteinase 1 (interstitial collagenase)
28.	4589	MUC7	mucin 7, salivary
29.	5376	PMP22	peripheral myelin protein 22

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
30.	5954	RCN1	reticulocalbin 1, EF-hand calcium binding domain
31.	10313	RTN3	reticulon 3
32.	10610	ST6GALNAC2	ST6 (alpha-N-acetyl-neuraminy1-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 2
33.	6863	TAC1	tachykinin, precursor 1 (substance K, substance P, neurokinin 1, neurokinin 2, neuromedin L, neurokinin alpha, neuropeptide K, neuropeptide gamma)
34.	8565	YARS	tyrosyl-tRNA synthetase
35.	358	AQP1	aquaporin 1 (channel-forming integral protein, 28kDa)
36.	1306	COL15A1	collagen, type XV, alpha 1
37.	11341	SCRG1	scrapie responsive protein 1
38.	6383	SDC2	syndecan 2 (heparan sulfate proteoglycan 1, cell surface-associated, fibroglycan)
39.	219699	UNC5B	unc-5 homolog B (C. elegans)

TABLE XV

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	5825	ABCD3	ATP-binding cassette, sub-family D (ALD), member 3
2.	92370	ACPL2	acid phosphatase-like 2
3.	8728	ADAM19	a disintegrin and metalloproteinase domain 19 (meltrin beta)
4.	150	ADRA2A	adrenergic, alpha-2A-, receptor
5.	187	AGTRL1	angiotensin II receptor-like 1
6.	284	ANGPT1	angiopoietin 1
7.	56172	ANKH	ankylosis, progressive homolog (mouse)
8.	358	AQP1	aquaporin 1 (channel-forming integral protein, 28kDa)
9.	360	AQP3	aquaporin 3
10.	374	AREG	amphiregulin (schwannoma-derived growth factor)
11.	7873	ARMET	arginine-rich, mutated in early stage tumors
12.	444	ASPH	aspartate beta-hydroxylase
13.	23245	ASTN2	astrotactin 2
14.	533	ATP6V0B	ATPase, H ⁺ transporting, lysosomal 21kDa, V0 subunit c''
15.	9331	B4GALT6	UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide 6
16.	25825	BACE2	beta-site APP-cleaving enzyme 2
17.	10134	BCAP31	B-cell receptor-associated protein 31
18.	638	BIK	BCL2-interacting killer (apoptosis-inducing)
19.	55717	BRWD2	bromodomain and WD repeat domain containing 2
20.	171546	C14orf147	chromosome 14 open reading frame 147
21.	56913	C1GALT1	core 1 synthase, glycoprotein-N-acetylgalactosamine 3-beta-galactosyltransferase, 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
22.	260436	C4orf7	chromosome 4 open reading frame 7
23.	57082	CASC5	cancer susceptibility candidate 5
24.	857	CAV1	caveolin 1, caveolae protein, 22kDa
25.	9236	CCPG1	cell cycle progression 1
26.	135228	CD109	CD109 antigen (Gov platelet alloantigens)
27.	965	CD58	CD58 antigen, (lymphocyte function-associated antigen 3)
28.	966	CD59	CD59 antigen p18-20 (antigen identified by monoclonal antibodies 16.3A5, EJ16, EJ30, EL32 and G344)
29.	50515	CHST11	carbohydrate (chondroitin 4) sulfotransferase 11
30.	9435	CHST2	carbohydrate (N-acetylglucosamine-6-O) sulfotransferase 2
31.	51208	CLDN18	claudin 18
32.	9976	CLEC2B	C-type lectin domain family 2, member B
33.	79789	CLMN	calmin (calponin-like, transmembrane)
34.	149111	CNIH3	cornichon homolog 3 (Drosophila)
35.	1312	COMT	catechol-O-methyltransferase
36.	7852	CXCR4	chemokine (C-X-C motif) receptor 4
37.	285440	CYP4V2	cytochrome P450, family 4, subfamily V, polypeptide 2
38.	1604	DAF	decay accelerating factor for complement (CD55, Cromer blood group system)
39.	131566	DCBLD2	discoidin, CUB and LCCL domain containing 2
40.	1638	DCT	dopachrome tautomerase (dopachrome delta-isomerase, tyrosine-related protein 2)
41.	4921	DDR2	discoidin domain receptor family, member 2
42.	92737	DNER	delta-notch-like EGF repeat-containing transmembrane
43.	26355	E2IG5	growth and transformation-dependent protein
44.	1842	ECM2	extracellular matrix protein 2, female organ and adipocyte specific
45.	1909	EDNRA	endothelin receptor type A
46.	1942	EFNA1	ephrin-A1
47.	2065	ERBB3	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
48.	30001	ERO1L	ERO1-like (S. cerevisiae)
49.	2109	ETFB	electron-transfer-flavoprotein, beta polypeptide
50.	2191	FAP	fibroblast activation protein, alpha
51.	84824	FCRLM1	Fc receptor-like and mucin-like 1
52.	2224	FDPS	farnesyl diphosphate synthase (farnesyl pyrophosphate synthetase, dimethylallyltranstransferase, geranyltranstransferase)
53.	55744	FLJ10803	hypothetical protein FLJ10803
54.	55273	FLJ10970	hypothetical protein FLJ10970
55.	54947	FLJ20481	hypothetical protein FLJ20481
56.	55026	FLJ20716	hypothetical protein FLJ20716
57.	170384	FUT11	fucosyltransferase 11 (alpha (1,3) fucosyltransferase)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
58.	2589	GALNT1	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 1 (GalNAc-T1)
59.	8693	GALNT4	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 4 (GalNAc-T4)
60.	84634	GPR54	G protein-coupled receptor 54
61.	53831	GPR84	G protein-coupled receptor 84
62.	9052	GPRC5A	G protein-coupled receptor, family C, group 5, member A
63.	3037	HAS2	hyaluronan synthase 2
64.	9709	HERPUD1	homocysteine-inducible, endoplasmic reticulum stress-inducible, ubiquitin-like domain member 1
65.	3082	HGF	hepatocyte growth factor (hepapoietin A; scatter factor)
66.	29923	HIG2	hypoxia-inducible protein 2
67.	83872	HMCN1	hemicentin 1
68.	3156	HMGCR	3-hydroxy-3-methylglutaryl-Coenzyme A reductase
69.	9955	HS3ST3A1	heparan sulfate (glucosamine) 3-O-sulfotransferase 3A1
70.	51478	HSD17B7	hydroxysteroid (17-beta) dehydrogenase 7
71.	3383	ICAM1	intercellular adhesion molecule 1 (CD54), human rhinovirus receptor
72.	23463	ICMT	isoprenylcysteine carboxyl methyltransferase
73.	8870	IER3	immediate early response 3
74.	51124	IER3IP1	immediate early response 3 interacting protein 1
75.	8519	IFITM1	interferon induced transmembrane protein 1 (9-27)
76.	3459	IFNGR1	interferon gamma receptor 1
77.	3460	IFNGR2	interferon gamma receptor 2 (interferon gamma transducer 1)
78.	3486	IGFBP3	insulin-like growth factor binding protein 3
79.	3598	IL13RA2	interleukin 13 receptor, alpha 2
80.	9466	IL27RA	interleukin 27 receptor, alpha
81.	54928	IMPA3	myo-inositol monophosphatase A3
82.	3638	INSIG1	insulin induced gene 1
83.	51141	INSIG2	insulin induced gene 2
84.	3678	ITGA5	integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
85.	3696	ITGB8	integrin, beta 8
86.	56704	JPH1	junctionophilin 1
87.	3755	KCNG1	potassium voltage-gated channel, subfamily G, member 1
88.	3783	KCNN4	potassium intermediate/small conductance calcium-activated channel, subfamily N, member 4
89.	3790	KCNS3	potassium voltage-gated channel, delayed-rectifier, subfamily S, member 3
90.	9865	KIAA0644	KIAA0644 gene product

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
91.	55243	KIRREL	kin of IRRE like (Drosophila)
92.	3949	LDLR	low density lipoprotein receptor (familial hypercholesterolemia)
93.	339047	LOC339047	hypothetical protein LOC339047
94.	51234	LOC51234	hypothetical protein LOC51234
95.	4017	LOXL2	lysyl oxidase-like 2
96.	7804	LRP8	low density lipoprotein receptor-related protein 8, apolipoprotein e receptor
97.	26045	LRRTM2	leucine rich repeat transmembrane neuronal 2
98.	84314	MGC10744	hypothetical protein MGC10744
99.	130612	MGC99813	similar to RIKEN cDNA A230078I05 gene
100.	8195	MKKS	McKusick-Kaufman syndrome
101.	23531	MMD	monocyte to macrophage differentiation-associated
102.	117195	MRGPRX3	MAS-related GPR, member X3
103.	8828	NRP2	neuropilin 2
104.	10726	NUDC	nuclear distribution gene C homolog (A. nidulans)
105.	54852	PAQR5	progesterin and adipoQ receptor family member V
106.	85315	PAQR8	progesterin and adipoQ receptor family member VIII
107.	9488	PIGB	phosphatidylinositol glycan, class B
108.	5329	PLAUR	plasminogen activator, urokinase receptor
109.	5376	PMP22	peripheral myelin protein 22
110.	8613	PPAP2B	phosphatidic acid phosphatase type 2B
111.	5723	PSPH	phosphoserine phosphatase
112.	23210	PTDSR	phosphatidylserine receptor
113.	9536	PTGES	prostaglandin E synthase
114.	25907	RIS1	Ras-induced senescence 1
115.	9781	RNF144	ring finger protein 144
116.	221687	RNF182	ring finger protein 182
117.	6241	RRM2	ribonucleotide reductase M2 polypeptide
118.	10313	RTN3	reticulon 3
119.	6307	SC4MOL	sterol-C4-methyl oxidase-like
120.	949	SCARB1	scavenger receptor class B, member 1
121.	7857	SCG2	secretogranin II (chromogranin C)
122.	6335	SCN9A	sodium channel, voltage-gated, type IX, alpha
123.	6383	SDC2	syndecan 2 (heparan sulfate proteoglycan 1, cell surface-associated, fibroglycan)
124.	23753	SDF2L1	stromal cell-derived factor 2-like 1
125.	5265	SERPINA1	serine (or cysteine) proteinase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1
126.	6490	SILV	silver homolog (mouse)
127.	89886	SLAMF9	SLAM family member 9
128.	6563	SLC14A1	solute carrier family 14 (urea transporter), member 1 (Kidd blood group)
129.	9123	SLC16A3	solute carrier family 16 (monocarboxylic acid transporters), member 3
130.	6509	SLC1A4	solute carrier family 1 (glutamate/neutral amino acid transporter), member 4

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
131.	6510	SLC1A5	solute carrier family 1 (neutral amino acid transporter), member 5
132.	6574	SLC20A1	solute carrier family 20 (phosphate transporter), member 1
133.	55356	SLC22A15	solute carrier family 22 (organic cation transporter), member 15
134.	6583	SLC22A4	solute carrier family 22 (organic cation transporter), member 4
135.	57419	SLC24A3	solute carrier family 24 (sodium/potassium/calcium exchanger), member 3
136.	6513	SLC2A1	solute carrier family 2 (facilitated glucose transporter), member 1
137.	81031	SLC2A10	solute carrier family 2 (facilitated glucose transporter), member 10
138.	114134	SLC2A13	solute carrier family 2 (facilitated glucose transporter), member 13
139.	144195	SLC2A14	solute carrier family 2 (facilitated glucose transporter), member 14
140.	6515	SLC2A3	solute carrier family 2 (facilitated glucose transporter), member 3
141.	11182	SLC2A6	solute carrier family 2 (facilitated glucose transporter), member 6
142.	222553	SLC35F1	solute carrier family 35, member F1
143.	6520	SLC3A2	solute carrier family 3 (activators of dibasic and neutral amino acid transport), member 2
144.	29015	SLC43A3	solute carrier family 43, member 3
145.	9497	SLC4A7	solute carrier family 4, sodium bicarbonate cotransporter, member 7
146.	6526	SLC5A3	solute carrier family 5 (inositol transporters), member 3
147.	55117	SLC6A15	solute carrier family 6, member 15
148.	6541	SLC7A1	solute carrier family 7 (cationic amino acid transporter, y ⁺ system), member 1
149.	23657	SLC7A11	solute carrier family 7, (cationic amino acid transporter, y ⁺ system) member 11
150.	8140	SLC7A5	solute carrier family 7 (cationic amino acid transporter, y ⁺ system), member 5
151.	28231	SLC04A1	solute carrier organic anion transporter family, member 4A1
152.	84189	SLITRK6	SLIT and NTRK-like family, member 6
153.	81848	SPRY4	sprouty homolog 4 (Drosophila)
154.	6713	SQLE	squalene epoxidase
155.	8406	SRPX	sushi-repeat-containing protein, X-linked
156.	6484	ST3GAL4	ST3 beta-galactoside alpha-2,3-sialyltransferase 4
157.	8869	ST3GAL5	ST3 beta-galactoside alpha-2,3-sialyltransferase 5
158.	10610	ST6GALNAC2	ST6 (alpha-N-acetyl-neuraminy-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 2
159.	55240	STEAP3	STEAP family member 3
160.	11075	STMN2	stathmin-like 2
161.	6857	SYT1	synaptotagmin I
162.	7039	TGFA	transforming growth factor, alpha

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
163.	7040	TGFB1	transforming growth factor, beta 1 (Camurati-Engelmann disease)
164.	4071	TM4SF1	transmembrane 4 L six family member 1
165.	55076	TMEM45A	transmembrane protein 45A
166.	81671	TMEM49	transmembrane protein 49
167.	56937	TMEPAI	transmembrane, prostate androgen induced RNA
168.	51330	TNFRSF12A	tumor necrosis factor receptor superfamily, member 12A
169.	27242	TNFRSF21	tumor necrosis factor receptor superfamily, member 21
170.	8600	TNFSF11	tumor necrosis factor (ligand) superfamily, member 11
171.	79054	TRPM8	transient receptor potential cation channel, subfamily M, member 8
172.	219699	UNC5B	unc-5 homolog B (C. elegans)
173.	79001	VKORC1	vitamin K epoxide reductase complex, subunit 1
174.	7439	VMD2	vitelliform macular dystrophy 2 (Best disease, bestrophin)

TABLE XVI

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	8728	ADAM19	a disintegrin and metalloproteinase domain 19 (meltrin beta)
2.	187	AGTRL1	angiotensin II receptor-like 1
3.	7873	ARMET	arginine-rich, mutated in early stage tumors
4.	444	ASPH	aspartate beta-hydroxylase
5.	9331	B4GALT6	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 6
6.	638	BIK	BCL2-interacting killer (apoptosis- inducing)
7.	961	CD47	CD47 antigen (Rh-related antigen, integrin-associated signal transducer)
8.	965	CD58	CD58 antigen, (lymphocyte function- associated antigen 3)
9.	966	CD59	CD59 antigen p18-20 (antigen identified by monoclonal antibodies 16.3A5, EJ16, EJ30, EL32 and G344)
10.	50515	CHST11	carbohydrate (chondroitin 4) sulfotransferase 11
11.	9976	CLEC2B	C-type lectin domain family 2, member B
12.	131566	DCBLD2	discoidin, CUB and LCCL domain containing 2
13.	26355	E2IG5	growth and transformation-dependent protein
14.	1909	EDNRA	endothelin receptor type A
15.	170384	FUT11	fucosyltransferase 11 (alpha (1,3) fucosyltransferase)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
16.	8693	GALNT4	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 4 (GalNAc-T4)
17.	9052	GPRC5A	G protein-coupled receptor, family C, group 5, member A
18.	3156	HMGCR	3-hydroxy-3-methylglutaryl-Coenzyme A reductase
19.	9955	HS3ST3A1	heparan sulfate (glucosamine) 3-O-sulfotransferase 3A1
20.	51478	HSD17B7	hydroxysteroid (17-beta) dehydrogenase 7
21.	3460	IFNGR2	interferon gamma receptor 2 (interferon gamma transducer 1)
22.	54928	IMPA3	myo-inositol monophosphatase A3
23.	3638	INSIG1	insulin induced gene 1
24.	51141	INSIG2	insulin induced gene 2
25.	3696	ITGB8	integrin, beta 8
26.	3783	KCNN4	potassium intermediate/small conductance calcium-activated channel, subfamily N, member 4
27.	3949	LDLR	low density lipoprotein receptor (familial hypercholesterolemia)
28.	7804	LRP8	low density lipoprotein receptor-related protein 8, apolipoprotein e receptor
29.	23531	MMD	monocyte to macrophage differentiation-associated
30.	54852	PAQR5	progesterin and adipoQ receptor family member V
31.	5329	PLAUR	plasminogen activator, urokinase receptor
32.	8613	PPAP2B	phosphatidic acid phosphatase type 2B
33.	23210	PTDSR	phosphatidylserine receptor
34.	25907	RIS1	Ras-induced senescence 1
35.	6307	SC4MOL	sterol-C4-methyl oxidase-like
36.	6563	SLC14A1	solute carrier family 14 (urea transporter), member 1 (Kidd blood group)
37.	9123	SLC16A3	solute carrier family 16 (monocarboxylic acid transporters), member 3
38.	6574	SLC20A1	solute carrier family 20 (phosphate transporter), member 1
39.	6583	SLC22A4	solute carrier family 22 (organic cation transporter), member 4
40.	6513	SLC2A1	solute carrier family 2 (facilitated glucose transporter), member 1
41.	114134	SLC2A13	solute carrier family 2 (facilitated glucose transporter), member 13
42.	9497	SLC4A7	solute carrier family 4, sodium bicarbonate cotransporter, member 7
43.	6526	SLC5A3	solute carrier family 5 (inositol transporters), member 3
44.	55117	SLC6A15	solute carrier family 6, member 15
45.	28231	SLCO4A1	solute carrier organic anion transporter family, member 4A1
46.	6713	SQLE	squalene epoxidase
47.	55240	STEAP3	STEAP family member 3
48.	4071	TM4SF1	transmembrane 4 L six family member 1
49.	55076	TMEM45A	transmembrane protein 45A

