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(54) Title: AMNIOTIC FLUID DERIVED CELLS

(57) Abrégé/Abstract:
This invention relates to an expandable population of amniotic fluid-derived cells that can be differentiated into a β-cell lineage. This invention also provides methods for isolating and expanding such amniotic fluid-derived cells, as well as related methods and compositions for utilizing such cells in the therapeutic treatment of diabetes.

ABSTRACT

This invention relates to an expandable population of amniotic fluid-derived cells that can be differentiated into a β-cell lineage. This invention also provides methods for isolating and expanding such amniotic fluid-derived cells, as well as related methods and compositions for utilizing such cells in the therapeutic treatment of diabetes.

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AMNIOTIC FLUID DERIVED CELLS

FIELD OF THE INVENTION

This invention relates to an expandable population of amniotic fluid-derived cells that can be differentiated into a β-cell lineage. This invention also provides methods for isolating and expanding such amniotic fluid-derived cells, as well as related methods and compositions for utilizing such cells in the therapeutic treatment of diabetes.

BACKGROUND

Loss of organ function can result from congenital defects, injury or disease. One example of a disease causing loss of organ function is diabetes mellitus, or diabetes. Most cases of diabetes fall into two clinical types: Type 1, also known as juvenile-onset diabetes, or insulin dependent diabetes mellitus (IDDM), and Type 2, also known as adult-onset diabetes. Each type has a different prognosis, treatment, and cause. Both types are characterized by the patient's inability to regulate their blood glucose levels. As a consequence, blood glucose levels rise to high values because glucose cannot enter cells to meet metabolic demands. This inability to properly metabolize blood sugar causes a complex series of early and late-stage symptomologies, beginning with, for example, hyperglycemia, abnormal hunger, thirst, polyuria, and glycouria, and then escalating to, for example, neuropathy, macro-vascular disease, and micro-vascular disease.

A common method of treatment of Type 1 diabetes involves the exogenous administration of insulin, typically by injection with either a syringe or a pump. This method does not completely normalize blood glucose levels and is often associated with

an increased risk of hypoglycemia. More effective glycemic control can be achieved if the function of the pancreas can be restored or rejuvenated via transplantation or cell-based therapies.

There are many transplantation therapies currently used to treat diabetes: One such treatment involves transplanting isolated islets of Langerhans into the diabetic patient. One of the main hurdles to human islet transplantation has been the lack of sufficient number of islets to treat the large number of diabetic patients. One possible solution to the shortage of islets is the generation of islets from alternate cellular sources.

It has been documented that progenitor cells derived from adult tissues are capable of differentiation into a pancreatic β-cell phenotype. See, for example, WO2004/087885 A2, Hess *et al.* (*Nature Biotechnology* 21, 763 – 770, 2003), and Ianus *et al.* (*J. Clin. Invest.* 111: 843-850, 2003), which report the capacity of adult bone marrow-derived cells (mesenchymal and hematopoetic cells) to differentiate into cells having characteristics of a pancreatic β-cell *in vitro*, or secrete trophic factors that help regenerate a damaged pancreas *in vivo*.

Among other sources of progenitor cells that can be differentiated into pancreatic cells include rodent liver oval stem cells (WO03/033697) and post-partum placenta (U.S. Published Application 2004/0161419 A1).

The endocrine cells of the islets of Langerhans, including β-cells, are constantly turning over by processes of apoptosis and the proliferation of new islet cells (neogenesis). As such, the pancreas is thought to be a source of progenitor cells that are capable of differentiating into pancreatic hormone producing cells. There are three distinct tissue types, isolated from a pancreas, that are a potential source of pancreatic progenitor cells: an islet rich fraction, a ductal cell rich fraction, and an acinar cell rich fraction.

Isolation of progenitor cells or partially differentiated cells from crude pancreatic tissue extracts may be achieved using antibodies raised against cell surface markers. For example, U.S. Published Application 2004/0241761 discloses isolation of murine cells that expressed ErbB2, ErbB3, ErbB4, Msx-2, PDX-1 and insulin.

Gershengorn *et al.* (*Science* 306: 2261-2264, 2004) teach the production of proliferating cells that were able to form islet-like cell aggregates. The cells were derived from a heterogeneous population of adherent cells that emerged from the culture of isolated human pancreatic islets *in vitro*. The isolated islets of Langerhans were initially seeded onto tissue culture dishes and cultured in medium containing 10% serum. Fibroblast-like cells were observed to migrate out of the cultured islets and form a monolayer. These cells expressed Nestin, smooth muscle actin and vimentin.

Pancreatic progenitor cells may also arise from the culture of pancreatic islet and ductal tissue that has been dissociated into single cells, as disclosed by Seaberg *et al.* (*Nature Biotechnology* 22: 1115 – 1124, 2004). The murine progenitor cells disclosed by Seaberg *et al.* expressed Nestin during proliferation.

U.S. Published Application 2003/0082155 discloses methods to isolate and identify a population of cells from the islets of Langerhans of human pancreas, which have the functional and molecular characteristics of stem cells. In particular, these cells were characterized by Nestin-positive staining, Nestin gene expression, GLP-1R-positive staining, GLP- 1R gene expression, ABCG2 positive staining, ABCG2 gene expression, Oct3/4 positive staining, Oct3/4 gene expression, latrophilin (type 2) positive staining, latrophilin (type 2) gene expression, Hes-1 positive staining, Hes-1 gene expression, Integrin subunits α6 and β1 positive staining, Integrin subunits α6 and β1 gene expression, c-kit positive staining, c-kit gene expression, MDR-1 positive staining, MDR-1 gene expression, SST-R, 2, 3, 4 positive staining, SST-R, 2, 3, 4 gene expression, SUR-1 positive staining, SUR-1 gene expression, Kir 6.2 positive staining, Kir 6.2 gene expression, CD34 negative staining, CD45 negative staining, CD133 negative staining, MHC class I negative staining, MHC class II negative staining, cytokeratin-19 negative staining, long-term proliferation in culture, and the ability to differentiate into pseudo-islets in culture.

In another approach, as disclosed in U.S. Patent 5,834,308, U.S. Patent 6,001,647 and U.S. Patent 6,703,017, crude preparations of islet cultures from NOD mice may be used to establish epithelial-like cultures, which can be maintained in growing cultures for

greater than 1 year and which appear to demonstrate the ability to differentiate into islet-like clusters, capable of secreting insulin.

Islet-like structures may be generated from fractions of digested human pancreata enriched for ductal tissue, as disclosed in Bonner-Weir *et al.* (*Proc Nat Acad Sci* 97: 7999-8004, 2000) and U.S. Patent 6,815,203 B1. Islet-like clusters disclosed in these publications stained positive for cytokeratin-19 and showed immunoreactivity for insulin.

WO2004/011621 discloses the generation of insulin negative adherent cells from human pancreatic ductal fragments.

WO03/102134 discloses the generation of an epithelial cell positive for cytokeratin-19 from an acinar fraction of a human pancreatic digest. The cells generated are capable of limited expansion and differentiate into an insulin-producing cell in the presence of an induction media.

U.S. Published Application 2004/015805 A1 reports that a subset of human pancreatic stem cells may be isolated using ligands to the cell surface marker CD56 (also known as NCAM). These cells can differentiate into insulin producing cells and insulin producing aggregates.

It has been documented that progenitor cells, derived from fetal or embryonic tissues, have the potential to differentiate into a pancreatic hormone-producing cell. See, for example, U.S. Patent 6,436,704, WO03/062405, WO02/092756 and EP 0 363 125 A2, which report the potential of human fetal and embryonic derived cells to differentiate into a β-cell lineage.

Human Embryonic Stem cells (hES) are derived from the inner cell mass of the blastocyst, the earliest stage of embryonic development of the fertilized egg. The blastocyst is a pre-implantation stage of the embryo, a stage before the embryo would implant in the uterine wall. When cultured on an inactivated feeder layer of cells according to conditions described by Thompson and colleagues (Thomson, *et al.* (*Proc. Natl. Acad. Sci. U.S.A.* 92: 7844-7848, 1995); Thomson, *et al.* (*Science* 282:1145-1147, 1998), Marshall, *et al.*,

(*Methods Mol. Biol.* 158:11-18, 2001), the inner layer cells of the blastocyst may be grown *in vitro* indefinitely in an undifferentiated state. Properly propagated hES cells have unlimited potential to double while maintaining their pluiripotency; namely their capacity of differentiating into the three layers of the embryo, Ectoderm (Ec), Mesoderm (Me) and Endoderm (En). When grown as pluripotent hES, the cells maintain a euploid karyotype and are not prone to senescence.

Human embryonic stem cells display a distinct group of cell surface antigens, SSEA-3, SSEA-4, TRA-2-54 (alkaline phosphatase), TRA-1-60 and TRA-1-81, in addition to expressing specific transcription factors OCT-4, NANOG, SOX-2, FGF-4 and REX-1 (Henderson, *et al.*, (*Stem Cells* 20:329-337, 2002), Draper, *et al.*, (*J. Anat.* 200:249-258, 2002), Mitsui *et al.*, (*Cell* 113:631-642, 2003), Chambers *et al.*, (*Cell* 113:643-655, 2003).

It is important to note from these publications, however, that human embryonic cells often require a feeder layer for expansion and maintenance of pluripotency or combination of a complex extracellular matrix, such as, for example, MATRIGEL™, plus conditioned media. These conditions do not allow the facile scale up of cells and an eventual cell therapy for treating diabetes.

Researchers have found that non-embryonic types of stem cells ("adult stem cells") are not as capable of differentiating into many different tissue types, as are embryonic stem cells, so embryonic stem cells still have many advantages over the use of adult stem cells. However, one obstacle with the isolation of embryonic stem cells is that the cells are derived from embryos at the "blastocyst" stage. Human embryonic stem cell research is encumbered by an emotionally charged political and ethics debate and is likely to remain so for years to come.

Additionally, human embryonic stem cells (hES) have been found to be tumorigenic when injected into immunologically impaired animals, i.e. in the context of post-natal tissues, whereas adult stem cells are not. The tumorigenic attributes of hES cells are not frequently addressed, though this issue may burden their use in replacement cell therapy in the future. The political, moral and ethical issues around hES cells and their

tumorigenic properties, as well as the perceived difficulties of expanding undifferentiated adult stem cells in culture, while maintaining a genetically normal genome, are major barriers in the development of human cell replacement therapy.

Pluripotent or multipotent stem cells have been isolated from chorionic villus, and amniotic fluid. Many amniotic and placental cells share a common origin, namely the inner cell mass of the morula, which gives rise to the embryo itself, the yolk sac, the mesenchymal core of the chorionic villi, the chorion and the amnion (Crane & Cheung, *Prenatal Diagnosis* 8: 119-129, 1988). Embryonic and fetal cells from all three germ layers have long been identified in the amniotic fluid (Milunsky, *Genetic Disorder of the Fetus*. New York: Plenum Press, 75-84, 1979; Hoehn & Salk, *Methods in Cell Biology* 26, 11-34, 1982; Gosden, *British Medical Bulletin* 39, 348-354, 1983; Prusa *et al, Human Reproduction* 18, 1489-1493, 2003). Thus, amniotic fluid may provide the least invasive access to embryonic-like and fetal-like stem cells.

Amniotic fluid derived cells have been routinely used for detecting chromosomal abnormality of the fetus. Amniotic fluid is typically sampled during the 2nd trimester (16 to 22 weeks of gestation). Previous art clearly demonstrates presence of three sub-population with distinct cell morphologies: "fibroblastic" (F), "amniotic fluid" (AF) cells, and "epithelial" (E) cells. The F and AF cells rapidly expand whereas the E cells display a much slower growth curve and have poor clonal efficiency.

For example, PCT application WO2003/042405 discloses isolation of c-Kit positive stem cells from chorionic villus, amniotic fluid and placenta (Cell 1, **Table I**).

In another example, U.S. Published Application 2005/0054093 discloses the isolation of stem cells from amniotic fluid. These cells express stage-specific embryonic antigen 3 (SSEA3), stage-specific embryonic antigen 4 (SSEA4), Tra1-60, Tra1-81, Tra2-54, Oct-4, HLA class I, CD13, CD44 CD49b and CD105 (Cell 2, **Table I**).

In another example, fetal cells have been isolated from amniotic fluid (in't Anker *et al, Blood* 102, 1548-1549, 2003). The cells disclosed were positive for expression of the following markers: CD44, CD73, CD90, CD105, CD106, HLA-A,B, & C. The cells were

negative for expression of the following markers: c-Kit (CD117), CD11, CD31, CD34, CD45 and HLA-D (Cell 3, **Table I**).

A population of mesenchymal stem cells isolated from amniotic fluid has also been reported in a publication to Tsai *et al* (Tsai *et al*, *Human Reproduction* 19, 1450-1456, 2004). The cells disclosed were positive for expression of the following markers: CD29, CD44, CD73, CD90, HLA-A,B, & C. The cells were also positive for the embryonic transcription factor Oct-4. The cells were negative for expression of the following markers: c-Kit (CD117), CD34 and HLA-D (Cell 4, **Table I**).

Although recent publications and patents have suggested that within the fibroblastic, amniotic fluid, or epithelial subpopulations there exists a cell population that display some characteristics of human embryonic cells, such as expression of surface markers SSEA3 and –4, expression of transcription factor Oct-4, strong expansion potential, and differentiation into multiple cell types; none of the previously published art has demonstrated the existence of a subpopulation of the cells that display expression of key early endodermal markers, such as HNF-1 beta, HNF-3 beta, SOX-17, and GATA-6, while maintaining expression of ES markers SSEA-4.

Co expression of HNF-1 beta, HNF-3 beta (also known as FOXa2), SOX-17, and GATA-6 is regarded as the key step to define the formation of definitive endoderm during gastrulation. Thus, expression of these markers may be key in the generation of a pancreatic β-cell population, or a population of pancreatic hormone-producing cells, or a gut hormone-producing cell from an amniotic fluid-derived cell.

Therefore, there still remains a significant need to develop culture conditions for establishing amniotic fluid-derived cell lines that can be expanded to address the current clinical needs, while retaining the potential to differentiate into definitive endoderm, or a population of pancreatic hormone-producing cells, or a gut hormone-producing cell, or a β-cell lineage.

SUMMARY

In one aspect, there is provided a substantially pure population of cells obtained from amniotic fluid, wherein said cells are: negative for the expression of the CD117 and Oct-4 protein markers, and positive for the expression of GATA-6 and SSEA-4, wherein the cells are negative for a factor when the factor is not present or expressed in at least 70% of the cell population, and the cells are positive for a factor when the factor is present or expressed in at least 50% of the cell population.

Also disclosed is a method for isolating mammalian amniotic fluid-derived cells. According to one aspect, amniotic fluid-derived cells are obtained from amniotic fluid samples of about 14 to about 23 weeks gestation. Alternatively, the amniotic fluid-derived cells are obtained from amniotic fluid samples of about 23 to about 40 weeks gestation.

In one embodiment, the cultures are left undisturbed for at least 5 to 10 days under hypoxic conditions (3% O_2). Alternatively, the cultures are left undisturbed for at least 5 to 10 days under normoxic conditions (approximately 20% O_2).

In an alternate embodiment, amniotic fluid-derived cells are obtained from amniotic fluid samples from the second trimester of gestation. Alternatively, the amniotic fluid-derived cells are obtained from amniotic fluid samples from the third trimester of gestation.

In one embodiment, the cultured amniotic fluid-derived cells are isolated as single cells, and clonally expanded.

The amniotic fluid-derived isolated according to the methods described herein can be contacted, for example, with an agent (such as an antibody) that specifically recognizes a protein marker expressed by amniotic fluid cells, to identify and select amniotic fluid-derived cells, thereby obtaining a substantially pure population of amniotic fluid-derived cells, i.e., wherein a recognized protein marker is expressed in at least 50% of the cell population.

In one disclosed embodiment, the resulting amniotic fluid-derived cell population is substantially positive for at least one of the following markers: HNF-1 beta, HNF-3 beta, SOX-17, or GATA-6. The amniotic fluid-derived cell population is substantially negative for at least one of the following markers: CD117, Oct-4, or Tra2-54. The amniotic fluid-derived cell population can be expanded for more than 50 population doublings without losing the capacity to express HNF-1 beta, HNF-3 beta, SOX-17, or GATA-6.

In one embodiment, the amniotic fluid-derived cell population is substantially positive for the following markers: SSEA4 and CD44. The amniotic fluid-derived cell population can

be expanded for more than 50 population doublings without losing the capacity to express HNF-1 beta, HNF-3 beta, SOX-17, or GATA-6.

In one embodiment, the amniotic fluid-derived cell population isolated according to the methods disclosed is substantially negative for at least one of the following markers: SOX-17, CD117, Oct-4, or Tra2-54. The amniotic fluid-derived cell population is substantially positive for the following markers: SSEA4 and CD44. The amniotic fluid-derived cell population can be expanded for more than 50 population doublings.

In one embodiment, the amniotic fluid-derived cell population isolated according to the methods disclosed is substantially negative for cytokeratin and at least one of the following markers: SOX-17, CD117, Oct-4, or Tra2-54. The amniotic fluid-derived cell population is substantially positive for the following markers: SSEA4 and CD44. The amniotic fluid-derived cell population can be expanded for more than 50 population doublings.

In one embodiment, the amniotic fluid-derived cell population isolated according to the methods disclosed is substantially negative for SOX-17. The amniotic fluid-derived cell population is substantially positive for the following markers: SSEA4 and CD44. The amniotic fluid-derived cell population can be expanded for more than 50 population doublings.

In one embodiment, the amniotic fluid-derived cell population isolated according to the methods disclosed is substantially negative for the following markers: cytokeratin, and SOX-17. The amniotic fluid-derived cell population is substantially positive for the following markers: SSEA4 and CD44. The amniotic fluid-derived cell population can be expanded for more than 50 population doublings.

In one embodiment, the amniotic fluid-derived cell population isolated according to the methods disclosed is substantially negative for SOX-17. The amniotic fluid-derived cell population is further negative for at least one of the following markers: CD117, Oct-4, or Tra2-54. The amniotic fluid-derived cell population is substantially positive for the following markers: SSEA4 and CD44. The amniotic fluid-derived cell population can be expanded for more than 50 population doublings.

In one embodiment, the amniotic fluid-derived cell population isolated according to the methods disclosed is substantially negative for the following markers: cytokeratin, and SOX-17. The amniotic fluid-derived cell population is further negative for at least one of the following markers: CD117, Oct-4, or Tra2-54. The amniotic fluid-derived cell population is substantially positive for the following markers: SSEA4 and CD44. The amniotic fluid-derived cell population can be expanded for more than 50 population doublings.

In another embodiment, there is disclosed an isolated pure population of amniotic fluid-derived cells that are substantially negative for at least one of the following markers: CD117, Oct-4, or Tra2-54.

In another embodiment, there is disclosed an isolated pure population of amniotic fluid-derived cells that are substantially negative for at least one of the following markers: SOX-17, CD117, Oct-4, or Tra2-54.

In another embodiment, there is disclosed an isolated pure population of amniotic fluid-derived cells that are substantially negative for SOX-17.

In another embodiment, there is disclosed an isolated pure population of amniotic fluid-derived cells that are substantially negative for SOX-17, and substantially negative for at least one of the following markers: CD117, Oct-4, or Tra2-54.

In one embodiment, the amniotic fluid-derived cells isolated according to the methods disclosed herein may also express at least one of the following: Musashi-1 and Hes1.

The amniotic fluid-derived cells isolated and expanded as described can be induced to differentiate into cells of the ß cell lineage under appropriate *in vitro* or *in vivo* conditions. Accordingly, the amniotic fluid-derived cells selected and expanded as described herein, as well as the differentiated cells derived from the amniotic fluid-derived cells, can be useful for treating Type 1 and 2 diabetes.

The amniotic fluid-derived cells isolated and expanded according to the present disclosure can be induced to gut hormone-producing cells under appropriate *in vitro* or *in vivo* conditions. In one embodiment, the amniotic fluid-derived cells isolated and expanded as

described herein can be induced to gut hormone-producing cells under appropriate *in vitro* or *in vivo* conditions and may express insulin in a glucose responsive manner.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows the isolation and culturing steps used to isolate the amniotic fluid derived cells of the present invention.

Figure 2 shows three distinct morphologies of cells isolated from an amniotic fluid sample at passage 0. a) AF morphology, b) epithelial morphology, and c) fibroblast morphology.

Figure 3 depicts the expression of cell surface markers on AF-I cells derived from amniotic fluid. The markers are indicated on panels a-n.

Figure 4 depicts the expression of cell surface markers on F cells derived from amniotic fluid. The markers are indicated on panels a-l.

Figure 5 depicts the expression of cell surface markers on E cells derived from amniotic fluid. The markers are indicated on panels a-m.

Figure 6 depicts immunofluoresence images of the F cells derived from amniotic fluid samples. F cells stained positive for a) vimentin, b) SSEA-4, and c) beta III tubulin.

Figure 7 depicts immunofluoresence images of the E cells derived from amniotic fluid samples. E cells stained positive for a) vimentin and nestin, b) SSEA-4, c) beta III tubulin, d) pan-cytokeratin, e) smooth muscle actin, and f) cytokeratin 19.

Figure 8 depicts immunofluoresence images of the AF-I cells derived from amniotic fluid samples. AF-I cells stained positive for a) vimentin and nestin, b) beta III tubulin, c) cytokeratin 19 and HES-1, d) pan-cytokeratin, e) SSEA-4, f) SOX-17 and ZO-1, g) GATA-6, h) HNF-1 beta, i) smooth muscle actin and HES-2.

Figure 9 shows the expression profile of AF-I, AF-II, and AF-III cells of the present invention.

Figure 10 depicts the population doubling curve of early passage AF-I cells.

Figure 11 depicts the expansion potential of AF, F, or E cell derived from different donors. ◆ shows the cell number of amniotic fluid-derived cells with AF-I morphology obtained from amniotic fluid from one donor at 14-23 weeks gestation. Cells were cultured in media number 5 (**Table II**). ▲ shows the cell number of amniotic fluid-derived cells with AF-I morphology obtained from amniotic fluid from a second donor at 14-23 weeks gestation. Cells were cultured in media number 5 (**Table II**). ■ shows the cell number of amniotic fluid-derived cells with F morphology obtained from amniotic fluid from a third donor at 14-23 weeks gestation. Cells were cultured in media number 15 (**Table II**). ✱ shows the cell number of amniotic fluid-derived cells with F morphology obtained from amniotic fluid from a fourth donor at 14-23 weeks gestation. Cells were cultured in media number 16 (**Table II**). ● shows the cell number of amniotic fluid-derived cells with E morphology obtained from amniotic fluid from a donor at 14-23 weeks gestation. Cells were cultured in media number 5. + shows the cell number of amniotic fluid-derived cells with AF-II morphology obtained from amniotic fluid from a second donor at 14-23 weeks gestation. Cells were cultured in media number 5 (**Table II**). Δ shows the cell number of amniotic fluid-derived cells with AF-III morphology obtained from amniotic fluid from a second donor at 14-23 weeks gestation. Cells were cultured in media number 5 (**Table II**)

Figure 12 depicts the telomere length of an AF-I cell line cultured either in AMNIOMAX or DM-LG + 10 % FBS at an intermediate passage level (approximately 40 population doublings). Lane 1 is the molecular weight ladder, lane 2 is the high

telomere length control, lane 3 is the low telomere length control, lane 4 is amniotic fluid-derived cells from a donor at Passage 12, cultured in DMEM-LG + 10% FBS, lane 5 is amniotic fluid-derived cells from the same donor at passage 12, cultured in media #5, and lane 6 is an embryonic carcinoma cell line (NTERA cells) that serves as a positive control.

Figure 13 shows the karyotype of a) AF-I, b) AF-II, and c) AF-III cells cultured at passage 7-9 (approximately 30-35 population doublings).

Figure 14 depicts the expansion potential of a single AF derived cell from one donor at term (approximately 38 weeks). Cells were cultured in media number 5 (**Table II**).

Figure 15 depicts the scatter plot gene expression profiles between the different amniotic fluid cell types. The Pearson correlation coefficient for each plot is also listed.

Figure 16 shows the effects of growth factors on gene expression in amniotic fluid-derived cells. Amniotic fluid-derived cells were obtained from a single donor and cultured for 12 days in conditioned media that was obtained from cultures of PANC-1 cells. The media was supplemented with the growth factors indicated. The levels of expression of HNF-3 beta and somatostatin were determined by real-time PCR. Human pancreas total RNA was included as a calibrator. Panel a shows the changes in HNF-3 beta expression. Panel b shows the changes in somatostatin expression.

Figure 17 shows the effects of L685,458 on cultured amniotic fluid-derived cells having the AF morphology. Panel a shows the relative differences in RNA expression of human Hes-1 in cultured AF cells treated with the concentrations of L685,458 indicated. Panel b shows the effects of L685,458 on the viability of the cultured cells following a treatment with L685,458. Cells were treated for three days, at the concentrations indicated. Changes in viability, corresponding to cytotoxicity were detected using an MTS assay, where a decrease in cell viability corresponds to a decrease in A490nm.

DETAILED DESCRIPTION

For clarity of disclosure, and not by way of limitation, the detailed description of the invention is divided into the following subsections that describe or illustrate certain features, embodiments or applications of the present invention.

The present invention is directed to methods for isolating an amniotic fluid-derived cell population that is highly proliferative, and displays embryonic-like characteristics. Similar cells may also be present in the chorionic villus. Some of the embodiments of the invention disclosed herein describe three morphologically distinct populations of amniotic fluid-derived cells: “fibroblastic” (F), epithelial” (E) cells, and “amniotic fluid” (AF) cells.

Definitions

"β-cell lineage" refer to cells with positive gene expression for the transcription factor PDX-1 and at least one of the following transcription factors: NGN-3, Nkx2.2, Nkx6.1, NeuroD, Isl-1, HNF-3 beta, MAFA, Pax4, and Pax6. Characteristics of cells of the beta cell lineage are well known to those skilled in the art, and additional characteristics of the beta cell lineage continue to be identified. These transcription factors are well established in prior art for identification of endocrine cells (*Nature Reviews Genetics*, Vol3, 524-632, 2002).

