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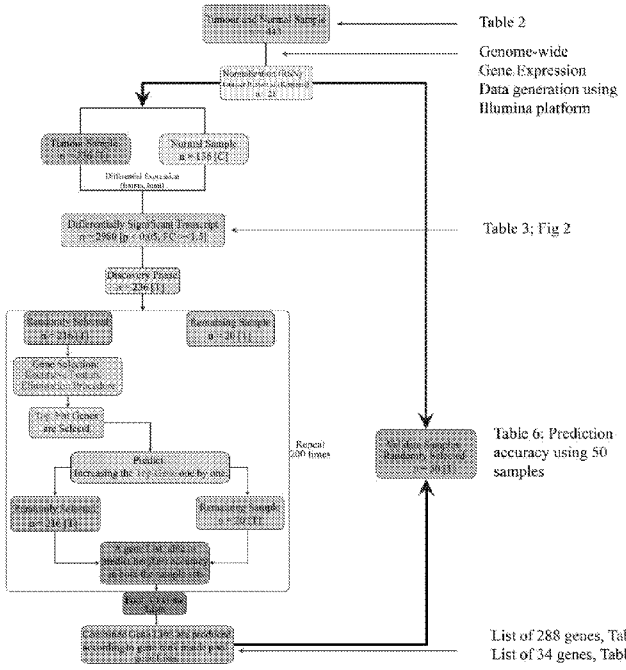
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(54) Title: A CHIP AND A METHOD FOR HEAD & NECK CANCER PROGNOSIS

Figure 1:



(57) Abstract: The present application provides a method for classification of metastatic and non-metastatic squamous cell carcinoma of head and neck (HNSCC) into N0 (low or no risk of metastases) or N+ (high risk of metastases) based on analysis of gene expression profile. Particularly, the present application provides a method for classification of HNSCC which is specifically effective for the Asian population.

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A CHIP AND A METHOD FOR HEAD & NECK CANCER PROGNOSIS

FIELD OF THE INVENTION

The invention relates to a chip and a method for head & neck cancer prognosis and further the biomarkers that predict the aggressive subset amongst early squamous cancer of tongue, biomarkers that can predict the aggressive subset amongst early squamous cancer of the buccal mucosa, and an analytical process using micro-array based gene expression data to classify metastatic and non-metastatic Squamous cell carcinoma of the head and neck (HNSCC) tumors to aid in the decision making by a Surgeon to dissect or not to dissect the neck of a patient. In other words, this classification process will allow the surgeon to avoid over-treatment as well as under treatment.

BACKGROUND OF THE INVENTION

Squamous cell carcinoma of the head and neck (HNSCC) being the sixth most common cancer worldwide, poses a significant cause for morbidity and mortality, with approximately 540,000 new cases annually worldwide (Vigneswaran and Williams; Oral MaxillofacSurgClin North Am. 2014 May;26(2):123-41. doi: 10.1016/j.coms.2014.01.001). HNSCC is the highest incidence of all cancer in South East Asia and in India it comprises 32% to 40% of total malignancy in comparison to western countries where it is only 3% to 5% (Vigneswaran and Williams; Oral MaxillofacSurgClin North Am. 2014 May; 26(2):123-41. doi: 10.1016/j.coms.2014.01.001). Despite the recent advances the 5-year survival rate is approximately 50% due to relatively high recurrence rates in the patients and the development of SPTs in the upper aerodigestive tract (Tabor, Brakenhoff et al.;Clin Cancer Res. 2001 Jun;7(6):1523-32). HNSCC arises from the epithelial mucosal region of the upper aerodigestive tract encompassing regions of oral cavity, larynx and pharynx and has variable etiologies and prognosis. Smoking and alcohol consumption are the foremost risk factors for HNSCC. However, the difference in prevalence in different population is attributable to the indigenous habit of chewing a mixture of tobacco, areca nut, lime betel leaf and spices in variety of combinations (Tabor, Brakenhoff et al.; Clin Cancer Res. 2001 Jun;7(6):1523-32). Human papillomavirus (HPV) also is emerging as an important risk factor for the development of HNSCC.

In India, it is the chewing of tobacco quid, and its placement in the gingivo-buccal groove that is responsible for the high incidence overall and the predilection for buccal mucosa cancer. In the West it is mainly alcohol consumption along with smoking that is responsible for causing oral cancer which affects mainly the floor of the mouth and the tongue.

Oral submucous fibrosis,- a premalignant condition, is a typically Indian disease as it is caused due to the habit of chewing areca nut. A very large number of Indian oral cancer cases have associated submucous fibrosis. This is not so in oral cancers in the Western population.

HNSCC has a tendency to metastasize to the cervical lymph nodes. Presence of metastasis to cervical lymph node has a major adverse impact on the prognosis of oral cancer. There are site wise differences in the pattern of lymph node metastases. Level one lymph node is the first echelon of metastasis from cancer of the buccal mucosa whereas level two is the first echelon of metastasis from cancer of the tongue.

Presence of cervical lymph node metastases (N+ neck) may manifest clinically as a palpable mass or may be demonstrated on imaging and a needle biopsy. In a sizeable number of cases of oral cancer there may be micro metastases that are neither clinically palpable nor are demonstrable on imaging. These cases may pass off as ' N zero ' (N0) though they are truly ' N+ ' cases.

Treatment of oral squamous cancer must necessarily address the issue of management of the neck.

Surgery is the mainstay of treatment for oral cancer. An early primary tumour viz stage T1(tumour size < 2cms) or stage T2 (tumour size 2-4 ems) is generally resected intra orally. If the neck is N+, clinically or on imaging, a radical or modified radical neck dissection is performed.

Nearly 30% of the T1 /T2, N0 (N zero) cases may be harbouring occult cervical lymph node metastases. If the neck is not dissected, the neck disease will manifest within weeks or months as palpable metastatic nodes. Resection at that stage may or may not be possible. If on the other

hand, neck dissection is performed prophylactically in all N0 cases, 70% of the cases will be subjected to an unnecessary radical surgery with all its costs & morbidity.
Several clinico-pathological parameters have been used to try and predict the true 'N ' status in a neck that is 'N0 ' clinically and on imaging. These include the tumour size, its depth, the grade of the tumour and the presence or absence of perineural invasion. Neither singly, nor in combination has these factors allowed a high enough predictability for a ' wait & watch ' policy to be pursued safely.

If the neck is "N0" clinically and on imaging, a surgeon is faced with the dilemma on whether to dissect the neck at this stage.

Roepman, Wessels et al. in their publication (Nat Genet. 2005 Feb;37(2):182-6. Epub 2005 Jan 9) and PCT Publication W02006/085746 disclosed a microarray-based study on the European population and reported a gene signature with the predictive strength of 102 differentially expressed genes (those which are up-regulated or down-regulated) for lymph node metastases from 82 primary SCCs of the oral cavity and oropharynx). Significantly, an overall predictive accuracy of 86% was achieved compared with a clinical staging accuracy of 68%. Ropemann *et al.* (Cancer Res. 2006 Feb 15; 66(4):2361-6) further reported several subsets of an 825-gene panel that are capable of predicting lymph node metastasis in head and neck cancer with equal robustness. A further refinement was reported by Roepman *et al.* (Cancer Res. 2006 Feb 15;66(4):2361-6) on the predictive genes that enriched two over represented functional categories viz, binding to the extracellular matrix and protease activity for the degradation of the extracellular matrix, supporting the fact that invasion of the tumor cells in the surrounding tissues involve the non-tumor cells in the tumor microenvironment. The initial 102 gene signature developed on a in-house 'customized' array platform and was subsequently subjected to a commercial whole gene expression array for platform transition, followed by the analysis on a dedicated diagnostic array for multicentric validation. Van Hoof SR et al. (Carcinoma Journal of Clinical Oncology 2012 30:33, 4104-4110) reported an analysis that showed an overall accuracy of 72% for the whole validation cohort and an 89% NPV upon combining with clinical assessment.

The 825 genes or subset thereof generated from the HNSCC tumors of patient population in the Netherlands disclosed in the PCT publication W02006/085746 suffer from severe limitations and is not applicable to patients in the Asian subcontinent due to their distinct population specific differences in the genetic architecture of the HNSCC tumors. The gene list could classify only at 72% accuracy for the validation cohort that reaches to 89% upon combining with clinical information. Further, the said gene list is unlikely to successfully classify the HNSCC samples originating from the Asian subcontinent as a major percentage of these population cohorts have a history of exposure to smokeless tobacco, as depicted by the current set of patient volunteers whose tissues were subjected to transcriptomics analysis (Table 1).

Smoking and alcohol consumption are the foremost risk factors for HNSCC. However, the difference in prevalence in different population is attributable to the indigenous habit of chewing a mixture of tobacco, areca nut, lime betel leaf and spices in variety of combinations as described by Tabor, Brakenhoff et al. in 2001. This is also supported by the fact that there is very little resemblance with list generated from the data obtained using European cohorts versus this work based on Indian patients (Fig. 7).

There is therefore an unmet need to provide biomarkers that predict the aggressive subset amongst early squamous cancer of tongue, biomarkers that can predict the aggressive subset amongst early squamous cancer of the buccal mucosa within the population in the Asian subcontinent and an analytical process using micro-array based gene expression signature to distinguish potentially metastatic from non-metastatic HNSCC tumors to aid in the decision making by a Surgeon whether to undertake a prophylactic radical neck dissection or whether to wait and watch with regular follow up.

OBJECTS OF THE INVENTION

The main object of the invention is to provide a chip, a kit, biomarkers and an in-vitro method for head & neck cancer prognosis.

Another major objective of the invention is to provide biomarkers to aid the surgeon in making evidence based decision, whether to dissect or not to dissect the neck during surgery for an

early (T1,/T2, N0) Squamous cancer of the oral cavity thus minimising the risk of under-treatment and avoiding the morbidities of over-treatment.

A major objective of the invention is to provide biomarkers to identify the aggressive subset amongst early HNSCC (T1, T2, N0) so as to assist the head and neck oncologist in prognostication as also in planning appropriate and optimum treatment upfront.

Another object of the invention is to provide biomarkers that predict the aggressive subset amongst early squamous cancer of tongue (T1 /T2) within the population in the Asian subcontinent.

Another object of the invention is to provide biomarkers that can predict the aggressive subset amongst early squamous cancer of the buccal mucosa (T1/T2) within the population in the Asian subcontinent.

Yet another object of the invention is to provide an analytical process using micro-array based gene expression data to classify metastatic and non-metastatic HNSCC tumors that can be used by a surgeon to decide on whether to dissect the neck of a patient.

Yet another object of the invention is to provide a kit for the determination of head-and-neck tumor, comprising a microarray which includes one or more polynucleotides comprising a nucleic acid sequence complementary to the sequence of one or more mRNAs selected from the group arrived at using the said analytical process, capable of measuring the expression level of the mRNA in tumor biopsy materials or body fluids like saliva and blood, so as to yield a comparative expression profile between sample and control to determine presence of tumor and its metastatic potential.

Yet another object of the invention is to provide the said kit for the determination of head-and-neck tumor, including a primer set capable of amplifying the sequence of one or more mRNA in tumor biopsy materials or body fluids like saliva and blood, selected from the group arrived at using the analytical process and a fluorescent probe comprising a polynucleotide consisting of a nucleic acid sequence complementary to the mRNA sequence or a part thereof.

SUMMARY OF THE INVENTION

Accordingly, the present invention relates to a chip for detection of head & neck cancer prognosis consisting of cDNA sequence complimentary to the nucleotide sequence having Seq id no. 1-957.

In an embodiment of the invention it provides a method for microarray-based gene-expression assay conducted on a microarray chip for quantifying the expression levels of signature biomarkers in a tumour biopsy material, such that the said method comprises steps of:

(a) preparing total RNA from a tumour sample (T);
(b) purifying the said RNA from samples (T) converting them to respective cDNA;
(c) characterized in converting the said cDNA of sample (T) into cRNA and labelling that cRNA with a fluorescent dye (selected from colours Red, Green, Blue, yellow) to obtain a flurorescent-labelled cRNA (fT);
(d) purifying the fluorescent labelled cRNAs (fT) from free, unreacted dye;
(e) hybridising the said fT as obtained in step (d) with oligonucleotide probes on the said microarray chip;
(f) washing the said chip after hybridization in order to remove excess, unbound fT, followed by processing and scanning using an array reader;
(g) the scanner generates fluorescent coloured image of the resultant spots due to hybridization of fT to the probes on the Chip.
(h) fluorescent spots for the colour assigned to fT is normalized and corrected against the background and non-specific (undesired) hybridization.
(i) the normalized values of the each fluorescent spot from the sample as obtained in (h) are matched with the pre-determined Hyperplane approximation as template (also called classifier template) to obtain the classified N0 and N+ samples.

In another embodiment of the invention it provides a method wherein the microarray chip has a biomarker specific oligonucleotide probe on the surface of a glass slide.

In yet another embodiment of the invention provides a method, wherein the tumour is selected from a group consisting of HNSCC, at N0, N+, T1, T2, T3, T4 stage of tongue and buccal mucosa.

In yet another embodiment of the invention provides a method wherein the cRNA as in step 'c' is a biomarker for detection of head & neck cancer prognosis having Seq id no. 1-957.

In yet another embodiment of the invention provides a kit for head & neck cancer prognosis consisting of :

I. a panel of cDNA sequence complimentary to the nucleotide sequence having Seq id no. 1-957 on a chip,
II. suitable reagents capable of detecting singly or a combination of the cDNA;
III. instruction manual for using the kit.

wherein, up-regulation (induction) of genes having nucleotide sequence of seq id no. 1-555 and concomitant down-regulation (suppression) of genes having nucleotide sequence of seq id no. 556-957 yielding a comparative expression profile between sample and control to determine presence of tumour and its node metastatic potential.

In yet another embodiment the invention provides an in-silico method for analysing the micro-array data obtained by using the chip comprising steps:

I. normalising the intensity output from the iScan for all Tumour and Normal samples (n=443;) using Robust Spline Normalization in Lumi, Bioconductor package method;
II. removing the Outlier samples (n=21) from the total sample by using K-means clustering method;
III. randomly selecting from all samples 50 Tumour samples as validation set and generating robust gene list from remaining samples (n=372) consisting of Tumour samples (n=236) and Normal samples (n=136);
IV. using the normalized intensity values of the two groups of samples (n=372 and n=236) for differential expression analysis using the Bioconductor packages limma and lumi and generating a list of 2980 differentially expressed genes that classify the tumour and normal samples with adjusted p value < 0.05 and fold change > 1.5 or <-1.5;
V. generating the robust feature list that would classify the NO and N+ tumour samples using the 236 Tumour samples with 2980 genes wherein the tumour samples (n=236) are separated randomly in two parts; one part containing — 90% of the samples

(n=216) and the other part containing —10% of the samples (n=20) and denoting them as "Sample 1" and "Sample 2", respectively;

VI. applying a Recursive Feature Elimination process on Sample 1 and identifying top 300 features (genes) as important ones;

VII. predicting Sample 1 and Sample 2 separately by choosing top *"i"* transcripts (genes) from this list varying *i=1,2,...,300,* and finding the feature lists with the highest prediction accuracy in both sample sets;

VIII. repeating Steps V to Step VII 200 times to remove the sample bias and collecting all 200 feature lists so obtained;

IX. preparing a frequency distribution of genes found in all 200 feature lists;

X. characterized in preparing a list of 957 genes from the above 200 feature lists such that each of these 957 transcripts or genes appears at least once in the 200 feature lists thus making it the largest list of which successive lists are subsets of this 957-gene list;

XI. predicting 50 validation samples set with the gene that appeared highest number of times and calculating prediction accuracy followed by prediction with two transcripts having highest and next highest frequency and repeating the procedure by increasing the number of transcripts.

In yet another embodiment the invention provides a method for screening therapeutic agents for head-and-neck tumour, comprising the steps:

i. administering a test substance to a non-human animal suffering from artificially induced head-and-neck tumour;

ii. applying the sample from step (i) onto the chip;

iii. comparing the expression level to the expression level of the mRNA (or corresponding cDNA) with control wherein test substance is not administered.

ABBREVIATIONS

HNSCC	Head and Neck Squamous Cell Carcinoma
SCC	Squamous Cell Carcinoma
N0	Lymph node metastases negative
N+ neck	Lymph node metastases positive

Ti	Tumour size <2cms
T2	Tumour size 2-4 ems
mRNA	Messenger ribo-nucleic acid
cRNA	Complementary ribo-nucleic acid
cDNA	Complementary deoxyribo-nucleic acid
T	Tumour
C	Control
ROC	Receiver Operating Characteristics
UTP	Uridine tri phosphate
RSN	Robust Spline Normalization
PCR	Polymerase Chain Reaction
PPV	Positive predictive value
NPV	Negative predictive value

BRIEF DESCRIPTION OF ACCOMPANYING DRAWINGS

Fig. 1 illustrates the flow chart of the analysis process followed. The Model depicts the workflow and the numbers of the samples analyzed and gene shortlisted at each analysis. 443 samples were received of which 286 were tumor samples. Of this 286 samples 50 were kept aside for the testing set and the rest were used as a training set for the discovery phase. Reiterative statistical and computer algorithms were used to generate a final gene list. The combined final list was then validated in the 50 samples that were kept aside for the testing phase.

Fig. 2 illustrates the Heat Map. The heat map depicts the differentially expressed transcripts (genes) between tumor and control tissues. In the present analysis 2980 differentially expressed transcripts with p value less than 0.05 and 1.5 fold differences were selected.

Fig. 3 illustrates the prediction accuracy curve. The upper panel illustrates prediction accuracy produced by the combined transcript lists which were generated by the algorithm. It was observed that the accuracy level is higher than 95% in the training set and nearly 85% in the test set by using the two transcript lists which contains n = 34 and n = 288 transcripts. The lower panel shows how the prediction accuracy is varied by the different transcript lists.

Fig. 4 illustrates AUC - training sample. The panels depict the sensitivity of prediction both in the training set samples used for discovery phase and the testing set samples used for validation phase.

Fig. 5 illustrates the validation data of prediction of 50 test samples. The picture depicts the bar plot of the probability value generated when predicting the 50 validation samples by using the n = 34 transcripts. In the present analysis, 236 samples are used as train set. The comparison plot shows agreement between the diagnosis clinically and predicted by the 34 transcripts for a given sample.

Fig. 6 illustrates prediction accuracy of 10 follow up samples converted from N0 to N+. The picture depicts that prediction with the help of this algorithm accurately predicts the clinical progression of 10 samples. Samples which converted from NO to N+ clinically after 18 months were predicted successfully by the transcript list generated.

Fig. 7 illustrates comparison of gene signatures derived from Indian and Caucasian head and neck patients. The graph illustrates that the transcript list generated is indigenous to the India population and is unique when compared to the Caucasian population. This shows the necessity to have an indigenous biomarker for tumor progression as the allele pool is different between Indian and other populations. Panel A: Shows the venn diagram between the transcript list produced from this work (n = 34) and the transcript list provided by Frank C P Holstege *et al.* (n= 102). The second venn diagram is between the transcript list produced from this work (n = 288) and the transcript list provided by Frank C P Holstege *et al.* (n= 102). The third venn diagram is between the transcript list produced from this work (n = 957) and the transcript list provided by Frank C P Holstege *et al.* (n= 825).

Panel B shows the log fold change value of transcripts (n = 102 and n= 825 provided by Frank C P Holstege *et al.*) generated by the differential expression between tumour and control samples of this work.

Panel C shows ROC curves by using the transcripts (n = 102 and n = 825) provided by Frank C P Holstege *et al.* where the train samples and the test samples are from this work.

Fig. 8 illustrates classifying unknown sample as N0 or N+: For classifying the unknown tumour samples, the normalized expression value is used as input into the model generated from the 34 or 288 gene signature using the learning algorithm as shown.

BRIEF DESCRIPTION OF ACCOMPANYING TABLES

Table 1 illustrates the history of 293 patient volunteers whose tissues were subjected to gene-expression analysis for this invention.

Table 2 illustrates the clinical description of the samples used for gene-expression analysis.

Table 3 illustrates the differentially expressed [Tumour (T) versus Control (C)] 2980 genes or nucleotide sequences.

Table 4 illustrates the 288 gene signatures [N+ vs N0].

Table 5 illustrates the signature of 34 differentially (N+ versus N0) expressed genes or nucleotide sequences.

Table 6 illustrates the prediction accuracy/sensitivity.

Table 7 illustrates the signatures of 957 genes or nucleotide sequences [N+ vs N0].

DETAILED DESCRIPTION OF THE INVENTION

In accordance with this invention, paired tumor and normal tissues were collected in the hospital (Table 2) [Tissue material is taken from Prince Aly Khan Hospital (PAKH), Mumbai-400010] and preserved in RNA Later (Ambion) at -80°C. Total RNA from the tissue samples were isolated and quality and quantity were determined. The isolated RNA samples were converted to cRNA and labelled with cy3 (Cyanine™ 3) dye. The labelled cRNA were hybridized with Illumina Human HT-12 v4 Expression Beadchip and the Illumina bioarrays were read in an Illumina iScan Reader and the primary intensity data were obtained in standard file format, using Genome Studio software.

The process of analysing the micro-array data comprises the following main steps:

I. Normalising the intensity output from the iScan for all Tumour and Normal samples (n=443; sample descriptions are provided in Table 2) using RSN (Robust Spline Normalization in Lumi, R Bioconductor package) method as described in Fig. 1;

II. Removing the Outlier samples (n=21) from the total sample by using K-means clustering method;

III. Randomly selecting from all samples 50 Tumour samples as validation set and generating the robust gene list form remaining samples (n=372) consisting of Tumour samples (n=236) and Normal samples (n=136);

IV. Using the normalized intensity values of the two groups of samples (n=236 and n=136) for differential expression analysis using the Bioconductor packages limma and lumi and generating a list of 2980 differentially expressed genes (Table 3) that

classify the tumor and normal samples with adjusted p value < 0.05 and fold change > 1.5 or <-1.5 (Histogram or Heat Map in Fig. 2);

V. Generating the robust feature list that would classify the N0 and N+ tumor samples using the 236 Tumour samples with 2980 genes wherein the tumour samples (n=236) are separated randomly in two parts; one part containing — 90% of the samples (n=216) and the other part containing —10% of the samples (n=20) and denoting them as "Sample 1" and "Sample 2", respectively;

VI. Applying a Recursive Feature Elimination process on Sample 1 and identifying top 300 features (genes) as important ones;

VII. Predicting Sample 1 and Sample 2 separately by choosing top *"i"* transcripts (genes) from this list varying *i=1,2, ...,300,* and finding the feature lists with the highest prediction accuracy in both sample sets;

VIII. Repeating Steps V to Step VII 200 times to remove the sample bias and collecting all 200 feature lists so obtained;

IX. Preparing a frequency distribution of genes found in all 200 feature lists;

X. Preparing a list of 957 genes from the above 200 feature lists such that each of these 957 transcripts or genes appears at least once in the 200 feature lists thus making it the largest list of which successive lists are subsets of this 957-gene list (Table 7);

XI. Predicting 50 validation samples set with the gene that appeared highest number of times in the 957-gene list and calculating prediction accuracy followed by prediction with two transcripts having highest and next highest frequency. This procedure was repeated by increasing the number of transcripts. The transcripts list(s) comprising of 288 nucleotide sequences (genes or transcripts) (Table 4) and 34 nucleotide sequences (genes or transcripts) (Table 5) showed highest prediction accuracy.

The biomarker information generated from the training set samples (n=236) was used for class prediction of 50 tumor samples that were initially put aside and are referred to as validation set samples. Analysis of these 50 samples with 288 nucleotide sequences (genes or transcripts) and also with 34 nucleotide sequence signature which is a subset of 288 nucleotide sequences (genes or transcripts) gave overall prediction of 84% and 82 % respectively in these samples (Fig. 5). Moreover, Fig. 3 illustrates that the nucleotide sequence signature of 288 nucleotide sequences (genes or transcripts) or a subset of 34 nucleotide sequences (genes or transcripts) gave overall prediction of > 95% in training samples. The specificity and sensitivity for both

the test samples yielded acceptable results as demonstrated in Fig. 4 and Table 6. The ROC curves illustrated in Fig. 4 depict the percentage of false positives and false negatives.

It was observed that the prediction in 50 samples with the 34 nucleotide array set corroborated the clinical diagnosis hence validating the process of analysing the microarray data (Fig. 1). Furthermore, 10 samples of the 50 validation samples that were N0 at the recruitment stage were converted to N+ on 18 month follow up. Both the 288 and 34 nucleotide sequence (genes or transcripts) signature correctly predicted those samples as N+ when they were clinically marked at N0 with 100% accuracy (Fig. 6).

The present invention includes a nucleotide sequence (mRNA or cDNA) signature of 288 genes with up-regulation (induction) of one or more genes selected from serial numbers 1-174 and concomitant down-regulation (suppression) of one or more genes from numbers 175-288 as listed in table 4 and a signature of 34 genes (a subset of 288 genes) as given in table 5 where upregulation of one or more genes selected from genes 1-21 and concomitant down-regulation of one or more genes from numbers 22-34 are indicative of aggressive subset of head and neck cancer. Both the signature gene sets of 34 and 288 genes are subsets of 957 genes (Table 7).

The method of hybridization, detection and classification of an unknown tumor samples is given below:

(a) preparing total RNA from a tumor sample (T);

(b) converting the said RNA from samples (T) to respective double strand cDNA;

(c) converting the said cDNA of sample (T) into cRNA by in vitro transcription;

(d) hybridizing purified cRNA with the microarray chip containing nucleotide sequence probes as mentioned above;

(e) washing the said chip after hybridization in order to remove excess, probes;

(f) washing, blocking and streptavidin-Cy3 staining of the bound cRNAs;

(g) washing of the labelled chip with buffers under non-stringent condition to remove unbound conjugate;

(h) scanning of the labelled chip in a suitable scanner to collect the fluroscent intensity values;

(i) background correction and normalization of the fluorescent intensity values;

(j) using the normalized expression value as input into the model generated from the 34/288 gene signature using the learning algorithm as shown in Fig. 8 for classifying the unknown tumour samples.

Thus the present invention provides:

(i) A signature of 957 nucleotide sequences or genes or transcripts — any combinations of nucleotide sequences 1-957;

(ii) A signature of 288 nucleotide sequences or genes or transcripts — any combinations of nucleotidesequences 1-288;

(iii) A signature 34 nucleotide sequences or genes or transcripts — any combinations of nucleotide sequences 1-34that can be used for determining the expression level of the mRNA in tumor biopsy materials so as to yield a comparative expression profile between sample and control to determine presence of tumor and its metastatic potential

(iv) A signature of 957 genes, wherein up-regulation (activation) of one or more genes is selected from serial numbers 1-555 and concomitant down-regulation (suppression) of one or more genes from numbers 556-957 as listed in table 7.

(v) A signature of 288 genes (subset of 957 genes), wherein up-regulation (activation) of one or more genes is selected from serial numbers 1-174 and concomitant down-regulation (suppression) of one or more genes from numbers 175-288 as listed in table 4.

(vi) A signature of 34 genes (subset of 288 genes) as given in table 5, wherein up-regulation of one or more genes is selected from genes 1-21 and concomitant down-regulation of one or more genes from numbers 22-34.

EXAMPLES

The following examples are given by way of illustration of the present invention and therefore should not be construed to limit the scope of the present invention.

Example 1: RNA Isolation

Since May, 2011, 443 tumor and normal HNSCC tissue samples were weighed and preserved in RNA Later (Ambion) and stored at -80°C for further use. History was recorded and each sample case followed up for 18 months (Table 1 and 2).

About 30mg of the tissues from 443 tissue samples, of which tumor (n = 303) and normal (n = 140) samples, were subjected to total RNA extraction. Total RNA was isolated from the biopsy tissue preserved in RNA latter using a Qiagen RNeasy kit. Following extraction, the RNA was qualitatively and quantitatively checked. Quantitative estimation of RNA yield was measured

by Nanodrop Spectrophotometer. In addition to the concentration of RNA, protein and carbohydrate contamination was checked by analyzing 260/280 and 260/230 absorbance ratio respectively. 500 ng of RNA was used for further experiments. Each sample was qualitatively evaluated for RNA integrity by Agilent 2100 Bioanalyser with RNA 600 nano kit. Total RNA quality control criteria was set in concordance with tumor analysis best practicing practice group, where samples below RIN value as 7 were not used further.

Example 2: cRNA synthesis and Labeling

cRNA was prepared using Illumina Total Prep RNA Amplification Kit from Ambion as per the manufacturer's instructions. First strand synthesis of cDNA was performed by reverse transcription of 500ng of RNA using Arrayscript followed by second strand synthesis by DNA polymerase. The double stranded cDNA was then purified and used as template for in vitro transcription at 37 ° for 16 hours to generate cRNA. During in vitro transcription biotynylated 5 -(3- aminoallyl) -UTP was incorporated in the single stranded cRNA. The cRNA was then purified and the yield was quantified by Qubit spectrophotometry. 750ng of cRNA was used for further hybridizations.

Example 3: Array Based Whole Genome Gene expression profiling using Illumina Human HT-12 v4 Expression Beadchip

The Direct hybridization Whole-Gene Expression assay offers the highest multiplexing capabilities for whole genome gene expression, simultaneously profiling more than 47,000 transcripts (genes). The Human-HT-12 v4.0 Expression Beadchip supports 12 samples format facilitates large scale gene expression studies. This technique allows to analyze genome wide transcriptome profile targeting more than 31,000 annotated genes per sample using 47,000 probe sets.

Example 4: Array Hybridization

Illumina Whole Genome Gene Expression Beadchips consists of oligonucleotides immobilized to beads held in microwells on the surface of an array substrate. The presence of 29- mer array sequence on each bead helps in uniquely identifying the location of the bead on the array surface and hence helps in hybridization based procedure to map the array. Seven-hundred fifty nanogram (750ng) of labeled sample cRNA were detected by hybridization to 50 mer probes on

the bead chip. Subsequent steps included washing, blocking, and streptavidin-Cy3 staining followed by serial non-stringent washing steps to remove unbound conjugate. Following the final rinse, the chips were dried by centrifugation and scanned. The Illumina bioarrays were read in an Illumina iScan Reader and the primary intensity data were obtained in standard file format, using Genome Studio software.

Example 5: Selection of Predictive Nucleotide Sequence Array List

(i) Data Analysis Pipeline Setup for Transcriptome Profiling

Pre-processing of Expression Data

Raw background subtracted data were extracted by Illumina GenomeStudio Software v3, and were further processed in R statistical environment (http://www.r-project.org) using Lumi package. Raw data were pre-processed for force positive value to handle using variance stabilization transformation of R Bioconductor Lumi package. The robust spline method was used for normalization and outlier is removed by using k-means method. Filtration was done with probes reaching a detection p value < 0.01 in all samples. Differentially expressed nucleotide sequences were analyzed in the R Bioconductor Limma package. A linear model was fitted for each nucleotide sequence given a series of arrays using lmFit function. Using Benjamini and Hochberg method, the p values were adjusted for multiple testing. Nucleotide sequences/ probes with FC >1.5 or FC < -1.5 and adjusted p value < 0.05 were considered to be differentially expressed between tumor and control samples.

Comparison between Tumor and Control Samples

In order to elucidate the progression of N0 into N+ tumors in HNSCC patients the differential expression of the transcriptome between tumor and normal samples were first compared. This was done by pooling all N0 and N+ tumor samples as one group (n=236) and their adjacent normal tissue (n=136) as another group.

It was observed from the aforesaid analysis that 2980 nucleotide sequences/probes were differentially expressed between tumor and the normal samples (Fig. 2 and Table 3). The threshold for the differential fold change in selecting these 2980 nucleotide sequences was set at 1.5. However, the same 2980 nucleotide sequences/probes did not show any significant expression difference between N0 and N+ tumors. The reason for such an observation can be attributed to the fact that the difference in expression of genes between N0 and N+ group would be very small.

Thus, the Class Prediction method was then used to analyze the difference as opposed to directly calculating differential gene expression between 112 N+ and 124 N0 tumor samples. Class prediction effectively predicts the samples according to their N0 and N+ status as detailed below. The 2980 nucleotide sequences differentially expressed between tumor and normal samples with >< 1.5 fold difference (adjusted p value < 0.05) was used as probable predictor nucleotide sequences (Table 3).

Class Prediction Analysis

To delineate an effective set of classifier nucleotide sequence, a Class Prediction based on training testing method was developed. Three hundred three (303) tumor samples were first normalized based on robust spline normalization and outliers (21 samples) were removed. From this group of 286 tumor samples, 50 randomly selected samples were kept aside for validation. The remaining 236 tumor samples were used for identification of the biomarker. The training testing method was performed in 236 samples using the 2980 nucleotide sequences as input to predict N0 and N+ tumors (Table 3). The data from each sample was subjected to reiterative statistical analysis to produce a nucleotide sequence/ probe list that could accurately classify early N0 and N+ HNSCC patients in 236 training set samples. The resulting nucleotide sequence signature of 957 (Table 7) nucleotide sequences or a sub set of 288 (Table 4) nucleotide sequences or a subset of 34 (Table 5) nucleotide sequences gave overall prediction of > 95% in training samples. (Fig. 4).

(ii) Validation Studies

The biomarker information generated from the discovery phase / training set samples (n=236) was used for class prediction of 50 tumor samples that were initially put aside and are referred to as validation set samples. Analysis of these 50 samples with 288 nucleotide sequences and also with 34 nucleotide sequence signature which is a subset of 288 nucleotide sequences gave overall prediction of 84% and 82 % respectively, in these samples (Fig. 3 and Fig. 5). The specificity and sensitivity for both the test samples yielded acceptable results as depicted in Fig. 4 and Table 6. The ROC curves illustrated in Fig. 4 depict the percentage of false positives and false negatives. The prediction in 50 samples with the 34 nucleotide array set corroborated the clinical diagnosis hence validating the prediction process in this sample set (Fig. 1). Ten samples of the 50 validation samples which were labeled as N0 at the recruitment stage and converted to N+ on 18 month follow up. Both the 288 and 34 nucleotide sequence signatures correctly predicted those samples as N+ when they were clinically marked at N0 with 100% accuracy (Fig. 6).

The present invention includes a nucleotide sequence (mRNA or cDNA) signature of 288 genes with up-regulation (induction) of one or more genes selected from serial numbers 1-174 and concomitant down-regulation (suppression) of one or more genes from numbers 175-288 as listed in table 4 and a signature of 34 genes (a subset of 288 genes) as given in table 5 where upregulation of one or more genes selected from genes 1-21 and concomitant down-regulation of one or more genes from numbers 22-34 are indicative of aggressive subset of head and neck cancer. Both the signature gene sets of 34 and 288 genes are subsets of 957 genes (Table 7).

Kit Design and Unknown Tumour Sample Testing

The list of biomarkers or genes, as provided in tables 4, 5, and 7, was used to identify the aggressive tumour subset amongst early HNSCC (T1, T2, N0) tumor by assaying the expression level of mRNAs of the corresponding genes in tumour biopsy materials by a hybridization-based assay on a microarray chip.

The microarray chip is prepared by spotting (printing) mRNA or biomarker specific oligonucleotide probe as listed in the sequence listing, along with few additional spots (5-10) of oligonucleotide unrelated to human samples for background correction and few oligonucleotides (3-5) for normalization purposes on the surface of a glass slide. The probes spotted on a chip "hybridize" with the corresponding mRNA or biomarker, listed in Tables 4, 5 and 7, present in the tumor sample of the subject.

ADVANTAGES OF THE INVENTION

The invention relates to the development of a gene expression based biomarker that predicts the aggressive subset amongst early stage oral cavity squamous cell carcinoma of the head and neck (HNSCC). This gene expression based kit will aid in the decision making by a Surgeon to dissect or not to dissect the lymph node of a patient with oral cavity cancer. Thus, this classification process will allow the surgeon to avoid over-treatment as well as under treatment.

Table 1

History of patient volunteers whose tissues were subjected to gene-expression analysis for this invention

Distribution of tobacco (n=293)

	Total	Male	Female
Smoking only	25	25	00
Smokeless tobacco only	**137**	129	08
Smoking + smokeless tobacco	37	35	02
Not at all	94	66	28

Distribution of alcohol (n=34)

	Total	Male	Female
Only alcohol consumption	08	08	00
Alcohol + tobacco consumption in any form	26	24	02
Total	34	32	02

Distribution of pattern of tobacco and alcohol use.

Smoking tobacco	Cigarette	54
	Bidi	12
Smokeless tobacco	Khaini	21
	Guthka	**159**
	Betel nut/Areca nut	44
	Pan	69
	Jarda	23
Alcohol consumption	Alcohol	34

Tobacco and alcohol consumption in BM and Tongue cases (n=293)

	BM (115)	Tongue (178)	Total (293)
Smoking only	14	11	25
Smokeless tobacco only	50	87	137
Smoking + smokeless tobacco	13	24	37
Not at all	38	56	94
Alcohol consumption	16	18	34
Not at all	99	160	259

Signs of oral cancer (n=293)

	mild	moderate	severe	absent
SMF	74	39	03	177
Leukoplakia	25	01	00	267
Erythroplakia	04	00	00	289

Table 2

Clinical Description of the Samples used for Transcriptome Analysis

Sr. No.	Patient Code	Category	T	N	N0 -> N+	Regional Rec in months	Depth (cm)	Grade	PNI	Total follow up [Jun 2015]
1	B/89607/001	BMT1T2N0	T2a	N0	0	NA	0.3	VC	A	24
2	B/88537/002	BMT1T2N0	T1b	N0	0	NA	0.3	WD	A	5
3	B/93694/003	BMT1T2N0	T1b	N0	0	NA	0.8	MD	A	24
4	A/95623/004	TT1T2N0	T1b	N0	Yes	3	0.7	MD	A	23
5	B/97343/005	BMT1T2N0	T1b	N0	Yes	4	0.7	MD	A	32
6	A/98781/006	TT1T2N0	T1b	N0	0	NA	0.5	MD	A	10
7	A1/98393/007	TT1T2N+	T2a	N+	0	NA	1.6	MD	P	10
8	B1/99562/008	BMT1T2N+	T1b	N2b	0	NA	0.6	MD	A	10
9	A/98461/009	TT1T2N0	T1b	N0	0	NA	0.8	MD	A	22
10	A/103870/010	TT1T2N0	T2a	N0	0	NA	0.3	VC	A	28
11	A/106033/011	TT1T2N0	T1b	N0	0	NA	0.5	MD	A	40
12	B/106044/012	BMT1T2N0	T1b	N0	0	NA	0.5	MD	P	21
13	B1/104004/014	BMT1T2N+	T2b	N+	0	NA	0.5	WD	P	20
14	B1/106466/015	BMT1T2N+	T2a	N+	0	NA	0.4	MD	A	5
15	B/106967/016	BMT1T2N0	T1b	N0	0	NA	0.5	MD	A	27
16	A/106011/017	TT1T2N0	T1b	N0	0	NA	0.5	MD	A	37
17	B/107017/018	BMT1T2N0	T1b	N0	Yes	NA	0.2	VC	A	31
18	B//107023/019	BMT1T2N0	T2a	N0	0	NA	0.8	WD	A	23
19	A1/107022/020	TT1T2N+	T1b	N2b	0	NA	1.3	MD	P	11
20	A1/107352/021	TT1T2N+	T1b	N+	0	NA	0.5	PD	A	23
21	B/107790/022	BMT1T2N0	T1b	N0	Yes	12	0.3	MD	A	20
22	B/107443/023	BMT1T2N0	T1b	N0	0	NA	1	WD	A	23
23	A1/107783/024	TT1T2N+	T1b	N+	0	NA	0.8	MD	P	1
24	A/107991/025	TT1T2N0	T2a	N0	0	NA	1.5	PD	P	15
25	B/107780/026	BMT1T2N0	T1b	N0	0	NA	0.2	WD	A	23
26	A/108604/027	TT1T2N0	T2a	N0	0	NA	0.6	WD	P	27
27	A1/108537/028	TT1T2N+	T2a	N+	0	NA	1.1	MD	P	12
28	A/108098/029	TT1T2N0	T1a	N0	0	NA	0.2	VC	A	38
29	A1/10395/030	TT1T2N+	T2b	N2b	0	NA	1.5	MD	A	16
30	B/10347/031	BMT1T2N0	T2a	N0	0	NA	0.8	MD	P	8
31	A/109266/033	TT1T2N0	T1b	N0	0	NA	0.6	MD	A	25
32	A/109728/034	TT1T2N0	T1b	N0	Yes	3	0.3	MD	A	23
33	A/109711/035	TT1T2N0	T1b	N0	Yes	7	0.8	MD	P	13
34	B/109710/036	BMT1T2N0	T2a	N0	0	NA	0.5	WD	P	23
35	A/110660/037	TT1T2N0	T1b	N0	Yes	8	0.4	MD	A	21
36	B/109928/038	BMT1T2N0	T1b	N0	0	NA	0.5	WD	A	24
37	B/111202/039	BMT1T2N0	T2a	N0	Yes	4	0.3	MD	A	25
38	B1/110773/040	BMT1T2N+	T1b	N2b	0	NA	0.7	MD	P	15
39	A/112042/041	TT1T2N0	T1b	N0	Yes	20	0.2	MD	A	31
40	B/112758/042	BMT1T2N0	T1a	N0	0	NA	0.4	MD	A	23
41	B/112869/043	BMT1T2N0	T1b	N0	0	NA	0.2	VC	A	24
42	B/112583/044	BMT1T2N0	T1b	N0	0	NA	0.3	MD	A	24
43	B/113311/045	BMT1T2N0	T2a	N0	Yes	17	0.8	MD	P	22
44	A1/112794/046	TT1T2N+	T2a	N+	0	NA	1	MD	A	6
45	A/113599/047	TT1T2N0	T1b	N0	0	NA	0.5	MD	A	7
46	A/113719/048	TT1T2N0	T1b	N0	0	NA	0.5	MD	A	24
47	A/113950/049	TT1T2N0	T1b	N0	0	NA	0.5	MD	P	22
48	A/112079/050	TT1T2N0	T1b	N0	Yes	5	0.4	MD	A	24
49	A1/113073/051	TT1T2N+	T2a	N+	0	NA	1.1	MD	A	25
50	A/113435/052	TT1T2N0	T1b	N0	0	NA	0.5	MD	A	24
51	A/114465 /053	TT1T2N0	T1b	N0	0	NA	1.2	MD	A	22
52	B1/113533/054	BMT1T2N+	T2a	N+	0	NA	0.8	MD	P	10
53	B/114073/056	BMT1T2N0	T1a	N0	Yes	7	0.4	MD	A	36