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
50.	81671	TMEM49	transmembrane protein 49
51.	51330	TNFRSF12A	tumor necrosis factor receptor superfamily, member 12A
52.	5825	ABCD3	ATP-binding cassette, sub-family D (ALD), member 3
53.	92370	ACPL2	acid phosphatase-like 2
54.	56172	ANKH	ankylosis, progressive homolog (mouse)
55.	533	ATP6V0B	ATPase, H ⁺ transporting, lysosomal 21kDa, V0 subunit c''
56.	25825	BACE2	beta-site APP-cleaving enzyme 2
57.	10134	BCAP31	B-cell receptor-associated protein 31
58.	171546	C14orf147	chromosome 14 open reading frame 147
59.	57082	CASC5	cancer susceptibility candidate 5
60.	135228	CD109	CD109 antigen (Gov platelet alloantigens)
61.	9435	CHST2	carbohydrate (N-acetylglucosamine-6-O) sulfotransferase 2
62.	149111	CNIH3	cornichon homolog 3 (Drosophila)
63.	1604	DAF	decay accelerating factor for complement (CD55, Cromer blood group system)
64.	1942	EFNA1	ephrin-A1
65.	2109	ETFB	electron-transfer-flavoprotein, beta polypeptide
66.	2191	FAP	fibroblast activation protein, alpha
67.	84824	FCRLM1	Fc receptor-like and mucin-like 1
68.	2224	FDPS	farnesyl diphosphate synthase (farnesyl pyrophosphate synthetase, dimethylallyltranstransferase, geranyltranstransferase)
69.	55744	FLJ10803	hypothetical protein FLJ10803
70.	55026	FLJ20716	hypothetical protein FLJ20716
71.	2589	GALNT1	UDP-N-acetyl-alpha-D- galactosamine:polypeptide N- acetylglactosaminyltransferase 1 (GalNAc- T1)
72.	23463	ICMT	isoprenylcysteine carboxyl methyltransferase
73.	51124	IER3IP1	immediate early response 3 interacting protein 1
74.	8519	IFITM1	interferon induced transmembrane protein 1 (9-27)
75.	3598	IL13RA2	interleukin 13 receptor, alpha 2
76.	9466	IL27RA	interleukin 27 receptor, alpha
77.	9865	KIAA0644	KIAA0644 gene product
78.	51234	LOC51234	hypothetical protein LOC51234
79.	26045	LRRTM2	leucine rich repeat transmembrane neuronal 2
80.	84314	MGC10744	hypothetical protein MGC10744
81.	8195	MKKS	McKusick-Kaufman syndrome
82.	10726	NUDC	nuclear distribution gene C homolog (A. nidulans)
83.	9536	PTGES	prostaglandin E synthase
84.	9781	RNF144	ring finger protein 144
85.	221687	RNF182	ring finger protein 182
86.	6241	RRM2	ribonucleotide reductase M2 polypeptide
87.	949	SCARB1	scavenger receptor class B, member 1
88.	7857	SCG2	secretogranin II (chromogranin C)

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
89.	23753	SDF2L1	stromal cell-derived factor 2-like 1
90.	6490	SILV	silver homolog (mouse)
91.	57419	SLC24A3	solute carrier family 24 (sodium/potassium/calcium exchanger), member 3
92.	11182	SLC2A6	solute carrier family 2 (facilitated glucose transporter), member 6
93.	29015	SLC43A3	solute carrier family 43, member 3
94.	81848	SPRY4	sprouty homolog 4 (Drosophila)
95.	8406	SRPX	sushi-repeat-containing protein, X-linked
96.	6484	ST3GAL4	ST3 beta-galactoside alpha-2,3- sialyltransferase 4
97.	8869	ST3GAL5	ST3 beta-galactoside alpha-2,3- sialyltransferase 5
98.	7039	TGFA	transforming growth factor, alpha
99.	7040	TGFB1	transforming growth factor, beta 1 (Camurati-Engelmann disease)
100.	56937	TMEPAI	transmembrane, prostate androgen induced RNA
101.	27242	TNFRSF21	tumor necrosis factor receptor superfamily, member 21
102.	79054	TRPM8	transient receptor potential cation channel, subfamily M, member 8
103.	79001	VKORC1	vitamin K epoxide reductase complex, subunit 1
104.	284	ANGPT1	angiopoietin 1
105.	374	AREG	amphiregulin (schwannoma-derived growth factor)
106.	260436	C4orf7	chromosome 4 open reading frame 7
107.	51208	CLDN18	claudin 18
108.	7852	CXCR4	chemokine (C-X-C motif) receptor 4
109.	30001	ERO1L	ERO1-like (S. cerevisiae)
110.	84634	GPR54	G protein-coupled receptor 54
111.	53831	GPR84	G protein-coupled receptor 84
112.	3037	HAS2	hyaluronan synthase 2
113.	3082	HGF	hepatocyte growth factor (hepapoietin A; scatter factor)
114.	29923	HIG2	hypoxia-inducible protein 2
115.	3383	ICAM1	intercellular adhesion molecule 1 (CD54), human rhinovirus receptor
116.	8870	IER3	immediate early response 3
117.	3486	IGFBP3	insulin-like growth factor binding protein 3
118.	3678	ITGA5	integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
119.	56704	JPH1	junctophilin 1
120.	4017	LOXL2	lysyl oxidase-like 2
121.	117195	MRGPRX3	MAS-related GPR, member X3
122.	8828	NRP2	neuropilin 2
123.	5265	SERPINA1	serine (or cysteine) proteinase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1
124.	89886	SLAMF9	SLAM family member 9
125.	144195	SLC2A14	solute carrier family 2 (facilitated glucose transporter), member 14

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
126.	6515	SLC2A3	solute carrier family 2 (facilitated glucose transporter), member 3
127.	11075	STMN2	stathmin-like 2
128.	8600	TNFSF11	tumor necrosis factor (ligand) superfamily, member 11

TABLE XVII

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	55717	BRWD2	bromodomain and WD repeat domain containing 2
2.	56913	C1GALT1	core 1 synthase, glycoprotein-N-acetylgalactosamine 3-beta-galactosyltransferase, 1
3.	1312	COMT	catechol-O-methyltransferase
4.	285440	CYP4V2	cytochrome P450, family 4, subfamily V, polypeptide 2
5.	2065	ERBB3	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
6.	55273	FLJ10970	hypothetical protein FLJ10970
7.	3459	IFNGR1	interferon gamma receptor 1
8.	3790	KCNS3	potassium voltage-gated channel, delayed-rectifier, subfamily S, member 3
9.	339047	LOC339047	hypothetical protein LOC339047
10.	130612	MGC99813	similar to RIKEN cDNA A230078I05 gene
11.	85315	PAQR8	progesterin and adipoQ receptor family member VIII
12.	6335	SCN9A	sodium channel, voltage-gated, type IX, alpha
13.	6510	SLC1A5	solute carrier family 1 (neutral amino acid transporter), member 5
14.	55356	SLC22A15	solute carrier family 22 (organic cation transporter), member 15
15.	81031	SLC2A10	solute carrier family 2 (facilitated glucose transporter), member 10
16.	84189	SLITRK6	SLIT and NTRK-like family, member 6
17.	7439	VMD2	vitelliform macular dystrophy 2 (Best disease, bestrophin)
18.	150	ADRA2A	adrenergic, alpha-2A-, receptor
19.	360	AQP3	aquaporin 3
20.	23245	ASTN2	astrotactin 2
21.	857	CAV1	caveolin 1, caveolae protein, 22kDa
22.	79789	CLMN	calmin (calponin-like, transmembrane)
23.	1638	DCT	dopachrome tautomerase (dopachrome delta-isomerase, tyrosine-related protein 2)
24.	4921	DDR2	discoidin domain receptor family, member 2
25.	92737	DNER	delta-notch-like EGF repeat-containing transmembrane
26.	1842	ECM2	extracellular matrix protein 2, female organ and adipocyte specific
27.	54947	FLJ20481	hypothetical protein FLJ20481
28.	9709	HERPUD1	homocysteine-inducible, endoplasmic reticulum stress-inducible, ubiquitin-like domain member 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
29.	83872	HMCN1	hemicentin 1
30.	3755	KCNG1	potassium voltage-gated channel, subfamily G, member 1
31.	55243	KIRREL	kin of IRRE like (Drosophila)
32.	5376	PMP22	peripheral myelin protein 22
33.	5723	PSPH	phosphoserine phosphatase
34.	10313	RTN3	reticulon 3
35.	6509	SLC1A4	solute carrier family 1 (glutamate/neutral amino acid transporter), member 4
36.	222553	SLC35F1	solute carrier family 35, member F1
37.	6520	SLC3A2	solute carrier family 3 (activators of dibasic and neutral amino acid transport), member 2
38.	6541	SLC7A1	solute carrier family 7 (cationic amino acid transporter, y+ system), member 1
39.	23657	SLC7A11	solute carrier family 7, (cationic amino acid transporter, y+ system) member 11
40.	8140	SLC7A5	solute carrier family 7 (cationic amino acid transporter, y+ system), member 5
41.	10610	ST6GALNAC2	ST6 (alpha-N-acetyl-neuraminy-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 2
42.	6857	SYT1	synaptotagmin I
43.	358	AQP1	aquaporin 1 (channel-forming integral protein, 28kDa)
44.	9236	CCPG1	cell cycle progression 1
45.	9488	PIGB	phosphatidylinositol glycan, class B
46.	6383	SDC2	syndecan 2 (heparan sulfate proteoglycan 1, cell surface-associated, fibroglycan)
47.	219699	UNC5B	unc-5 homolog B (C. elegans)

TABLE XVIII

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	ALDOA	226	aldolase A, fructose-bisphosphate
2.	ALDOC	230	aldolase C, fructose-bisphosphate
3.	ENO1	2023	enolase 1, (alpha)
4.	ENO2	2026	enolase 2 (gamma, neuronal)
5.	HK1	3098	hexokinase 1
6.	HK2	3099	hexokinase 2
7.	LDHA	3939	lactate dehydrogenase A
8.	PFKFB3	5209	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 3
9.	PFKFB4	5210	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4
10.	PFKP	5214	phosphofructokinase, platelet
11.	PGK1	5230	phosphoglycerate kinase 1
12.	PKM2	5315	pyruvate kinase, muscle
13.	SLC14A1	6563	solute carrier family 14 (urea transporter), member 1 (Kidd blood group)
14.	SLC15A4	121260	solute carrier family 15, member 4
15.	SLC16A1	6566	solute carrier family 16 (monocarboxylic acid transporters), member 1

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
16.	SLC16A3	9123	solute carrier family 16 (monocarboxylic acid transporters), member 3
17.	SLC1A1	6505	solute carrier family 1 (neuronal/epithelial high affinity glutamate transporter, system Xag), member 1
18.	SLC20A1	6574	solute carrier family 20 (phosphate transporter), member 1
19.	SLC22A4	6583	solute carrier family 22 (organic cation transporter), member 4
20.	SLC24A3	57419	solute carrier family 24 (sodium/potassium/calcium exchanger), member 3
21.	SLC25A37	51312	solute carrier family 25, member 37
22.	SLC2A1	6513	solute carrier family 2 (facilitated glucose transporter), member 1
23.	SLC2A14	144195	solute carrier family 2 (facilitated glucose transporter), member 14
24.	SLC2A3	6515	solute carrier family 2 (facilitated glucose transporter), member 3
25.	SLC2A6	11182	solute carrier family 2 (facilitated glucose transporter), member 6
26.	SLC35E1	79939	solute carrier family 35, member E1
27.	SLC39A14	23516	solute carrier family 39 (zinc transporter), member 14
28.	SLC39A6	25800	solute carrier family 39 (zinc transporter), member 6
29.	SLC39A7	7922	solute carrier family 39 (zinc transporter), member 7
30.	SLC41A2	84102	solute carrier family 41, member 2
31.	SLC43A3	29015	solute carrier family 43, member 3
32.	SLC4A7	9497	solute carrier family 4, sodium bicarbonate cotransporter, member 7
33.	SLC5A3	6526	solute carrier family 5 (inositol transporters), member 3
34.	SLC6A15	55117	solute carrier family 6, member 15
35.	SLC6A6	6533	solute carrier family 6 (neurotransmitter transporter, taurine), member 6
36.	SLC04A1	28231	solute carrier organic anion transporter family, member 4A1

TABLE XIX

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
1.	358	AQP1	aquaporin 1 (channel-forming integral protein, 28kDa)
2.	360	AQP3	aquaporin 3
3.	9563	H6PD	hexose-6-phosphate dehydrogenase (glucose 1-dehydrogenase)
4.	5208	PFKFB2	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2
5.	4891	SLC11A2	solute carrier family 11 (proton-coupled divalent metal ion transporters), member 2

	ENTREZ GENE ID	GENE SYMBOL	DESCRIPTION
6.	6558	SLC12A2	solute carrier family 12 (sodium/potassium/chloride transporters), member 2
7.	9122	SLC16A4	solute carrier family 16 (monocarboxylic acid transporters), member 4
8.	6509	SLC1A4	solute carrier family 1 (glutamate/neutral amino acid transporter), member 4
9.	6510	SLC1A5	solute carrier family 1 (neutral amino acid transporter), member 5
10.	6575	SLC20A2	solute carrier family 20 (phosphate transporter), member 2
11.	55356	SLC22A15	solute carrier family 22 (organic cation transporter), member 15
12.	9962	SLC23A2	solute carrier family 23 (nucleobase transporters), member 2
13.	788	SLC25A20	solute carrier family 25 (carnitine/acylcarnitine translocase), member 20
14.	253512	SLC25A30	solute carrier family 25, member 30
15.	291	SLC25A4	solute carrier family 25 (mitochondrial carrier; adenine nucleotide translocator), member 4
16.	284129	SLC26A11	solute carrier family 26, member 11
17.	376497	SLC27A1	solute carrier family 27 (fatty acid transporter), member 1
18.	81031	SLC2A10	solute carrier family 2 (facilitated glucose transporter), member 10
19.	1317	SLC31A1	solute carrier family 31 (copper transporters), member 1
20.	10559	SLC35A1	solute carrier family 35 (CMP-sialic acid transporter), member A1
21.	55032	SLC35A5	solute carrier family 35, member A5
22.	51000	SLC35B3	solute carrier family 35, member B3
23.	9906	SLC35E2	solute carrier family 35, member E2
24.	222553	SLC35F1	solute carrier family 35, member F1
25.	81539	SLC38A1	solute carrier family 38, member 1
26.	54407	SLC38A2	solute carrier family 38, member 2
27.	6520	SLC3A2	solute carrier family 3 (activators of dibasic and neutral amino acid transport), member 2
28.	55117	SLC6A15	solute carrier family 6, member 15
29.	6541	SLC7A1	solute carrier family 7 (cationic amino acid transporter, y ⁺ system), member 1
30.	23657	SLC7A11	solute carrier family 7, (cationic amino acid transporter, y ⁺ system) member 11
31.	8140	SLC7A5	solute carrier family 7 (cationic amino acid transporter, y ⁺ system), member 5

TABLE XX

	ENTREZ GENE ID	GENESYMBOL	DESCRIPTION
1	5208	PFKFB2	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2

2	5209	PFKFB3	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 3
3	5210	PFKFB4	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4
4	226	ALDOA	aldolase A, fructose-bisphosphate
5	230	ALDOC	aldolase C, fructose-bisphosphate
6	2023	ENO1	enolase 1, (alpha)
7	2026	ENO2	enolase 2 (gamma, neuronal)
8	3098	HK1	hexokinase 1
9	3099	HK2	hexokinase 2
10	9563	H6PD	hexose-6-phosphate dehydrogenase (glucose 1-dehydrogenase)
11	3939	LDHA	lactate dehydrogenase A
12	5214	PFKP	phosphofructokinase, platelet
13	5230	PGK1	phosphoglycerate kinase 1
14	5315	PKM2	pyruvate kinase, muscle
15	6513	SLC2A1	solute carrier family 2 (facilitated glucose transporter), member 1
16	81031	SLC2A10	solute carrier family 2 (facilitated glucose transporter), member 10
17	144195	SLC2A14	solute carrier family 2 (facilitated glucose transporter), member 14
18	6515	SLC2A3	solute carrier family 2 (facilitated glucose transporter), member 3
19	11182	SLC2A6	solute carrier family 2 (facilitated glucose transporter), member 6

The gene expression of the biomarkers of Table I or any of its subsets, Tables II through VII, may be down- or up-regulated in response to the inhibition of Raf kinase. The same is true of the biomarkers of Table VIII. Similarly, gene expression of Table IX, Table XII, or Table XV biomarkers may be down- or up-regulated in response to the inhibition of Raf kinase, although it is preferred that such biomarkers are down- or up-regulated in accordance with the guidance provided by Tables X/XI, Tables XIII/XIV, or Tables XVI/XVII, respectively. In some instances, the detection of the presence of gene expression of one of the biomarkers may be sufficient to identify the patient for treatment or provide indication of a favorable response to treatment. In other instances, one may prefer the guidance provided by a higher level of alteration of gene expression. This is typically within the judgment of the treatment provider.