"Pancreatic islet-like structure" refers to a three-dimensional clusters of cells derived by practicing the methods of the invention, which has the appearance of a pancreatic islet. The cells in a pancreatic islet-like structure express at least the PDX-1 gene and one hormone selected from the list glucagon, somatostatin, or insulin.

The term "hypoxic" refers to oxygen levels less than 20%, preferably less than 10%, and more preferably less than 5% but more than 1%.

The term "normoxia" refers to atmospheric oxygen levels of about 20%.

The term "substantially positive," when used in connection with a population of cells with respect to the expression of certain marker (such as a membrane receptor, cytoplasmic or nuclear protein, or a transcription factor), means that the marker is present or expressed in at least about 50%, alternatively at least about 60%, and alternatively at least about 70%, of the total cell population.

The term "substantially negative," when used in connection with a population of cells with respect to the expression of certain marker (such as a membrane receptor, cytoplasmic or nuclear protein, or a transcription factor), means that the marker is not present or expressed in at least about 70%, alternatively about 80%, alternatively about 90%, of the total cell population.

A "stem cell" as used herein refers to an undifferentiated cell that is capable of extensive propagation either *in vivo* or *ex vivo* and capable of differentiation to other cell types.

A "progenitor cell" refers to a cell that is derived from a stem cell by differentiation and is capable of further differentiation to more mature cell types. Progenitor cells typically have more restricted proliferation capacity as compared to stem cells.

"Expandable population" refers to the ability of an isolated cell population to be propagated through at least 50 or more cell divisions in a cell culture system.

By "undifferentiated cells," when used in connection with cells isolated from a amniotic fluid, are meant a population of amniotic fluid-derived cells that are substantially negative for the expression of PDX-1, or insulin.

By "differentiated cells," when used in connection with cells isolated from amniotic fluid, are meant a population of amniotic fluid-derived cells that are substantially positive for the expression of PDX-1, or insulin.

"Markers" as used herein, are nucleic acid or polypeptide molecules that are differentially expressed in a cell of interest. In this context, differential expression means an increased level of the marker for a positive marker, and a decreased level for a negative marker. The

detectable level of the marker nucleic acid or polypeptide is sufficiently higher or lower in the cells of interest, compared to other cells, such that the cell of interest can be identified and distinguished from other cells, using any of a variety of methods known in the art.

"c-Kit" and "CD117" both refer to a cell surface receptor tyrosine kinase having a sequence disclosed in Genbank Accession No. X06182, or a naturally occurring variant sequence thereof (e.g., allelic variant).

"CD9" is also referred to as "Motility-related protein-1 (MRP-1)" and is a transmembrane glycoprotein that has been implicated in cell adhesion, motility, proliferation, and differentiation.

"CD10" is also referred to as "Common Acute Lymphocytic Leukemia Antigen (CALLA)". CD10 is a cell surface enzyme with neutral metalloendopeptidase activity and it is expressed in lymphoblastic, Burkitt's, and follicular germinal center lymphomas and in patients with chronic myelocytic leukemia. It is also expressed on the surface of normal early lymphoid progenitor cells, immature B Cells within adult bone marrow and germinal center B Cells within lymphoid tissue. CD10 is also present on breast myoepithelial cells, bile canaliculi, fibroblasts, brush border of kidney and gut epithelial cells.

"CD44" is also referred to as "Hermes antigen" and is the main cell surface receptor for hyaluronan. This CD is primarily expressed in most cell types, except for tissues/cells such as hepatocytes, some epithelial cells, and cardiac muscle.

"CD49f" is also referred to as "a6 integrin" and "VLA-6," and associates with integrin subunit beta 1 to bind laminin. CD49f is expressed primarily on epithelial cells, trophoblasts, platelets, and monocytes.

"CD73" is also referred to as "ecto-5'-nucleotidase" and is primarily expressed on a subset of-B and T cells, bone marrow stromal cells, various epithelial cells, fibroblasts, and endothelial cells.

"CD90" is also referred to as "Thy-1" and is primarily expressed on hematopoietic stem cells, connective tissue cells, and various fibroblastic and stromal cells.

“SSEA-1” (Stage Specific Embryonic Antigen-1) is a glycolipid surface antigen present on the surface of murine teratocarcinoma stem cells (EC), murine and human embryonic germ cells (EG), and murine embryonic stem cells (ES).

“SSEA-3” (Stage Specific Embryonic Antigen-3) is a glycolipid surface antigen present on the surface of human teratocarcinoma stem cells (EC), human embryonic germ cells (EG), and human embryonic stem cells (ES).

“SSEA-4” (Stage Specific Embryonic Antigen-4) is a glycolipid surface antigen present on the surface of human teratocarcinoma stem cells (EC), human embryonic germ cells (EG), and human embryonic stem cells (ES).

“TRA1-60” is a keratin sulfate related antigen that is expressed on the surface of human teratocarcinoma stem cells (EC), human embryonic germ cells (EG), and human embryonic stem cells (ES).

“TRA1-81” is a keratin sulfate related antigen that is expressed on the surface of human teratocarcinoma stem cells (EC), human embryonic germ cells (EG), and human embryonic stem cells (ES).

“TRA2-49” is an alkaline phosphatase isozyme expressed on the surface of human teratocarcinoma stem cells (EC), and human embryonic stem cells (ES).

“Oct-4” is a member of the POU-domain transcription factor and is widely regarded as a hallmark of pluripotent stem cells. The relationship of Oct-4 to pluripotent stem cells is indicated by its tightly restricted expression to undifferentiated pluripotent stem cells. Upon differentiation to somatic lineages, the expression of Oct-4 disappears rapidly.

“EPCAM” " is also referred to as "Epithelial Cell Adhesion Molecule” is broadly expressed on cells of epithelial origin and epithelial derived tumor cells.

"Rex-1" is a developmentally regulated acidic zinc finger gene (*Zfp-42*). Rex-1 message level is high in embryonic stem cells and reduced upon induction of differentiation. As expected for a stem-cell-specific message, Rex-1 mRNA is present in the inner cell mass (ICM) of blastocyst, polar trophoblast of the blastocyst and later in the ectoplacental cone and extraembryonic ectoderm of the egg cylinder (trophoblast-derived tissues), but its abundance is much reduced in the embryonic ectoderm, which is directly descended from the ICM.

"HNF-1 alpha", "HNF-1 beta" and "HNF-3 beta" belong to the hepatic nuclear factor family of transcription factors, which is characterized by a highly conserved DNA binding domain and two short carboxy-terminal domains.

"GATA-4" and "GATA-6" are members of the GATA transcription factor family. This family of transcription factors are induced by TGF β signaling and contribute to the maintenance of early endoderm markers, Sox17α and HNF-1 beta, and the later marker HNF-3 beta.

"SOX-17" is a transcription factor, which is implicated in the formation of endoderm during embryogenesis.

By "basic defined cell culture medium" is meant a serum free or serum containing, chemically defined cell growth medium. Such medium includes, but is not limited to, Dulbecco's Modified Eagle's Medium (DMEM), alpha modified Minimum Essential Medium (alpha MMEM), Basal Medium Essential (BME), CMRL-1066, RPMI 1640, M199 medium, Ham's F10 nutrient medium, KNOCKOUT™ DMEM, Advanced DMEM, MCDB based media such as MCDB -151, -153, -201, and –302 (Sigma, MO), and DMEM/F12. These and other useful media are available from GIBCO, Grand Island, New York, U.S.A., for example. A number of these media are reviewed in *Methods in Enzymology*, Volume LVIII, "Cell Culture," pp. 62-72, edited by William B. Jakoby and Ira H. Pastan, published by Academic Press Inc.

"Hes-1", also known as "hairy/enhancer of split-1" is a transcription factor that may influence cell fate determination.

"Musashi-1" is a member of a subfamily of RNA binding proteins that are highly conserved across species. Musashi-1expression is highly enriched in proliferative cells within the developing central nervous system, and may be a stem cell marker in intestinal cells.

"Pharmaceutical carrier" refers to a biodegradable or non-degradable porous or non-porous matrix that can act as a carrier for transplantation of mammalian cells.

"Transplantation" as used herein, can include the steps of introducing a cell or a population of cells or tissue into a mammal such as a human patient. "Transplantation" may also include incorporating cells or tissue into a pharmaceutical carrier, and implanting the carrier in a mammal such as a human patient.

Isolation of Amniotic Fluid-Derived Cells

In one aspect of the present invention, amniotic fluid-derived cells are isolated by a multi-stage method, which essentially involves:

- Isolation of amniotic fluid,
- Centrifugation of the amniotic fluid, followed by removal of the supernatant,
- Resuspending the cell pellet in growth medium,
- Culturing the tissues and cells in a low oxygen environment,
- Leaving the culture undisturbed for about 5 to 10 days without any media changes,
- Isolation of distinct colonies using cloning rings,
- Culturing the isolated colonies in growth media
- Serial dilution cloning and identification of single cells that give rise to proliferating colonies, and
- Culturing the clones in growth media.

In an alternate embodiment, amniotic fluid-derived cells are isolated by a multi-stage method, which essentially involves:

- Isolation of amniotic fluid,
- Centrifugation of the amniotic fluid, followed by removal of the supernatant,
- Resuspending the cell pellet in growth medium,
- Culturing the tissues and cells in a normoxic environment,
- Leaving the culture undisturbed for about 5 to 10 days without any media changes,
- Isolation of distinct colonies using cloning rings,
- Culturing the isolated colonies in growth media,
- Serial dilution cloning and identification of single cells that give rise to proliferating colonies, and
- Culturing the clones in growth media.

The culture plates may be pre-coated with agents such as, for example, fibronectin, vitronectin, laminin, collagen, gelatin, thrombospondin, placenta extracts, MATRIGEL™, tenascin, human serum, or combinations thereof.

If desirable, the amniotic fluid may be exposed, for example, to an agent (such as an antibody) that specifically recognizes a protein marker expressed by amniotic fluid cells, to identify and select amniotic fluid-derived cells, thereby obtaining a substantially pure population of amniotic fluid-derived cells.

Amniotic fluid-derived cells may be cultured in AMNIOMAX™ complete medium (Invitrogen). Alternatively, the cells may be cultured in Chang B/C medium (Irvine Scientific). Alternatively, the cells may be cultured in low glucose DMEM, supplemented with insulin-transferrin-selenium-X (ITS-X, Invitrogen, CA), 2% fetal bovine serum (FBS), 1% penicillin/streptomycin (P/S) + 25 ng/ml bFGF. Alternatively, the cells may be cultured in, DM-KNOCKOUT™ media (Invitrogen, CA), supplemented with 20% KNOCKOUT™ serum replacement (Invitrogen, CA), 10 ng/ml bFGF. Alternatively, the cells may be cultured in Williams' medium E supplemented with 2% defined FBS, 2mM L-glutamine, ITS, 55 μM 2-mercaptoethanol, 10ng/ml EGF, 4ng/ml bFGF, and 4ng/ml dexamethasone. Alternatively, the cells may be cultured in 1:1 DMEM-LG/MCDB 201, 2% FBS, ITS-X, βme 55 μM, 100 μM ascorbic acid-2-

phosphate, 4ng/ml bFGF, 10ng/ml EGF, and 4ng/ml dexamethasone. Alternatively, the cells may be cultured in low glucose DMEM, supplemented with 20% FBS. Alternatively, the cell may be cultured in low glucose DMEM, supplemented with 5% FBS. The cells may also be cultured in low glucose DMEM/MCDB 201 medium (1:1), supplemented with 2% defined FBS, ITS-X, 1nM dexamethasone, 100 mM ascorbic acid 2-phosphate, 10ng/ml EGF, 10ng/ml PDGF-bb and 100 mM 2-mercaptoethanol. The media may be supplemented with bFGF, at concentrations from about 5 ng/ml to about 100 ng/ml. Alternatively, the cells may be cultured in 20% KNOCKOUT™ serum replacement + 80% KNOCKOUT™ DMEM, supplemented with 1 mM L-glutamine, 1% non-essential amino acids and 0.1 mM 2-mercaptoethanol. The medium may be conditioned overnight, on human or murine embryonic fibroblasts, human bone marrow derived stromal cells, or human placenta derived cells and supplemented with 4 ng/ml bFGF. Alternatively, the cells may be cultured in high glucose DMEM, supplemented with 20% defined FBS with 0.1 mM 2- mercaptoethanol. **Table II** lists the various media formulations used to culture the amniotic fluid-derived cells of the present invention.

During culture in growth media, the cells may be cultured under hypoxic or normoxic conditions. Under hypoxic conditions, oxygen levels are lower than 20%, alternatively lower than 10%, alternatively lower than 5%, but more than 1%.

Preferably, the culture should be maintained in the growth media undisturbed for about 5 to 14 days without any media changes, at which point the cells have typically become adherent to the culture substrate used. At which point, cells may be sub-cultured.

Subculture can be achieved with any of the enzymatic solutions well known to those skilled in the art. An example of an enzymatic solution suitable for use in the present invention is TrypLE EXPRESS™ (Invitrogen, Ca).

Furthermore, the amniotic fluid-derived cells may be expanded by culturing in a defined growth media containing agent(s) that stimulate the proliferation of the cells of the present invention. These factors may include, for example, nicotinamide, members of

TGF-β family, including TGF-β1, 2, and 3, bone morphogenic proteins (BMP-2, -4, 6, -7, -11, -12, and –13), serum albumin, fibroblast growth factor family, platelet-derived growth factor-AA, and –BB, platelet rich plasma, insulin growth factor (IGF-I, II) growth differentiation factor (GDF-5, -6, -8, -10, 11), glucagon like peptide-I and II (GLP-I and II), GLP-1 and GLP-2 mimetobody, Exendin-4, retinoic acid, parathyroid hormone, insulin, progesterone, testosterone, estrogen, aprotinin, hydrocortisone, ethanolamine, beta mercaptoethanol, epidermal growth factor (EGF), gastrin I and II, copper chelators such as triethylene pentamine, TGF-α, forskolin, Na-Butyrate, activin, betacellulin, noggin, neuron growth factor, nodal, insulin/transferrin/selenium (ITS), hepatocyte growth factor (HGF), keratinocyte growth factor (KGF), bovine pituitary extract, islet neogenesis-associated protein (INGAP), proteasome inhibitors, notch pathway inhibitors, sonic hedgehog inhibitors, GSK-3 beta inhibitors, or combinations thereof. Alternatively, the amniotic fluid-derived cells may be expanded by culturing in conditioned media. By "conditioned media" is meant that a population of cells is grown in a basic defined cell culture medium and contributes soluble factors to the medium. In one such use, the cells are removed from the medium, while the soluble factors the cells produce remain. This medium is then used to nourish a different population of cells.

In certain embodiments, the amniotic fluid-derived cells are cultured on standard tissue culture plates. Alternatively, the culture plates may be coated with extracellular matrix proteins, such as, for example, MATRIGEL ®, growth factor reduced MATRIGEL ®, laminin, collagen, gelatin, tenascin, fibronectin, vitronectin, thrombospondin, placenta extracts, human serum, or combinations thereof.

Characterization of The Isolated Amniotic Fluid-Derived Cells

Methods for assessing expression of protein and nucleic acid markers in cultured or isolated cells are standard in the art. These include quantitative reverse transcriptase polymerase chain reaction (RT-PCR), Northern blots, *in situ* hybridization (see, e.g., *Current Protocols in Molecular Biology* (Ausubel *et al.*, eds. 2001 supplement)), and immunoassays, such as immunohistochemical analysis of sectioned material, Western blotting, and for markers that are accessible in intact cells, flow cytometry analysis

(FACS) (see, e.g., Harlow and Lane, *Using Antibodies: A Laboratory Manual,* New York: Cold Spring Harbor Laboratory Press (1998)).

Examples of antibodies useful for detecting certain protein markers are listed in **Table III**. It should be noted that other antibodies directed to the same markers that are recognized by the antibodies listed in **Table III** are available, or can be readily developed. Such other antibodies can also be employed for assessing expression of markers in the cells isolated in accordance with the present invention.

Characteristics of cells of the β-cell lineage are well known to those skilled in the art, and additional characteristics of the β-cell lineage continue to be identified. These characteristics can be used to confirm that the amniotic fluid-derived cells isolated in accordance with the present invention have differentiated to acquire the properties characteristic of the β-cell lineage. β-cell lineage specific characteristics include the expression of one or more transcription factors such as, for example, PDX-1 (pancreatic and duodenal homeobox gene-1), NGN-3 (neurogenin-3), Hlxb9, Nkx6, Isl1, Pax6, NeuroD, Hnf1a, Hnf6, Hnf3 Beta, and Mafa, among others. These transcription factors are well established in the art for identification of endocrine cells. See, e.g., Edlund (*Nature Reviews Genetics* 3: 524-632 (2002)).

Characteristics of cells of the intestinal cell lineage are well known to those skilled in the art, and additional characteristics of this lineage continue to be identified. These characteristics can be used to confirm that the differentiated or undifferentiated amniotic fluid-derived cells isolated in accordance with the present invention have some of the properties characteristic of the intestinal cell lineage. Intestinal cell lineage characteristics include the expression of one or more transcription factors such as, for example, HES-1 (hairy/enhancer of split-1), NGN-3, Pax6, NeuroD, Math-1, and Musashi-1, among others. In addition, gut cells express hormones such as secretin, cholecystokinin, GLP-1, neurotensin, gastric inhibitory peptide (GIP), serotonin, somatostatin, and gastrin, among others. These transcription factors and gut hormones are well established in the art for identification of intestinal cells. See, e.g., Schonhoff (*Endocrinology* 145: 2639-2644 (2004)).

The present inventors have identified and isolated a population of amniotic fluid-derived cells that is highly proliferative, and displays embryonic cell-like characteristics, and may express at least one of the following markers: HNF-1 beta, HNF-3 beta, SOX-17, or GATA 6. In particular, the amniotic fluid-derived cells isolated in accordance with the present invention are characterized as, *inter alia*, substantially lacking at least one of the following protein markers: CD117, Oct-4 or Tra2-54. Populations of amniotic fluid-derived cells with these characteristics are referred to herein as AF-I (ATCC accession number PTA-6975).

Under the above growth conditions for expansion, the amniotic fluid cells isolated in accordance with the present invention may be expanded for more than 50 population doublings, while maintaining the potential to express at least one of the following markers: HNF-1 beta, HNF-3 beta, SOX-17, or GATA-6.

The present inventors have also identified and isolated populations of amniotic fluid-derived cells that is highly proliferative, displays embryonic cell-like characteristics, and do not express at least one of following markers: HNF-3 beta, SOX-17, GATA-4, CD117, Oct-4 or Tra2-54. In particular, the amniotic fluid-derived cells isolated in accordance with the present invention are characterized as, *inter alia*, substantially lacking at least one of the following protein markers: CD117, Oct-4 or Tra2-54. Populations of amniotic fluid-derived cells with these characteristics are referred to herein as AF-II.

The present inventors have also identified and isolated populations of amniotic fluid-derived cells that is highly proliferative, displays embryonic cell-like characteristics, and do not express any of the following markers: HNF-3beta, SOX-17, GATA-4, CD117, Oct-4 or Tra2-54. In particular, the amniotic fluid-derived cells isolated in accordance with the present invention are characterized as, *inter alia*, substantially lacking at least one of the following protein markers: CD117, Oct-4 or Tra2-54. Populations of amniotic fluid-derived cells with these characteristics are referred to herein as AF-II.

The present inventors have also identified and isolated populations of amniotic fluid-derived cells that is highly proliferative, displays embryonic cell-like characteristics, and do not express cytokeratin and at least one of following markers: HNF-3 beta, SOX-17, GATA-4, CD117, Oct-4 or Tra2-54. In particular, the amniotic fluid-derived cells isolated in accordance with the present invention are characterized as, *inter alia*, substantially lacking at least one of the following protein markers: CD117, Oct-4 or Tra2-54. Populations of amniotic fluid-derived cells with these characteristics are refered to herein as AF-III.

The present inventors have also identified and isolated populations of amniotic fluid-derived cells that is highly proliferative, displays embryonic cell-like characteristics, and do not express any of the following markers: cytokeratin, HNF-3beta, SOX-17, GATA-4, CD117, Oct-4 or Tra2-54. In particular, the amniotic fluid-derived cells isolated in accordance with the present invention are characterized as, *inter alia*, substantially lacking at least one of the following protein markers: CD117, Oct-4 or Tra2-54. Populations of amniotic fluid-derived cells with these characteristics are refered to herein as AF-III.

A summay of the expression profile of AF-I, AF-II and AF-III cells is shown in **Figure 9**.

Amniotic fluid-derived cells of the present invention may be expanded for more than 50 population doublings, while maintaining the potential to differentiate into definitive endoderm, or cells with characteristics of a pancreatic β- cell lineage, or the capacity to differentiate into a gut hormone-producing cell.

Differentiation Of Amniotic Fluid-Derived Cells

In one aspect, the present invention provides compositions capable of differentiating the expanded amniotic fluid-derived cells of this invention into cells bearing markers characteristic of the βcell lineage.

In another aspect, the present invention provides compositions capable of differentiating the expanded amniotic fluid-derived cells of this invention into cells bearing markers characteristic of definitive endoderm.

In another aspect, the present invention provides compositions capable of differentiating the expanded amniotic fluid-derived cells of this invention into cells bearing markers characteristic of a gut hormone-producing cell.

A basic defined culture medium, when supplied with one or more components, that support the growth of amniotic fluid-derived cells, supplemented with differentiation-inducing amounts of one or more growth factors, is referred to as an "induction medium." In accordance with the present invention, the induction medium contains less than or equal to 20% serum. In one embodiment, fetal calf serum may be used. Alternatively, fetal bovine serum may be replaced by serum from any mammal, or by albumin, bovine albumin or other compounds that permit or enhance differentiation of amniotic fluid-derived cells to the β cell lineage. Alternatively, the induction medium may be conditioned medium.

Factors appropriate for use in the induction medium may include, for example, nicotinamide, members of TGF-β family, including TGF-β1, 2, and 3, bone morphogenic proteins (BMP-2, -4, 6, -7, -11, -12, and –13), serum albumin, fibroblast growth factor family, platelet-derived growth factor-AA, and –BB, platelet rich plasma, insulin growth factor (IGF-I, II) growth differentiation factor (GDF-5, -6, -8, -10, 11), glucagon like peptide-I and II (GLP-I and II), GLP-1 and GLP-2 mimetobody, Exendin-4, retinoic acid, parathyroid hormone, insulin, progesterone, aprotinin, hydrocortisone, ethanolamine, beta mercaptoethanol, epidermal growth factor (EGF), gastrin I and II, copper chelators such as triethylene pentamine, TGF-α, forskolin, Na-Butyrate, activin, betacellulin, ITS, noggin, neurite growth factor, nodal, valporic acid, trichostatin A, sodium butyrate, hepatocyte growth factor (HGF), sphingosine-1, Wnt proteins such as Wnt-1, -3, -3a, 07a, and –8, keratinocyte growth factor (KGF), Dickkopf protein family, bovine pituitary extract, islet neogenesis-associated protein (INGAP), Indian hedgehog, sonic hedgehog,

proteasome inhibitors, notch pathway inhibitors, sonic hedgehog inhibitors, or combinations thereof.

In one aspect of the present invention, a combination of growth factors and chemical agents, including bFGF, Activin-A, FGF5, N2 and B27 supplements (Gibco, CA), steroid alkaloid such as, for example, cyclopamine (EMD, CA) that inhibits sonic hedgehog signaling, and a proteasome inhibitor such as, for example MG132 (EMD, CA), is supplied to a basic defined medium to support differentiation of amniotic fluid-derived cells into a β-cell lineage. In one aspect, the cells are cultured in an induction media composed of DMEM (low glucose, 5.5 mM) containing 10 micromolar MG-132 for 1-2 days, followed by additional incubation for 3-7 days in an induction media supplemented with 1X B27 (Gibco, CA) and 1X N2 (Gibco, CA) and further supplemented with Cyclopamine (10 μM; EMD, CA), bFGF (20 ng/ml; R&D Systems, MN), Activin A (20 nM; R&D Systems, MN) or FGF5 (20 ng/ml; R&D Systems, MN) for an additional five days.

In another aspect of the invention, the cells of the current invention can be treated with conditioned media isolated from cultures of primary fetal intestinal or pancreatic rudiments to induce further differentiation into the intestinal or pancreatic lineages, respectively. The cells may also be induce to differentiate with conditioned media from pancreatic cells lines such as PANC-1, CAPAN-1, BxPC-3, HPAF-II, hepatic cell lines such as HepG2, and intestinal cell lines such as, for example, FHs 74 and HS738. Altrenatively, the cells of the present invention can be treated with conditioned media isolated from human or mouse embryonic stem cells indiced to differentiate into an endodermal lineage. These cell lines can be purchased from the ATCC (VA).

The combination and concentrations of growth factors, the length of culture, and other culture conditions can be optimized by those skilled in the art to achieve effective differentiation by, e.g., monitoring the percentage of cells that have differentiated into cells characteristic of the β-cell lineage. The one or more growth factors may be added in an amount sufficient to induce the differentiation of the amniotic fluid-derived cells of

the present invention into cells bearing markers of a β-cell lineage over a time period of about one to four weeks.

Therapeutic Use of The Cells of The Present Invention.