Sr. No.	Patient Code	Category	T	N	N0 -> N+	Regional Rec in months	Depth (cm)	Grade	PNI	Total follow up [Jun 2015]
54	B/114080/057	BMT1T2N0	T1b	N0	0	NA	0.8	MD	A	23
55	A/114580/058	TT1T2N0	T1a	N0	0	NA	0.2	MD	A	25
56	A1/115451/059	TT1T2N+	T1b	N+	0	NA	0.3	MD	P	29
57	A/115578/060	TT1T2N0	T2a	N0	0	NA	0.8	MD	A	31
58	A1/115776/061	TT1T2N+	T2a	N+	0	NA	0.6	MD	A	23
59	A/115740/062	TT1T2N0	T1b	N0	0	NA	0.6	MD	A	14
60	A/116614/063	TT1T2N0	T1b	N0	0	NA	1	MD	P	25
61	B/117566/064	BMT1T2N0	T2a	N0	Yes	4	0.3	WD	A	22
62	A/117853/065	TT1T2N0	T1b	N0	0	NA	0.6	MD	A	22
63	B1/117928/067	BMT1T2N+	T1b	N2b	0	NA	1	MD	A	24
64	A/118829/068	TT1T2N0	T1b	N0	Yes	5	0.3	MD	A	18
65	B/117681/069	BMT1T2N0	T1b	N0	0	NA	0.2	MD	A	22
66	A/119497/071	TT1T2N0	T1b	N0	0	NA	0.5	MD	A	22
67	B/120349/072	BMT1T2N0	T1b	N0	0	NA	0.5	MD	P	24
68	A1/119949/073	TT1T2N+	T1b	N2B	0	NA	1.2	MD	P	22
69	B/120895/074	BMT1T2N0	T1b	N0	0	NA	0.5	MD	A	22
70	A/120724/075	TT1T2N0	T2a	N0	0	NA	1	MD	P	32
71	A1/121892/076	TT1T2N+	T2a	N+	0	NA	0.6	MD	A	24
72	A/121825/077	TT1T2N0	T1b	N0	0	NA	0.6	MD	P	32
73	B/122481/078	BMT1T2N0	T2a	N0	Yes	7	0.9	MD	A	34
74	A1/122099/079	TT1T2N+	T2a	N+	0	NA	0.7	MD	A	23
75	A/123600/082	TT1T2N0	T1b	N0	0	NA	1.1	MD	A	23
76	A/122496/083	TT1T2N0	T2b	N0	0	NA	1.2	MD	P	23
77	A/122331/084	TT1T2N0	T1a	N0	0	NA	0.2	MD	A	34
78	A1/122316/085	TT1T2N+	T1b	N2b	0	NA	0.8	MD	P	6
79	B1/122016/086	BMT1T2N+	T1b	N+	0	NA	0.1	MD	A	26
80	A1/124020/087	TT1T2N+	T1b	N2b	0	NA	1.5	MD	P	3
81	A/122329/091	TT1T2N0	T2a	N0	0	NA	0.7	MD	P	22
82	A/126194/092	TT1T2N0	T1b	N0	0	NA	0.6	WD	A	22
83	B1/125697/093	BMT1T2N+	T2b	N2a	0	NA	0.6	MD	P	11
84	A/125288/095	TT1T2N0	T2b	N0	0	NA	1	MD	A	20
85	A/126275/096	TT1T2N0	T2a	N0	0	NA	0.7	MD	P	26
86	A/123721/097	TT1T2N0	T1b	N0	0	NA	0.9	MD	A	30
87	A/127193/098	TT1T2N0	T1a	N0	0	NA	0.6	MD	A	24
88	B/127410/099	BMT1T2N0	T2a	N0	Yes	3	0.3	MD	A	22
89	B/128964/101	BMT1T2N0	T1b	N0	0	NA	0.8	MD	A	23
90	A/129422/102	TT1T2N0	T1b	N0	0	NA	0.7	WD	A	23
91	B1/129260/106	BMT1T2N+	T2a	N+	0	NA	0.5	MD	P	24
92	B/129967/107	BMT1T2N0	T1b	N0	Yes	1	0.5	MD	A	26
93	B/128933/108	BMT1T2N0	T1b	N0	0	NA	0.8	MD	A	24
94	A/132374/109	TT1T2N0	T2a	N0	0	NA	0.5	MD	P	24
95	A/127246/110	TT1T2N0	T1b	N0	Yes	6	1	MD	A	25
96	A/132081/111	TT1T2N0	T1a	N0	0	NA	0.2	MD	A	31
97	A/131451/113	TT1T2N0	T1b	N0	0	NA	0.2	WD	A	24
98	A/132299/114	TT1T2N0	T2a	N0	0	NA	1.2	MD	A	15
99	A1/133798/116	TT1T2N+	T1b	N2b	0	NA	1	MD	P	23
100	A/133233/117	TT1T2N0	T2a	N0	Yes	7	1	MD	A	14
101	B/133552/118	BMT1T2N0	T1b	N0	0	NA	0.5	MD	A	23
102	B/130496/119	BMT1T2N0	T1a	N0	0	NA	0.5	MD	A	23
103	B/129968/120	BMT1T2N0	T1b	N0	Yes	8	0.3	MD	A	24
104	A/134557/121	TT1T2N0	T2a	N0	0	NA	0.9	MD	A	24
105	A /132784/122	TT1T2N0	T1b	N0	Yes	6	1.1	MD	P	24
106	B/133939/124	BMT1T2N0	T1b	N0	0	NA	0.6	MD	A	24

Sr. No.	Patient Code	Category	T	N	N0 -> N+	Regional Rec in months	Depth (cm)	Grade	PNI	Total follow up [Jun 2015]
107	A1/135618/125	TT1T2N+	T1b	N+	0	NA	0.7	MD	A	24
108	A/134792/126	TT1T2N0	T1a	N0	0	NA	0.5	MD	A	24
109	B/137493/127	BMT1T2N0	T2a	N0	Yes	3	0.8	MD	A	23
110	B/135362/128	BMT1T2N0	T1b	N0	0	NA	0.4	MD	A	27
111	A1/137887/129	TT1T2N+	T2a	N+	0	NA	0.3	MD	P	23
112	B/136566/130	BMT1T2N0	T1a	N0	Yes	8	0.2	MD	A	23
113	A1/137663/132	TT1T2N+	T2b	N+	0	NA	2.2	MD	A	29
114	A1/139019/133	TT1T2N+	T2b	N+	0	NA	1.1	MD	A	22
115	B/137067/134	BMT1T2N0	T1b	N0	Yes	19	0.8	MD	A	31
116	A1/139041/135	TT1T2N+	T2a	N+	0	NA	0.8	MD	P	22
117	A1/137480/136	TT1T2N+	T2a	N2b	0	NA	1	MD	A	12
118	A/140221/138	TT1T2N0	T1b	N0	0	NA	0.1	MD	A	22
119	A/133781/139	TT1T2N0	T2a	N0	0	NA	0.6	MD	P	22
120	B/138753/140	BMT1T2N0	T2a	N0	0	NA	0.5	MD	A	18
121	A1/137661/141	TT1T2N+	T1b	N2b	0	NA	0.5	MD	P	22
122	A/139966/142	TT1T2N0	T2b	N0	0	NA	1	MD	P	22
123	A/141072/143	TT1T2N0	T2b	N0	0	NA	1	MD	A	27
124	A1/141080/148	TT1T2N+	T2b	N2b	0	NA	1.5	MD	P	27
125	B/141847/149	BMT1T2N0	T1b	N0	0	NA	1	MD	A	28
126	B/142113/150	BMT1T2N0	T1a	N0	0	NA	0.1	MD	A	23
127	A/141857/151	TT1T2N0	T1b	N0	0	NA	0.4	MD	A	23
128	B1/141601/153	BMT1T2N+	T2a	N2b	0	NA	0.7	MD	A	23
129	A/142544/154	TT1T2N0	T2a	N0	0	NA	0.8	MD	P	23
130	A/139814/155	TT1T2N0	T2b	N0	0	NA	1	MD	P	22
131	A/139155/157	TT1T2N0	T1b	N0	0	NA	0.5	MD	A	25
132	B/143578/158	BMT1T2N0	T1b	N0	0	NA	0.5	WD	A	23
133	A/142560/159	TT1T2N0	T2b	N0	Yes	3	1.7	MD	P	25
134	A1/143025/160	TT1T2N+	T2a	N+	0	NA	1.5	MD	P	23
135	A/144376/162	TT1T2N0	T1b	N0	0	NA	0.4	MD	A	25
136	A/144397/163	TT1T2N0	T1b	N0	0	NA	1	MD	P	23
137	A/144039/164	TT1T2N+	T1b	N+	0	NA	1	MD	P	23
138	B/145827/165	BMT1T2N0	T1a	N0	0	NA	0.2	MD	A	23
139	B/144734/167	BMT1T2N0	T1b	N0	Yes	1	1	MD	P	22
140	A1/146314/169	TT1T2N+	T2b	N+	0	NA	1	MD	P	22
141	B/147133/170	BMT1T2N0	T2a	N0	0	NA	0.8	MD	A	22
142	B/145281/171	BMT1T2N0	T1a	N0	0	NA	0.5	MD	A	22
143	B/146055/172	BMT1T2N0	T2a	N0	0	NA	1	MD	A	25
144	A/146790/173	TT1T2N0	T1a	N0	0	NA	0.6	MD	A	19
145	A/144876/174	TT1T2N0	T2a	N0	0	NA	1	MD	A	23
146	B1/146619/175	BMT1T2N+	T2a	N+	0	NA	0.6	MD	A	17
147	B/144739/176	BMT1T2N0	T2a	N0	0	NA	0.7	WD	A	29
148	B/144704/178	BMT1T2N0	T1b	N0	0	NA	0.7	MD	A	23
149	A/146754/180	TT1T2N0	T2b	N0	0	NA	0.7	MD	P	23
150	B/147792/182	BMT1T2N0	T1a	N0	0	NA	0.2	MD	A	23
151	A/148498/183	TT1T2N0	T1b	N0	0	NA	0.3	MD	A	27
152	B/147941/184	BMT1T2N0	T1a	N0	0	NA	0.1	MD	A	27
153	B/147697/185	BMT1T2N0	T1b	N0	0	NA	0.8	WD	A	24
154	B/148809/187	BMT1T2N0	T1b	N0	0	NA	0.8	MD	A	24
155	A1/146049/188	TT1T2N+	T2a	N+	0	NA	0.9	PD	P	24
156	A/149612/189	TT1T2N0	T1b	N0	0	NA	0.4	MD	A	23
157	A/148816/190	TT1T2N0	T2a	N0	Yes	4	1	MD	P	10
158	B1/142436/192	BMT1T2N+	T1b	N+	0	NA	0.6	MD	P	24
159	A/149973/193	TT1T2N0	T2a	N0	Yes	11	1.3	MD	P	19

Sr. No.	Patient Code	Category	T	N	N0 -> N+	Regional Rec in months	Depth (cm)	Grade	PNI	Total follow up [Jun 2015]
160	B/150709/194	BMT1T2N0	T1b	N0	0	NA	0.3	MD	A	24
161	A1/151096/197	TT1T2N+	T2a	N+	0	NA	0.8	MD	A	24
162	B/146788/198	BMT1T2N0	T2a	N0	0	NA	0.3	MD	A	24
163	A/150175/199	TT1T2N0	T1a	N0	Yes	5	0.8	MD	A	15
164	B/150724/200	BMT1T2N0	T1b	N0	0	NA	0.3	WD	A	24
165	A1/150948/201	TT1T2N+	T2a	N+	0	NA	1.2	MD	A	24
166	A/150154/205	TT1T2N0	T1b	N0	0	NA	0.5	MD	A	25
167	A1/152853/209	TT1T2N+	T2a	N+	0	NA	1	MD	P	24
168	A/152674/210	TT1T2N0	T1b	N0	0	NA	0.7	PD	P	23
169	A1/153375/211	TT1T2N+	T1b	N+	0	NA	0.7	MD	P	22
170	B1/149592/212	BMT1T2N+	T1b	N2a	0	NA	1	MD	P	22
171	A/150381/213	TT1T2N0	T2b	N0	0	NA	1	MD	A	22
172	A/153961/214	TT1T2N+	T2a	N+	0	NA	0.7	MD	P	27
173	A/153069/215	TT1T2N0	T1b	N0	yes	8	0.6	MD	P	11
174	B1/154945/218	BMT1T2N+	T1b	N+	0	NA	0.3	MD	A	20
175	A/156521/222	TT1T2N0	T1b	N0	Yes	5	0.3	MD	P	22
176	B1/155847/224	BMT1T2N+	T2a	N+	0	NA	0.8	MD	P	8
177	B/146902/225	BMT1T2N0	T1b	N0	0	NA	0.1	MD	A	21
178	A/156071/227	TT1T2N0	T2a	N0	0	NA	0.7	MD	P	21
179	A/156001/228	TT1T2N0	T2b	N0	0	NA	0.7	MD	P	21
180	B/156769/230	BMT1T2N0	T2a	N0	0	NA	0.6	MD	A	24
181	A/156523/231	TT1T2N+	T2a	N+	0	NA	1.1	MD	A	23
182	B/157695/232	BMT1T2N0	T1b	N0	0	NA	1	MD	A	22
183	A/156456/233	TT1T2N0	T1b	N0	0	NA	0.4	MD	A	22
184	A/154460/234	TT1T2N0	T1b	N0	0	NA	0.8	MD	P	22
185	A/157194/235	TT1T2N0	T2b	N0	0	NA	1.1	MD	A	26
186	A/155592/236	TT1T2N0	T2a	N0	Yes	9	0.7	MD	A	22
187	A/156530/238	TT1T2N0	T2b	N0	YES	NA	0.7	MD	A	25
188	B1/155595/239	BMT1T2N+	T2a	N2b	0	NA	1	MD	A	22
189	A/156050/240	TT1T2N0	T1a	N0	0	NA	0.5	MD	A	22
190	B/156019/241	BMT1T2N0	T2a	N0	Yes	5	1.6	MD	P	17
191	A1/158175/242	TT1T2N+	T1b	N+	0	NA	0.6	MD	A	23
192	A1/158754/243	TT1T2N+	T2b	N2b	0	NA	1	MD	P	9
193	A/159199/244	TT1T2N0	T2b	N0	0	NA	1.5	MD	A	24
194	B1/157840/245	BMT1T2N+	T2a	N2a	0	NA	0.6	MD	P	5
195	A1/154082/246	TT1T2N+	T2b	N+	0	NA	0.7	MD	P	24
196	B/142523/248	BMT1T2N0	T2a	N0	0	NA	0.2	MD	A	23
197	A/159787/249	TT1T2N0	T2a	N0	0	NA	0.2	MD	A	20
198	B/159877/250	BMT1T2N0	T1b	N0	0	NA	0.5	MD	A	20
199	B/159149/251	BMT1T2N0	T1b	N0	0	NA	0.2	MD	A	20
200	A/159454/252	TT1T2N0	T2a	N0	Yes	4	1.2	MD	P	24
201	A1/158561/253	TT1T2N+	T2b	N+	0	NA	1.1	MD	P	17
202	B1/156715/255	BMT1T2N0	T2a	N0	0	NA	0.6	MD	A	20
203	B/160350/256	BMT1T2N0	T1b	N0	0	NA	1.2	MD	A	21
204	A/158173/257	TT1T2N0	T1b	N0	0	NA	0.2	MD	A	21
205	A/161059/259	TT1T2N0	T2a	N0	0	NA	1.5	MD	P	21
206	A/162360/260	TT1T2N0	T2a	N0	0	NA	1.3	MD	P	21
207	A1/159740/261	TT1T2N+	T2b	N2b	0	NA	1.7	MD	P	21
208	A/162492/262	TT1T2N0	T1a	N0	0	NA	0.2	MD	A	20
209	A1/161671/263	TT1T2N+	T1a	N2b	0	NA	1.2	MD	P	20
210	B/160006/264	BMT1T2N0	T1a	N0	0	NA	0.2	VC	A	19
211	A1/162521/265	TT1T2N+	T2b	N2b	0	NA	1	MD	P	5
212	A/162648/266	TT1T2N0	T2a	N0	0	NA	0.6	MD	P	20

Sr. No.	Patient Code	Category	T	N	N0 -> N+	Regional Rec in months	Depth (cm)	Grade	PNI	Total follow up [Jun 2015]
213	A/162661/268	TT1T2N0	T1b	N0	Yes	3	0.3	MD	A	12
214	A/163041/269	TT1T2N0	T2a	N0	Yes	7	0.8	MD	A	17
215	A/163324/270	TT1T2N0	T2a	N0	0	NA	1	MD	P	20
216	B/163230/271	BMT1T2N0	T1b	N0	Yes	3	0.7	MD	A	20
217	A/164050/272	TT1T2N0	T1b	N0	0	NA	0.3	MD	A	20
218	A/164020/273	TT1T2N0	T1b	N0	Yes	9	0.5	MD	A	23
219	A/164033/274	TT1T2N0	T1b	N0	Yes	4	0.5	MD	A	10
220	B/162629/275	BMT1T2N0	T2a	N0	0	NA	0.3	MD	A	20
221	A1/163888/276	TT1T2N+	T2b	N+	0	NA	1.5	MD	P	19
222	B/164232/277	BMT1T2N0	T2a	N0	Yes	7	0.2	MD	A	22
223	B/164212/278	BMT1T2N0	T2a	N0	0	NA	0.7	MD	A	22
224	A1/165035/281	TT1T2N+	T1b	N2b	0	NA	1.3	MD	P	18
225	A/164994/282	TT1T2N0	T1b	N0	0	NA	0.5	MD	A	22
226	A1/165209/284	TT1T2N+	T1b	N2b	0	NA	1.5	MD	P	22
227	B1/165357/285	BMT1T2N+	T2a	N2b	0	NA	1.1	MD	A	20
228	A/165371/286	TT1T2N0	T1b	N0	0	NA	0.3	MD	A	21
229	A/165719/287	TT1T2N0	T1b	N0	0	NA	0.4	MD	P	21
230	A/165917/288	TT1T2N0	T1a	N0	0	NA	0.4	MD	A	21
231	A/165929/289	TT1T2N0	T2a	N0	Yes	9	0.3	MD	A	14
232	B/164472/291	BMT1T2N0	T1b	N0	Yes	2	1	PD	A	21
233	B/164997/292	BMT1T2N0	T1b	N0	0	NA	0.4	MD	A	21
234	B/166315/293	BMT1T2N0	T1b	N0	0	NA	0.6	MD	A	21
235	A1/167046/295	TT1T2N+	T2a	N2b	0	NA	0.8	PD	P	13
236	A/166933/296	TT1T2N0	T1b	N0	0	NA	0.6	PD	P	21
237	A/167409/297	TT1T2N0	T2a	N0	0	NA	0.5	MD	P	21
238	A1/167566/300	TT1T2N+	T2b	N2b	0	NA	1.4	MD	A	22
239	A/168667/302	TT1T2N0	T1b	N0	0	NA	0.8	MD	A	21
240	B/166071/303	BMT1T2N0	T2a	N0	0	NA	0.4	MD	A	21
241	A/168074/304	TT1T2N0	T2a	N0	0	NA	0.9	MD	P	21
242	A/168348/306	TT1T2N0	T1b	N0	Yes	3	0.6	PD	P	21
243	A/167967/307	TT1T2N0	T1b	N0	0	NA	0.3	MD	A	21
244	B/169689/308	BMT1T2N0	T2a	N0	0	NA	0.3	VC	A	21
245	A/167745/310	TT1T2N0	T1b	N0	0	NA	0.3	MD	A	18
246	B/171502/313	BMT1T2N0	T1b	N0	0	NA	0.2	VC	A	20
247	B/171640/314	BMT1T2N0	T1b	N0	Yes	6	0.6	MD	P	19
248	A1/171272/315	TT1T2N+	T2a	N+	0	NA	0.9	MD	A	19
249	B/170152/316	BMT1T2N0	T1b	N0	0	NA	0.4	MD	A	18
250	A1/172502/318	TT1T2N+	T2a	N2b	0	NA	1.1	MD	A	18
251	A/172815/319	TT1T2N0	T1b	N0	0	NA	0.4	MD	A	18
252	A1/172300/320	TT1T2N+	T2b	N2b	0	NA	0.6	MD	P	20
253	A1/170282/322	TT1T2N+	T1b	N+	0	NA	0.5	PD	A	17
254	A/171685/323	TT1T2N0	T1b	N0	0	NA	0.4	MD	A	18
255	A/173962/325	TT1T2N0	T1b	N0	0	NA	1.1	PD	P	20
256	B/172030/326	BMT1T2N0	T1a	N0	0	NA	0.3	WD	A	18
257	A/174708/330	TT1T2N0	T2b	N0	0	NA	0.4	VC	A	18
258	A/173042/331	TT1T2N0	T2a	N0	0	NA	0.7	MD	P	18
259	A/174402/334	TT1T2N0	T2a	N0	0	NA	1.6	MD	P	18
260	A1/174816/335	TT1T2N+	T2b	N+	0	NA	1.3	PD	P	19
261	B/175281/336	BMT1T2N0	T1a	N0	0	NA	0.2	MD	A	19
262	B/173629/338	BMT1T2N0	T2a	N0	Yes	2	0.5	MD	A	16
263	B/176746/342	BMT1T2N0	T1b	N0	0	NA	1	PD	P	18
264	A/178635/343	TT1T2N0	T1b	N0	0	NA	0.3	WD	A	18
265	B/176092/344	BMT1T2N0	T2a	N0	Yes	3	0.6	MD	A	18

Sr. No.	Patient Code	Category	T	N	N0 -> N+	Regional Rec in months	Depth (cm)	Grade	PNI	Total follow up [Jun 2015]
266	B/177606/345	BMT1T2N0	T1b	N0	0	NA	0.1	WD	A	18
267	B1/178427/346	BMT1T2N+	T1b	N2b	0	NA	1	PD	A	18
268	B/175968/348	BMT1T2N0	T1b	N0	0	NA	0.5	MD	A	18
269	A/178301/349	TT1T2N0	T1b	N0	Yes	8	0.7	MD	P	18
270	A1/177458/351	TT1T2N+	T1b	N+	0	NA	0.5	MD	A	18
271	B/177591/352	BMT1T2N0	T1b	N0	0	NA	0.4	MD	A	18
272	B/176758/353	BMT1T2N0	T2b	N0	0	NA	0.1	WD	A	18
273	A1/176702/354	TT1T2N+	T2b	N+	0	NA	1.7	MD	A	19
274	A/185517/384	TT1T2N0	T1b	N0	0	NA	0.8	MD	A	18
275	A1/186697/387	TT1T2N+	T1a	N+	0	NA	0.4	MD	A	18
276	B1/186804/389	BMT1T2N+	T1a	N+	0	NA	0.5	MD	P	18
277	A1/191649/400	TT1T2N+	T1b	N+	0	NA	0.7	MD	P	18
278	A/192088/404	TT1T2N0	T2a	N0	Yes	4	0.4	PD	A	15
279	A1/196847/419	TT1T2N+	T2a	N+	0	NA	1.5	MD	P	12
280	B1/198004/426	BMT1T2N+	T1a	N+	0	NA	0.3	MD	A	12
281	A1/197985/427	TT1T2N+	T1a	N+	0	NA	1.2	MD	A	12
282	B1/198585/432	BMT1T2N+	T1b	N2b	0	NA	1	PD	P	7
283	B1/198445/439	BMT1T2N+	T1b	N+	0	NA	0.7	MD	A	8
284	B1/198826/441	BMT1T2N+	T1b	N+	0	NA	0.5	PD	A	8
285	B1/197437/443	BMT1T2N+	T1b	N+	0	NA	0.3	MD	A	7
286	B1/200773/445	BMT1T2N+	T1b	N+	0	NA	0.6	PD	A	7
287	A1/201375/446	TT1T2N+	T1b	N+	0	NA	0.5	MD	A	9
288	A1/202939/454	TT1T2N+	T1b	N+	0	NA	1	MD	A	6
289	A1/201782/455	TT1T2N+	T1b	N+	0	NA	1.1	MD	P	6
290	A1/201507/456	TT1T2N+	T1b	N+	0	NA	0.6	MD	A	4
291	B1/203340/458	BMT1T2N+	T1a	N2b	0	NA	0.2	MD	A	4
292	A1/204808/466	TT1T2N+	T1b	N+	0	NA	1	MD	P	4
293	B/132804/115	#N/A	T1b	N0	0	NA	#N/A	#N/A	#N/A	9
294	254T	No Clinical Report Present								
295	280T	No Clinical Report Present								
296	283T	No Clinical Report Present								
297	312T	No Clinical Report Present								
298	301T	No Clinical Report Present								
299	347T	No Clinical Report Present								
300	332T	No Clinical Report Present								
301	333T	No Clinical Report Present								
302	258T	No Clinical Report Present								
303	341T	No Clinical Report Present								

INDEX	
Moderately Differentiated Squamous Carcinima	MD
Well Differentiated Squamous Carcinoma	WD
Poorly Differentiated Squamous Carcinoma	PD
Verrucous Carcinoma	VC
Present	P
Absent	A

Table 3

Differentially expressed [Tumour (T) versus Control (C)] 2980 genes

Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
1	IL8	3576	NM_000584	4.300	Up		94	NA	NA	XR_017149	1.990	Up
2	MMP3	4314	NM_002422	4.040	Up		95	AIM2	9447	NM_004833	1.976	Up
3	MMP10	4319	NM_002425	3.889	Up		96	CCL3L3	414062	NM_001001437	1.961	Up
4	COL1A1	1277	NM_000088	3.771	Up		97	KLK5	25818	NM_001077491	1.961	Up
5	NA	NA	XR_019109	3.762	Up		98	NA	NA	XM_940969	1.958	Up
6	ISG15	9636	NM_005101	3.690	Up		99	IGFBP3	3486	NM_001013398	1.953	Up
7	IGLL1	3543	NM_020070	3.574	Up		100	THBS2	7058	NM_003247	1.946	Up
8	COL1A2	1278	NM_000089	3.546	Up		101	IDO1	3620	NM_002164	1.944	Up
9	NA	NA	XM_941953	3.462	Up		102	THY1	7070	NM_006288	1.943	Up
10	MMP1	4312	NM_002421	3.396	Up		103	IFI35	3430	NM_005533	1.942	Up
11	MMP9	4318	NM_004994	3.257	Up		104	C1S	716	NM_001734	1.938	Up
12	PLAU	5328	NM_002658	3.244	Up		105	NA	NA	XM_001726834	1.936	Up
13	IFI6	2537	NM_022872	3.233	Up		106	FEZ1	9638	NM_005103	1.934	Up
14	CXCL10	3627	NM_001565	3.231	Up		107	MMP7	4316	NM_002423	1.931	Up
15	IL8	3576	NM_000584	3.216	Up		108	PMEPA1	56937	NM_199169	1.927	Up
16	NA	NA	XM_936518	3.200	Up		109	IFI30	10437	NM_006332	1.893	Up
17	NA	NA	XM_936253	3.180	Up		110	HAS3	3038	NM_005329	1.888	Up
18	LAMC2	3918	NM_005562	3.178	Up		111	PCDH7	5099	NM_002589	1.879	Up
19	NA	NA	XR_015626	3.086	Up		112	CTSK	1513	NM_000396	1.878	Up
20	COL4A1	1282	NM_001845	3.041	Up		113	COLGALT1	79709	NM_024656	1.874	Up
21	COL3A1	1281	NM_000090	3.018	Up		114	LAMA3	3909	NM_198129	1.872	Up
22	TGFBI	7045	NM_000358	3.013	Up		115	TYMP	1890	NM_001953	1.872	Up
23	MMP12	4321	NM_002426	2.988	Up		116	LINC00152	112597	NM_052871	1.867	Up
24	PTHLH	5744	NM_198965	2.985	Up		117	C1QC	714	NM_172369	1.863	Up
25	TNC	3371	NM_002160	2.883	Up		118	COL6A2	1292	NM_001849	1.860	Up
26	NA	NA	XM_939003	2.873	Up		119	IFITM2	10581	NM_006435	1.852	Up
27	CDH3	1001	NM_001793	2.872	Up		120	HLA-F	3134	NM_018950	1.849	Up
28	PTHLH	5744	NM_198964	2.857	Up		121	CCL5	6352	NM_002985	1.848	Up
29	S100A7A	338324	NM_176823	2.774	Up		122	KYNU	8942	NM_003937	1.847	Up
30	NA	NA	XM_001713938	2.691	Up		123	IFITM3	10410	NM_021034	1.841	Up
31	COL5A2	1290	NM_000393	2.689	Up		124	SRGN	5552	NM_002727	1.841	Up
32	COL5A1	1289	NM_000093	2.634	Up		125	CAV1	857	NM_001753	1.840	Up
33	EPSTI1	94240	NM_033255	2.587	Up		126	KRT17	3872	NM_000422	1.835	Up
34	COL1A2	1278	NM_000089	2.517	Up		127	TNFRSF6B	8771	NM_032945	1.829	Up
35	PDPN	10630	NM_001006625	2.487	Up		128	NA	NA	XM_937968	1.825	Up
36	TNFRSF12A	51330	NM_016639	2.482	Up		129	CTSC	1075	NM_001814	1.807	Up
37	NA	NA	XM_001720850	2.479	Up		130	RAB31	11031	NM_006868	1.805	Up
38	IL1B	3553	NM_000576	2.451	Up		131	HERC5	51191	NM_016323	1.803	Up
39	CXCL9	4283	NM_002416	2.444	Up		132	TNFAIP6	7130	NM_007115	1.803	Up
40	STAT1	6772	NM_139266	2.440	Up		133	IL7R	3575	NM_002185	1.798	Up

Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
41	GBP1	2633	NM_002053	2.428	Up		134	FSCN1	6624	NM_003088	1.794	Up
42	BST2	684	NM_004335	2.387	Up		135	TYROBP	7305	NM_003332	1.794	Up
43	C1QB	713	NM_000491	2.384	Up		136	SLC15A3	51296	NM_016582	1.783	Up
44	LAMC2	3918	NM_005562	2.378	Up		137	FCER1G	2207	NM_004106	1.782	Up
45	COL6A3	1293	NM_057165	2.374	Up		138	HTRA1	5654	NM_002775	1.762	Up
46	SERPINH1	871	NM_001235	2.371	Up		139	PLAUR	5329	NM_001005376	1.761	Up
47	WDR66	144406	NM_144668	2.371	Up		140	GNLY	10578	NM_012483	1.760	Up
48	IFIT1	3434	NM_001548	2.358	Up		141	COL12A1	1303	NM_080645	1.757	Up
49	NA	NA	XM_942302	2.356	Up		142	MMP7	4316	NM_002423	1.754	Up
50	SPP1	6696	NM_000582	2.343	Up		143	LIMA1	51474	NM_016357	1.748	Up
51	CXCL13	10563	NM_006419	2.331	Up		144	TAP1	6890	NM_000593	1.747	Up
52	CTHRC1	115908	NM_138455	2.331	Up		145	APOC1	341	NM_001645	1.747	Up
53	IFI6	2537	NM_022873	2.329	Up		146	CD14	929	NM_001040021	1.746	Up
54	CTSL	1514	NM_001912	2.314	Up		147	MYO1B	4430	NM_012223	1.738	Up
55	SERPINE1	5054	NM_000602	2.314	Up		148	LY6E	4061	NM_002346	1.738	Up
56	WARS	7453	NM_173701	2.288	Up		149	FXYD5	53827	NM_144779	1.731	Up
57	RBP1	5947	NM_002899	2.287	Up		150	S100A7	6278	NM_002963	1.728	Up
58	WARS	7453	NM_004184	2.278	Up		151	GLIPR1	11010	NM_006851	1.719	Up
59	CTSL	1514	NM_145918	2.268	Up		152	CD276	80381	NM_001024736	1.717	Up
60	CXCL1	2919	NM_001511	2.267	Up		153	MSN	4478	NM_002444	1.716	Up
61	NA	NA	XM_498969	2.253	Up		154	SRGN	5552	NM_002727	1.716	Up
62	LAMA3	3909	NM_198129	2.211	Up		155	SLC2A1	6513	NM_006516	1.713	Up
63	FST	10468	NM_013409	2.204	Up		156	XAF1	54739	NM_199139	1.703	Up
64	IGFBP7	3490	NM_001553	2.197	Up		157	CCL4L2	388372	NM_207007	1.701	Up
65	TNC	3371	NM_002160	2.194	Up		158	ITGB4	3691	NM_001005619	1.695	Up
66	COL6A1	1291	NM_001848	2.194	Up		159	LAMP3	27074	NM_014398	1.693	Up
67	IFIT3	3437	NM_001031683	2.191	Up		160	SPP1	6696	NM_001040058	1.687	Up
68	IGFBP3	3486	NM_000598	2.168	Up		161	GZMB	3002	NM_004131	1.685	Up
69	SERPINE2	5270	NM_006216	2.165	Up		162	ITGA5	3678	NM_002205	1.683	Up
70	MMP11	4320	NM_005940	2.162	Up		163	PARP12	64761	NM_022750	1.675	Up
71	GBP1	2633	NM_002053	2.149	Up		164	KRT75	9119	NM_004693	1.670	Up
72	NA	NA	XM_937367	2.140	Up		165	BASP1	10409	NM_006317	1.670	Up
73	TUBB3	10381	NM_006086	2.139	Up		166	AEBP1	165	NM_001129	1.666	Up
74	IFI44L	10964	NM_006820	2.136	Up		167	CA2	760	NM_000067	1.666	Up
75	GBP5	115362	NM_052942	2.125	Up		168	PXDN	7837	NM_012293	1.665	Up
76	CCL8	6355	NM_005623	2.109	Up		169	MARCKSL1	65108	NM_023009	1.665	Up
77	OAS2	4939	NM_016817	2.107	Up		170	THBS1	7057	NM_003246	1.664	Up
78	MMP12	4321	NM_002426	2.106	Up		171	IGF2BP2	10644	NM_006548	1.656	Up
79	ITGA3	3675	NM_002204	2.105	Up		172	C12orf75	387882	NM_207376	1.655	Up
80	IL24	11009	NM_006850	2.103	Up		173	TYMP	1890	NM_001113756	1.654	Up
81	PTGS2	5743	NM_000963	2.085	Up		174	ACKR3	57007	NM_020311	1.653	Up
82	LUM	4060	NM_002345	2.084	Up		175	TYMP	1890	NM_001953	1.649	Up
83	COL6A3	1293	NM_004369	2.075	Up		176	CTSC	1075	NM_001814	1.642	Up
84	STAT1	6772	NM_007315	2.073	Up		177	FXYD5	53827	NM_014164	1.638	Up
85	IFI44	10561	NM_006417	2.072	Up		178	COL4A5	1287	NM_000495	1.633	Up
86	KLK5	25818	NM_012427	2.062	Up		179	RGS1	5996	NM_002922	1.628	Up
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
87	RAC2	5880	NM_002872	2.047	Up		180	UBE2L6	9246	NM_004223	1.627	Up
88	NELL2	4753	NM_006159	2.046	Up		181	NA	NA	XM_001128061	1.624	Up
89	IFITM1	8519	NM_003641	2.044	Up		182	HLA-F	3134	NM_001098479	1.622	Up
90	APOE	348	NM_000041	2.044	Up		183	CD14	929	NM_000591	1.622	Up
91	DFNA5	1687	NM_004403	2.041	Up		184	PSMB8	5696	NM_004159	1.620	Up
92	OASL	8638	NM_198213	2.019	Up		185	ODC1	4953	NM_002539	1.617	Up
93	IFIT2	3433	NM_001547	2.004	Up		186	NA	NA	XM_001133190	1.615	Up

187	SNAI2	6591	NM_003068	1.614	Up		280	PRNP	5621	NM_001080121	1.354	Up
188	FAM83A	84985	NM_207006	1.602	Up		281	TYMP	1890	NM_001113755	1.352	Up
189	NA	NA	XM_945799	1.600	Up		282	USB1	79650	NM_024598	1.349	Up
190	C1QTNF6	114904	NM_031910	1.599	Up		283	SULF1	23213	NM_015170	1.349	Up
191	LEPREL1	55214	NM_018192	1.596	Up		284	CCL18	6362	NM_002988	1.348	Up
192	IDO1	3620	NM_002164	1.591	Up		285	IFIH1	64135	NM_022168	1.348	Up
193	SLC2A3	6515	NM_006931	1.586	Up		286	NA	NA	XM_001718864	1.344	Up
194	CFB	629	NM_001710	1.582	Up		287	RPS6KA4	8986	NM_001006944	1.344	Up
195	TDO2	6999	NM_005651	1.580	Up		288	CALD1	800	NM_033140	1.343	Up
196	CCL5	6352	NM_002985	1.578	Up		289	IL36G	56300	NM_019618	1.343	Up
197	ACTN1	87	NM_001102	1.578	Up		290	PDGFRB	5159	NM_002609	1.342	Up
198	SIRPA	140885	NM_001040023	1.577	Up		291	XPR1	9213	NM_004736	1.340	Up
199	LAMB3	3914	NM_000228	1.576	Up		292	NA	NA	XM_939093	1.338	Up
200	CTSC	1075	NM_001814	1.573	Up		293	MELK	9833	NM_014791	1.337	Up
201	HIST2H2AA3	8337	NM_003516	1.564	Up		294	PSMB9	5698	NM_002800	1.333	Up
202	IRF7	3665	NM_004029	1.562	Up		295	SOD2	6648	NM_001024465	1.332	Up
203	CA2	760	NM_000067	1.559	Up		296	GPR68	8111	NM_003485	1.330	Up
204	CDC25B	994	NM_004358	1.559	Up		297	HIST2H2AA4	723790	NM_001040874	1.327	Up
205	GREM1	26585	NM_013372	1.553	Up		298	RSAD2	91543	NM_080657	1.325	Up
206	HAVCR2	84868	NM_032782	1.551	Up		299	CPA3	1359	NM_001870	1.325	Up
207	HLA-B	3106	NM_005514	1.548	Up		300	ITGB2	3689	NM_000211	1.323	Up
208	OCIAD2	132299	NM_001014446	1.546	Up		301	LY96	23643	NM_015364	1.319	Up
209	SP110	3431	NM_004510	1.541	Up		302	PLOD3	8985	NM_001084	1.315	Up
210	PLA2G7	7941	NM_005084	1.541	Up		303	HCST	10870	NM_001007469	1.309	Up
211	PLEK2	26499	NM_016445	1.541	Up		304	EIF2AK2	5610	NM_002759	1.307	Up
212	HLA-H	3136	NR_001434	1.539	Up		305	CRISPLD2	83716	NM_031476	1.306	Up
213	STAT1	6772	NM_007315	1.538	Up		306	FAM83A	84985	NM_032899	1.305	Up
214	TTYH3	80727	NM_025250	1.532	Up		307	CDH11	1009	NM_001797	1.302	Up
215	CPA4	51200	NM_016352	1.529	Up		308	UBE2C	11065	NM_181803	1.301	Up
216	PLAUR	5329	NM_001005376	1.511	Up		309	CYBA	1535	NM_000101	1.299	Up
217	CTSV	1515	NM_001333	1.504	Up		310	FJX1	24147	NM_014344	1.298	Up
218	IL6	3569	NM_000600	1.498	Up		311	NA	NA	XM_929340	1.297	Up
219	NA	NA	XM_936251	1.495	Up		312	PLOD1	5351	NM_000302	1.295	Up
220	SP110	3431	NM_004510	1.494	Up		313	NA	NA	NM_006674	1.293	Up
221	DEFB4A	1673	NM_004942	1.493	Up		314	SERINC2	347735	NM_178865	1.293	Up
222	EVA1A	84141	NM_032181	1.492	Up		315	IL18BP	10068	NM_173042	1.293	Up
223	LYN	4067	NM_002350	1.492	Up		316	APP	351	NM_201414	1.292	Up
224	NA	NA	BG205162	1.481	Up		317	ADAMDEC1	27299	NM_014479	1.291	Up
225	PPP1R18	170954	NM_133471	1.481	Up		318	PARP9	83666	NM_031458	1.291	Up
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
226	FCGR2A	2212	NM_021642	1.481	Up		319	COL4A2	1284	NM_001846	1.289	Up
227	TPSAB1	7177	NM_003294	1.481	Up		320	IRF9	10379	NM_006084	1.284	Up
228	RFTN1	23180	NM_015150	1.479	Up		321	TNFSF10	8743	NM_003810	1.283	Up
229	AGRN	375790	NM_198576	1.479	Up		322	HCLS1	3059	NM_005335	1.282	Up
230	FLRT3	23767	NM_198391	1.476	Up		323	DEFB103A	414325	NM_001081551	1.280	Up
231	KRT16	3868	NM_005557	1.472	Up		324	LPXN	9404	NM_004811	1.278	Up
232	MX2	4600	NM_002463	1.465	Up		325	CDC20	991	NM_001255	1.278	Up
233	LAPTM5	7805	NM_006762	1.464	Up		326	MDK	4192	NM_001012334	1.278	Up
234	CCL20	6364	NM_004591	1.461	Up		327	NA	NA	XR_015937	1.277	Up
235	ISG20	3669	NM_002201	1.460	Up		328	NA	NA	XM_001720835	1.276	Up
236	RAI14	26064	NM_015577	1.455	Up		329	FAT1	2195	NM_005245	1.276	Up
237	TIMP1	7076	NM_003254	1.454	Up		330	CTSZ	1522	NM_001336	1.276	Up
238	OAS3	4940	NM_006187	1.450	Up		331	HLA-DMB	3109	NM_002118	1.275	Up
239	TM4SF19	116211	NM_138461	1.449	Up		332	CHN1	1123	NM_001025201	1.275	Up
240	NA	NA	XR_017543	1.449	Up		333	DUSP6	1848	NM_022652	1.274	Up
241	FAM89A	375061	NM_198552	1.445	Up		334	STAT2	6773	NM_005419	1.273	Up

242	UBE2C	11065	NM_181800	1.444	Up		335	SHC1	6464	NM_003029	1.273	Up
243	ACKR3	57007	NM_001047841	1.439	Up		336	VCAN	1462	NM_004385	1.273	Up
244	XPR1	9213	NM_004736	1.438	Up		337	SERPING1	710	NM_001032295	1.272	Up
245	MMP13	4322	NM_002427	1.437	Up		338	MTHFD1L	25902	NM_015440	1.272	Up
246	COL7A1	1294	NM_000094	1.437	Up		339	CALU	813	NM_001219	1.271	Up
247	EMP3	2014	NM_001425	1.425	Up		340	DDX60	55601	NM_017631	1.269	Up
248	NA	NA	XM_001723814	1.424	Up		341	ITGA6	3655	NM_000210	1.267	Up
249	HELZ2	85441	NM_033405	1.422	Up		342	MFAP2	4237	NM_017459	1.264	Up
250	S100A2	6273	NM_005978	1.417	Up		343	CCL3	6348	NM_002983	1.262	Up
251	RAB32	10981	NM_006834	1.416	Up		344	ACOT9	23597	NM_001033583	1.259	Up
252	IGLL3P	91353	NM_001013618	1.415	Up		345	CEP55	55165	NM_018131	1.259	Up
253	UBD	10537	NM_006398	1.411	Up		346	S100P	6286	NM_005980	1.258	Up
254	EFHD2	79180	NM_024329	1.409	Up		347	GZMA	3001	NM_006144	1.256	Up
255	HIST2H2AC	8338	NM_003517	1.409	Up		348	CTGF	1490	NM_001901	1.256	Up
256	CYR61	3491	NM_001554	1.407	Up		349	CKS1B	1163	NM_001826	1.255	Up
257	TMEM158	25907	NM_015444	1.407	Up		350	LGALS3BP	3959	NM_005567	1.254	Up
258	PSMB2	5690	NM_002794	1.404	Up		351	MS4A6A	64231	NM_152851	1.251	Up
259	WDR54	84058	NM_032118	1.403	Up		352	TMSB4XP8	7117	NM_183049	1.244	Up
260	MT2A	4502	NM_005953	1.403	Up		353	HIST2H2AA3	8337	NM_003516	1.242	Up
261	NNMT	4837	NM_006169	1.402	Up		354	PARP14	54625	NM_017554	1.241	Up
262	HLA-H	3136	NR_001434	1.402	Up		355	NETO2	81831	NM_018092	1.241	Up
263	CD163	9332	NM_203416	1.399	Up		356	IFNGR1	3459	NM_000416	1.239	Up
264	CCL2	6347	NM_002982	1.394	Up		357	CD74	972	NM_001025159	1.239	Up
265	LCP1	3936	NM_002298	1.393	Up		358	CHST15	51363	NM_015892	1.237	Up
266	KYNU	8942	NM_001032998	1.383	Up		359	TMEM132A	54972	NM_178031	1.235	Up
267	LTB	4050	NM_002341	1.382	Up		360	HCG4	54435	NR_002139	1.230	Up
268	SLC20A1	6574	NM_005415	1.381	Up		361	OSM	5008	NM_020530	1.227	Up
269	PRSS23	11098	NM_007173	1.381	Up		362	SERPINA3	12	NM_001085	1.226	Up
270	CD163	9332	NM_203416	1.376	Up		363	OCIAD2	132299	NM_152398	1.225	Up

Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
271	FAP	2191	NM_004460	1.376	Up		364	GJA1	2697	NM_000165	1.225	Up
272	PRKCDBP	112464	NM_145040	1.374	Up		365	SAA1	6288	NM_199161	1.222	Up
273	CAV1	857	NM_001753	1.367	Up		366	IFI16	3428	NM_005531	1.219	Up
274	VEGFC	7424	NM_005429	1.367	Up		367	LIPG	9388	NM_006033	1.213	Up
275	ITGB2	3689	NM_000211	1.366	Up		368	WAS	7454	NM_000377	1.212	Up
276	PMEPA1	56937	NM_199169	1.361	Up		369	ITGB1	3688	NM_002211	1.210	Up
277	CD74	972	NM_004355	1.358	Up		370	OLFML2B	25903	NM_015441	1.210	Up
278	IFIT3	3437	NM_001549	1.357	Up		371	IRAK1	3654	NM_001025243	1.208	Up
279	MYO1B	4430	NM_012223	1.354	Up		372	ITM2C	81618	NM_001012516	1.206	Up
373	PROCR	10544	NM_006404	1.205	Up		466	KLHL5	51088	NM_001007075	1.114	Up
374	CD86	942	NM_006889	1.205	Up		467	TRIM22	10346	NM_006074	1.113	Up
375	PTK7	5754	NM_152882	1.203	Up		468	HLA-DRA	3122	NM_019111	1.113	Up
376	ASPRV1	151516	NM_152792	1.202	Up		469	KRT16	3868	NM_005557	1.112	Up
377	LITAF	9516	NM_004862	1.201	Up		470	ITGB4	3691	NM_001005731	1.111	Up
378	SEL1L3	23231	NM_015187	1.200	Up		471	ENY2	56943	NM_020189	1.111	Up
379	IFI27	3429	NM_005532	1.200	Up		472	TNFAIP3	7128	NM_006290	1.111	Up
380	CLIC4	25932	NM_013943	1.194	Up		473	SUGCT	79783	NM_024728	1.110	Up
381	TPSB2	64499	NM_024164	1.194	Up		474	EMR2	30817	NM_152916	1.110	Up
382	SLC7A7	9056	NM_003982	1.191	Up		475	ZC3H12A	80149	NM_025079	1.110	Up
383	TMEM2	23670	NM_013390	1.191	Up		476	CD3D	915	NM_000732	1.109	Up
384	TNFRSF1B	7133	NM_001066	1.190	Up		477	TNFSF13B	10673	NM_006573	1.105	Up
385	NA	NA	XR_041521	1.189	Up		478	NA	NA	XM_001129441	1.105	Up
386	LGALS1	3956	NM_002305	1.189	Up		479	SIRPA	140885	NM_080792	1.104	Up
387	CDCA5	113130	NM_080668	1.188	Up		480	CCL3L1	6349	NM_021006	1.102	Up
388	DSE	29940	NM_013352	1.187	Up		481	BGN	633	NM_001711	1.101	Up
389	NA	NA	XM_374020	1.186	Up		482	CLEC4A	50856	NM_194448	1.100	Up
390	FCGR2A	2212	NM_021642	1.184	Up		483	SLC52A2	79581	NM_024531	1.100	Up
391	IRF8	3394	NM_002163	1.183	Up		484	ANTXR2	118429	NM_058172	1.100	Up
392	NA	NA	XM_932678	1.182	Up		485	FSTL1	11167	NM_007085	1.097	Up
393	MUCL1	118430	NM_058173	1.181	Up		486	PTPRK	5796	NM_002844	1.097	Up
394	RTTN	25914	NM_173630	1.181	Up		487	RARRES3	5920	NM_004585	1.096	Up
395	PCDH17	27253	NM_014459	1.181	Up		488	RGS20	8601	NM_170587	1.095	Up
396	AQP9	366	NM_020980	1.179	Up		489	CTGF	1490	NM_001901	1.094	Up
397	SULF2	55959	NM_018837	1.178	Up		490	NA	NA	NM_001080840	1.093	Up
398	PTGS2	5743	NM_000963	1.175	Up		491	NA	NA	XR_017543	1.091	Up
399	FNDC3B	64778	NM_001135095	1.175	Up		492	SERPINA1	5265	NM_001002235	1.090	Up
400	FOLR3	2352	NM_000804	1.173	Up		493	SPINK6	404203	NM_205841	1.089	Up
401	NA	NA	XR_037197	1.169	Up		494	SOD2	6648	NM_001024466	1.089	Up
402	CDSN	1041	NM_001264	1.169	Up		495	NA	NA	XR_038625	1.086	Up
403	HLA-DRA	3122	NM_019111	1.168	Up		496	PKM	5315	NM_182470	1.085	Up
404	TAGLN2	8407	NM_003564	1.167	Up		497	SLC3A2	6520	NM_001013251	1.084	Up
405	AIF1	199	NM_032955	1.167	Up		498	PTGFRN	5738	NM_020440	1.084	Up
406	PLOD2	5352	NM_000935	1.165	Up		499	NA	NA	XR_015970	1.083	Up
407	RHOC	389	NM_175744	1.165	Up		500	NA	NA	XM_001134247	1.083	Up
408	IER3	8870	NM_003897	1.161	Up		501	LBH	81606	NM_030915	1.082	Up
409	ZYX	7791	NM_003461	1.161	Up		502	CYP27B1	1594	NM_000785	1.081	Up
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
410	FPR3	2359	NM_002030	1.161	Up		503	COL22A1	169044	NM_152888	1.081	Up
411	EFNB1	1947	NM_004429	1.161	Up		504	CAMK1G	57172	NM_020439	1.081	Up
412	APP	351	NM_201414	1.161	Up		505	RGS2	5997	NM_002923	1.081	Up
413	PTK7	5754	NM_152880	1.158	Up		506	ADAR	103	NM_001111	1.080	Up
414	IRF1	3659	NM_002198	1.156	Up		507	SLC7A8	23428	NM_182728	1.080	Up
415	CCDC109B	55013	NM_017918	1.155	Up		508	AGTRAP	57085	NM_001040196	1.079	Up
416	FYB	2533	NM_001465	1.155	Up		509	COL17A1	1308	NM_000494	1.078	Up

417	DCBLD2	131566	NM_080927	1.153	Up		510	FAT1	2195	NM_005245	1.075	Up
418	FSTL3	10272	NM_005860	1.153	Up		511	C1R	715	NM_001733	1.074	Up
419	COL16A1	1307	NM_001856	1.153	Up		512	PLAUR	5329	NM_002659	1.073	Up
420	MZB1	51237	NM_016459	1.153	Up		513	PFN1	5216	NM_005022	1.072	Up
421	CNTNAP2	26047	NM_014141	1.151	Up		514	GLIPR2	152007	NM_022343	1.071	Up
422	CD3D	915	NM_001040651	1.151	Up		515	PSMB10	5699	NM_002801	1.071	Up
423	EXT1	2131	NM_000127	1.151	Up		516	CD52	1043	NM_001803	1.068	Up
424	HLA-DRB6	3128	NR_001298	1.150	Up		517	IGFBP6	3489	NM_002178	1.068	Up
425	DSG2	1829	NM_001943	1.150	Up		518	FAM89A	375061	NM_198552	1.067	Up
426	STOM	2040	NM_004099	1.146	Up		519	CCNB2	9133	NM_004701	1.067	Up
427	TAPBP	6892	NM_003190	1.145	Up		520	CXCL6	6372	NM_002993	1.065	Up
428	ABCA1	19	NM_005502	1.145	Up		521	FERMT1	55612	NM_017671	1.065	Up
429	RGS4	5999	NM_005613	1.144	Up		522	OAF	220323	NM_178507	1.064	Up
430	PRNP	5621	NM_183079	1.144	Up		523	TNFRSF21	27242	NM_014452	1.062	Up
431	SULF2	55959	NM_018837	1.143	Up		524	CLEC2D	29121	NM_013269	1.060	Up
432	ACP5	54	NM_001611	1.142	Up		525	GNLY	10578	NM_006433	1.059	Up
433	EMILIN2	84034	NM_032048	1.142	Up		526	PTGFRN	5738	NM_020440	1.058	Up
434	FNDC3B	64778	NM_022763	1.141	Up		527	ITGAV	3685	NM_002210	1.058	Up
435	CKS2	1164	NM_001827	1.140	Up		528	TRIM21	6737	NM_003141	1.057	Up
436	TRIP13	9319	NM_004237	1.140	Up		529	KIAA0101	9768	NM_014736	1.056	Up
437	PKM	5315	NM_182471	1.140	Up		530	ACOT7	11332	NM_181864	1.056	Up
438	TPSAB1	7177	NM_003294	1.140	Up		531	IMPDH1	3614	NM_000883	1.055	Up
439	ZYX	7791	NM_003461	1.139	Up		532	HLA-DPA1	3113	NM_033554	1.053	Up
440	AMTN	401138	NM_212557	1.139	Up		533	GALNT18	374378	NM_198516	1.046	Up
441	CTSH	1512	NM_004390	1.137	Up		534	ADA	100	NM_000022	1.046	Up
442	RTP4	64108	NM_022147	1.134	Up		535	SAT1	6303	NM_002970	1.045	Up
443	TSPAN10	83882	NM_031945	1.134	Up		536	PLTP	5360	NM_182676	1.042	Up
444	SCNN1D	6339	NM_002978	1.134	Up		537	BNC1	646	NM_001717	1.042	Up
445	TNFSF13B	10673	NM_006573	1.133	Up		538	DKK3	27122	NM_015881	1.041	Up
446	DEFB103A	414325	NM_001081551	1.133	Up		539	SLC9A1	6548	NM_003047	1.039	Up
447	NA	NA	XM_937579	1.132	Up		540	CASP1	834	NM_033294	1.039	Up
448	MXRA5	25878	NM_015419	1.131	Up		541	CEBPB	1051	NM_005194	1.038	Up
449	ITM2C	81618	NM_001012516	1.127	Up		542	CEMIP	57214	NM_018689	1.036	Up
450	ADM	133	NM_001124	1.125	Up		543	IRF7	3665	NM_004029	1.035	Up
451	PIM2	11040	NM_006875	1.125	Up		544	AURKA	6790	NM_198436	1.035	Up
452	COL6A2	1292	NM_001849	1.124	Up		545	ELF4	2000	NM_001421	1.034	Up
453	CCL13	6357	NM_005408	1.123	Up		546	MS4A6A	64231	NM_022349	1.033	Up
454	CTLA4	1493	NM_005214	1.123	Up		547	PPP1R14C	81706	NM_030949	1.032	Up
455	F2RL1	2150	NM_005242	1.123	Up		548	HLA-DRB6	3128	NR_001298	1.031	Up
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
456	HSPH1	10808	NM_006644	1.122	Up		549	UHRF1	29128	NM_001048201	1.031	Up
457	TOX2	84969	NM_032883	1.121	Up		550	GPNMB	10457	NM_001005340	1.031	Up
458	HLA-A	3105	NM_002116	1.121	Up		551	CD151	977	NM_139030	1.029	Up
459	RUNX3	864	NM_004350	1.120	Up		552	CSF2	1437	NM_000758	1.029	Up
460	MELK	9833	NM_014791	1.120	Up		553	SERPINA1	5265	NM_001002236	1.029	Up
461	DRAM1	55332	NM_018370	1.119	Up		554	NA	NA	XM_936510	1.028	Up
462	NA	NA	CR596519	1.119	Up		555	SLC25A24	29957	NM_013386	1.027	Up
463	TGIF1	7050	NM_170695	1.116	Up		556	NA	NA	XM_001129232	1.027	Up
464	CDK6	1021	NM_001259	1.115	Up		557	TNFRSF6B	8771	NM_032945	1.027	Up
465	AGTRAP	57085	NM_001040194	1.115	Up		558	SH2B3	10019	NM_005475	1.026	Up
559	ACOT7	11332	NM_007274	1.025	Up		652	DSC1	1823	NM_004948	0.951	Up
560	NA	NA	XM_001128032	1.025	Up		653	RGS19	10287	NM_005873	0.949	Up
561	ZNFX1	57169	NM_021035	1.025	Up		654	ANO1	55107	NM_018043	0.947	Up
562	FST	10468	NM_006350	1.023	Up		655	KANK4	163782	NM_181712	0.946	Up
563	XAF1	54739	NM_199139	1.022	Up		656	NT5E	4907	NM_002526	0.945	Up
564	MX1	4599	NM_002462	1.021	Up		657	HENMT1	113802	NM_144584	0.945	Up

565	FOSL1	8061	NM_005438	1.021	Up		658	ANO1	55107	NM_018043	0.944	Up
566	TGM2	7052	NM_004613	1.020	Up		659	STK3	6788	NM_006281	0.944	Up
567	SCG5	6447	NM_003020	1.019	Up		660	ANO1	55107	NM_018043	0.943	Up
568	OLR1	4973	NM_002543	1.019	Up		661	LAP3	51056	NM_015907	0.942	Up
569	FEN1	2237	NM_004111	1.018	Up		662	SLFN11	91607	NM_152270	0.942	Up
570	GPX8	493869	NM_001008397	1.017	Up		663	CD2	914	NM_001767	0.941	Up
571	HLA-C	3107	NM_002117	1.017	Up		664	PLEK	5341	NM_002664	0.940	Up
572	ALG1L	200810	NM_001015050	1.016	Up		665	SIGMAR1	10280	NM_005866	0.940	Up
573	NA	NA	XM_936128	1.015	Up		666	EDNRA	1909	NM_001957	0.939	Up
574	MFSD10	10227	NM_001120	1.015	Up		667	HLA-DRB5	3127	NM_002125	0.938	Up
575	AURKA	6790	NM_198434	1.014	Up		668	DKK1	22943	NM_012242	0.938	Up
576	GBP4	115361	NM_052941	1.012	Up		669	DCBLD2	131566	NM_080927	0.937	Up
577	PYGL	5836	NM_002863	1.012	Up		670	ETS1	2113	NM_005238	0.937	Up
578	FPR1	2357	NM_002029	1.012	Up		671	BRMS1	25855	NM_001024958	0.937	Up
579	TK1	7083	NM_003258	1.011	Up		672	CHSY1	22856	NM_014918	0.936	Up
580	NA	NA	XM_941434	1.011	Up		673	CTHRC1	115908	NM_138455	0.935	Up
581	TGFB3	7043	NM_003239	1.010	Up		674	SAMD9L	219285	NM_152703	0.935	Up
582	TRIB1	10221	NM_025195	1.006	Up		675	BOLA2	552900	NM_001031827	0.934	Up
583	COL4A6	1288	NM_001847	1.006	Up		676	CCM2	83605	NM_001029835	0.934	Up
584	F2RL1	2150	NM_005242	1.006	Up		677	MSRB1	51734	NM_016332	0.933	Up
585	SNAI2	6591	NM_003068	1.006	Up		678	SPRR2G	6706	NM_001014291	0.933	Up
586	VCAM1	7412	NM_001078	1.005	Up		679	AFAP1L2	84632	NM_001001936	0.933	Up
587	HLA-DRB3	3125	NM_022555	1.005	Up		680	CYP26B1	56603	NM_019885	0.931	Up
588	NA	NA	XM_001719804	1.005	Up		681	ALOX5AP	241	NM_001629	0.930	Up
589	SPRED1	161742	NM_152594	1.005	Up		682	EDN1	1906	NM_001955	0.929	Up
590	CD74	972	NM_001025159	1.004	Up		683	TMEM184B	25829	NM_012264	0.928	Up
591	PSME2	5721	NM_002818	1.004	Up		684	COL11A1	1301	NM_001854	0.928	Up
592	IL2RB	3560	NM_000878	1.004	Up		685	MYH9	4627	NM_002473	0.928	Up
593	RTKN	6242	NM_033046	1.004	Up		686	SELE	6401	NM_000450	0.927	Up
594	NA	NA	XM_375698	1.003	Up		687	CDKN2A	1029	NM_058195	0.927	Up
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
595	DCBLD1	285761	NM_173674	1.000	Up		688	PTPRE	5791	NM_130435	0.927	Up
596	TAGLN	6876	NM_003186	1.000	Up		689	MYO5A	4644	NM_000259	0.926	Up
597	NREP	9315	NM_004772	1.000	Up		690	ADAP2	55803	NM_018404	0.926	Up
598	CSF3R	1441	NM_172313	1.000	Up		691	NA	NA	XM_941060	0.925	Up
599	ITPR3	3710	NM_002224	0.998	Up		692	SAMD9	54809	NM_017654	0.924	Up
600	C19orf10	56005	NM_019107	0.998	Up		693	COL17A1	1308	NM_000494	0.924	Up
601	CKS2	1164	NM_001827	0.997	Up		694	C1orf162	128346	NM_174896	0.924	Up
602	HLA-DRB4	3126	NM_021983	0.996	Up		695	MYH10	4628	NM_005964	0.922	Up
603	ASAP1	50807	NM_018482	0.995	Up		696	SLC7A5	8140	NM_003486	0.922	Up
604	NA	NA	XM_001714074	0.994	Up		697	TRAM2	9697	NM_012288	0.921	Up
605	FABP5	2171	NM_001444	0.992	Up		698	IGJ	3512	NM_144646	0.919	Up
606	LAMB1	3912	NM_002291	0.992	Up		699	DLGAP5	9787	NM_014750	0.917	Up
607	HLA-DRB1	3123	NM_002124	0.992	Up		700	IL4R	3566	NM_000418	0.917	Up
608	DKK3	27122	NM_013253	0.990	Up		701	IRS1	3667	NM_005544	0.917	Up
609	CDKN3	1033	NM_005192	0.990	Up		702	HBEGF	1839	NM_001945	0.917	Up
610	P4HA2	8974	NM_001017973	0.988	Up		703	SRM	6723	NM_003132	0.915	Up
611	BNC1	646	NM_001717	0.988	Up		704	CDKN1A	1026	NM_000389	0.914	Up
612	RIPK2	8767	NM_003821	0.986	Up		705	CSPG4	1464	NM_001897	0.913	Up
613	GRINA	2907	NM_000837	0.984	Up		706	MS4A7	58475	NM_206938	0.913	Up
614	HOXB7	3217	NM_004502	0.984	Up		707	C1QTNF1	114897	NM_198594	0.913	Up
615	ARPC1B	10095	NM_005720	0.984	Up		708	SLAMF8	56833	NM_020125	0.913	Up
616	PKM	5315	NM_002654	0.984	Up		709	BMP1	649	NM_006129	0.912	Up
617	CASP4	837	NM_001225	0.983	Up		710	HOMER3	9454	NM_004838	0.912	Up
618	LIPA	3988	NM_000235	0.981	Up		711	CD53	963	NM_000560	0.911	Up
619	LILRB3	11025	NM_006864	0.981	Up		712	ACOT9	23597	NM_001037171	0.911	Up

620	ASAP1	50807	NM_018482	0.980	Up		713	GAS1	2619	NM_002048	0.910	Up
621	SPINK6	404203	NM_205841	0.980	Up		714	CCNA1	8900	NM_003914	0.909	Up
622	EHD4	30844	NM_139265	0.979	Up		715	PCOLCE	5118	NM_002593	0.905	Up
623	CD79A	973	NM_021601	0.977	Up		716	GSDMD	79792	NM_024736	0.905	Up
624	CD97	976	NM_078481	0.977	Up		717	NA	NA	NM_014745	0.905	Up
625	TMEM173	340061	NM_198282	0.977	Up		718	TNFRSF10B	8795	NM_003842	0.905	Up
626	CASP1	834	NM_033294	0.976	Up		719	APMAP	57136	NM_020531	0.904	Up
627	CD69	969	NM_001781	0.974	Up		720	CXCL16	58191	NM_022059	0.903	Up
628	CECR1	51816	NM_177405	0.974	Up		721	ABCG1	9619	NM_016818	0.902	Up
629	POSTN	10631	NM_006475	0.973	Up		722	DNAJB11	51726	NM_016306	0.901	Up
630	CCL3L1	6349	NM_021006	0.972	Up		723	PTPLAD1	51495	NM_016395	0.901	Up
631	BSG	682	NM_198590	0.972	Up		724	FKBP11	51303	NM_016594	0.901	Up
632	PYCARD	29108	NM_013258	0.971	Up		725	NCOA7	135112	NM_181782	0.899	Up
633	TPST1	8460	NM_003596	0.966	Up		726	GALNT6	11226	NM_007210	0.899	Up
634	BCAT1	586	NM_005504	0.965	Up		727	YEATS2	55689	NM_018023	0.898	Up
635	CKS1B	1163	NM_001826	0.964	Up		728	NUDT5	11164	NM_014142	0.898	Up
636	CDC45	8318	NM_003504	0.963	Up		729	DDX39A	10212	NM_005804	0.897	Up
637	CCRN4L	25819	NM_012118	0.963	Up		730	PARP9	83666	NM_031458	0.896	Up
638	TAP2	6891	NM_000544	0.963	Up		731	CCR7	1236	NM_001838	0.896	Up
639	HLA-DMA	3108	NM_006120	0.960	Up		732	FBXO6	26270	NM_018438	0.896	Up
640	TP63	8626	NM_001114981	0.960	Up		733	ICOS	29851	NM_012092	0.895	Up
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
641	P4HA2	8974	NM_001017974	0.959	Up		734	PPT1	5538	NM_000310	0.895	Up
642	SLC39A14	23516	NM_015359	0.959	Up		735	NA	NA	XR_019109	0.895	Up
643	TSHZ3	57616	NM_020856	0.957	Up		736	MRPS17	51373	NM_015969	0.894	Up
644	COL8A1	1295	NM_020351	0.957	Up		737	HEXB	3074	NM_000521	0.892	Up
645	HLA-G	3135	NM_002127	0.957	Up		738	C1QA	712	NM_015991	0.891	Up
646	NA	NA	XM_937508	0.956	Up		739	NA	NA	XR_036947	0.889	Up
647	GPR183	1880	NM_004951	0.956	Up		740	PTK2	5747	NM_005607	0.889	Up
648	BOLA2	552900	NM_001031827	0.954	Up		741	GMFG	9535	NM_004877	0.888	Up
649	IGFBP4	3487	NM_001552	0.953	Up		742	LILRA3	11026	NM_006865	0.888	Up
650	YWHAH	7533	NM_003405	0.952	Up		743	NA	NA	XM_001133534	0.888	Up
651	FKBP9L	360132	NM_182827	0.952	Up		744	CD247	919	NM_198053	0.888	Up
745	CORO1A	11151	NM_007074	0.885	Up		838	TEAD2	8463	NM_003598	0.828	Up
746	PSMB8	5696	NM_148919	0.885	Up		839	GSTO1	9446	NM_004832	0.827	Up
747	CMTM3	123920	NM_144601	0.885	Up		840	CENPN	55839	NM_018455	0.826	Up
748	LILRB2	10288	NM_001080978	0.884	Up		841	SESN3	143686	NM_144665	0.823	Up
749	MS4A6A	64231	NM_152851	0.883	Up		842	NKG7	4818	NM_005601	0.823	Up
750	CAV2	858	NM_001233	0.882	Up		843	LAPTM4B	55353	NM_018407	0.822	Up
751	RAB23	51715	NM_016277	0.881	Up		844	DNAJA1	3301	NM_001539	0.821	Up
752	EGFL6	25975	NM_015507	0.881	Up		845	GOLGA7B	401647	NM_001010917	0.820	Up
753	CYTH4	27128	NM_013385	0.879	Up		846	NA	NA	XM_944822	0.820	Up
754	PLXNA1	5361	NM_032242	0.878	Up		847	MYADM	91663	NM_001020820	0.819	Up
755	BIRC3	330	NM_001165	0.878	Up		848	FAM111A	63901	NM_022074	0.818	Up
756	LAMC1	3915	NM_002293	0.876	Up		849	RHOC	389	NM_001042678	0.818	Up
757	NA	NA	XM_925989	0.876	Up		850	ERRFI1	54206	NM_018948	0.817	Up
758	NCAPG	64151	NM_022346	0.876	Up		851	PPFIA1	8500	NM_003626	0.817	Up
759	LOC644936	644936	NR_004845	0.875	Up		852	OAS2	4939	NM_002535	0.817	Up
760	ENTPD1	953	NM_001098175	0.875	Up		853	FTL	2512	NM_000146	0.816	Up
761	GPNMB	10457	NM_002510	0.874	Up		854	CSF1R	1436	NM_005211	0.816	Up
762	NA	NA	XM_001133534	0.874	Up		855	LASP1	3927	NM_006148	0.816	Up
763	SPOCK2	9806	NM_014767	0.873	Up		856	IL27RA	9466	NM_004843	0.816	Up
764	TP63	8626	NM_003722	0.873	Up		857	SLC2A9	56606	NM_001001290	0.816	Up
765	RIN2	54453	NM_018993	0.872	Up		858	RANBP1	5902	NM_002882	0.816	Up
766	CCDC86	79080	NM_024098	0.872	Up		859	CBLB	868	NM_170662	0.815	Up
767	SPRY4	81848	NM_030964	0.872	Up		860	FLNA	2316	NM_001456	0.815	Up

768	SELM	140606	NM_080430	0.872	Up		861	COL18A1	80781	NM_130445	0.815	Up
769	GNA12	2768	NM_007353	0.870	Up		862	GNAI2	2771	NM_002070	0.814	Up
770	MCM4	4173	NM_005914	0.869	Up		863	CDKN2A	1029	NM_000077	0.814	Up
771	DSC1	1823	NM_004948	0.868	Up		864	SDC4	6385	NM_002999	0.814	Up
772	OAS1	4938	NM_001032409	0.867	Up		865	NINJ2	4815	NM_016533	0.813	Up
773	KANK4	163782	NM_181712	0.867	Up		866	SNRPB2	6629	NM_198220	0.812	Up
774	RUNX1	861	NM_001754	0.867	Up		867	TMX1	81542	NM_030755	0.812	Up
775	EFNA1	1942	NM_004428	0.867	Up		868	FTH1P8	2501	NR_002203	0.812	Up
776	UBASH3B	84959	NM_032873	0.866	Up		869	SPARC	6678	NM_003118	0.811	Up
777	SCRN1	9805	NM_014766	0.866	Up		870	MMD	23531	NM_012329	0.811	Up
778	CA9	768	NM_001216	0.866	Up		871	BIRC5	332	NM_001168	0.811	Up
779	SPI1	6688	NM_003120	0.861	Up		872	KHDC1L	100129128	NM_001126063	0.811	Up
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
780	RNF213	57674	NM_020954	0.861	Up		873	HOXD11	3237	NM_021192	0.811	Up
781	TFRC	7037	NM_003234	0.861	Up		874	OAS1	4938	NM_002534	0.811	Up
782	EXT2	2132	NM_000401	0.861	Up		875	NTM	50863	NM_001048209	0.810	Up
783	ADCY3	109	NM_004036	0.860	Up		876	TNS3	64759	NM_022748	0.810	Up
784	RPA3	6119	NM_002947	0.859	Up		877	NA	NA	XM_001717333	0.809	Up
785	SNHG15	285958	AK096179	0.859	Up		878	MICB	4277	NM_005931	0.809	Up
786	CXCL5	6374	NM_002994	0.858	Up		879	CCDC50	152137	NM_174908	0.809	Up
787	AHSA1	10598	NM_012111	0.858	Up		880	SOCS1	8651	NM_003745	0.809	Up
788	AXL	558	NM_021913	0.858	Up		881	RNASE1	6035	NM_198235	0.809	Up
789	LUZP1	7798	NM_033631	0.857	Up		882	TPBG	7162	NM_006670	0.808	Up
790	NLGN4X	57502	NM_020742	0.857	Up		883	FOXN2	3344	NM_002158	0.807	Up
791	NRG1	3084	AF176921	0.855	Up		884	MYH9	4627	NM_002473	0.807	Up
792	CALD1	800	NM_033157	0.855	Up		885	09-Sep	10801	NM_006640	0.807	Up
793	NA	NA	XM_498510	0.854	Up		886	NA	NA	XM_001719439	0.806	Up
794	MAD2L2	10459	NM_006341	0.854	Up		887	FGR	2268	NM_001042729	0.805	Up
795	ITGAX	3687	NM_000887	0.854	Up		888	LARP6	55323	NM_197958	0.804	Up
796	CD247	919	NM_000734	0.853	Up		889	LHFPL2	10184	NM_005779	0.804	Up
797	UBE2Q2	92912	NM_173469	0.852	Up		890	NA	NA	XR_016076	0.804	Up
798	SLA	6503	NM_006748	0.851	Up		891	HIST1H2BK	85236	NM_080593	0.804	Up
799	LAG3	3902	NM_002286	0.851	Up		892	TTPAL	79183	NM_024331	0.804	Up
800	TMSB4X	7114	NM_021109	0.850	Up		893	SAMSN1	64092	NM_022136	0.803	Up
801	APH1B	83464	NM_031301	0.848	Up		894	APOL3	80833	NM_145641	0.803	Up
802	NA	NA	XR_039632	0.848	Up		895	RPS7	6201	NM_001011	0.803	Up
803	CEBPD	1052	NM_005195	0.848	Up		896	POSTN	10631	NM_006475	0.803	Up
804	IGFL2	147920	NM_001002915	0.847	Up		897	AURKB	9212	NM_004217	0.802	Up
805	RPL36A	6173	NM_021029	0.846	Up		898	SHISA5	51246	NM_016479	0.802	Up
806	SMS	6611	NM_004595	0.846	Up		899	COL10A1	1300	NM_000493	0.802	Up
807	PTGES	9536	NM_004878	0.846	Up		900	SFRP2	6423	NM_003013	0.802	Up
808	ENG	2022	NM_000118	0.846	Up		901	RRAS2	22800	NM_012250	0.802	Up
809	NA	NA	XR_015611	0.845	Up		902	RPN1	6184	NM_002950	0.802	Up
810	GPSM3	63940	NM_022107	0.845	Up		903	EBNA1BP2	10969	NM_006824	0.801	Up
811	NA	NA	XR_037586	0.844	Up		904	NA	NA	XR_016115	0.801	Up
812	TOP2A	7153	NM_001067	0.844	Up		905	RFC4	5984	NM_181573	0.801	Up
813	PTPRE	5791	NM_130435	0.844	Up		906	NA	NA	XM_941665	0.800	Up
814	CD7	924	NM_006137	0.844	Up		907	FMNL2	114793	NM_052905	0.800	Up
815	ALPL	249	NM_000478	0.844	Up		908	FCGR3B	2215	NM_000570	0.799	Up
816	FKBP1A	2280	NM_000801	0.844	Up		909	HCK	3055	NM_002110	0.799	Up
817	FTL	2512	NM_000146	0.843	Up		910	PFN2	5217	NM_053024	0.798	Up
818	PCED1B	91523	NM_138371	0.842	Up		911	PTPN6	5777	NM_080548	0.797	Up
819	FADS1	3992	NM_013402	0.842	Up		912	PRC1	9055	NM_199413	0.797	Up
820	NA	NA	XR_018747	0.841	Up		913	LEPRE1	64175	NM_022356	0.797	Up
821	HSP90B1	7184	NM_003299	0.840	Up		914	CYBB	1536	NM_000397	0.797	Up
822	STK4	6789	NM_006282	0.839	Up		915	FADD	8772	NM_003824	0.796	Up

823	CERCAM	51148	NM_016174	0.838	Up		916	BID	637	NM_197966	0.796	Up
824	TGIF1	7050	NM_170695	0.837	Up		917	NOX4	50507	NM_016931	0.796	Up
825	ATP6V0B	533	NM_004047	0.837	Up		918	PSMB4	5692	NM_002796	0.796	Up
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
826	CDK12	51755	NM_016507	0.837	Up		919	ZBP1	81030	NM_030776	0.795	Up
827	NA	NA	XM_937285	0.835	Up		920	PTRH2	51651	NM_016077	0.794	Up
828	EPHB4	2050	NM_004444	0.835	Up		921	NA	NA	X00437	0.793	Up
829	GUCY1A3	2982	NM_000856	0.835	Up		922	NA	NA	XM_929980	0.793	Up
830	ARL14	80117	NM_025047	0.833	Up		923	ATL3	25923	NM_015459	0.793	Up
831	PLCG2	5336	NM_002661	0.833	Up		924	CCND2	894	NM_001759	0.793	Up
832	CMTM7	112616	NM_181472	0.833	Up		925	NDE1	54820	NM_017668	0.793	Up
833	SNHG15	285958	NR_003697	0.833	Up		926	CMIP	80790	NM_030629	0.792	Up
834	PANX1	24145	NM_015368	0.832	Up		927	C1orf186	440712	NM_001007544	0.792	Up
835	OAS1	4938	NM_001032409	0.830	Up		928	GIMAP4	55303	NM_018326	0.792	Up
836	FZD2	2535	NM_001466	0.829	Up		929	UBE2L6	9246	NM_004223	0.792	Up
837	RAB8B	51762	NM_016530	0.829	Up		930	PGF	5228	NM_002632	0.791	Up
931	DCUN1D5	84259	NM_032299	0.790	Up		1024	SOCS3	9021	NM_003955	0.748	Up
932	HMMR	3161	NM_012485	0.790	Up		1025	HOXC13	3229	NM_017410	0.748	Up
933	TNFRSF4	7293	NM_003327	0.789	Up		1026	CLEC4A	50856	NM_194447	0.748	Up
934	DENND1A	57706	NM_024820	0.789	Up		1027	CKAP2L	150468	NM_152515	0.747	Up
935	DAB2	1601	NM_001343	0.789	Up		1028	SNRPB	6628	NM_003091	0.747	Up
936	CAV2	858	NM_001233	0.789	Up		1029	CDC42SE1	56882	NM_001038707	0.747	Up
937	CARD10	29775	NM_014550	0.788	Up		1030	RCN3	57333	NM_020650	0.747	Up
938	ANGPT2	285	NM_001147	0.787	Up		1031	CTSH	1512	NM_004390	0.746	Up
939	SLA	6503	NM_001045557	0.787	Up		1032	NA	NA	XM_942669	0.746	Up
940	ARHGDIB	397	NM_001175	0.787	Up		1033	C1orf54	79630	NM_024579	0.745	Up
941	DDX58	23586	NM_014314	0.787	Up		1034	CD53	963	NM_000560	0.744	Up
942	LAPTM4B	55353	NM_018407	0.786	Up		1035	EVA1A	84141	NM_001135032	0.744	Up
943	PDCD2	5134	NM_002598	0.786	Up		1036	MED10	84246	NM_032286	0.743	Up
944	SLC11A1	6556	NM_000578	0.784	Up		1037	RNF19B	127544	NM_153341	0.742	Up
945	CDCA4	55038	NM_145701	0.784	Up		1038	ACVR1	90	NM_001105	0.742	Up
946	MCM2	4171	NM_004526	0.782	Up		1039	NUTF2	10204	NM_005796	0.741	Up
947	CXCL5	6374	NM_002994	0.781	Up		1040	FERMT3	83706	NM_031471	0.741	Up
948	PNKD	25953	NM_022572	0.780	Up		1041	SELL	6402	NM_000655	0.741	Up
949	NMB	4828	NM_021077	0.780	Up		1042	NDRG1	10397	NM_006096	0.740	Up
950	SLC2A6	11182	NM_017585	0.779	Up		1043	MCM4	4173	NM_182746	0.739	Up
951	NA	NA	XM_942419	0.779	Up		1044	RCN1	5954	NM_002901	0.738	Up
952	RDH16	8608	NM_003708	0.778	Up		1045	CLDN1	9076	NM_021101	0.738	Up
953	CD93	22918	NM_012072	0.778	Up		1046	ATP6V0B	533	NM_001039457	0.738	Up
954	MRGBP	55257	NM_018270	0.778	Up		1047	KDELR3	11015	NM_006855	0.738	Up
955	B2M	567	NM_004048	0.777	Up		1048	BAZ1A	11177	NM_182648	0.737	Up
956	DRAP1	10589	NM_006442	0.776	Up		1049	GLRX	2745	NM_002064	0.737	Up
957	RPS24	6229	NM_001026	0.775	Up		1050	FBN2	2201	NM_001999	0.736	Up
958	GJB4	127534	NM_153212	0.775	Up		1051	GLB1	2720	NM_000404	0.736	Up
959	ACLY	47	NM_198830	0.774	Up		1052	NA	NA	XR_016251	0.735	Up
960	PI15	51050	NM_015886	0.773	Up		1053	ITGB1	3688	NM_033668	0.735	Up
961	TCIRG1	10312	NM_006053	0.773	Up		1054	ACSL4	2182	NM_004458	0.734	Up
962	C1QTNF5	114902	NM_015645	0.772	Up		1055	CCL4L1	9560	NM_001001435	0.734	Up
963	SRPK2	6733	NM_182691	0.772	Up		1056	RBBP8	5932	NM_203291	0.732	Up
964	RPS15	6209	NM_001018	0.772	Up		1057	SPI1	6688	NM_001080547	0.731	Up
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
965	TMEM51	55092	NM_018022	0.772	Up		1058	LUM	4060	NM_002345	0.731	Up
966	CXCL11	6373	NM_005409	0.772	Up		1059	FRMD8	83786	NM_031904	0.731	Up
967	SBNO2	22904	NM_014963	0.771	Up		1060	ANXA5	308	NM_001154	0.730	Up
968	DLGAP5	9787	NM_014750	0.771	Up		1061	AP2M1	1173	NM_004068	0.730	Up

969	VKORC1	79001	NM_024006	0.771	Up		1062	NA	NA	XM_001129173	0.729	Up
970	SLC38A5	92745	NM_033518	0.770	Up		1063	MAD2L1	4085	NM_002358	0.729	Up
971	FABP5P3	220832	NR_002935	0.770	Up		1064	MFSD12	126321	NM_174983	0.729	Up
972	CHPF	79586	NM_024536	0.770	Up		1065	BOLA2	552900	NM_001031827	0.729	Up
973	GRAP	10750	NM_006613	0.770	Up		1066	ARTN	9048	NM_057091	0.728	Up
974	INPP4B	8821	NM_003866	0.769	Up		1067	GMFB	2764	NM_004124	0.728	Up
975	RPS7	6201	NM_001011	0.769	Up		1068	SP110	3431	NM_004510	0.728	Up
976	FAIM3	9214	NM_005449	0.769	Up		1069	CPVL	54504	NM_031311	0.728	Up
977	CNGB1	1258	NM_001297	0.768	Up		1070	TNFRSF1A	7132	NM_001065	0.727	Up
978	CD8A	925	NM_171827	0.768	Up		1071	ALG1L	200810	NM_001015050	0.727	Up
979	CD209	30835	NM_021155	0.767	Up		1072	SLC1A5	6510	NM_005628	0.727	Up
980	STEAP1	26872	NM_012449	0.767	Up		1073	GLB1	2720	NM_001079811	0.727	Up
981	SH3PXD2B	285590	NM_001017995	0.766	Up		1074	SLC3A2	6520	NM_001012661	0.726	Up
982	ARHGAP9	64333	NM_001080157	0.765	Up		1075	CHGB	1114	NM_001819	0.726	Up
983	SIGLEC10	89790	NM_033130	0.765	Up		1076	NA	NA	XR_018212	0.726	Up
984	PSMA6	5687	NM_002791	0.765	Up		1077	IFIT3	3437	NM_001031683	0.726	Up
985	CD248	57124	NM_020404	0.765	Up		1078	SLC38A2	54407	NM_018976	0.726	Up
986	GPR183	1880	NM_004951	0.765	Up		1079	BRIX1	55299	NM_018321	0.725	Up
987	PLSCR1	5359	NM_021105	0.764	Up		1080	LAMA4	3910	NM_002290	0.725	Up
988	FCN1	2219	NM_002003	0.764	Up		1081	PSMA4	5685	NM_002789	0.725	Up
989	AXL	558	NM_021913	0.764	Up		1082	RRP7A	27341	NM_015703	0.725	Up
990	APCDD1L	164284	NM_153360	0.764	Up		1083	P2RY6	5031	NM_176796	0.725	Up
991	PTTG1	9232	NM_004219	0.763	Up		1084	PIK3CD	5293	NM_005026	0.724	Up
992	NA	NA	XM_929985	0.763	Up		1085	VMP1	81671	NM_030938	0.724	Up
993	CXCL14	9547	NM_004887	0.763	Up		1086	ARHGAP25	9938	NM_014882	0.723	Up
994	FAM69A	388650	NM_001006605	0.762	Up		1087	COL15A1	1306	NM_001855	0.723	Up
995	RPL21	6144	NM_000982	0.762	Up		1088	TPP1	1200	NM_000391	0.723	Up
996	S100A12	6283	NM_005621	0.762	Up		1089	CD8A	925	NM_171827	0.722	Up
997	SLC16A3	9123	NM_004207	0.761	Up		1090	YIF1A	10897	NM_020470	0.722	Up
998	HERC6	55008	NM_017912	0.761	Up		1091	CD83	9308	NM_001040280	0.722	Up
999	RFC4	5984	NM_002916	0.761	Up		1092	DNMT1	1786	NM_001379	0.721	Up
1000	TCEB1	6921	NM_005648	0.761	Up		1093	WNT7A	7476	NM_004625	0.721	Up
1001	TPST2	8459	NM_001008566	0.760	Up		1094	LMNA	4000	NM_005572	0.720	Up
1002	TAGLN2	8407	NM_003564	0.760	Up		1095	TMEM54	113452	NM_033504	0.720	Up
1003	NOP10	55505	NM_018648	0.760	Up		1096	EVA1A	84141	NM_001135032	0.720	Up
1004	TYMS	7298	NM_001071	0.760	Up		1097	EVI2B	2124	NM_006495	0.720	Up
1005	PSMA5	5686	NM_002790	0.759	Up		1098	SMS	6611	NM_004595	0.720	Up
1006	NIP7	51388	NM_016101	0.759	Up		1099	CFL1	1072	NM_005507	0.719	Up
1007	FBXO2	26232	NM_012168	0.757	Up		1100	RAB34	83871	NM_031934	0.719	Up
1008	ARHGDIA	396	NM_004309	0.757	Up		1101	ANGPTL4	51129	NM_139314	0.719	Up
1009	FAM213A	84293	NM_032333	0.757	Up		1102	ADAM8	101	NM_001109	0.719	Up
1010	ALG3	10195	NM_005787	0.756	Up		1103	CTPS1	1503	NM_001905	0.719	Up
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
1011	NCLN	56926	NM_020170	0.756	Up		1104	NA	NA	XR_016704	0.719	Up
1012	HAPLN3	145864	NM_178232	0.756	Up		1105	TAGLN	6876	NM_003186	0.718	Up
1013	PRKCB	5579	NM_002738	0.756	Up		1106	PROK2	60675	NM_021935	0.718	Up
1014	CCDC23	374969	NM_199342	0.756	Up		1107	CSRP2	1466	NM_001321	0.718	Up
1015	TXNDC5	81567	NM_030810	0.755	Up		1108	HLA-A	3105	NM_002116	0.718	Up
1016	CYTH4	27128	NM_013385	0.754	Up		1109	NA	NA	XM_001722872	0.717	Up
1017	BMP2	650	NM_001200	0.754	Up		1110	BTN3A2	11118	NM_007047	0.717	Up
1018	NFE2L3	9603	NM_004289	0.753	Up		1111	LYAR	55646	NM_017816	0.715	Up
1019	SLC30A7	148867	NM_133496	0.751	Up		1112	RAD51AP1	10635	NM_006479	0.714	Up
1020	LILRA5	353514	NM_021250	0.749	Up		1113	CDR2	1039	NM_001802	0.714	Up
1021	LMNB2	84823	NM_032737	0.749	Up		1114	ULBP2	80328	NM_025217	0.714	Up
1022	CTSB	1508	NM_147780	0.749	Up		1115	SPHK1	8877	NM_021972	0.714	Up
1023	SLC39A1	27173	NM_014437	0.748	Up		1116	IER5L	389792	NM_203434	0.714	Up