Further, in some instances, one may find identifying the most suitable patients for treatment for a particular cell proliferative disorder or following the response of those patients may best be accomplished by detecting an alteration in level of gene expression of two or more biomarkers or by a specific combination of biomarkers or even direction of alteration of gene expression. For example, a particular two of the biomarkers identified in Table I may be most correlated with a given condition and, thus, guide a certain treatment.

Alternatively, a ratio of the relative levels of gene expression of two particular biomarkers may be indicative of the suitability of a given treatment for a patient. It is also contemplated that a particular condition may have a signature such as the up-regulation of one or more particular biomarker or biomarkers and/or the down-regulation of one or more other particular biomarker or biomarkers. The biomarkers may be over-expressed or under-expressed in a sample obtained from the patient relative to baseline.

In the methods of the invention, determining presence of gene expression of a biomarker encompasses detecting presence or absence of gene expression of the biomarker, as well as determining an alteration in the level of gene expression of the biomarker, such as by measuring gene expression level of the biomarker and comparing the measured gene expression level to baseline. Selecting a patient evidencing gene expression of a biomarker includes evidencing as by detecting the presence of gene expression of the biomarker. As used herein, determining presence of gene expression may be direct or indirect, such as by obtaining results from a sample or evaluating results obtained from a sample by another. In a method of monitoring response of a patient to treatment, evaluating response of a patient based on detection of the presence of gene expression of a biomarker includes, for example, continuing treatment if gene expression of at least one biomarker is detected, as well as discontinuing or altering treatment if such gene expression is not detected.

The alteration in the level of gene expression may be compared to a baseline level. A baseline level may be established in several ways. For example, in a method of monitoring response of a patient to treatment, a biological sample may be obtained from the patient and tested for measurement of gene expression prior to introduction of a Raf kinase inhibitor to the patient. Thus, the profile of gene expression levels, if any, of biomarkers in a treatment-naïve individual may serve as a baseline for that individual and later tests performed on samples obtained once treatment has begun may be compared to the individual's baseline. Alternatively, a baseline may be established through creation of a guide that consolidates information on gene expression levels taken from a pool of healthy or treatment-naïve individuals or even from an appropriate cell culture. Further, information on baseline levels of gene expression of particular biomarkers may be gathered from published sources or a gene database. Thus, baseline could be obtained or established from gene expression level information of similar patient populations not known to have been treated with a Raf kinase inhibitor. Baseline could also be represented by the gene expression level of a reference standard, such as a reference sample (or average of several

reference samples) obtained from lung, pancreas, thyroid, or other tissue of the patient or another. If the reference sample is not obtained from the patient, then it is preferably of the same tissue type as the biological sample obtained from the patient.

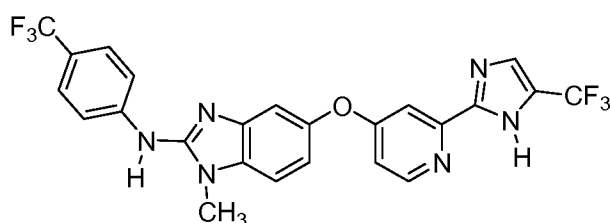
In one aspect, a biological sample is obtained from the patient after receipt of an amount of inhibitor of Raf kinase, whether a therapeutically effective amount or a sub-therapeutically effective amount, which may be adequate for some purposes. The sample is preferably isolated from impurities, or may otherwise be a functional derivative of the starting material obtained from the patient or another. Cell or tissue samples used for this invention encompass body fluid (including but not limited to blood, serum, or plasma), solid tissue samples, tissue cultures or cells derived therefrom and the progeny thereof, and sections or smears prepared from any of these sources, or any other samples that may contain genetic information. The biological sample may be obtained, for example, from lung, pancreas, thyroid, ovary, bladder, breast, prostate, liver, colon, myeloid tissue, skin, or tumor tissue. The sample may be obtained from a region showing evidence a cell proliferative disorder in the patient. Measurement of the expression of the biomarkers is described in further detail below.

Inhibitors of Raf

Compounds which are inhibitors of Raf, and particularly of the enzyme Raf kinase, are useful in conjunction with the methods of the invention. Since the enzyme is a downstream effector of p21 Ras, Raf inhibitors are useful in pharmaceutical compositions for human or veterinary use where inhibition of the Raf kinase pathway is indicated, e.g., in the treatment of tumors and/or cancerous cell growth mediated by Raf kinase. In particular, such compounds are useful in the treatment of human or animal, e.g., murine cancer, since the progression of these cancers is dependent upon the Ras protein signal transduction cascade and therefore is susceptible to treatment by interruption of the cascade by inhibiting Raf kinase activity. Such compounds are useful in treating solid cancers, such as, for example, carcinomas (e.g., of the lungs, pancreas, thyroid, ovaries, bladder, breast, prostate, liver, or colon), melanomas, myeloid disorders (e.g., myeloid leukemia, multiple myeloma and erythroleukemia), or adenomas (e.g., villous colon adenoma) or sarcomas (e.g., osteosarcoma).

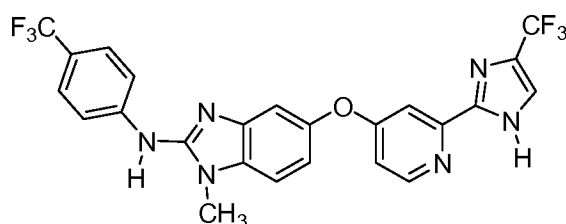
Some examples of inhibitors of Raf kinase include the following compounds: CHIR-265 (Chiron Corporation); BAY 43-9006 (sorafenib)(Nexavar® Bayer AG); ISIS-5132 (CGP-69846A)(Isis Pharmaceuticals); ODN-698 (Novartis); ISIS-13650 (Isis

Pharmaceuticals); LE-AON, Leraf-AON, LE-AON c-Raf, LE-5132 (NeoPharm); N-[3-[6-(3-Oxo-1,3-dihydro-2-benzofuran-5-ylamino)pyrazin-2-yl]phenyl]acetamide (Cancer Research UK); PLX-4720, PLX-3204, PLX-3331, PLX-4718, PLX-4735, PLX-4032 (Plexxikon); N-[5-[3-(1-Cyano-1-methylethyl)benzamido]-2-methylphenyl]-4-oxo-3,4-dihydroquinazoline-6-carboxamide (AstraZeneca); and N-[5-[3-(1-Cyano-1-methylethyl)benzamido]-2-methylphenyl]-3-methyl-4-oxo-3,4-dihydroquinazoline-6-carboxamide (AstraZeneca). CHIR-265 has the following structures (drawn in the two alternative tautomeric forms):



{1-Methyl-5-[2-(5-trifluoromethyl-1H-imidazol-2-yl)-pyridin-4-yloxy]-1H-benzimidazol-2-yl}-(4-trifluoromethyl-phenyl)-amine

and



{1-Methyl-5-[2-(4-trifluoromethyl-1H-imidazol-2-yl)-pyridin-4-yloxy]-1H-benzimidazol-2-yl}-(4-trifluoromethyl-phenyl)-amine.

As is art recognized, tautomeric forms of a compound merely represent alternative structures that can be in equilibrium depending upon, for example, the site of protonation of the imidazole amino group. Both structures, in fact, are intended to represent CHIR-265.

CHIR-265 is an exemplary Raf-inhibitory compound for use in the methods of this invention, CHIR-265 exhibits potent inhibition of the MAPK signaling pathway. The compound is a potent inhibitor of B-Raf, c-Raf, mutant B-Raf, and mutant Ras in biochemical assays, demonstrating inhibition of mutant B-Raf activity (IC₅₀ of 0.019 μM), inhibition of B-Raf activity (IC₅₀ of 0.068 μM), and inhibition of c-Raf activity (IC₅₀ of 0.005 μM). Treatment with the compound caused tumor regression in three mutant B-Raf

xenograft models (A375M, MEXF276, and HT29) tested, and tumor growth inhibition in a K-Ras (HCT116) driven xenograft model. CHIR-265 also showed inhibition of the Raf pathway in other mutant B-Raf cell lines tested, including SKMEL28, A2058, G361, COLO205, SKMEL31, and MALME-3M, as well as a K-Ras cell line (SW620) and an N-Ras cell line (SKMEL2). Furthermore, assays in preclinical models indicated that CHIR-265 showed a dose and time dependent inhibition of both MEK target phosphorylation and the signaling molecules downstream from Raf in the MAPK pathway including BIM, Cyclin D1, p27Kip and pAKT.

This compound and related compounds have been described in several patents and applications, the entire disclosures of which are incorporated herein by reference and for all purposes: U.S. Serial No. 60/712,539, filed August 30, 2005, U.S. Serial No. 60/731,591, filed October 27, 2005, U.S. Serial No. 60/774,684, filed February 17, 2006, U.S. Serial No. 60/713,108, filed August 30, 2005, U.S. Serial No. 11/513,959, filed August 30, 2006, and U.S. Serial No. 11/513,745, filed August 30, 2006.

Each of the references listed above is hereby incorporated by reference in its entirety and for all purposes as if fully set forth herein.

Measurement of Gene Expression

As noted previously, the measurement of gene expression is performed on a sample, preferably a biological sample, obtained from the patient. For example, the patient may undergo a blood draw or tissue biopsy and the measurement may be made on the resulting sample. Depending upon the technique utilized, the test may be performed on an isolated fraction of the sample or in situ.

Detection of the presence of gene expression of the biomarker of interest and/or detection of the level of alteration in the gene expression compared to baseline may be made utilizing standard techniques.

Detection can be by any appropriate method, including for example, detecting the quantity of mRNA transcribed from the gene or the quantity of cDNA produced from the reverse transcription of the mRNA transcribed from the gene or the quantity of the polypeptide or protein encoded by the gene. These methods can be performed on a sample by sample basis or modified for high throughput analysis. Additionally, databases containing quantitative full or partial transcripts or protein sequences isolated from a cell

sample can be searched and analyzed for the presence and amount of transcript or expressed gene product.

In assaying for an alteration in mRNA level, nucleic acid contained in the aforementioned samples is first extracted according to standard methods in the art. For instance, mRNA can be isolated using various lytic enzymes or chemical solutions according to the procedures set forth in Sambrook et al. (1989), supra or extracted by nucleic-acid-binding resins following the accompanying instructions provided by manufacturers. The mRNA of the biomarker contained in the extracted nucleic acid sample is then detected by hybridization (e.g. Northern blot analysis) and/or amplification procedures according to methods widely known in the art or based on the methods exemplified herein.

Nucleic acid molecules having at least 10 nucleotides and exhibiting sequence complementarity or homology to the biomarkers described herein find utility as hybridization probes. It is known in the art that a “perfectly matched” probe is not needed for a specific hybridization. Minor changes in probe sequence achieved by substitution, deletion, or insertion of a small number of bases do not affect the hybridization specificity. In general, as much as 20% base-pair mismatch (when optimally aligned) can be tolerated.

In certain embodiments, it will be advantageous to employ probes or primers in combination with an appropriate means, such as a label, for detecting hybridization and therefore complementary sequences. A wide variety of appropriate indicator means are known in the art, including fluorescent, radioactive, enzymatic, or other ligands, such as avidin/biotin, which are capable of giving a detectable signal. In preferred embodiments, one will likely desire to employ a fluorescent label or an enzyme tag, such as urease, alkaline phosphatase, or peroxidase, instead of radioactive or other environmental undesirable reagents. In the case of enzyme tags, colorimetric indicator substrates are known, which can be employed to provide a means visible to the human eye or spectrophotometrically, to identify specific hybridization with complementary nucleic acid-containing samples.

Hybridization reactions can be performed under conditions of different “stringency.” Relevant conditions include temperature, ionic strength, time of incubation, the presence of additional solutes in the reaction mixture such as formamide, and the washing procedure. Higher stringency conditions are those conditions, such as higher temperature and lower

sodium ion concentration, which require higher minimum complementarity between hybridizing elements for a stable hybridization complex to form. Conditions that increase the stringency of a hybridization reaction are widely known and published in the art. See, for example, (Sambrook, et al., (1989), supra).

5 Briefly, multiple RNAs are isolated from cell or tissue samples as described above. Optionally, the gene transcripts can be converted to cDNA. A sampling of the biomarker transcript(s) is/are subjected to sequence-specific analysis and quantified. These gene transcript sequence abundances are compared to the baseline.

10 Alternatively any one of gene copy number, transcription, or translation of a biomarker can be determined using known techniques. For example, an amplification method such as PCR may be useful. General procedures for PCR are taught in MacPherson et al., PCR: A PRACTICAL APPROACH, (IRL Press at Oxford University Press (1991)). However, PCR conditions used for each application reaction are empirically determined. A number of parameters influence the success of a reaction. Among them are annealing
15 temperature and time, extension time, Mg^{2+} ATP concentration, pH, and the relative concentration of primers, templates, and deoxyribonucleotides. After amplification, the resulting DNA fragments can be detected by agarose gel electrophoresis followed by visualization with ethidium bromide staining and ultraviolet illumination.

In one aspect, the biomarkers are detected and quantitated by hybridization to a
20 probe that specifically hybridizes to the appropriate probe for that biomarker. The probes also can be attached to a solid support for use in high throughput screening assays using methods known in the art. PCT WO 97/10365 and U.S. Patent numbers 5,405,783, 5,412,087 and 5,445,934, for example, disclose the construction of high density oligonucleotide chips which can contain one or more of the sequences disclosed herein.
25 Using the methods disclosed in U.S. Patent numbers 5,405,783, 5,412,087 and 5,445,934, the probes of this invention are synthesized on a derivatized glass surface. Photoprotected nucleoside phosphoramidites are coupled to the glass surface, selectively deprotected by photolysis through a photolithographic mask, and reacted with a second protected nucleoside phosphoramidite. The coupling/deprotection process is repeated until the
30 desired probe is complete.

In one aspect, the expression level of the biomarker is determined through exposure of a nucleic acid sample to the probe-modified chip. Extracted nucleic acid is labeled, for

example, with a fluorescent tag, preferably during an amplification step. Hybridization of the labeled sample is performed at an appropriate stringency level. The degree of probe-nucleic acid hybridization is quantitatively measured using a detection device, such as a confocal microscope. See U.S. Pat Nos. 5,578,832 and 5,631,734.

5 In an alternative embodiment, the method is performed by the detecting and comparing of two or more biomarkers that have been pre-determined to be predictive of a therapeutic response. In a yet further embodiment, a plurality of biomarkers, e.g., see Tables I through XX, supra, are used in the method of this invention. In these
10 embodiments, the biomarkers or probes that specifically hybridize and recognize the biomarker of interest are arranged on a high density oligonucleotide probe array that provides an effective means of monitoring expression of a multiplicity of genes.

 In another preferred embodiment, the methods of this invention are used to monitor expression of the genes which specifically hybridize to the probes of this invention in response to defined stimuli, such as a drug or biologic.

15 In one embodiment, the hybridized nucleic acids are detected by detecting one or more labels attached to the sample nucleic acids. The labels may be incorporated by any of a number of means well known to those of skill in the art. However, in one aspect, the label is simultaneously incorporated during the amplification step in the preparation of the sample nucleic acid. Thus, for example, polymerase chain reaction (PCR) with labeled primers or
20 labeled nucleotides will provide a labeled amplification product. In a separate embodiment, transcription amplification, as described above, using a labeled nucleotide (e.g. fluorescein-labeled UTP and/or CTP) incorporates a label in to the transcribed nucleic acids.