In one aspect, the present invention provides a method for treating a patient suffering from, or at risk of developing Type1 diabetes. This method involves isolating and culturing amniotic fluid-derived cells, expanding the isolated population of cells, differentiating the cultured cells *in vitro* into a β-cell lineage, and implanting the differentiated cells either directly or in a pharmaceutical carrier into the patient. If appropriate, the patient can be further treated with pharmaceutical agents or bioactives that facilitate the survival and function of the transplanted cells. These agents may include, for example, insulin, members of the TGF-β family, including TGF-β1, 2, and 3, bone morphogenic proteins (BMP-2, -3, -4, -5, -6, -7, -11, -12, and -13), fibroblast growth factors-1 and -2, platelet-derived growth factor-AA, and –BB, platelet rich plasma, insulin growth factor (IGF-I, II) growth differentiation factor (GDF-5, -6, -8, -10, -15), vascular endothelial cell-derived growth factor (VEGF), pleiotrophin, endothelin, among others. Other pharmaceutical compounds can include, for example, nicotinamide, glucagon like peptide-I (GLP-1) and II, GLP-1 and 2 mimetibody, Exendin-4, retinoic acid, parathyroid hormone, MAPK inhibitors, such as, for example, compounds disclosed in U.S. Published Application 2004/0209901 and U.S. Published Application 2004/0132729.

In yet another aspect, this invention provides a method for treating a patient suffering from, or at risk of developing Type 2 diabetes. The method involves isolating and culturing amniotic fluid-derived cells according to the present invention, expanding the isolated population of cells, differentiating the cultured cells *in vitro* into a β-cell lineage, and implanting the differentiated cells either directly or in a pharmaceutical carrier into said patient.

In yet another embodiment, the amniotic fluid-derived cells of the present invention may be cryopreserved using commercially available medium containing DMSO

(dimethylsulfoxide) or glycerol. The banked and frozen cells may be stored in the vapor phase of a liquid nitrogen storage tank until needed.

In yet another embodiment, the amniotic fluid-derived cells of the present invention may be transplanted with mature islets of the same or different animal species to enhance the survival of the amniotic fluid-derived cells or to induce further differentiation of the amniotic fluid-derived cells into a pancreatic β cell lineage.

The source of amniotic fluid from which the cells are isolated may be autologous in relation to the patient undergoing the therapeutic treatment. Alternatively, the source may be allogeneic, or xenogeneic. Cells to be administered to a patient may also be genetically modified to enhance proliferation and/or differentiation or prevent or lessen the risk of immune rejection. Alternatively, the amniotic fluid-derived cells obtained in accordance with the present invention can be used to modulate the recipient's immune response, prior to transplantation of differentiated cells prepared in accordance with the present invention. See, for example, U.S. Patent 6,328,960, U.S. Patent 6,281,012.

The amniotic fluid-derived cells of the present invention may be differentiated into an insulin-producing cell prior to transplantation into a recipient. In a specific embodiment, the amniotic fluid-derived cells of the present invention are fully differentiated into β-cells, prior to transplantation into a recipient. Alternatively, the amniotic fluid-derived cells of the present invention may be transplanted into a recipient in an undifferentiated or partially differentiated state. Further differentiation may take place in the recipient.

The amniotic fluid-derived cells of the present invention may be genetically modified. For example, the cells may be engineered to over express markers characteristic of a cell of a β-cell lineage, such as, for example, PDX-1 or insulin. The cells may be engineered to over express with any suitable gene of interest. Furthermore, the cells may be engineered to over express markers characteristic of an intestinal cell, such as MATH-1. Alternatively, the cells of the present invention can be differentiated into a GIP expressing cell population and further modified with an insulin gene under control of the GIP promoter to become glucose responsive and insulin-producing cell population.

Techniques useful to genetically modify the amniotic fluid-derived cells of the present invention can be found, for example, in standard textbooks and reviews in cell biology. Methods in molecular genetics and genetic engineering are described, for example, in Molecular Cloning: A Laboratory Manual, 2nd Ed. (Sambrook *et al.,* 1989); Oligonucleotide Synthesis (M. J. Gait, ed., 1984); Animal Cell Culture (R. I. Freshney, ed., 1987); the series Methods in Enzymology (Academic Press, Inc.); Gene Transfer Vectors for Mammalian Cells (I. M. Miller &M. P. Calos, eds. , 1987); Current Protocols in Molecular Biology and Short Protocols in Molecular Biology, 3rd Edition (F. M. Ausubel *et al*., eds., 1987 &1995); and Recombinant DNA Methodology II (R. Wu ed. , Academic Press 1995).

The nucleic acid molecule, encoding the gene of interest may be stably integrated into the genome of the host amniotic fluid-derived cell, or the nucleic acid molecule may be present as an extrachromosomal molecule, such as a vector or plasmid. Such an extrachromosomal molecule may be auto- replicating. The term "transfection," as used herein, refers to a process for introducing heterologous nucleic acid into the host amniotic fluid-derived cell.

The cells, undifferentiated or otherwise, may be used as dispersed cells or formed into clusters that may be infused into the hepatic portal vein. Alternatively, the cells may be provided in biocompatible degradable polymeric supports, porous non-degradable devices or encapsulated to protect from host immune response. The cells may be implanted into an appropriate site in a recipient. The implantation sites include, for example, the liver, natural pancreas, renal subcapsular space, omentum, peritoneum, subserosal space, intestine, stomach, or a subcutaneous pocket.

To enhance further differentiation, survival or activity of implanted cells, additional factors, such as growth factors, antioxidants or anti-inflammatory agents, can be administered before, simultaneously with, or after the administration of the cells. In certain embodiments, growth factors are utilized to differentiate the administered cells *in vivo*. These factors can be secreted by endogenous cells and exposed to the administered amniotic fluid-derived cells *in situ*. Implanted amniotic fluid-derived cells can be

induced to differentiate by any combination of endogenous and exogenously administered growth factors known in the art.

The amount of cells used in implantation depends on a number of factors including the patient's condition and response to the therapy, and can be determined by one skilled in the art.

In one aspect, this invention provides a method for treating a patient suffering from, or at risk of developing diabetes. The method includes isolating and culturing amniotic fluid-derived cells according to the present invention, expanding the isolated population of cells, differentiating *in vitro* the cultured amniotic fluid-derived cells into a β-cell lineage, and incorporating the cells into a three-dimensional support. The cells can be maintained *in vitro* on this support prior to implantation into the patient. Alternatively, the support containing the cells can be directly implanted in the patient without additional *in vitro* culturing. The support can optionally be incorporated with at least one pharmaceutical agent that facilitates the survival and function of the transplanted cells.

Support materials suitable for use for purposes of the present invention include tissue templates, conduits, barriers, and reservoirs useful for tissue repair. In particular, synthetic and natural materials in the form of foams, sponges, gels, hydrogels, textiles, and nonwoven structures, which have been used *in vitro* and *in vivo* to reconstruct or regenerate biological tissue, as well as to deliver chemotactic agents for inducing tissue growth, are suitable for use in practicing the methods of the present invention. See, e.g., the materials disclosed in U.S. Patent 5,770,417, U.S. Patent 6,022,743, U.S. Patent 5,567,612, U.S. Patent 5,759,830, U.S. Patent 6,626,950, U.S. Patent 6,534,084, U.S. Patent 6,306,424, U.S. Patent 6,365,149, U.S. Patent 6,599,323, U.S. Patent 6,656,488, and U.S. Patent 6,333,029. Exemplary polymers suitable for use in the present invention are disclosed in U.S. Published Application 2004/0062753 A1 and U.S. Patent 4,557,264.

To form a support incorporated with a pharmaceutical agent, the pharmaceutical agent can be mixed with the polymer solution prior to forming the support. Alternatively, a pharmaceutical agent could be coated onto a fabricated support, preferably in the

presence of a pharmaceutical carrier. The pharmaceutical agent may be present as a liquid, a finely divided solid, or any other appropriate physical form. Alternatively, excipients may be added to the support to alter the release rate of the pharmaceutical agent. In an alternate embodiment, the support is incorporated with at least one pharmaceutical compound that is an anti-inflammatory compound, such as, for example compounds disclosed in U.S. Patent 6,509,369.

In one embodiment, the support is incorporated with at least one pharmaceutical compound that is an anti-apoptotic compound, such as, for example, compounds disclosed in U.S. Patent 6,793,945.

In another embodiment, the support is incorporated with at least one pharmaceutical compound that is an inhibitor of fibrosis, such as, for example, compounds disclosed in U.S. Patent 6,331,298.

In a further embodiment, the support is incorporated with at least one pharmaceutical compound that is capable of enhancing angiogenesis, such as, for example, compounds disclosed in U.S. Published Application 2004/0220393 and U.S. Published Application 2004/0209901.

In still another embodiment, the support is incorporated with at least one pharmaceutical compound that is an immunosuppressive compound, such as, for example, compounds disclosed in U.S. Published Application 2004/0171623.

In a further embodiment, the support is incorporated with at least one pharmaceutical compound that is a growth factor, such as, for example, members of the TGF-β family, including TGF-β1, 2, and 3, bone morphogenic proteins (BMP-2, -3, -4, -5, -6, -7, -11, -12, and -13), fibroblast growth factors-1 and -2, platelet-derived growth factor-AA, and –BB, platelet rich plasma, insulin growth factor (IGF-I, II) growth differentiation factor (GDF-5, -6, -8, -10, -15), vascular endothelial cell-derived growth factor (VEGF), pleiotrophin, endothelin, among others. Other pharmaceutical compounds can include, for example, nicotinamide, hypoxia inducible factor 1-alpha, glucagon like peptide-I (GLP-1), GLP-1 and GLP-2 mimetibody, and II, Exendin-4, nodal, noggin, NGF, retinoic

acid, parathyroid hormone, tenascin-C, tropoelastin, thrombin-derived peptides, cathelicidins, defensins, laminin, biological peptides containing cell- and heparin-binding domains of adhesive extracellular matrix proteins such as fibronectin and vitronectin, MAPK inhibitors, such as, for example, compounds disclosed in U.S. Published Application 2004/0209901 and U.S. Published Application 2004/0132729.

The incorporation of the cells of the present invention into a scaffold can be achieved by the simple depositing of cells onto the scaffold. Cells can enter into the scaffold by simple diffusion (*J. Pediatr. Surg.* 23 (1 Pt 2): 3-9 (1988)). Several other approaches have been developed to enhance the efficiency of cell seeding. For example, spinner flasks have been used in seeding of chondrocytes onto polyglycolic acid scaffolds (*Biotechnol. Prog.* 14(2): 193-202 (1998)). Another approach for seeding cells is the use of centrifugation, which yields minimum stress to the seeded cells and enhances seeding efficiency. For example, Yang *et al.* developed a cell seeding method (*J. Biomed. Mater. Res.* 55(3): 379-86 (2001)), referred to as Centrifugational Cell Immobilization (CCI).

The present invention is further illustrated, but not limited by, the following examples.

Example 1

The Establishment of Human Amniotic Fluid-Derived Cell Lines

Amniotic fluid used to isolate the cells of the present invention was taken from samples taken from routine amniocentesis performed at 16 to 22 weeks of gestation for fetal karyotyping. The multi-stage method used to isolate the amniotic fluid-derived cells is outlined in **Figure 1**. The amniotic fluid was centrifuged for 7 minutes at 400 *x g* and the supernatant removed. The resulting cell pellet was resuspended in the growth media indicated in **Table III** for the amniotic fluid samples used in the present invention. The cells were cultured either on collagen type IV (1mg/100 mm plate), or on collagen type I (1 microgram/cm^2), vitronectin (10 microgram/ml) or fibronectin (10 micrograms/ml) coated plates. The cell yield from amniotic fluid samples had a large variation (8000-300000 cell/sample) and some samples also contained a significant number of blood cell contamination. The cultures were left undisturbed for at least 5-10 days under hypoxic

conditions (3% O2). In parallel, cultures were established under similar conditions in normoxic conditions. Next, the cultures were fed with the same growth media and cultured until the cultures reached 70-80% confluency. Cells at this stage were referred to as "P0". In some cultures, colonies of cells were isolated by a cloning ring and sub cultured into a different culture plate. Distinct colonies were present with morphologies characteristic of fibroblast (F), amniotic fluid (AF), and epithelial (E) cells (**Figure 2**). Cells were released from P0 culture by using TrypLE Express™ (Invitrogen) and seeded into fibronectin, vitronectin, or collagen type IV coated flaks/dishes/plates at various densities (50-10,000 cell/cm2). Some of the P0 cells were used for serial dilution cloning. The population doubling time of the fastest growing cells was approximately 24 hrs at early passages. The expanded cells cultured under various media conditions (**Table II**) were analyzed for cell surface markers (**Table III**). Cells were typically split at ~70% confluency and reseeded at 100-10000 cells/cm^2. RNA was collected at various stages of cell growth and analyzed for embryonic and germ layer markers (**Table V**).

Amniotic fluid cells of the present invention were present at various gestational ages. **Table VI** lists the presence or absence of AF, E, and F morphologies in amniotic fluid samples obtained at 17 weeks to 41 weeks of gestation.

Amniotic fluid cells of the present invention were also obtained from amniotic fluid obtained at term (approximately 40 wks of gestation). Amniotic fluid samples were obtained from 38-40 wk deliveries and cultured according to the protocols outlined above. The resulting adherent cell populations displayed very similar characteristics to the cells isolated from 16-22 wks of gestation.

Example 2

Clonal Expansion of the Cells of the Present Invention

Using methods described in **Example 1**, cells with AF-like morphologies were harvested from P0 cultures using cloning rings. Three distinct populations of cells exhibiting different expression of surface receptors, cytoskeletal proteins, and transcription factors were identified. For sake of clarity, these populations are referred to as AF-I, AF-II, and

AF-III cells. Subsequent examples highlight the differences between AF-I, -II, and –III populations.

Example 3

Fluorescence-Activated Cell Sorting (FACS) Analysis

Adhered cells were removed from culture plates by five-minute incubation with the TRYPLE™ express solution (Gibco, CA). Released cells were resuspended in DMEM supplemented with 10% FBS and recovered by centrifugation, followed by washing and resuspending the cells in a staining buffer consisting of 2% BSA, 0.05% sodium azide (Sigma, MO) in PBS. If appropriate, the cells were Fc-receptor blocked using a 0.1% γ–globulin (Sigma) solution for 15 min. Aliquots (approximately 10^5 cells) were incubated with either phycoerythirin (PE) or allophycocyanin (APC) conjugated monoclonal antibodies (5 μl antibody per 10^6 cells), as indicated in **Table III-A**, or with an unconjugated primary antibody. Controls included appropriate isotype matched antibodies, non-stained cells, and cells only stained with secondary conjugated antibody. All incubations with antibodies were performed for 30 mins at 4°C, after which the cells were washed with the staining buffer. Samples that were stained with unconjugated primary antibodies were incubated for additional 30 mins at 4°C with secondary conjugated PE or -APC labeled antibodies. See **Table III-B** for a list of secondary antibodies used. Washed cells were pelleted and resuspended in the staining buffer and the cell surface molecules were identified by using a FACS Array (BD Biosciences) by collecting at least 10,000 events.

For intracellular staining, cells were first fixed for 10 mins with 4% paraformaldheyde, followed by two rinses in the staining buffer, centrifugation of cells and resuspension of the cells in a permeabilization buffer containing 0.5% Triton-X (Sigma) in PBS for 5 mins at room temperature (RT). The permeabilized cells were rinsed twice with a rinsing buffer, centrifuged, and resuspended in the staining buffer and incubated with an appropriate conjugated antibody (5 μl antibody per 10^6 cells), for 30 mins at 4°C. Samples that were stained with unconjugated primary antibodies were incubated for

additional 30 mins at 4°C with secondary conjugated PE or –APC labeled antibodies (**Table III B**). Washed cells were pelleted and resuspended in the staining buffer and the internal proteins were identified by using a FACSArray (BD Biosciences) by collecting at least 10,000 events. The expression level of examined surface and internal markers is listed in **Table IV A and B**. FACS analysis allowed identification of signature markers to distinguish amniotic fluid cells (AF-I, -II, and -III), fibroblasts (F), and epithelial cells (E) (**Figures 3-5**). Table **IV C** lists the cell surface expression profile of AF-I cells isolated from term (38-40 wks) amniotic fluid. The expression level of cell surface receptors is very similar to AF-I cells isolated from 16-22 wks amniotic fluid.

Example 4

Immunostaining of Undifferentiated Cells

10,000 cells/cm^2 cells, cultured according to **Example 1**, were seeded into glass bottom 35 mm microwell dishes (Matek Corp, MA) in various growth media. Following three days in culture, the cells were fixed for 10 mins with 4% paraformaldheyde, followed by two rinses in the PBS, and addition of a permeabilization buffer containing 0.5% Triton-X (Sigma) for 5 mins at room temperature (RT) followed by additional three rinses with PBS. The fixed and permeabilized cells were blocked with either 1% bovine serum albumin (BSA) or 4% sera from the species where the secondary antibody was raised in (Goat, donkey, or rabbit). Control samples included reactions with the primary antibody omitted or where the primary antibody was replaced with corresponding immunoglobulins at the same concentration as the primary antibodies. Stained samples were rinsed with a PROLONG® antifade reagent (Invitrogen, CA) containing diamidino-2-phenylindole, dihydrochloride (DAPI) to counter stain the nucleus. Images were acquired using a Nikon Confocal Eclipse C-1 inverted microscope (Nikon, Japan) and a 10-60X objective (**Figures 6 - 8**).

Example 5

PCR Analysis Of Undifferentiated Cells

RNA was extracted from cells cultured in the growth media. Total RNA from human pancreas, liver, brain ,gut (Ambion, INC.) NTERA cells (human embryonic carcinoma cells line, ATCC), HEK293 cells (ATCC), and human airway epithelia cells (Cambrex) were used as positive controls. Bone marrow derived mesenchymal cells (Cambrex, MD) were used as negative controls for the expression of key genes involved in pancreatic development.

RNA extraction, purification, and cDNA synthesis. RNA samples were purified through its binding to a silica-gel membrane (Rneasy™ Mini Kit, Qiagen, CA) in the presence of an ethanol-containing, high-salt buffer; while contaminants were washed away. The RNA was further purified while bound to the column by treatment with DNase I (Qiagen, CA) for 15 min. High-quality RNA was then eluted in water. Yield and purity were assessed by A260 and A280 readings on the spectrophotometer. cDNA copies were made from purified RNA using an ABI (ABI, CA) high capacity cDNA archive kit.

Real-time PCR amplification and quantitative analysis. Unless otherwise stated, all reagents were purchased from Applied Biosystems. Real-time PCR reactions were performed using the ABI PRISM® 7000 Sequence Detection System. TAQMAN® UNIVERSAL PCR MASTER MIX® (ABI, CA) was used with 20 ng of reverse transcribed RNA in a total reaction volume of 20 µl. Each cDNA sample was run in duplicate to correct for pipetting errors. Primers and FAM-labeled TAQMAN®probes were used at concentrations of 200 nM. The level of expression of each target gene was normalized using the pre-developed Applied Biosystem's 18S ribosomal RNA or human glyceraldehydes-3-phosphate dehydrogenase (GAPDH) endogenous control kit. Primers and probes were either designed using ABI PRISM PRIMER EXPRESS™ software or used pre-developed ABI gene analysis kit. For each gene, either one of the primers or the probe were designed to be exon-boundary spanning. This eliminated the possibility of the primers/probe binding to any genomic DNA present. The primer and probe sets are listed as following Nkx2.2 (Hs00159616), Pdx-1 (Hs00426216), Nkx6.1 (Hs00232355), Ngn3 (Hs00360700), Pax4 (Hs00173014), Pax6 (Hs00240871), Insulin (Hs00355773), Glu2 (Hs00165775), glucagon (Hs00174967), Isl-1 (Hs00158126), somatostatin

(Hs00174949), FoxA2 (HNF 3-beta) (Hs00232764), HlxB9 (Hs00232128), GATA-4 (Hs00171403), HNF1β (Hs00172123), Musashi Homolog 1 (Msi-1) (Hs00159291), Hes-1 (Hs00172878), Neurotensin (NTS) (Hs00175048), Cholecystokinin (Hs00174937), AFP (Hs00173490), Secretin (Hs00360814), GIP (Hs00175030), GFAP (Hs00157674), MAP2 (Hs00159041), Olig2 (Hs0037782), Oct-4 (CGACCATCTGCCGCTTTGAG (SEQ ID NO: 1) and CCCCCTGTCCCCCA TTCCTA (SEQ ID NO: 2)); Rex-1 (CAGATCCTAAACAGCTCGCAGAAT (SEQ ID NO: 3), and GCGTACGCAAATTAAACTCCAGA(SEQ ID NO: 4); Sox17: TGGCGCAGCAGATACCA (SEQ ID NO:5), AGCGCCTTCCACGACTTG (SEQ ID NO:6) and CCAGCATCTTGCTCAACTCGGCG (SEQ ID NO:7); ABCG-2: GTTTATCCGTGGTGTGTCTGG (SEQ ID NO: 8) and CTGAGCTATAGAGGCCTGGG (SEQ ID NO: 9); SOX2: ATGCACCGCTACGACGTGA (SEQ ID NO:10) and CTTTTGCACCCCTCCCATTT (SEQ ID NO: 11). The remaining primers were designed by using the PRIMERS program (ABI, CA) and are listed in **Table V**. After an initial 50°C for 2 min, and 95°C for 10 min, samples were cycled 40 times in two stages - a denaturation step at 95°C for 15 sec, followed by an annealing/extension step at 60°C for 1 min. Data analysis was carried out using GENEAMP®7000 Sequence Detection System software. For each primer/probe set, a C_t value was determined as the cycle number at which the fluorescence intensity reached a specific value in the middle of the exponential region of amplification. Relative gene expression levels were calculated using the comparative C_t method. Briefly, for each cDNA sample, the endogenous control C_t value was subtracted from the gene of interest C_t to give the delta C_t value (ΔC_t). The normalized amount of target was calculated as $2^{-\Delta Ct}$, assuming amplification to be 100% efficiency. Final data were expressed relative to a calibrator sample. The comparative C_t method is only valid if target and endogenous control amplification efficiencies are approximately equal. Preliminary validation experiments were therefore performed for each primer/probe set by amplifying serially diluted cDNA samples and determining the ΔC_t values. These ΔC_t values should remain constant across the range of dilutions if amplification efficiencies are equal (**Table V**).

Example 6

Population doubling time

Passage 6 amniotic fluid cells (AF-I type), isolated and expanded according to Example1 were seeded at 10000 cells/well of a 24-well tissue culture plate (Corning, MA) in growth media #11. At various time points, cells were removed from three wells of the plate using TRYPLE™ Express (Invitrogen, CA) and counted using a Guava PCA-96 cell analysis system and the VIACOUNT® reagent (Guava, CA). **Figure 10** depicts the growth curve of passage 6 cells cultured under hypoxic conditions (3% O2). The linear phase of the log plot was used to estimate the population doubling time of the cells. Population doubling time of passage 6 cells was 31 hrs.

The growth potential of the three cell populations (fibroblast, AF, and epithelial morphology) were compared over long-term cultures. **Figure 11** depicts the growth potential of AF-I, AF-II, AF-III, F, and E cells cultured in media #5. It is clear that F ("fibroblastic" amniotic fluid-derived) cells and AF cells can expand well above 50 population doublings and represent a scalable source for cell therapy applications.

Example 7

Telomere length of AF-I cells

The telomere length of an AF-I line isolated from a single cell by limited serial dilution was analyzed at passage 12 (approximately 50 population doublings) by using the *Telo TAGGG* Telomere Length Assay (Roche, IN) and following the manufacturer's instruction. The telomere length was analyzed for cells cultured in DMEM-LG + 10 % FBS and cells cultured in Amniomax™ (Gibco) see **Figure 12**. DNA from NTERA cells served as a positive control.

Example 8

Karyotype analysis

The karyotype of AF cells, isolated from mutliple donors at passage 8-10 (approximately 30 population doublings), was determined by G-band analysis. Five karyotypes were prepared and cytogenetic analysis showed that the cells had a normal autosomes and a modal chromosome number of 46. All cells analyzed also contained the X and Y-chromosomes confirming their fetal origin. **Figure 13** depicts karyotypes of amniotic fluid-derived cells (AF-I, AF-II, and AF-III) isolated from amniotic fluid obtained from 16-22 weeks of gestation.

Example 9

Expansion potential of AF cells derived from term amniotic fluid

Figure 14 depicts the expansion potential of an AF-I cell morphology derived from term amniotic fluid (~38 weeks) and cultured in media #5. The expansion potential is very similar to the AF-I cells isolated from 16-22 wks amniotic fluid.

Example 10

Microarray analysis of fibroblast, epithelial, and amniotic fluid morphology cells

Total RNA was isolated from passage 9-11 amniotic fluid-derived fibroblast cells (F), amniotic fluid-derived epithelial cells (E), amniotic fluid-derived amniotic fluid cells (AF- I, -II, and -III lines), and amniotic fluid at term (AF term) using an RNeasy mini kit (Qiagen). The sample preparation, hybridization, and image analysis was performed according to the CodeLink™ System (GE Healthcare, Amersham Biosciences, NJ). Codelink™ Human Whole Genome arrays were used. It is comprised of approximately 55 000 30-mer probes designed to conserved exons across the transcripts of targeted genes. The chip contains ~45000 unique Unigene IDs. Following normalization and a log transformation, data analysis was performed using OmniViz® software (MA) and GENESIFTER (VizXLabs, WA). The variance stabilizing transformation along with cross sample normalization was applied to the log transformed array dataset. The variability within each cell line and among the different cell lines was compared using the Pearson correlation coefficient. For all the samples analyzed, the correlation coefficient

within a cell line was higher as compared to those between the lines. Variance in gene expression profiles between the different cell types along with the correlation coefficient between the lines are depicted in **Figure 15**. Significant differences in gene expression between the cell types were evaluated using analysis of variance and an F-test with adjusted P-value (Benjamini and Hochberg correction) of □ 0.05. **Tables VII A-G** list the genes that are differentially expressed at least 5-fold between the various cell types.

Example 11

Differentiation of cells into intestinal-like cells

The AF-I line, AFCA007 Clone A passage 14, was cultured at 10,000 cells/cm^2 in AMNIOMAX^{TM}. At confluency, the cells were further treated for 2 weeks with a daily dose of 10 micro molar retinoic acid (RA) in AMNIOMAX^{TM} media. RNA was collected at day 14 and expression of intestinal hormones (secretin, neurotensin, gastric inhibitory peptide (GIP), cholecystokinin, somatostatin, and gastrin) was assessed by using real-time PCR as outlined in Example 4. Intestinal RNA (Ambion) was used to assess relative levels of expression using the $\Delta\Delta C_t$ method. **Table VIII** lists the C_t values and the relative level of expression of the intestinal hormones in treated and untreated samples. As shown in **Table VIII**, addition of RA enhanced expression of the gut hormones.