1117	IRF6	3664	NM_006147	0.713	Up		1210	KDELR3	11015	NM_016657	0.684	Up
1118	ATP2A2	488	NM_170665	0.713	Up		1211	FTH1P3	2498	NR_002201	0.684	Up
1119	CPNE1	8904	NM_152931	0.713	Up		1212	SP100	6672	NM_001080391	0.684	Up
1120	LRRC17	10234	NM_005824	0.713	Up		1213	ZMYM6	9204	NM_007167	0.683	Up
1121	CTSA	5476	NM_000308	0.713	Up		1214	MSANTD3	91283	NM_080655	0.682	Up
1122	GSTO1	9446	NM_004832	0.713	Up		1215	AKNA	80709	NM_030767	0.682	Up
1123	RCC2	55920	NM_018715	0.712	Up		1216	SKP2	6502	NM_032637	0.681	Up
1124	CXCR4	7852	NM_001008540	0.712	Up		1217	CD48	962	NM_001778	0.681	Up
1125	PSMB8	5696	NM_148919	0.711	Up		1218	PSMB3	5691	NM_002795	0.681	Up
1126	NOP56	10528	NM_006392	0.710	Up		1219	NBL1	4681	NM_005380	0.681	Up
1127	PTPLAD1	51495	NM_016395	0.710	Up		1220	OIP5	11339	NM_007280	0.681	Up
1128	FOS	2353	NM_005252	0.710	Up		1221	APOBEC3G	60489	NM_021822	0.680	Up
1129	SURF4	6836	NM_033161	0.709	Up		1222	AIF1	199	NM_001623	0.680	Up
1130	FILIP1L	11259	NM_014890	0.709	Up		1223	APOL2	23780	NM_145637	0.680	Up
1131	NBL1	4681	NM_182744	0.709	Up		1224	NA	NA	NM_022040	0.679	Up
1132	CD44	960	NM_001001391	0.708	Up		1225	RHOG	391	NM_001665	0.679	Up
1133	MT1E	4493	NM_175617	0.708	Up		1226	ECT2	1894	NM_018098	0.679	Up
1134	SKAP2	8935	NM_003930	0.707	Up		1227	LAMP3	27074	NM_014398	0.679	Up
1135	NCKAP1L	3071	NM_005337	0.707	Up		1228	PNP	4860	NM_000270	0.678	Up
1136	CKLF	51192	NM_001040138	0.707	Up		1229	PLEKHO2	80301	NM_025201	0.678	Up
1137	CENPW	387103	NM_001012507	0.706	Up		1230	ACTL6A	86	NM_177989	0.678	Up
1138	HIST1H2BD	3017	NM_138720	0.706	Up		1231	MCM6	4175	NM_005915	0.677	Up
1139	RANBP1	5902	NM_002882	0.706	Up		1232	BRSK1	84446	NM_032430	0.677	Up
1140	DEFB103B	55894	NM_018661	0.706	Up		1233	CELSR3	1951	NM_001407	0.676	Up
1141	TRIM47	91107	NM_033452	0.706	Up		1234	TRAM1	23471	NM_014294	0.676	Up
1142	CLCA2	9635	NM_006536	0.705	Up		1235	NA	NA	XM_938166	0.676	Up
1143	CYB561A3	220002	NM_153611	0.705	Up		1236	FTH1P11	2503	NR_002204	0.675	Up
1144	GNS	2799	NM_002076	0.704	Up		1237	MB21D1	115004	NM_138441	0.675	Up
1145	ITGB1	3688	NM_033669	0.704	Up		1238	SNRPB	6628	NM_003091	0.675	Up
1146	GPR137B	7107	NM_003272	0.704	Up		1239	SGK223	157285	NM_001080826	0.675	Up
1147	CDK4	1019	NM_000075	0.704	Up		1240	NA	NA	XR_018394	0.675	Up
1148	NFIL3	4783	NM_005384	0.703	Up		1241	CD151	977	NM_001039490	0.674	Up
1149	C1R	715	NM_001733	0.703	Up		1242	NRSN2	80023	NM_024958	0.674	Up
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
1150	ID3	3399	NM_002167	0.703	Up		1243	TMEM119	338773	NM_181724	0.674	Up
1151	NA	NA	NM_138765	0.703	Up		1244	PRF1	5551	NM_005041	0.674	Up
1152	PTPN12	5782	NM_002835	0.702	Up		1245	TPX2	22974	NM_012112	0.671	Up
1153	LTBR	4055	NM_002342	0.701	Up		1246	COL8A1	1295	NM_020351	0.671	Up
1154	TMEM69	51249	NM_016486	0.701	Up		1247	NA	NA	NM_001080848	0.671	Up
1155	DUSP14	11072	NM_007026	0.701	Up		1248	CCT2	10576	NM_006431	0.670	Up
1156	EXT2	2132	NM_207122	0.701	Up		1249	RNF149	284996	NM_173647	0.670	Up
1157	CASP7	840	NM_033339	0.701	Up		1250	NA	NA	XR_015946	0.669	Up
1158	VNN2	8875	NM_004665	0.701	Up		1251	SNRNP40	9410	NM_004814	0.669	Up
1159	NA	NA	XR_016048	0.701	Up		1252	LRR1	122769	NM_203467	0.669	Up
1160	PTRF	284119	NM_012232	0.700	Up		1253	RPL21P16	729402	NM_001139505	0.668	Up
1161	FNDC1	84624	NM_032532	0.699	Up		1254	ADAR	103	NM_015840	0.668	Up
1162	BCAS4	55653	NM_017843	0.698	Up		1255	NIPA2	81614	NM_030922	0.668	Up
1163	GLT8D2	83468	NM_031302	0.698	Up		1256	IFNAR2	3455	NM_207584	0.668	Up
1164	PHF5A	84844	NM_032758	0.697	Up		1257	NCF2	4688	NM_000433	0.668	Up
1165	LDLR	3949	NM_000527	0.697	Up		1258	RSRC1	51319	NM_016625	0.667	Up
1166	NA	NA	XR_019393	0.697	Up		1259	PDIA5	10954	NM_006810	0.667	Up
1167	NA	NA	XM_929980	0.697	Up		1260	RRAS2	22800	NM_012250	0.667	Up
1168	TMEM138	51524	NM_016464	0.695	Up		1261	HEYL	26508	NM_014571	0.667	Up
1169	OLFML2A	169611	NM_182487	0.695	Up		1262	CXCL2	2920	NM_002089	0.666	Up
1170	CAP1	10487	NM_006367	0.695	Up		1263	FNDC1	84624	NM_032532	0.666	Up
1171	PIP4K2A	5305	AK023329	0.695	Up		1264	TMEM44	93109	NM_138399	0.666	Up

1172	CCND2	894	NM_001759	0.695	Up		1265	IFNAR2	3455	NM_207585	0.666	Up
1173	NA	NA	XM_001128906	0.695	Up		1266	C16orf74	404550	NM_206967	0.666	Up
1174	CRELD2	79174	NM_024324	0.694	Up		1267	FAM111A	63901	NM_022074	0.666	Up
1175	CPNE1	8904	NM_152931	0.694	Up		1268	BIRC2	329	NM_001166	0.665	Up
1176	DGUOK	1716	NM_080916	0.692	Up		1269	TRMT112	51504	NM_016404	0.665	Up
1177	FUCA2	2519	NM_032020	0.692	Up		1270	SLC35A2	7355	NM_001032289	0.663	Up
1178	GPR56	9289	NM_201525	0.692	Up		1271	NA	NA	XM_377426	0.663	Up
1179	TBPL1	9519	NM_004865	0.692	Up		1272	CLCF1	23529	NM_013246	0.663	Up
1180	KRT14	3861	NM_000526	0.691	Up		1273	CPVL	54504	NM_019029	0.663	Up
1181	LAMP5	24141	NM_012261	0.690	Up		1274	TMEM208	29100	NM_014187	0.662	Up
1182	MCM5	4174	NM_006739	0.690	Up		1275	POTEF	728378	NM_001099771	0.662	Up
1183	PCNX	22990	NM_014982	0.690	Up		1276	CHI3L1	1116	NM_001276	0.662	Up
1184	BCAP31	10134	NM_005745	0.689	Up		1277	BCL2L12	83596	NM_001040668	0.661	Up
1185	NEK6	10783	NM_014397	0.689	Up		1278	SEMA4B	10509	NM_198925	0.661	Up
1186	NA	NA	XM_001718050	0.689	Up		1279	DOCK2	1794	NM_004946	0.661	Up
1187	KIFC1	3833	NM_002263	0.689	Up		1280	NA	NA	XR_037048	0.661	Up
1188	NA	NA	XR_042330	0.688	Up		1281	DOCK11	139818	NM_144658	0.660	Up
1189	DGUOK	1716	NM_080918	0.688	Up		1282	CASC15	401237	NR_015410	0.660	Up
1190	CD38	952	NM_001775	0.688	Up		1283	PHLDB2	90102	NM_145753	0.660	Up
1191	PLSCR3	57048	NM_020360	0.688	Up		1284	GLDC	2731	NM_000170	0.660	Up
1192	ADORA2B	136	NM_000676	0.688	Up		1285	LTB	4050	NM_002341	0.660	Up
1193	STK17B	9262	NM_004226	0.687	Up		1286	LPAR3	23566	NM_012152	0.660	Up
1194	ACP2	53	NM_001610	0.687	Up		1287	FKBP14	55033	NM_017946	0.659	Up
1195	MIR574	693159	NR_030300	0.687	Up		1288	CLSTN1	22883	NM_001009566	0.659	Up
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
1196	MYO10	4651	NM_012334	0.687	Up		1289	NIPAL4	348938	NM_001099287	0.659	Up
1197	SPON1	10418	NM_006108	0.686	Up		1290	BTN3A3	10384	NM_197974	0.659	Up
1198	FABP5	2171	NM_001444	0.686	Up		1291	NUAK1	9891	NM_014840	0.658	Up
1199	DCUN1D5	84259	NM_032299	0.686	Up		1292	COMMD2	51122	NM_016094	0.658	Up
1200	FTH1P12	2504	NR_002205	0.686	Up		1293	KIF20A	10112	NM_005733	0.658	Up
1201	SFN	2810	NM_006142	0.686	Up		1294	NKD2	85409	NM_033120	0.657	Up
1202	FGR	2268	NM_005248	0.686	Up		1295	FEZ1	9638	NM_022549	0.657	Up
1203	KDELR2	11014	NM_006854	0.686	Up		1296	ASCL2	430	NM_005170	0.657	Up
1204	FTH1P2	2497	NR_002200	0.685	Up		1297	MARS	4141	NM_004990	0.657	Up
1205	STC1	6781	NM_003155	0.685	Up		1298	ERAP2	64167	NM_022350	0.657	Up
1206	MCOLN2	255231	NM_153259	0.685	Up		1299	NA	NA	XR_016041	0.656	Up
1207	CSAG3	389903	NM_203311	0.685	Up		1300	NA	NA	XR_016363	0.656	Up
1208	MTFR1	9650	NM_014637	0.685	Up		1301	AP2M1	1173	NM_004068	0.655	Up
1209	NA	NA	XM_001718184	0.685	Up		1302	ASAP1	50807	NM_018482	0.655	Up
1303	POLR2G	5436	NM_002696	0.655	Up		1396	CCDC3	83643	NM_031455	0.631	Up
1304	HIST1H2BK	85236	NM_080593	0.654	Up		1397	ANTXR1	84168	NM_032208	0.631	Up
1305	CERS2	29956	NM_022075	0.654	Up		1398	ZWILCH	55055	NR_003105	0.630	Up
1306	DKC1	1736	NM_001363	0.654	Up		1399	MRPL17	63875	NM_022061	0.630	Up
1307	ADPGK	83440	NM_031284	0.654	Up		1400	FTH1	2495	NM_002032	0.629	Up
1308	PRDX4	10549	NM_006406	0.653	Up		1401	SRC	6714	NM_198291	0.629	Up
1309	C5AR1	728	NM_001736	0.653	Up		1402	CST7	8530	NM_003650	0.629	Up
1310	LIPG	9388	NM_006033	0.653	Up		1403	SIGMAR1	10280	NM_005866	0.629	Up
1311	RPS6KA1	6195	NM_002953	0.653	Up		1404	RAB5C	5878	NM_201434	0.628	Up
1312	C2	717	NM_000063	0.653	Up		1405	RNU1-28P	26866	NR_004402	0.628	Up
1313	NGF	4803	NM_002506	0.652	Up		1406	NA	NA	XR_037336	0.628	Up
1314	GRINA	2907	NM_001009184	0.652	Up		1407	CDCA8	55143	NM_018101	0.628	Up
1315	HPCAL1	3241	NM_134421	0.650	Up		1408	NA	NA	XM_001723531	0.628	Up
1316	GZMK	3003	NM_002104	0.650	Up		1409	FKBP1A	2280	NM_054014	0.627	Up
1317	HIF1A	3091	NM_181054	0.650	Up		1410	RASIP1	54922	NM_017805	0.627	Up
1318	MTHFD2	10797	NM_006636	0.650	Up		1411	CTNNAL1	8727	NM_003798	0.626	Up
1319	FOXM1	2305	NM_021953	0.649	Up		1412	SH3BGRL3	83442	NM_031286	0.626	Up

1320	LRRC8A	56262	NM_019594	0.649	Up		1413	NSUN2	54888	NM_017755	0.625	Up
1321	NA	NA	XM_001126125	0.649	Up		1414	IGSF6	10261	NM_005849	0.624	Up
1322	CLIC4	25932	NM_013943	0.649	Up		1415	NUP37	79023	NM_024057	0.624	Up
1323	UPP1	7378	NM_003364	0.649	Up		1416	NOP10	55505	NM_018648	0.624	Up
1324	STARD5	80765	NM_181900	0.649	Up		1417	PSMA6	5687	NM_002791	0.624	Up
1325	NA	NA	XR_018287	0.648	Up		1418	MAFB	9935	NM_005461	0.624	Up
1326	SDF4	51150	NM_016547	0.648	Up		1419	OLFML3	56944	NM_020190	0.623	Up
1327	ANGPT2	285	NM_001118888	0.648	Up		1420	CDK1	983	NM_001786	0.623	Up
1328	STAT4	6775	NM_003151	0.647	Up		1421	CXCL6	6372	NM_002993	0.622	Up
1329	NA	NA	XM_498571	0.647	Up		1422	CCDC24	149473	NM_152499	0.622	Up
1330	NA	NA	XR_038699	0.647	Up		1423	TACC3	10460	NM_006342	0.622	Up
1331	CKLF	51192	NM_001040139	0.646	Up		1424	MPZL1	9019	NM_024569	0.622	Up
1332	CYTIP	9595	NM_004288	0.646	Up		1425	15-Sep	9403	NM_004261	0.622	Up
1333	NA	NA	XR_017680	0.646	Up		1426	PLVAP	83483	NM_031310	0.622	Up
1334	GNPDA1	10007	NM_005471	0.646	Up		1427	LYAR	55646	NM_017816	0.621	Up
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
1335	ANLN	54443	NM_018685	0.645	Up		1428	CERS2	29956	NM_181746	0.621	Up
1336	DDOST	1650	NM_005216	0.645	Up		1429	ISLR	3671	NM_005545	0.621	Up
1337	TGFA	7039	NM_003236	0.645	Up		1430	MCM7	4176	NM_182776	0.621	Up
1338	SMOX	54498	NM_175840	0.645	Up		1431	NPM3	10360	NM_006993	0.621	Up
1339	HES4	57801	NM_021170	0.645	Up		1432	PRPF4	9128	NM_004697	0.621	Up
1340	BRMS1	25855	NM_015399	0.644	Up		1433	ASPM	259266	NM_018136	0.621	Up
1341	SNX10	29887	NM_013322	0.644	Up		1434	BCL2L12	83596	NM_001040668	0.621	Up
1342	C17orf62	79415	NM_001100408	0.644	Up		1435	CST1	1469	NM_001898	0.620	Up
1343	PTPRZ1	5803	NM_002851	0.643	Up		1436	MTHFD2	10797	NM_001040409	0.620	Up
1344	HNRNPL	3191	NM_001005335	0.643	Up		1437	YWHAQ	10971	NM_006826	0.620	Up
1345	NOP2	4839	NM_001033714	0.643	Up		1438	MAPK6	5597	NM_002748	0.619	Up
1346	BTG1	694	NM_001731	0.643	Up		1439	NAPSB	256236	NR_002798	0.619	Up
1347	LY86	9450	NM_004271	0.643	Up		1440	ATP1A1	476	NM_001001586	0.619	Up
1348	BATF2	116071	NM_138456	0.643	Up		1441	LEPREL4	10609	NM_006455	0.619	Up
1349	NA	NA	XR_037483	0.642	Up		1442	TOMM34	10953	NM_006809	0.618	Up
1350	IL4I1	259307	NM_172374	0.642	Up		1443	TLR8	51311	NM_138636	0.618	Up
1351	SIGLEC14	100049587	NM_001098612	0.642	Up		1444	NUAK1	9891	NM_014840	0.618	Up
1352	SKIV2L	6499	NM_006929	0.642	Up		1445	TDG	6996	NM_003211	0.618	Up
1353	CCR1	1230	NM_001295	0.641	Up		1446	CYB5R2	51700	NM_016229	0.618	Up
1354	KIAA0020	9933	NM_014878	0.641	Up		1447	FOXD1	2297	NM_004472	0.618	Up
1355	CNN2	1265	NM_201277	0.641	Up		1448	TMEM140	55281	NM_018295	0.617	Up
1356	CHST7	56548	NM_019886	0.640	Up		1449	SLC43A3	29015	NM_014096	0.617	Up
1357	POU3F1	5453	NM_002699	0.639	Up		1450	HPRT1	3251	NM_000194	0.617	Up
1358	EXOSC3	51010	NM_016042	0.639	Up		1451	HLA-E	3133	NM_005516	0.617	Up
1359	CHST3	9469	NM_004273	0.639	Up		1452	SEC61G	23480	NM_014302	0.617	Up
1360	SMTN	6525	NM_006932	0.639	Up		1453	NA	NA	NR_000034	0.616	Up
1361	TPST2	8459	NM_001008566	0.638	Up		1454	EXOSC3	51010	NM_016042	0.616	Up
1362	ST3GAL5	8869	NM_001042437	0.638	Up		1455	PHLDB2	90102	NM_145753	0.616	Up
1363	RNU1-1	26871	NR_004430	0.638	Up		1456	AATF	26574	NM_012138	0.615	Up
1364	ADPRHL2	54936	NM_017825	0.638	Up		1457	FURIN	5045	NM_002569	0.615	Up
1365	UBE2T	29089	NM_014176	0.638	Up		1458	TMEM206	55248	NM_018252	0.615	Up
1366	MARCKS	4082	NM_002356	0.638	Up		1459	WFDC5	149708	NM_145652	0.614	Up
1367	RNASE6	6039	NM_005615	0.638	Up		1460	PTTG3P	26255	NR_002734	0.614	Up
1368	EPAS1	2034	NM_001430	0.638	Up		1461	MTERFD1	51001	NM_015942	0.613	Up
1369	IL1RL1	9173	NM_003856	0.638	Up		1462	SLC43A2	124935	NM_152346	0.613	Up
1370	JAG2	3714	NM_002226	0.637	Up		1463	NA	NA	XR_038464	0.613	Up
1371	RNU4ATAC	100151683	NR_023343	0.637	Up		1464	CSAG1	158511	NM_153479	0.613	Up
1372	ANPEP	290	NM_001150	0.637	Up		1465	FAM198B	51313	NM_016613	0.612	Up
1373	IL24	11009	NM_181339	0.636	Up		1466	NA	NA	XR_018309	0.612	Up
1374	CCNA2	890	NM_001237	0.636	Up		1467	C1orf74	148304	NM_152485	0.612	Up

1375	FTH1P12	2504	NR_002205	0.636	Up		1468	TBXAS1	6916	NM_001061	0.612	Up
1376	C19orf66	55337	NM_018381	0.635	Up		1469	RAB38	23682	NM_022337	0.611	Up
1377	RER1	11079	NM_007033	0.635	Up		1470	ARRDC4	91947	NM_183376	0.611	Up
1378	TENM3	55714	NM_001080477	0.635	Up		1471	RDH10	157506	NM_172037	0.611	Up
1379	CENPA	1058	NM_001042426	0.635	Up		1472	TBC1D2B	23102	NM_015079	0.610	Up
1380	GANAB	23193	NM_198334	0.635	Up		1473	CCL19	6363	NM_006274	0.610	Up
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
1381	GPR56	9289	NM_201524	0.635	Up		1474	SLC31A2	1318	NM_001860	0.610	Up
1382	NRIP1	8204	NM_003489	0.635	Up		1475	DPY19L1	23333	NM_015283	0.610	Up
1383	PITPNC1	26207	NM_181671	0.635	Up		1476	COTL1	23406	NM_021149	0.609	Up
1384	FGL2	10875	NM_006682	0.634	Up		1477	NA	NA	XM_291277	0.609	Up
1385	POTEKP	440915	NM_001017421	0.634	Up		1478	MT1F	4494	NM_005949	0.609	Up
1386	SIAH1	6477	NM_001006610	0.633	Up		1479	TWSG1	57045	NM_020648	0.609	Up
1387	MS4A7	58475	NM_206938	0.633	Up		1480	DDX21	9188	NM_004728	0.609	Up
1388	OGFR	11054	NM_007346	0.633	Up		1481	SNRPC	6631	NM_003093	0.608	Up
1389	NME1	4830	NM_000269	0.632	Up		1482	GRP	2922	NM_001012513	0.608	Up
1390	CNDP2	55748	NM_018235	0.632	Up		1483	BORA	79866	NM_024808	0.608	Up
1391	SPECC1	92521	NM_001033555	0.632	Up		1484	LSM5	23658	NM_012322	0.608	Up
1392	TTPAL	79183	NM_001039199	0.631	Up		1485	TOP1MT	116447	NM_052963	0.607	Up
1393	FLRT2	23768	NM_013231	0.631	Up		1486	SLC35B2	347734	NM_178148	0.606	Up
1394	CDCA4	55038	NM_017955	0.631	Up		1487	BTN3A1	11119	NM_007048	0.606	Up
1395	MNDA	4332	NM_002432	0.631	Up		1488	CD63	967	NM_001040034	0.605	Up
1489	CDK2	1017	NM_001798	0.605	Up		1582	KCNT1	57582	NM_020822	-0.590	Down
1490	APEX2	27301	NM_014481	0.605	Up		1583	BNIPL	149428	NM_138278	-0.590	Down
1491	BOP1	23246	NM_015201	0.605	Up		1584	RTN2	6253	NM_206902	-0.590	Down
1492	C11orf82	220042	NM_145018	0.604	Up		1585	RORA	6095	AK055969	-0.591	Down
1493	NPL	80896	NM_030769	0.604	Up		1586	DENND2C	163259	NM_198459	-0.591	Down
1494	PUS1	80324	NM_001002019	0.604	Up		1587	RAB27B	5874	AF131784	-0.591	Down
1495	KIF23	9493	NM_004856	0.604	Up		1588	ZNF823	55552	NM_001080493	-0.591	Down
1496	LAMP2	3920	NM_002294	0.603	Up		1589	TXNIP	10628	NM_006472	-0.592	Down
1497	YME1L1	10730	BC070337	0.603	Up		1590	MESP1	55897	NM_018670	-0.592	Down
1498	PILRA	29992	NM_178272	0.603	Up		1591	CD36	948	NM_001001548	-0.592	Down
1499	NA	NA	XR_018707	0.603	Up		1592	TMEM134	80194	NM_001078650	-0.592	Down
1500	PWP1	11137	NM_007062	0.603	Up		1593	LRRC75A-AS1	125144	NM_152350	-0.592	Down
1501	IRX2	153572	NM_033267	0.603	Up		1594	SERPINB2	5055	NM_002575	-0.593	Down
1502	PON2	5445	NM_000305	0.602	Up		1595	NDUFB7	4713	NM_004146	-0.593	Down
1503	ADAMDEC1	27299	NM_014479	0.602	Up		1596	AKAP7	9465	NM_004842	-0.593	Down
1504	KLK6	5653	NM_001012964	0.601	Up		1597	GPHN	10243	NM_001024218	-0.593	Down
1505	DHX58	79132	NM_024119	0.601	Up		1598	DYM	54808	NM_017653	-0.593	Down
1506	PSMD12	5718	NM_002816	0.601	Up		1599	LYPD3	27076	NM_014400	-0.593	Down
1507	NABP1	64859	NM_001031716	0.601	Up		1600	ATP5G1	516	NM_005175	-0.593	Down
1508	IMPAD1	54928	NM_017813	0.600	Up		1601	ASCC2	84164	NM_032204	-0.593	Down
1509	AAED1	195827	NM_153698	0.600	Up		1602	SDHA	6389	NM_004168	-0.593	Down
1510	RNASE1	6035	NM_198232	0.599	Up		1603	NDUFB11	54539	NM_019056	-0.593	Down
1511	NA	NA	XR_015319	0.599	Up		1604	RAET1E	135250	NM_139165	-0.594	Down
1512	NRAS	4893	NM_002524	0.599	Up		1605	THBS4	7060	NM_003248	-0.594	Down
1513	CD300A	11314	NM_007261	0.599	Up		1606	SPRY1	10252	NM_005841	-0.594	Down
1514	CDCA3	83461	NM_031299	0.599	Up		1607	NA	NA	XR_019605	-0.594	Down
1515	NA	NA	XM_001721497	0.598	Up		1608	PIM1	5292	NM_002648	-0.594	Down
1516	NA	NA	BG698090	0.598	Up		1609	UQCRC1	7384	NM_003365	-0.595	Down
1517	SHFM1	7979	NM_006304	0.598	Up		1610	NQO1	1728	NM_000903	-0.595	Down
1518	HSP90AA1	3320	NM_005348	0.598	Up		1611	AGR2	10551	NM_006408	-0.595	Down
1519	E2F3	1871	NM_001949	0.597	Up		1612	N4BP2L2	10443	NM_033111	-0.596	Down
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
1520	GBP1P1	400759	NR_003133	0.596	Up		1613	FRAT2	23401	NM_012083	-0.596	Down

1521	ATF5	22809	NM_012068	0.596	Up		1614	ATP5S	27109	NM_001003805	-0.596	Down
1522	NXT1	29107	NM_013248	0.596	Up		1615	KIAA1468	57614	NM_020854	-0.596	Down
1523	NOP58	51602	NM_015934	0.596	Up		1616	DUOX1	53905	NM_017434	-0.597	Down
1524	CCL21	6366	NM_002989	0.596	Up		1617	CYCS	54205	NM_018947	-0.597	Down
1525	PSMB7	5695	NM_002799	0.595	Up		1618	HDHD2	84064	NM_032124	-0.597	Down
1526	NPC2	10577	NM_006432	0.595	Up		1619	OAT	4942	NM_000274	-0.597	Down
1527	SAA1	6288	NM_000331	0.595	Up		1620	NA	NA	XM_096885	-0.597	Down
1528	ARHGAP15	55843	NM_018460	0.595	Up		1621	CCDC147	159686	NM_001008723	-0.598	Down
1529	SEPN1	57190	NM_206926	0.595	Up		1622	EFHD1	80303	NM_025202	-0.598	Down
1530	KREMEN2	79412	NM_024507	0.594	Up		1623	FABP4	2167	NM_001442	-0.598	Down
1531	BCAS4	55653	NM_017843	0.594	Up		1624	NUPR1	26471	NM_001042483	-0.598	Down
1532	CTNNAL1	8727	NM_003798	0.594	Up		1625	NFE2L2	4780	NM_006164	-0.599	Down
1533	NA	NA	XR_038201	0.594	Up		1626	SYNE2	23224	NM_015180	-0.599	Down
1534	SLC44A1	23446	NM_080546	0.593	Up		1627	USP46	64854	NM_022832	-0.599	Down
1535	NA	NA	XR_037260	0.593	Up		1628	NAAA	27163	NM_014435	-0.599	Down
1536	WNT7B	7477	NM_058238	0.593	Up		1629	RNF103	7844	NM_005667	-0.599	Down
1537	MAPRE1	22919	NM_012325	0.592	Up		1630	CTDSPL	10217	NM_005808	-0.599	Down
1538	NA	NA	XR_038054	0.592	Up		1631	GBAS	2631	NM_001483	-0.599	Down
1539	C6orf141	135398	NM_153344	0.591	Up		1632	MYZAP	100820829	NM_001018100	-0.600	Down
1540	NA	NA	XM_001129792	0.591	Up		1633	PPP1R3F	89801	NM_033215	-0.600	Down
1541	CTNS	1497	NM_004937	0.591	Up		1634	OXCT1	5019	NM_000436	-0.600	Down
1542	LRP8	7804	NM_017522	0.591	Up		1635	WDR26	80232	NM_025160	-0.601	Down
1543	BFAR	51283	NM_016561	0.590	Up		1636	C7orf55	154791	NM_197964	-0.602	Down
1544	ENPP2	5168	NM_001040092	0.590	Up		1637	CD207	50489	NM_015717	-0.602	Down
1545	NFE2	4778	NM_006163	0.590	Up		1638	KRTAP11-1	337880	NM_175858	-0.602	Down
1546	HMMR	3161	NM_012484	0.590	Up		1639	SYPL2	284612	NM_001040709	-0.602	Down
1547	BUB1	699	NM_004336	0.590	Up		1640	RAB5A	5868	NM_004162	-0.602	Down
1548	SCO2	9997	NM_005138	0.590	Up		1641	DSP	1832	NM_004415	-0.602	Down
1549	PPP1R14B	26472	NM_138689	0.590	Up		1642	FNTA	2339	NM_002027	-0.603	Down
1550	MTSS1	9788	NM_014751	0.590	Up		1643	ACOX3	8310	NM_003501	-0.603	Down
1551	MGME1	92667	NM_052865	0.589	Up		1644	ABCD3	5825	NM_002858	-0.604	Down
1552	JUNB	3726	NM_002229	0.589	Up		1645	PRADC1	84279	NM_032319	-0.604	Down
1553	NRBF2	29982	NM_030759	0.589	Up		1646	MGST3	4259	NM_004528	-0.604	Down
1554	RHBDF2	79651	NM_001005498	0.589	Up		1647	PODN	127435	NM_153703	-0.605	Down
1555	PGK1	5230	NM_000291	0.589	Up		1648	ATP5A1	498	NM_004046	-0.605	Down
1556	NA	NA	NM_001048197	0.588	Up		1649	NCOR1P1	149934	NM_001039379	-0.605	Down
1557	NA	NA	XM_938277	0.588	Up		1650	EPM2A	7957	NM_005670	-0.606	Down
1558	TUBB	203068	NM_178014	0.587	Up		1651	CCDC115	84317	NM_032357	-0.606	Down
1559	PTPN14	5784	AK056963	0.587	Up		1652	RFFL	117584	NM_057178	-0.606	Down
1560	F3	2152	NM_001993	0.587	Up		1653	AKR1C4	1109	NM_001818	-0.606	Down
1561	MOB3B	79817	NM_024761	0.587	Up		1654	MGP	4256	NM_000900	-0.606	Down
1562	F2R	2149	NM_001992	0.587	Up		1655	LOC100630918	100630918	BC009563	-0.606	Down
1563	IFNGR2	3460	NM_005534	0.587	Up		1656	SF3B3	23450	NM_012426	-0.606	Down
1564	GJB3	2707	NM_001005752	0.586	Up		1657	HIBADH	11112	NM_152740	-0.607	Down
1565	NA	NA	XM_001129280	0.586	Up		1658	CADM1	23705	NM_014333	-0.607	Down
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
1566	SDF2L1	23753	NM_022044	0.585	Up		1659	AMFR	267	NM_001144	-0.607	Down
1567	TRIB2	28951	NM_021643	0.585	Up		1660	RAB5B	5869	NM_002868	-0.607	Down
1568	TUBB	203068	NM_178014	0.585	Up		1661	CPM	1368	NM_001005502	-0.607	Down
1569	NOA1	84273	NM_032313	-0.585	Down		1662	CDH15	1013	NM_004933	-0.607	Down
1570	LMBRD1	55788	NM_018368	-0.585	Down		1663	NAAA	27163	NM_014435	-0.608	Down
1571	DBI	1622	NM_001079863	-0.585	Down		1664	SSPN	8082	NM_005086	-0.608	Down
1572	EEF1G	1937	NM_001404	-0.586	Down		1665	IL1RN	3557	NM_173843	-0.608	Down
1573	GYPC	2995	NM_016815	-0.586	Down		1666	LRIG1	26018	NM_015541	-0.608	Down
1574	NAPRT1	93100	NM_145201	-0.586	Down		1667	GADD45G	10912	NM_006705	-0.609	Down
1575	NA	NA	AK026168	-0.587	Down		1668	RAB40B	10966	NM_006822	-0.609	Down

1576	GLCE	26035	NM_015554	-0.587	Down		1669	NICN1	84276	NM_032316	-0.609	Down
1577	KLHDC2	23588	NM_014315	-0.588	Down		1670	TMEM246	84302	NM_032342	-0.609	Down
1578	RAF1	5894	NM_002880	-0.588	Down		1671	BTBD1	53339	NM_001011885	-0.610	Down
1579	KLHDC1	122773	NM_172193	-0.589	Down		1672	ATP5L	10632	NM_006476	-0.610	Down
1580	CARNS1	57571	NM_020811	-0.590	Down		1673	FRAS1	80144	NM_025074	-0.611	Down
1581	HOOK2	29911	NM_013312	-0.590	Down		1674	NPRL2	10641	NM_006545	-0.612	Down
1675	CYBRD1	79901	NM_024843	-0.612	Down		1768	TPPP3	51673	NM_015964	-0.638	Down
1676	CRBN	51185	NM_016302	-0.612	Down		1769	FAM172A	83989	NM_032042	-0.638	Down
1677	PDHA1	5160	NM_000284	-0.612	Down		1770	MLYCD	23417	NM_012213	-0.638	Down
1678	NA	NA	XM_001128725	-0.612	Down		1771	UQCR10	29796	NM_013387	-0.639	Down
1679	MYH1	4619	NM_005963	-0.612	Down		1772	NA	NA	XM_001721243	-0.639	Down
1680	FXR1	8087	NM_005087	-0.612	Down		1773	VAT1	10493	NM_006373	-0.639	Down
1681	OSGIN1	29948	NM_013370	-0.613	Down		1774	PRRG2	5639	NM_000951	-0.639	Down
1682	NDUFA10	4705	NM_004544	-0.613	Down		1775	SIM2	6493	NM_005069	-0.640	Down
1683	CDKN2C	1031	NM_078626	-0.613	Down		1776	TNFAIP8L3	388121	NM_207381	-0.640	Down
1684	HOOK1	51361	NM_015888	-0.613	Down		1777	ACHE	43	NM_000665	-0.641	Down
1685	GRHL3	57822	NM_021180	-0.613	Down		1778	CXCL12	6387	NM_000609	-0.641	Down
1686	AIM1	202	NM_001624	-0.614	Down		1779	TRNP1	388610	NM_001013642	-0.642	Down
1687	NA	NA	XM_001133842	-0.614	Down		1780	RPL32P18	644907	NM_001090027	-0.645	Down
1688	ZDHHC13	54503	NM_001001483	-0.614	Down		1781	ATP5F1	515	NM_001688	-0.645	Down
1689	FAM195A	84331	NM_138418	-0.615	Down		1782	CYBRD1	79901	NM_024843	-0.645	Down
1690	LOC283070	283070	AK097377	-0.615	Down		1783	ECHS1	1892	NM_004092	-0.646	Down
1691	KIAA1324	57535	NM_020775	-0.615	Down		1784	LRRFIP2	9209	NM_017724	-0.646	Down
1692	UCP3	7352	NM_022803	-0.615	Down		1785	NGRN	51335	NM_016645	-0.647	Down
1693	LDHD	197257	NM_194436	-0.617	Down		1786	CLCN3	1182	NM_173872	-0.647	Down
1694	ATP5A1	498	NM_004046	-0.617	Down		1787	AAMDC	28971	NM_024684	-0.647	Down
1695	MXD1	4084	NM_002357	-0.617	Down		1788	CNFN	84518	NM_032488	-0.647	Down
1696	METTL7A	25840	NM_014033	-0.617	Down		1789	HNMT	3176	NM_001024074	-0.648	Down
1697	C17orf97	400566	NM_001013672	-0.618	Down		1790	SDCBP2	27111	NM_015685	-0.648	Down
1698	JADE1	79960	NM_024900	-0.618	Down		1791	SERPINB1	1992	NM_030666	-0.649	Down
1699	RALGPS1	9649	NM_014636	-0.618	Down		1792	RPS29	6235	NM_001030001	-0.649	Down
1700	ECM1	1893	NM_004425	-0.619	Down		1793	PRKCQ	5588	NM_006257	-0.649	Down
1701	SNHG5	387066	NR_003038	-0.619	Down		1794	CLIP4	79745	NM_024692	-0.649	Down
1702	IMPDH2	3615	NM_000884	-0.619	Down		1795	STBD1	8987	NM_003943	-0.650	Down
1703	NOL3	8996	NM_003946	-0.619	Down		1796	MSRA	4482	NM_012331	-0.650	Down
1704	PTN	5764	NM_002825	-0.620	Down		1797	HTN1	3346	NM_002159	-0.651	Down
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
1705	ENSA	2029	NM_207043	-0.620	Down		1798	NEU4	129807	NM_080741	-0.652	Down
1706	TPM3P9	147804	NR_003148	-0.620	Down		1799	NA	NA	XR_018036	-0.654	Down
1707	NA	NA	XM_941634	-0.620	Down		1800	CCSER2	54462	NM_018999	-0.654	Down
1708	CXCR1	3577	NM_000634	-0.621	Down		1801	ZBTB16	7704	NM_001018011	-0.654	Down
1709	ZNF823	55552	NM_001080493	-0.621	Down		1802	QDPR	5860	NM_000320	-0.655	Down
1710	NA	NA	XM_001722593	-0.621	Down		1803	RORA	6095	AL832164	-0.655	Down
1711	FAM135A	57579	NM_020819	-0.621	Down		1804	FAM129A	116496	NM_052966	-0.655	Down
1712	NA	NA	XM_942212	-0.621	Down		1805	LTBP4	8425	NM_001042545	-0.655	Down
1713	ZNF25	219749	NM_145011	-0.622	Down		1806	PPP1CB	5500	NM_206876	-0.655	Down
1714	TUBB2B	347733	NM_178012	-0.622	Down		1807	P2RY2	5029	NM_002564	-0.655	Down
1715	HOMER2	9455	NM_199331	-0.622	Down		1808	SMARCD3	6604	NM_003078	-0.655	Down
1716	CALML3	810	NM_005185	-0.622	Down		1809	NA	NA	CR622439	-0.656	Down
1717	ENSA	2029	NM_207168	-0.622	Down		1810	LMO4	8543	NM_006769	-0.656	Down
1718	SUN2	25777	NM_015374	-0.623	Down		1811	CLDN8	9073	NM_199328	-0.657	Down
1719	DSG3	1830	NM_001944	-0.623	Down		1812	SMAGP	57228	NM_001033873	-0.657	Down
1720	RNF141	50862	NM_016422	-0.623	Down		1813	CMBL	134147	NM_138809	-0.658	Down
1721	CCDC106	29903	NM_013301	-0.623	Down		1814	FAM117B	150864	NM_173511	-0.658	Down
1722	CCNG1	900	NM_199246	-0.624	Down		1815	DUSP5	1847	NM_004419	-0.658	Down
1723	MDH1	4190	NM_005917	-0.624	Down		1816	KRT2	3849	NM_000423	-0.659	Down