 Alternatively, a label may be added directly to the original nucleic acid sample (e.g., mRNA, polyA, mRNA, cDNA, etc.) or to the amplification product after the amplification
25 is completed. Means of attaching labels to nucleic acids are well known to those of skill in the art and include, for example nick translation or end-labeling (e.g. with a labeled RNA) by kinasing of the nucleic acid and subsequent attachment (ligation) of a nucleic acid linker joining the sample nucleic acid to a label (e.g., a fluorophore).

 Detectable labels suitable for use in the present invention include any composition
30 detectable by spectroscopic, photochemical, biochemical, immunochemical, electrical, optical or chemical means. Useful labels in the present invention include biotin for staining with labeled streptavidin conjugate, magnetic beads (e.g., Dynabeads™), fluorescent dyes

(e.g., fluorescein, texas red, rhodamine, green fluorescent protein, and the like), radiolabels (e.g., ^3H , ^{125}I , ^{35}S , ^{14}C , or ^{32}P) enzymes (e.g., horse radish peroxidase, alkaline phosphatase and others commonly used in an ELISA), and colorimetric labels such as colloidal gold or colored glass or plastic (e.g., polystyrene, polypropylene, latex, etc.) beads. Patents
5 teaching the use of such labels include U.S. Patents Nos. 3,817,837; 3,850,752; 3,939,350; 3,996,345; 4,277,437; 4,275,149; and 4,366,241.

Means of detecting such labels are well known to those of skill in the art. Thus, for example, radiolabels may be detected using photographic film or scintillation counters, fluorescent markers may be detected using a photodetector to detect emitted light.

10 Enzymatic labels are typically detected by providing the enzyme with a substrate and detecting the reaction product produced by the action of the enzyme on the substrate, and colorimetric labels are detected by simply visualizing the colored label.

As described in more detail in WO 97/10365, the label may be added to the target (sample) nucleic acid(s) prior to, or after the hybridization. These are detectable labels that
15 are directly attached to or incorporated into the target (sample) nucleic acid prior to hybridization. In contrast, "indirect labels" are joined to the hybrid duplex after hybridization. Often, the indirect label is attached to a binding moiety that has been attached to the target nucleic acid prior to the hybridization. Thus, for example, the target nucleic acid may be biotinylated before the hybridization. After hybridization, an avidin-
20 conjugated fluorophore will bind the biotin bearing hybrid duplexes providing a label that is easily detected. For a detailed review of methods of labeling nucleic acids and detecting labeled hybridized nucleic acids see LABORATORY TECHNIQUES IN BIOCHEMISTRY AND MOLECULAR BIOLOGY, Vol. 24: Hybridization with Nucleic Acid Probes, P. Tijssen, ed. Elsevier, N.Y. (1993).

25 The nucleic acid sample also may be modified prior to hybridization to the high density probe array in order to reduce sample complexity thereby decreasing background signal and improving sensitivity of the measurement using the methods disclosed in WO 97/10365.

Results from the chip assay are typically analyzed using a computer software
30 program. See, for example, EP 0717 113 A2 and WO 95/20681. The hybridization data is read into the program, which calculates the expression level of the targeted gene(s). The figures may be compared against existing data sets of gene expression levels for diseased

and healthy individuals. A correlation between the obtained data and that of a set of a predetermined baseline identifies patients likely to be responsive to the therapy.

Also within the scope of this application is a database useful for the identification of patients likely to respond to a predetermined therapy, e.g., anti-Raf kinase therapy, wherein
5 the database contains a combination of base line gene expression data against which the patient sample can be compared using bioinformatic techniques known in the art.

The pre-determined baseline information is stored in a digital storage medium such that a data processing system for standardized representation of the genes that identify patients that are responsive to therapy. The data processing system is useful to analyze gene
10 expression between two samples. A suitable sample is isolated from the patient and then the genotype or phenotype of the cell or sample is determined using methods known in the art. In one aspect, the nucleic acids of the biomarkers if present in the sample are sequenced and transcribed to code. The sequences (in code form) from the sample are compared with the sequence(s) present in the database using homology search techniques. Greater than
15 90%, or alternatively, greater than 95% or alternatively, greater than or equal to 97% sequence identity between the test sequence and at least one sequence identified by the biomarkers identified in Tables I through XX is a positive indication that the polynucleotide from a biomarker has been isolated from the patient sample.

Expression level of the biomarker can also be determined by examining the protein
20 product. Determining the protein level involves (a) providing a biological sample containing expression product of the biomarker; and (b) measuring the amount of any immunospecific binding that occurs between an antibody that selectively recognizes and binds to the expression product of the biomarker in the sample, in which the amount of immunospecific binding indicates the level of the biomarker expression, or (c) monitoring
25 the binding of a protein that positively or negatively regulates a biomarker. This information is then compared to a pre-determined base line and analyzed to identify those patients suitable for therapy.

A variety of techniques are available in the art for protein analysis. They include but are not limited to radioimmunoassays, ELISA (enzyme linked immunosorbent assays),
30 "sandwich" immunoassays, immunoradiometric assays, in situ immunoassays (using e.g., colloidal gold, enzyme or radioisotope labels), western blot analysis, immunoprecipitation

assays, immunofluorescent assays, flow cytometry, immunohistochemistry, confocal microscopy, enzymatic assays, and PAGE-SDS.

Antibodies that specifically recognize and bind to the protein products of the expression products of the biomarkers are required for immunoassays. These may be
5 purchased from commercial vendors or generated and screened using methods well known in the art. See Harlow and Lane (1988) *supra*. and Sambrook et al. (1989) *supra*.

Treatment

Inhibition of Raf kinase is a useful avenue for treatment of cellular proliferative disease and particularly neoplastic disease. A patient may be beneficially treated by
10 administration of an inhibitor of Raf kinase, particularly a small molecule inhibitor (SMI) of Raf kinase. Thus, treatment according to the invention may constitute administration of one or more small molecule inhibitors of Raf kinase, such as those disclosed herein.

Some disease models in which the genetic profiling methods taught herein are especially useful include melanoma, thyroid cancer, ovarian cancer, colon cancer, liver
15 cancer, pancreatic cancer, and lung cancer.

Administration *in vivo* can be effected in one dose, continuously or intermittently throughout the course of treatment. Methods of determining the most effective means and dosage of administration are well known to those of skill in the art and will vary with the composition used for therapy, the purpose of the therapy, the target cell being treated, and
20 the subject being treated. Single or multiple administrations can be carried out with the dose level and pattern being selected by the treating physician. Suitable dosage formulations and methods of administering the agents may be empirically adjusted.

More particularly, an agent administered according to the invention may be administered for therapy by any suitable route including oral, rectal, nasal, topical
25 (including transdermal, aerosol, buccal, and sublingual), vaginal, parenteral (including subcutaneous, intramuscular, intravenous and intradermal) and pulmonary. It will also be appreciated that the preferred route will vary with the condition and age of the recipient and the disease being treated.

Ideally, the agent should be administered to achieve peak concentrations of the
30 active compound at sites of disease. This may be achieved, for example, by the intravenous injection of the agent, optionally in saline or orally administered, for example, as a tablet,

capsule, or syrup containing the active ingredient. Desirable blood levels of the agent may be maintained by a continuous infusion to provide a therapeutic amount of the active ingredient within disease tissue. In a specific embodiment, it may be desirable to administer pharmaceutical compositions locally to the area in need of treatment; this may be achieved by, for example, and not by way of limitation, local infusion during surgery, by injection, or by means of a catheter. The use of operative combinations may provide therapeutic combinations requiring a lower total dosage of each component agent than may be required when each individual therapeutic compound or drug is used alone, thereby reducing adverse effects.

While it is possible for the agent to be administered alone, it is preferable to present it as a pharmaceutical formulation comprising at least one active ingredient together with one or more pharmaceutically acceptable carriers, and optionally other therapeutic agents. Each carrier must be "acceptable" in the sense of being compatible with the other ingredients of the formulation and not injurious to the patient.

Pharmaceutical compositions utilized according to the methods of the invention may take the form of tablets, lozenges, granules, capsules, pills, ampoules, suppositories, or aerosol form. They may also take the form of suspensions, solutions, or emulsions of the active ingredient in aqueous or nonaqueous diluents, syrups, granulates, or powders. In addition to the key active ingredients, the pharmaceutical compositions can also contain other pharmaceutically active compounds or a plurality of compositions of the invention.

Formulations include those suitable for oral, rectal, nasal, topical (including transdermal, buccal and sublingual), vaginal, parenteral (including subcutaneous, intramuscular, intravenous and intradermal) and pulmonary administration. The formulations may conveniently be presented in unit dosage form and may be prepared by any methods well known in the art of pharmacy. Such methods include the step of bringing into association the active ingredient with the carrier which constitutes one or more accessory ingredients. In general, the formulations are prepared by uniformly and intimately bringing into association the active ingredient with liquid carriers or finely divided solid carriers or both and then, if necessary, shaping the product.

Formulations suitable for oral administration may be presented as discrete units such as capsules, cachets or tablets, each containing a predetermined amount of the active ingredient; as a powder or granules; as a solution or suspension in an aqueous or non-

aqueous liquid; or as an oil-in-water liquid emulsion or a water-in-oil liquid emulsion. The active ingredient may also be presented as a bolus, electuary or paste.

A tablet may be made by compression or molding, optionally with one or more accessory ingredients. Compressed tablets may be prepared by compressing in a suitable machine the active ingredient in a free-flowing form such as a powder or granules, optionally mixed with a binder (e.g., povidone, gelatin, hydroxypropylmethyl cellulose), lubricant, inert diluent, preservative, disintegrant (e.g., sodium starch glycolate, cross-linked povidone, cross-linked sodium carboxymethyl cellulose) surface-active or dispersing agent. Molded tablets may be made by molding in a suitable machine a mixture of the powdered compound moistened with an inert liquid diluent. The tablets may optionally be coated or scored and may be formulated so as to provide slow or controlled release of the active ingredient therein using, for example, hydroxypropylmethyl cellulose in varying proportions to provide the desired release profile. Tablets may optionally be provided with an enteric coating, to provide release in parts of the gut other than the stomach.

Formulations suitable for topical administration in the mouth include lozenges comprising the active ingredient in a flavored basis, usually sucrose and acacia or tragacanth; pastilles comprising the active ingredient in an inert basis such as gelatin and glycerin or sucrose and acacia; and mouthwashes comprising the active ingredient in a suitable liquid carrier.

Pharmaceutical compositions for topical administration according to the present invention may be formulated as an ointment, cream, suspension, lotion, powder, solution, paste, gel, spray, aerosol, or oil. Alternatively, a formulation may comprise a patch or a dressing such as a bandage or adhesive plaster impregnated with active ingredients and optionally one or more excipients or diluents.

If desired, the aqueous phase of the cream base may include, for example, at least about 30% w/w of a polyhydric alcohol, i.e., an alcohol having two or more hydroxyl groups such as propylene glycol, butane-1,3-diol, mannitol, sorbitol, glycerol and polyethylene glycol and mixtures thereof. The topical formulations may desirably include a compound which enhances absorption or penetration of the agent through the skin or other affected areas. Examples of such dermal penetration enhancers include dimethylsulfoxide and related analogues.

The oily phase of the emulsions of a composition used according to this invention may be constituted from known ingredients in a known manner. While this phase may comprise merely an emulsifier (otherwise known as an emulgent), it desirably comprises a mixture of at least one emulsifier with a fat or an oil or with both a fat and an oil.

5 Preferably, a hydrophilic emulsifier is included together with a lipophilic emulsifier which acts as a stabilizer. It is also preferred to include both an oil and a fat. Together, the emulsifier(s) with or without stabilizer(s) make up the so-called emulsifying wax, and the wax together with the oil and/or fat make up the so-called emulsifying ointment base which forms the oily dispersed phase of the cream formulations.

10 Emulgents and emulsion stabilizers suitable for use in the formulation of the present invention include Tween 60, Span 80, cetostearyl alcohol, myristyl alcohol, glyceryl monostearate and sodium lauryl sulphate.

The choice of suitable oils or fats for the formulation is based on achieving the desired cosmetic properties, since the solubility of the active compound in most oils likely
15 to be used in pharmaceutical emulsion formulations is very low. Thus the cream should preferably be a non-greasy, non-staining and washable product with suitable consistency to avoid leakage from tubes or other containers. Straight or branched chain, mono- or dibasic alkyl esters such as di-isoadipate, isocetyl stearate, propylene glycol diester of coconut fatty acids, isopropyl myristate, decyl oleate, isopropyl palmitate, butyl stearate, 2-ethylhexyl
20 palmitate or a blend of branched chain esters known as Crodamol CAP may be used, the last three being preferred esters. These may be used alone or in combination depending on the properties required. Alternatively, high melting point lipids such as white soft paraffin and/or liquid paraffin or other mineral oils can be used.

Formulations suitable for topical administration to the eye also include eye drops
25 wherein the active ingredient is dissolved or suspended in a suitable carrier, especially an aqueous solvent for the agent.

Formulations for rectal administration may be presented as a suppository with a suitable base comprising, for example, cocoa butter or a salicylate.

Formulations suitable for vaginal administration may be presented as pessaries,
30 tampons, creams, gels, pastes, foams, or spray formulations containing in addition to the agent, such carriers as are known in the art to be appropriate.

Formulations suitable for nasal administration, wherein the carrier is a solid, include a coarse powder having a particle size, for example, in the range of about 20 to about 500 microns which is administered in the manner in which snuff is taken, i.e., by rapid inhalation through the nasal passage from a container of the powder held close up to the nose. Suitable formulations wherein the carrier is a liquid for administration as, for example, nasal spray, nasal drops, or by aerosol administration by nebulizer, include aqueous or oily solutions of the agent.

Formulations suitable for parenteral administration include aqueous and non-aqueous isotonic sterile injection solutions that may contain anti-oxidants, buffers, bacteriostats, and solutes that render the formulation isotonic with the blood of the intended recipient. Other suitable formulations include aqueous and non-aqueous sterile suspensions that may include suspending agents, thickening agents and liposomes or other microparticulate systems that are designed to target the compound to blood components or one or more organs. The formulations may be presented in unit-dose or multi-dose sealed containers, for example, ampoules and vials, and may be stored in a freeze-dried (lyophilized) condition requiring only the addition of the sterile liquid carrier, for example water for injections, immediately prior to use. Extemporaneous injection solutions and suspensions may be prepared from sterile powders, granules and tablets of the kind previously described.

Various delivery systems are known and can be used to administer a therapeutic agent in accordance with the methods of the invention, e.g., encapsulation in liposomes, microparticles, microcapsules, expression by recombinant cells, receptor-mediated endocytosis (See e.g., Wu and Wu (1987) J. Biol. Chem. 262:4429-4432), construction of a therapeutic nucleic acid as part of a retroviral or other vector, etc. Methods of delivery include but are not limited to intra-arterial, intra-muscular, intravenous, intranasal and oral routes.

As noted, the compounds can also be administered in the form of liposomes. As is known in the art, liposomes are generally derived from phospholipids or other lipid substances. Liposomes are formed by mono- or multi-lamellar hydrated liquid crystals that are dispersed in an aqueous medium. Any non-toxic, physiologically acceptable and metabolizable lipid capable of forming liposomes can be used. The present compositions in liposome form can contain, in addition to a compound of the present invention, stabilizers, preservatives, excipients, and the like. The preferred lipids are the phospholipids and

phosphatidyl cholines (lecithins), both natural and synthetic. Methods to form liposomes are known in the art. See, for example, Prescott, Ed., *Methods in Cell Biology*, Volume XIV, Academic Press, New York, N.W., p. 33 *et seq.* (1976).

Preferred unit dosage formulations are those containing a daily dose or unit, daily
5 subdose, as herein above-recited, or an appropriate fraction thereof, of an agent. Effective amounts of the compounds generally include any amount sufficient to detectably inhibit Raf activity by Raf kinase activity assays known to those having ordinary skill in the art or by detecting an inhibition or alleviation of symptoms of cancer.

The amount of active ingredient that may be combined with the carrier materials to
10 produce a single dosage form will vary depending upon the subject treated and the particular mode of administration. It will be understood, however, that the specific dose level for any particular patient will depend upon a variety of factors including the activity of the specific compound employed, the age, body weight, general health, sex, diet, time of administration, route of administration, rate of excretion, drug combination, and the severity
15 of the particular disease for which the patient is undergoing therapy. The therapeutically effective amount for a given situation can be readily determined by routine experimentation and is within the skill and judgment of the ordinary clinician.

For purposes of the present invention, a therapeutically effective dose will generally be a total daily dose administered to a host in single or divided doses and may be in
20 amounts, for example, of from 0.001 to 1000 mg/kg body weight daily and more preferred from 1.0 to 30 mg/kg body weight daily. Dosage unit compositions may contain such amounts of submultiples thereof to make up the daily dose.