Example 12

Differentiation of cells into multiple endocrine lineages

Cells from the cell line AFCA007 Clone A (AF-I) at passage 8 were embedded in collagen type I (Becton Dickinson, CA) with 1% growth-factor reduced matrigel matrix (Becton Dickinson), and seeded into 6-well transwell insert at 5x10^5 cells per well. The bottom well was seeded with human aortic endothelial cells passage 6 (Cambrex. MD). Cells were cultured with DMEM medium supplemented with 5% FBS and growth factors, which includes Cyclopamine, bFGF, EGF, BMP4-7, Activin A, Exendin 4, FGF4, all-trans retinoic acid and γ-secretase inhibitors for 14 days. Cultures were fed

every other day. Cells treated by all-trans retinoic acid showed the up-regulation of alpha-fetoprotein (AFP). Treatment of cells with Activin A, BMP4, or the γ-secretase inhibitor L-685,458 up-regulated the expression of HNF-3 beta. Treatment of cells with BMPs at high concentration, 50 ng/ml, also up-regualted the GATA4 expression. Treatment of cells with FGF4 at 50 ng/ml showed an up-regulation of PDX-1 expression (**Table IX**).

Cells from the cell line AFCA004 (E morphology) at passage 6 were seeded at $5x10^5$ cells per well of 6-well culture plates and treated with conditioned medium from confluent PANC-1 cells (ATCC, VA) in combination with different growth factors. Basic FGF, EGF and combination of bFGF and EGF enhanced the expression of HNF-3 beta ~100 fold over untreated cells. Basic FGF, EGF and BMPs also stimulated somatostatin expression after 14 days treatment (**Figure 16, panels a&b**).

Taken together, these results suggest that AF cells could be differentiated into pancreatic, hepatic or intestinal lineage by treating the cells with different growth factors.

Example 13

Modulation of the expression of endoderm makers by inhibiting the Notch pathway

Cells from the cell line AFCA007 (AF-I) at passage 8 were treated with a range of concentrations of the notch pathway inhibitor L-685,458 (Sigma, MO) for 3 to 5 days. The cytotoxcity of L-685,458 was determined by measuring cell viability by a MTS assay (Promega, WI). Real-time PCR analysis was performed to analyze Hes-1 expression after the treatment. We found that L-685,458 showed a dose-dependent inhibitory effect on Hes-1 expression, Hes-1 is the downstream direct target of Notch pathway (**Figure 17, panel a**). No effect on cell viability, as determined by the MTS assay, was observed following L-685,458 treatment of up to 10μM for 5 days (**Figure 17, panel b**).

Example 14

Cytokine antibody array analysis for AF I and AF II cells

AFCA007 A (AF-I) and AFCA015 C (AF-II) at passage 10 were grown to approximately 70 % confluency and then cell lystaes was collected using mammalian cell lysis kit (Sigma-Aldrich, MO). Cytokine array analyss was completed using Cytokine Array panels provided by RayBiotech, GA . **Table X** lists cytokine, cytokine and growth factor receeptor expression following normalization of the data and background subtraction. For each panel, positive and negative controls are also included. The panels were run for two different samples per cell type.

TABLE I: COMPARISON OF THE CELL OF THE PRESENT INVENTION WITH AMNIOTIC FLUID-DERIVED CELLS OF THE ART.

Marker	Cell 1	Cell 2	Cell 3	Cell 4
CD10				-
CD105	+	+	+	Weak
CD11			-	-
CD117	Weak	-	-	-
CD13		+		
CD29 (Beta 1 integrin)				+
CD31			-	
CD34	Weak	-	-	-
CD44		+	+	+
CD45		-	-	
CD49b (Alpha 2 integrin)		+		
CD49e (Alpha 5 integrin)			+	
CD73			+	+
CD166			+	
CD90	+		+	+
HLA ABC	+	+	+	+
HLA D		-	-	-
Oct-4	+	+		+
SSEA-1	-	-		
SSEA-3	+	+		
SSEA-4	+	+		

Stro-1		-		
Telomerase	+			
TRA 1-60		+		
TRA 1-81		+		
TRA 1-85				
TRA 2-49				
TRA 2-54		+		

TABLE II. MEDIA FORMULATIONS USED TO CULTURE AMNIOTIC-FLUID DERIVED CELLS.

Media formulation	
1	DMEM-LG + ITS-X + 1% P/S + 2% FBS + 25 ng/ml bFGF
2	Advanced DMEM + ITS-X + 1% P/S + 1% FBS + 25 ng/ml bFGF
3	Alpha MEM: MCDB 153 (1:1) + ITS-X + 1% P/S + 1% FBS + 25 ng/ml bFGF
4	Defined Keratinocyte growth media (Gibco, NY)
5	AMNIOMAX™ complete media (Gibco, NY)
6	Chang B/C (Irvine Scientific, CA)
7	Chang D (Irvine Scientific, CA)
8	DM-KNOCKOUT™ media (Invitrogen, CA), supplemented with 20% KNOCKOUT™ serum replacement (Invitrogen, CA) ,10 ng/ml bFGF
9	DMEM- Low glucose, supplemented with 20% FBS
10	DMEM- Low glucose, supplemented with 5% FBS
11	DMEM- low glucose /MCDB 201 medium (1:1), supplemented with 2% defined FBS, ITS-X, 1nM dexamethasone, 100 mM ascorbic acid 2-phosphate, 10ng/ml EGF, 10ng/ml PDGF-bb and 100 mM 2-mercaptoethanol
12	20% KNOCKOUT™ serum replacement + 80% KNOCKOUT™ DMEM, supplemented with 1 mM L-glutamine, 1% non-essential amino acids and 0.1 mM 2-mercaptoethanol
13	The medium may be conditioned overnight, on human or murine embryonic fibroblasts, human bone marrow derived stromal cells, or human placenta derived cells and supplemented with 4 ng/ml bFGF
14	high glucose DMEM, supplemented with 20% defined FBS with

	0.1 mM 2- mercaptoethanol
15	Williams' E medium, 2% FBS, 1X ITS, 55uM βme, 1X Glutamax (Gibco), 1%P/S, 10ng/ml EGF, 4ng/ml bFGF, 4ng/ml dexamethasone
16	1:1 DMEM-LG/MCDB 201, 2% FBS, ITS-X, βme 55uM,100uM ascorbic acid-2-phosphate, 4ng/ml bFGF, 10ng/ml EGF, 4ng/ml dexamethasone

TABLE III A: ANTIBODIES TO SURFACE RECEPTORS.

Antibody	Supplier	Isotype	Clone
CD117 (c-Kit)	Santa Cruz Biotechnology (CA)	Goat IgG	M-14
CD117 (c-Kit)	Santa Cruz Biotechnology (CA)	Mouse IgG1	104D2
CD117 (c-Kit)	BD Pharmingen (CA)	Mouse IgG1, kappa	YB5.B8
CD24	BD Pharmingen (CA)	Mouse IgG2A, Kappa	ML5
CD44	BD Pharmingen (CA)	Mouse IgG2b, Kappa	G44-26
CD45	BD Pharmingen (CA)	Mouse IgG1, Kappa	Hi30
CD49f	BD Pharmingen (CA)	Rat IgG2A, Kappa	G0H3
CD73	BD Pharmingen (CA)	Mouse IgG1, Kappa	AD2
CD10	BD Pharmingen (CA)	Mouse IgG1, Kappa	HI10a
CD105	Santa Cruz (CA)	Mouse IgG1	P3D1
CD49b (Alpha 2 integrin)	BD Pharmingen (CA)	Mouse IgG2a, Kappa	121-H6
Alpha 3 integrin	Santa Cruz (CA)	Mouse IgG1	P1B5
Alpha 4 integrin (CD49d)	BD Pharmingen (CA)	Mouse IgG1, Kappa	9F10
Alpha 5 intgerin	BD Pharmingen	Mouse IgG1,	IIA1

(CD49e)	(CA)	Kappa	
CD49f (Alpha 6 integrin)	BD Pharmingen (CA)	Rat IgG2a	GoH3
CD29 (Beta 1 integrin)	BD Pharmingen (CA)	Mouse IgG1, Kappa	MAR4
Beta 3 integrin	Santa Cruz (CA)	Mouse IgG1	Y2/51
Alpha V Beta 3 integrin (CD51/61)	BD Pharmingen (CA)	Mouse IgG1, Kappa	23C6
SSEA-3	Chemicon (CA)	Mouse IgG3	MC-631
SSEA-4	Chemicon (CA)	Rat IgM	MC-813-70
TRA 1-60	Chemicon (CA)	Mouse IgM	TRA 1-60
TRA 1-81	Chemicon (CA)	Mouse IgM	TRA 1-81
TRA 1-85	Chemicon (CA)	Mouse IgG1	TRA 1-85
TRA 2-54	Chemicon (CA)	Mouse IgG1	TRA 2-54
EGF r	BD Pharmingen (CA)	Mouse IgG2b, Kappa	EGFR1
EpCAM	BD Pharmingen (CA)	Mouse IgG1	EBA-1
HLA ABC	BD Pharmingen (CA)	Mouse IgG1, Kappa	G46-2.6
HLA DR	BD Pharmingen (CA)	Mouse IgG2b, Kappa	TU36
CD90	BD Pharmingen (CA)	Mouse IgG1, kappa	5E10

TABLE III B: LIST OF SECONDARY CONJUGATED ANTIBODIES USED FOR FACS AND IMMUNOSTAINININGANALYSIS.

Secondary conjugated antibody	Supplier	Dilution
Goat Anti-Mouse IgG APC conjugated	Jackson ImmunoResearch (PA)	1:200
Goat Anti-Mouse IgG PE conjugated	Jackson ImmunoResearch (PA)	1:200
Donkey anti-rabbit PE or – APC conjugated	Jackson ImmunoResearch (PA)	1:200
Donkey anti-goat PE or – APC conjugated	Jackson ImmunoResearch (PA)	1:200
Goat anti-mouse IgM PE	SouthernBiotech (AL)	1:200
Goat anti-Rat IgM PE	SouthernBiotech (AL)	1:200
Goat anti-mouse IgG3 PE	SouthernBiotech (AL)	1:200

TABLE III C: LIST OF PRIMARY ANTIBODIES USED FOR IMMUNOSTAININGANALYSIS.

Antibody	Supplier	Dilution
Beta III Tubulin	R&D Systems (MN)	1:100
C-Kit	Santa Cruz Biotechnology (CA)	1:100
Cytokeratin 18	Sigma (MO)	1:100
Cytokeratin 8	Sigma (MO)	1:100
Cytokeratin-7	Santa Cruz Biotechnology (CA)	1:100
Cytokeratin 19	Sigma (MO)	1:100
E-Cadherin	BD Transduction Laboratories (CA)	1:100
FOXA1	Chemicon International (CA)	1:100
GATA-6	R&D Systems (MN)	1:100
HES-1	Chemicon International (CA)	1:100
HES-2	Chemicon International (CA)	1:100
HNF-1 alpha	BD Transduction Laboratories (CA)	1:100
HNF-1 beta	BD Transduction Laboratories (CA)	1:100
Musashi-1	Chemicon International (CA)	1:100
Nestin	R&D Systems (MN)	1:100
Pan-Cytokeratin (CK, 4, 5, 6, 10, 13, and 18)	Santa Cruz Biotechnology (CA)	1:100
SOX-17	R&D Systems (MN)	1:100

SSEA-4	Santa Cruz Biotechnology (CA)	1:100
TRA 1-81	Santa Cruz Biotechnology (CA)	1:100
Vimentin	Santa Cruz Biotechnology (CA)	1:100
ZO-1	BD Transduction Laboratories (CA)	1:100

TABLE IV A: CELL SURFACE RECEPTORS ON FIBROBLAST, AMNIOTIC FLUID, AND EPITHELIAL CELLS DERIVED FROM ANMNIOTIC FLUID AND GROWN UNDER HYPOXIC CONDITIONS

	Fibroblast cells (F)	Amniotic fluid cells (AF-I)	Amniotic fluid cells (AF-II)	Amniotic fluid cells (AF-III)	Epithelial cells (E)
Alpha 3 integrin	+	+	+	+	+
Beta 1 integrin	+	+	+	+	+
Beta 3 integrin	-	+	Weak	Weak	+
Alpha V Beta 3 (CD51/ 61)	-	+	Weak	Weak	+
C-Met		+	+	+	
CD24	Weak	+	Weak	Weak	+
CD10	+	Weak	-	-	-
CD105	+	Weak	+	+	-
CD117	-	-	-	-	-
CD13	+	Weak	+	+	-
CD44	+	+	+	+	+
CD73	+	+	+	+	+
CD90	+	+	+	+	+
EpCAM	-	+	-	-	+
HLA ABC	+	+	+	+	+
HLA II-	-	-	-	-	-

DR					
TRA2-49	-	-	-	-	-
SSEA-4	+	+	+	+	+
SSEA-3	-	+	-	-	+
TRA1-60	-	+	-	-	+
TRA 1-81	-	+	-	-	+

TABLE IV B: INTRACELLULAR PROTEINS OF VARIOUS AMNIOTIC FLUID CELL TYPES GROWN IN MEDIA #5

Marker	Fibroblast cells (F)	Amniotic fluid cells (AF-I)	Amniotic fluid cells (AF-II)	Amniotic fluid cells (AF-III)	Epithelial cells (E)
CK-19	-	+	-	-	+
Vimentin	+	+	+	+	+
Smooth muscle actin	Weak	Weak	Weak	Weak	+
Beta III tubulin	+	+	+	+	+
Pan cytokeratin	-	+	+	-	+
Cytokeratin 7	-	+			
Cytokeratin 8	-	+			
Cytokeratin 18	-	+			
Nestin	-	+	+	+	Weak

TABLE IV C: CELL SURFACE RECEPTORS ON AMNIOTIC FLUID CELLS DERIVED FROM TERM ANMNIOTIC FLUID AND GROWN UNDER HYPOXIC CONDITIONS

	Amniotic fluid cells (AF-I)
Alpha 3 integrin	+
Beta 1 integrin	+
Beta 3 integrin	+
Alpha V Beta 3 (CD51/61)	+
CD10	Weak
CD105	Weak
CD117	-
CD13	Weak
CD44	+
CD73	+
CD90	+
EpCAM	+
HLA ABC	+
HLA II-DR	-
SSEA-4	+
TRA1-60	+
TRA 1-81	+

TABLE V: PCR ANALYSIS OF THE AMNIOTIC FLUID-DERIVED CELLS OF THE PRESENT INVENTION

a. Pluripotency markers

Markers	Fibroblast Cells	Epithelial cells	AF-I Cells	AF-II Cells	AF-III Cells	Ntera-1
Oct3/4	-	-	-	-	-	+
Sox-2	-	-	-	-	-	+
Rex-1	-	+	+/-			+
hTERT	-	+/-	-	-	-	+

b. Endocrine markers

Cell Markers	Fibroblast cells	Epithelial cells	AF_I cells	AF_II cells	AF_III cells
Sox 17	Weak	+	+	-	-
GATA-6	-	+	+	+	+
GATA-4	Weak	+	Weak	-	-
HNF 1 Beta	-	+	+	+	-
HNF3 beta	-	+	Weak	-	-
Pdx-1	-	-	-	-	-
NGN-3	-	-	-	-	-
Musashi-1	+	+	+		

HES-1	+	+	+	+	+
NeuroD1	-	–	-	-	-
Pax 4	-	-	-		
Pax6	+	+	+	-	-
Secretin	-	-	-	-	-
Gastric inhibitory peptide (GIP)	+	+	+	-	-
Glucagon	-	-	-	-	-
Somatostatin	+	+	+	-	-
Cholecystokinin	-	-	-	-	-
Gastrin	-	-	-	-	-
Insulin		-	Weak	-	-
Nestin	+	+	+	+	+

*Weak: CT values of 35-38 cycles

+: CT value <35 cycles

TABLE VI: PRESENCE OF ALL AF, E, AND F MORPHOLOGIES AT VARIOUS GESTATIONAL AGES IN SECOND TRIMESTER AMNIOTIC FLUID SAMPLES.

AF designation	Gestation age	Presence of AF-like morphology	Presence of E-like morphology	Presence of F-like morphology
AFCA001	17 wks	+	+	+
AFCA002	18 wks	+	+	-
AFCA004	18 wks	+	+	-
AFCA008	18 wks	+	+	-
AFDX001	19 wks	+	+	+
AFDX021	20 wks	+	+	+
AFDX022	20 wks	+	+	+
AFCA007	19 wks	+	+	-
AFCA009	18 wks	+	+	-
AFCA010	18 wks	+	+	-
AFCA011	19 wks	+	+	-
AFCA017	16 wks	+	+	-
AFPN003	20 wks	+	+	-
AFPN004	20 wks	+	+	-
AFND001	41 wks	+	+	-

TABLE VII A: GENES THAT WERE DIFFERENTIALLY EXPRESSED AT LEAST 5 FOLD IN FIBROBLAST VERSUS AF-I CELLS

Gene Identifier	Gene Name	Average fold change in fibroblast versus AF cells	Direction	adj. p-value
NM_002421	Homo sapiens matrix metalloproteinase 1 (interstitial collagenase) (MMP1), mRNA	434.28	UP	1.09E-03
NM_144594	Homo sapiens hypothetical protein FLJ32942 (FLJ32942), mRNA	207.74	UP	2.52E-03
NM_020927	Homo sapiens KIAA1576 protein (KIAA1576), mRNA	200.11	UP	5.06E-04
NM_001451	Homo sapiens forkhead box F1 (FOXF1), mRNA	183.69	UP	1.52E-03
AK021543	Homo sapiens cDNA FLJ11481 fis, clone HEMBA1001803	131.1	UP	3.11E-03
NM_007036	Homo sapiens endothelial cell-specific molecule 1 (ESM1), mRNA	120.15	UP	2.07E-03
NM_002448	Homo sapiens msh homeo box homolog 1 (Drosophila) (MSX1), mRNA	112.45	UP	7.69E-04
NM_152270	Homo sapiens hypothetical protein FLJ34922 (FLJ34922), mRNA	109.54	UP	1.63E-03
NM_000474	Homo sapiens twist homolog 1 (acrocephalosyndactyly 3; Saethre-Chotzen syndrome) (Drosophila) (TWIST1), mRNA	102.84	UP	1.72E-03
AK122739	Homo sapiens cDNA FLJ16260 fis, clone IMR322006947, highly similar to Rattus norvegicus mRNA for dHand protein	98.04	UP	4.82E-03

AV702977	AV702977 ADB Homo sapiens cDNA clone ADBCVD08 5, mRNA sequence	93.67 UP	2.91E-03
AK026784	Homo sapiens cDNA: FLJ23131 fis, clone LNG08502	87.77 UP	1.52E-03
NM_000710	Homo sapiens bradykinin receptor B1 (BDKRB1), mRNA	86.86 UP	4.77E-03
NM_000609	Homo sapiens chemokine (C-X-C motif) ligand 12 (stromal cell-derived factor 1) (CXCL12), mRNA	77.16 UP	2.97E-03
NM_030781	Homo sapiens collectin sub-family member 12 (COLEC12), transcript variant II, mRNA	64.54 UP	8.99E-05
NM_032638	Homo sapiens GATA binding protein 2 (GATA2), mRNA	63.54 UP	3.35E-03
NM_000362	Homo sapiens tissue inhibitor of metalloproteinase 3 (Sorsby fundus dystrophy, pseudoinflammatory) (TIMP3), mRNA	61.32 UP	5.06E-03
NM_198148	Homo sapiens carboxypeptidase X (M14 family), member 2 (CPXM2), mRNA	57.01 UP	4.00E-03
AL831863	Homo sapiens mRNA; cDNA DKFZp761J2017 (from clone DKFZp761J2017)	55.07 UP	7.57E-03
NM_002091	Homo sapiens gastrin-releasing peptide (GRP), mRNA	53.77 UP	9.01E-03
NM_020404	Homo sapiens CD164 sialomucin-like 1 (CD164L1), mRNA	51.44 UP	2.22E-04
NM_014178	Homo sapiens syntaxin binding protein 6 (amisyn) (STXBP6), mRNA	47.27 UP	7.17E-03
NM_205855	Homo sapiens HWKM1940 (UNQ1940), mRNA	42.6 UP	2.31E-03
BX089019	BX089019 Soares_testis_NHT Homo sapiens cDNA clone IMAGp998K243513 ; IMAGE:1391375, mRNA sequence	42.17 UP	8.50E-03

AI124557	am58g02.x1 Johnston frontal cortex Homo sapiens cDNA clone IMAGE:1539794 3, mRNA sequence	37.2 UP	8.24E-03
NM_139211	Homo sapiens homeodomain-only protein (HOP), transcript variant 2, mRNA	34.14 UP	1.45E-04
NM_002593	Homo sapiens procollagen C-endopeptidase enhancer (PCOLCE), mRNA	30.85 UP	2.64E-03
BQ020357	UI-H-ED0-axk-p-07-0-UI.s1 NCI_CGAP_ED0 Homo sapiens cDNA clone IMAGE:5830134 3, mRNA sequence	30.74 UP	5.91E-03
CA843592	ir49c12.x1 HR85 islet Homo sapiens cDNA clone IMAGE:6548544 3, mRNA sequence	29.57 UP	6.22E-05
NM_002852	Homo sapiens pentaxin-related gene, rapidly induced by IL-1 beta (PTX3), mRNA	29.35 UP	3.55E-03
NM_000089	Homo sapiens collagen, type I, alpha 2 (COL1A2), mRNA	28.94 UP	4.61E-04
CD677332	ho15f06.y1 Human Trabecular meshwork cDNA: hohphq Homo sapiens cDNA clone ho15f06 5, mRNA sequence	28.67 UP	1.15E-04
BC030692	Homo sapiens ELAV (embryonic lethal, abnormal vision, Drosophila)-like 2 (Hu antigen B), mRNA (cDNA clone MGC:26319 IMAGE:4826082), complete cds	28.22 UP	7.64E-03
AK021543	Homo sapiens cDNA FLJ11481 fis, clone HEMBA1001803	27.4 UP	1.70E-02
AI962169	wq45c10.x1 NCI_CGAP_GC6 Homo sapiens cDNA clone IMAGE:2474226 3, mRNA sequence	27.1 UP	8.11E-03
NM_000685	Homo sapiens angiotensin II receptor, type 1 (AGTR1), transcript	26.59 UP	4.86E-03

	variant 1, mRNA		
AI422199	tf58d04.x1 NCI_CGAP_Brn23 Homo sapiens cDNA clone IMAGE:2103463 3, mRNA sequence	26.11 UP	1.04E-02
NM_001002295	Homo sapiens GATA binding protein 3 (GATA3), transcript variant 1, mRNA	24.62 UP	3.24E-03
NM_000396	Homo sapiens cathepsin K (pycnodysostosis) (CTSK), mRNA	24.58 UP	4.37E-05
NM_001442	Homo sapiens fatty acid binding protein 4, adipocyte (FABP4), mRNA	24.37 UP	8.07E-03
NM_004460	Homo sapiens fibroblast activation protein, alpha (FAP), mRNA	24.15 UP	1.93E-04
AB067499	Homo sapiens mRNA for KIAA1912 protein, partial cds	23.83 UP	2.51E-03
NM_032777	Homo sapiens G protein-coupled receptor 124 (GPR124), mRNA	22.29 UP	3.83E-03
U83115	Human non-lens beta gamma-crystallin like protein (AIM1) mRNA, partial cds	21.93 UP	5.28E-04
AY335938	Homo sapiens homeodomain protein IRXA1 (IRX1) mRNA, complete cds	21.54 UP	2.02E-02
NM_006350	Homo sapiens follistatin (FST), transcript variant FST317, mRNA	21.53 UP	2.20E-03
W38393	zb15c07.r1 Soares_fetal_lung_NbHL19W Homo sapiens cDNA clone IMAGE:3021245, mRNA sequence	21.16 UP	8.46E-05
NM_021637	Homo sapiens transmembrane protein 35 (TMEM35), mRNA	20.78 UP	3.74E-04
AK091731	Homo sapiens cDNA FLJ34412 fis, clone HEART2002432	20.71 UP	1.19E-02
NM_032883	Homo sapiens chromosome 20 open reading frame 100 (C20orf100), mRNA	20.29 UP	2.33E-04
NM_005110	Homo sapiens glutamine-fructose-6-phosphate transaminase 2 (GFPT2),	19.69 UP	9.13E-05

	mRNA		
NM_024633	Homo sapiens chromosome 14 open reading frame 139 (C14orf139), mRNA	19.44 UP	1.05E-02
NM_004811	Homo sapiens leupaxin (LPXN), mRNA	18.74 UP	1.74E-05
NM_153183	Homo sapiens nudix (nucleoside diphosphate linked moiety X)-type motif 10 (NUDT10), mRNA	18.51 UP	9.88E-03
NM_014459	Homo sapiens protocadherin 17 (PCDH17), mRNA	18.39 UP	1.39E-03
BX115659	BX115659 Soares_total_fetus_Nb2HF8_9w Homo sapiens cDNA clone IMAGp998C204119 ; IMAGE:1623883, mRNA sequence	18.15 UP	4.07E-04
NM_018013	Homo sapiens hypothetical protein FLJ10159 (FLJ10159), mRNA	17.64 UP	1.54E-02
BX112628	BX112628 Soares_fetal_lung_NbHL19W Homo sapiens cDNA clone IMAGp998A09669 ; IMAGE:299024, mRNA sequence	16.09 UP	2.35E-02
NM_016428	Homo sapiens ABI gene family, member 3 (ABI3), mRNA	16.07 UP	1.15E-02
NM_012449	Homo sapiens six transmembrane epithelial antigen of the prostate (STEAP), mRNA	16.07 UP	1.49E-04
NM_006350	Homo sapiens follistatin (FST), transcript variant FST317, mRNA	15.98 UP	6.30E-05
AF052115	Homo sapiens clone 23688 mRNA sequence	15.92 UP	1.56E-02
NM_004787	Homo sapiens slit homolog 2 (Drosophila) (SLIT2), mRNA	15.9 UP	4.75E-04
AK091336	Homo sapiens cDNA FLJ34017 fis, clone FCBBF2002626	15.59 UP	2.68E-02
NM_006329	Homo sapiens fibulin 5 (FBLN5),	15.59 UP	7.87E-03

	mRNA		
NM_000963	Homo sapiens prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase) (PTGS2), mRNA	15.57 UP	8.59E-04
NM_001146	Homo sapiens angiopoietin 1 (ANGPT1), transcript variant 1, mRNA	14.89 UP	9.40E-04
NM_018431	Homo sapiens docking protein 5 (DOK5), transcript variant 1, mRNA	14.56 UP	8.69E-03
NM_017577	Homo sapiens hypothetical protein DKFZp434C0328 (DKFZp434C0328), mRNA	14.47 UP	4.20E-03
H85497	yv88b07.r1 Soares melanocyte 2NbHM Homo sapiens cDNA clone IMAGE:249781 5, mRNA sequence	13.8 UP	1.13E-04
NM_001147	Homo sapiens angiopoietin 2 (ANGPT2), mRNA	13.76 UP	2.64E-02
NM_000090	Homo sapiens collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant) (COL3A1), mRNA	13.63 UP	1.65E-02
NM_007289	Homo sapiens membrane metallo-endopeptidase (neutral endopeptidase, enkephalinase, CALLA, CD10) (MME), transcript variant 2b, mRNA	13.35 UP	1.86E-02
NM_016229	Homo sapiens cytochrome b5 reductase b5R.2 (CYB5R2), transcript variant 1, mRNA	13.35 UP	9.80E-03
NM_000810	Homo sapiens gamma-aminobutyric acid (GABA) A receptor, alpha 5 (GABRA5), mRNA	13.07 UP	2.71E-02
NM_002518	Homo sapiens neuronal PAS domain protein 2 (NPAS2), mRNA	12.99 UP	1.04E-02
AK093256	Homo sapiens cDNA FLJ35937 fis, clone TESTI2011480	12.93 UP	2.09E-03