1724	SAMM50	25813	NM_015380	-0.624	Down		1817	XIRP1	165904	NM_194293	-0.659	Down
1725	EIF3L	51386	NM_016091	-0.624	Down		1818	ERO1L	30001	NM_014584	-0.659	Down
1726	NA	NA	XM_062872	-0.625	Down		1819	PLS1	5357	NM_002670	-0.660	Down
1727	AMY2A	279	NM_000699	-0.625	Down		1820	C15orf59	388135	NM_001039614	-0.660	Down
1728	KAZN	23254	NM_001018000	-0.625	Down		1821	TYRP1	7306	NM_000550	-0.661	Down
1729	C1orf116	79098	NM_023938	-0.625	Down		1822	NA	NA	AK124143	-0.661	Down
1730	MGLL	11343	NM_007283	-0.625	Down		1823	WWC1	23286	NM_015238	-0.661	Down
1731	NA	NA	XM_927769	-0.626	Down		1824	ASB8	140461	NM_024095	-0.661	Down
1732	SLC9A9	285195	NM_173653	-0.626	Down		1825	ANKRD6	22881	NM_014942	-0.663	Down
1733	SNRPD3	6634	NM_004175	-0.626	Down		1826	CLINT1	9685	NM_014666	-0.663	Down
1734	SPATA18	132671	NM_145263	-0.627	Down		1827	MT4	84560	NM_032935	-0.663	Down
1735	ATP5D	513	NM_001687	-0.627	Down		1828	UGP2	7360	NM_006759	-0.663	Down
1736	PLA2G3	50487	NM_015715	-0.627	Down		1829	ERMP1	79956	NM_024896	-0.663	Down
1737	NDUFA2	4695	NM_002488	-0.627	Down		1830	ATP6V1C2	245973	NM_144583	-0.664	Down
1738	KLF4	9314	NM_004235	-0.628	Down		1831	CALB2	794	NM_007088	-0.664	Down
1739	KRT80	144501	NM_182507	-0.629	Down		1832	GTF2IRD2B	389524	NM_001003795	-0.664	Down
1740	NA	NA	XR_018793	-0.629	Down		1833	PTPN3	5774	NM_002829	-0.664	Down
1741	NA	NA	XM_925809	-0.629	Down		1834	SYNGR1	9145	NM_145731	-0.665	Down
1742	SYBU	55638	NM_001099743	-0.629	Down		1835	TRPT1	83707	NM_031472	-0.665	Down
1743	RERGL	79785	NM_024730	-0.630	Down		1836	PDCD6IP	10015	NM_013374	-0.666	Down
1744	NA	NA	XM_944104	-0.630	Down		1837	NA	NA	XM_496143	-0.666	Down
1745	ATP5J	522	NM_001003696	-0.630	Down		1838	TSPAN3	10099	NM_005724	-0.666	Down
1746	MTIF3	219402	NM_152912	-0.631	Down		1839	NA	NA	XM_001722097	-0.666	Down
1747	ILDR1	286676	NM_175924	-0.631	Down		1840	RBM47	54502	NM_001098634	-0.667	Down
1748	ANKRD22	118932	NM_144590	-0.631	Down		1841	NLRX1	79671	NM_170722	-0.667	Down
1749	SLC2A5	6518	NM_003039	-0.631	Down		1842	TJP1	7082	NM_003257	-0.667	Down
1750	NA	NA	XM_934719	-0.632	Down		1843	HBA1	3039	NM_000558	-0.668	Down
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
1751	KLF9	687	NM_001206	-0.632	Down		1844	NA	NA	XR_041286	-0.668	Down
1752	FBXL5	26234	NM_012161	-0.633	Down		1845	TTN	7273	NM_003319	-0.669	Down
1753	SCARA5	286133	NM_173833	-0.633	Down		1846	NR3C2	4306	NM_000901	-0.669	Down
1754	MT1X	4501	NM_005952	-0.633	Down		1847	CCDC64B	146439	NM_001103175	-0.669	Down
1755	HSDL2	84263	NM_032303	-0.634	Down		1848	MOB4	25843	NM_199482	-0.669	Down
1756	NBEAL2	23218	NM_015175	-0.634	Down		1849	CAMSAP1	157922	NM_015447	-0.669	Down
1757	HFM1	164045	NM_001017975	-0.634	Down		1850	FBXW4	6468	NM_022039	-0.669	Down
1758	NA	NA	XR_016813	-0.635	Down		1851	COQ9	57017	NM_020312	-0.669	Down
1759	LRTM1	57408	NM_020678	-0.635	Down		1852	CCDC6	8030	NM_005436	-0.669	Down
1760	TMEM125	128218	NM_144626	-0.635	Down		1853	MEF2D	4209	NM_005920	-0.669	Down
1761	ZBTB42	100128927	NM_001137601	-0.635	Down		1854	ACOX2	8309	NM_003500	-0.670	Down
1762	NNT	23530	NM_012343	-0.636	Down		1855	FAM214A	56204	NM_019600	-0.670	Down
1763	SH3RF2	153769	NM_152550	-0.637	Down		1856	NA	NA	NM_017949	-0.671	Down
1764	NAGK	55577	NM_017567	-0.637	Down		1857	TMEM184A	202915	NM_001097620	-0.671	Down
1765	CAST	831	NM_001042445	-0.637	Down		1858	P4HTM	54681	NM_177938	-0.671	Down
1766	COA3	28958	NM_001040431	-0.637	Down		1859	BCL11A	53335	NM_022893	-0.671	Down
1767	TRIM29	23650	NM_012101	-0.638	Down		1860	PLBD1	79887	NM_024829	-0.671	Down
1861	LYRM5	144363	NM_001001660	-0.672	Down		1954	SERPINB2	5055	NM_002575	-0.713	Down
1862	MYH14	79784	NM_001077186	-0.672	Down		1955	ICA1	3382	NM_004968	-0.713	Down
1863	UQCRFS1	7386	NM_006003	-0.673	Down		1956	PCYOX1	51449	NM_016297	-0.714	Down
1864	NA	NA	XM_001130815	-0.674	Down		1957	TCEAL2	140597	NM_080390	-0.714	Down
1865	MCCC1	56922	NM_020166	-0.674	Down		1958	GSTT1	2952	NM_000853	-0.715	Down
1866	USP6NL	9712	NM_001080491	-0.675	Down		1959	FDCSP	260436	NM_152997	-0.715	Down
1867	DGCR6L	85359	NM_033257	-0.675	Down		1960	TMEM120A	83862	NM_031925	-0.715	Down
1868	CROT	54677	NM_021151	-0.675	Down		1961	CHP1	11261	NM_007236	-0.716	Down
1869	IVD	3712	NM_002225	-0.676	Down		1962	BTBD11	121551	NM_152322	-0.716	Down
1870	MYLK3	91807	NM_182493	-0.677	Down		1963	NA	NA	XR_017490	-0.717	Down
1871	MPZL2	10205	NM_144765	-0.677	Down		1964	PDHB	5162	NM_000925	-0.718	Down

1872	SERTAD4	56256	NM_019605	-0.678	Down		1965	SH2D4A	63898	NM_022071	-0.719	Down
1873	AKTIP	64400	NM_001012398	-0.678	Down		1966	GATS	352954	NM_178831	-0.719	Down
1874	HMGCS1	3157	NM_002130	-0.678	Down		1967	SPRR2C	6702	NR_003062	-0.720	Down
1875	AIM1L	55057	NM_001039775	-0.678	Down		1968	NA	NA	XM_942991	-0.721	Down
1876	CACNA1S	779	NM_000069	-0.679	Down		1969	ISL1	3670	NM_002202	-0.721	Down
1877	ANXA11	311	NM_001157	-0.680	Down		1970	PEBP1	5037	NM_002567	-0.721	Down
1878	SYNGR1	9145	NM_004711	-0.680	Down		1971	FZD4	8322	NM_012193	-0.721	Down
1879	CRBN	51185	NM_016302	-0.681	Down		1972	ZNF91	7644	NM_003430	-0.721	Down
1880	C21orf33	8209	NM_004649	-0.682	Down		1973	MEF2C	4208	NM_002397	-0.722	Down
1881	CYP4F3	4051	NM_000896	-0.682	Down		1974	NA	NA	XM_935702	-0.723	Down
1882	DEXI	28955	NM_014015	-0.682	Down		1975	PMM1	5372	NM_002676	-0.723	Down
1883	LRP3	4037	NM_002333	-0.683	Down		1976	RNF165	494470	NM_152470	-0.723	Down
1884	GLTSCR2	29997	NM_015710	-0.683	Down		1977	RETSAT	54884	NM_017750	-0.723	Down
1885	SLC47A1	55244	NM_018242	-0.685	Down		1978	VDAC3	7419	NM_005662	-0.724	Down
1886	SH3GLB2	56904	NM_020145	-0.685	Down		1979	IDNK	414328	NM_001001551	-0.727	Down
1887	TRIM55	84675	NM_184086	-0.685	Down		1980	GCAT	23464	NM_014291	-0.728	Down
1888	TRIM55	84675	NM_184085	-0.685	Down		1981	SCN1B	6324	NM_001037	-0.729	Down
1889	ZADH2	284273	NM_175907	-0.686	Down		1982	LTF	4057	NM_002343	-0.729	Down
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
1890	MSRB2	22921	NM_012228	-0.686	Down		1983	OBFC1	79991	NM_024928	-0.729	Down
1891	MSMO1	6307	NM_006745	-0.687	Down		1984	TBX3	6926	NM_005996	-0.731	Down
1892	PGM5	5239	NM_021965	-0.687	Down		1985	PLLP	51090	NM_015993	-0.732	Down
1893	HSD17B4	3295	NM_000414	-0.687	Down		1986	FGGY	55277	NM_001113411	-0.732	Down
1894	FAM129B	64855	NM_022833	-0.687	Down		1987	MAPK3	5595	NM_001040056	-0.732	Down
1895	ATP5J	522	NM_001003701	-0.687	Down		1988	MPZL2	10205	NM_144765	-0.734	Down
1896	SBDSP1	155370	NR_001588	-0.687	Down		1989	STX19	415117	NM_001001850	-0.734	Down
1897	CES2	8824	NM_003869	-0.687	Down		1990	C3orf14	57415	NM_020685	-0.735	Down
1898	PARM1	25849	NM_015393	-0.688	Down		1991	NA	NA	XM_001131588	-0.736	Down
1899	RPL22	6146	NM_000983	-0.689	Down		1992	CPXM2	119587	NM_198148	-0.736	Down
1900	PSCA	8000	NM_005672	-0.689	Down		1993	EIF4E3	317649	NM_173359	-0.736	Down
1901	LCN2	3934	NM_005564	-0.690	Down		1994	SMPDL3A	10924	NM_006714	-0.736	Down
1902	TRIM2	23321	NM_015271	-0.690	Down		1995	NA	NA	XM_085463	-0.737	Down
1903	MYBPC1	4604	NM_206820	-0.691	Down		1996	PRUNE2	158471	NM_015225	-0.737	Down
1904	DHRS1	115817	NM_138452	-0.691	Down		1997	SCGB2A1	4246	NM_002407	-0.738	Down
1905	NA	NA	XR_015950	-0.691	Down		1998	EPB41L4A-AS1	114915	NR_015370	-0.738	Down
1906	DSG1	1828	NM_001942	-0.692	Down		1999	NA	NA	AK091057	-0.738	Down
1907	HECTD1	25831	NM_015382	-0.693	Down		2000	NA	NA	XM_926402	-0.739	Down
1908	NA	NA	XR_041341	-0.693	Down		2001	AK4	205	AK026966	-0.740	Down
1909	LPL	4023	NM_000237	-0.694	Down		2002	RPRML	388394	NM_203400	-0.741	Down
1910	AACS	65985	NM_023928	-0.694	Down		2003	FAM129B	64855	NM_001035534	-0.741	Down
1911	RPLP0	6175	NM_053275	-0.695	Down		2004	NPEPL1	79716	NM_024663	-0.741	Down
1912	SPIN2B	474343	NM_001006681	-0.695	Down		2005	ALDH5A1	7915	NM_001080	-0.741	Down
1913	PITHD1	57095	NM_020362	-0.697	Down		2006	LMOD2	442721	NM_207163	-0.742	Down
1914	LOC80154	80154	NM_025084	-0.698	Down		2007	SLC9A3R1	9368	NM_004252	-0.742	Down
1915	CIRBP	1153	NM_001280	-0.698	Down		2008	FBXO3	26273	NM_033406	-0.742	Down
1916	CAV3	859	NM_033337	-0.698	Down		2009	N4BP2L2	10443	NM_033111	-0.742	Down
1917	SSBP2	23635	NM_012446	-0.698	Down		2010	KLF4	9314	NM_004235	-0.742	Down
1918	ZNF672	79894	NM_024836	-0.698	Down		2011	STK40	83931	NM_032017	-0.743	Down
1919	LYRM7	90624	NM_181705	-0.699	Down		2012	PCM1	5108	NM_006197	-0.743	Down
1920	MIPEP	4285	NM_005932	-0.699	Down		2013	ARL1	400	NM_001177	-0.743	Down
1921	RCOR3	55758	NM_018254	-0.699	Down		2014	DHRS9	10170	NM_005771	-0.744	Down
1922	NA	NA	BC038245	-0.699	Down		2015	HBA2	3040	NM_000517	-0.744	Down
1923	NA	NA	XR_041286	-0.700	Down		2016	DKFZp451A211	400169	NM_001003399	-0.744	Down
1924	AZGP1	563	NM_001185	-0.700	Down		2017	UQCRC2	7385	NM_003366	-0.744	Down
1925	MTUS1	57509	NM_001001924	-0.700	Down		2018	EPB41L4A-AS1	114915	NM_053000	-0.745	Down
1926	TSTD1	100131187	NM_001113206	-0.702	Down		2019	KRTAP3-2	83897	NM_031959	-0.745	Down

1927	OSBPL1A	114876	NM_080597	-0.703	Down		2020	NA	NA	XR_039164	-0.746	Down
1928	RERE	473	NM_001042682	-0.703	Down		2021	NA	NA	XR_039076	-0.746	Down
1929	TLE2	7089	NM_003260	-0.703	Down		2022	ST6GALNAC1	55808	NM_018414	-0.747	Down
1930	SLC16A9	220963	NM_194298	-0.703	Down		2023	PP7080	25845	NR_024158	-0.748	Down
1931	NA	NA	XM_926382	-0.703	Down		2024	PHYH	5264	NM_006214	-0.750	Down
1932	SUCLG1	8802	NM_003849	-0.703	Down		2025	NA	NA	XM_001723325	-0.750	Down
1933	C1orf115	79762	NM_024709	-0.703	Down		2026	NA	NA	XR_038867	-0.751	Down
1934	ECI2	10455	NM_006117	-0.704	Down		2027	ACSL1	2180	NM_001995	-0.751	Down
1935	CYP4B1	1580	NM_000779	-0.704	Down		2028	NDUFA4L2	56901	NM_020142	-0.752	Down
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
1936	NA	NA	XR_038223	-0.705	Down		2029	OSR1	130497	NM_145260	-0.752	Down
1937	VSIG10	54621	NM_019086	-0.705	Down		2030	SLC44A2	57153	NM_020428	-0.752	Down
1938	NA	NA	NM_001077593	-0.706	Down		2031	DUSP13	51207	NM_016364	-0.754	Down
1939	NRAP	4892	NM_198060	-0.706	Down		2032	SAP18	10284	NM_005870	-0.754	Down
1940	NA	NA	AK123915	-0.707	Down		2033	RAVER2	55225	NM_018211	-0.754	Down
1941	NA	NA	AK091904	-0.707	Down		2034	NTS	4922	NM_006183	-0.755	Down
1942	SNTA1	6640	NM_003098	-0.707	Down		2035	AGR2	10551	NM_006408	-0.755	Down
1943	TSPO	706	NM_007311	-0.708	Down		2036	NA	NA	XM_944816	-0.756	Down
1944	NA	NA	XM_001716638	-0.708	Down		2037	BNIPL	149428	NM_138278	-0.756	Down
1945	ECI2	10455	NM_006117	-0.708	Down		2038	FAM174B	400451	NM_207446	-0.757	Down
1946	KLHDC8B	200942	NM_173546	-0.708	Down		2039	UGT1A6	54578	NM_001072	-0.757	Down
1947	ZAK	51776	NM_133646	-0.708	Down		2040	RPL15	6138	NM_002948	-0.757	Down
1948	RASAL2	9462	NM_004841	-0.709	Down		2041	SGSM2	9905	NM_014853	-0.758	Down
1949	01-Mar	64757	NM_022746	-0.709	Down		2042	KRT23	25984	NM_015515	-0.758	Down
1950	TMEM154	201799	NM_152680	-0.709	Down		2043	GCHFR	2644	NM_005258	-0.760	Down
1951	SLC44A3	126969	NM_152369	-0.711	Down		2044	GSTA1	2938	NM_145740	-0.760	Down
1952	FNDC4	64838	NM_022823	-0.711	Down		2045	TCP11L2	255394	NM_152772	-0.760	Down
1953	TMEM143	55260	NM_018273	-0.713	Down		2046	BCKDHA	593	NM_000709	-0.761	Down
2047	ALDH4A1	8659	NM_170726	-0.761	Down		2140	FAM107A	11170	NM_001076778	-0.807	Down
2048	PROS1	5627	NM_000313	-0.762	Down		2141	ABI3BP	25890	NM_015429	-0.807	Down
2049	QARS	5859	NM_005051	-0.762	Down		2142	MFSD6	54842	NM_017694	-0.807	Down
2050	ABR	29	NM_001092	-0.763	Down		2143	DGCR6	8214	NM_005675	-0.809	Down
2051	ZBED2	79413	NM_024508	-0.765	Down		2144	ASB8	140461	NM_024095	-0.809	Down
2052	KRT85	3891	NM_002283	-0.765	Down		2145	NA	NA	XM_942645	-0.809	Down
2053	DOCK9	23348	NM_015296	-0.765	Down		2146	C2orf40	84417	NM_032411	-0.810	Down
2054	PALMD	54873	NM_017734	-0.765	Down		2147	TIAF1	9220	NM_004740	-0.811	Down
2055	HHATL	57467	NM_020707	-0.766	Down		2148	FAM134B	54463	NM_001034850	-0.812	Down
2056	CNST	163882	NM_152609	-0.766	Down		2149	NA	NA	XM_373670	-0.812	Down
2057	ACAD8	27034	NM_014384	-0.767	Down		2150	PANK1	53354	NM_138316	-0.812	Down
2058	ME1	4199	NM_002395	-0.769	Down		2151	NA	NA	XR_038043	-0.813	Down
2059	KBTBD12	166348	NM_207335	-0.769	Down		2152	IQGAP3	128239	NM_178229	-0.815	Down
2060	ABHD12	26090	NM_015600	-0.769	Down		2153	AHNAK	79026	NM_001620	-0.815	Down
2061	ECI1	1632	NM_001919	-0.769	Down		2154	GPT	2875	NM_005309	-0.815	Down
2062	ACADVL	37	NM_000018	-0.769	Down		2155	NA	NA	XM_927826	-0.816	Down
2063	CACNB1	782	NM_199247	-0.771	Down		2156	MAL2	114569	NM_052886	-0.816	Down
2064	PLA2G2A	5320	NM_000300	-0.771	Down		2157	AGL	178	NM_000642	-0.817	Down
2065	ANXA9	8416	NM_003568	-0.771	Down		2158	NFIA	4774	BX537823	-0.819	Down
2066	BBOX1	8424	NM_003986	-0.772	Down		2159	DHRS11	79154	NM_024308	-0.819	Down
2067	PNPLA7	375775	NM_152286	-0.772	Down		2160	NA	NA	XM_001718466	-0.819	Down
2068	CXCL12	6387	NM_199168	-0.774	Down		2161	VAV3	10451	NM_006113	-0.819	Down
2069	KANK1	23189	NM_015158	-0.776	Down		2162	NA	NA	XM_371820	-0.820	Down
2070	PAMR1	25891	NM_015430	-0.776	Down		2163	MYLK4	340156	NM_001012418	-0.820	Down
2071	SPSB3	90864	NM_080861	-0.776	Down		2164	CAT	847	NM_001752	-0.821	Down
2072	OAT	4942	NM_000274	-0.777	Down		2165	SMIM19	114926	NM_138436	-0.821	Down
2073	NA	NA	XR_038426	-0.777	Down		2166	UCP3	7352	NM_003356	-0.822	Down
2074	ALKBH7	84266	NM_032306	-0.777	Down		2167	CYP4F22	126410	NM_173483	-0.822	Down

Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
2075	MUC1	4582	NM_001044390	-0.777	Down		2168	DCAF5	8816	NM_003861	-0.823	Down
2076	AK3	50808	NM_016282	-0.778	Down		2169	DBNDD1	79007	NM_001042610	-0.823	Down
2077	NFIB	4781	NM_005596	-0.778	Down		2170	DGCR6	8214	NM_005675	-0.823	Down
2078	PPP1R13B	23368	NM_015316	-0.778	Down		2171	SLC29A2	3177	NM_001532	-0.824	Down
2079	SRPK3	26576	NM_014370	-0.778	Down		2172	ACYP2	98	NM_138448	-0.825	Down
2080	UGP2	7360	NM_006759	-0.778	Down		2173	CRY2	1408	NM_021117	-0.826	Down
2081	NPY6R	4888	NR_002713	-0.779	Down		2174	CD9	928	NM_001769	-0.826	Down
2082	CYP27A1	1593	NM_000784	-0.779	Down		2175	PCM1	5108	NM_006197	-0.826	Down
2083	NA	NA	XM_001721704	-0.780	Down		2176	MALL	7851	NM_005434	-0.827	Down
2084	TECR	9524	NM_138501	-0.781	Down		2177	CES1	1066	NM_001025195	-0.827	Down
2085	NA	NA	XM_939505	-0.782	Down		2178	CBX7	23492	NM_175709	-0.827	Down
2086	TGM5	9333	NM_201631	-0.782	Down		2179	NA	NA	XM_496804	-0.827	Down
2087	NA	NA	XM_927451	-0.783	Down		2180	TMEM45B	120224	NM_138788	-0.829	Down
2088	EIF4B	1975	NM_001417	-0.784	Down		2181	SFTA2	389376	NM_205854	-0.829	Down
2089	CUTC	51076	NM_015960	-0.784	Down		2182	RBM47	54502	NM_019027	-0.832	Down
2090	HSD17B8	7923	NM_014234	-0.784	Down		2183	MAPK13	5603	NM_002754	-0.833	Down
2091	SETMAR	6419	NM_006515	-0.786	Down		2184	TMEM254	80195	NM_025125	-0.833	Down
2092	GSTM3	2947	NM_000849	-0.787	Down		2185	FOXO4	4303	NM_005938	-0.833	Down
2093	NA	NA	XR_039149	-0.788	Down		2186	C14orf132	56967	NM_020215	-0.833	Down
2094	NA	NA	XM_939337	-0.788	Down		2187	FMO9P	116123	NR_002925	-0.833	Down
2095	GRHL1	29841	NM_198182	-0.788	Down		2188	PRPSAP1	5635	NM_002766	-0.834	Down
2096	NA	NA	XM_933085	-0.789	Down		2189	PPFIBP2	8495	NM_003621	-0.836	Down
2097	SYTL1	84958	NM_032872	-0.790	Down		2190	SERPINB6	5269	NM_004568	-0.836	Down
2098	NA	NA	XM_371273	-0.791	Down		2191	SOX2	6657	NM_003106	-0.837	Down
2099	ARPP21	10777	NM_016300	-0.791	Down		2192	PIGR	5284	NM_002644	-0.837	Down
2100	NDUFA3	4696	NM_004542	-0.791	Down		2193	RIOK3	8780	NM_003831	-0.838	Down
2101	SDPR	8436	NM_004657	-0.792	Down		2194	PLEKHG6	55200	NM_018173	-0.841	Down
2102	NA	NA	AK095707	-0.792	Down		2195	DCAF6	55827	NM_018442	-0.842	Down
2103	C18orf25	147339	NM_001008239	-0.792	Down		2196	UBE2G1	7326	NM_003342	-0.842	Down
2104	NA	NA	XM_371461	-0.792	Down		2197	ASB5	140458	NM_080874	-0.842	Down
2105	FDFT1	2222	NM_004462	-0.793	Down		2198	ELOVL4	6785	NM_022726	-0.842	Down
2106	MAMSTR	284358	NM_182574	-0.794	Down		2199	PCCA	5095	NM_000282	-0.843	Down
2107	YOD1	55432	NM_018566	-0.794	Down		2200	SMIM4	440957	NM_001124767	-0.843	Down
2108	ATP10B	23120	NM_025153	-0.795	Down		2201	PCOLCE2	26577	NM_013363	-0.845	Down
2109	TEX101	83639	NM_031451	-0.795	Down		2202	PHACTR4	65979	NM_001048183	-0.845	Down
2110	SMIM14	201895	NM_174921	-0.796	Down		2203	TOM1	10043	NM_005488	-0.846	Down
2111	HADHA	3030	NM_000182	-0.796	Down		2204	GBE1	2632	NM_000158	-0.847	Down
2112	SYNGR1	9145	NM_004711	-0.796	Down		2205	ZNF395	55893	NM_018660	-0.847	Down
2113	CARNS1	57571	NM_020811	-0.797	Down		2206	HLF	3131	NM_002126	-0.847	Down
2114	ATP2A1	487	NM_173201	-0.797	Down		2207	BSPRY	54836	NM_017688	-0.847	Down
2115	DUSP28	285193	NM_001033575	-0.798	Down		2208	CBR3	874	NM_001236	-0.848	Down
2116	BPIFB1	92747	NM_033197	-0.798	Down		2209	ARHGAP32	9743	NM_014715	-0.850	Down
2117	MUC20	200958	NM_001098516	-0.798	Down		2210	AGPAT9	84803	NM_032717	-0.851	Down
2118	CACNG6	59285	NM_031897	-0.799	Down		2211	NA	NA	XM_943699	-0.851	Down
2119	NA	NA	XM_498725	-0.799	Down		2212	CAST	831	NM_001042442	-0.852	Down
2120	SMTNL2	342527	NM_198501	-0.799	Down		2213	DDAH2	23564	NM_013974	-0.853	Down
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
2121	KIAA1147	57189	NM_001080392	-0.799	Down		2214	BAMBI	25805	NM_012342	-0.853	Down
2122	NMNAT3	349565	NM_178177	-0.801	Down		2215	CITED2	10370	NM_006079	-0.855	Down
2123	CRISP3	10321	NM_006061	-0.801	Down		2216	MYF6	4618	NM_002469	-0.855	Down
2124	PDCD4	27250	NM_145341	-0.802	Down		2217	RORC	6097	NM_001001523	-0.857	Down
2125	TRIP10	9322	NM_004240	-0.803	Down		2218	HADHB	3032	NM_000183	-0.857	Down
2126	SLC16A6	9120	NM_004694	-0.803	Down		2219	PRR15L	79170	NM_024320	-0.858	Down
2127	FAM219B	57184	NM_020447	-0.804	Down		2220	SPAG16	79582	NM_001025436	-0.858	Down

2128	DUSP22	56940	NM_020185	-0.804	Down		2221	ALDH3A2	224	NM_001031806	-0.859	Down
2129	SEMA6C	10500	NM_030913	-0.804	Down		2222	ISOC1	51015	NM_016048	-0.860	Down
2130	FAM117B	150864	NM_173511	-0.804	Down		2223	ACOX1	51	NM_007292	-0.860	Down
2131	DDAH1	23576	NM_012137	-0.804	Down		2224	PPP1R1B	84152	NM_181505	-0.860	Down
2132	ARMCX3	51566	NM_177947	-0.804	Down		2225	STAC3	246329	NM_145064	-0.861	Down
2133	SORBS2	8470	NM_003603	-0.804	Down		2226	SEPP1	6414	NM_005410	-0.862	Down
2134	MGP	4256	NM_000900	-0.806	Down		2227	ZDHHC11	79844	NM_024786	-0.863	Down
2135	FBXO32	114907	NM_148177	-0.806	Down		2228	C15orf48	84419	NM_032413	-0.863	Down
2136	NA	NA	XM_001134320	-0.806	Down		2229	SDR16C5	195814	NM_138969	-0.863	Down
2137	ESPL1	9700	NM_012291	-0.806	Down		2230	SHROOM3	57619	NM_020859	-0.863	Down
2138	METTL21A	151194	NM_145280	-0.807	Down		2231	PMS2P4	5382	NR_022007	-0.865	Down
2139	GATSL3	652968	NM_001037666	-0.807	Down		2232	ATP2A1	487	NM_173201	-0.865	Down
2233	FAM25E	643479	XM_926802	-0.866	Down		2326	CLDN8	9073	NM_199328	-0.931	Down
2234	PIGN	23556	NM_176787	-0.867	Down		2327	TSPO	706	NM_000714	-0.932	Down
2235	MFSD6	54842	NM_017694	-0.867	Down		2328	VAV3	10451	NM_006113	-0.933	Down
2236	TMEM159	57146	NM_020422	-0.869	Down		2329	ATP5J	522	NM_001003703	-0.934	Down
2237	PALM	5064	NM_002579	-0.870	Down		2330	PLA2G4C	8605	NM_003706	-0.934	Down
2238	GSTA4	2941	NM_001512	-0.870	Down		2331	CHPT1	56994	NM_020244	-0.934	Down
2239	VSIG2	23584	NM_014312	-0.871	Down		2332	KCTD3	51133	NM_016121	-0.935	Down
2240	ETNK2	55224	NM_018208	-0.871	Down		2333	TSPAN6	7105	NM_003270	-0.935	Down
2241	AK1	203	NM_000476	-0.871	Down		2334	SNURF	8926	NM_005678	-0.936	Down
2242	RPS23	6228	NM_001025	-0.872	Down		2335	RORA	6095	NM_002943	-0.936	Down
2243	PGAP3	93210	NM_033419	-0.872	Down		2336	SUCLG2	8801	NM_003848	-0.937	Down
2244	NA	NA	XM_936731	-0.873	Down		2337	TSPAN3	10099	NM_005724	-0.938	Down
2245	MKNK2	2872	NM_199054	-0.875	Down		2338	GCOM1	145781	NM_001018091	-0.938	Down
2246	TMEM38A	79041	NM_024074	-0.876	Down		2339	MYLK2	85366	NM_033118	-0.939	Down
2247	UPK3BL	100134938	NM_001114403	-0.876	Down		2340	DTNA	1837	NM_032981	-0.939	Down
2248	C21orf33	8209	NM_198155	-0.876	Down		2341	HIBCH	26275	NM_198047	-0.939	Down
2249	ATP1B1	481	NM_001001787	-0.877	Down		2342	STK39	27347	NM_013233	-0.940	Down
2250	USO1	8615	NM_003715	-0.879	Down		2343	ZNF358	140467	NM_018083	-0.940	Down
2251	MAOB	4129	NM_000898	-0.879	Down		2344	FXYD1	5348	NM_005031	-0.941	Down
2252	CNKSR3	154043	NM_173515	-0.880	Down		2345	ACADVL	37	NM_000018	-0.941	Down
2253	ATP1B1	481	NM_001677	-0.880	Down		2346	ARPP21	10777	NM_016300	-0.941	Down
2254	WIF1	11197	NM_007191	-0.881	Down		2347	NA	NA	XM_937044	-0.942	Down
2255	ALDH9A1	223	NM_000696	-0.881	Down		2348	NA	NA	XM_930677	-0.942	Down
2256	MT1G	4495	NM_005950	-0.882	Down		2349	CIDEC	63924	NM_022094	-0.943	Down
2257	GDF1	2657	NM_001492	-0.883	Down		2350	IL11RA	3590	NM_004512	-0.943	Down
2258	SAMD5	389432	NM_001030060	-0.884	Down		2351	NA	NA	XR_017420	-0.943	Down
2259	HAGH	3029	NM_005326	-0.884	Down		2352	RBM24	221662	NM_153020	-0.943	Down
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
2260	ZYG11B	79699	NM_024646	-0.884	Down		2353	ECH1	1891	NM_001398	-0.945	Down
2261	FETUB	26998	NM_014375	-0.886	Down		2354	MEIS1	4211	NM_002398	-0.946	Down
2262	ACO2	50	NM_001098	-0.887	Down		2355	BPIFB2	80341	NM_025227	-0.947	Down
2263	PIGN	23556	NM_176787	-0.887	Down		2356	ETFB	2109	NM_001014763	-0.948	Down
2264	TPD52L1	7164	NM_001003396	-0.888	Down		2357	MYO5C	55930	NM_018728	-0.948	Down
2265	C6orf58	352999	NM_001010905	-0.888	Down		2358	TOB1	10140	NM_005749	-0.949	Down
2266	FBXO34	55030	NM_017943	-0.889	Down		2359	NFIA	4774	NM_005595	-0.950	Down
2267	NIPAL1	152519	NM_207330	-0.891	Down		2360	SPINK9	643394	NM_001040433	-0.951	Down
2268	MYLIP	29116	NM_013262	-0.891	Down		2361	DUOX1	53905	NM_017434	-0.952	Down
2269	HOXA10	3206	NM_018951	-0.892	Down		2362	CORO6	84940	NM_032854	-0.953	Down
2270	OBSCN	84033	NM_052843	-0.893	Down		2363	PPM1L	151742	NM_139245	-0.955	Down
2271	ALDH1L1	10840	NM_012190	-0.893	Down		2364	NCOA1	8648	NM_147223	-0.955	Down
2272	SOX2	6657	NM_003106	-0.894	Down		2365	MUC1	4582	NM_001044391	-0.956	Down
2273	ACSS2	55902	NM_018677	-0.895	Down		2366	CXCL17	284340	NM_198477	-0.956	Down
2274	MPZL2	10205	NM_144765	-0.895	Down		2367	NFIB	4781	BX537698	-0.956	Down
2275	CXXC5	51523	NM_016463	-0.895	Down		2368	ABCA8	10351	NM_007168	-0.957	Down

2276	PRDX6	9588	NM_004905	-0.897	Down		2369	NEXN	91624	NM_144573	-0.957	Down
2277	BLVRB	645	NM_000713	-0.897	Down		2370	MAOA	4128	NM_000240	-0.958	Down
2278	NA	NA	XM_001725669	-0.898	Down		2371	GALNT12	79695	NM_024642	-0.958	Down
2279	PHKB	5257	NM_001031835	-0.898	Down		2372	PPP1R3A	5506	NM_002711	-0.959	Down
2280	CASQ2	845	NM_001232	-0.899	Down		2373	SESN1	27244	NM_014454	-0.959	Down
2281	DMBT1	1755	NM_017579	-0.899	Down		2374	RTN2	6253	NM_206901	-0.962	Down
2282	MANSC1	54682	NM_018050	-0.900	Down		2375	MAPKAPK3	7867	NM_004635	-0.964	Down
2283	SNX31	169166	NM_152628	-0.900	Down		2376	POF1B	79983	NM_024921	-0.966	Down
2284	DNAJA4	55466	NM_018602	-0.901	Down		2377	CYP2E1	1571	NM_000773	-0.966	Down
2285	CAB39L	81617	NM_001079670	-0.902	Down		2378	HSPB3	8988	NM_006308	-0.968	Down
2286	MUSTN1	389125	NM_205853	-0.905	Down		2379	LRRC20	55222	NM_018239	-0.970	Down
2287	TYRO3	7301	NM_006293	-0.906	Down		2380	SLC24A3	57419	NM_020689	-0.970	Down
2288	KRT84	3890	NM_033045	-0.906	Down		2381	ACADM	34	NM_000016	-0.971	Down
2289	SLC36A2	153201	NM_181776	-0.907	Down		2382	P4HTM	54681	NM_177938	-0.972	Down
2290	FBXO32	114907	NM_058229	-0.908	Down		2383	ZBTB16	7704	NM_006006	-0.973	Down
2291	LRRC2	79442	NM_024512	-0.908	Down		2384	SULT2B1	6820	NM_177973	-0.974	Down
2292	TRIM7	81786	NM_033342	-0.908	Down		2385	ERBB2	2064	NM_004448	-0.974	Down
2293	KCTD3	51133	NM_016121	-0.909	Down		2386	NA	NA	AI867361	-0.974	Down
2294	PINK1	65018	NM_032409	-0.911	Down		2387	FAM46B	115572	NM_052943	-0.975	Down
2295	TCHHL1	126637	NM_001008536	-0.911	Down		2388	SNRPN	6638	NM_022805	-0.976	Down
2296	NA	NA	XM_001723978	-0.911	Down		2389	ANG	283	NM_001097577	-0.978	Down
2297	MYH1	4619	NM_005963	-0.912	Down		2390	PCYOX1	51449	NM_016297	-0.979	Down
2298	RNF150	57484	NM_020724	-0.912	Down		2391	FUT6	2528	NM_000150	-0.979	Down
2299	NA	NA	XM_941544	-0.912	Down		2392	ATP1B1	481	NM_001677	-0.982	Down
2300	FXYD1	5348	NM_021902	-0.913	Down		2393	GSTM2	2946	NM_000848	-0.982	Down
2301	PMEL	6490	NM_006928	-0.914	Down		2394	AGL	178	NM_000645	-0.983	Down
2302	NA	NA	XM_001132893	-0.914	Down		2395	SH3BGR	6450	NM_007341	-0.983	Down
2303	UBE2D4	51619	NM_015983	-0.914	Down		2396	NA	NA	XM_941544	-0.984	Down
2304	ANKRD35	148741	NM_144698	-0.915	Down		2397	NA	NA	XR_019567	-0.984	Down
2305	CPT1B	1375	NM_152246	-0.916	Down		2398	DTNA	1837	NM_032980	-0.984	Down
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
2306	PCNT	5116	NM_006031	-0.916	Down		2399	SLC11A2	4891	NM_000617	-0.985	Down
2307	CAMK2A	815	NM_171825	-0.917	Down		2400	NA	NA	XM_001716725	-0.986	Down
2308	ATP6V0E2	155066	NM_145230	-0.917	Down		2401	H19	283120	NR_002196	-0.987	Down
2309	FAM172A	83989	NM_032042	-0.918	Down		2402	CAST	831	NM_001042445	-0.988	Down
2310	ACSS2	55902	NM_001076552	-0.919	Down		2403	PLLP	51090	NM_015993	-0.989	Down
2311	PPP1R3A	5506	NM_002711	-0.919	Down		2404	JMJD7-PLA2G4B	8681	NM_005090	-0.989	Down
2312	SCRIB	23513	NM_015356	-0.920	Down		2405	GSTM1	2944	NM_000561	-0.991	Down
2313	ALDOC	230	NM_005165	-0.921	Down		2406	NA	NA	XR_038223	-0.991	Down
2314	EML3	256364	NM_153265	-0.921	Down		2407	EPB41L3	23136	NM_012307	-0.992	Down
2315	CLEC3B	7123	NM_003278	-0.922	Down		2408	SERPINB11	89778	NM_080475	-0.994	Down
2316	ACAA2	10449	NM_006111	-0.923	Down		2409	NYNRIN	57523	NM_025081	-0.996	Down
2317	CLIC6	54102	NM_053277	-0.926	Down		2410	NA	NA	XM_931434	-0.998	Down
2318	KRT34	3885	NM_021013	-0.927	Down		2411	SPINK9	643394	NM_001040433	-0.999	Down
2319	CSRP3	8048	NM_003476	-0.928	Down		2412	GMPR	2766	NM_006877	-0.999	Down
2320	DOPEY2	9980	NM_005128	-0.929	Down		2413	CACNB1	782	NM_199247	-1.000	Down
2321	GRHL3	57822	NM_021180	-0.929	Down		2414	ELOVL6	79071	NM_024090	-1.001	Down
2322	STOX2	56977	NM_020225	-0.929	Down		2415	EPS8L1	54869	NM_133180	-1.001	Down
2323	NA	NA	XM_929738	-0.929	Down		2416	ATP6V0A4	50617	NM_130840	-1.004	Down
2324	CGN	57530	NM_020770	-0.930	Down		2417	FBXO3	26273	NM_012175	-1.005	Down
2325	MAPK3	5595	NM_002746	-0.931	Down		2418	S100A14	57402	NM_020672	-1.005	Down
2419	TMEM52	339456	NM_178545	-1.005	Down		2512	ACADM	34	NM_000016	-1.089	Down
2420	MCEE	84693	NM_032601	-1.008	Down		2513	LRRFIP2	9209	NM_017724	-1.090	Down
2421	IDH2	3418	NM_002168	-1.009	Down		2514	PTK6	5753	NM_005975	-1.090	Down
2422	GSN	2934	NM_198252	-1.009	Down		2515	CIDEA	1149	NM_001279	-1.092	Down

2423	ALDOA	226	NM_184041	-1.010	Down		2516	SVIL	6840	NM_003174	-1.099	Down
2424	NFIC	4782	NM_205843	-1.012	Down		2517	NA	NA	XM_001132090	-1.100	Down
2425	LYPD2	137797	NM_205545	-1.014	Down		2518	GGT6	124975	NM_153338	-1.100	Down
2426	C4orf3	401152	NM_001001701	-1.015	Down		2519	CIPC	85457	NM_033426	-1.100	Down
2427	NA	NA	XR_037845	-1.016	Down		2520	CALML6	163688	NM_138705	-1.100	Down
2428	MUC7	4589	NM_152291	-1.016	Down		2521	PGM5	5239	NM_021965	-1.101	Down
2429	SLC25A42	284439	NM_178526	-1.017	Down		2522	MYOM3	127294	NM_152372	-1.103	Down
2430	PAQR8	85315	NM_133367	-1.018	Down		2523	PPARG	5468	NM_015869	-1.104	Down
2431	NA	NA	NR_031742	-1.018	Down		2524	C21orf33	8209	NM_198155	-1.105	Down
2432	LYNX1	66004	NM_177458	-1.018	Down		2525	RORC	6097	NM_001001523	-1.105	Down
2433	SOX21	11166	NM_007084	-1.018	Down		2526	TST	7263	NM_003312	-1.105	Down
2434	TSPAN7	7102	NM_004615	-1.018	Down		2527	GAS7	8522	NM_201433	-1.105	Down
2435	CEACAM7	1087	NM_006890	-1.018	Down		2528	CLIC5	53405	NM_016929	-1.106	Down
2436	RAPGEFL1	51195	NM_016339	-1.019	Down		2529	KRTAP13-1	140258	NM_181599	-1.107	Down
2437	CIPC	85457	NM_033426	-1.020	Down		2530	ERBB3	2065	NM_001982	-1.108	Down
2438	GSTO2	119391	NM_183239	-1.021	Down		2531	AHNAK	79026	NM_001620	-1.109	Down
2439	C20orf166	128826	NM_178463	-1.026	Down		2532	TBX15	6913	NM_152380	-1.111	Down
2440	NA	NA	XM_940278	-1.026	Down		2533	SMAGP	57228	NM_001033873	-1.113	Down
2441	MLPH	79083	NM_001042467	-1.027	Down		2534	SNRPN	6638	NM_022806	-1.114	Down
2442	PEG3	5178	NM_006210	-1.027	Down		2535	SLC25A34	284723	NM_207348	-1.114	Down
2443	IGFBP5	3488	NM_000599	-1.028	Down		2536	CES2	8824	NM_003869	-1.115	Down
2444	ADIRF	10974	NM_006829	-1.028	Down		2537	C9orf152	401546	NM_001012993	-1.117	Down
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
2445	TACC2	10579	NM_006997	-1.028	Down		2538	CWH43	80157	NM_025087	-1.119	Down
2446	TGM5	9333	NM_004245	-1.030	Down		2539	NA	NA	XR_018211	-1.123	Down
2447	ELF5	2001	NM_198381	-1.031	Down		2540	MANSC1	54682	NM_018050	-1.123	Down
2448	NA	NA	XR_037172	-1.031	Down		2541	SGCG	6445	NM_000231	-1.126	Down
2449	SYT15	83849	NM_181519	-1.032	Down		2542	SELENBP1	8991	NM_003944	-1.130	Down
2450	ALDH6A1	4329	NM_005589	-1.032	Down		2543	TSPAN7	7102	NM_004615	-1.130	Down
2451	DCXR	51181	NM_016286	-1.032	Down		2544	LY6G6C	80740	NM_025261	-1.130	Down
2452	KRTAP13-1	140258	NM_181599	-1.033	Down		2545	BIN1	274	NM_139343	-1.130	Down
2453	TRIM63	84676	NM_032588	-1.034	Down		2546	DKK4	27121	NM_014420	-1.131	Down
2454	TJP3	27134	NM_014428	-1.038	Down		2547	CACNG1	786	NM_000727	-1.133	Down
2455	CRTAC1	55118	NM_018058	-1.038	Down		2548	TACC2	10579	NM_206861	-1.135	Down
2456	PPP1R16A	84988	NM_032902	-1.041	Down		2549	PI16	221476	NM_153370	-1.136	Down
2457	NNT	23530	NM_012343	-1.042	Down		2550	ZSCAN18	65982	NM_023926	-1.138	Down
2458	SUOX	6821	NM_000456	-1.043	Down		2551	FCGBP	8857	NM_003890	-1.140	Down
2459	DBI	1622	NM_020548	-1.045	Down		2552	FBP2	8789	NM_003837	-1.141	Down
2460	DIO2	1734	NM_001007023	-1.046	Down		2553	FMO2	2327	NM_001460	-1.142	Down
2461	RNASE4	6038	NM_194430	-1.047	Down		2554	NA	NA	XM_937048	-1.142	Down
2462	OPLAH	26873	NM_017570	-1.048	Down		2555	HRASLS	57110	NM_020386	-1.145	Down
2463	MLIP	90523	NM_138569	-1.048	Down		2556	MYPN	84665	NM_032578	-1.147	Down
2464	MLLT10	8028	NM_004641	-1.048	Down		2557	C15orf52	388115	NM_207380	-1.148	Down
2465	C15orf48	84419	NM_032413	-1.049	Down		2558	CAMK2B	816	NM_172080	-1.149	Down
2466	MYL5	4636	NM_002477	-1.052	Down		2559	DANCR	57291	NR_024031	-1.150	Down
2467	MYL1	4632	NM_079420	-1.053	Down		2560	SFRP1	6422	NM_003012	-1.151	Down
2468	UGT1A6	54578	NM_205862	-1.053	Down		2561	PGM5	5239	NM_021965	-1.152	Down
2469	AHNAK	79026	NM_024060	-1.054	Down		2562	CYP4X1	260293	NM_178033	-1.155	Down
2470	MGST2	4258	NM_002413	-1.054	Down		2563	ACYP2	98	NM_138448	-1.156	Down
2471	SBK1	388228	NM_001024401	-1.055	Down		2564	C7orf55	154791	NM_197964	-1.158	Down
2472	FAM134B	54463	NM_001034850	-1.055	Down		2565	DUSP13	51207	NM_001007275	-1.158	Down
2473	PLN	5350	NM_002667	-1.055	Down		2566	SMPX	23676	NM_014332	-1.159	Down
2474	ARL4A	10124	NM_005738	-1.057	Down		2567	NA	NA	XR_017711	-1.162	Down
2475	NA	NA	XM_001726827	-1.057	Down		2568	NUCB2	4925	NM_005013	-1.165	Down
2476	FAM45B	55855	NM_018472	-1.058	Down		2569	RAB25	57111	NM_020387	-1.165	Down
2477	SPARCL1	8404	NM_004684	-1.058	Down		2570	MTURN	222166	NM_152793	-1.165	Down