Therapeutic agents utilized according to this invention, include, but are not limited to small molecules. They may be polynucleotides, peptides, antibodies, antigen presenting
25 cells and include immune effector cells that specifically recognize and act upon cells expressing the gene of interest. One can determine if a subject or patient will be beneficially treated by the use of agents by screening one or more of the agents against tumor cells isolated from the subject or patient using methods known in the art.

Alternatively, small molecule inhibitors may be used in combination with other
30 treatments. For instance, inhibitors that are not small molecules, e.g. biologicals, polynucleotides, gene therapy, etc. may be used in conjunction in a combination protocol for treatment. In some cases, the small molecule Raf kinase inhibitor may be used primarily

as an initial aid in identifying patient candidates and other types of inhibitors may be used subsequently, or vice versa. In another alternative, one inhibitor may be used prior to a gene expression level measurement step and another may be used subsequently.

As noted, while the Raf kinase inhibitory compounds can be administered as the sole active pharmaceutical agent, they can also be used in combination with one or more other agents used in the treatment of cancer. The Raf kinase inhibitory compounds are also useful in combination with known therapeutic agents and anti-cancer agents, and combinations of the presently disclosed compounds with other anti-cancer or chemotherapeutic agents are within the scope of the invention. Examples of such agents can be found in *Cancer*

Principles and Practice of Oncology, V. T. Devita and S. Hellman (editors), 6th edition (Feb. 15, 2001), Lippincott Williams & Wilkins Publishers. The health care provider should be able to discern which combinations of agents would be useful based on the particular characteristics of the drugs and the cancer involved.

Methods for treating Raf kinase related disorders in a human or animal subject in need of such treatment may include administering to the subject an amount of a Raf kinase inhibitory compound effective to reduce or prevent tumor growth in the subject in combination with at least one additional agent for the treatment of cancer. A number of suitable anticancer agents to be used as combination therapeutics are contemplated for use in conjunction with the methods of the present invention. Advantageous administration of numerous anticancer agents such as: agents that induce apoptosis; polynucleotides (e.g., ribozymes); polypeptides (e.g., enzymes); drugs; biological mimetics; alkaloids; alkylating agents; antitumor antibiotics; antimetabolites; hormones; platinum compounds; monoclonal antibodies conjugated with anticancer drugs, toxins, and/or radionuclides; biological response modifiers (e.g. interferons [e.g. IFN-alpha, etc.] and interleukins [e.g. IL-2, etc.], etc.); adoptive immunotherapy agents; hematopoietic growth factors; agents that induce tumor cell differentiation (e.g. all-trans-retinoic acid, etc.); gene therapy reagents; antisense therapy reagents and nucleotides; tumor vaccines; inhibitors of angiogenesis, and the like in a combination therapy may be beneficial.

In preferred embodiments, anticancer agents to be used in combination with Raf inhibitory compounds comprise agents that induce or stimulate apoptosis. Agents that induce apoptosis include, but are not limited to, radiation (e.g., W); kinase inhibitors (e.g., Epidermal Growth Factor Receptor [EGFR] kinase inhibitor, Vascular Growth Factor

Receptor [VGFR] kinase inhibitor, Fibroblast Growth Factor Receptor [FGFR] kinase inhibitor, Platelet-derived Growth Factor Receptor [PDGFR] I kinase inhibitor, and Bcr-Abl kinase inhibitors such as STI-571, Gleevec, and Glivec]); antisense molecules; antibodies [e.g., Herceptin and Rituxan]; anti-estrogens [e.g., raloxifene and tamoxifen]; anti-
5 androgens [e.g., flutamide, bicalutamide, finasteride, aminoglutethamide, ketoconazole, and corticosteroids]; cyclooxygenase 2 (COX-2) inhibitors [e.g., Celecoxib, meloxicam, NS-398, and non-steroidal antiinflammatory drugs (NSAIDs)]; and cancer chemotherapeutic drugs [e.g., irinotecan (Camptosar), CPT-11, fludarabine (Fludara), dacarbazine (DTIC), dexamethasone, mitoxantrone, Mylotarg, VP-16, cisplatin, 5-FU, Doxorubicin, Taxotere
10 or taxol]; cellular signaling molecules; ceramides and cytokines; and staurosporine, and the like.

Further anti-cancer agents for use in combination include, but are not limited to, the following: estrogen receptor modulators, androgen receptor modulators, retinoid receptor modulators, cytotoxic/cytostatic agents, antiproliferative agents, prenyl-protein transferase
15 inhibitors, HMG-CoA reductase inhibitors and other angiogenesis inhibitors, inhibitors of cell proliferation and survival signaling, apoptosis inducing agents and agents that interfere with cell cycle checkpoints. A Raf kinase inhibitory compound is also useful when co-administered with radiation therapy.

Estrogen receptor modulators are compounds that interfere with or inhibit the
20 binding of estrogen to the receptor, regardless of mechanism. Examples of estrogen receptor modulators include, but are not limited to, tamoxifen, raloxifene, idoxifene, LY353381, LY117081, toremifene, fulvestrant, 4-[7-(2,2-dimethyl-1-oxopropoxy-4-methyl-2-[4-[2-(1-piperidinyl)ethoxy]phenyl]-2H-1-benzopyran-3-yl)-phenyl]-2,2-dimethylpropanoate, 4,4'-dihydroxybenzophenone-2,4-dinitrophenyl-hydrazone, and SH646.

Androgen receptor modulators are compounds which interfere with or inhibit the
25 binding of androgens to an androgen receptor. Representative examples of androgen receptor modulators include finasteride and other 5 α -reductase inhibitors, nilutamide, flutamide, bicalutamide, liarozole, and abiraterone acetate. Retinoid receptor modulators are compounds which interfere or inhibit the binding of retinoids to a retinoid receptor.
30 Examples of retinoid receptor modulators include bexarotene, tretinoin, 13-cis-retinoic acid, 9-cis-retinoic acid, α -difluoromethylornithine, LX23-7553, trans-N-(4'-hydroxyphenyl)retinamide, and N4-carboxyphenyl retinamide.

Cytotoxic and/or cytostatic agents are compounds which cause cell death or inhibit cell proliferation primarily by interfering directly with the cell's functioning or inhibit or interfere with cell mytosis, including alkylating agents, tumor necrosis factors, intercalators, hypoxia activatable compounds, microtubule inhibitors/microtubule-stabilizing agents, inhibitors of mitotic kinesins, inhibitors of kinases involved in mitotic progression, antimetabolites; biological response modifiers; hormonal/anti-hormonal therapeutic agents, haematopoietic growth factors, monoclonal antibody targeted therapeutic agents, topoisomerase inhibitors, proteasome inhibitors and ubiquitin ligase inhibitors. Examples of cytotoxic agents include, but are not limited to, sertenef, cachectin, ifosfamide, tasonermin, lonidamine, carboplatin, altretamine, prednimustine, dibromodulcitol, ranimustine, fotemustine, nedaplatin, oxaliplatin, temozolomide, heptaplatin, estramustine, improsulfan tosilate, trofosfamide, nimustine, dibrospidium chloride, pumitepa, lobaplatin, satraplatin, proflomycin, cisplatin, irofulven, dexifosfamide, cis-aminedichloro(2-methylpyridine)platinum, benzylguanine, glufosfamide, GPX100, (trans, trans, trans)-bis-mu-(hexane-1,6-diamine)-mu-[diamine-platinum(II)]bis[diamine(chloro)platinum(II)]tetrachloride, diarizidinylspermine, arsenic trioxide, 1-(11-dodecylamino-10-hydroxyundecyl)-3,7-dimethylxanthine, zorubicin, idarubicin, daunorubicin, bisantrene, mitoxantrone, pirarubicin, pinafide, valrubicin, amrubicin, antineoplaston, 3'-deamino-3'-morpholino-13-deoxo-10-hydroxycarminomycin, annamycin, galarubicin, elinafide, MEN10755, and 4-demethoxy-3-deamino-3-aziridinyl-4-methylsulphonyl-daunorubicin (see WO 00/50032). A representative example of a hypoxia-activatable compound is tirapazamine. Proteasome inhibitors include, but are not limited to, lactacystin and bortezomib. Examples of microtubule inhibitors/microtubule-stabilizing agents include paclitaxel, vindesine sulfate, 3',4'-didehydro-4'-deoxy-8'-norvincal leukoblastine, docetaxol, rhizoxin, dolastatin, mivobulin isethionate, auristatin, cemadotin, RPR109881, BMS184476, vinflunine, cryptophycin, 2,3,4,5,6-pentafluoro-N-(3-fluoro-4-methoxyphenyl)benzene sulfonamide, anhydrovinblastine, N,N-dimethyl-L-valyl-L-valyl-N-methyl-L-valyl-L-prolyl-L-proline-t-butylamide, TDX258, the epothilones (see for example U.S. Pat. Nos. 6,284,781 and 6,288,237) and BMS188797. Representative examples of topoisomerase inhibitors include topotecan, hycaptamine, irinotecan, rubitecan, 6-ethoxypropionyl-3',4'-O-exo-benzylidene-chartreusin, 9-methoxy-N,N-dimethyl-5-nitropyrazolo[3,4,5-kl]acridine-2-(6H) propanamine, 1-amino-9-ethyl-5-fluoro-2,3-dihydro-9-hydroxy-4-methyl-1H,12H-benzo[de]pyrano[3',4':b,7]-indolizino[1,2b]quinoline-

10,13(9H,15H)dione, lurtotecan, 7-[2-(N-isopropylamino)ethyl]-(20S)camptothecin, BNP1350, BNPI1100, BN80915, BN80942, etoposide phosphate, teniposide, sobuzoxane, 2'-dimethylamino-2'-deoxy-etoposide, GL331, N-[2-(dimethylamino)ethyl]-9-hydroxy-5,6-dimethyl-6H-pyrido[4,3-b]carbazole-1-carboxamide, asulacrine, (5a, 5aB, 8aa, 9b)-9-[2-[N-
5 [2-(dimethylamino)ethyl]-N-methylamino]ethyl]-5-[4-hydroxy-3,5-dimethoxyphenyl]-5,5a,6,8,8a,9-hexahydrofuro(3',4':6,7)naphtho(2,3-d)-1,3-dioxol-6-one, 2,3-(methylene-dioxy)-5-methyl-7-hydroxy-8-methoxybenzo[c]-phenanthridinium, 6,9-bis [(2-amino-ethyl)amino]benzo[g]isoguinoline-5,10-dione, 5-(3-aminopropylamino)-7,10-dihydroxy-2-(2-hydroxyethylaminomethyl)-6H-pyrazolo[4,5,1'-de]acridin-6-one, N-[1-[2(diethylamino)-
10 ethylamino]-7-methoxy-9-oxo-9H-thioxanthen-4-ylmethyl]formamide, N-(2-(dimethylamino)ethyl)acridine-4-carboxamide, 6-[[2-(dimethylamino)ethyl]amino]-3-hydroxy-7H-indeno[2,1-c]quinolin-7-one, and dimesna. Examples of inhibitors of mitotic kinesins, such as the human mitotic kinesin KSP, are described in PCT Publications WO 01/30768 and WO 01/98278, WO 03/050,064 (Jun. 19, 2003), WO 03/050,122 (Jun. 19,
15 2003), WO 03/049,527 (Jun. 19, 2003), WO 03/049,679 (Jun. 19, 2003), WO 03/049,678 (Jun. 19, 2003) and WO 03/39460 (May 15, 2003) and pending PCT Appl. Nos. US03/06403 (filed Mar. 4, 2003), US03/15861 (filed May 19, 2003), US03/15810 (filed May 19, 2003), US03/18482 (filed Jun. 12, 2003) and US03/18694 (filed Jun. 12, 2003). In an embodiment inhibitors of mitotic kinesins include, but are not limited to inhibitors of
20 KSP, inhibitors of MKLP1, inhibitors of CENP-E, inhibitors of MCAK, inhibitors of Kif14, inhibitors of Mphosph1 and inhibitors of Rab6-KIFL.

Inhibitors of kinases involved in mitotic progression include, but are not limited to, inhibitors of aurora kinase, inhibitors of Polo-like kinases (PLK) (e.g., inhibitors of PLK-1), inhibitors of bub-1 and inhibitors of bub-R1. Antiproliferative agents include antisense
25 RNA and DNA oligonucleotides such as G3139, ODN698, RVASKRAS, GEM231, and INX3001, and antimetabolites such as enocitabine, carmofur, tegafur, pentostatin, doxifluridine, trimetrexate, fludarabine, capecitabine, galocitabine, cytarabine ocfosfate, fosteabine sodium hydrate, raltitrexed, paltitrexid, emitefur, tiazofurin, decitabine, nolatrexed, pemetrexed, nelzarabine, 2'-deoxy-2'-methylidenecytidine, 2'-fluoromethylene-
30 2'-deoxycytidine, N-[5-(2,3-dihydro-benzofuryl)sulfonyl]-N'-(3,4-dichlorophenyl)urea, N6-[4-deoxy-4-[N2-[2(E),4(E)-tetradecadienoyl]glycylamino]-L-glycero-B-L-manno-heptopyranosyl]adenine, aplidine, ecteinascidin, troxacitabine, 4-[2-amino-4-oxo4,6,7,8-tetrahydro-3H-pyrimidino[5,4-b][1,4]thiazin-6-yl-(S)-ethyl]-2,5-thienoyl-L-glutamic acid,

aminopterin, 5-fluorouracil, alanosine, 11-acetyl-8-(carbamoyloxymethyl)-4-formyl-6-methoxy-14-oxa-1,1-diazatetracyclo(7.4.1.0.0)-tetradeca-2,4,6-trien-9-yl acetic acid ester, swainsonine, lometrexol, dexrazoxane, methioninase, 2'-cyano-2'-deoxy-N4-palmitoyl-1-B-D-arabino furanosyl cytosine and 3-aminopyridine-2-carboxaldehyde thiosemicarbazone.

- 5 Examples of monoclonal antibody targeted therapeutic agents include those therapeutic agents which have cytotoxic agents or radioisotopes attached to a cancer cell specific or target cell specific monoclonal antibody. Examples include, for example, Bexxar. HMG-CoA reductase inhibitors are inhibitors of 3-hydroxy-3-methylglutaryl-CoA reductase. Compounds which have inhibitory activity for HMG-CoA reductase can be readily
- 10 identified by using assays well-known in the art such as those described or cited in U.S. Pat. No. 4,231,938 and WO 84/02131. Examples of HMG-CoA reductase inhibitors that may be used include, but are not limited to, lovastatin (MEVACOR[®]; see U.S. Pat. Nos. 4,231,938, 4,294,926 and 4,319,039), simvastatin (ZOCOR[®]; see U.S. Pat. Nos. 4,444,784, 4,820,850 and 4,916,239), pravastatin (PRAVACHOL[®]; see U.S. Pat. Nos. 4,346,227, 4,537,859,
- 15 4,410,629, 5,030,447 and 5,180,589), fluvastatin (LESCOL[®]; see U.S. Pat. Nos. 5,354,772, 4,911,165, 4,929,437, 5,189,164, 5,118,853, 5,290,946 and 5,356,896) and atorvastatin (LIPITOR[®]; see U.S. Pat. Nos. 5,273,995, 4,681,893, 5,489,691 and 5,342,952). The structural formulas of these and additional HMG-CoA reductase inhibitors that may be used in conjunction with the instant methods are described at page 87 of M. Yalpani,
- 20 "Cholesterol Lowering Drugs", *Chemistry & Industry*, pp. 85-89 (5 Feb. 1996) and U.S. Pat. Nos. 4,782,084 and 4,885,314. In an embodiment, the HMG-CoA reductase inhibitor is selected from lovastatin and simvastatin.