NM_005127	Homo sapiens C-type (calcium dependent, carbohydrate-recognition domain) lectin, superfamily member 2 (activation-induced) (CLECSF2), mRNA	12.82 UP	2.71E-02
NM_006209	Homo sapiens ectonucleotide pyrophosphatase/phosphodiesteras e 2 (autotaxin) (ENPP2), mRNA	12.62 UP	2.60E-02
W03013	za02c04.r1 Soares melanocyte 2NbHM Homo sapiens cDNA clone IMAGE:291366 5 similar to contains THR.t3 THR repetitive element ;, mRNA sequence	12.43 UP	7.69E-04
AF131813	Homo sapiens clone 24970 mRNA sequence	12.17 UP	2.57E-02
BQ025821	UI-1-BB1p-aye-f-10-0-UI.s1 NCI_CGAP_PI6 Homo sapiens cDNA clone UI-1-BB1p-aye-f-10-0-UI 3, mRNA sequence	12.15 UP	1.30E-02
AW445209	UI-H-BI3-akc-g-11-0-UI.s1 NCI_CGAP_Sub5 Homo sapiens cDNA clone IMAGE:2733908 3, mRNA sequence	12.09 UP	8.91E-04
NM_033292	Homo sapiens caspase 1, apoptosis-related cysteine protease (interleukin 1, beta, convertase) (CASP1), transcript variant alpha, mRNA	11.63 UP	2.67E-02
NM_170744	Homo sapiens unc-5 homolog B (C. elegans) (UNC5B), mRNA	11.62 UP	3.68E-02
NM_012204	Homo sapiens general transcription factor IIIC, polypeptide 4, 90kDa (GTF3C4), mRNA	11.59 UP	3.11E-02
NM_002531	Homo sapiens neurotensin receptor 1 (high affinity) (NTSR1), mRNA	11.33 UP	2.65E-02
BG118019	602351269F1 NIH_MGC_90 Homo sapiens cDNA clone	11.16 UP	8.51E-05

	IMAGE:4446065 5, mRNA sequence		
NM_014802	Homo sapiens KIAA0528 gene product (KIAA0528), mRNA	11.05 UP	2.84E-02
BX647541	Homo sapiens mRNA; cDNA DKFZp686P0492 (from clone DKFZp686P0492)	10.9 UP	1.65E-03
NM_020809	Homo sapiens Rho GTPase activating protein 20 (ARHGAP20), mRNA	10.85 UP	2.74E-02
NM_016307	Homo sapiens paired related homeobox 2 (PRRX2), mRNA	10.85 UP	7.71E-05
NM_057179	Homo sapiens twist homolog 2 (Drosophila) (TWIST2), mRNA	10.83 UP	7.22E-05
AK128325	Homo sapiens cDNA FLJ46467 fis, clone THYMU3022668	10.82 UP	1.20E-02
BE866150	601679068F1 NIH_MGC_53 Homo sapiens cDNA clone IMAGE:3961768 5, mRNA sequence	10.74 UP	2.16E-02
BX109483	BX109483 NCI_CGAP_Ov23 Homo sapiens cDNA clone IMAGp998C165481 ; IMAGE:2216391, mRNA sequence	10.72 UP	2.65E-02
C02345	HUMGS0007544 Human adult (K.Okubo) Homo sapiens cDNA, mRNA sequence	10.64 UP	2.15E-03
NM_002961	Homo sapiens S100 calcium binding protein A4 (calcium protein, calvasculin, metastasin, murine placental homolog) (S100A4), transcript variant 1, mRNA	10.61 UP	1.87E-04
NM_031908	Homo sapiens C1q and tumor necrosis factor related protein 2 (C1QTNF2), mRNA	10.13 UP	3.04E-02
NM_013387	Homo sapiens ubiquinol-cytochrome c reductase complex (7.2 kD) (HSPC051), transcript variant 1, mRNA	9.95 UP	4.17E-04

BC039369	Homo sapiens, clone IMAGE:5271073, mRNA, partial cds	9.76 UP	4.82E-03
BQ934941	AGENCOURT_8810373 NIH_MGC_101 Homo sapiens cDNA clone IMAGE:6429485 5, mRNA sequence	9.53 UP	2.21E-02
NM_006670	Homo sapiens trophoblast glycoprotein (TPBG), mRNA	9.37 UP	2.37E-04
BC046364	Homo sapiens flavoprotein oxidoreductase MICAL3, mRNA (cDNA clone IMAGE:5737121), with apparent retained intron	9.09 UP	2.55E-02
NM_024600	Homo sapiens chromosome 16 open reading frame 30 (C16orf30), mRNA	9.09 UP	4.32E-02
AK023647	Homo sapiens cDNA FLJ13585 fis, clone PLACE1009150	8.81 UP	2.25E-03
NM_017805	Homo sapiens Ras interacting protein 1 (RASIP1), mRNA	8.78 UP	2.38E-03
NM_152399	Homo sapiens hypothetical protein FLJ30834 (FLJ30834), mRNA	8.73 UP	2.18E-02
NM_002851	Homo sapiens protein tyrosine phosphatase, receptor-type, Z polypeptide 1 (PTPRZ1), mRNA	8.61 UP	5.08E-02
AK024653	Homo sapiens cDNA: FLJ21000 fis, clone CAE03359	8.51 UP	6.29E-03
NM_020226	Homo sapiens PR domain containing 8 (PRDM8), mRNA	8.48 UP	1.49E-04
NM_012307	Homo sapiens erythrocyte membrane protein band 4.1-like 3 (EPB41L3), mRNA	8.41 UP	7.37E-03
NM_002203	Homo sapiens integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor) (ITGA2), mRNA	8.3 UP	8.37E-05
NM_203370	Homo sapiens similar to RIKEN cDNA 6530418L21 (LOC389119), mRNA	8.27 UP	8.21E-05
NM_015192	Homo sapiens phospholipase C,	8.26 UP	2.64E-03

	beta 1 (phosphoinositide-specific) (PLCB1), transcript variant 1, mRNA		
AK056725	Homo sapiens cDNA FLJ32163 fis, clone PLACE6000371	8.22 UP	1.68E-04
NM_005328	Homo sapiens hyaluronan synthase 2 (HAS2), mRNA	8.2 UP	4.39E-02
NM_012294	Homo sapiens Rap guanine nucleotide exchange factor (GEF) 5 (RAPGEF5), mRNA	8.08 UP	4.94E-02
AA187037	zp58e04.r1 Stratagene endothelial cell 937223 Homo sapiens cDNA clone IMAGE:624414 5, mRNA sequence	7.95 UP	1.09E-02
NM_001463	Homo sapiens frizzled-related protein (FRZB), mRNA	7.94 UP	1.31E-03
BM468332	AGENCOURT_6432296 NIH_MGC_71 Homo sapiens cDNA clone IMAGE:5535773 5, mRNA sequence	7.94 UP	7.42E-05
AK096661	Homo sapiens cDNA FLJ39342 fis, clone OCBBF2018873	7.82 UP	2.30E-03
NM_001849	Homo sapiens collagen, type VI, alpha 2 (COL6A2), transcript variant 2C2, mRNA	7.67 UP	1.10E-04
BC071787	Homo sapiens cDNA clone IMAGE:4610527, partial cds	7.59 UP	1.14E-04
NM_012105	Homo sapiens beta-site APP-cleaving enzyme 2 (BACE2), transcript variant a, mRNA	7.58 UP	2.00E-04
NM_014217	Homo sapiens potassium channel, subfamily K, member 2 (KCNK2), mRNA	7.58 UP	4.61E-02
N28431	yx35c03.r1 Soares melanocyte 2NbHM Homo sapiens cDNA clone IMAGE:263716 5 similar to SP:PIR:S32603 S32603 collagen alpha 1(VI) chain - mouse ;, mRNA	7.47 UP	1.75E-02

	sequence		
NM_012445	Homo sapiens spondin 2, extracellular matrix protein (SPON2), mRNA	7.22 UP	4.03E-02
NM_000304	Homo sapiens peripheral myelin protein 22 (PMP22), transcript variant 1, mRNA	7.02 UP	4.58E-02
NM_004791	Homo sapiens integrin, beta-like 1 (with EGF-like repeat domains) (ITGBL1), mRNA	7.02 UP	2.64E-02
NM_053044	Homo sapiens serine protease HTRA3 (HTRA3), mRNA	6.86 UP	1.13E-03
BC028245	Homo sapiens, Similar to hypothetical gene LOC130797, clone IMAGE:5395354, mRNA	6.86 UP	1.28E-02
NM_023003	Homo sapiens transmembrane 6 superfamily member 1 (TM6SF1), mRNA	6.86 UP	2.12E-03
AJ420536	Homo sapiens mRNA full length insert cDNA clone EUROIMAGE 994183	6.79 UP	3.53E-04
NM_152996	Homo sapiens sialyltransferase 7 ((alpha-N-acetylneuraminyl-2,3-beta-galactosyl-1,3)-N-acetyl galactosaminide alpha-2,6-sialyltransferase) C (SIAT7C), mRNA	6.79 UP	4.08E-02
NM_005583	Homo sapiens lymphoblastic leukemia derived sequence 1 (LYL1), mRNA	6.77 UP	1.92E-02
NM_016270	Homo sapiens Kruppel-like factor 2 (lung) (KLF2), mRNA	6.55 UP	5.02E-02
NM_005397	Homo sapiens podocalyxin-like (PODXL), mRNA	6.53 UP	3.68E-03
NM_006182	Homo sapiens discoidin domain receptor family, member 2 (DDR2), mRNA	6.52 UP	8.46E-05

U79271	Human clones 23920 and 23921 mRNA sequence	6.31 UP	8.59E-05
BC036034	Homo sapiens endothelial differentiation, lysophosphatidic acid G-protein-coupled receptor, 2, transcript variant 2, mRNA (cDNA clone MGC:33157 IMAGE:5272431), complete cds	6.3 UP	3.07E-04
NM_152314	Homo sapiens hypothetical protein MGC34830 (MGC34830), mRNA	6.29 UP	2.93E-04
AK095791	Homo sapiens cDNA FLJ38472 fis, clone FEBRA2022148	6.27 UP	1.74E-03
NM_004840	Homo sapiens Rac/Cdc42 guanine nucleotide exchange factor (GEF) 6 (ARHGEF6), mRNA	6.2 UP	1.32E-03
AL833655	Homo sapiens mRNA; cDNA DKFZp667O0320 (from clone DKFZp667O0320)	6.18 UP	3.01E-02
NM_032270	Homo sapiens factor for adipocyte differentiation 158 (FAD158), mRNA	6.1 UP	6.22E-05
NM_021643	Homo sapiens tribbles homolog 2 (Drosophila) (TRIB2), mRNA	5.97 UP	8.59E-05
AW044647	wy78e09.x1 Soares_NSF_F8_9W_OT_PA_P_S1 Homo sapiens cDNA clone IMAGE:2554696 3, mRNA sequence	5.94 UP	4.09E-02
AK125284	Homo sapiens cDNA FLJ43294 fis, clone MESTC1000042	5.85 UP	3.94E-03
NM_005069	Homo sapiens single-minded homolog 2 (Drosophila) (SIM2), transcript variant SIM2, mRNA	5.84 UP	8.35E-05
NM_018836	Homo sapiens transmembrane protein SHREW1 (SHREW1), mRNA	5.83 UP	2.71E-02
NM_014932	Homo sapiens neuroligin 1 (NLGN1), mRNA	5.83 UP	2.45E-03
NM_006307	Homo sapiens sushi-repeat-containing protein, X-linked (SRPX),	5.77 UP	4.30E-04

	mRNA		
NM_000210	Homo sapiens integrin, alpha 6 (ITGA6), mRNA	5.77 UP	7.49E-05
BG208475	RST27977 Athersys RAGE Library Homo sapiens cDNA, mRNA sequence	5.72 UP	1.46E-03
N36786	yy34e08.s1 Soares melanocyte 2NbHM Homo sapiens cDNA clone IMAGE:273158 3 similar to contains element MSR1 repetitive element ;, mRNA sequence	5.67 UP	9.13E-05
NM_005308	Homo sapiens G protein-coupled receptor kinase 5 (GRK5), mRNA	5.58 UP	1.35E-02
AB037722	Homo sapiens mRNA for KIAA1301 protein, partial cds	5.58 UP	9.18E-04
NM_012242	Homo sapiens dickkopf homolog 1 (Xenopus laevis) (DKK1), mRNA	5.57 UP	1.68E-04
NM_003068	Homo sapiens snail homolog 2 (Drosophila) (SNAI2), mRNA	5.53 UP	7.42E-05
NM_080806	Homo sapiens collagen, type XIII, alpha 1 (COL13A1), transcript variant 10, mRNA	5.52 UP	8.65E-05
NM_173553	Homo sapiens hypothetical protein FLJ25801 (FLJ25801), mRNA	5.48 UP	1.77E-02
AI085016	ow88e06.s1 Soares_fetal_liver_spleen_1NFLS_S1 Homo sapiens cDNA clone IMAGE:1653922 3, mRNA sequence	5.45 UP	4.77E-03
NM_182728	Homo sapiens solute carrier family 7 (cationic amino acid transporter, y+ system), member 8 (SLC7A8), transcript variant 2, mRNA	5.34 UP	2.70E-02
BC035066	Homo sapiens, clone IMAGE:5259543, mRNA	5.29 UP	2.24E-02
NM_016247	Homo sapiens interphotoreceptor matrix proteoglycan 2 (IMPG2), mRNA	5.22 UP	2.97E-03

NM_001704	Homo sapiens brain-specific angiogenesis inhibitor 3 (BAI3), mRNA	5.19 UP	1.08E-02
NM_005226	Homo sapiens endothelial differentiation, sphingolipid G-protein-coupled receptor, 3 (EDG3), mRNA	5.18 UP	1.53E-04
NM_017413	Homo sapiens apelin, AGTRL1 ligand (APLN), mRNA	5.14 UP	2.48E-02
NM_000576	Homo sapiens interleukin 1, beta (IL1B), mRNA	5.1 UP	3.32E-03
NM_012307	Homo sapiens erythrocyte membrane protein band 4.1-like 3 (EPB41L3), mRNA	5.09 UP	4.93E-04
AL831835	Homo sapiens mRNA; cDNA DKFZp547A0515 (from clone DKFZp547A0515)	5.04 UP	4.14E-02
NM_000955	Homo sapiens prostaglandin E receptor 1 (subtype EP1), 42kDa (PTGER1), mRNA	5.02 UP	3.12E-03
NM_018658	Homo sapiens potassium inwardly-rectifying channel, subfamily J, member 16 (KCNJ16), transcript variant 1, mRNA	334.17 Down	8.59E-05
NM_007038	Homo sapiens a disintegrin-like and metalloprotease (reprolysin type) with thrombospondin type 1 motif, 5 (aggrecanase-2) (ADAMTS5), mRNA	250.9 Down	3.32E-05
BG219729	RST39494 Athersys RAGE Library Homo sapiens cDNA, mRNA sequence	182.25 Down	6.10E-05
AB032980	Homo sapiens mRNA for KIAA1154 protein, partial cds	159.9 Down	7.49E-05
NM_022454	Homo sapiens SRY (sex determining region Y)-box 17 (SOX17), mRNA	151.72 Down	3.05E-05

AK130281	Homo sapiens cDNA FLJ26771 fis, clone PRS03189	148.34 Down	6.10E-05
NM_003238	Homo sapiens transforming growth factor, beta 2 (TGFB2), mRNA	139.18 Down	7.00E-05
BU734212	UI-E-CQ1-agd-e-21-0-UI.s1 UI-E-CQ1 Homo sapiens cDNA clone UI-E-CQ1-agd-e-21-0-UI 3, mRNA sequence	135.35 Down	7.49E-05
BM993116	UI-H-DT0-aty-f-17-0-UI.s1 NCI_CGAP_DT0 Homo sapiens cDNA clone IMAGE:5866000 3, mRNA sequence	134.03 Down	8.59E-05
BX648964	Homo sapiens mRNA; cDNA DKFZp686J0156 (from clone DKFZp686J0156)	133.35 Down	1.19E-04
AI765021	wh56c02.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2384738 3, mRNA sequence	131.86 Down	6.22E-05
D29453	HUMNK566 Human epidermal keratinocyte Homo sapiens cDNA clone 566, mRNA sequence	128.83 Down	6.30E-05
NM_002521	Homo sapiens natriuretic peptide precursor B (NPPB), mRNA	128.09 Down	1.42E-04
BX102632	BX102632 NCI_CGAP_Co3 Homo sapiens cDNA clone IMAGp998J052307 ; IMAGE:928228, mRNA sequence	123.34 Down	1.15E-04
NM_024508	Homo sapiens zinc finger, BED domain containing 2 (ZBED2), mRNA	118.4 Down	5.18E-05
NM_153026	Homo sapiens prickle-like 1 (Drosophila) (PRICKLE1), mRNA	106.78 Down	6.10E-05
NM_006228	Homo sapiens prepronociceptin (PNOC), mRNA	102.73 Down	2.87E-04
NM_005560	Homo sapiens laminin, alpha 5 (LAMA5), mRNA	99.24 Down	7.49E-05
NM_023942	Homo sapiens hypothetical protein	91.38 Down	6.30E-05

	MGC3036 (MGC3036), mRNA		
AK096481	Homo sapiens cDNA FLJ39162 fis, clone OCBBF2002376	85.12 Down	7.45E-05
AI335277	tb29h06.x1 NCI_CGAP_Kid12 Homo sapiens cDNA clone IMAGE:2055803 3, mRNA sequence	84.58 Down	6.22E-05
BF798098	RC1-CI0045-021000-021-f02 CI0045 Homo sapiens cDNA, mRNA sequence	81.7 Down	8.59E-05
AK023631	Homo sapiens cDNA FLJ13569 fis, clone PLACE1008369	77.57 Down	7.00E-05
NM_000927	Homo sapiens ATP-binding cassette, sub-family B (MDR/TAP), member 1 (ABCB1), mRNA	77.16 Down	2.21E-04
BG197054	RST16291 Athersys RAGE Library Homo sapiens cDNA, mRNA sequence	76.09 Down	1.03E-04
AK058012	Homo sapiens cDNA FLJ25283 fis, clone STM06716	75.4 Down	6.22E-05
NM_000104	Homo sapiens cytochrome P450, family 1, subfamily B, polypeptide 1 (CYP1B1), mRNA	70.8 Down	6.24E-05
NM_004617	Homo sapiens transmembrane 4 superfamily member 4 (TM4SF4), mRNA	63.32 Down	1.39E-04
NM_000990	Homo sapiens ribosomal protein L27a (RPL27A), mRNA	62.1 Down	5.32E-05
NM_002899	Homo sapiens retinol binding protein 1, cellular (RBP1), mRNA	62.01 Down	2.87E-04
NM_000582	Homo sapiens secreted phosphoprotein 1 (osteopontin, bone sialoprotein I, early T-lymphocyte activation 1) (SPP1), mRNA	60.53 Down	1.18E-04
NM_002423	Homo sapiens matrix metalloproteinase 7 (matrilysin, uterine) (MMP7), mRNA	60.01 Down	1.56E-04
H89053	yw24c06.r1 Morton Fetal Cochlea	59.02 Down	7.45E-05

	Homo sapiens cDNA clone IMAGE:253162 5, mRNA sequence		
AK090808	Homo sapiens cDNA FLJ33489 fis, clone BRAMY2003585	58.15 Down	7.49E-05
NM_001200	Homo sapiens bone morphogenetic protein 2 (BMP2), mRNA	57.05 Down	6.24E-05
NM_001453	Homo sapiens forkhead box C1 (FOXC1), mRNA	56.24 Down	6.10E-05
AK092245	Homo sapiens cDNA FLJ34926 fis, clone NT2RP7003319, highly similar to Mus musculus neuralin mRNA	56.11 Down	2.55E-04
NM_005329	Homo sapiens hyaluronan synthase 3 (HAS3), transcript variant 1, mRNA	55.44 Down	7.22E-05
AI244954	qj93h05.x1 NCI_CGAP_Kid3 Homo sapiens cDNA clone IMAGE:1867065 3, mRNA sequence	54.38 Down	6.22E-05
NM_003287	Homo sapiens tumor protein D52-like 1 (TPD52L1), transcript variant 1, mRNA	53.91 Down	7.45E-05
BF696790	602125323F1 NIH_MGC_56 Homo sapiens cDNA clone IMAGE:4282540 5, mRNA sequence	49.46 Down	1.09E-04
NM_001202	Homo sapiens bone morphogenetic protein 4 (BMP4), transcript variant 1, mRNA	47.81 Down	8.21E-05
BC042028	Homo sapiens, clone IMAGE:4794726, mRNA	47.5 Down	7.49E-05
AL833276	Homo sapiens mRNA; cDNA DKFZp451D088 (from clone DKFZp451D088)	43.28 Down	7.28E-05
NM_184087	Homo sapiens tripartite motif-containing 55 (TRIM55), transcript variant 4, mRNA	42.9 Down	7.42E-05
NM_003494	Homo sapiens dysferlin, limb girdle muscular dystrophy 2B (autosomal recessive) (DYSF), mRNA	42.2 Down	7.31E-05

NM_024422	Homo sapiens desmocollin 2 (DSC2), transcript variant Dsc2a, mRNA	41.3 Down	1.96E-04
AI249696	qj64a03.x1 NCI_CGAP_Kid3 Homo sapiens cDNA clone IMAGE:1864204 3, mRNA sequence	41.1 Down	1.50E-04
AL833166	Homo sapiens mRNA; cDNA DKFZp686I2118 (from clone DKFZp686I2118)	39.95 Down	1.89E-04
NM_173505	Homo sapiens ankyrin repeat domain 29 (ANKRD29), mRNA	39.16 Down	9.13E-05
NM_130435	Homo sapiens protein tyrosine phosphatase, receptor type, E (PTPRE), transcript variant 2, mRNA	39.16 Down	2.54E-04
NM_016356	Homo sapiens doublecortin domain containing 2 (DCDC2), mRNA	38.33 Down	2.10E-04
AF318382	Homo sapiens pp9974 mRNA, complete cds	38.03 Down	8.59E-05
NM_018265	Homo sapiens hypothetical protein FLJ10901 (FLJ10901), mRNA	37.23 Down	1.50E-04
NM_152487	Homo sapiens hypothetical protein FLJ31842 (FLJ31842), mRNA	37 Down	1.56E-04
AK000075	Homo sapiens cDNA FLJ20068 fis, clone COL01755	35.55 Down	2.21E-04
NM_012464	Homo sapiens tolloid-like 1 (TLL1), mRNA	35.05 Down	2.09E-03
NM_184087	Homo sapiens tripartite motif-containing 55 (TRIM55), transcript variant 4, mRNA	34.38 Down	7.49E-05
BU680661	UI-CF-DU1-aaz-f-04-0-UI.s1 UI-CF-DU1 Homo sapiens cDNA clone UI-CF-DU1-aaz-f-04-0-UI 3, mRNA sequence	34.34 Down	6.22E-05
BF431030	7o18c06.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:3574283 3, mRNA sequence	34.25 Down	1.86E-04
NM_006722	Homo sapiens microphthalmia-	34.23 Down	6.30E-05

	associated transcription factor (MITF), transcript variant 3, mRNA		
NM_152284	Homo sapiens Snf7 homologue associated with Alix 3 (Shax3), mRNA	33.99 Down	7.71E-05
BC037316	Homo sapiens, clone IMAGE:5259432, mRNA	33.46 Down	2.03E-04
NM_002345	Homo sapiens lumican (LUM), mRNA	33.34 Down	8.46E-05
NM_080743	Homo sapiens serine-arginine repressor protein (35 kDa) (SRrp35), mRNA	32.96 Down	5.23E-05
NM_004221	Homo sapiens natural killer cell transcript 4 (NK4), mRNA	32.74 Down	1.45E-04
NM_004496	Homo sapiens forkhead box A1 (FOXA1), mRNA	32.31 Down	2.57E-04
AA738254	nx13b02.s1 NCI_CGAP_GC3 Homo sapiens cDNA clone IMAGE:1255947 3, mRNA sequence	32.23 Down	6.10E-05
BC045828	Homo sapiens zinc finger protein 608, mRNA (cDNA clone IMAGE:5262896), partial cds	32.18 Down	7.49E-05
NM_000599	Homo sapiens insulin-like growth factor binding protein 5 (IGFBP5), mRNA	32.18 Down	9.81E-05
AF055376	Homo sapiens short form transcription factor C-MAF (c-maf) mRNA, complete cds	31.81 Down	2.01E-04
NM_015236	Homo sapiens latrophilin 3 (LPHN3), mRNA	31.68 Down	9.69E-05
NM_007069	Homo sapiens HRAS-like suppressor 3 (HRASLS3), mRNA	31.67 Down	7.49E-05
BG221364	RST41175 Athersys RAGE Library Homo sapiens cDNA, mRNA sequence	31.63 Down	2.22E-04
AI819186	wj32d10.x1 NCI_CGAP_Kid12 Homo sapiens cDNA clone	31.49 Down	1.80E-04