2478	CLDN10	9071	NM_006984	-1.058	Down		2571	SULT2B1	6820	NM_004605	-1.167	Down
2479	CPEB3	22849	NM_014912	-1.059	Down		2572	NA	NA	CR612552	-1.167	Down
2480	STRADB	55437	NM_018571	-1.059	Down		2573	ABLIM1	3983	NM_006720	-1.170	Down
2481	MYL5	4636	NM_002477	-1.059	Down		2574	CAPNS2	84290	NM_032330	-1.170	Down
2482	MUC15	143662	NM_145650	-1.061	Down		2575	DCAF6	55827	NM_001017977	-1.170	Down
2483	SCGB3A1	92304	NM_052863	-1.061	Down		2576	NA	NA	XM_926530	-1.171	Down
2484	MYLK4	340156	NM_001012418	-1.061	Down		2577	SGCA	6442	NM_000023	-1.172	Down
2485	PHKG1	5260	NM_006213	-1.062	Down		2578	SYTL4	94121	NM_080737	-1.178	Down
2486	ACADVL	37	NM_001033859	-1.063	Down		2579	BIN1	274	NM_139346	-1.182	Down
2487	TRIM54	57159	NM_187841	-1.066	Down		2580	FEM1A	55527	NM_018708	-1.183	Down
2488	LDOC1	23641	NM_012317	-1.067	Down		2581	NEBL	10529	NM_006393	-1.184	Down
2489	MEG3	55384	NR_002766	-1.068	Down		2582	MPC1	51660	NM_016098	-1.187	Down
2490	SMAGP	57228	NM_001031628	-1.068	Down		2583	AIF1L	83543	NM_001002260	-1.188	Down
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
2491	SIAE	54414	NM_170601	-1.070	Down		2584	NMRK2	27231	NM_170678	-1.195	Down
2492	PLAC9	219348	NM_001012973	-1.070	Down		2585	CLYBL	171425	NM_206808	-1.196	Down
2493	BMP7	655	NM_001719	-1.071	Down		2586	ELF3	1999	NM_004433	-1.196	Down
2494	NA	NA	XM_926523	-1.072	Down		2587	GRB14	2888	NM_004490	-1.197	Down
2495	TPD52L1	7164	NM_001003397	-1.075	Down		2588	PKIA	5569	NM_006823	-1.198	Down
2496	HEBP2	23593	NM_014320	-1.075	Down		2589	CYB5A	1528	NM_001914	-1.199	Down
2497	OSBPL1A	114876	NM_080597	-1.076	Down		2590	NA	NA	XM_001713808	-1.199	Down
2498	EIF4E3	317649	NM_173359	-1.076	Down		2591	MURC	347273	NM_001018116	-1.203	Down
2499	EXPH5	23086	NM_015065	-1.077	Down		2592	MAP4	4134	NM_002375	-1.204	Down
2500	UGT1A7	54577	NM_019077	-1.081	Down		2593	KLK11	11012	NM_144947	-1.205	Down
2501	CCL15	6359	NM_032964	-1.083	Down		2594	ZNF185	7739	NM_007150	-1.207	Down
2502	S100A1	6271	NM_006271	-1.083	Down		2595	PEBP4	157310	NM_144962	-1.208	Down
2503	PLA2G16	11145	NM_007069	-1.084	Down		2596	IGFBP5	3488	NM_000599	-1.208	Down
2504	NA	NA	XM_371299	-1.084	Down		2597	BRSK2	9024	NM_003957	-1.210	Down
2505	CYB5A	1528	NM_001914	-1.084	Down		2598	MKNK2	2872	NM_017572	-1.213	Down
2506	NA	NA	XR_015587	-1.084	Down		2599	PRR4	11272	NM_001098538	-1.213	Down
2507	KRT33B	3884	NM_002279	-1.085	Down		2600	PDCD4	27250	NM_145341	-1.214	Down
2508	C1orf116	79098	NM_023938	-1.086	Down		2601	FGGY	55277	NM_018291	-1.214	Down
2509	RAB11FIP1	80223	NM_001002814	-1.087	Down		2602	RN7SK	125050	NR_001445	-1.218	Down
2510	NDUFS7	374291	NM_024407	-1.088	Down		2603	SPNS2	124976	NM_001124758	-1.219	Down
2511	SPARCL1	8404	NM_004684	-1.088	Down		2604	TCHH	7062	NM_007113	-1.220	Down
2605	LINC00478	388815	NM_001005734	-1.221	Down		2698	MAPT	4137	NM_016841	-1.390	Down
2606	RNASE4	6038	NM_194431	-1.221	Down		2699	ALDH2	217	NM_000690	-1.390	Down
2607	SLC7A2	6542	NM_001008539	-1.222	Down		2700	ASAP3	55616	NM_017707	-1.392	Down
2608	DEPTOR	64798	NM_022783	-1.226	Down		2701	GDPD3	79153	NM_024307	-1.400	Down
2609	FAM189A2	9413	NM_004816	-1.227	Down		2702	IL1RN	3557	NM_173843	-1.404	Down
2610	MACROD1	28992	NM_014067	-1.229	Down		2703	NA	NA	XR_017761	-1.406	Down
2611	PIP	5304	NM_002652	-1.230	Down		2704	NA	NA	XM_001723781	-1.410	Down
2612	GMDS	2762	NM_001500	-1.233	Down		2705	RTN4	57142	NM_007008	-1.413	Down
2613	CCL14	6358	NM_032962	-1.234	Down		2706	MYH6	4624	NM_002471	-1.415	Down
2614	REPIN1	29803	NM_014374	-1.237	Down		2707	TGFBR3	7049	NM_003243	-1.416	Down
2615	CAPN5	726	NM_004055	-1.243	Down		2708	FOXA1	3169	NM_004496	-1.418	Down
2616	ETFDH	2110	NM_004453	-1.243	Down		2709	ENDOU	8909	NM_006025	-1.421	Down
2617	ATPAF1	64756	NM_022745	-1.243	Down		2710	STATH	6779	NM_001009181	-1.424	Down
2618	PTGR1	22949	NM_012212	-1.243	Down		2711	TFF3	7033	NM_003226	-1.425	Down
2619	KAZN	23254	NM_001018000	-1.243	Down		2712	FHL3	2275	NM_004468	-1.426	Down
2620	ITM2A	9452	NM_004867	-1.250	Down		2713	KAT2B	8850	NM_003884	-1.426	Down
2621	TP53INP2	58476	NM_021202	-1.251	Down		2714	NDRG2	57447	NM_201539	-1.428	Down
2622	USP13	8975	NM_003940	-1.256	Down		2715	CYP4F12	66002	NM_023944	-1.431	Down
2623	ASPG	374569	NM_001080464	-1.257	Down		2716	NA	NA	XM_113912	-1.439	Down
2624	BEX2	84707	NM_032621	-1.259	Down		2717	LRRC26	389816	NM_001013653	-1.441	Down
2625	AADAC	13	NM_001086	-1.262	Down		2718	EPDR1	54749	NM_017549	-1.442	Down

2626	ETFB	2109	NM_001985	-1.262	Down		2719	ABLIM2	84448	NM_032432	-1.447	Down
2627	KIAA1211L	343990	NM_207362	-1.263	Down		2720	KLK12	43849	NM_019598	-1.448	Down
2628	PITX1	5307	NM_002653	-1.264	Down		2721	PTK6	5753	NM_005975	-1.448	Down
2629	DLK1	8788	NM_003836	-1.267	Down		2722	MYL6B	140465	NM_002475	-1.449	Down
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
2630	TSPAN8	7103	NM_004616	-1.268	Down		2723	CHCHD10	400916	NM_213720	-1.459	Down
2631	SUSD4	55061	NM_001037175	-1.275	Down		2724	PITX2	5308	NM_000325	-1.464	Down
2632	RCAN2	10231	NM_005822	-1.277	Down		2725	EMP1	2012	NM_001423	-1.465	Down
2633	IL36A	27179	NM_014440	-1.278	Down		2726	ANKRD20A11P	391267	NM_153750	-1.466	Down
2634	ELOVL6	79071	NM_024090	-1.278	Down		2727	SHMT1	6470	NM_004169	-1.472	Down
2635	RYR1	6261	NM_001042723	-1.279	Down		2728	MGLL	11343	NM_007283	-1.472	Down
2636	MFAP4	4239	NM_002404	-1.280	Down		2729	MPC1	51660	NM_016098	-1.476	Down
2637	TMPRSS2	7113	NM_005656	-1.286	Down		2730	TMPRSS11D	9407	NM_004262	-1.477	Down
2638	MAP1LC3A	84557	NM_181509	-1.289	Down		2731	JSRP1	126306	NM_144616	-1.478	Down
2639	CAPN3	825	NM_173087	-1.290	Down		2732	IL17D	53342	NM_138284	-1.479	Down
2640	CD24	100133941	NM_013230	-1.292	Down		2733	MGST1	4257	NM_145792	-1.479	Down
2641	SERPINB13	5275	NM_012397	-1.292	Down		2734	GPT2	84706	NM_133443	-1.481	Down
2642	C14orf159	80017	NM_024952	-1.295	Down		2735	ART3	419	NM_001179	-1.482	Down
2643	FSD2	123722	NM_001007122	-1.297	Down		2736	CAP2	10486	NM_006366	-1.483	Down
2644	PPAPDC3	84814	NM_032728	-1.297	Down		2737	FRZB	2487	NM_001463	-1.484	Down
2645	ADHFE1	137872	NM_144650	-1.300	Down		2738	TPM2	7169	NM_213674	-1.486	Down
2646	HADH	3033	NM_005327	-1.300	Down		2739	SCNN1B	6338	NM_000336	-1.490	Down
2647	DNASE1L3	1776	NM_004944	-1.301	Down		2740	MUC21	394263	NM_001010909	-1.491	Down
2648	ZNF106	64397	NM_022473	-1.301	Down		2741	LOR	4014	NM_000427	-1.495	Down
2649	AADACL2	344752	NM_207365	-1.302	Down		2742	ALDH3A2	224	NM_000382	-1.502	Down
2650	MTMR10	54893	NM_017762	-1.302	Down		2743	CAND2	23066	NM_012298	-1.504	Down
2651	ACAT1	38	NM_000019	-1.308	Down		2744	LDB3	11155	NM_007078	-1.510	Down
2652	PRDX2	7001	NM_181738	-1.309	Down		2745	ADPRHL1	113622	NM_199162	-1.514	Down
2653	05-Sep	5413	NM_002688	-1.310	Down		2746	NA	NA	XM_937000	-1.517	Down
2654	CEACAM1	634	NM_001024912	-1.311	Down		2747	BNIPL	149428	NM_138278	-1.518	Down
2655	RGMA	56963	NM_020211	-1.312	Down		2748	HFE2	148738	NM_145277	-1.518	Down
2656	NA	NA	XM_211764	-1.313	Down		2749	TF	7018	NM_001063	-1.519	Down
2657	PGM1	5236	NM_002633	-1.314	Down		2750	ABLIM1	3983	NM_001003407	-1.519	Down
2658	PPARGC1A	10891	NM_013261	-1.315	Down		2751	CEACAM5	1048	NM_004363	-1.519	Down
2659	CHPT1	56994	NM_020244	-1.315	Down		2752	HPGD	3248	NM_000860	-1.520	Down
2660	ANKRD20A1	84210	NM_032250	-1.317	Down		2753	PDK4	5166	NM_002612	-1.520	Down
2661	NA	NA	XR_015662	-1.318	Down		2754	LPIN1	23175	NM_145693	-1.520	Down
2662	FYCO1	79443	NM_024513	-1.319	Down		2755	JPH1	56704	NM_020647	-1.530	Down
2663	MYPN	84665	NM_032578	-1.322	Down		2756	MYOM2	9172	NM_003970	-1.532	Down
2664	GOT1	2805	NM_002079	-1.323	Down		2757	KLHL40	131377	NM_152393	-1.534	Down
2665	KRT36	8689	NM_003771	-1.323	Down		2758	PRSS3	5646	NM_002771	-1.534	Down
2666	FLG	2312	NM_002016	-1.324	Down		2759	MYO1G	64005	NM_033054	-1.537	Down
2667	HSPB2	3316	NM_001541	-1.325	Down		2760	MAMDC2	256691	NM_153267	-1.544	Down
2668	NA	NA	XR_039978	-1.326	Down		2761	ZNF750	79755	NM_024702	-1.546	Down
2669	ACACB	32	NM_001093	-1.327	Down		2762	ASB10	136371	NM_080871	-1.556	Down
2670	NCCRP1	342897	NM_001001414	-1.328	Down		2763	KRT3	3850	NM_057088	-1.557	Down
2671	TPM1	7168	NM_001018004	-1.329	Down		2764	RN7SK	125050	NR_001445	-1.564	Down
2672	SORBS1	10580	NM_001034954	-1.330	Down		2765	SCIN	85477	NM_033128	-1.566	Down
2673	ZNF106	64397	NM_022473	-1.331	Down		2766	PHYH	5264	NM_006214	-1.570	Down
2674	TM7SF2	7108	NM_003273	-1.337	Down		2767	SORT1	6272	NM_002959	-1.572	Down
2675	CLYBL	171425	NM_206808	-1.338	Down		2768	C3orf43	255798	NM_001077657	-1.574	Down
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
2676	UBL3	5412	NM_007106	-1.338	Down		2769	SPRR3	6707	NM_005416	-1.575	Down
2677	ANKRD37	353322	NM_181726	-1.338	Down		2770	SASH1	23328	NM_015278	-1.576	Down
2678	COQ10A	93058	NM_144576	-1.343	Down		2771	RYR1	6261	NM_001042723	-1.577	Down

2679	TPM1	7168	NM_001018020	-1.345	Down		2772	FCER1A	2205	NM_002001	-1.593	Down
2680	DPT	1805	NM_001937	-1.345	Down		2773	KRT76	51350	NM_015848	-1.595	Down
2681	PTGR1	22949	NM_012212	-1.348	Down		2774	GAMT	2593	NM_000156	-1.600	Down
2682	LMCD1	29995	NM_014583	-1.350	Down		2775	ADH1A	124	NM_000667	-1.606	Down
2683	TPM3	7170	NM_152263	-1.351	Down		2776	ATP6V0A4	50617	NM_020632	-1.606	Down
2684	PRDX2	7001	NM_181738	-1.353	Down		2777	CRCT1	54544	NM_019060	-1.612	Down
2685	SH3GL3	6457	NM_003027	-1.354	Down		2778	CAPN3	825	NM_024344	-1.614	Down
2686	CILP	8483	NM_003613	-1.355	Down		2779	GATM	2628	NM_001482	-1.616	Down
2687	NA	NA	XM_001717925	-1.355	Down		2780	HSPB8	26353	NM_014365	-1.621	Down
2688	C1orf116	79098	NM_023938	-1.364	Down		2781	DYNAP	284254	NM_173629	-1.621	Down
2689	ECM1	1893	NM_022664	-1.366	Down		2782	BEX4	56271	NM_001080425	-1.622	Down
2690	AIF1L	83543	NM_031426	-1.367	Down		2783	TNFRSF19	55504	NM_148957	-1.626	Down
2691	TGM1	7051	NM_000359	-1.367	Down		2784	CEACAM6	4680	NM_002483	-1.626	Down
2692	MYF6	4618	NM_002469	-1.369	Down		2785	ALDH3A2	224	NM_001031806	-1.627	Down
2693	ZBTB7C	201501	NM_001039360	-1.371	Down		2786	CEACAM1	634	NM_001024912	-1.627	Down
2694	NA	NA	XM_001720061	-1.377	Down		2787	HRC	3270	NM_002152	-1.628	Down
2695	LIMCH1	22998	NM_014988	-1.378	Down		2788	CYP2J2	1573	NM_000775	-1.630	Down
2696	ZG16B	124220	NM_145252	-1.380	Down		2789	ATP2A2	488	NM_001681	-1.634	Down
2697	ASB5	140458	NM_080874	-1.383	Down		2790	NFIX	4784	NM_002501	-1.635	Down
2791	EHF	26298	NM_012153	-1.636	Down		2884	GBP6	163351	NM_198460	-2.095	Down
2792	CSTA	1475	NM_005213	-1.637	Down		2885	VSIG8	391123	NM_001013661	-2.115	Down
2793	PGD	5226	NM_002631	-1.642	Down		2886	NDRG2	57447	NM_201539	-2.116	Down
2794	FUT3	2525	NM_001097641	-1.646	Down		2887	TMOD4	29765	NM_013353	-2.144	Down
2795	KIAA1211L	343990	NM_207362	-1.648	Down		2888	NA	NA	XM_001719715	-2.148	Down
2796	KLK12	43849	NM_019598	-1.649	Down		2889	TNNT3	7140	NM_001042780	-2.157	Down
2797	LRRC26	389816	NM_001013653	-1.651	Down		2890	SYNPO2L	79933	NM_024875	-2.171	Down
2798	SHROOM3	57619	NM_020859	-1.661	Down		2891	HFE2	148738	NM_213652	-2.185	Down
2799	CLIC3	9022	NM_004669	-1.662	Down		2892	ADSSL1	122622	NM_152328	-2.188	Down
2800	PHGDH	26227	NM_006623	-1.663	Down		2893	DAPL1	92196	NM_001017920	-2.204	Down
2801	HMGCS2	3158	NM_005518	-1.667	Down		2894	HOPX	84525	NM_032495	-2.209	Down
2802	NA	NA	NM_001099662	-1.671	Down		2895	PDLIM5	10611	NM_001011516	-2.219	Down
2803	CYP2C18	1562	NM_000772	-1.673	Down		2896	PDLIM5	10611	NM_001011515	-2.226	Down
2804	HSPB7	27129	NM_014424	-1.678	Down		2897	DHRS7C	201140	NM_001105571	-2.241	Down
2805	ECHDC3	79746	NM_024693	-1.692	Down		2898	SMYD1	150572	NM_198274	-2.243	Down
2806	NCCRP1	342897	NM_001001414	-1.693	Down		2899	A2ML1	144568	NM_144670	-2.243	Down
2807	USP13	8975	NM_003940	-1.695	Down		2900	RPL3L	6123	NM_005061	-2.248	Down
2808	HOPX	84525	NM_139212	-1.697	Down		2901	SLN	6588	NM_003063	-2.248	Down
2809	EVPL	2125	NM_001988	-1.705	Down		2902	SLURP1	57152	NM_020427	-2.252	Down
2810	C9orf169	375791	NM_199001	-1.706	Down		2903	CASQ1	844	NM_001231	-2.262	Down
2811	LRRC20	55222	NM_018239	-1.707	Down		2904	CGNL1	84952	NM_032866	-2.267	Down
2812	SASH1	23328	NM_015278	-1.711	Down		2905	ADH7	131	NM_000673	-2.279	Down
2813	ACPP	55	NM_001099	-1.720	Down		2906	CRYAB	1410	NM_001885	-2.308	Down
2814	FLNC	2318	NM_001458	-1.737	Down		2907	PITX2	5308	NM_153427	-2.312	Down
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
2815	NRAP	4892	NM_006175	-1.739	Down		2908	ACTA1	58	NM_001100	-2.313	Down
2816	ATP2A2	488	NM_170665	-1.739	Down		2909	PPL	5493	NM_002705	-2.323	Down
2817	AIF1L	83543	NM_031426	-1.740	Down		2910	MYOZ3	91977	NM_133371	-2.361	Down
2818	PRSS27	83886	NM_031948	-1.740	Down		2911	MYL3	4634	NM_000258	-2.367	Down
2819	BARX2	8538	NM_003658	-1.741	Down		2912	TNNT3	7140	NM_001042780	-2.369	Down
2820	ATP1A2	477	NM_000702	-1.741	Down		2913	TNNT1	7138	NM_003283	-2.378	Down
2821	PFKM	5213	NM_000289	-1.742	Down		2914	APOD	347	NM_001647	-2.392	Down
2822	CLDN7	1366	NM_001307	-1.745	Down		2915	SRL	6345	NM_001098814	-2.414	Down
2823	NA	NA	XM_113971	-1.748	Down		2916	ADCK3	56997	NM_020247	-2.422	Down
2824	PAX9	5083	NM_006194	-1.757	Down		2917	GAMT	2593	NM_000156	-2.432	Down
2825	PKIA	5569	NM_181839	-1.757	Down		2918	HSPB6	126393	NM_144617	-2.455	Down
2826	KRT13	3860	NM_002274	-1.764	Down		2919	FHL1	2273	NM_001449	-2.503	Down

2827	SLC25A23	79085	NM_024103	-1.765	Down		2920	FAM3B	54097	NM_206964	-2.511	Down
2828	DUSP26	78986	NM_024025	-1.771	Down		2921	GPD1L	23171	NM_015141	-2.522	Down
2829	DTNA	1837	NM_001392	-1.781	Down		2922	COX6A2	1339	NM_005205	-2.532	Down
2830	CLDN17	26285	NM_012131	-1.789	Down		2923	TCEA3	6920	NM_003196	-2.539	Down
2831	KRTAP13-2	337959	NM_181621	-1.791	Down		2924	CMYA5	202333	NM_153610	-2.540	Down
2832	CYP3A5	1577	NM_000777	-1.792	Down		2925	GPX3	2878	NM_002084	-2.566	Down
2833	CA3	761	NM_005181	-1.793	Down		2926	ALDH3A1	218	NM_000691	-2.588	Down
2834	TMOD1	7111	NM_003275	-1.794	Down		2927	CLCA4	22802	NM_012128	-2.609	Down
2835	KRT19	3880	NM_002276	-1.795	Down		2928	MYL1	4632	NM_079422	-2.613	Down
2836	NA	NA	AW364673	-1.802	Down		2929	NEB	4703	NM_004543	-2.627	Down
2837	SCEL	8796	NM_144777	-1.807	Down		2930	ATP2A1	487	NM_173201	-2.636	Down
2838	NA	NA	XM_374137	-1.808	Down		2931	TNNC1	7134	NM_003280	-2.652	Down
2839	COBL	23242	NM_015198	-1.817	Down		2932	PYGM	5837	NM_005609	-2.659	Down
2840	EPHX2	2053	NM_001979	-1.821	Down		2933	MYBPC1	4604	NM_002465	-2.666	Down
2841	NA	NA	XM_001130790	-1.837	Down		2934	FNDC5	252995	NM_153756	-2.677	Down
2842	ALDH1A1	216	NM_000689	-1.840	Down		2935	MYL2	4633	NM_000432	-2.684	Down
2843	FITM1	161247	NM_203402	-1.845	Down		2936	ALDH1A1	216	NM_000689	-2.685	Down
2844	KLK13	26085	NM_015596	-1.851	Down		2937	SH3BGRL2	83699	NM_031469	-2.715	Down
2845	ACTN2	88	NM_001103	-1.857	Down		2938	TGM3	7053	NM_003245	-2.723	Down
2846	NA	NA	BC035116	-1.869	Down		2939	MYLPF	29895	NM_013292	-2.737	Down
2847	TMPRSS11A	339967	NM_182606	-1.876	Down		2940	RRAGD	58528	NM_021244	-2.751	Down
2848	TPM3	7170	NM_152263	-1.897	Down		2941	SPINK7	84651	NM_032566	-2.757	Down
2849	KRT15	3866	NM_002275	-1.906	Down		2942	KLHL41	10324	NM_006063	-2.773	Down
2850	NA	NA	XM_941428	-1.909	Down		2943	MYOT	9499	NM_006790	-2.804	Down
2851	AMOT	154796	NM_133265	-1.912	Down		2944	SLC25A4	291	NM_001151	-2.820	Down
2852	ANKRD23	200539	NM_144994	-1.918	Down		2945	PGAM2	5224	NM_000290	-2.825	Down
2853	ECHDC2	55268	NM_018281	-1.921	Down		2946	KLHL41	10324	NM_006063	-2.848	Down
2854	NMU	10874	NM_006681	-1.925	Down		2947	EEF1A2	1917	NM_001958	-2.855	Down
2855	MYBPC2	4606	NM_004533	-1.928	Down		2948	CKMT2	1160	NM_001825	-2.902	Down
2856	SMPX	23676	NM_014332	-1.933	Down		2949	TNNI2	7136	NM_003282	-2.938	Down
2857	NA	NA	XM_936467	-1.936	Down		2950	MUC21	394263	NM_001010909	-2.941	Down
2858	SYNM	23336	NM_015286	-1.938	Down		2951	FAM3D	131177	NM_138805	-2.948	Down
2859	MYH11	4629	NM_002474	-1.939	Down		2952	MYL2	4633	NM_000432	-2.951	Down
2860	UPK1A	11045	NM_007000	-1.944	Down		2953	TPM2	7169	NM_003289	-2.982	Down
Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down		Sl. No.	Gene Symbol	Entrez ID	Accession	logFC	Up/Down
2861	DDIT4L	115265	NM_145244	-1.944	Down		2954	SLC25A4	291	NM_001151	-2.997	Down
2862	DBNDD1	79007	NM_001042610	-1.951	Down		2955	MYL1	4632	NM_079422	-3.015	Down
2863	DES	1674	NM_001927	-1.957	Down		2956	RHCG	51458	NM_016321	-3.049	Down
2864	NA	NA	XR_040455	-1.957	Down		2957	MB	4151	NM_005368	-3.074	Down
2865	NA	NA	XM_937200	-1.964	Down		2958	MYOM1	8736	NM_003803	-3.089	Down
2866	XIRP2	129446	NM_152381	-1.970	Down		2959	PPP1R3C	5507	NM_005398	-3.161	Down
2867	AMPD1	270	NM_000036	-1.977	Down		2960	TNNC2	7125	NM_003279	-3.169	Down
2868	PHYH	5264	NM_001037537	-1.978	Down		2961	SPINK5	11005	NM_006846	-3.181	Down
2869	GCNT3	9245	NM_004751	-1.980	Down		2962	TCAP	8557	NM_003673	-3.209	Down
2870	EPHX3	79852	NM_024794	-1.987	Down		2963	MYOZ1	58529	NM_021245	-3.245	Down
2871	GBP6	163351	NM_198460	-1.994	Down		2964	CKM	1158	NM_001824	-3.255	Down
2872	PPP1R1A	5502	NM_006741	-1.995	Down		2965	COX7A1	1346	NM_001864	-3.279	Down
2873	TTN	7273	NM_133378	-2.002	Down		2966	MYBPC1	4604	NM_206821	-3.306	Down
2874	DEPTOR	64798	NM_022783	-2.003	Down		2967	MB	4151	NM_005368	-3.319	Down
2875	PDLIM3	27295	NM_014476	-2.031	Down		2968	MAL	4118	NM_022440	-3.396	Down
2876	PDLIM3	27295	NM_014476	-2.038	Down		2969	MYBPC1	4604	NM_206819	-3.481	Down
2877	ALOX12	239	NM_000697	-2.060	Down		2970	ENO3	2027	NM_001976	-3.507	Down
2878	EYA2	2139	NM_172112	-2.060	Down		2971	KRT78	196374	NM_173352	-3.513	Down
2879	APOBEC2	10930	NM_006789	-2.064	Down		2972	TMPRSS11B	132724	NM_182502	-3.535	Down
2880	SCNN1A	6337	NM_001038	-2.069	Down		2973	ENO3	2027	NM_001976	-3.573	Down
2881	ANKRD35	148741	NM_144698	-2.075	Down		2974	MYH2	4620	NM_017534	-3.687	Down

2882	CFD	1675	NM_001928	-2.077	Down		2975	MUC21	394263	NM_001010909	-3.710	Down
2883	SCEL	8796	NM_003843	-2.090	Down		2976	CRNN	49860	NM_016190	-3.715	Down
2977	NA	NA	XM_935887	-3.726	Down							
2978	MYH7	4625	NM_000257	-3.731	Down							
2979	MAL	4118	NM_002371	-4.457	Down							
2980	KRT4	3851	NM_002272	-4.480	Down							

Table 4

288 Gene Signatures [N+ vs N0]

TABLE 4: 288 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
1	THBS1	7057	NM_003246	Up	4
2	HLA-DRB5	3127	NM_002125	Up	6
3	COL5A1	1289	NM_000093	Up	7
4	SPP1	6696	NM_001040058	Up	8
5	MMP11	4320	NM_005940	Up	10
6	AXL	558	NM_021913	Up	11
7	DCBLD2	131566	NM_080927	Up	15
8	CYR61	3491	NM_001554	Up	19
9	F3	2152	NM_001993	Up	22
10	TGFBI	7045	NM_000358	Up	24
11	COL22A1	169044	NM_152888	Up	25
12	ACKR3	57007	NM_001047841	Up	26
13	COL11A1	1301	NM_001854	Up	27
14	DCBLD2	131566	NM_080927	Up	15
15	AXL	558	NM_021913	Up	11
16	ACKR3	57007	NM_020311	Up	35
17	MYADM	91663	NM_001020820	Up	36
18	NA	NA	XM_941434	Up	38
19	IFI6	2537	NM_022872	Up	42
20	NA	NA	XM_942302	Up	43
21	COL1A2	1278	NM_000089	Up	30
22	FST	10468	NM_006350	Up	48
23	IFIT2	3433	NM_001547	Up	50
24	RTTN	25914	NM_173630	Up	52
25	LUM	4060	NM_002345	Up	55
26	C1QC	714	NM_172369	Up	56
27	FNDC3B	64778	NM_001135095	Up	60
28	FNDC3B	64778	NM_022763	Up	61
29	CHGB	1114	NM_001819	Up	63
30	APOE	348	NM_000041	Up	71
31	CXCL10	3627	NM_001565	Up	72
32	PRSS23	11098	NM_007173	Up	74
33	EPSTI1	94240	NM_033255	Up	79

34	LY6E	4061	NM_002346	Up	80
35	CKS2	1164	NM_001827	Up	82
36	NA	NA	XR_037845	Up	83
37	LEPREL1	55214	NM_018192	Up	84
38	GBP5	115362	NM_052942	Up	87
39	PFN2	5217	NM_053024	Up	91

TABLE 4: 288 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
40	MAMDC2	256691	NM_153267	Up	96
41	AMTN	401138	NM_212557	Up	100
42	EMP3	2014	NM_001425	Up	101
43	ZMYM6	9204	NM_007167	Up	102
44	CXCL11	6373	NM_005409	Up	103
45	MELK	9833	NM_014791	Up	109
46	CAP2	10486	NM_006366	Up	110
47	BIRC2	329	NM_001166	Up	113
48	SLC38A5	92745	NM_033518	Up	120
49	PTGR1	22949	NM_012212	Up	122
50	OAS1	4938	NM_001032409	Up	119
51	PTGR1	22949	NM_012212	Up	122
52	DNAJA1	3301	NM_001539	Up	127
53	IL7R	3575	NM_002185	Up	130
54	APOC1	341	NM_001645	Up	131
55	NA	NA	XM_936128	Up	135
56	NRG1	3084	AF176921	Up	136
57	GLIPR1	11010	NM_006851	Up	140
58	FJX1	24147	NM_014344	Up	143
59	IGFBP3	3486	NM_000598	Up	144
60	IGLL1	3543	NM_020070	Up	146
61	IMPAD1	54928	NM_017813	Up	147
62	GSTO2	119391	NM_183239	Up	148
63	UBD	10537	NM_006398	Up	150
64	MELK	9833	NM_014791	Up	109
65	GBP4	115361	NM_052941	Up	153
66	SFRP1	6422	NM_003012	Up	156
67	LAPTM4B	55353	NM_018407	Up	158
68	CCDC50	152137	NM_174908	Up	161
69	SERPING1	710	NM_001032295	Up	162
70	KRT19	3880	NM_002276	Up	165
71	TTN	7273	NM_133378	Up	167
72	AK4	205	AK026966	Up	169
73	CDK1	983	NM_001786	Up	177
74	DSP	1832	NM_004415	Up	178
75	IGFBP3	3486	NM_001013398	Up	182
76	RRAGD	58528	NM_021244	Up	183

77	ATP1B1	481	NM_001677	Up	186
78	ADORA2B	136	NM_000676	Up	188

TABLE 4: 288 gene signatures (N+ vs N0)

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
79	ATP1B1	481	NM_001677	Up	186
80	STAT1	6772	NM_007315	Up	192
81	KRT4	3851	NM_002272	Up	195
82	STAT1	6772	NM_139266	Up	198
83	OSBPL1A	114876	NM_080597	Up	199
84	VCAM1	7412	NM_001078	Up	202
85	NA	NA	XM_938277	Up	204
86	TCEB1	6921	NM_005648	Up	206
87	VCAN	1462	NM_004385	Up	207
88	EXOSC3	51010	NM_016042	Up	208
89	CHI3L1	1116	NM_001276	Up	214
90	MGP	4256	NM_000900	Up	226
91	CMTM7	112616	NM_181472	Up	235
92	HPRT1	3251	NM_000194	Up	236
93	HLA-DRB4	3126	NM_021983	Up	237
94	CD74	972	NM_001025159	Up	238
95	TGFB3	7043	NM_003239	Up	239
96	GNLY	10578	NM_012483	Up	245
97	C3orf14	57415	NM_020685	Up	248
98	EXOSC3	51010	NM_016042	Up	208
99	MGP	4256	NM_000900	Up	226
100	ADM	133	NM_001124	Up	266
101	CCNB2	9133	NM_004701	Up	267
102	CTSL	1514	NM_001912	Up	272
103	IGLL3P	91353	NM_001013618	Up	276
104	C1QA	712	NM_015991	Up	278
105	HLA-H	3136	NR_001434	Up	281
106	FBN2	2201	NM_001999	Up	290
107	FEZ1	9638	NM_005103	Up	293
108	LAMP5	24141	NM_012261	Up	301
109	CXCL1	2919	NM_001511	Up	304
110	CA3	761	NM_005181	Up	305
111	PGM1	5236	NM_002633	Up	309
112	C15orf52	388115	NM_207380	Up	311
113	FETUB	26998	NM_014375	Up	312
114	FDCSP	260436	NM_152997	Up	313
115	STC1	6781	NM_003155	Up	321
116	RIOK3	8780	NM_003831	Up	322
117	CPA4	51200	NM_016352	Up	323

TABLE 4: 288 gene signatures (N+ vs N0)

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID

118	ANXA11	311	NM_001157	Up	326
119	NA	NA	XM_001128725	Up	328
120	GLDC	2731	NM_000170	Up	332
121	HLA-A	3105	NM_002116	Up	337
122	CRYAB	1410	NM_001885	Up	340
123	MTIF3	219402	NM_152912	Up	345
124	CAT	847	NM_001752	Up	355
125	NUTF2	10204	NM_005796	Up	357
126	IGFBP5	3488	NM_000599	Up	194
127	NA	NA	XM_942419	Up	361
128	RN7SK	125050	NR_001445	Up	364
129	ANGPTL4	51129	NM_139314	Up	372
130	SDR16C5	195814	NM_138969	Up	373
131	VMP1	81671	NM_030938	Up	379
132	PSMA4	5685	NM_002789	Up	384
133	NRIP1	8204	NM_003489	Up	385
134	PHGDH	26227	NM_006623	Up	391
135	NA	NA	XR_018747	Up	392
136	ATP6V0B	533	NM_001039457	Up	396
137	TFRC	7037	NM_003234	Up	398
138	C14orf159	80017	NM_024952	Up	401
139	NA	NA	XR_017711	Up	403
140	KRT15	3866	NM_002275	Up	407
141	OAS1	4938	NM_002534	Up	408
142	H19	283120	NR_002196	Up	418
143	ACP5	54	NM_001611	Up	420
144	CYB5A	1528	NM_001914	Up	423
145	FHL1	2273	NM_001449	Up	429
146	MGST1	4257	NM_145792	Up	432
147	GSTT1	2952	NM_000853	Up	443
148	MGLL	11343	NM_007283	Up	339
149	NA	NA	NM_001077593	Up	449
150	C4orf3	401152	NM_001001701	Up	451
151	ERO1L	30001	NM_014584	Up	453
152	CPNE1	8904	NM_152931	Up	439
153	ALDOC	230	NM_005165	Up	456
154	NA	NA	XM_496143	Up	457
155	NA	NA	XM_498510	Up	463
156	TJP1	7082	NM_003257	Up	467

TABLE 4: 288 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
157	IFNGR2	3460	NM_005534	Up	476
158	USO1	8615	NM_003715	Up	480
159	MAPRE1	22919	NM_012325	Up	482
160	NA	NA	XM_001129280	Up	484

161	TACC2	10579	NM_006997	Up	492
162	SIGMAR1	10280	NM_005866	Up	502
163	LRRC17	10234	NM_005824	Up	509
164	PGK1	5230	NM_000291	Up	512
165	SUOX	6821	NM_000456	Up	513
166	NA	NA	AK091904	Up	516
167	NA	NA	XM_001713808	Up	517
168	N4BP2L2	10443	NM_033111	Up	518
169	SERPINB11	89778	NM_080475	Up	519
170	GNS	2799	NM_002076	Up	524
171	RHOC	389	NM_175744	Up	529
172	PSMA5	5686	NM_002790	Up	548
173	IRF8	3394	NM_002163	Up	549
174	N4BP2L2	10443	NM_033111	Up	518
175	MEG3	55384	NR_002766	Down	558
176	MTHFD1L	25902	NM_015440	Down	564
177	RNU1-1	26871	NR_004430	Down	566
178	SVIL	6840	NM_003174	Down	571
179	PYGM	5837	NM_005609	Down	572
180	ALDH6A1	4329	NM_005589	Down	573
181	HRASLS	57110	NM_020386	Down	575
182	APOL3	80833	NM_145641	Down	578
183	CAPN3	825	NM_024344	Down	579
184	LRRC75A-AS1	125144	NM_152350	Down	587
185	NA	NA	NM_001080848	Down	589
186	IGJ	3512	NM_144646	Down	593
187	CD247	919	NM_000734	Down	596
188	COL15A1	1306	NM_001855	Down	597
189	CD247	919	NM_198053	Down	602
190	SIGMAR1	10280	NM_005866	Down	502
191	SLC38A2	54407	NM_018976	Down	620
192	HLA-G	3135	NM_002127	Down	629
193	SDF4	51150	NM_016547	Down	630
194	CXCL12	6387	NM_199168	Down	645
195	MYOM3	127294	NM_152372	Down	648

TABLE 4: 288 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
196	PLS1	5357	NM_002670	Down	650
197	DKC1	1736	NM_001363	Down	656
198	RDH10	157506	NM_172037	Down	657
199	ZNF395	55893	NM_018660	Down	661
200	TUBB3	10381	NM_006086	Down	664
201	EEF1G	1937	NM_001404	Down	670
202	ADH7	131	NM_000673	Down	671
203	CCR7	1236	NM_001838	Down	684

204	LYPD2	137797	NM_205545	Down	691
205	RASIP1	54922	NM_017805	Down	693
206	MUC20	200958	NM_001098516	Down	700
207	TMEM159	57146	NM_020422	Down	702
208	MYH2	4620	NM_017534	Down	704
209	NA	NA	NM_001080840	Down	707
210	PCDH17	27253	NM_014459	Down	709
211	CXCL13	10563	NM_006419	Down	713
212	SNHG5	387066	NR_003038	Down	714
213	SORT1	6272	NM_002959	Down	716
214	FLNC	2318	NM_001458	Down	717
215	RHCG	51458	NM_016321	Down	720
216	MKNK2	2872	NM_017572	Down	723
217	NAPRT1	93100	NM_145201	Down	731
218	SLC24A3	57419	NM_020689	Down	732
219	HSD17B8	7923	NM_014234	Down	737
220	ALG1L	200810	NM_001015050	Down	643
221	DSC1	1823	NM_004948	Down	739
222	RNF149	284996	NM_173647	Down	744
223	IL1B	3553	NM_000576	Down	751
224	RNF141	50862	NM_016422	Down	753
225	PIGR	5284	NM_002644	Down	755
226	CEACAM6	4680	NM_002483	Down	756
227	ANKRD35	148741	NM_144698	Down	758
228	CYP4F12	66002	NM_023944	Down	768
229	NA	NA	XM_933085	Down	774
230	CHP1	11261	NM_007236	Down	775
231	NA	NA	XR_015626	Down	776
232	NDRG2	57447	NM_201539	Down	781
233	NAPSB	256236	NR_002798	Down	786
234	FAM129B	64855	NM_001035534	Down	788

TABLE 4: 288 gene signatures (N+ vs N0)

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
235	PGF	5228	NM_002632	Down	791
236	OPLAH	26873	NM_017570	Down	797
237	LRRC26	389816	NM_001013653	Down	761
238	KRT16	3868	NM_005557	Down	801
239	ECHDC2	55268	NM_018281	Down	812
240	VAV3	10451	NM_006113	Down	817
241	LOR	4014	NM_000427	Down	818
242	RGS2	5997	NM_002923	Down	820
243	KLK5	25818	NM_001077491	Down	821
244	ECM1	1893	NM_022664	Down	825
245	AQP9	366	NM_020980	Down	827
246	CRNN	49860	NM_016190	Down	832

247	KRT13	3860	NM_002274	Down	837
248	ZC3H12A	80149	NM_025079	Down	838
249	NA	NA	XR_038043	Down	842
250	IRAK1	3654	NM_001025243	Down	844
251	MPZL2	10205	NM_144765	Down	845
252	TFF3	7033	NM_003226	Down	848
253	KRT2	3849	NM_000423	Down	850
254	ARRDC4	91947	NM_183376	Down	851
255	FABP4	2167	NM_001442	Down	853
256	CA2	760	NM_000067	Down	865
257	BPIFB1	92747	NM_033197	Down	866
258	MAOA	4128	NM_000240	Down	869
259	HMGCS1	3157	NM_002130	Down	870
260	NLRX1	79671	NM_170722	Down	871
261	NA	NA	XM_938166	Down	872
262	CLCA2	9635	NM_006536	Down	873
263	NLGN4X	57502	NM_020742	Down	884
264	ALDH3A1	218	NM_000691	Down	886
265	NA	NA	XR_015937	Down	892
266	FABP5P3	220832	NR_002935	Down	893
267	UPK1A	11045	NM_007000	Down	895
268	SERPINB2	5055	NM_002575	Down	896
269	HOMER2	9455	NM_199331	Down	898
270	FABP5	2171	NM_001444	Down	907
271	VSIG8	391123	NM_001013661	Down	908
272	AIF1L	83543	NM_031426	Down	874
273	SERPINB2	5055	NM_002575	Down	896