- Prenyl-protein transferase inhibitors are compounds which inhibit any one or any combination of the prenyl-protein transferase enzymes, including farnesyl-protein
- 25 transferase (FPTase), geranylgeranyl-protein transferase type I (GGPTase-I), and geranylgeranyl-protein transferase type-II (GGPTase-II, also called Rab GGPTase). Examples of prenyl-protein transferase inhibiting compounds include (±)-6-[amino(4-chlorophenyl)(1-methyl-1H-imidazol-5-yl)methyl]-4-(3-chlorophenyl)-1-methyl-2(1H)-quinolinone, (-)-6-[amino(4-chlorophenyl)(1-methyl-1H-imidazol-5-yl)methyl]-4-(3-
- 30 chlorophenyl)-1-methyl-2(1H)-quinolinone, (+)-6-[amino(4-chlorophenyl)(1-methyl-1H-imidazol-5-yl) methyl]-4-(3-chlorophenyl)-1-methyl-2(1H)-quinolinone, 5(S)-n-butyl-1-(2,3-dimethylphenyl)-4-[1-(4-cyanobenzyl)-5-imidazolylmethyl-2-piperazinone, (S)-1-(3-

chlorophenyl)-4-[1-(4-cyanobenzyl)-5-imidazolylmethyl]-5-[2-(ethanesulfonyl) methyl]-2-piperazinone, 5(S)-n-butyl-1-(2-methylphenyl)-4-[1-(4-cyanobenzyl)-5-imidazolylmethyl]-2-piperazinone, 1-(3-chlorophenyl)-4-[1-(4-cyanobenzyl)-2-methyl-5-imidazolylmethyl]-2-piperazinone, 1-(2,2-diphenylethyl)-3-[N-(1-(4-cyanobenzyl)-1H-imidazol-5-yl-5-yl-ethyl)carbamoyl]piperidine, 4-{-[4-hydroxymethyl-4-(4-chloropyridin-2-ylmethyl)-piperidine-1-ylmethyl]-2-methylimidazol-1-ylmethyl} benzonitrile, 4-{5-[4-hydroxymethyl-4-(3-chlorobenzyl)-piperidine-1-ylmethyl]-2-methylimidazol-1-ylmethyl} benzonitrile, 4-{3-[4-(2-oxo-2H-pyridin-1-yl)benzyl]-3H-imidazol-4-ylmethyl} benzonitrile, 4-{3-[4-(5-chloro-2-oxo-2H-[1,2']bipyridin-5'-ylmethyl)-3H-imidazol-4-ylmethyl} benzonitrile, 4-{3-[4-(2-oxo-2H-[1,2']bipyridin-5'-ylmethyl)-3H-imidazol-4-ylmethyl} benzonitrile, 4-[3-(2-oxo-1-phenyl-1,2-dihydropyridin-4-ylmethyl)-3H-imidazol-4-ylmethyl} benzonitrile, 18,19-dihydro-19-oxo-5H,17H-6,10:12,16-dimetheno-1H-imidazo[4,3-c][1,11,4]dioxazacyclo-nonadecine-9-carbonitrile, ($\pm$)-19,20-dihydro-19-oxo-5H-18,21-ethano-12,14-etheno-6,10-metheno-22H-benzo[d]imidazo[4,3-k]-[1,6,9,12]oxatriaza-cyclooctadecine-9-carbonitrile, 19,20-dihydro-19-oxo-5H,17H-18,21-ethano-6,10:12,16-dimetheno-22H-imidazo[3,4-h][1,8,11,14]oxatriazacycloeicosine-9-carbonitrile, and (+-)-19,20-dihydro-3-methyl-19-oxo-5H-18,21-ethano-12,14-etheno-6,10-metheno-22H-benzo[d]imidazo[4,3-k][1,6,9,12]oxa-triazacyclooctadecine-9-carbonitrile. Other examples of prenyl-protein transferase inhibitors can be found in the following publications and patents: WO 96/30343, WO 97/18813, WO 97/21701, WO 97/23478, WO 97/38665, WO 98/28980, WO 98/29119, WO 95/32987, U.S. Pat. No. 5,420,245, U.S. Pat. No. 5,523,430, U.S. Pat. No. 5,532,359, U.S. Pat. No. 5,510,510, U.S. Pat. No. 5,589,485, U.S. Pat. No. 5,602,098, European Patent Publ. 0 618 221, European Patent Publ. 0 675 112, European Patent Publ. 0 604 181, European Patent Publ. 0 696 593, WO 94/19357, WO 95/08542, WO 95/11917, WO 95/12612, WO 95/12572, WO 95/10514, U.S. Pat. No. 5,661,152, WO 95/10515, WO 95/10516, WO 95/24612, WO 95/34535, WO 95/25086, WO 96/05529, WO 96/06138, WO 96/06193, WO 96/16443, WO 96/21701, WO 96/21456, WO 96/22278, WO 96/24611, WO 96/24612, WO 96/05168, WO 96/05169, WO 96/00736, U.S. Pat. No. 5,571,792, WO 96/17861, WO 96/33159, WO 96/34850, WO 96/34851, WO 96/30017, WO 96/30018, WO 96/30362, WO 96/30363, WO 96/31111, WO 96/31477, WO 96/31478, WO 96/31501, WO 97/00252, WO 97/03047, WO 97/03050, WO 97/04785, WO 97/02920, WO 97/17070, WO 97/23478, WO 97/26246, WO 97/30053, WO 97/44350, WO 98/02436, and U.S. Patent No. 5,532,359. For an example of the role of a

prenyl-protein transferase inhibitor on angiogenesis see *European J. of Cancer* 35(9):1394-1401 (1999).

Angiogenesis inhibitors refers to compounds that inhibit the formation of new blood vessels, regardless of mechanism. Examples of angiogenesis inhibitors include, but are not limited to, tyrosine kinase inhibitors, such as inhibitors of the tyrosine kinase receptors Flt-1 (VEGFR1) and Flk-1/KDR (VEGFR2), inhibitors of epidermal-derived, fibroblast-derived, or platelet derived growth factors, MMP (matrix metalloprotease) inhibitors, integrin blockers, interferon-alpha., interleukin-12, pentosan polysulfate, cyclooxygenase inhibitors, including nonsteroidal anti-inflammatories (NSAIDs) like aspirin and ibuprofen as well as selective cyclooxygenase-2 inhibitors like celecoxib and rofecoxib (*PNAS* 89:7384 (1992); *JNCI* 69:475 (1982); *Arch. Ophthalmol.* 108:573 (1990); *Anat. Rec.*, (238):68 (1994); *FEBS Letters* 372:83 (1995); *Clin. Orthop.* 313:76 (1995); *J. Mol. Endocrinol.* 16:107 (1996); *Jpn. J. Pharmacol.* 75:105 (1997); *Cancer Res.* 57:1625 (1997); *Cell* 93:705 (1998); *Intl. J. Mol. Med.* 2:715 (1998); *J. Biol. Chem.* 274:9116 (1999)), steroidal anti-inflammatories (such as corticosteroids, mineralocorticoids, dexamethasone, prednisone, prednisolone, methylpred, betamethasone), carboxyamidotriazole, combretastatin A4, squalamine, 6-O-chloroacetyl-carbonyl-fumagillol, thalidomide, angiostatin, troponin-1, angiotensin II antagonists (see Fernandez et al., *J. Lab. Clin. Med.* 105:141-145 (1985)), and antibodies to VEGF (see, *Nature Biotechnology*, 17:963-968 (October 1999); Kim et al., *Nature*, 362:841-844 (1993); WO 00/44777; and WO 00/61186). Other therapeutic agents that modulate or inhibit angiogenesis and may also be used in combination with the compounds of the instant invention include agents that modulate or inhibit the coagulation and fibrinolysis systems (see review in *Clin. Chem. La. Med.* 38:679-692 (2000)). Examples of such agents that modulate or inhibit the coagulation and fibrinolysis pathways include, but are not limited to, heparin (see *Thromb. Haemost.* 80:10-23 (1998)), low molecular weight heparins and carboxypeptidase U inhibitors (also known as inhibitors of active thrombin activatable fibrinolysis inhibitor [TAFIa]) (see *Thrombosis Res.* 101:329-354 (2001)). TAFIa inhibitors have been described in PCT Publication WO 03/013,526 and U.S. Ser. No. 60/349,925 (filed Jan. 18, 2002). Also contemplated are combinations of small molecule Raf inhibitory compounds with NSAIDs which are selective COX-2 inhibitors (generally defined as those which possess a specificity for inhibiting COX-2 over COX-1 of at least 100 fold as measured by the ratio of IC₅₀ for COX-2 over IC₅₀ for COX-1 evaluated by cell or microsomal assays). Such compounds include, but are not limited to

those disclosed in U.S. Pat. No. 5,474,995, issued Dec. 12, 1995, U.S. Pat. No. 5,861,419, issued Jan. 19, 1999, U.S. Pat. No. 6,001,843, issued Dec. 14, 1999, U.S. Pat. No. 6,020,343, issued Feb. 1, 2000, U.S. Pat. No. 5,409,944, issued Apr. 25, 1995, U.S. Pat. No. 5,436,265, issued Jul. 25, 1995, U.S. Pat. No. 5,536,752, issued Jul. 16, 1996, U.S. Pat. No. 5,550,142, issued Aug. 27, 1996, U.S. Pat. No. 5,604,260, issued Feb. 18, 1997, U.S. Pat. No. 5,698,584, issued Dec. 16, 1997, U.S. Pat. No. 5,710,140, issued Jan. 20, 1998, WO 94/15932, published Jul. 21, 1994, U.S. Pat. No. 5,344,991, issued Jun. 6, 1994, U.S. Pat. No. 5,134,142, issued Jul. 28, 1992, U.S. Pat. No. 5,380,738, issued Jan. 10, 1995, U.S. Pat. No. 5,393,790, issued Feb. 20, 1995, U.S. Pat. No. 5,466,823, issued Nov. 14, 1995, U.S. Pat. No. 5,633,272, issued May 27, 1997, and U.S. Pat. No. 5,932,598, issued Aug. 3, 1999, all of which are hereby incorporated by reference. Representative inhibitors of COX-2 that are useful in the methods of the present invention include 3-phenyl-4-(4-(methylsulfonyl)phenyl)-2-(5H)-furanone; and 5-chloro-3-(4-methylsulfonyl)phenyl-2-(2-methyl-5-pyridinyl)pyridine. Compounds which are described as specific inhibitors of COX-2 and are therefore useful in conjunction with the present invention can be found in the following patents, pending applications and publications, which are herein incorporated by reference: WO 94/15932, published Jul. 21, 1994, U.S. Pat. No. 5,344,991, issued Jun. 6, 1994, U.S. Pat. No. 5,134,142, issued Jul. 28, 1992, U.S. Pat. No. 5,380,738, issued Jan. 10, 1995, U.S. Pat. No. 5,393,790, issued Feb. 20, 1995, U.S. Pat. No. 5,466,823, issued Nov. 14, 1995, U.S. Pat. No. 5,633,272, issued May 27, 1997, U.S. Pat. No. 5,932,598, issued Aug. 3, 1999, U.S. Pat. No. 5,474,995, issued Dec. 12, 1995, U.S. Pat. No. 5,861,419, issued Jan. 19, 1999, U.S. Pat. No. 6,001,843, issued Dec. 14, 1999, U.S. Pat. No. 6,020,343, issued Feb. 1, 2000, U.S. Pat. No. 5,409,944, issued Apr. 25, 1995, U.S. Pat. No. 5,436,265, issued Jul. 25, 1995, U.S. Pat. No. 5,536,752, issued Jul. 16, 1996, U.S. Pat. No. 5,550,142, issued Aug. 27, 1996, U.S. Pat. No. 5,604,260, issued Feb. 18, 1997, U.S. Pat. No. 5,698,584, issued Dec. 16, 1997, and U.S. Pat. No. 5,710,140, issued Jan. 20, 1998. Other examples of angiogenesis inhibitors include, but are not limited to, endostatin, ukrain, ranpirnase, IM862, 5-methoxy-4-[2-methyl-3-(3-methyl-2-butenyl)oxiranyl]-1-oxaspiro[2,5]oct-6-yl(chloroacetyl)carbamate, acetyldinanaline, 5-amino-1-[[3,5-dichloro-4-(4-chlorobenzoyl)phenyl]methyl]-1H-1,2,3-triazole-4-carboxamide, CM101, squalamine, combretastatin, RPI4610, NX31838, sulfated mannopentaose phosphate, 7,7-(carbonyl-bis[imino-N-methyl-4,2-pyrrolocarbonylimino[N-methyl-4,2-pyrrole]-carbonylimino]-bis-

(1,3-naphthalene disulfonate), and 3-[(2,4-dimethylpyrrol-5-yl)methylene]-2-indolinone (SU5416).

Agents that interfere with cell cycle checkpoints are compounds that inhibit protein kinases that transduce cell cycle checkpoint signals, thereby sensitizing the cancer cell to DNA damaging agents. Such agents include inhibitors of ATR, ATM, the Chk1 and Chk2 kinases and cdk and cdc kinase inhibitors and are specifically exemplified by 7-hydroxystaurosporin, flavopiridol, CYC202 (Cyclacel) and BMS-387032.

Inhibitors of cell proliferation and survival signaling pathway are pharmaceutical agents that inhibit cell surface receptors and signal transduction cascades downstream of those surface receptors. Such agents include inhibitors of inhibitors of EGFR (for example gefitinib and erlotinib), inhibitors of ERB-2 (for example trastuzumab), inhibitors of IGFR, inhibitors of cytokine receptors, inhibitors of MET, inhibitors of PI3K (for example LY294002), serine/threonine kinases (including but not limited to inhibitors of Akt such as described in WO 02/083064, WO 02/083139, WO 02/083140 and WO 02/083138), inhibitors of Raf kinase (for example BAY-43-9006), inhibitors of MEK (for example CI-1040 and PD-098059) and inhibitors of mTOR (for example Wyeth CCI-779). Such agents include small molecule inhibitor compounds and antibody antagonists.

Apoptosis inducing agents include activators of TNF receptor family members (including the TRAIL receptors).

In certain presently preferred embodiments, representative agents useful in combination with the small molecule Raf kinase inhibitory compounds for the treatment of cancer include, for example, irinotecan, topotecan, gemcitabine, 5-fluorouracil, leucovorin carboplatin, cisplatin, taxanes, tezacitabine, cyclophosphamide, vinca alkaloids, imatinib (Gleevec), anthracyclines, rituximab, trastuzumab, as well as other cancer chemotherapeutic agents.

The above compounds to be employed in combination with the Raf kinase inhibitory compounds such as CHIR-265 will be used in therapeutic amounts as indicated in the *Physicians' Desk Reference* (PDR) 60th Edition (2006), which is incorporated herein by reference, or such therapeutically useful amounts as would be known to one of ordinary skill in the art.

The Raf kinase inhibitory compounds and the other anticancer agents may be administered at the recommended maximum clinical dosage or at lower doses, within the

judgment of the treating physician. Dosage levels of the active compounds in the compositions of the invention may be varied so as to obtain a desired therapeutic response depending on the route of administration, severity of the disease, and the response of the patient. The combination can be administered as separate compositions or as a single dosage form containing both agents. When administered as a combination, the therapeutic agents can be formulated as separate compositions, which are given at the same time or different times, or the therapeutic agents, can be given as a single composition.

Antiestrogens, such as tamoxifen, inhibit breast cancer growth through induction of cell cycle arrest, that requires the action of the cell cycle inhibitor p27Kip. Recently, it has been shown that activation of the Ras-Raf-MAP Kinase pathway alters the phosphorylation status of p27Kip such that its inhibitory activity in arresting the cell cycle is attenuated, thereby contributing to antiestrogen resistance (Donovan et al., *J. Biol. Chem.* 276:40888, 2001). As reported by Donovan et al., inhibition of MAPK signaling through treatment with MEK inhibitor changed the phosphorylation status of p27 in hormone refractory breast cancer cell lines and in so doing restored hormone sensitivity. Accordingly, in one aspect, Raf kinase inhibitory compounds may be used in the treatment of hormone-dependent cancers, such as breast and prostate cancers, to reverse hormone resistance commonly seen in these cancers with conventional anticancer agents.

In hematological cancers, such as chronic myelogenous leukemia (CML), chromosomal translocation is responsible for the constitutively activated BCR-AB1 tyrosine kinase. The afflicted patients are responsive to Gleevec, a small molecule tyrosine kinase inhibitor, as a result of inhibition of Ab1 kinase activity. However, many patients with advanced stage disease respond to Gleevec initially, but then relapse later due to resistance-conferring mutations in the Ab1 kinase domain. *In vitro* studies have demonstrated that BCR-Av1 employs the Raf kinase pathway to elicit its effects. In addition, inhibiting more than one kinase in the same pathway provides additional protection against resistance-conferring mutations. Accordingly, Raf kinase inhibitory compounds may be used in combination with at least one additional agent, such as Gleevec, in the treatment of hematological cancers, such as chronic myelogenous leukemia (CML), to reverse or prevent resistance to the at least one additional agent.

Raf kinase inhibitors are useful for treating patients with a need for such inhibitors (e.g., those suffering from cancer mediated by abnormal MAPK signaling). Cancer types mediated by abnormal MAPK signaling include, for example, melanoma, papillary cancer,

thyroid cancer, ovarian cancer, colon cancer, pancreatic cancer, non-small cell lung cancer (NSCLC), acute lymphoblastic leukemia (ALL), and acute myeloid leukemia. Abnormal MAPK signaling may be inhibited by administering a compound that inhibits wild-type or mutant forms of Ras, Raf, MEK, or ERK.

5 The therapeutic compounds in accordance with this aspect of the invention are useful for treating patients with a need for such inhibitors (e.g., those suffering from cancer mediated by abnormal tyrosine kinase receptor signaling). Cancers mediated by abnormal tyrosine kinase receptor signaling include, for example, melanoma, breast cancer, bladder cancer, lung cancer, thyroid cancer, prostate cancer, ovarian cancer, mast cell leukemia,
10 germ cell tumors, small-cell lung carcinoma, gastrointestinal stromal tumors, acute myelogenous leukemia (AML), neuroblastoma, and pancreatic cancer.