	IMAGE:2404531 3, mRNA sequence		
BF512544	UI-H-BW1-amf-c-08-0-UI.s1 NCI_CGAP_Sub7 Homo sapiens cDNA clone IMAGE:3069687 3, mRNA sequence	30.8 Down	7.49E-05
NM_020873	Homo sapiens leucine rich repeat neuronal 1 (LRRN1), mRNA	30.67 Down	2.01E-04
CA425961	UI-H-FE1-beg-p-18-0-UI.s1 NCI_CGAP_FE1 Homo sapiens cDNA clone UI-H-FE1-beg-p-18-0-UI 3, mRNA sequence	30.15 Down	1.88E-04
AK000776	Homo sapiens cDNA FLJ20769 fis, clone COL06674	30.11 Down	1.15E-04
NM_001562	Homo sapiens interleukin 18 (interferon-gamma-inducing factor) (IL18), mRNA	29.97 Down	7.65E-04
NM_014333	Homo sapiens immunoglobulin superfamily, member 4 (IGSF4), mRNA	29.77 Down	5.82E-04
NM_030583	Homo sapiens matrilin 2 (MATN2), transcript variant 2, mRNA	29.05 Down	8.46E-05
W93585	zd95g01.s1 Soares_fetal_heart_NbHH19W Homo sapiens cDNA clone IMAGE:357264 3, mRNA sequence	28.93 Down	6.22E-05
NM_012198	Homo sapiens grancalcin, EF-hand calcium binding protein (GCA), mRNA	28.84 Down	9.13E-05
NM_001448	Homo sapiens glypican 4 (GPC4), mRNA	28.72 Down	6.36E-04
AK056882	Homo sapiens cDNA FLJ32320 fis, clone PROST2003537	28.6 Down	4.45E-04
AB033048	Homo sapiens mRNA for KIAA1222 protein, partial cds	28.27 Down	2.41E-04
NM_025074	Homo sapiens Fraser syndrome 1 (FRAS1), transcript variant 1, mRNA	28.13 Down	8.92E-05
NM_019000	Homo sapiens hypothetical protein	27.54 Down	1.07E-04

	FLJ20152 (FLJ20152), mRNA		
BU729783	UI-E-CK1-afh-h-18-0-UI.s1 UI-E-CK1 Homo sapiens cDNA clone UI-E-CK1-afh-h-18-0-UI 3, mRNA sequence	26.13 Down	6.30E-05
NM_004862	Homo sapiens lipopolysaccharide-induced TNF factor (LITAF), mRNA	25.95 Down	8.99E-05
AB011539	Homo sapiens mRNA for MEGF6 protein (KIAA0815), partial cds	25.67 Down	3.12E-04
BC043195	Homo sapiens cDNA clone IMAGE:5288757, partial cds	25.58 Down	2.22E-04
NM_152864	Homo sapiens chromosome 20 open reading frame 58 (C20orf58), mRNA	25.35 Down	3.00E-04
AK125608	Homo sapiens cDNA FLJ43620 fis, clone SPLEN2021701, highly similar to HLA CLASS I HISTOCOMPATIBILITY ANTIGEN, A-2 ALPHA CHAIN PRECURSOR	25.33 Down	2.03E-04
AL080103	Homo sapiens mRNA; cDNA DKFZp564N2216 (from clone DKFZp564N2216)	25.17 Down	2.03E-04
NM_173549	Homo sapiens hypothetical protein FLJ39553 (FLJ39553), mRNA	24.71 Down	1.67E-04
BG211832	RST31404 Athersys RAGE Library Homo sapiens cDNA, mRNA sequence	24.57 Down	1.02E-04
NM_024726	Homo sapiens IQ motif containing with AAA domain (IQCA), mRNA	24.08 Down	7.49E-05
NM_002559	Homo sapiens purinergic receptor P2X, ligand-gated ion channel, 3 (P2RX3), mRNA	24.04 Down	2.63E-04
NM_018168	Homo sapiens chromosome 14 open reading frame 105 (C14orf105), mRNA	23.69 Down	1.50E-04
NM_000599	Homo sapiens insulin-like growth factor binding protein 5 (IGFBP5), mRNA	23.5 Down	4.02E-04

NM_003551	Homo sapiens non-metastatic cells 5, protein expressed in (nucleoside-diphosphate kinase) (NME5), mRNA	23.23 Down	1.41E-04
NM_032471	Homo sapiens protein kinase (cAMP-dependent, catalytic) inhibitor beta (PKIB), transcript variant 3, mRNA	22.83 Down	1.54E-04
NM_005949	Homo sapiens metallothionein 1F (functional) (MT1F), mRNA	22.22 Down	8.81E-05
NM_018242	Homo sapiens hypothetical protein FLJ10847 (FLJ10847), mRNA	22.1 Down	2.03E-04
AW151660	xf67d04.x1 NCI_CGAP_Gas4 Homo sapiens cDNA clone IMAGE:2623111 3, mRNA sequence	21.81 Down	2.71E-04
AK096975	Homo sapiens cDNA FLJ39656 fis, clone SMINT2005956	21.78 Down	2.52E-04
CA306881	UI-H-FT1-bht-n-22-0-UI.s1 NCI_CGAP_FT1 Homo sapiens cDNA clone UI-H-FT1-bht-n-22-0-UI 3, mRNA sequence	21.69 Down	1.30E-04
NM_016212	Homo sapiens TP53TG3 protein (TP53TG3), mRNA	21.67 Down	9.03E-05
NM_178470	Homo sapiens WD repeat domain 40B (WDR40B), mRNA	21.63 Down	7.59E-05
NM_014243	Homo sapiens a disintegrin-like and metalloprotease (reprolysin type) with thrombospondin type 1 motif, 3 (ADAMTS3), mRNA	21.47 Down	8.24E-05
AK126467	Homo sapiens cDNA FLJ44503 fis, clone UTERU3001158	21.42 Down	6.22E-05
AW248516	2820632.3prime NIH_MGC_7 Homo sapiens cDNA clone IMAGE:2820632 3, mRNA sequence	21.37 Down	1.23E-04
NM_001263	Homo sapiens CDP-diacylglycerol synthase (phosphatidate cytidylyltransferase) 1 (CDS1), mRNA	21.12 Down	1.10E-04

BM669002	UI-E-CK1-afn-m-04-0-UI.s2 UI-E-CK1 Homo sapiens cDNA clone UI-E-CK1-afn-m-04-0-UI 3, mRNA sequence	20.96 Down	7.28E-05
NM_000170	Homo sapiens glycine dehydrogenase (decarboxylating; glycine decarboxylase, glycine cleavage system protein P) (GLDC), mRNA	20.78 Down	1.19E-04
NM_014585	Homo sapiens solute carrier family 40 (iron-regulated transporter), member 1 (SLC40A1), mRNA	20.73 Down	8.46E-05
NM_031426	Homo sapiens chromosome 9 open reading frame 58 (C9orf58), transcript variant 1, mRNA	20.62 Down	2.00E-04
BM728728	UI-E-EO1-aiv-c-02-0-UI.r1 UI-E-EO1 Homo sapiens cDNA clone UI-E-EO1-aiv-c-02-0-UI 5, mRNA sequence	20.59 Down	1.14E-04
NM_152369	Homo sapiens hypothetical protein MGC45474 (MGC45474), mRNA	20.57 Down	9.78E-05
NM_175056	Homo sapiens hypothetical protein LOC131368 (LOC131368), mRNA	20.51 Down	5.42E-04
NM_004524	Homo sapiens lethal giant larvae homolog 2 (Drosophila) (LLGL2), mRNA	20.3 Down	7.45E-05
AI436290	th81c01.x1 Soares_NhHMPu_S1 Homo sapiens cDNA clone IMAGE:2125056 3, mRNA sequence	19.93 Down	1.23E-04
AW268540	xv51e10.x1 NCI_CGAP_Lu28 Homo sapiens cDNA clone IMAGE:2816682 3, mRNA sequence	19.89 Down	1.09E-04
BC015159	Homo sapiens cDNA clone IMAGE:3885734, partial cds	19.47 Down	7.49E-05
NM_020130	Homo sapiens chromosome 8 open reading frame 4 (C8orf4), mRNA	19.43 Down	2.83E-04
BM979825	UI-CF-DU1-adt-f-12-0-UI.s1 UI-CF-	19.41 Down	1.01E-04

	DU1 Homo sapiens cDNA clone UI-CF-DU1-adt-f-12-0-UI 3, mRNA sequence		
BM712072	UI-E-DW1-ahc-b-11-0-UI.r1 UI-E-DW1 Homo sapiens cDNA clone UI-E-DW1-ahc-b-11-0-UI 5, mRNA sequence	19.33 Down	1.19E-04
CB135276	K-EST0187371 L5HLK1 Homo sapiens cDNA clone L5HLK1-32-B12 5, mRNA sequence	18.98 Down	8.97E-05
T53523	ya89h12.r1 Stratagene placenta (#937225) Homo sapiens cDNA clone IMAGE:68903 5, mRNA sequence	18.87 Down	1.96E-04
NM_138432	Homo sapiens serine dehydratase-like (SDSL), mRNA	18.84 Down	1.32E-04
NM_023915	Homo sapiens G protein-coupled receptor 87 (GPR87), mRNA	18.74 Down	2.72E-04
NM_017549	Homo sapiens upregulated in colorectal cancer gene 1 (UCC1), mRNA	18.73 Down	8.83E-05
BG436244	602508665F1 NIH_MGC_79 Homo sapiens cDNA clone IMAGE:4605617 5, mRNA sequence	18.7 Down	1.49E-04
NM_024901	Homo sapiens hypothetical protein FLJ22457 (FLJ22457), mRNA	18.68 Down	1.35E-04
NM_005712	Homo sapiens HERV-H LTR-associating 1 (HHLA1), mRNA	18.63 Down	1.08E-04
NM_198488	Homo sapiens FLJ46072 protein (FLJ46072), mRNA	18.58 Down	7.49E-05
NM_020349	Homo sapiens ankyrin repeat domain 2 (stretch responsive muscle) (ANKRD2), mRNA	18.49 Down	2.00E-04
NM_002148	Homo sapiens homeo box D10 (HOXD10), mRNA	18.41 Down	3.05E-05
N78460	yz76h06.r1 Soares_multiple_sclerosis_2NbHMS	18.4 Down	4.02E-04

	P Homo sapiens cDNA clone IMAGE:289019 5, mRNA sequence		
NM_006598	Homo sapiens solute carrier family 12 (potassium/chloride transporters), member 7 (SLC12A7), mRNA	18.13 Down	8.59E-05
BF431041	nab31g02.x1 Soares_NSF_F8_9W_OT_PA_P_S1 Homo sapiens cDNA clone IMAGE:3267627 3, mRNA sequence	18.11 Down	6.10E-05
AK126467	Homo sapiens cDNA FLJ44503 fis, clone UTERU3001158	17.84 Down	1.31E-04
NM_182487	Homo sapiens olfactomedin-like 2A (OLFML2A), mRNA	17.77 Down	1.06E-04
AK058012	Homo sapiens cDNA FLJ25283 fis, clone STM06716	17.76 Down	8.82E-05
NM_001252	Homo sapiens tumor necrosis factor (ligand) superfamily, member 7 (TNFSF7), mRNA	17.71 Down	2.46E-04
NM_006252	Homo sapiens protein kinase, AMP-activated, alpha 2 catalytic subunit (PRKAA2), mRNA	17.63 Down	6.57E-04
NM_030899	Homo sapiens zinc finger protein 323 (ZNF323), mRNA	17.62 Down	1.77E-04
NM_006722	Homo sapiens microphthalmia-associated transcription factor (MITF), transcript variant 3, mRNA	17.53 Down	1.61E-04
AK056431	Homo sapiens cDNA FLJ31869 fis, clone NT2RP7002151	17.29 Down	8.46E-05
BM719937	UI-E-EJ0-ahu-a-10-0-UI.r1 UI-E-EJ0 Homo sapiens cDNA clone UI-E-EJ0-ahu-a-10-0-UI 5, mRNA sequence	17.11 Down	4.37E-05
NM_005855	Homo sapiens receptor (calcitonin) activity modifying protein 1 (RAMP1), mRNA	16.97 Down	1.56E-04
AK124873	Homo sapiens cDNA FLJ42883 fis, clone BRHIP3006683	16.87 Down	3.99E-04

NM_001977	Homo sapiens glutamyl aminopeptidase (aminopeptidase A) (ENPEP), mRNA	16.61 Down	6.12E-04
AK074181	Homo sapiens mRNA for FLJ00254 protein	16.54 Down	6.10E-05
NM_000557	Homo sapiens growth differentiation factor 5 (cartilage-derived morphogenetic protein-1) (GDF5), mRNA	16.47 Down	1.49E-04
AK026966	Homo sapiens cDNA: FLJ23313 fis, clone HEP11919	16.36 Down	8.92E-05
BX113319	BX113319 NCI_CGAP_Gas4 Homo sapiens cDNA clone IMAGp998G205398 ; IMAGE:2184619, mRNA sequence	16.19 Down	6.30E-05
AK055362	Homo sapiens cDNA FLJ30800 fis, clone FEBRA2001197	16.02 Down	3.05E-05
NM_021102	Homo sapiens serine protease inhibitor, Kunitz type, 2 (SPINT2), mRNA	15.94 Down	2.71E-04
NM_002354	Homo sapiens tumor-associated calcium signal transducer 1 (TACSTD1), mRNA	15.93 Down	9.13E-05
BQ003401	UI-H-EI1-azd-j-23-0-UI.s1 NCI_CGAP_EI1 Homo sapiens cDNA clone IMAGE:5847286 3, mRNA sequence	15.78 Down	6.30E-05
NM_033641	Homo sapiens collagen, type IV, alpha 6 (COL4A6), transcript variant B, mRNA	15.77 Down	5.35E-05
N38753	yy42d01.s1 Soares melanocyte 2NbHM Homo sapiens cDNA clone IMAGE:273889 3, mRNA sequence	15.77 Down	3.67E-05
AI420213	te92g09.x1 NCI_CGAP_Pr28 Homo sapiens cDNA clone IMAGE:2094208 3, mRNA sequence	15.7 Down	2.35E-04
AK095776	Homo sapiens cDNA FLJ38457 fis,	15.48 Down	3.04E-04

	clone FEBRA2020400		
NM_006378	Homo sapiens sema domain, immunoglobulin domain (Ig), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 4D (SEMA4D), mRNA	15.33 Down	6.10E-05
AK021801	Homo sapiens cDNA FLJ11739 fis, clone HEMBA1005497	15.33 Down	1.38E-04
BX538226	Homo sapiens mRNA; cDNA DKFZp686E1944 (from clone DKFZp686E1944)	15.23 Down	2.37E-04
NM_001847	Homo sapiens collagen, type IV, alpha 6 (COL4A6), transcript variant A, mRNA	15.22 Down	7.42E-05
NM_017640	Homo sapiens leucine rich repeat containing 16 (LRRC16), mRNA	15.21 Down	6.39E-05
NM_007072	Homo sapiens HERV-H LTR-associating 2 (HHLA2), mRNA	15.04 Down	1.06E-04
NM_052947	Homo sapiens heart alpha-kinase (HAK), mRNA	14.96 Down	2.23E-04
NM_005139	Homo sapiens annexin A3 (ANXA3), mRNA	14.95 Down	6.71E-05
N63415	yy60d04.s1 Soares_multiple_sclerosis_2NbHMSP Homo sapiens cDNA clone IMAGE:277927 3 similar to contains L1.b3 L1 repetitive element ;, mRNA sequence	14.79 Down	2.23E-05
BC052289	Homo sapiens carboxypeptidase A4, mRNA (cDNA clone MGC:59749 IMAGE:6106874), complete cds	14.76 Down	7.22E-05
NM_153715	Homo sapiens homeo box A10 (HOXA10), transcript variant 2, mRNA	14.76 Down	8.35E-05
NM_014936	Homo sapiens ectonucleotide pyrophosphatase/phosphodiesterase 4 (putative function) (ENPP4),	14.67 Down	8.19E-04

	mRNA		
NM_021192	Homo sapiens homeo box D11 (HOXD11), mRNA	14.47 Down	4.53E-04
BX118238	BX118238 NCI_CGAP_Kid3 Homo sapiens cDNA clone IMAGp998L153800 ; IMAGE:1501598, mRNA sequence	14.44 Down	5.07E-04
NM_024969	Homo sapiens TGF-beta induced apotosis protein 2 (TAIP-2), mRNA	14.11 Down	1.57E-04
AK125490	Homo sapiens cDNA FLJ43501 fis, clone PEBLM2004497	14.06 Down	9.71E-04
R99527	yq79b11.s1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:201981 3, mRNA sequence	13.98 Down	8.39E-04
NM_001873	Homo sapiens carboxypeptidase E (CPE), mRNA	13.91 Down	9.16E-05
NM_003761	Homo sapiens vesicle-associated membrane protein 8 (endobrevin) (VAMP8), mRNA	13.87 Down	3.12E-04
NM_020808	Homo sapiens signal-induced proliferation-associated 1 like 2 (SIPA1L2), mRNA	13.84 Down	5.47E-04
NM_152573	Homo sapiens RAS and EF hand domain containing (RASEF), mRNA	13.82 Down	5.13E-04
NM_032866	Homo sapiens cingulin-like 1 (CGNL1), mRNA	13.78 Down	6.30E-05
BU740051	UI-E-EO0-ahw-n-18-0-UI.s1 UI-E-EO0 Homo sapiens cDNA clone UI-E-EO0-ahw-n-18-0-UI 3, mRNA sequence	13.74 Down	4.63E-04
NM_198389	Homo sapiens lung type-I cell membrane-associated glycoprotein (T1A-2), transcript variant 2, mRNA	13.71 Down	3.62E-04
CA777268	ip05d09.y1 HR85 islet Homo sapiens cDNA clone IMAGE:6134849 5, mRNA sequence	13.63 Down	1.39E-04
H00617	yj25f02.s1 Soares placenta Nb2HP	13.45 Down	3.33E-04

	Homo sapiens cDNA clone IMAGE:149787 3, mRNA sequence		
NM_024898	Homo sapiens family with sequence similarity 31, member C (FAM31C), mRNA	13.39 Down	2.17E-03
NM_000094	Homo sapiens collagen, type VII, alpha 1 (epidermolysis bullosa, dystrophic, dominant and recessive) (COL7A1), mRNA	13.3 Down	4.93E-04
NM_002837	Homo sapiens protein tyrosine phosphatase, receptor type, B (PTPRB), mRNA	13.25 Down	6.84E-04
NM_018728	Homo sapiens myosin VC (MYO5C), mRNA	13.15 Down	1.64E-04
NM_018659	Homo sapiens cytokine-like protein C17 (C17), mRNA	13.11 Down	1.45E-04
AL834140	Homo sapiens mRNA; cDNA DKFZp434A2029 (from clone DKFZp434A2029)	13.08 Down	9.99E-05
BX103476	BX103476 NCI_CGAP_Lu5 Homo sapiens cDNA clone IMAGp998C053946 ; IMAGE:1557436, mRNA sequence	13.02 Down	1.71E-04
BG545305	602572521F1 NIH_MGC_77 Homo sapiens cDNA clone IMAGE:4700644 5, mRNA sequence	12.86 Down	6.30E-05
BX647876	Homo sapiens mRNA; cDNA DKFZp313A1525 (from clone DKFZp313A1525)	12.83 Down	7.95E-05
NM_030949	Homo sapiens protein phosphatase 1, regulatory (inhibitor) subunit 14C (PPP1R14C), mRNA	12.82 Down	3.35E-04
NM_024423	Homo sapiens desmocollin 3 (DSC3), transcript variant Dsc3b, mRNA	12.81 Down	7.71E-05
NM_014452	Homo sapiens tumor necrosis factor receptor superfamily, member 21	12.8 Down	2.20E-04

	(TNFRSF21), mRNA		
NM_002246	Homo sapiens potassium channel, subfamily K, member 3 (KCNK3), mRNA	12.76 Down	7.59E-05
NM_002427	Homo sapiens matrix metalloproteinase 13 (collagenase 3) (MMP13), mRNA	12.65 Down	4.08E-04
NM_003328	Homo sapiens TXK tyrosine kinase (TXK), mRNA	12.61 Down	2.45E-04
NM_014422	Homo sapiens phosphatidylinositol (4,5) bisphosphate 5-phosphatase, A (PIB5PA), transcript variant 1, mRNA	12.48 Down	8.97E-05
NM_014333	Homo sapiens immunoglobulin superfamily, member 4 (IGSF4), mRNA	12.4 Down	1.04E-04
AA888443	nw74f10.s1 NCI_CGAP_Pr12 Homo sapiens cDNA clone IMAGE:1252363, mRNA sequence	12.37 Down	3.96E-04
BX110418	BX110418 NCI_CGAP_Kid3 Homo sapiens cDNA clone IMAGp998C224149 ; IMAGE:1635405, mRNA sequence	12.35 Down	1.54E-04
NM_019102	Homo sapiens homeo box A5 (HOXA5), mRNA	12.33 Down	7.59E-05
NM_016463	Homo sapiens CXXC finger 5 (CXXC5), mRNA	12.32 Down	1.96E-04
NM_004572	Homo sapiens plakophilin 2 (PKP2), transcript variant 2b, mRNA	12.28 Down	4.15E-04
N25875	yw78d12.s1 Soares_placenta_8to9weeks_2NbH P8to9W Homo sapiens cDNA clone IMAGE:258359 3, mRNA sequence	12.27 Down	1.02E-04
NM_152694	Homo sapiens zinc finger, CCHC domain containing 5 (ZCCHC5), mRNA	12.22 Down	3.38E-04
NM_021012	Homo sapiens potassium inwardly-	12.22 Down	9.23E-04

	rectifying channel, subfamily J, member 12 (KCNJ12), mRNA		
NM_017671	Homo sapiens chromosome 20 open reading frame 42 (C20orf42), mRNA	12.21 Down	1.06E-04
NM_002031	Homo sapiens fyn-related kinase (FRK), mRNA	12.11 Down	2.14E-04
BM976385	UI-CF-EN1-acz-f-03-0-UI.s1 UI-CF-EN1 Homo sapiens cDNA clone UI-CF-EN1-acz-f-03-0-UI 3, mRNA sequence	12.02 Down	8.11E-04
NM_005296	Homo sapiens G protein-coupled receptor 23 (GPR23), mRNA	11.98 Down	1.50E-04
NM_000817	Homo sapiens glutamate decarboxylase 1 (brain, 67kDa) (GAD1), transcript variant GAD67, mRNA	11.92 Down	6.22E-05
AI220066	qg84d01.x1 Soares_NFL_T_GBC_S1 Homo sapiens cDNA clone IMAGE:1841857 3, mRNA sequence	11.88 Down	1.09E-04
NM_005737	Homo sapiens ADP-ribosylation factor-like 7 (ARL7), mRNA	11.83 Down	1.58E-04
NM_000147	Homo sapiens fucosidase, alpha-L-1, tissue (FUCA1), mRNA	11.82 Down	1.74E-03
AK127437	Homo sapiens cDNA FLJ45529 fis, clone BRTHA2027546	11.82 Down	1.68E-04
NM_178033	Homo sapiens cytochrome P450, family 4, subfamily X, polypeptide 1 (CYP4X1), mRNA	11.81 Down	2.10E-04
NM_173567	Homo sapiens abhydrolase domain containing 7 (ABHD7), mRNA	11.76 Down	1.75E-04
AL049974	Homo sapiens mRNA; cDNA DKFZp564B222 (from clone DKFZp564B222)	11.74 Down	5.82E-04
NM_000519	Homo sapiens hemoglobin, delta (HBD), mRNA	11.7 Down	9.70E-04
AL359567	Homo sapiens mRNA; cDNA	11.66 Down	3.95E-04