TABLE 4: 288 gene signatures (N+ vs N0)

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
274	CLIC3	9022	NM_004669	Down	916
275	SPRR2G	6706	NM_001014291	Down	919
276	FABP5	2171	NM_001444	Down	907
277	JMJD7-PLA2G4B	8681	NM_005090	Down	930
278	NA	NA	XM_937508	Down	931
279	PLA2G3	50487	NM_015715	Down	934
280	CSTA	1475	NM_005213	Down	935
281	NA	NA	XR_017543	Down	687
282	CDSN	1041	NM_001264	Down	941
283	DEFB103B	55894	NM_018661	Down	942
284	SPINK6	404203	NM_205841	Down	947
285	DEFB103A	414325	NM_001081551	Down	952
286	SPINK6	404203	NM_205841	Down	947
287	TGM3	7053	NM_003245	Down	955
288	NA	NA	XM_926530	Down	957

Table 5

Signature of 34 differentially (N+ versus N0) expressed genes

TABLE 5: 34 gene signatures (N+ vs N0)

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
1	HLA-DRB5	3127	NM_002125	Up	6
2	AXL	558	NM_021913	Up	11
3	DCBLD2	131566	NM_080927	Up	15
4	TGFBI	7045	NM_000358	Up	24
5	NA	NA	XM_941434	Up	38
6	EPSTI1	94240	NM_033255	Up	79
7	CKS2	1164	NM_001827	Up	82
8	NA	NA	XR_037845	Up	83
9	CXCL11	6373	NM_005409	Up	103
10	MELK	9833	NM_014791	Up	109
11	CAP2	10486	NM_006366	Up	110
12	BIRC2	329	NM_001166	Up	113
13	PTGR1	22949	NM_012212	Up	122
14	PTGR1	22949	NM_012212	Up	122
15	FJX1	24147	NM_014344	Up	143
16	RRAGD	58528	NM_021244	Up	183
17	EXOSC3	51010	NM_016042	Up	208
18	LAMP5	24141	NM_012261	Up	301
19	FDCSP	260436	NM_152997	Up	313
20	RIOK3	8780	NM_003831	Up	322
21	ACP5	54	NM_001611	Up	420
22	HRASLS	57110	NM_020386	Down	575
23	CXCL12	6387	NM_199168	Down	645
24	HSD17B8	7923	NM_014234	Down	737
25	CEACAM6	4680	NM_002483	Down	756
26	OPLAH	26873	NM_017570	Down	797
27	ECHDC2	55268	NM_018281	Down	812
28	IRAK1	3654	NM_001025243	Down	844
29	MPZL2	10205	NM_144765	Down	845
30	BPIFB1	92747	NM_033197	Down	866
31	ALDH3A1	218	NM_000691	Down	886
32	SERPINB2	5055	NM_002575	Down	896
33	SPRR2G	6706	NM_001014291	Down	919
34	DEFB103B	55894	NM_018661	Down	942

Table 6

Prediction Accuracy/Sensitivity

Prediction of Train Sample (n=236):

Number of Gene : 288				
Class	Sensitivity	Specificity	PPV	NPV
N0	0.991	0.946	0.953	0.99
N+	0.946	0.991	0.99	0.953

Prediction of Test Sample (n=50):

Number of Gene : 288				
Class	Sensitivity	Specificity	PPV	NPV
N0	0.851	0.826	0.851	0.826
N+	0.826	0.851	0.826	0.851

Prediction of [N0 ---> N+] (n=10):

Number of Gene : 288				
Class	Sensitivity	Specificity	PPV	NPV
N+	1.00	1.00	1.00	1.00

Prediction of Train Sample (n=236):

Number of Gene : 34				
Class	Sensitivity	Specificity	PPV	NPV
N0	0.959	0.955	0.959	0.955
N+	0.955	0.959	0.955	0.9539

Prediction of Test Sample (n=50):

Number of Gene : 34				
Class	Sensitivity	Specificity	PPV	NPV
N0	0.778	0.869	0.875	0.769
N+	0.869	0.778	0.769	0.875

Prediction of [N0 ---> N+] (n=10):

Number of Gene : 34				
Class	Sensitivity	Specificity	PPV	NPV
N+	1	1	1	1

Table 7

957 Gene Signatures [N+ vs N0]

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
1	MMP7	4316	NM_002423	Up	1
2	PLOD2	5352	NM_000935	Up	2
3	SPP1	6696	NM_000582	Up	3
4	THBS1	7057	NM_003246	Up	4
5	MMP10	4319	NM_002425	Up	5
6	HLA-DRB5	3127	NM_002125	Up	6
7	COL5A1	1289	NM_000093	Up	7

8	SPP1	6696	NM_001040058	Up	8
9	FST	10468	NM_013409	Up	9
10	MMP11	4320	NM_005940	Up	10
11	AXL	558	NM_021913	Up	11
12	LAMC2	3918	NM_005562	Up	12
13	CLDN1	9076	NM_021101	Up	13
14	LAMC2	3918	NM_005562	Up	14
15	DCBLD2	131566	NM_080927	Up	15
16	CTGF	1490	NM_001901	Up	16
17	SERPINE1	5054	NM_000602	Up	17
18	LAMB3	3914	NM_000228	Up	18
19	CYR61	3491	NM_001554	Up	19
20	SULF1	23213	NM_015170	Up	20
21	CTGF	1490	NM_001901	Up	21
22	F3	2152	NM_001993	Up	22
23	HLA-DRB1	3123	NM_002124	Up	23
24	TGFBI	7045	NM_000358	Up	24
25	COL22A1	169044	NM_152888	Up	25
26	ACKR3	57007	NM_001047841	Up	26
27	COL11A1	1301	NM_001854	Up	27
28	DCBLD2	131566	NM_080927	Up	28
29	COL5A2	1290	NM_000393	Up	29
30	COL1A2	1278	NM_000089	Up	30
31	KANK4	163782	NM_181712	Up	31
32	AXL	558	NM_021913	Up	32
33	MMP12	4321	NM_002426	Up	33
34	IFI44L	10964	NM_006820	Up	34
35	ACKR3	57007	NM_020311	Up	35
36	MYADM	91663	NM_001020820	Up	36
37	TPM1	7168	NM_001018020	Up	37
38	NA	NA	XM_941434	Up	38
39	FBXO32	114907	NM_148177	Up	39

TABLE 7: 957 gene signatures (N+ vs N0)

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
40	TPM1	7168	NM_001018004	Up	40
41	CAV1	857	NM_001753	Up	41
42	IFI6	2537	NM_022872	Up	42
43	NA	NA	XM_942302	Up	43
44	MMP13	4322	NM_002427	Up	44
45	COL1A2	1278	NM_000089	Up	45
46	LGALS1	3956	NM_002305	Up	46
47	CTSV	1515	NM_001333	Up	47
48	FST	10468	NM_006350	Up	48
49	NA	NA	XM_001713938	Up	49
50	IFIT2	3433	NM_001547	Up	50

51	DCBLD1	285761	NM_173674	Up	51
52	RTTN	25914	NM_173630	Up	52
53	CAV2	858	NM_001233	Up	53
54	IFIT3	3437	NM_001549	Up	54
55	LUM	4060	NM_002345	Up	55
56	C1QC	714	NM_172369	Up	56
57	CCL5	6352	NM_002985	Up	57
58	OLR1	4973	NM_002543	Up	58
59	CTSK	1513	NM_000396	Up	59
60	FNDC3B	64778	NM_001135095	Up	60
61	FNDC3B	64778	NM_022763	Up	61
62	SERPINH1	871	NM_001235	Up	62
63	CHGB	1114	NM_001819	Up	63
64	MXRA5	25878	NM_015419	Up	64
65	FBXO32	114907	NM_058229	Up	65
66	P4HA2	8974	NM_001017973	Up	66
67	NA	NA	XM_936253	Up	67
68	ACTA1	58	NM_001100	Up	68
69	RARRES3	5920	NM_004585	Up	69
70	ISG15	9636	NM_005101	Up	70
71	APOE	348	NM_000041	Up	71
72	CXCL10	3627	NM_001565	Up	72
73	COL8A1	1295	NM_020351	Up	73
74	PRSS23	11098	NM_007173	Up	74
75	MMP3	4314	NM_002422	Up	75
76	FSTL1	11167	NM_007085	Up	76
77	THBS4	7060	NM_003248	Up	77
78	COL10A1	1300	NM_000493	Up	78

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
79	EPSTI1	94240	NM_033255	Up	79
80	LY6E	4061	NM_002346	Up	80
81	C12orf75	387882	NM_207376	Up	81
82	CKS2	1164	NM_001827	Up	82
83	NA	NA	XR_037845	Up	83
84	LEPREL1	55214	NM_018192	Up	84
85	P4HA2	8974	NM_001017974	Up	85
86	FLRT2	23768	NM_013231	Up	86
87	GBP5	115362	NM_052942	Up	87
88	CMTM3	123920	NM_144601	Up	88
89	CTSC	1075	NM_001814	Up	89
90	NA	NA	XM_939003	Up	90
91	PFN2	5217	NM_053024	Up	91
92	IFIT3	3437	NM_001031683	Up	92
93	IFIT3	3437	NM_001031683	Up	93

94	MT2A	4502	NM_005953	Up	94
95	ITGA5	3678	NM_002205	Up	95
96	MAMDC2	256691	NM_153267	Up	96
97	CCL5	6352	NM_002985	Up	97
98	C1QB	713	NM_000491	Up	98
99	NA	NA	XM_941665	Up	99
100	AMTN	401138	NM_212557	Up	100
101	EMP3	2014	NM_001425	Up	101
102	ZMYM6	9204	NM_007167	Up	102
103	CXCL11	6373	NM_005409	Up	103
104	COL6A3	1293	NM_057165	Up	104
105	FILIP1L	11259	NM_014890	Up	105
106	GAS1	2619	NM_002048	Up	106
107	SRGN	5552	NM_002727	Up	107
108	TUBB	203068	NM_178014	Up	108
109	MELK	9833	NM_014791	Up	109
110	CAP2	10486	NM_006366	Up	110
111	TNFAIP3	7128	NM_006290	Up	111
112	SULF2	55959	NM_018837	Up	112
113	BIRC2	329	NM_001166	Up	113
114	FKBP11	51303	NM_016594	Up	114
115	HLA-F	3134	NM_001098479	Up	115
116	FKBP14	55033	NM_017946	Up	116
117	SCG5	6447	NM_003020	Up	117

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
118	CCL2	6347	NM_002982	Up	118
119	OAS1	4938	NM_001032409	Up	119
120	SLC38A5	92745	NM_033518	Up	120
121	APP	351	NM_201414	Up	121
122	PTGR1	22949	NM_012212	Up	122
123	OAS1	4938	NM_001032409	Up	123
124	PTGR1	22949	NM_012212	Up	124
125	ABCA1	19	NM_005502	Up	125
126	CSF2	1437	NM_000758	Up	126
127	DNAJA1	3301	NM_001539	Up	127
128	OAT	4942	NM_000274	Up	128
129	ADAMDEC1	27299	NM_014479	Up	129
130	IL7R	3575	NM_002185	Up	130
131	APOC1	341	NM_001645	Up	131
132	CDH11	1009	NM_001797	Up	132
133	MMP1	4312	NM_002421	Up	133
134	SRGN	5552	NM_002727	Up	134
135	NA	NA	XM_936128	Up	135
136	NRG1	3084	AF176921	Up	136

137	PTHLH	5744	NM_198965	Up	137
138	SAA1	6288	NM_199161	Up	138
139	COL16A1	1307	NM_001856	Up	139
140	GLIPR1	11010	NM_006851	Up	140
141	MYL1	4632	NM_079422	Up	141
142	PTK2	5747	NM_005607	Up	142
143	FJX1	24147	NM_014344	Up	143
144	IGFBP3	3486	NM_000598	Up	144
145	PDLIM3	27295	NM_014476	Up	145
146	IGLL1	3543	NM_020070	Up	146
147	IMPAD1	54928	NM_017813	Up	147
148	GSTO2	119391	NM_183239	Up	148
149	PPP1R3C	5507	NM_005398	Up	149
150	UBD	10537	NM_006398	Up	150
151	MELK	9833	NM_014791	Up	151
152	COL3A1	1281	NM_000090	Up	152
153	GBP4	115361	NM_052941	Up	153
154	CCL20	6364	NM_004591	Up	154
155	MT1E	4493	NM_175617	Up	155
156	SFRP1	6422	NM_003012	Up	156

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
157	APP	351	NM_201414	Up	157
158	LAPTM4B	55353	NM_018407	Up	158
159	NA	NA	XM_001719804	Up	159
160	SCRN1	9805	NM_014766	Up	160
161	CCDC50	152137	NM_174908	Up	161
162	SERPING1	710	NM_001032295	Up	162
163	C1S	716	NM_001734	Up	163
164	ANXA5	308	NM_001154	Up	164
165	KRT19	3880	NM_002276	Up	165
166	FADS1	3992	NM_013402	Up	166
167	TTN	7273	NM_133378	Up	167
168	SPARC	6678	NM_003118	Up	168
169	AK4	205	AK026966	Up	169
170	CCL8	6355	NM_005623	Up	170
171	CST1	1469	NM_001898	Up	171
172	GUCY1A3	2982	NM_000856	Up	172
173	CDK6	1021	NM_001259	Up	173
174	NA	NA	XM_377426	Up	174
175	SP110	3431	NM_004510	Up	175
176	POSTN	10631	NM_006475	Up	176
177	CDK1	983	NM_001786	Up	177
178	DSP	1832	NM_004415	Up	178
179	LAPTM4B	55353	NM_018407	Up	179

180	HLA-F	3134	NM_018950	Up	180
181	SDHA	6389	NM_004168	Up	181
182	IGFBP3	3486	NM_001013398	Up	182
183	RRAGD	58528	NM_021244	Up	183
184	BGN	633	NM_001711	Up	184
185	NA	NA	XM_374020	Up	185
186	ATP1B1	481	NM_001677	Up	186
187	NA	NA	XR_016048	Up	187
188	ADORA2B	136	NM_000676	Up	188
189	ATP1B1	481	NM_001677	Up	189
190	FGL2	10875	NM_006682	Up	190
191	PRNP	5621	NM_183079	Up	191
192	STAT1	6772	NM_007315	Up	192
193	RAB32	10981	NM_006834	Up	193
194	IGFBP5	3488	NM_000599	Up	194
195	KRT4	3851	NM_002272	Up	195

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
196	ATP1B1	481	NM_001001787	Up	196
197	KLF9	687	NM_001206	Up	197
198	STAT1	6772	NM_139266	Up	198
199	OSBPL1A	114876	NM_080597	Up	199
200	FADD	8772	NM_003824	Up	200
201	THY1	7070	NM_006288	Up	201
202	VCAM1	7412	NM_001078	Up	202
203	RSAD2	91543	NM_080657	Up	203
204	NA	NA	XM_938277	Up	204
205	SLC25A4	291	NM_001151	Up	205
206	TCEB1	6921	NM_005648	Up	206
207	VCAN	1462	NM_004385	Up	207
208	EXOSC3	51010	NM_016042	Up	208
209	LGALS3BP	3959	NM_005567	Up	209
210	NA	NA	XM_001133190	Up	210
211	THBS2	7058	NM_003247	Up	211
212	SLC20A1	6574	NM_005415	Up	212
213	CKS2	1164	NM_001827	Up	213
214	CHI3L1	1116	NM_001276	Up	214
215	RANBP1	5902	NM_002882	Up	215
216	MGME1	92667	NM_052865	Up	216
217	ZBP1	81030	NM_030776	Up	217
218	ST3GAL5	8869	NM_001042437	Up	218
219	OAS2	4939	NM_002535	Up	219
220	NA	NA	XM_932678	Up	220
221	RBBP8	5932	NM_203291	Up	221
222	AAED1	195827	NM_153698	Up	222

223	HSPB3	8988	NM_006308	Up	223
224	OLFML2A	169611	NM_182487	Up	224
225	MAD2L1	4085	NM_002358	Up	225
226	MGP	4256	NM_000900	Up	226
227	NA	NA	NM_006674	Up	227
228	HLA-DRA	3122	NM_019111	Up	228
229	TNFSF13B	10673	NM_006573	Up	229
230	PLAUR	5329	NM_001005376	Up	230
231	PON2	5445	NM_000305	Up	231
232	MYH10	4628	NM_005964	Up	232
233	KDELR2	11014	NM_006854	Up	233
234	MX1	4599	NM_002462	Up	234

TABLE 7: 957 gene signatures (N+ vs N0)

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
235	CMTM7	112616	NM_181472	Up	235
236	HPRT1	3251	NM_000194	Up	236
237	HLA-DRB4	3126	NM_021983	Up	237
238	CD74	972	NM_001025159	Up	238
239	TGFB3	7043	NM_003239	Up	239
240	NXT1	29107	NM_013248	Up	240
241	MYL2	4633	NM_000432	Up	241
242	MOB3B	79817	NM_024761	Up	242
243	IFITM3	10410	NM_021034	Up	243
244	PTK7	5754	NM_152880	Up	244
245	GNLY	10578	NM_012483	Up	245
246	NA	NA	XR_016363	Up	246
247	HSPH1	10808	NM_006644	Up	247
248	C3orf14	57415	NM_020685	Up	248
249	MED10	84246	NM_032286	Up	249
250	CAMK1G	57172	NM_020439	Up	250
251	CDKN2A	1029	NM_000077	Up	251
252	DCUN1D5	84259	NM_032299	Up	252
253	CDKN2A	1029	NM_058195	Up	253
254	GZMA	3001	NM_006144	Up	254
255	CTSZ	1522	NM_001336	Up	255
256	C1QTNF1	114897	NM_198594	Up	256
257	OASL	8638	NM_198213	Up	257
258	EXOSC3	51010	NM_016042	Up	258
259	MGP	4256	NM_000900	Up	259
260	NREP	9315	NM_004772	Up	260
261	SLC25A4	291	NM_001151	Up	261
262	CCL13	6357	NM_005408	Up	262
263	TNFRSF21	27242	NM_014452	Up	263
264	ARPC1B	10095	NM_005720	Up	264
265	GPR68	8111	NM_003485	Up	265

266	ADM	133	NM_001124	Up	266
267	CCNB2	9133	NM_004701	Up	267
268	CKLF	51192	NM_001040139	Up	268
269	FTH1P2	2497	NR_002200	Up	269
270	ALDH3A2	224	NM_000382	Up	270
271	NOP56	10528	NM_006392	Up	271
272	CTSL	1514	NM_001912	Up	272
273	SERPINA3	12	NM_001085	Up	273

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
274	PLXNA1	5361	NM_032242	Up	274
275	ITM2C	81618	NM_001012516	Up	275
276	IGLL3P	91353	NM_001013618	Up	276
277	TAP1	6890	NM_000593	Up	277
278	C1QA	712	NM_015991	Up	278
279	FOXD1	2297	NM_004472	Up	279
280	IL8	3576	NM_000584	Up	280
281	HLA-H	3136	NR_001434	Up	281
282	NA	NA	XR_038054	Up	282
283	SNRPB2	6629	NM_198220	Up	283
284	TACC2	10579	NM_206861	Up	284
285	C11orf82	220042	NM_145018	Up	285
286	HEYL	26508	NM_014571	Up	286
287	DIO2	1734	NM_001007023	Up	287
288	CCDC147	159686	NM_001008723	Up	288
289	TNNT3	7140	NM_001042780	Up	289
290	FBN2	2201	NM_001999	Up	290
291	SP100	6672	NM_001080391	Up	291
292	PSMA6	5687	NM_002791	Up	292
293	FEZ1	9638	NM_005103	Up	293
294	NTM	50863	NM_001048209	Up	294
295	PHLDB2	90102	NM_145753	Up	295
296	CDK12	51755	NM_016507	Up	296
297	SUGCT	79783	NM_024728	Up	297
298	NA	NA	XR_018793	Up	298
299	SORBS2	8470	NM_003603	Up	299
300	NA	NA	XR_039632	Up	300
301	LAMP5	24141	NM_012261	Up	301
302	MDK	4192	NM_001012334	Up	302
303	NA	NA	XR_039076	Up	303
304	CXCL1	2919	NM_001511	Up	304
305	CA3	761	NM_005181	Up	305
306	NA	NA	XM_001720835	Up	306
307	IGFL2	147920	NM_001002915	Up	307
308	PCYOX1	51449	NM_016297	Up	308

309	PGM1	5236	NM_002633	Up	309
310	CD69	969	NM_001781	Up	310
311	C15orf52	388115	NM_207380	Up	311
312	FETUB	26998	NM_014375	Up	312

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
313	FDCSP	260436	NM_152997	Up	313
314	MB	4151	NM_005368	Up	314
315	MB	4151	NM_005368	Up	315
316	PSMB8	5696	NM_148919	Up	316
317	SRPK2	6733	NM_182691	Up	317
318	NA	NA	XM_001714074	Up	318
319	PPP1R14C	81706	NM_030949	Up	319
320	SLN	6588	NM_003063	Up	320
321	STC1	6781	NM_003155	Up	321
322	RIOK3	8780	NM_003831	Up	322
323	CPA4	51200	NM_016352	Up	323
324	PSMD12	5718	NM_002816	Up	324
325	FXYD5	53827	NM_014164	Up	325
326	ANXA11	311	NM_001157	Up	326
327	OLFML2B	25903	NM_015441	Up	327
328	NA	NA	XM_001128725	Up	328
329	C1orf74	148304	NM_152485	Up	329
330	QDPR	5860	NM_000320	Up	330
331	ASAP1	50807	NM_018482	Up	331
332	GLDC	2731	NM_000170	Up	332
333	JAG2	3714	NM_002226	Up	333
334	HMMR	3161	NM_012485	Up	334
335	PTK7	5754	NM_152882	Up	335
336	CSAG3	389903	NM_203311	Up	336
337	HLA-A	3105	NM_002116	Up	337
338	COL17A1	1308	NM_000494	Up	338
339	MGLL	11343	NM_007283	Up	339
340	CRYAB	1410	NM_001885	Up	340
341	ACOT9	23597	NM_001033583	Up	341
342	CADM1	23705	NM_014333	Up	342
343	BCAS4	55653	NM_017843	Up	343
344	NA	NA	XM_929980	Up	344
345	MTIF3	219402	NM_152912	Up	345
346	STK3	6788	NM_006281	Up	346
347	NA	NA	XM_001129441	Up	347
348	TEAD2	8463	NM_003598	Up	348
349	PLA2G4C	8605	NM_003706	Up	349
350	MX2	4600	NM_002463	Up	350
351	IFI16	3428	NM_005531	Up	351

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
352	HIST1H2BD	3017	NM_138720	Up	352
353	CTSC	1075	NM_001814	Up	353
354	ATL3	25923	NM_015459	Up	354
355	CAT	847	NM_001752	Up	355
356	TRNP1	388610	NM_001013642	Up	356
357	NUTF2	10204	NM_005796	Up	357
358	CFB	629	NM_001710	Up	358
359	NQO1	1728	NM_000903	Up	359
360	IGFBP5	3488	NM_000599	Up	360
361	NA	NA	XM_942419	Up	361
362	PIM2	11040	NM_006875	Up	362
363	LCP1	3936	NM_002298	Up	363
364	RN7SK	125050	NR_001445	Up	364
365	IFI6	2537	NM_022873	Up	365
366	PHF5A	84844	NM_032758	Up	366
367	DNAJA4	55466	NM_018602	Up	367
368	TYROBP	7305	NM_003332	Up	368
369	NA	NA	XR_037336	Up	369
370	FEZ1	9638	NM_022549	Up	370
371	NA	NA	XR_015946	Up	371
372	ANGPTL4	51129	NM_139314	Up	372
373	SDR16C5	195814	NM_138969	Up	373
374	NFIB	4781	NM_005596	Up	374
375	NKD2	85409	NM_033120	Up	375
376	ULBP2	80328	NM_025217	Up	376
377	SOD2	6648	NM_001024466	Up	377
378	CD38	952	NM_001775	Up	378
379	VMP1	81671	NM_030938	Up	379
380	CENPW	387103	NM_001012507	Up	380
381	ALG3	10195	NM_005787	Up	381
382	ITGB4	3691	NM_001005731	Up	382
383	BMP1	649	NM_006129	Up	383
384	PSMA4	5685	NM_002789	Up	384
385	NRIP1	8204	NM_003489	Up	385
386	SERPINB6	5269	NM_004568	Up	386
387	EIF4E3	317649	NM_173359	Up	387
388	PCNT	5116	NM_006031	Up	388
389	CYBA	1535	NM_000101	Up	389
390	HLA-A	3105	NM_002116	Up	390

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
391	PHGDH	26227	NM_006623	Up	391
392	NA	NA	XR_018747	Up	392

393	EDN1	1906	NM_001955	Up	393
394	HIBADH	11112	NM_152740	Up	394
395	FBXO3	26273	NM_012175	Up	395
396	ATP6V0B	533	NM_001039457	Up	396
397	MCOLN2	255231	NM_153259	Up	397
398	TFRC	7037	NM_003234	Up	398
399	GSTA1	2938	NM_145740	Up	399
400	CERS2	29956	NM_181746	Up	400
401	C14orf159	80017	NM_024952	Up	401
402	PFKM	5213	NM_000289	Up	402
403	NA	NA	XR_017711	Up	403
404	CYBRD1	79901	NM_024843	Up	404
405	IL2RB	3560	NM_000878	Up	405
406	CHN1	1123	NM_001025201	Up	406
407	KRT15	3866	NM_002275	Up	407
408	OAS1	4938	NM_002534	Up	408
409	BTN3A2	11118	NM_007047	Up	409
410	CCL3L3	414062	NM_001001437	Up	410
411	FAT1	2195	NM_005245	Up	411
412	CCRN4L	25819	NM_012118	Up	412
413	TSPAN3	10099	NM_005724	Up	413
414	LIMCH1	22998	NM_014988	Up	414
415	NINJ2	4815	NM_016533	Up	415
416	FCGBP	8857	NM_003890	Up	416
417	HIST2H2AA4	723790	NM_001040874	Up	417
418	H19	283120	NR_002196	Up	418
419	TSPAN7	7102	NM_004615	Up	419
420	ACP5	54	NM_001611	Up	420
421	CCDC23	374969	NM_199342	Up	421
422	NA	NA	XR_015662	Up	422
423	CYB5A	1528	NM_001914	Up	423
424	FNDC1	84624	NM_032532	Up	424
425	TMEM184B	25829	NM_012264	Up	425
426	NEB	4703	NM_004543	Up	426
427	GANAB	23193	NM_198334	Up	427
428	CYB5A	1528	NM_001914	Up	428
429	FHL1	2273	NM_001449	Up	429

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
430	COL18A1	80781	NM_130445	Up	430
431	HSP90AA1	3320	NM_005348	Up	431
432	MGST1	4257	NM_145792	Up	432
433	TNNI2	7136	NM_003282	Up	433
434	NIPAL1	152519	NM_207330	Up	434
435	ALDH3A2	224	NM_001031806	Up	435

436	XAF1	54739	NM_199139	Up	436
437	SF3B3	23450	NM_012426	Up	437
438	ERAP2	64167	NM_022350	Up	438
439	CPNE1	8904	NM_152931	Up	439
440	SLC35A2	7355	NM_001032289	Up	440
441	ADH1A	124	NM_000667	Up	441
442	MYLPF	29895	NM_013292	Up	442
443	GSTT1	2952	NM_000853	Up	443
444	TMEM132A	54972	NM_178031	Up	444
445	KCTD3	51133	NM_016121	Up	445
446	MGLL	11343	NM_007283	Up	446
447	ERMP1	79956	NM_024896	Up	447
448	RER1	11079	NM_007033	Up	448
449	NA	NA	NM_001077593	Up	449
450	NA	NA	XM_001128032	Up	450
451	C4orf3	401152	NM_001001701	Up	451
452	ZBED2	79413	NM_024508	Up	452
453	ERO1L	30001	NM_014584	Up	453
454	ABLIM2	84448	NM_032432	Up	454
455	CPNE1	8904	NM_152931	Up	455
456	ALDOC	230	NM_005165	Up	456
457	NA	NA	XM_496143	Up	457
458	PTRH2	51651	NM_016077	Up	458
459	CITED2	10370	NM_006079	Up	459
460	CD8A	925	NM_171827	Up	460
461	PRKCQ	5588	NM_006257	Up	461
462	HLA-H	3136	NR_001434	Up	462
463	NA	NA	XM_498510	Up	463
464	DDAH1	23576	NM_012137	Up	464
465	BATF2	116071	NM_138456	Up	465
466	PSMA6	5687	NM_002791	Up	466
467	TJP1	7082	NM_003257	Up	467
468	FITM1	161247	NM_203402	Up	468

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
469	FEN1	2237	NM_004111	Up	469
470	MDH1	4190	NM_005917	Up	470
471	SPI1	6688	NM_001080547	Up	471
472	FAM134B	54463	NM_001034850	Up	472
473	ACAT1	38	NM_000019	Up	473
474	CECR1	51816	NM_177405	Up	474
475	RN7SK	125050	NR_001445	Up	475
476	IFNGR2	3460	NM_005534	Up	476
477	PSME2	5721	NM_002818	Up	477
478	LILRB3	11025	NM_006864	Up	478

479	CIDEC	63924	NM_022094	Up	479
480	USO1	8615	NM_003715	Up	480
481	GJB4	127534	NM_153212	Up	481
482	MAPRE1	22919	NM_012325	Up	482
483	PROCR	10544	NM_006404	Up	483
484	NA	NA	XM_001129280	Up	484
485	SLC7A5	8140	NM_003486	Up	485
486	HIST1H2BK	85236	NM_080593	Up	486
487	ABI3BP	25890	NM_015429	Up	487
488	FAT1	2195	NM_005245	Up	488
489	PI15	51050	NM_015886	Up	489
490	SOCS1	8651	NM_003745	Up	490
491	KLF4	9314	NM_004235	Up	491
492	TACC2	10579	NM_006997	Up	492
493	CTSH	1512	NM_004390	Up	493
494	CNTNAP2	26047	NM_014141	Up	494
495	COMMD2	51122	NM_016094	Up	495
496	AHSA1	10598	NM_012111	Up	496
497	ITPR3	3710	NM_002224	Up	497
498	GPR56	9289	NM_201525	Up	498
499	TMEM45B	120224	NM_138788	Up	499
500	LRIG1	26018	NM_015541	Up	500
501	KLHDC2	23588	NM_014315	Up	501
502	SIGMAR1	10280	NM_005866	Up	502
503	GCHFR	2644	NM_005258	Up	503
504	ADAM8	101	NM_001109	Up	504
505	CPVL	54504	NM_019029	Up	505
506	PCYOX1	51449	NM_016297	Up	506
507	TMPRSS11B	132724	NM_182502	Up	507

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
508	CDH3	1001	NM_001793	Up	508
509	LRRC17	10234	NM_005824	Up	509
510	AMFR	267	NM_001144	Up	510
511	LAMP2	3920	NM_002294	Up	511
512	PGK1	5230	NM_000291	Up	512
513	SUOX	6821	NM_000456	Up	513
514	TRIB2	28951	NM_021643	Up	514
515	MYH1	4619	NM_005963	Up	515
516	NA	NA	AK091904	Up	516
517	NA	NA	XM_001713808	Up	517
518	N4BP2L2	10443	NM_033111	Up	518
519	SERPINB11	89778	NM_080475	Up	519
520	EDNRA	1909	NM_001957	Up	520
521	TRIM63	84676	NM_032588	Up	521

522	DGCR6	8214	NM_005675	Up	522
523	ETFB	2109	NM_001985	Up	523
524	GNS	2799	NM_002076	Up	524
525	DGCR6	8214	NM_005675	Up	525
526	HOXD11	3237	NM_021192	Up	526
527	BMP2	650	NM_001200	Up	527
528	CMBL	134147	NM_138809	Up	528
529	RHOC	389	NM_175744	Up	529
530	AGTRAP	57085	NM_001040194	Up	530
531	CD276	80381	NM_001024736	Up	531
532	PSMB4	5692	NM_002796	Up	532
533	TPD52L1	7164	NM_001003396	Up	533
534	HIST2H2AC	8338	NM_003517	Up	534
535	TMPRSS11A	339967	NM_182606	Up	535
536	NA	NA	BG205162	Up	536
537	HIST2H2AA3	8337	NM_003516	Up	537
538	SLC11A1	6556	NM_000578	Up	538
539	PALM	5064	NM_002579	Up	539
540	WWC1	23286	NM_015238	Up	540
541	LDOC1	23641	NM_012317	Up	541
542	NA	NA	XR_017149	Up	542
543	SRL	6345	NM_001098814	Up	543
544	MYLIP	29116	NM_013262	Up	544
545	TBC1D2B	23102	NM_015079	Up	545
546	PRF1	5551	NM_005041	Up	546

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
547	ATP5J	522	NM_001003703	Up	547
548	PSMA5	5686	NM_002790	Up	548
549	IRF8	3394	NM_002163	Up	549
550	N4BP2L2	10443	NM_033111	Up	550
551	GZMB	3002	NM_004131	Up	551
552	IL24	11009	NM_181339	Up	552
553	CXCL12	6387	NM_000609	Up	553
554	SNHG15	285958	AK096179	Up	554
555	TMOD4	29765	NM_013353	Up	555
556	SELM	140606	NM_080430	Down	556
557	CCL19	6363	NM_006274	Down	557
558	MEG3	55384	NR_002766	Down	558
559	KCTD3	51133	NM_016121	Down	559
560	C1orf116	79098	NM_023938	Down	560
561	SPON1	10418	NM_006108	Down	561
562	RNF165	494470	NM_152470	Down	562
563	CAPN5	726	NM_004055	Down	563
564	MTHFD1L	25902	NM_015440	Down	564

565	SLC25A34	284723	NM_207348	Down	565
566	RNU1-1	26871	NR_004430	Down	566
567	MCM6	4175	NM_005915	Down	567
568	CD83	9308	NM_001040280	Down	568
569	NFIA	4774	BX537823	Down	569
570	SERINC2	347735	NM_178865	Down	570
571	SVIL	6840	NM_003174	Down	571
572	PYGM	5837	NM_005609	Down	572
573	ALDH6A1	4329	NM_005589	Down	573
574	RORA	6095	NM_002943	Down	574
575	HRASLS	57110	NM_020386	Down	575
576	KRT33B	3884	NM_002279	Down	576
577	CMYA5	202333	NM_153610	Down	577
578	APOL3	80833	NM_145641	Down	578
579	CAPN3	825	NM_024344	Down	579
580	LSM5	23658	NM_012322	Down	580
581	TNFRSF4	7293	NM_003327	Down	581
582	KRT3	3850	NM_057088	Down	582
583	SBK1	388228	NM_001024401	Down	583
584	FAM83A	84985	NM_207006	Down	584
585	MUCL1	118430	NM_058173	Down	585

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
586	FLNA	2316	NM_001456	Down	586
587	LRRC75A-AS1	125144	NM_152350	Down	587
588	SCARA5	286133	NM_173833	Down	588
589	NA	NA	NM_001080848	Down	589
590	TMPRSS2	7113	NM_005656	Down	590
591	RPL22	6146	NM_000983	Down	591
592	MTMR10	54893	NM_017762	Down	592
593	IGJ	3512	NM_144646	Down	593
594	NA	NA	XM_942212	Down	594
595	NA	NA	XM_936731	Down	595
596	CD247	919	NM_000734	Down	596
597	COL15A1	1306	NM_001855	Down	597
598	FLRT3	23767	NM_198391	Down	598
599	HENMT1	113802	NM_144584	Down	599
600	ADSSL1	122622	NM_152328	Down	600
601	CAMSAP1	157922	NM_015447	Down	601
602	CD247	919	NM_198053	Down	602
603	GLIPR2	152007	NM_022343	Down	603
604	MYO5C	55930	NM_018728	Down	604
605	HNRNPL	3191	NM_001005335	Down	605
606	EFNB1	1947	NM_004429	Down	606
607	GBAS	2631	NM_001483	Down	607

608	MTSS1	9788	NM_014751	Down	608
609	CD3D	915	NM_000732	Down	609
610	C7orf55	154791	NM_197964	Down	610
611	S100A1	6271	NM_006271	Down	611
612	CYB561A3	220002	NM_153611	Down	612
613	CD3D	915	NM_001040651	Down	613
614	NA	NA	XM_926382	Down	614
615	FNTA	2339	NM_002027	Down	615
616	NUPR1	26471	NM_001042483	Down	616
617	SIGMAR1	10280	NM_005866	Down	617
618	TACC3	10460	NM_006342	Down	618
619	SMIM4	440957	NM_001124767	Down	619
620	SLC38A2	54407	NM_018976	Down	620
621	BEX2	84707	NM_032621	Down	621
622	C15orf48	84419	NM_032413	Down	622
623	FGGY	55277	NM_018291	Down	623
624	ASAP3	55616	NM_017707	Down	624

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
625	LIPG	9388	NM_006033	Down	625
626	HBA1	3039	NM_000558	Down	626
627	PFN1	5216	NM_005022	Down	627
628	GPX3	2878	NM_002084	Down	628
629	HLA-G	3135	NM_002127	Down	629
630	SDF4	51150	NM_016547	Down	630
631	C7orf55	154791	NM_197964	Down	631
632	HIST2H2AA3	8337	NM_003516	Down	632
633	LRP3	4037	NM_002333	Down	633
634	SPI1	6688	NM_003120	Down	634
635	HBEGF	1839	NM_001945	Down	635
636	IGFBP6	3489	NM_002178	Down	636
637	NA	NA	XM_944822	Down	637
638	UQCR10	29796	NM_013387	Down	638
639	FOXA1	3169	NM_004496	Down	639
640	MUSTN1	389125	NM_205853	Down	640
641	CDC42SE1	56882	NM_001038707	Down	641
642	PTGFRN	5738	NM_020440	Down	642
643	ALG1L	200810	NM_001015050	Down	643
644	SGSM2	9905	NM_014853	Down	644
645	CXCL12	6387	NM_199168	Down	645
646	FGGY	55277	NM_001113411	Down	646
647	CD36	948	NM_001001548	Down	647
648	MYOM3	127294	NM_152372	Down	648
649	TNFRSF6B	8771	NM_032945	Down	649
650	PLS1	5357	NM_002670	Down	650

651	TSPAN7	7102	NM_004615	Down	651
652	ELF5	2001	NM_198381	Down	652
653	TAGLN2	8407	NM_003564	Down	653
654	NA	NA	XR_038699	Down	654
655	ANPEP	290	NM_001150	Down	655
656	DKC1	1736	NM_001363	Down	656
657	RDH10	157506	NM_172037	Down	657
658	CASP1	834	NM_033294	Down	658
659	TMEM184A	202915	NM_001097620	Down	659
660	MYO1G	64005	NM_033054	Down	660
661	ZNF395	55893	NM_018660	Down	661
662	CRELD2	79174	NM_024324	Down	662
663	RPS6KA1	6195	NM_002953	Down	663

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
664	TUBB3	10381	NM_006086	Down	664
665	PLTP	5360	NM_182676	Down	665
666	RPS29	6235	NM_001030001	Down	666
667	NA	NA	XM_929985	Down	667
668	TCEA3	6920	NM_003196	Down	668
669	NA	NA	CR612552	Down	669
670	EEF1G	1937	NM_001404	Down	670
671	ADH7	131	NM_000673	Down	671
672	SMIM19	114926	NM_138436	Down	672
673	HOXB7	3217	NM_004502	Down	673
674	EMP1	2012	NM_001423	Down	674
675	LTBR	4055	NM_002342	Down	675
676	ADCY3	109	NM_004036	Down	676
677	FLG	2312	NM_002016	Down	677
678	PLEKHO2	80301	NM_025201	Down	678
679	IGFBP4	3487	NM_001552	Down	679
680	CBX7	23492	NM_175709	Down	680
681	NA	NA	XM_944816	Down	681
682	SCO2	9997	NM_005138	Down	682
683	PSMB10	5699	NM_002801	Down	683
684	CCR7	1236	NM_001838	Down	684
685	DGUOK	1716	NM_080916	Down	685
686	CXCL5	6374	NM_002994	Down	686
687	NA	NA	XR_017543	Down	687
688	TMEM254	80195	NM_025125	Down	688
689	KRT75	9119	NM_004693	Down	689
690	LOC80154	80154	NM_025084	Down	690
691	LYPD2	137797	NM_205545	Down	691
692	LINC00478	388815	NM_001005734	Down	692
693	RASIP1	54922	NM_017805	Down	693

694	KRT34	3885	NM_021013	Down	694
695	SLC2A9	56606	NM_001001290	Down	695
696	CWH43	80157	NM_025087	Down	696
697	HOOK2	29911	NM_013312	Down	697
698	EEF1A2	1917	NM_001958	Down	698
699	MCM5	4174	NM_006739	Down	699
700	MUC20	200958	NM_001098516	Down	700
701	PTPRZ1	5803	NM_002851	Down	701
702	TMEM159	57146	NM_020422	Down	702

TABLE 7: 957 gene signatures (N+ vs N0)

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
703	NA	NA	XM_001129173	Down	703
704	MYH2	4620	NM_017534	Down	704
705	PEBP1	5037	NM_002567	Down	705
706	AHNAK	79026	NM_024060	Down	706
707	NA	NA	NM_001080840	Down	707
708	RRP7A	27341	NM_015703	Down	708
709	PCDH17	27253	NM_014459	Down	709
710	SMPDL3A	10924	NM_006714	Down	710
711	AP2M1	1173	NM_004068	Down	711
712	KLF4	9314	NM_004235	Down	712
713	CXCL13	10563	NM_006419	Down	713
714	SNHG5	387066	NR_003038	Down	714
715	PPP1CB	5500	NM_206876	Down	715
716	SORT1	6272	NM_002959	Down	716
717	FLNC	2318	NM_001458	Down	717
718	NA	NA	XM_941544	Down	718
719	NA	NA	NM_001099662	Down	719
720	RHCG	51458	NM_016321	Down	720
721	LCN2	3934	NM_005564	Down	721
722	CYCS	54205	NM_018947	Down	722
723	MKNK2	2872	NM_017572	Down	723
724	MAPK6	5597	NM_002748	Down	724
725	PPP1R13B	23368	NM_015316	Down	725
726	TSPAN10	83882	NM_031945	Down	726
727	SPSB3	90864	NM_080861	Down	727
728	METTL21A	151194	NM_145280	Down	728
729	KYNU	8942	NM_001032998	Down	729
730	NDUFS7	374291	NM_024407	Down	730
731	NAPRT1	93100	NM_145201	Down	731
732	SLC24A3	57419	NM_020689	Down	732
733	NA	NA	XM_944104	Down	733
734	TOM1	10043	NM_005488	Down	734
735	ACOX2	8309	NM_003500	Down	735
736	CDKN1A	1026	NM_000389	Down	736

737	HSD17B8	7923	NM_014234	Down	737
738	ALG1L	200810	NM_001015050	Down	738
739	DSC1	1823	NM_004948	Down	739
740	EPHX3	79852	NM_024794	Down	740
741	DSC1	1823	NM_004948	Down	741