Screens

 The invention also includes methods of identifying agents useful for treatment of a cell proliferative disorder or useful to guide a decision to progress agents to further
15 development, as by contacting a candidate agent with a cell line or tissue associated with the disorder and then testing a portion of the cell culture or tissue to measure gene expression level of the biomarkers disclosed herein. For example, the method may include contacting a candidate agent with A375M cells or cells from an A375M-cell-initiated xenograft tumor. As noted earlier, gene expression level may be measured via detecting RNA transcription of
20 at least one biomarker, detecting DNA produced from reverse transcription of RNA transcribed by at least one biomarker, or detecting a polypeptide or protein encoded by at least one biomarker. Preferably the agent is a Raf kinase inhibitor. The methods are useful not only in identifying agents, but also in elucidating the mechanism of action, for example by a candidate agent triggering a signaling pathway. As noted earlier, the biomarkers may
25 be operably linked to a gene chip and presented in a computer readable format for rapid screening.

Experimental Examples

Example 1

 Transcriptional activity was assessed by measuring levels of messenger RNA
30 (mRNA) in cells derived from xenograft tumors in mice from an A375M melanoma cancer cell line using Affymetrix HG-U133-Plus-2 GeneChips.

Xenograft tumors were grown in forty nude mice, each 6-8 weeks old, using the A375M melanoma cancer cell line by implanting with 2.5×10^6 A375M cells subcutaneously in the right flank. When tumor volume reached approximately 200mm^3 , the mice were randomized into their respective groups and treatment begun. The A375M melanoma cancer cell line is a B-Raf-mutant driven melanoma cell line.

Animals were dosed orally with 100 mg/kg of CHIR-265 or with vehicle only (no CHIR-265) every other day. The treatment period lasted a total of 28 days. Tumors from vehicle-treated and CHIR-265-treated mice were harvested at the following time points with five animals per timepoint: 8 hours, 24 hours, 192 hours (48 hours after the fourth dose), and 336 hours (48 hours after the seventh dose). Tumors were also harvested from five untreated mice on the first day of the study to serve as naïve controls.

Tumors were harvested in an RNase treated work area with RNase treated instruments. Once excised, tumors were placed in RNase free 15mL falcon tubes in approximately 5mL of RNeasy lysis buffer for four hours at room temperature and then refrigerated overnight at 4°C . Excess RNeasy lysis buffer was decanted the following day and the tumors stored at -80°C until RNA was isolated.

RNA was prepared for microarray profiling using the Affymetrix GeneChip ArrayStation running the manufacturer's recommended protocols (<http://www.affymetrix.com/products/instruments/specific/arraystation.affx>). The target products were hybridized to Affymetrix U133-Plus-2 whole genome microarrays and scanned with an Affymetrix GeneChip Scanner 3000. Bioinformatics analysis was performed on the raw data to provide the results. The manufacturer's recommended quality control criteria were examined during the laboratory processing and data analysis to ensure high-quality results. One sample was determined to fail the quality control criteria, resulting in four Day 14 CHIR-265-treated samples. All other time points had data for five treated and five control samples.

A. Differential expression was determined between the CHIR-265 treated xenografts and the matching vehicle-only controls. An average expression level was determined for each probeset at each time-point and treatment condition by computing the geomean expression level across replicate tumors. For purposes of this experiment, probesets were identified as significantly differential if the ratio of CHIR-265 treated/vehicle-only control was greater than 3-fold up or down with a p-value less than

0.001 in at least one time point. The p-value was determined by a two-tailed t-test assuming unequal variances (Satterwaite's approximation). The probesets were mapped to genes by blasting the target probe sequences, supplied by Affymetrix, against GenBank.

Of the genes probed on the microarray, 490 were determined to be significantly
5 differential. These biomarkers are listed in Table I.

Any of the genes identified can be used individually or in combination to
diagnostically or prognostically determine response of human tumors to Raf kinase
inhibitors. Within this set of genes, several interesting subsets can be defined.

Genes with relatively large differentials are particularly promising as biomarker
10 candidates. Of the 490 biomarkers of Table I, 165 of them presented in Table II, have a
fold-change of 5 or greater over baseline in at least one time point, and thus Table II
represents a preferred subset according to one aspect of the invention. As enumerated in
Table III, 45 genes of the 490 have a fold-change of 10 or greater over baseline, and thus
represent an even more preferred subset according to one aspect of the invention. Table IV
15 lists 4 genes of the 490 that have a fold-change of 30 or greater over baseline; these
biomarkers represent the most preferred subset according to one aspect of the invention.

Genes whose products are secreted can potentially be detected in other tissues,
particularly peripheral blood, but possibly in skin, saliva, urine, and other easily accessible
tissues. Of the 490 genes, the 77 listed in Table V are identified as secreted and therefore
20 represent an especially useful subset of the biomarkers identified herein according to a
second aspect of the invention.

Genes whose products are both secreted and have relatively large fold-changes are
especially good candidates as biomarkers, as the samples are easy to collect from subjects
and and detection results tend to be significant. Of the 490 genes with significant
25 differentials, 17 have a fold-change of greater than 10 and are secreted. These 17 secreted
and significantly differential biomarkers are presented in Table VI.

Table VII lists the 189 genes of Table I that exhibited a significant level of alteration
compared to baseline over 3 or more consecutive timepoints of the experiment.

One gene in this list, HGF (gene id 3082) is particularly interesting because it has
30 been reported to be detectable in the peripheral blood of breast cancer patients (Sheen-Chen,
et.al. "Serum Levels of Hepatocyte Growth Factor in patients with Breast Cancer." Cancer

Epidemiol Biomarkers Prev 14 (2005): 715-717), and also appears relevant to non-small cell lung cancer (Siegfried, et al., "The Clinical Significance of Hepatocyte Growth Factor for Non-Small Cell Lung Cancer," *Ann. Thorac. Surg.*, 66:1915-8 (1998)).

5 B. The data obtained from the experiment was also analyzed in an alternate way. Six queries were performed on the data to identify the genes showing greatest modulation by CHIR-265 as compared to the matching vehicle-only controls.

The six queries were as follows:

(1) (Average Day 1, Hour 8 CHIR-265-treated samples)/(Average Day 1 Hour 8 vehicle-treated samples);

10 (2) (Average Day 1 Hour 24 CHIR-265-treated samples)/(Average Day 1 Hour 24 vehicle-treated samples);

(3) (Average Day 8 CHIR-265-treated samples)/(Average Day 8 vehicle-treated samples);

15 (4) (75th Percentile Day 14 CHIR-265-treated samples)/(75th percentile Day 14 vehicle-treated samples);

(5) (Average Day 14 CHIR-265-treated samples)/(Average Day 1 Hour 8 CHIR-265-treated samples); and

(6) (95th Percentile all CHIR-265-treated samples)/(95th Percentile all vehicle-treated samples).

20 Initially, all genes having a $p < 0.005$ in at least one of the six queries was used to generate Table VIII.

Subsequently, for each query, the top 200 (genes upregulated by CHIR-265) and bottom 200 (genes downregulated by CHIR-265) probesets were identified, for a total of 2400 genes.

25 From the six queries, a subset of 783 probesets, representing 609 unique genes, was selected using the following criteria:

(a) gene-by-gene examination for good margin of differential expression between CHIR-265-treated and vehicle-treated samples, and

30 (b) all probesets for which the p-value (Student's t-test, 2 tails, equal variance) for all 6 queries $p < 0.005$.

Thus, according to the alternate analysis method, 609 of the genes probed on the microarray were determined to be significantly differential. These biomarkers are listed in Table IX and represent a preferred subset of biomarkers from Table VIII.

As noted earlier, any of the genes identified can be used individually or in
5 combination to diagnostically or prognostically determine response of human tumors to Raf inhibitors. A particular pattern of combinations of biomarkers may be found in biological samples upon exposure to Raf kinase inhibitors even where the tables do not overlap.

Within Table IX, two subsets, Tables X and XI are of particular interest. Table X lists that portion of Table IX whose biomarkers were downregulated by CHIR-265
10 according to the experimental protocol described and Table XI lists that portion of Table IX whose biomarkers were upregulated by CHIR-265 according to the experimental protocol described. According to one aspect of the invention, a biomarker listed on Table X is preferably modulated in a down-regulated fashion and a biomarker listed on Table XI is preferably modulated in an up-regulated fashion.

15 In a manner analogous to Tables I and V, another especially useful and therefore preferred subset of Table IX is a set of biomarkers whose gene products are secreted, since these may be easily detected in biological samples such as peripheral blood, skin, saliva, urine, or other easily accessible tissues obtained from the patient. Table IX biomarkers are generally structurally predicted to be secreted due to the presence of a signal sequence and
20 absence of a transmembrane domain. Thus, Table XII represents a preferred portion the of the Table IX biomarkers according to another aspect of the invention, wherein the Table IX biomarkers identified as secreted are listed.

Within Table XII, subsets represented by Table XIII and Table XIV are of particular interest. Table XIII lists that portion of Table XII whose biomarkers were downregulated
25 by CHIR-265 according to the experimental protocol described and Table XIV lists that portion of Table XII whose biomarkers were upregulated by CHIR-265 according to the experimental protocol described. According to an aspect of the invention, a biomarker listed on Table XIII is preferably modulated in a down-regulated fashion and a biomarker listed on Table XIV is preferably modulated in an up-regulated fashion.

30 Table XV is a preferred subset of Table IX according to another aspect of the invention. The biomarkers listed in Table XV are those whose gene product is likely to be located on a cell surface. Biomarkers structurally predicted to be on the cell surface were

generally selected due to the presence of a transmembrane domain and possibly also a signal sequence. These represent another useful subset of Table IX biomarkers, for example in the situation where tumor cells having proteins indicative of such biomarkers are circulating in the bloodstream of the patient. Such biomarkers may be readily detected from a blood sample via flow cytometry, for example. Immunohistochemistry and Western blots may also be of use in detection of such biomarkers.

Tables XVI and XVII are subsets of Table XV. Table XVI lists biomarkers that were downregulated by CHIR-265 according to the experimental protocol described and Table XVII lists that portion of Table XV whose biomarkers were upregulated by CHIR-265 according to the experimental protocol described. According to an aspect of the invention, a biomarker listed on Table XVI is preferably modulated in a down-regulated fashion and a biomarker listed on Table XVII is preferably modulated in an up-regulated fashion.

Example 2

As a further means of identifying useful biomarkers, another analysis was completed. The measurement of glucose uptake, as by FDG-PET imaging, has previously been shown to be a useful indicator of suppression of tumor growth. Jallal, B., Keystone Symposium, Jan 2006; J.Nucl.Med. 2006 Jun; 47(6):1059-66. The experiment was set up as in Example 1.

To provide a molecular explanation for decreased glucose uptake in tumors treated with CHIR-265 or another Raf kinase inhibitor, 67 probesets representing solute carrier family members, aquaporins, and genes involved in glucose metabolism (identified through literature searches) and whose expression was modulated by CHIR-265 ($p < 0.0005$ in at least one of queries (1) through (6) as enumerated in Example 1) were identified.

These 67 genes are sorted into those downregulated or upregulated by CHIR-265 and listed in Tables XVIII or XIX, respectively. Thus, biomarkers listed in Table XVIII are preferably down-regulated in response to a Raf kinase inhibitor and biomarkers listed in Table XIX are preferably up-regulated in response to a Raf kinase inhibitor. Table XX is a listing of the most preferred biomarkers (either down-regulated or up-regulated) taken from Tables XVIII and XIX. Table XX lists 19 genes known to be involved in glucose transport or metabolism. Tables XVIII, XIX, and XX are subsets of Table VIII and represent preferred lists of biomarkers according to another aspect of the invention.

Example 3

Raf/Mek Filtration Assay

Buffers

Assay buffer: 50 mM Tris, pH 7.5, 15 mM MgCl₂, 0.1 mM EDTA, 1 mM DTT

5 Wash buffer: 25 mM Hepes, pH 7.4, 50 mM sodium pyrophosphate, 500 mM NaCl

Stop reagent: 30 mM EDTA

Materials

Raf, active: Upstate Biotech #14-352

Mek, inactive: Upstate Biotech #14-205

10 ³³P-ATP: NEN Perkin Elmer #NEG 602 h

96 well assay plates: Falcon U-bottom polypropylene plates #35-1190

Filter apparatus: Millipore #MAVM 096 OR

96 well filtration plates: Millipore Immobilon 1 #MAIP NOB

Scintillation fluid: Wallac OptiPhase "SuperMix" #1200-439

15 Assay Conditions

Raf approximately 120 pM

Mek approximately 60 nM

³³P-ATP 100 nM

Reaction time 45-60 minutes at room temperature

20 Assay Protocol

Raf and Mek were combined at 2X final concentrations in assay buffer (50 mM Tris, pH 7.5, 15 mM MgCl₂, 0.1 mM EDTA and 1 mM DTT) and dispensed 15 µl per well in polypropylene assay plates (Falcon U-bottom polypropylene 96 well assay plates #35-1190. Background levels are determined in wells containing Mek and DMSO without Raf.

25 To the Raf/Mek containing wells was added 3 µl of 10X of a raf kinase inhibitor test compound diluted in 100% DMSO. The raf kinase activity reaction was started by the addition of 12 µl per well of 2.5X ³³P-ATP diluted in assay buffer. After 45-60 minutes, the reactions were stopped with the addition of 70 µl of stop reagent (30 mM EDTA).

Filtration plates were pre-wetted for 5 min with 70% ethanol, and then rinsed by filtration with wash buffer. Samples (90 µl) from the reaction wells were then transferred to the filtration plates. The filtration plates were washed 6X with wash buffer using Millipore filtration apparatus. The plates were dried and 100 µl per well of scintillation fluid (Wallac OptiPhase "SuperMix" #1200-439) was added. The CPM is then determined using a Wallac Microbeta 1450 reader.

Specific Embodiments

The invention includes, but is not limited to, specific embodiments as set forth below:

1. A method of identifying a patient for treatment with a Raf kinase inhibitor, the method comprising:
 - determining presence of gene expression of at least one biomarker selected from Table I or Table VIII in a biological sample obtained from the patient,
 - identifying the patient for treatment if the presence of gene expression of the at least one biomarker is detected.
2. The method of 1, wherein the determining step further comprises measuring gene expression level of the at least one biomarker and comparing the measured gene expression level to baseline.
3. The method of 2, wherein baseline is obtained from gene expression level information of similar patient populations not known to have been treated with a Raf kinase inhibitor.
4. The method of 3, wherein the gene expression level information is represented in a gene database.
5. The method of 2, wherein baseline is the gene expression level of a reference standard.
6. The method of 5, wherein the reference standard is not obtained from the patient.
7. The method of 1, wherein the biological sample is obtained from lung, pancreas, thyroid, ovary, bladder, breast, prostate, liver, colon, myeloid tissue, skin, or tumor tissue.

8. The method of 5, wherein the reference standard is a reference sample of the same tissue type as the biological sample obtained from the patient.

5 9. The method of 1, wherein the biological sample is from a region showing evidence of a cell proliferative disorder.

10. The method of 2, wherein the biomarker is over-expressed in the biological sample relative to baseline.

10

11. The method of 2, wherein the biomarker is under-expressed in the biological sample relative to baseline.

12. The method of 1 or 2 further comprising the step of administering a Raf kinase
15 inhibitor to the patient.

13. The method of 12, wherein the inhibitor is administered before the biological sample is obtained from the patient.

20 14. The method of 1 or 2, wherein the determining step further comprises determining gene expression of at least one biomarker selected from a subset of Table I represented by any of Tables II through VII.

15. The method of 1 or 2, wherein the determining step further comprises determining
25 gene expression of at least one biomarker selected from a subset of Table VIII represented by any of Tables IX through XX.

16. The method of 1 or 2, wherein the determining step further comprises determining gene expression of at least two biomarkers selected from Table I and/or Table VIII.

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17. The method of 1 or 2, wherein the determining step comprises detecting RNA transcribed by the at least one biomarker.