	DKFZp547D023 (from clone DKFZp547D023)		
BF510493	UI-H-BI4-apa-b-08-0-UI.s1 NCI_CGAP_Sub8 Homo sapiens cDNA clone IMAGE:3086558 3, mRNA sequence	11.66 Down	6.30E-05
NM_000961	Homo sapiens prostaglandin I2 (prostacyclin) synthase (PTGIS), mRNA	11.63 Down	5.06E-04
NM_025151	Homo sapiens RAB11 family interacting protein 1 (class I) (RAB11FIP1), transcript variant 1, mRNA	11.6 Down	1.14E-04
BM712945	UI-E-EJ0-ahi-c-16-0-UI.r1 UI-E-EJ0 Homo sapiens cDNA clone UI-E-EJ0-ahi-c-16-0-UI 5, mRNA sequence	11.6 Down	9.48E-05
AW451831	UI-H-BI3-alk-e-12-0-UI.s1 NCI_CGAP_Sub5 Homo sapiens cDNA clone IMAGE:2737246 3, mRNA sequence	11.54 Down	8.69E-04
BC040701	Homo sapiens cDNA clone IMAGE:5736259, partial cds	11.53 Down	1.23E-04
AL359058	Homo sapiens mRNA full length insert cDNA clone EUROIMAGE 592473	11.44 Down	1.27E-03
NM_001854	Homo sapiens collagen, type XI, alpha 1 (COL11A1), transcript variant A, mRNA	11.39 Down	7.56E-04
NM_000227	Homo sapiens laminin, alpha 3 (LAMA3), transcript variant 2, mRNA	11.39 Down	8.59E-05
NM_033256	Homo sapiens protein phosphatase 1, regulatory (inhibitor) subunit 14A (PPP1R14A), mRNA	11.36 Down	1.26E-04
AB011538	Homo sapiens mRNA for MEGF5, partial cds	11.35 Down	4.81E-04
AL389942	Homo sapiens mRNA full length	11.33 Down	4.78E-04

	insert cDNA clone EUROIMAGE 2005635		
NM_174900	Homo sapiens zinc finger protein 42 (ZFP42), mRNA	11.23 Down	1.29E-04
BG622707	602647476F1 NIH_MGC_79 Homo sapiens cDNA clone IMAGE:4768963 5, mRNA sequence	11.21 Down	1.49E-04
NM_178177	Homo sapiens nicotinamide nucleotide adenylyltransferase 3 (NMNAT3), mRNA	11.19 Down	3.57E-04
AA099748	zl78c09.s1 Stratagene colon (#937204) Homo sapiens cDNA clone IMAGE:510736 3, mRNA sequence	11.16 Down	9.87E-05
H89526	yw28b04.r1 Morton Fetal Cochlea Homo sapiens cDNA clone IMAGE:253519 5, mRNA sequence	11.06 Down	2.94E-04
NM_178868	Homo sapiens chemokine-like factor super family 8 (CKLFSF8), mRNA	10.96 Down	9.23E-04
BE788763	601475864F1 NIH_MGC_68 Homo sapiens cDNA clone IMAGE:3879014 5, mRNA sequence	10.88 Down	6.22E-05
NM_000076	Homo sapiens cyclin-dependent kinase inhibitor 1C (p57, Kip2) (CDKN1C), mRNA	10.87 Down	7.28E-05
NM_152768	Homo sapiens hypothetical protein FLJ25378 (FLJ25378), mRNA	10.81 Down	7.31E-05
M60502	Human profilaggrin mRNA, 3 end	10.81 Down	8.46E-05
NM_181847	Homo sapiens amphoterin induced gene 2 (AMIGO2), mRNA	10.78 Down	1.86E-03
NM_005331	Homo sapiens hemoglobin, theta 1 (HBQ1), mRNA	10.77 Down	3.32E-04
NM_032367	Homo sapiens zinc finger, BED domain containing 3 (ZBED3), mRNA	10.61 Down	7.71E-05
NM_004574	Homo sapiens peanut-like 2 (Drosophila) (PNUTL2), transcript	10.6 Down	3.18E-04

	variant 1, mRNA		
NM_014421	Homo sapiens dickkopf homolog 2 (Xenopus laevis) (DKK2), mRNA	10.52 Down	7.31E-05
NM_052923	Homo sapiens zinc finger protein 452 (ZNF452), mRNA	10.43 Down	1.06E-04
NM_006379	Homo sapiens sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3C (SEMA3C), mRNA	10.39 Down	6.30E-05
AL137488	Homo sapiens mRNA; cDNA DKFZp434N2030 (from clone DKFZp434N2030)	10.37 Down	2.60E-04
BX088936	BX088936 Soares_testis_NHT Homo sapiens cDNA clone IMAGp998G123255 ; IMAGE:1292195, mRNA sequence	10.34 Down	1.20E-03
AB041269	Homo sapiens mRNA for keratin 19, partial cds, isolate:K19-141	10.33 Down	4.02E-03
AK091933	Homo sapiens cDNA FLJ34614 fis, clone KIDNE2014268	10.3 Down	1.49E-04
AF269162	Homo sapiens c21orf7 form B mRNA, complete cds	10.3 Down	1.78E-03
NM_001935	Homo sapiens dipeptidylpeptidase 4 (CD26, adenosine deaminase complexing protein 2) (DPP4), mRNA	10.27 Down	1.10E-04
NM_001850	Homo sapiens collagen, type VIII, alpha 1 (COL8A1), transcript variant 1, mRNA	10.23 Down	2.23E-05
AI469032	ti70a01.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2137320 3, mRNA sequence	10.2 Down	7.42E-05
NM_003081	Homo sapiens synaptosomal-associated protein, 25kDa (SNAP25), transcript variant 1, mRNA	10.05 Down	2.34E-03
BG570144	602591134F1 NIH_MGC_77 Homo	9.99 Down	1.09E-03

	sapiens cDNA clone IMAGE:4717761 5, mRNA sequence		
BM969191	UI-CF-EN0-acp-e-22-0-UI.s1 UI-CF-EN0 Homo sapiens cDNA clone UI-CF-EN0-acp-e-22-0-UI 3, mRNA sequence	9.99 Down	1.00E-03
NM_006622	Homo sapiens polo-like kinase 2 (Drosophila) (PLK2), mRNA	9.99 Down	1.45E-04
NM_000860	Homo sapiens hydroxyprostaglandin dehydrogenase 15-(NAD) (HPGD), mRNA	9.98 Down	6.39E-05
AJ318805	AJ318805 Homo sapiens adipose tissue Homo sapiens cDNA clone 2040, mRNA sequence	9.97 Down	1.92E-04
NM_002735	Homo sapiens protein kinase, cAMP-dependent, regulatory, type I, beta (PRKAR1B), mRNA	9.93 Down	8.51E-06
AK092114	Homo sapiens cDNA FLJ34795 fis, clone NT2NE2005921	9.91 Down	1.57E-03
NM_024608	Homo sapiens nei endonuclease VIII-like 1 (E. coli) (NEIL1), mRNA	9.89 Down	3.05E-05
BE464407	hx89g05.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:3195032 3, mRNA sequence	9.88 Down	1.05E-03
BF431460	7o14b05.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:3573849 3, mRNA sequence	9.85 Down	1.19E-03
BF509573	UI-H-BI4-apf-b-11-0-UI.s1 NCI_CGAP_Sub8 Homo sapiens cDNA clone IMAGE:3086949 3, mRNA sequence	9.82 Down	2.57E-04
T78754	yd01f08.r1 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGE:24180 5, mRNA sequence	9.79 Down	1.51E-03
NM_153256	Homo sapiens chromosome 10 open reading frame 47 (C10orf47), mRNA	9.78 Down	2.10E-04
NM_207482	Homo sapiens FLJ44048 protein	9.76 Down	2.14E-04

	(FLJ44048), mRNA		
NM_002276	Homo sapiens keratin 19 (KRT19), mRNA	9.74 Down	3.70E-03
N70752	za72d02.s1 Soares_fetal_lung_NbHL19W Homo sapiens cDNA clone IMAGE:298083 3, mRNA sequence	9.73 Down	1.49E-04
NM_020962	Homo sapiens likely ortholog of mouse neighbor of Punc E11 (NOPE), mRNA	9.73 Down	8.91E-04
NM_016276	Homo sapiens serum/glucocorticoid regulated kinase 2 (SGK2), transcript variant 2, mRNA	9.7 Down	4.41E-04
AI355761	qt94a11.x1 NCI_CGAP_Co14 Homo sapiens cDNA clone IMAGE:1962908 3 similar to gb:X74929 KERATIN, TYPE II CYTOSKELETAL 8 (HUMAN);, mRNA sequence	9.7 Down	9.99E-05
NM_003264	Homo sapiens toll-like receptor 2 (TLR2), mRNA	9.69 Down	1.86E-04
NM_198495	Homo sapiens CTAGE family, member 4 (CTAGE4), mRNA	9.66 Down	3.12E-04
BX097888	BX097888 Soares_parathyroid_tumor_NbHPA Homo sapiens cDNA clone IMAGp998K064187 ; IMAGE:1650173, mRNA sequence	9.62 Down	6.10E-05
BU567804	AGENCOURT_10398872 NIH_MGC_82 Homo sapiens cDNA clone IMAGE:6614502 5, mRNA sequence	9.62 Down	7.71E-05
NM_152423	Homo sapiens melanoma associated antigen (mutated) 1-like 1 (MUM1L1), mRNA	9.61 Down	2.45E-03
NM_018330	Homo sapiens KIAA1598 (KIAA1598), mRNA	9.6 Down	1.68E-04

BU584197	2513030T6 LIVRTUT04 Homo sapiens cDNA clone 2513030 3, mRNA sequence	9.56 Down	8.83E-04
NM_005264	Homo sapiens GDNF family receptor alpha 1 (GFRA1), transcript variant 1, mRNA	9.56 Down	1.19E-04
NM_002245	Homo sapiens potassium channel, subfamily K, member 1 (KCNK1), mRNA	9.53 Down	2.05E-03
NM_178550	Homo sapiens hypothetical protein MGC48998 (MGC48998), mRNA	9.51 Down	9.03E-04
NM_006863	Homo sapiens leukocyte immunoglobulin-like receptor, subfamily A (with TM domain), member 1 (LILRA1), mRNA	9.48 Down	6.22E-05
NM_173354	Homo sapiens SNF1-like kinase (SNF1LK), mRNA	9.47 Down	8.25E-04
BC016962	Homo sapiens, clone IMAGE:4182947, mRNA	9.43 Down	2.15E-04
AB046810	Homo sapiens mRNA for KIAA1590 protein, partial cds	9.38 Down	6.30E-05
BX116347	BX116347 NCI_CGAP_Kid12 Homo sapiens cDNA clone IMAGp998B215967 ; IMAGE:2401844, mRNA sequence	9.33 Down	1.54E-04
BU633163	UI-H-FL1-bgt-n-07-0-UI.s1 NCI_CGAP_FL1 Homo sapiens cDNA clone UI-H-FL1-bgt-n-07-0-UI 3, mRNA sequence	9.31 Down	1.46E-04
AI289329	qw28c09.x1 NCI_CGAP_Ut4 Homo sapiens cDNA clone IMAGE:1992400 3 similar to contains L1.b2 L1 repetitive element ;, mRNA sequence	9.28 Down	4.80E-04
BU951469	in60a05.x3 HR85 islet Homo sapiens cDNA clone IMAGE:6126249 3, mRNA sequence	9.21 Down	2.54E-03

NM_002338	Homo sapiens limbic system-associated membrane protein (LSAMP), mRNA	9.19 Down	1.30E-03
AL833346	Homo sapiens mRNA; cDNA DKFZp686M2234 (from clone DKFZp686M2234)	9.17 Down	3.02E-04
BC040293	Homo sapiens, clone IMAGE:4820330, mRNA	9.1 Down	1.09E-03
NM_003810	Homo sapiens tumor necrosis factor (ligand) superfamily, member 10 (TNFSF10), mRNA	9.04 Down	5.06E-04
NM_014373	Homo sapiens G protein-coupled receptor 160 (GPR160), mRNA	9.01 Down	1.59E-04
CA425405	UI-H-FE1-bef-g-08-0-UI.s1 NCI_CGAP_FE1 Homo sapiens cDNA clone UI-H-FE1-bef-g-08-0-UI 3, mRNA sequence	8.89 Down	1.74E-05
AI953708	wq47d09.x1 NCI_CGAP_GC6 Homo sapiens cDNA clone IMAGE:2474417 3, mRNA sequence	8.87 Down	9.89E-03
NM_017641	Homo sapiens kinesin family member 21A (KIF21A), mRNA	8.86 Down	7.22E-05
NM_153377	Homo sapiens leucine-rich repeats and immunoglobulin-like domains 3 (LRIG3), mRNA	8.86 Down	2.71E-04
NM_000236	Homo sapiens lipase, hepatic (LIPC), mRNA	8.83 Down	1.93E-03
BC046362	Homo sapiens voltage-dependent calcium channel gamma subunit-like protein, mRNA (cDNA clone MGC:50757 IMAGE:5221396), complete cds	8.8 Down	4.71E-04
AJ697972	Homo sapiens chromosome 3 cDNA	8.8 Down	7.35E-04
BF509074	UI-H-BI4-aou-b-08-0-UI.s1 NCI_CGAP_Sub8 Homo sapiens cDNA clone IMAGE:3086150 3, mRNA sequence	8.8 Down	1.24E-04

NM_001080	Homo sapiens aldehyde dehydrogenase 5 family, member A1 (succinate-semialdehyde dehydrogenase) (ALDH5A1), nuclear gene encoding mitochondrial protein, transcript variant 2, mRNA	8.79 Down	8.46E-05
NM_002247	Homo sapiens potassium large conductance calcium-activated channel, subfamily M, alpha member 1 (KCNMA1), mRNA	8.78 Down	7.45E-05
NM_022154	Homo sapiens solute carrier family 39 (zinc transporter), member 8 (SLC39A8), mRNA	8.77 Down	4.65E-05
NM_144707	Homo sapiens prominin 2 (PROM2), mRNA	8.73 Down	2.01E-04
AB095949	Homo sapiens mRNA for KIAA2029 protein	8.69 Down	9.23E-04
AV728294	AV728294 HTC Homo sapiens cDNA clone HTCBIE09 5, mRNA sequence	8.68 Down	8.46E-05
NM_003851	Homo sapiens cellular repressor of E1A-stimulated genes 1 (CREG1), mRNA	8.68 Down	2.10E-04
NM_014181	Homo sapiens HSPC159 protein (HSPC159), mRNA	8.67 Down	1.10E-04
NM_000349	Homo sapiens steroidogenic acute regulator (STAR), nuclear gene encoding mitochondrial protein, transcript variant 1, mRNA	8.66 Down	1.03E-04
AK026740	Homo sapiens cDNA: FLJ23087 fis, clone LNG06994, highly similar to AF161368 Homo sapiens HSPC105 mRNA	8.65 Down	7.45E-04
T56535	yb33g07.r1 Stratagene fetal spleen (#937205) Homo sapiens cDNA clone IMAGE:73020 5, mRNA sequence	8.63 Down	1.23E-04

NM_178868	Homo sapiens chemokine-like factor super family 8 (CKLFSF8), mRNA	8.63 Down	6.22E-05
NM_005130	Homo sapiens fibroblast growth factor binding protein 1 (FGFBP1), mRNA	8.62 Down	1.15E-04
NM_032488	Homo sapiens cornifelin (CNFN), mRNA	8.6 Down	3.05E-05
NM_052960	Homo sapiens retinol binding protein 7, cellular (RBP7), mRNA	8.6 Down	2.05E-04
NM_207517	Homo sapiens ADAMTS-like 3 (ADAMTSL3), mRNA	8.57 Down	2.22E-04
AK127644	Homo sapiens cDNA FLJ45742 fis, clone KIDNE2016327	8.54 Down	3.24E-03
BU727096	UI-E-CR0-ach-e-12-0-UI.s1 UI-E-CR0 Homo sapiens cDNA clone UI-E-CR0-ach-e-12-0-UI 3, mRNA sequence	8.53 Down	9.29E-04
NM_015973	Homo sapiens galanin (GAL), mRNA	8.53 Down	6.30E-05
NM_033514	Homo sapiens LIM and senescent cell antigen-like domains 3 (LIMS3), mRNA	8.51 Down	3.30E-04
NM_138811	Homo sapiens chromosome 7 open reading frame 31 (C7orf31), mRNA	8.47 Down	8.35E-05
NM_005302	Homo sapiens G protein-coupled receptor 37 (endothelin receptor type B-like) (GPR37), mRNA	8.47 Down	2.19E-03
NM_173462	Homo sapiens papilin, proteoglycan-like sulfated glycoprotein (PAPLN), mRNA	8.46 Down	1.70E-04
NM_032148	Homo sapiens solute carrier family 41, member 2 (SLC41A2), mRNA	8.44 Down	9.03E-05
NM_000856	Homo sapiens guanylate cyclase 1, soluble, alpha 3 (GUCY1A3), mRNA	8.37 Down	1.17E-03
AW591723	xt85h10.x1 NCI_CGAP_Ut1 Homo sapiens cDNA clone IMAGE:2793283 3 similar to contains element MER32 repetitive	8.36 Down	4.86E-04

	element ;, mRNA sequence		
NM_032024	Homo sapiens chromosome 10 open reading frame 11 (C10orf11), mRNA	8.25 Down	1.80E-04
AK024850	Homo sapiens cDNA: FLJ21197 fis, clone COL00201	8.21 Down	7.71E-05
NM_002206	Homo sapiens integrin, alpha 7 (ITGA7), mRNA	8.2 Down	6.30E-05
AI963999	wt87g07.x1 NCI_CGAP_GC6 Homo sapiens cDNA clone IMAGE:2514492 3, mRNA sequence	8.19 Down	1.61E-03
NM_005567	Homo sapiens lectin, galactoside-binding, soluble, 3 binding protein (LGALS3BP), mRNA	8.18 Down	8.76E-05
D87454	Human mRNA for KIAA0265 gene, partial cds	8.14 Down	1.08E-03
BG564960	602583930F1 NIH_MGC_76 Homo sapiens cDNA clone IMAGE:4711807 5, mRNA sequence	8.12 Down	7.71E-05
NM_022168	Homo sapiens interferon induced with helicase C domain 1 (IFIH1), mRNA	8.12 Down	1.46E-04
AK027541	Homo sapiens cDNA FLJ14635 fis, clone NT2RP2001196	8.12 Down	2.08E-04
NM_024997	Homo sapiens activating transcription factor 7 interacting protein 2 (ATF7IP2), mRNA	8.11 Down	1.65E-03
AI926616	wo48e04.x1 NCI_CGAP_Gas4 Homo sapiens cDNA clone IMAGE:2458590 3 similar to contains MER27.b2 MER27 repetitive element ;, mRNA sequence	8.08 Down	6.30E-05
S70348	Homo sapiens integrin beta 3 mRNA, partial cds, alternatively spliced	8.06 Down	2.21E-04
NM_005725	Homo sapiens tetraspan 2 (TSPAN-2), mRNA	8.05 Down	3.97E-03

CA311343	UI-CF-FN0-aff-b-19-0-UI.s1 UI-CF-FN0 Homo sapiens cDNA clone UI-CF-FN0-aff-b-19-0-UI 3, mRNA sequence	8.02 Down	8.51E-06
NM_001710	Homo sapiens B-factor, properdin (BF), mRNA	8.01 Down	1.30E-03
NM_002247	Homo sapiens potassium large conductance calcium-activated channel, subfamily M, alpha member 1 (KCNMA1), mRNA	8 Down	1.29E-03
BG149255	nad25d01.x1 NCI_CGAP_Lu24 Homo sapiens cDNA clone IMAGE:3366553 3, mRNA sequence	8 Down	3.85E-04
NM_153634	Homo sapiens copine VIII (CPNE8), mRNA	7.97 Down	3.57E-04
NM_004390	Homo sapiens cathepsin H (CTSH), transcript variant 1, mRNA	7.97 Down	7.71E-05
NM_016613	Homo sapiens hypothetical protein DKFZp434L142 (DKFZp434L142), mRNA	7.97 Down	3.72E-04
NM_001845	Homo sapiens collagen, type IV, alpha 1 (COL4A1), mRNA	7.93 Down	8.65E-05
NM_005502	Homo sapiens ATP-binding cassette, sub-family A (ABC1), member 1 (ABCA1), mRNA	7.93 Down	5.18E-04
NM_018650	Homo sapiens MAP/microtubule affinity-regulating kinase 1 (MARK1), mRNA	7.92 Down	1.23E-04
D62831	HUM330B12B Clontech human aorta polyA+ mRNA (#6572) Homo sapiens cDNA clone GEN-330B12 5, mRNA sequence	7.92 Down	9.23E-04
CA313095	UI-CF-FN0-aex-f-01-0-UI.s1 UI-CF-FN0 Homo sapiens cDNA clone UI-CF-FN0-aex-f-01-0-UI 3, mRNA sequence	7.91 Down	7.42E-04
BC038556	Homo sapiens, clone	7.91 Down	2.57E-03

	IMAGE:3446976, mRNA		
AI493349	tg70f04.x1 Soares_NhHMPu_S1 Homo sapiens cDNA clone IMAGE:2114143 3, mRNA sequence	7.9 Down	1.14E-04
BC015108	Homo sapiens, Similar to otoconin 90, clone IMAGE:4044247, mRNA	7.9 Down	1.01E-04
AI819863	wj45h05.x1 NCI_CGAP_Lu19 Homo sapiens cDNA clone IMAGE:2405817 3, mRNA sequence	7.87 Down	2.39E-03
BM802920	AGENCOURT_6457446 NIH_MGC_88 Homo sapiens cDNA clone IMAGE:5560288 5, mRNA sequence	7.85 Down	1.60E-03
AK057113	Homo sapiens cDNA FLJ32551 fis, clone SPLEN1000087	7.83 Down	1.20E-03
NM_005025	Homo sapiens serine (or cysteine) proteinase inhibitor, clade I (neuroserpin), member 1 (SERPINI1), mRNA	7.82 Down	2.21E-04
AA195328	zr34f08.s1 Soares_NhHMPu_S1 Homo sapiens cDNA clone IMAGE:665319 3, mRNA sequence	7.81 Down	2.37E-04
NM_014358	Homo sapiens C-type (calcium dependent, carbohydrate-recognition domain) lectin, superfamily member 9 (CLECSF9), mRNA	7.81 Down	5.03E-03
BI493986	df106g12.y1 Morton Fetal Cochlea Homo sapiens cDNA clone IMAGE:2538815 5, mRNA sequence	7.8 Down	6.69E-04
NM_152366	Homo sapiens kelch/ankyrin repeat containing cyclin A1 interacting protein (KARCA1), transcript variant 1, mRNA	7.79 Down	8.97E-05
NM_015678	Homo sapiens neurobeachin (NBEA), mRNA	7.78 Down	2.12E-04
NM_018424	Homo sapiens erythrocyte membrane protein band 4.1 like 4B	7.77 Down	1.23E-04

	(EPB41L4B), mRNA		
CA310979	UI-CF-FN0-afc-c-21-0-UI.s1 UI-CF-FN0 Homo sapiens cDNA clone UI-CF-FN0-afc-c-21-0-UI 3, mRNA sequence	7.76 Down	1.86E-04
NM_031476	Homo sapiens hypothetical protein DKFZp434B044 (DKFZP434B044), mRNA	7.75 Down	2.20E-03
NM_004086	Homo sapiens coagulation factor C homolog, cochlin (Limulus polyphemus) (COCH), mRNA	7.74 Down	2.21E-04
NM_003617	Homo sapiens regulator of G-protein signalling 5 (RGS5), mRNA	7.73 Down	3.85E-04
BF966833	602286668T1 NIH_MGC_95 Homo sapiens cDNA clone IMAGE:4375360 3, mRNA sequence	7.73 Down	6.10E-05
AK024270	Homo sapiens cDNA FLJ14208 fis, clone NT2RP3003264	7.71 Down	1.13E-03
NM_144587	Homo sapiens chromosome 10 open reading frame 87 (C10orf87), mRNA	7.71 Down	6.03E-04
AK096288	Homo sapiens cDNA FLJ38969 fis, clone NT2RI2002359	7.7 Down	1.49E-04
BE968596	601649770F1 NIH_MGC_74 Homo sapiens cDNA clone IMAGE:3933472 5, mRNA sequence	7.69 Down	2.39E-03
AY358775	Homo sapiens clone DNA170212 WGAR9166 (UNQ9166) mRNA, complete cds	7.66 Down	2.16E-03
BX103949	BX103949 NCI_CGAP_Co3 Homo sapiens cDNA clone IMAGp998C112296 ; IMAGE:923842, mRNA sequence	7.64 Down	3.18E-04
NM_013410	Homo sapiens adenylate kinase 3 (AK3), nuclear gene encoding mitochondrial protein, transcript variant 2, mRNA	7.64 Down	3.07E-04
NM_005204	Homo sapiens mitogen-activated	7.63 Down	6.82E-04

	protein kinase kinase kinase 8 (MAP3K8), mRNA		
NM_032211	Homo sapiens lysyl oxidase-like 4 (LOXL4), mRNA	7.6 Down	3.30E-04
AA325746	EST28794 Cerebellum II Homo sapiens cDNA 5 end, mRNA sequence	7.57 Down	6.30E-05
H94320	yv18b10.s1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:243067 3, mRNA sequence	7.55 Down	3.35E-03
BX640973	Homo sapiens mRNA; cDNA DKFZp686B15184 (from clone DKFZp686B15184)	7.55 Down	7.89E-04
BQ015616	UI-1-BC1-ajb-g-04-0-UI.s1 NCI_CGAP_PI2 Homo sapiens cDNA clone UI-1-BC1-ajb-g-04-0-UI 3, mRNA sequence	7.54 Down	5.28E-04
AK128715	Homo sapiens cDNA FLJ46882 fis, clone UTERU3015844	7.53 Down	2.30E-04
NM_015068	Homo sapiens paternally expressed 10 (PEG10), mRNA	7.52 Down	7.71E-05
BU754480	UI-1-BB1p-axz-h-11-0-UI.s1 NCI_CGAP_PI6 Homo sapiens cDNA clone UI-1-BB1p-axz-h-11-0-UI 3, mRNA sequence	7.49 Down	6.24E-04
AK074097	Homo sapiens mRNA for FLJ00168 protein	7.48 Down	1.93E-03
BC033567	Homo sapiens, clone IMAGE:4822266, mRNA	7.48 Down	1.96E-04
NM_018894	Homo sapiens EGF-containing fibulin-like extracellular matrix protein 1 (EFEMP1), transcript variant 2, mRNA	7.47 Down	2.67E-04
BM701989	UI-E-CQ1-aex-j-06-0-UI.r1 UI-E-CQ1 Homo sapiens cDNA clone UI-E-CQ1-aex-j-06-0-UI 5, mRNA sequence	7.47 Down	4.53E-04