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
742	ECM1	1893	NM_004425	Down	742
743	PRR4	11272	NM_001098538	Down	743
744	RNF149	284996	NM_173647	Down	744
745	ACOT7	11332	NM_007274	Down	745
746	NA	NA	XM_001721497	Down	746
747	MYL5	4636	NM_002477	Down	747
748	CLCA4	22802	NM_012128	Down	748
749	ALDH4A1	8659	NM_170726	Down	749
750	CLDN7	1366	NM_001307	Down	750
751	IL1B	3553	NM_000576	Down	751
752	DANCR	57291	NR_024031	Down	752
753	RNF141	50862	NM_016422	Down	753
754	VAT1	10493	NM_006373	Down	754
755	PIGR	5284	NM_002644	Down	755
756	CEACAM6	4680	NM_002483	Down	756
757	CSRP2	1466	NM_001321	Down	757
758	ANKRD35	148741	NM_144698	Down	758
759	EPB41L4A-AS1	114915	NM_053000	Down	759
760	SFN	2810	NM_006142	Down	760
761	LRRC26	389816	NM_001013653	Down	761
762	AKR1C4	1109	NM_001818	Down	762
763	TPSB2	64499	NM_024164	Down	763
764	ID3	3399	NM_002167	Down	764
765	TNFRSF6B	8771	NM_032945	Down	765
766	SGK223	157285	NM_001080826	Down	766
767	CXCL6	6372	NM_002993	Down	767
768	CYP4F12	66002	NM_023944	Down	768
769	DMBT1	1755	NM_017579	Down	769
770	MGST2	4258	NM_002413	Down	770
771	ALPL	249	NM_000478	Down	771
772	GSTM3	2947	NM_000849	Down	772
773	AGR2	10551	NM_006408	Down	773
774	NA	NA	XM_933085	Down	774
775	CHP1	11261	NM_007236	Down	775
776	NA	NA	XR_015626	Down	776
777	HAS3	3038	NM_005329	Down	777
778	PTGES	9536	NM_004878	Down	778
779	NA	NA	XM_001134247	Down	779

780	LRRC20	55222	NM_018239	Down	780

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
781	NDRG2	57447	NM_201539	Down	781
782	RDH16	8608	NM_003708	Down	782
783	MAPKAPK3	7867	NM_004635	Down	783
784	AZGP1	563	NM_001185	Down	784
785	GBP6	163351	NM_198460	Down	785
786	NAPSB	256236	NR_002798	Down	786
787	SMTN	6525	NM_006932	Down	787
788	FAM129B	64855	NM_001035534	Down	788
789	STATH	6779	NM_001009181	Down	789
790	CHCHD10	400916	NM_213720	Down	790
791	PGF	5228	NM_002632	Down	791
792	CSAG1	158511	NM_153479	Down	792
793	CTNS	1497	NM_004937	Down	793
794	ACADVL	37	NM_001033859	Down	794
795	TP53INP2	58476	NM_021202	Down	795
796	GBP6	163351	NM_198460	Down	796
797	OPLAH	26873	NM_017570	Down	797
798	EPB41L3	23136	NM_012307	Down	798
799	LRRC26	389816	NM_001013653	Down	799
800	SEPP1	6414	NM_005410	Down	800
801	KRT16	3868	NM_005557	Down	801
802	ZNF750	79755	NM_024702	Down	802
803	TM4SF19	116211	NM_138461	Down	803
804	KLK5	25818	NM_012427	Down	804
805	SEMA4B	10509	NM_198925	Down	805
806	SASH1	23328	NM_015278	Down	806
807	BCAP31	10134	NM_005745	Down	807
808	BOLA2	552900	NM_001031827	Down	808
809	CBR3	874	NM_001236	Down	809
810	HBA2	3040	NM_000517	Down	810
811	APEX2	27301	NM_014481	Down	811
812	ECHDC2	55268	NM_018281	Down	812
813	KYNU	8942	NM_003937	Down	813
814	NA	NA	XM_939093	Down	814
815	SCEL	8796	NM_003843	Down	815
816	DUOX1	53905	NM_017434	Down	816
817	VAV3	10451	NM_006113	Down	817
818	LOR	4014	NM_000427	Down	818
819	NA	NA	XM_001718466	Down	819

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
820	RGS2	5997	NM_002923	Down	820

821	KLK5	25818	NM_001077491	Down	821
822	AIF1L	83543	NM_001002260	Down	822
823	CSF3R	1441	NM_172313	Down	823
824	SMOX	54498	NM_175840	Down	824
825	ECM1	1893	NM_022664	Down	825
826	CEACAM1	634	NM_001024912	Down	826
827	AQP9	366	NM_020980	Down	827
828	ATP10B	23120	NM_025153	Down	828
829	TGFBR3	7049	NM_003243	Down	829
830	FAM89A	375061	NM_198552	Down	830
831	PRSS3	5646	NM_002771	Down	831
832	CRNN	49860	NM_016190	Down	832
833	KAT2B	8850	NM_003884	Down	833
834	CCL15	6359	NM_032964	Down	834
835	POU3F1	5453	NM_002699	Down	835
836	TGM5	9333	NM_004245	Down	836
837	KRT13	3860	NM_002274	Down	837
838	ZC3H12A	80149	NM_025079	Down	838
839	NA	NA	XM_498725	Down	839
840	FDFT1	2222	NM_004462	Down	840
841	ELOVL4	6785	NM_022726	Down	841
842	NA	NA	XR_038043	Down	842
843	LOC644936	644936	NR_004845	Down	843
844	IRAK1	3654	NM_001025243	Down	844
845	MPZL2	10205	NM_144765	Down	845
846	MSRB1	51734	NM_016332	Down	846
847	STX19	415117	NM_001001850	Down	847
848	TFF3	7033	NM_003226	Down	848
849	MAL	4118	NM_022440	Down	849
850	KRT2	3849	NM_000423	Down	850
851	ARRDC4	91947	NM_183376	Down	851
852	NA	NA	XM_942669	Down	852
853	FABP4	2167	NM_001442	Down	853
854	NA	NA	XM_937200	Down	854
855	ASPG	374569	NM_001080464	Down	855
856	NA	NA	XM_001128906	Down	856
857	ASPRV1	151516	NM_152792	Down	857
858	PITX1	5307	NM_002653	Down	858

TABLE 7: 957 gene signatures (N+ vs N0)

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
859	NA	NA	XR_040455	Down	859
860	BTBD11	121551	NM_152322	Down	860
861	GPT2	84706	NM_133443	Down	861
862	ATP5D	513	NM_001687	Down	862
863	NA	NA	XR_016115	Down	863

864	NA	NA	XR_019567	Down	864
865	CA2	760	NM_000067	Down	865
866	BPIFB1	92747	NM_033197	Down	866
867	NIPAL4	348938	NM_001099287	Down	867
868	NA	NA	XM_001716725	Down	868
869	MAOA	4128	NM_000240	Down	869
870	HMGCS1	3157	NM_002130	Down	870
871	NLRX1	79671	NM_170722	Down	871
872	NA	NA	XM_938166	Down	872
873	CLCA2	9635	NM_006536	Down	873
874	AIF1L	83543	NM_031426	Down	874
875	PLBD1	79887	NM_024829	Down	875
876	MAPK3	5595	NM_002746	Down	876
877	FAM213A	84293	NM_032333	Down	877
878	IDH2	3418	NM_002168	Down	878
879	CFD	1675	NM_001928	Down	879
880	GSTM1	2944	NM_000561	Down	880
881	DBI	1622	NM_020548	Down	881
882	ADAP2	55803	NM_018404	Down	882
883	DUOX1	53905	NM_017434	Down	883
884	NLGN4X	57502	NM_020742	Down	884
885	MAPK13	5603	NM_002754	Down	885
886	ALDH3A1	218	NM_000691	Down	886
887	TRIM29	23650	NM_012101	Down	887
888	ANKRD22	118932	NM_144590	Down	888
889	PTGS2	5743	NM_000963	Down	889
890	NA	NA	XM_498969	Down	890
891	MAPK3	5595	NM_001040056	Down	891
892	NA	NA	XR_015937	Down	892
893	FABP5P3	220832	NR_002935	Down	893
894	DSG3	1830	NM_001944	Down	894
895	UPK1A	11045	NM_007000	Down	895
896	SERPINB2	5055	NM_002575	Down	896
897	KLK13	26085	NM_015596	Down	897

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
898	HOMER2	9455	NM_199331	Down	898
899	NA	NA	XR_019109	Down	899
900	SCNN1D	6339	NM_002978	Down	900
901	ODC1	4953	NM_002539	Down	901
902	SDCBP2	27111	NM_015685	Down	902
903	S100P	6286	NM_005980	Down	903
904	NA	NA	XM_001718864	Down	904
905	IL36G	56300	NM_019618	Down	905
906	NA	NA	XM_945799	Down	906

907	FABP5	2171	NM_001444	Down	907
908	VSIG8	391123	NM_001013661	Down	908
909	AIF1L	83543	NM_031426	Down	909
910	S100A12	6283	NM_005621	Down	910
911	NDUFA4L2	56901	NM_020142	Down	911
912	CYP4F22	126410	NM_173483	Down	912
913	CA2	760	NM_000067	Down	913
914	SERPINB2	5055	NM_002575	Down	914
915	HOPX	84525	NM_139212	Down	915
916	CLIC3	9022	NM_004669	Down	916
917	S100A7A	338324	NM_176823	Down	917
918	ZNF185	7739	NM_007150	Down	918
919	SPRR2G	6706	NM_001014291	Down	919
920	LY6G6C	80740	NM_025261	Down	920
921	S100A7	6278	NM_002963	Down	921
922	A2ML1	144568	NM_144670	Down	922
923	DSG1	1828	NM_001942	Down	923
924	SERPINB13	5275	NM_012397	Down	924
925	ADIRF	10974	NM_006829	Down	925
926	GDPD3	79153	NM_024307	Down	926
927	RAB25	57111	NM_020387	Down	927
928	FABP5	2171	NM_001444	Down	928
929	CALML3	810	NM_005185	Down	929
930	JMJD7-PLA2G4B	8681	NM_005090	Down	930
931	NA	NA	XM_937508	Down	931
932	TGM1	7051	NM_000359	Down	932
933	LYNX1	66004	NM_177458	Down	933
934	PLA2G3	50487	NM_015715	Down	934
935	CSTA	1475	NM_005213	Down	935
936	C9orf169	375791	NM_199001	Down	936

TABLE 7: 957 gene signatures [N+ vs N0]

Sl. No.	Gene Symbol	Entrez ID	Accession	Up/Down	Seq ID
937	NCCRP1	342897	NM_001001414	Down	937
938	NA	NA	XR_017543	Down	938
939	KLK11	11012	NM_144947	Down	939
940	SULT2B1	6820	NM_004605	Down	940
941	CDSN	1041	NM_001264	Down	941
942	DEFB103B	55894	NM_018661	Down	942
943	SPRR3	6707	NM_005416	Down	943
944	SPRR2C	6702	NR_003062	Down	944
945	SIAE	54414	NM_170601	Down	945
946	SPINK7	84651	NM_032566	Down	946
947	SPINK6	404203	NM_205841	Down	947
948	FAM25E	643479	XM_926802	Down	948
949	DEFB4A	1673	NM_004942	Down	949

950	NA	NA	XM_937044	Down	950
951	NA	NA	XM_926523	Down	951
952	DEFB103A	414325	NM_001081551	Down	952
953	SPINK6	404203	NM_205841	Down	953
954	NA	NA	XM_001128061	Down	954
955	TGM3	7053	NM_003245	Down	955
956	NA	NA	XM_937048	Down	956
957	NA	NA	XM_926530	Down	957

We Claim:

1. A chip for detection of head & neck cancer prognosis consisting of cDNA sequence complimentary to the nucleotide sequence having Seq id no. 1-957.

2. The method for microarray-based gene-expression assay conducted on a microarray chip as claimed in claim 1for quantifying the expression levels of signature biomarkers in a tumour biopsy material, such that the said method comprises steps of:

(a) preparing total RNA from a tumour sample (T);
(b) purifying the said RNA from samples (T) converting them to respective cDNA;
(c) characterized in converting the said cDNA of sample (T) into cRNA and labelling that cRNA with a fluorescent dye (selected from colours Red, Green, Blue, yellow) to obtain a flurorescent-labelled cRNA (fT);
(d) purifying the fluorescent labelled cRNAs (fT) from free, unreacted dye;
(e) hybridising the said fT as obtained in step (d) with oligonucleotide probes on the said microarray chip;
(f) washing the said chip after hybridization in order to remove excess, unbound fT, followed by processing and scanning using an array reader;
(g) the scanner generates fluorescent coloured image of the resultant spots due to hybridization of fT to the probes on the Chip.
(h) fluorescent spots for the colour assigned to fT is normalized and corrected against the background and non-specific (undesired) hybridization.
(i) the normalized values of the each fluorescent spot from the sample as obtained in (h) are matched with the pre-determined Hyperplane approximation as template (also called classifier template) to obtain the classified N0 and N+ samples.

3. The method as claimed in claim 2, wherein the microarray chip has a biomarker specific oligonucleotide probe on the surface of a glass slide.

4. The method as claimed in claim 2, wherein the tumour is selected from a group consisting of HNSCC, at N0, N+, T1, T2, T3, T4 stage of tongue and buccal mucosa.

5. The method as claimed in claim 2, wherein the cRNA as claimed in step 'c' is a biomarker for detection of head & neck cancer prognosis having Seq id no. 1-957.

6. A kit for head & neck cancer prognosis consisting of :

I. a panel of cDNA sequence complimentary to the nucleotide sequence having Seq id no. 1-957 on a chip as claimed in claim 1,

II. suitable reagents capable of detecting singly or a combination of the cDNA;

III. instruction manual for using the kit.

wherein, up-regulation (induction) of genes having nucleotide sequence of seq id no. 1-555 and concomitant down-regulation (suppression) of genes having nucleotide sequence of seq id no. 556-957 yielding a comparative expression profile between sample and control to determine presence of tumour and its node metastatic potential.

7. An in-silico method for analysing the micro-array data obtained by using the chip as claimed in claim 1 comprising steps:

I. normalising the intensity output from the iScan for all Tumour and Normal samples (n=443;) using Robust Spline Normalization in Lumi, Bioconductor package method;

II. removing the Outlier samples (n=21) from the total sample by using K-means clustering method;

III. randomly selecting from all samples 50 Tumour samples as validation set and generating robust gene list from remaining samples (n=372) consisting of Tumour samples (n=236) and Normal samples (n=136);

IV. using the normalized intensity values of the two groups of samples (n=372 and n=236) for differential expression analysis using the Bioconductor packages limma and lumi and generating a list of 2980 differentially expressed genes that classify the tumour and normal samples with adjusted p value < 0.05 and fold change > 1.5 or <-1.5;

V. generating the robust feature list that would classify the NO and N+ tumour samples using the 236 Tumour samples with 2980 genes wherein the tumour samples (n=236) are separated randomly in two parts; one part containing — 90%

of the samples (n=216) and the other part containing —10% of the samples (n=20) and denoting them as "Sample 1" and "Sample 2", respectively;

VI. applying a Recursive Feature Elimination process on Sample 1 and identifying top 300 features (genes) as important ones;

VII. predicting Sample 1 and Sample 2 separately by choosing top *"i"* transcripts (genes) from this list varying *i=1,2,...,300,* and finding the feature lists with the highest prediction accuracy in both sample sets;

VIII. repeating Steps V to Step VII 200 times to remove the sample bias and collecting all 200 feature lists so obtained;

IX. preparing a frequency distribution of genes found in all 200 feature lists;

X. characterized in preparing a list of 957 genes from the above 200 feature lists such that each of these 957 transcripts or genes appears at least once in the 200 feature lists thus making it the largest list of which successive lists are subsets of this 957-gene list;

XI. predicting 50 validation samples set with the gene that appeared highest number of times and calculating prediction accuracy followed by prediction with two transcripts having highest and next highest frequency and repeating the procedure by increasing the number of transcripts.

8. A method for screening therapeutic agents for head-and-neck tumour, comprising the steps:

i. administering a test substance to a non-human animal suffering from artificially induced head-and-neck tumour;

ii. applying the sample from step (i) onto the chip as claimed in claim 1;

iii. comparing the expression level to the expression level of the mRNA (or corresponding cDNA) with control wherein test substance is not administered.

Figure 1:

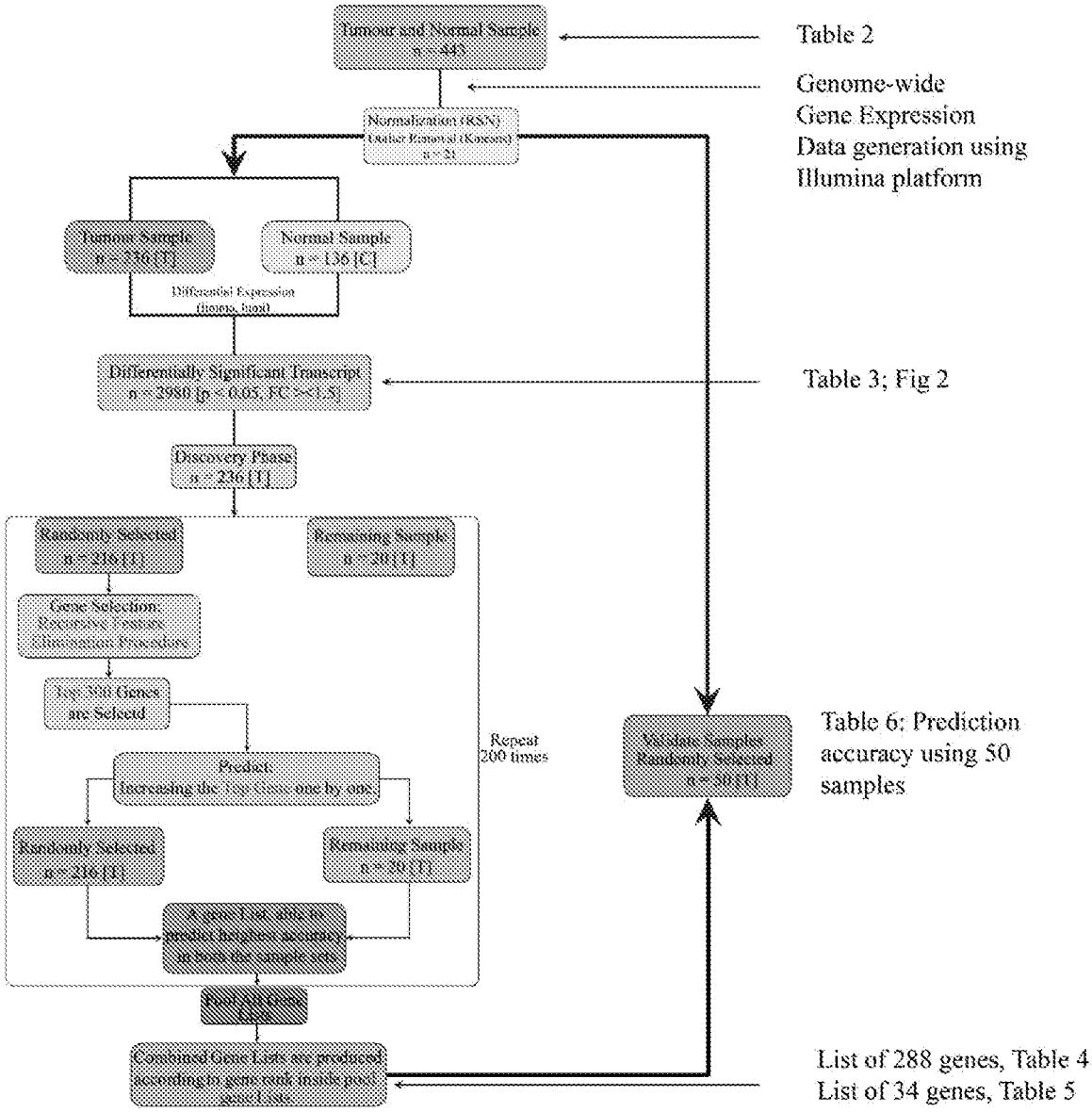

Tumour and Normal Sample
n = 443
Table 2
Genome-wide
Gene Expression
Data generation using
Illumina platform
Normalization (RSN)
Outlier Removal (Kmeans)
n = 21
Tumour Sample
n = 236 [T]
Normal Sample
n = 136 [C]
Differential Expression
(limma, bioc)
Differentially Significant Transcript
n = 2980 [p < 0.05, FC >=1.5]
Table 3; Fig 2
Discovery Phase
n = 236 [T]
Randomly Selected
n = 206 [T]
Remaining Sample
n = 30 [T]
Gene Selection:
Recursive Feature
Elimination Procedure
Top 500 Genes
are Selected
Predict
Increasing the Top Genes one by one
Repeat
200 times
Randomly Selected
n = 206 [T]
Remaining Sample
n = 30 [T]
Validate Samples
Randomly Selected
n = 30 [T]
Table 6: Prediction
accuracy using 50
samples
Combined Gene Lists are produced
according to gene rank inside pool
gene Lists
List of 288 genes, Table 4
List of 34 genes, Table 5

Figure 2:

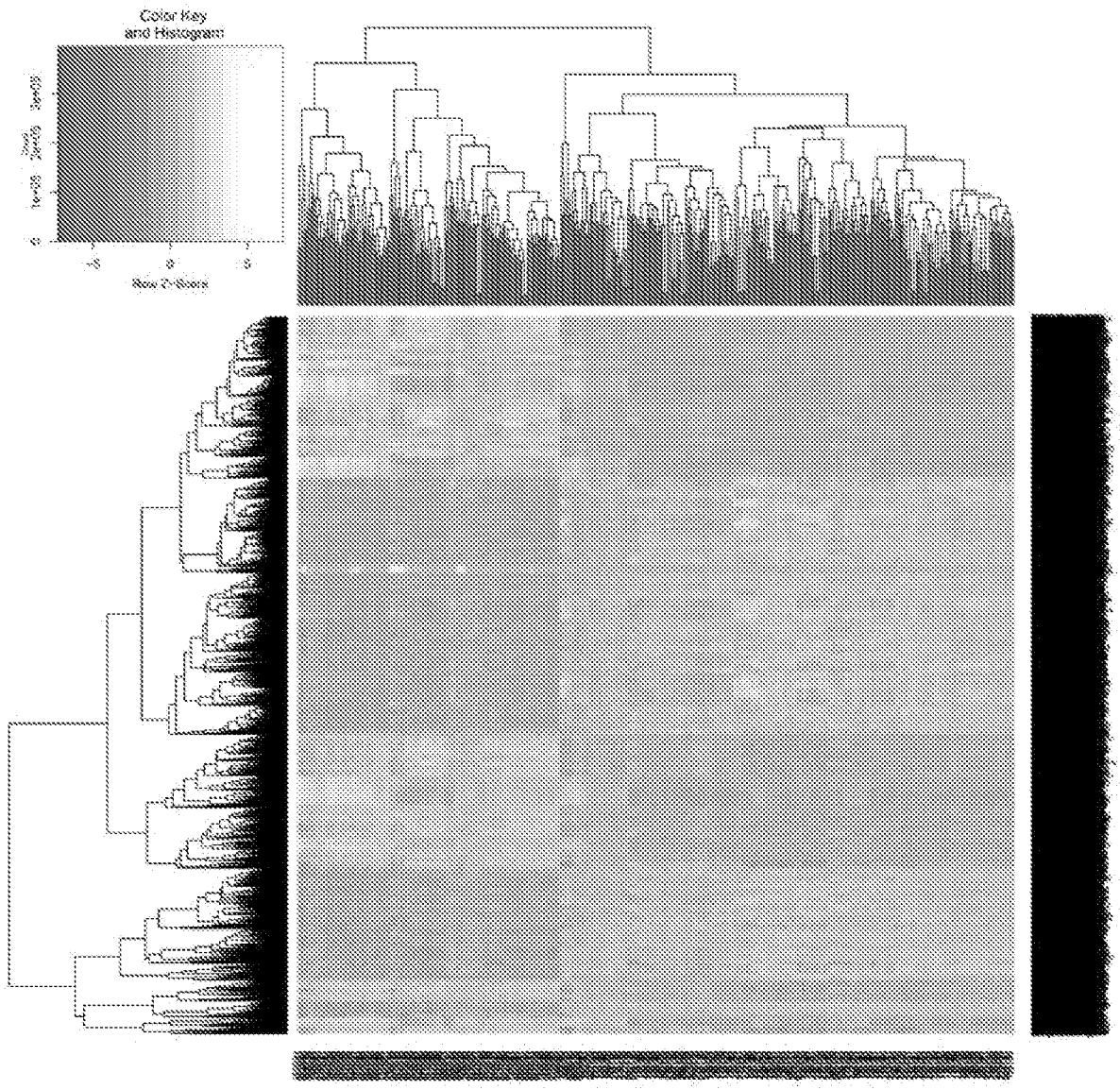


Figure 3:

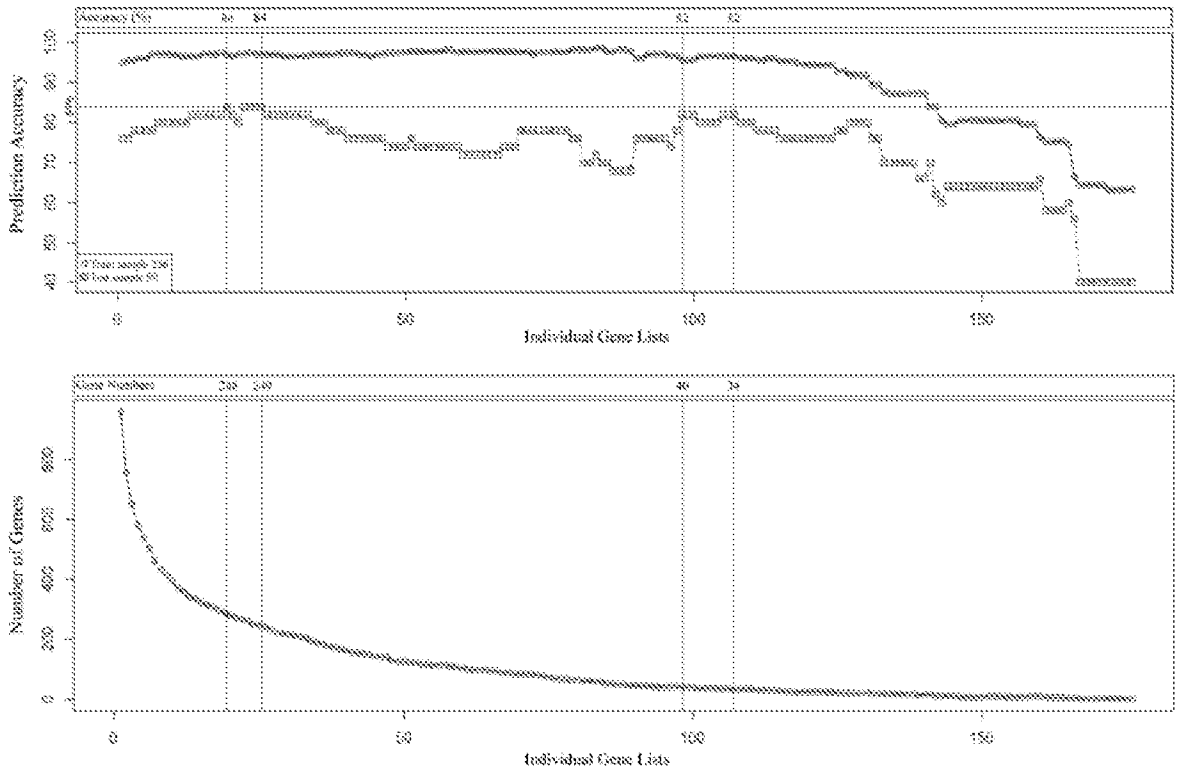

Prediction Accuracy
Individual Gene Lists
Number of Genes
Individual Gene Lists

Figure 4:

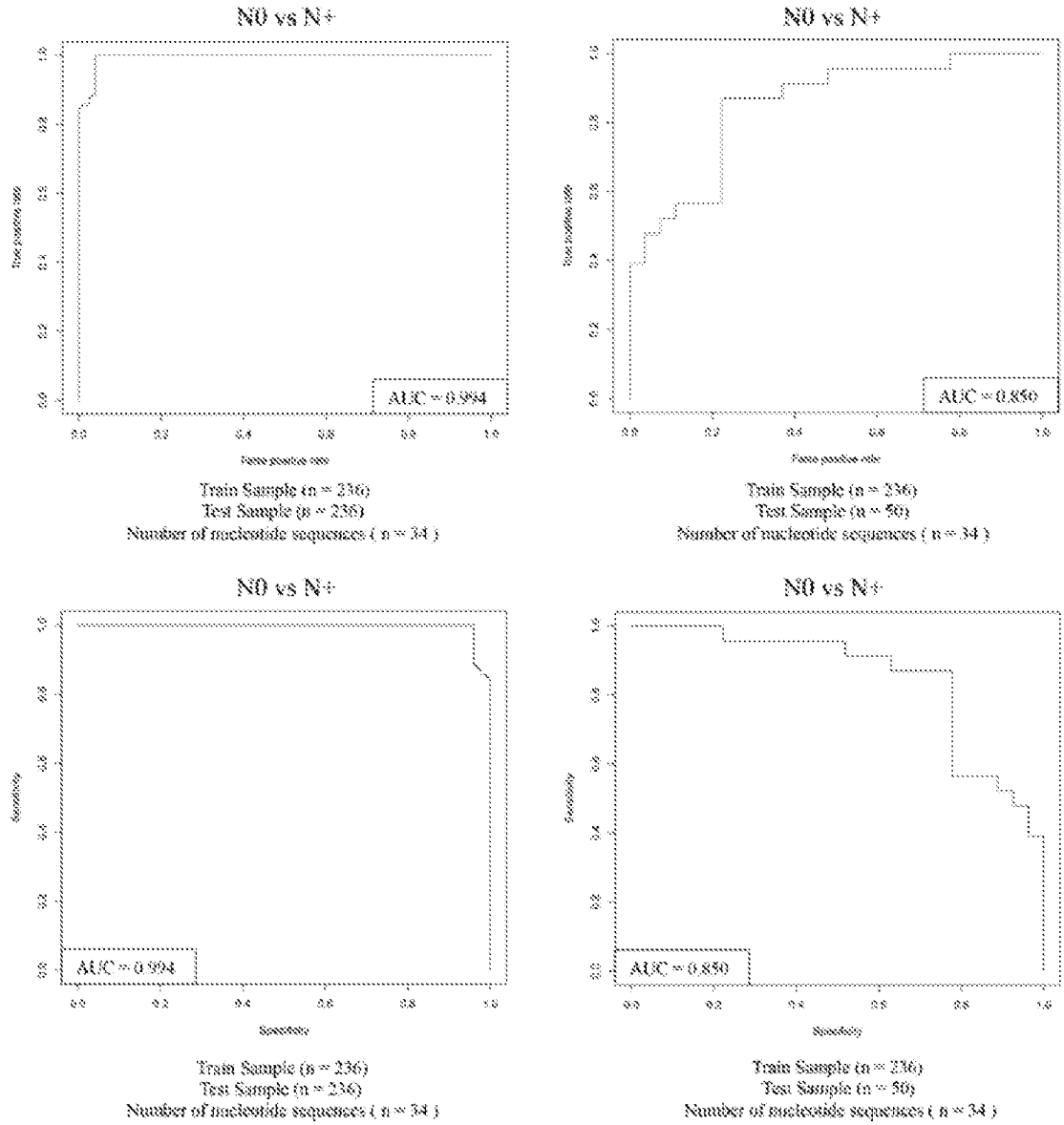

N0 vs N+
AUC = 0.994
Train Sample (n = 236)
Test Sample (n = 236)
Number of nucleotide sequences (n = 34)
N0 vs N+
AUC = 0.850
Train Sample (n = 236)
Test Sample (n = 50)
Number of nucleotide sequences (n = 34)
N0 vs N+
AUC = 0.994
Train Sample (n = 236)
Test Sample (n = 236)
Number of nucleotide sequences (n = 34)
N0 vs N+
AUC = 0.850
Train Sample (n = 236)
Test Sample (n = 50)
Number of nucleotide sequences (n = 34)

Figure 5:

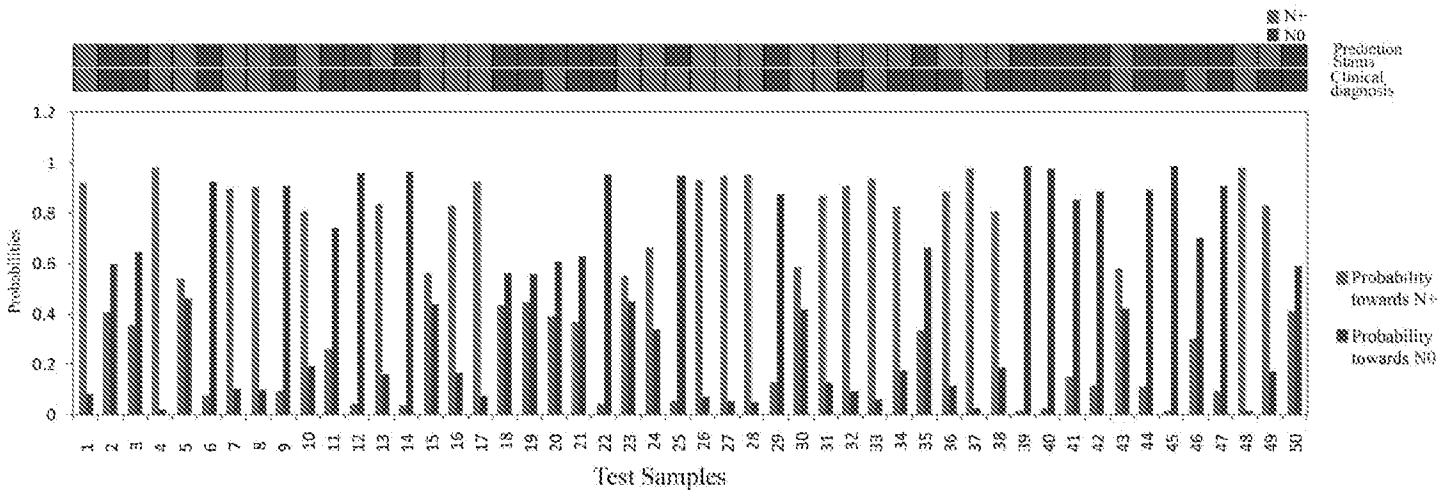

N+
N0
Prediction Status
Clinical diagnosis
Probabilities
1.2
1
0.8
0.6
0.4
0.2
0
Probability towards N+
Probability towards N0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50
Test Samples

Figure 6:

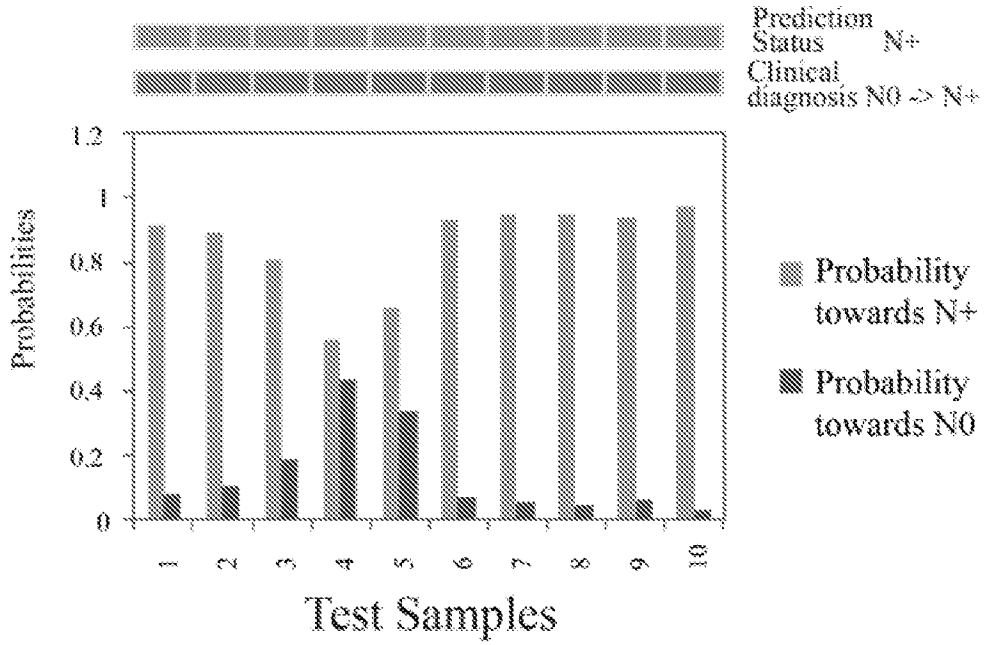

Prediction Status N+
Clinical diagnosis N0 -> N+
Probabilities
1.2
1
0.8
0.6
0.4
0.2
0
1
2
3
4
5
6
7
8
9
10
Test Samples
Probability towards N+
Probability towards N0

Figure 7:

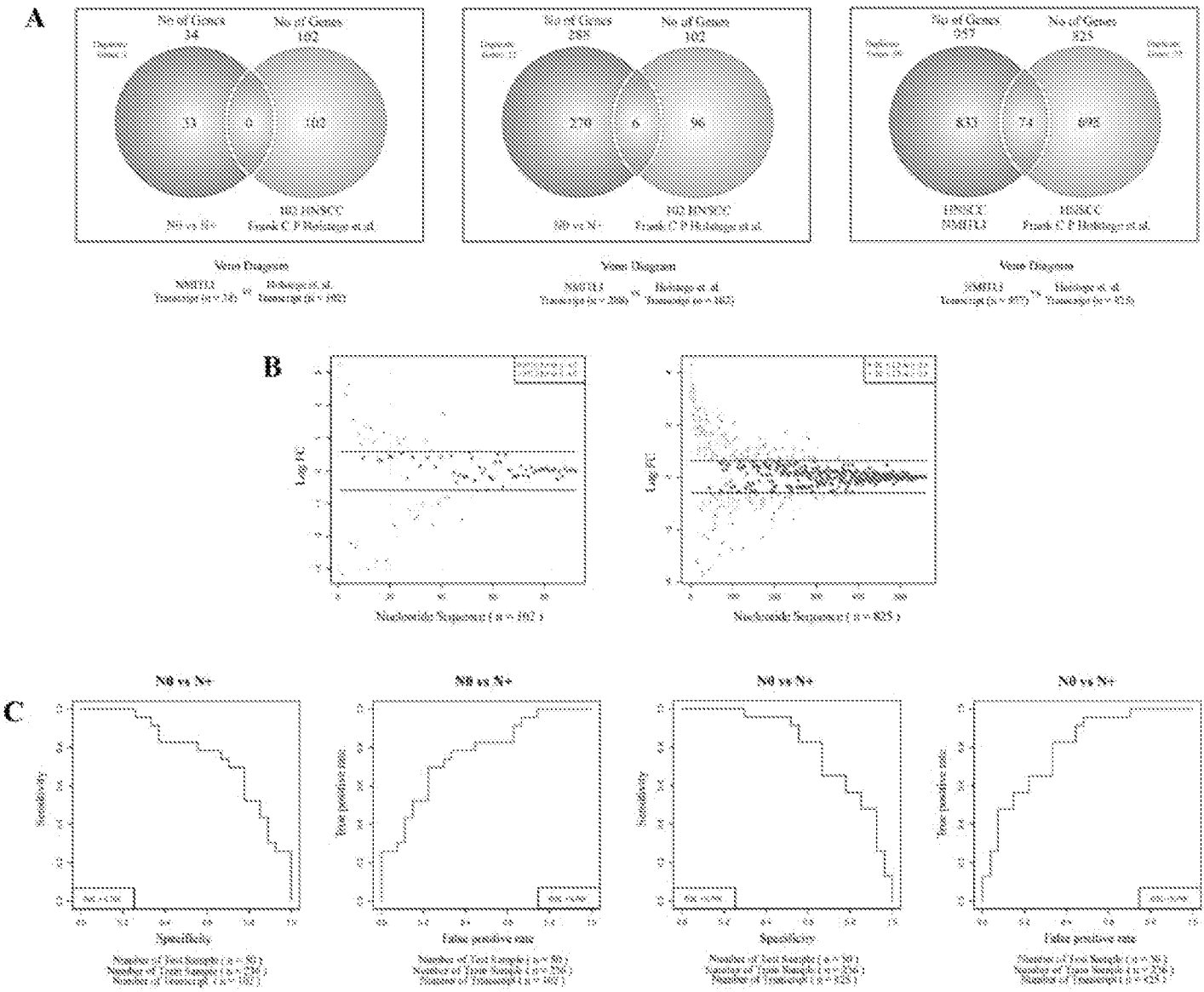
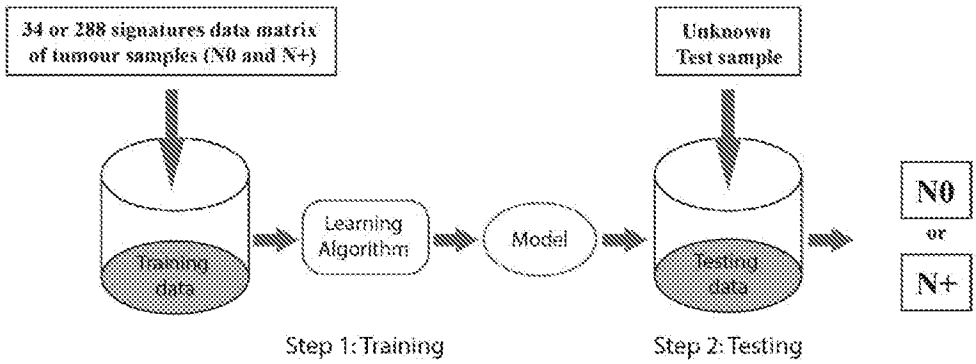

A
No of Genes
34
No of Genes
102
33
0
102
102 HNSCC
N0 vs N+
Frank C P Holstege et al.
Venn Diagram
No of Genes
288
No of Genes
102
270
6
96
102 HNSCC
N0 vs N+
Frank C P Holstege et al.
Venn Diagram
No of Genes
757
No of Genes
825
833
74
698
HNSCC
Frank C P Holstege et al.
Venn Diagram
B
Log FC
Nucleotide Sequence
C
N0 vs N+
Sensitivity
Specificity
False positive rate

Figure 8.


34 or 288 signatures data matrix of tumour samples (N0 and N+)
Unknown Test sample
Learning Algorithm
Model
N0
or
N+
Step 1: Training
Step 2: Testing

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IN2019/050386

A. CLASSIFICATION OF SUBJECT MATTER
C12Q1/6886 Version=2019.01

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

TotalPatent One, IPO Internal Database

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO2006085746A2 (UMC UTRECHT HOLDING B.V.), 17 August 2006 (17-08-2006), Whole document.	1-8
Y	Database: NCBI GEO, Accession number-GPL10558, "Illumina HumanHT-12 V4.0 expression beadchip", 17 June 2010 (17-06-2010), Whole document.	1-8

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
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"D" document cited by the applicant in the international application
"E" earlier application or patent but published on or after the international filing date
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"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
23-08-2019	23-08-2019
Name and mailing address of the ISA/ Indian Patent Office Plot No.32, Sector 14,Dwarka,New Delhi-110075 Facsimile No.	Authorized officer Ezhil Nilamani G Telephone No. +91-1125300200

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/IN2019/050386

Citation	Pub.Date	Family	Pub.Date
WO 2006085746 A2	17-08-2006	EP 1679379 A1	12-07-2006
		US 20090005258 A1	01-01-2009