18. The method of 1 or 2, wherein the determining step comprises detecting DNA produced from reverse transcription of an RNA transcribed by the at least one biomarker.
19. The method of 1 or 2, wherein the determining step comprises detecting a polypeptide or protein encoded by the at least one biomarker.
20. The method of 1 or 2, wherein the at least one biomarker is operably linked to a gene chip.
21. The method of 1 or 2, wherein the at least one biomarker is represented in computer readable format.
22. The method of 1 or 2, wherein the determining step comprises contacting the biological sample with a gene chip comprising any of the biomarkers of Table I and/or Table VIII.
23. The method of 1, wherein the inhibitor is selected from the group consisting of CHIR-265; BAY 43-9006; ISIS-5132; CGP-69846A; ODN-698; ISIS-13650; LE-AON; LEraf-AON; LE-AON c-Raf; LE-5132; N-[3-[6-(3-Oxo-1,3-dihydro-2-benzofuran-5-ylamino)pyrazin-2-yl]phenyl]acetamide; PLX-4720; PLX-3204; PLX-3331; PLX-4718; PLX-4735; PLX-4032; N-[5-[3-(1-Cyano-1-methylethyl)benzamido]-2-methylphenyl]-4-oxo-3,4-dihydroquinazoline-6-carboxamide; and N-[5-[3-(1-Cyano-1-methylethyl)benzamido]-2-methylphenyl]-3-methyl-4-oxo-3,4-dihydroquinazoline-6-carboxamide.
24. The method of 23, wherein the inhibitor is CHIR-265.
25. The method of 1, wherein the biomarker is HGF.
26. The method of 1, wherein the biomarker is not HGF.
27. A method of monitoring response of a patient to treatment with a Raf kinase inhibitor, the method comprising:

determining presence of gene expression of at least one biomarker selected from Table I or Table VIII in a biological sample obtained from a patient who has been administered a Raf kinase inhibitor,

5 evaluating response of the patient based on detection of the presence of gene expression of the at least one biomarker.

28. The method of 27, wherein the inhibitor has been administered in a therapeutically effective amount.

10 29. The method of 27 further comprising the step of administering an amount of a Raf kinase inhibitor to the patient.

30. The method of 29, wherein the inhibitor is administered before the biological sample is obtained from the patient.

15

31. The method of 29, wherein the inhibitor is administered after the evaluating step.

32. The method of 27 or 30 a further comprising obtaining a biological sample from the patient subsequent to the administration of the Raf kinase inhibitor.

20

33. The method of 27 further comprising altering the treatment based on the evaluating step.

25 34. The method of 27, wherein detection of the presence of gene expression of the at least one biomarker is indicative of a favorable response to treatment.

35. The method of 27, wherein the determining step further comprises measuring gene expression level of the at least one biomarker and comparing the measured gene expression level to baseline.

30

36. The method of 35, wherein baseline is obtained from gene expression level information of similar patient populations not known to have been treated with a Raf kinase inhibitor.

37. The method of 35, wherein baseline is the gene expression level of a reference standard.

5 38. The method of 37, wherein the reference standard is not obtained from the patient.

39. The method of 27, wherein the biological sample is obtained from lung, pancreas, thyroid, ovary, bladder, breast, prostate, liver, colon, myeloid tissue, skin, or tumor tissue.

10 40. The method of 37, wherein the reference standard is a reference sample of the same tissue type as the biological sample obtained from the patient.

41. The method of 27, wherein the biological sample is from a region showing evidence of a cell proliferative disorder.

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42. The method of 35, wherein the biomarker is over-expressed in the biological sample relative to baseline.

43. The method of 35, wherein the biomarker is under-expressed in the biological
20 sample relative to baseline.

44. The method of 31 further comprising administering a different Raf kinase inhibitor to the patient after the evaluating step.

25 45. The method of 28 further comprising adjusting the dosage amount for subsequent administration of the same or a different Raf kinase inhibitor to the patient.

46. The method of 27 or 35, wherein the determining step further comprises determining
30 presence of gene expression of at least one biomarker selected from a subset of Table I represented by any of Tables II through VII.

47. The method of 27 or 35, wherein the determining step further comprises determining presence of gene expression of at least one biomarker selected from a subset of Table VIII represented by any of Tables IX through XX.

5 48. The method of 27 or 35, wherein the determining step further comprises determining presence of gene expression of at least two biomarkers selected from Table I and/or Table VIII.

10 49. The method of 27 or 35, wherein the determining step comprises detecting RNA transcribed by the at least one biomarker.

50. The method of 27 or 35, wherein the determining step comprises detecting DNA produced from reverse transcription of an RNA transcribed by the at least one biomarker.

15 51. The method of 27 or 35, wherein the determining step comprises detecting a polypeptide or protein encoded by the at least one biomarker.

52. The method of 27 or 35, wherein the at least one biomarker is operably linked to a gene chip.

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53. The method of 27 or 35, wherein the at least one biomarker is represented in computer readable format.

25 54. The method of 27 or 35, wherein the determining step comprises contacting the biological sample with a gene chip comprising any of the biomarkers of Table I and/or Table VIII.

55. The method of 27, wherein the inhibitor is selected from the group consisting of CHIR-265; BAY 43-9006; ISIS-5132; CGP-69846A; ODN-698; ISIS-13650; LE-AON; 30 LEraf-AON; LE-AON c-Raf; LE-5132; N-[3-[6-(3-Oxo-1,3-dihydro-2-benzofuran-5-ylamino)pyrazin-2-yl]phenyl]acetamide; PLX-4720; PLX-3204; PLX-3331; PLX-4718; PLX-4735; PLX-4032; N-[5-[3-(1-Cyano-1-methylethyl)benzamido]-2-methylphenyl]-4-oxo-3,4-dihydroquinazoline-6-carboxamide; and N-[5-[3-(1-Cyano-1-

methylethyl)benzamido]-2-methylphenyl]-3-methyl-4-oxo-3,4-dihydroquinazoline-6-carboxamide.

56. The method of 55, wherein the inhibitor is CHIR-265.

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57. The method of 27, wherein the biomarker is HGF.

58. The method of 27, wherein the biomarker is not HGF.

10 59. A method of treating a cell proliferative disorder, the method comprising
selecting a patient evidencing gene expression of a first set of at least one biomarker
selected from Table I or Table VIII, and
administering to the patient a therapeutically effective amount of an agent that alters
the level of gene expression compared to baseline of a second set of at least one biomarker
15 selected from Table I or Table VIII.

60. The method of 59, wherein the first set and the second set include at least one of the
same biomarker.

20 61. The method of 59, wherein the first set and the second set include the same
biomarkers.

62. The method of 59, wherein the first set and/or the second set are selected from a
subset of Table I represented by any of Tables II through VII.

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63. The method of 59, wherein the first set and/or the second set are selected from a
subset of Table VIII represented by any of Tables IX through XX.

64. The method of 59, wherein evidencing gene expression comprises determining
30 presence of gene expression in a first biological sample obtained from the patient by
detection of any of RNA transcribed by the first set, DNA produced from reverse
transcription of an RNA transcribed by the first set, or a polypeptide or protein encoded by
the first set.

65. The method of 64, wherein the alteration of gene expression compared to baseline is determined by measuring in a second biological sample obtained from the patient the quantity of any of RNA transcribed by the second set, DNA produced from reverse transcription of an RNA transcribed by the second set, or a polypeptide or protein encoded by the second set, and comparing the measured gene expression level to baseline.

66. The method of 65, wherein baseline is obtained from gene expression level information of similar patient populations not known to have been treated with a Raf kinase inhibitor.

67. The method of 65, wherein baseline is the gene expression level of a reference standard.

68. The method of 67, wherein the reference standard is not obtained from the patient.

69. The method of 64 or 65, wherein the biological sample is obtained from lung, pancreas, thyroid, ovary, bladder, breast, prostate, liver, colon, myeloid tissue, skin, or tumor tissue.

70. The method of 67, wherein the reference standard is a reference sample of the same tissue type as the second biological sample obtained from the patient.

71. The method of 65, wherein the second biological sample is from a region showing evidence of a cell proliferative disorder.

72. The method of 59, wherein the cell proliferative disorder is a neoplastic disorder.

73. The method of 72, wherein the neoplastic disorder is a cancer of any of lung, pancreas, thyroid, ovary, bladder, breast, prostate, liver, colon, myeloid tissue, or skin.

74. The method of claim 73, wherein the cancer is melanoma.

75. The method of claim 75, wherein the melanoma exhibits a V600E B-Raf mutation.

76. The method of 59, wherein the first set and/or the second set are operably linked to at least one gene chip.

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77. The method of 59, wherein the inhibitor is selected from the group consisting of CHIR-265; BAY 43-9006; ISIS-5132; CGP-69846A; ODN-698; ISIS-13650; LE-AON; LEraf-AON; LE-AON c-Raf; LE-5132; N-[3-[6-(3-Oxo-1,3-dihydro-2-benzofuran-5-ylamino)pyrazin-2-yl]phenyl]acetamide; PLX-4720; PLX-3204; PLX-3331; PLX-4718; 10 PLX-4735; PLX-4032; N-[5-[3-(1-Cyano-1-methylethyl)benzamido]-2-methylphenyl]-4-oxo-3,4-dihydroquinazoline-6-carboxamide; and N-[5-[3-(1-Cyano-1-methylethyl)benzamido]-2-methylphenyl]-3-methyl-4-oxo-3,4-dihydroquinazoline-6-carboxamide.

15 78. The method of 77, wherein the inhibitor is CHIR-265.

79. A method of identifying an agent for treatment of a cell proliferative disorder, the method comprising:

20 contacting the agent with a cell line or tissue associated with the disorder, and
 testing a portion of the cell culture or tissue after the contacting to measure gene expression level of at least one biomarker selected from Table I or Table VIII that has been altered compared to baseline,

 wherein detection of an alteration in expression level of the at least one biomarker is indicative of an identification of the agent for the treatment.

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80. The method of 79, wherein the agent is a Raf kinase inhibitor.

81. The method of 79, wherein the at least one biomarker is selected from a subset of Table I represented by any of Tables II through VII.

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82. The method of 79, wherein the at least one biomarker is selected from a subset of Table VIII represented by any of Tables IX through XX.

83. The method of 79, wherein the measurement of gene expression compared to baseline is measured by detecting the quantity of any of RNA transcribed by the at least one biomarker, DNA produced from reverse transcription of an RNA transcribed by the at least one biomarker, or a polypeptide or protein encoded by the at least one biomarker.

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84. The method of 79, wherein baseline is obtained from gene expression level information of similar patient populations not known to have been treated with a Raf kinase inhibitor.

10 85. The method of 79, wherein baseline is the gene expression level of a reference standard.

86. The method of 79, wherein the at least one biomarker is operably linked to a gene chip.

15

87. A method of identifying a Raf kinase inhibitory agent for treatment of a cell proliferative disorder or to guide a decision to progress a Raf kinase inhibitory agent to further development, the method comprising:

20 contacting the agent with A375M cells or cells from an A375M-cell-initiated xenograft tumor, and

testing a portion of the contacted cells to measure gene expression level of at least one biomarker selected from Table I or Table VIII,

25 wherein detection of an alteration in expression level compared to baseline of the at least one biomarker is indicative of an identification of the agent for the treatment or a favorable decision to progress the compound for further development.

88. The method of 87, wherein the at least one biomarker is selected from a subset of Table I represented by any of Tables II through VII.

30 89. The method of 87, wherein the at least one biomarker is selected from a subset of Table VIII represented by any of Tables IX through XX.

90. The method of 87, wherein the measurement of gene expression is measured by detecting the quantity of any of RNA transcribed by the at least one biomarker, DNA produced from reverse transcription of an RNA transcribed by the at least one biomarker, or a polypeptide or protein encoded by the at least one biomarker.

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91. The method of 87, wherein the at least one biomarker is operably linked to a gene chip.

92. A data set presented in a computer readable format for indicating response to a Raf
10 kinase inhibitor, the data set comprising the biomarkers of Table I and/or Table VIII.

93. The data set of 92, wherein the data set comprises a subset of Table I represented by any of Tables II through VII.

15 94. The data set of 92, wherein the data set comprises a subset of Table VIII represented by any of Tables IX through XX.

95. The data set of 93 or 94, wherein the biomarkers are operably linked to a gene chip.

20 All references presented herein are incorporated by reference in their entirety as if fully set forth herein.

WHAT IS CLAIMED IS:

1. A method of identifying a patient for treatment with a Raf kinase inhibitor, the method comprising:
 - determining presence of gene expression of at least one biomarker selected from Table I or Table VIII in a biological sample obtained from the patient,
 - identifying the patient for treatment if the presence of gene expression of the at least one biomarker is detected.
2. The method of claim 1, wherein the determining step further comprises measuring gene expression level of the at least one biomarker and comparing the measured gene expression level to baseline.
3. The method of claim 1, wherein the biological sample is obtained from lung, pancreas, thyroid, ovary, bladder, breast, prostate, liver, colon, myeloid tissue, skin, or tumor tissue.
4. The method of claim 1, wherein the biological sample is from a region showing evidence of a cell proliferative disorder.
5. The method of claim 2, wherein the biomarker is over-expressed in the biological sample relative to baseline.
6. The method of claim 2, wherein the biomarker is under-expressed in the biological sample relative to baseline.
7. The method of claim 1 or 2, wherein the determining step further comprises determining gene expression of at least one biomarker selected from a subset of Table I represented by any of Tables II through VII.
8. The method of claim 1 or 2, wherein the determining step further comprises determining gene expression of at least one biomarker selected from a subset of Table VIII represented by any of Tables IX through XX.

9. The method of claim 1 or 2, wherein the determining step further comprises determining gene expression of at least two biomarkers selected from Table I and/or Table VIII.
10. The method of claim 1, wherein the inhibitor is selected from the group consisting of CHIR-265; BAY 43-9006; ISIS-5132; CGP-69846A; ODN-698; ISIS-13650; LE-AON; LERaf-AON; LE-AON c-Raf; LE-5132; N-[3-[6-(3-Oxo-1,3-dihydro-2-benzofuran-5-ylamino)pyrazin-2-yl]phenyl]acetamide; PLX-4720; PLX-3204; PLX-3331; PLX-4718; PLX-4735; PLX-4032; N-[5-[3-(1-Cyano-1-methylethyl)benzamido]-2-methylphenyl]-4-oxo-3,4-dihydroquinazoline-6-carboxamide; and N-[5-[3-(1-Cyano-1-methylethyl)benzamido]-2-methylphenyl]-3-methyl-4-oxo-3,4-dihydroquinazoline-6-carboxamide.
11. A method of monitoring response of a patient to treatment with a Raf kinase inhibitor, the method comprising:
determining presence of gene expression of at least one biomarker selected from Table I or Table VIII in a biological sample obtained from a patient who has been administered a Raf kinase inhibitor,
evaluating response of the patient based on detection of the presence of gene expression of the at least one biomarker.
12. The method of claim 11, wherein the inhibitor has been administered in a therapeutically effective amount.
13. The method of claim 11 further comprising the step of administering an amount of a Raf kinase inhibitor to the patient.
14. The method of claim 13, wherein the inhibitor is administered before the biological sample is obtained from the patient.
15. The method of claim 13, wherein the inhibitor is administered after the evaluating step.

16. The method of claim 11 or 14 further comprising obtaining a biological sample from the patient subsequent to the administration of the Raf kinase inhibitor.
17. The method of claim 11, wherein the determining step further comprises measuring gene expression level of the at least one biomarker and comparing the measured gene expression level to baseline.
18. The method of claim 15 further comprising administering a different Raf kinase inhibitor to the patient after the evaluating step.
19. The method of claim 12 further comprising adjusting the dosage amount for subsequent administration of the same or a different Raf kinase inhibitor to the patient.
20. A method of treating a cell proliferative disorder, the method comprising
selecting a patient evidencing gene expression of a first set of at least one biomarker selected from Table I or Table VIII, and
administering to the patient a therapeutically effective amount of an agent that alters the level of gene expression compared to baseline of a second set of at least one biomarker selected from Table I or Table VIII.
21. The method of claim 20, wherein the first set and the second set include at least one of the same biomarker.
22. The method of claim 20, wherein the first set and the second set include the same biomarkers.
23. The method of claim 20, wherein the cell proliferative disorder is a neoplastic disorder.
24. The method of claim 23, wherein the neoplastic disorder is a cancer of any of lung, pancreas, thyroid, ovary, bladder, breast, prostate, liver, colon, myeloid tissue, or skin.

25. The method of claim 24, wherein the cancer is melanoma.
26. The method of claim 25, wherein the melanoma exhibits a V600E B-Raf mutation.
27. The method of claim 20, wherein the first set and/or the second set are operably linked to at least one gene chip.
28. A method of identifying an agent for treatment of a cell proliferative disorder, the method comprising:
 contacting the agent with a cell line or tissue associated with the disorder, and
 testing a portion of the cell culture or tissue after the contacting to measure gene expression level of at least one biomarker selected from Table I or Table VIII that has been altered compared to baseline,
 wherein detection of an alteration in expression level of the at least one biomarker is indicative of an identification of the agent for the treatment.
29. The method of claim 28, wherein the agent is a Raf kinase inhibitor.
30. The method of claim 28, wherein the measurement of gene expression compared to baseline is measured by detecting the quantity of any of RNA transcribed by the at least one biomarker, DNA produced from reverse transcription of an RNA transcribed by the at least one biomarker, or a polypeptide or protein encoded by the at least one biomarker.