NM_016423	Homo sapiens zinc finger protein 219 (ZNF219), mRNA	7.46 Down	1.61E-04
BX117317	BX117317 NCI_CGAP_Co3 Homo sapiens cDNA clone IMAGp998E242234 ; IMAGE:900095, mRNA sequence	7.45 Down	1.13E-03
NM_001993	Homo sapiens coagulation factor III (thromboplastin, tissue factor) (F3), mRNA	7.45 Down	5.82E-04
CA502991	UI-CF-FN0-afp-g-01-0-UI.s1 UI-CF-FN0 Homo sapiens cDNA clone UI-CF-FN0-afp-g-01-0-UI 3, mRNA sequence	7.43 Down	2.24E-02
AI686890	tp90h02.x1 NCI_CGAP_Ut3 Homo sapiens cDNA clone IMAGE:2206611 3, mRNA sequence	7.41 Down	1.49E-04
AW137001	UI-H-BI1-acu-c-05-0-UI.s1 NCI_CGAP_Sub3 Homo sapiens cDNA clone IMAGE:2715632 3, mRNA sequence	7.4 Down	7.95E-05
BQ021695	UI-H-DH1-axi-f-22-0-UI.s1 NCI_CGAP_DH1 Homo sapiens cDNA clone IMAGE:5829141 3, mRNA sequence	7.39 Down	6.10E-05
BX640643	Homo sapiens mRNA; cDNA DKFZp686O24114 (from clone DKFZp686O24114)	7.36 Down	5.18E-05
NM_004669	Homo sapiens chloride intracellular channel 3 (CLIC3), mRNA	7.35 Down	4.30E-03
NM_001955	Homo sapiens endothelin 1 (EDN1), mRNA	7.33 Down	7.72E-04
AB007974	Homo sapiens mRNA, chromosome 1 specific transcript KIAA0505	7.33 Down	5.29E-03
NM_198174	Homo sapiens transcription factor CP2-like 4 (TFCP2L4), transcript variant 3, mRNA	7.32 Down	4.82E-03
BX098521	BX098521 Soares fetal liver spleen	7.3 Down	5.51E-03

	1NFLS Homo sapiens cDNA clone IMAGp998L05118 ; IMAGE:123412, mRNA sequence		
NM_004154	Homo sapiens pyrimidinergic receptor P2Y, G-protein coupled, 6 (P2RY6), transcript variant 4, mRNA	7.28 Down	3.41E-03
AK123617	Homo sapiens cDNA FLJ41623 fis, clone CTONG3009227	7.27 Down	2.26E-03
BF111903	7l38d07.x1 Soares_NSF_F8_9W_OT_PA_P_S1 Homo sapiens cDNA clone IMAGE:3523644 3, mRNA sequence	7.25 Down	1.34E-03
NM_018655	Homo sapiens lens epithelial protein (LENEP), mRNA	7.24 Down	1.07E-04
NM_139161	Homo sapiens crumbs homolog 3 (Drosophila) (CRB3), transcript variant 2, mRNA	7.23 Down	8.46E-04
BC060805	Homo sapiens hypothetical protein FLJ12788, mRNA (cDNA clone IMAGE:5266931), partial cds	7.22 Down	7.45E-05
CA413744	UI-H-EZ0-bat-h-12-0-UI.s1 NCI_CGAP_Ch1 Homo sapiens cDNA clone UI-H-EZ0-bat-h-12-0-UI 3, mRNA sequence	7.22 Down	6.09E-04
NM_018986	Homo sapiens SH3 domain and tetratricopeptide repeats 1 (SH3TC1), mRNA	7.21 Down	2.68E-03
NM_024677	Homo sapiens hypothetical protein FLJ14001 (FLJ14001), mRNA	7.21 Down	1.14E-04
AL117454	Homo sapiens mRNA; cDNA DKFZp586J1717 (from clone DKFZp586J1717)	7.2 Down	2.93E-04
AW450938	UI-H-BI3-all-g-05-0-UI.s1 NCI_CGAP_Sub5 Homo sapiens cDNA clone IMAGE:2737329 3, mRNA sequence	7.19 Down	1.19E-04
NM_017899	Homo sapiens hypothetical protein	7.16 Down	4.80E-03

	FLJ20607 (TSC), mRNA		
S81734	tissue transglutaminase homologue {alternatively spliced} [human, erythroleukemia cell line HEL GM06141A, mRNA, 2362 nt]	7.16 Down	8.76E-05
BU616749	UI-H-FH1-bfj-a-11-0-UI.s1 NCI_CGAP_FH1 Homo sapiens cDNA clone UI-H-FH1-bfj-a-11-0-UI 3, mRNA sequence	7.14 Down	2.21E-04
NM_006681	Homo sapiens neuromedin U (NMU), mRNA	7.1 Down	6.52E-03
AK022598	Homo sapiens cDNA FLJ12536 fis, clone NT2RM4000265	7.09 Down	1.15E-04
AW137116	UI-H-BI1-acp-f-03-0-UI.s1 NCI_CGAP_Sub3 Homo sapiens cDNA clone IMAGE:2715029 3, mRNA sequence	7.07 Down	3.50E-03
BX647876	Homo sapiens mRNA; cDNA DKFZp313A1525 (from clone DKFZp313A1525)	7.06 Down	1.41E-03
NM_000597	Homo sapiens insulin-like growth factor binding protein 2, 36kDa (IGFBP2), mRNA	7.04 Down	2.99E-03
CN478597	UI-CF-FN0-aeo-g-21-0-UI.s1 UI-CF-FN0 Homo sapiens cDNA clone UI-CF-FN0-aeo-g-21-0-UI 3, mRNA sequence	7.04 Down	1.43E-03
CN478714	UI-CF-FN0-afu-c-19-0-UI.s1 UI-CF-FN0 Homo sapiens cDNA clone UI-CF-FN0-afu-c-19-0-UI 3, mRNA sequence	7.04 Down	3.55E-03
AB020640	Homo sapiens mRNA for KIAA0833 protein, partial cds	7 Down	2.45E-03
NM_022746	Homo sapiens hypothetical protein FLJ22390 (FLJ22390), mRNA	6.99 Down	9.12E-04
AI905628	CM-BT094-050299-147 BT094 Homo sapiens cDNA, mRNA	6.98 Down	1.54E-04

	sequence		
NM_002193	Homo sapiens inhibin, beta B (activin AB beta polypeptide) (INHBB), mRNA	6.96 Down	7.59E-04
NM_004490	Homo sapiens growth factor receptor-bound protein 14 (GRB14), mRNA	6.94 Down	1.98E-03
NM_003985	Homo sapiens tyrosine kinase, non-receptor, 1 (TNK1), mRNA	6.93 Down	2.10E-04
NM_000480	Homo sapiens adenosine monophosphate deaminase (isoform E) (AMPD3), mRNA	6.92 Down	1.06E-04
AK094292	Homo sapiens cDNA FLJ36973 fis, clone BRACE2006249	6.92 Down	2.03E-03
BC033124	Homo sapiens, clone IMAGE:2960615, mRNA	6.88 Down	7.22E-05
NM_000612	Homo sapiens insulin-like growth factor 2 (somatomedin A) (IGF2), mRNA	6.88 Down	2.60E-04
BC042976	Homo sapiens cDNA clone IMAGE:5295023, partial cds	6.88 Down	2.39E-03
BF445031	nad20f02.x1 NCI_CGAP_Lu24 Homo sapiens cDNA clone IMAGE:3366266 3, mRNA sequence	6.87 Down	5.18E-04
NM_004170	Homo sapiens solute carrier family 1 (neuronal/epithelial high affinity glutamate transporter, system Xag), member 1 (SLC1A1), mRNA	6.87 Down	3.18E-04
NM_199169	Homo sapiens transmembrane, prostate androgen induced RNA (TMEPAI), transcript variant 2, mRNA	6.84 Down	1.45E-03
NM_019644	Homo sapiens ankyrin repeat domain 7 (ANKRD7), mRNA	6.83 Down	8.99E-05
W20132	zb40c10.r1 Soares_parathyroid_tumor_NbHPA Homo sapiens cDNA clone	6.82 Down	6.79E-03

	IMAGE:306066 5, mRNA sequence		
BC033116	Homo sapiens chromodomain helicase DNA binding protein 7, mRNA (cDNA clone IMAGE:3352674), partial cds	6.82 Down	8.03E-05
NM_018650	Homo sapiens MAP/microtubule affinity-regulating kinase 1 (MARK1), mRNA	6.8 Down	4.97E-03
BU563992	AGENCOURT_10371176 NIH_MGC_141 Homo sapiens cDNA clone IMAGE:6601829 5, mRNA sequence	6.79 Down	1.29E-02
AL119769	DKFZp761E1224_r1 761 (synonym: hamy2) Homo sapiens cDNA clone DKFZp761E1224 5, mRNA sequence	6.78 Down	2.52E-03
NM_052997	Homo sapiens ankyrin repeat domain 30A (ANKRD30A), mRNA	6.78 Down	2.45E-03
NM_024704	Homo sapiens chromosome 20 open reading frame 23 (C20orf23), mRNA	6.76 Down	7.45E-04
NM_000495	Homo sapiens collagen, type IV, alpha 5 (Alport syndrome) (COL4A5), transcript variant 1, mRNA	6.74 Down	4.77E-03
BX102895	BX102895 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGp998I18520 ; IMAGE:242009, mRNA sequence	6.7 Down	3.04E-04
BU753362	UI-1-BB1-air-h-09-0-UI.s1 NCI_CGAP_PI5 Homo sapiens cDNA clone UI-1-BB1-air-h-09-0-UI 3, mRNA sequence	6.7 Down	7.42E-05
AA190552	zp86b11.s1 Stratagene HeLa cell s3 937216 Homo sapiens cDNA clone IMAGE:627069 3, mRNA sequence	6.67 Down	1.26E-03
NM_004024	Homo sapiens activating transcription factor 3 (ATF3), mRNA	6.66 Down	3.12E-03

NM_144650	Homo sapiens alcohol dehydrogenase, iron containing, 1 (ADHFE1), mRNA	6.65 Down	1.45E-04
NM_002800	Homo sapiens proteasome (prosome, macropain) subunit, beta type, 9 (large multifunctional protease 2) (PSMB9), transcript variant 1, mRNA	6.63 Down	1.70E-04
NM_021977	Homo sapiens solute carrier family 22 (extraneuronal monoamine transporter), member 3 (SLC22A3), mRNA	6.62 Down	2.05E-03
AW516579	xq01f06.x1 Soares_NHCeC_cervical_tumor Homo sapiens cDNA clone IMAGE:2748611 3, mRNA sequence	6.62 Down	4.65E-03
AI311296	ta48d10.x2 NCI_CGAP_Lu25 Homo sapiens cDNA clone IMAGE:2047315 3, mRNA sequence	6.61 Down	1.72E-03
BC040204	Homo sapiens, clone IMAGE:4821815, mRNA	6.61 Down	5.66E-04
AA340011	EST45155 Fetal skin Homo sapiens cDNA 5 end, mRNA sequence	6.58 Down	6.30E-05
NM_025044	Homo sapiens bicaudal C homolog 1 (Drosophila) (BICC1), mRNA	6.57 Down	6.30E-05
BX111520	BX111520 Soares placenta Nb2HP Homo sapiens cDNA clone IMAGp998L15208 ; IMAGE:141470, mRNA sequence	6.57 Down	1.70E-03
AW444925	UI-H-BI3-ajz-f-09-0-UI.s1 NCI_CGAP_Sub5 Homo sapiens cDNA clone IMAGE:2733473 3, mRNA sequence	6.52 Down	2.55E-03
NM_003475	Homo sapiens chromosome 11 open reading frame 13 (C11orf13), mRNA	6.5 Down	5.88E-04
AK124778	Homo sapiens cDNA FLJ42788 fis, clone BRAWH3007129	6.48 Down	8.61E-04

NM_024563	Homo sapiens hypothetical protein FLJ14054 (FLJ14054), mRNA	6.44 Down	4.72E-03
NM_002214	Homo sapiens integrin, beta 8 (ITGB8), mRNA	6.43 Down	8.46E-05
NM_178814	Homo sapiens adaptor-related protein complex 1, sigma 3 subunit (AP1S3), mRNA	6.42 Down	1.78E-04
AI831068	wj62d12.x1 NCI_CGAP_Lu19 Homo sapiens cDNA clone IMAGE:2407415 3, mRNA sequence	6.41 Down	3.72E-04
NM_000186	Homo sapiens complement factor H (CFH), mRNA	6.39 Down	1.74E-03
NM_000216	Homo sapiens Kallmann syndrome 1 sequence (KAL1), mRNA	6.37 Down	8.59E-05
NM_015478	Homo sapiens l(3)mbt-like (Drosophila) (L3MBTL), transcript variant l, mRNA	6.36 Down	7.22E-05
BX096609	BX096609 Soares retina N2b4HR Homo sapiens cDNA clone IMAGp998L12439 ; IMAGE:221339, mRNA sequence	6.36 Down	1.24E-03
NM_030970	Homo sapiens hypothetical protein MGC3771 (MGC3771), mRNA	6.34 Down	1.69E-04
BQ007085	UI-H-EI1-azc-k-11-0-UI.s1 NCI_CGAP_EI1 Homo sapiens cDNA clone IMAGE:5846914 3, mRNA sequence	6.33 Down	1.19E-04
BC039329	Homo sapiens, clone IMAGE:5267606, mRNA	6.33 Down	6.61E-03
NM_001165	Homo sapiens baculoviral IAP repeat-containing 3 (BIRC3), transcript variant 1, mRNA	6.33 Down	3.42E-03
NM_004165	Homo sapiens Ras-related associated with diabetes (RRAD), mRNA	6.33 Down	4.68E-03
NM_001928	Homo sapiens D component of complement (adipsin) (DF), mRNA	6.32 Down	3.68E-03

NM_018670	Homo sapiens mesoderm posterior 1 (MESP1), mRNA	6.31 Down	5.76E-03
NM_153229	Homo sapiens hypothetical protein FLJ33318 (FLJ33318), mRNA	6.31 Down	2.57E-03
AA912845	ol32a12.s1 Soares_NFL_T_GBC_S1 Homo sapiens cDNA clone IMAGE:1525150 3, mRNA sequence	6.29 Down	1.13E-03
AK127437	Homo sapiens cDNA FLJ45529 fis, clone BRTHA2027546	6.28 Down	3.37E-04
NM_020836	Homo sapiens brain-enriched guanylate kinase-associated protein (KIAA1446), mRNA	6.27 Down	6.60E-03
AL512697	Homo sapiens mRNA; cDNA DKFZp547F134 (from clone DKFZp547F134)	6.25 Down	1.36E-03
NM_005211	Homo sapiens colony stimulating factor 1 receptor, formerly McDonough feline sarcoma viral (v-fms) oncogene homolog (CSF1R), mRNA	6.24 Down	5.07E-04
AK124776	Homo sapiens cDNA FLJ42786 fis, clone BRAWH3006761	6.2 Down	1.15E-04
NM_173662	Homo sapiens hypothetical protein LOC285533 (LOC285533), mRNA	6.18 Down	1.05E-02
NM_014391	Homo sapiens ankyrin repeat domain 1 (cardiac muscle) (ANKRD1), mRNA	6.18 Down	3.52E-03
NM_005860	Homo sapiens follistatin-like 3 (secreted glycoprotein) (FSTL3), mRNA	6.18 Down	5.23E-05
NM_001045	Homo sapiens solute carrier family 6 (neurotransmitter transporter, serotonin), member 4 (SLC6A4), mRNA	6.17 Down	5.46E-03
NM_002147	Homo sapiens homeo box B5 (HOXB5), mRNA	6.17 Down	1.05E-04

AI288404	qv89b01.x1 NCI_CGAP_Ut2 Homo sapiens cDNA clone IMAGE:1988713 3, mRNA sequence	6.16 Down	3.74E-04
NM_173584	Homo sapiens hypothetical protein MGC45840 (MGC45840), mRNA	6.16 Down	1.32E-04
N62729	yz76g05.s1 Soares_multiple_sclerosis_2NbHMSP Homo sapiens cDNA clone IMAGE:289016 3, mRNA sequence	6.12 Down	1.37E-03
AK024238	Homo sapiens cDNA FLJ14176 fis, clone NT2RP2003101	6.11 Down	9.69E-05
NM_001843	Homo sapiens contactin 1 (CNTN1), transcript variant 1, mRNA	6.1 Down	4.80E-03
NM_152433	Homo sapiens kelch repeat and BTB (POZ) domain containing 3 (KBTBD3), transcript variant 1, mRNA	6.1 Down	2.39E-03
BX649112	Homo sapiens mRNA; cDNA DKFZp686E02109 (from clone DKFZp686E02109)	6.1 Down	2.24E-04
AA411988	zt65g11.s1 Soares_testis_NHT Homo sapiens cDNA clone IMAGE:727268 3, mRNA sequence	6.09 Down	1.40E-03
R80806	yi94f01.s1 Soares placenta Nb2HP Homo sapiens cDNA clone IMAGE:146905 3, mRNA sequence	6.08 Down	1.54E-04
NM_002843	Homo sapiens protein tyrosine phosphatase, receptor type, J (PTPRJ), mRNA	6.08 Down	6.54E-03
NM_003979	Homo sapiens G protein-coupled receptor, family C, group 5, member A (GPCR5A), mRNA	6.06 Down	8.75E-03
AW129281	xf23a03.x1 NCI_CGAP_Kid8 Homo sapiens cDNA clone IMAGE:2618860 3 similar to gb:X58295_rna1 PLASMA GLUTATHIONE PEROXIDASE	6.06 Down	1.70E-04

	PRECURSOR (HUMAN);, mRNA sequence		
NM_015345	Homo sapiens dishevelled associated activator of morphogenesis 2 (DAAM2), mRNA	6.05 Down	1.09E-03
L07615	Human neuropeptide Y receptor Y1 (NPYY1) mRNA, exon 2-3 and complete cds	6.05 Down	5.51E-03
NM_016179	Homo sapiens transient receptor potential cation channel, subfamily C, member 4 (TRPC4), mRNA	6.04 Down	8.59E-05
NM_182797	Homo sapiens phospholipase C, beta 4 (PLCB4), transcript variant 2, mRNA	6.03 Down	4.40E-04
AB032945	Homo sapiens mRNA for KIAA1119 protein, partial cds	6.03 Down	1.11E-02
CA444471	UI-H-DP0-avv-a-16-0-UI.s1 NCI_CGAP_Fs1 Homo sapiens cDNA clone UI-H-DP0-avv-a-16-0-UI 3, mRNA sequence	6.02 Down	1.02E-03
AK127421	Homo sapiens cDNA FLJ45513 fis, clone BRTHA2021450	6.01 Down	1.60E-04
AV736303	AV736303 CB Homo sapiens cDNA clone CBCAJD04 5, mRNA sequence	6.01 Down	8.97E-05
BX537613	Homo sapiens mRNA; cDNA DKFZp686E11117 (from clone DKFZp686E11117)	6 Down	4.89E-04
AB023211	Homo sapiens mRNA for KIAA0994 protein, partial cds	5.99 Down	5.50E-04
NM_018349	Homo sapiens multiple C2-domains with two transmembrane regions 2 (MCTP2), mRNA	5.99 Down	2.48E-04
NM_000087	Homo sapiens cyclic nucleotide gated channel alpha 1 (CNGA1), mRNA	5.98 Down	3.29E-03
BF939416	nad89c02.x1 NCI_CGAP_Pr28	5.97 Down	9.03E-04

	Homo sapiens cDNA clone IMAGE:3410667 3, mRNA sequence		
NM_013951	Homo sapiens paired box gene 8 (PAX8), transcript variant PAX8B, mRNA	5.97 Down	2.57E-03
AW195474	xn38g09.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2696032 3, mRNA sequence	5.97 Down	1.68E-04
R40050	yf68h07.s1 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGE:27726 3, mRNA sequence	5.94 Down	5.78E-03
NM_021101	Homo sapiens claudin 1 (CLDN1), mRNA	5.9 Down	2.60E-04
AA602964	no97c02.s1 NCI_CGAP_Pr2 Homo sapiens cDNA clone IMAGE:1114754, mRNA sequence	5.9 Down	1.23E-03
NM_006255	Homo sapiens protein kinase C, eta (PRKCH), mRNA	5.89 Down	2.78E-04
NM_024103	Homo sapiens solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 23 (SLC25A23), mRNA	5.89 Down	7.42E-05
AK093870	Homo sapiens cDNA FLJ36551 fis, clone TRACH2008127	5.88 Down	2.28E-02
BE070450	QV4-BT0407-020300-122-d08 BT0407 Homo sapiens cDNA, mRNA sequence	5.85 Down	3.53E-04
NM_003706	Homo sapiens phospholipase A2, group IVC (cytosolic, calcium-independent) (PLA2G4C), mRNA	5.85 Down	7.81E-04
NM_023927	Homo sapiens HCV NS3-transactivated protein 2 (NS3TP2), mRNA	5.85 Down	2.64E-03
AF519622	Homo sapiens noncoding mRNA sequence	5.84 Down	7.70E-03
NM_198582	Homo sapiens FLJ43374 protein (FLJ43374), mRNA	5.84 Down	4.05E-03

AK026283	Homo sapiens cDNA: FLJ22630 fis, clone HSI06250	5.84 Down	5.32E-04
CB115754	K-EST0159876 L8SCK0 Homo sapiens cDNA clone L8SCK0-8-H08 5, mRNA sequence	5.81 Down	9.71E-04
BQ188285	UI-E-EJ1-ajp-n-20-0-UI.r1 UI-E-EJ1 Homo sapiens cDNA clone UI-E-EJ1-ajp-n-20-0-UI 5, mRNA sequence	5.8 Down	5.47E-03
NM_003662	Homo sapiens pirin (iron-binding nuclear protein) (PIR), mRNA	5.78 Down	1.71E-04
BX098660	BX098660 Soares placenta Nb2HP Homo sapiens cDNA clone IMAGp998L03214 ; IMAGE:143762, mRNA sequence	5.77 Down	6.00E-04
NM_005360	Homo sapiens v-maf musculoaponeurotic fibrosarcoma oncogene homolog (avian) (MAF), mRNA	5.77 Down	2.24E-04
NM_031847	Homo sapiens microtubule-associated protein 2 (MAP2), transcript variant 4, mRNA	5.77 Down	1.34E-03
NM_003057	Homo sapiens solute carrier family 22 (organic cation transporter), member 1 (SLC22A1), transcript variant 1, mRNA	5.75 Down	2.42E-04
AW242323	xm96f03.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2692061 3 similar to contains Alu repetitive element;, mRNA sequence	5.74 Down	1.92E-04
NM_052890	Homo sapiens peptidoglycan recognition protein 2 (PGLYRP2), mRNA	5.73 Down	1.14E-04
NM_000593	Homo sapiens transporter 1, ATP-binding cassette, sub-family B (MDR/TAP) (TAP1), mRNA	5.72 Down	4.86E-03

NM_033132	Homo sapiens Zic family member 5 (odd-paired homolog, Drosophila) (ZIC5), mRNA	5.71 Down	1.76E-04
AL832380	Homo sapiens mRNA; cDNA DKFZp451L157 (from clone DKFZp451L157)	5.71 Down	1.54E-04
NM_183376	Homo sapiens arrestin domain containing 4 (ARRDC4), mRNA	5.71 Down	5.88E-04
NM_018700	Homo sapiens tripartite motif-containing 36 (TRIM36), mRNA	5.7 Down	1.32E-02
NM_000782	Homo sapiens cytochrome P450, family 24, subfamily A, polypeptide 1 (CYP24A1), nuclear gene encoding mitochondrial protein, mRNA	5.69 Down	1.82E-02
BC035805	Homo sapiens caspase recruitment domain family, member 9, mRNA (cDNA clone IMAGE:5745585), partial cds	5.68 Down	4.00E-03
BC051727	Homo sapiens cDNA clone IMAGE:5265929, partial cds	5.68 Down	5.13E-04
NM_022842	Homo sapiens CUB domain-containing protein 1 (CDCP1), transcript variant 1, mRNA	5.68 Down	1.85E-03
NM_004335	Homo sapiens bone marrow stromal cell antigen 2 (BST2), mRNA	5.67 Down	6.01E-03
NM_053039	Homo sapiens UDP glycosyltransferase 2 family, polypeptide B28 (UGT2B28), mRNA	5.66 Down	8.07E-03
NM_004529	Homo sapiens myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila); translocated to, 3 (MLLT3), mRNA	5.66 Down	4.02E-04
AK093069	Homo sapiens cDNA FLJ35750 fis, clone TESTI2004539, weakly similar to Homo sapiens adlican mRNA	5.65 Down	1.10E-03
NM_005141	Homo sapiens fibrinogen, B beta polypeptide (FGB), mRNA	5.63 Down	7.89E-04

NM_000682	Homo sapiens adrenergic, alpha-2B-, receptor (ADRA2B), mRNA	5.61 Down	1.14E-04
BF512326	UI-H-BW1-amb-g-12-0-UI.s1 NCI_CGAP_Sub7 Homo sapiens cDNA clone IMAGE:3069503 3, mRNA sequence	5.6 Down	1.49E-04
NM_003726	Homo sapiens src family associated phosphoprotein 1 (SCAP1), mRNA	5.6 Down	2.42E-03
AK024261	Homo sapiens cDNA FLJ14199 fis, clone NT2RP3002713	5.6 Down	4.42E-04
AK125695	Homo sapiens cDNA FLJ43707 fis, clone TESOP2001865	5.59 Down	1.10E-02
NM_006074	Homo sapiens tripartite motif-containing 22 (TRIM22), mRNA	5.58 Down	1.94E-03
AW591461	xl92h06.x1 NCI_CGAP_Ut1 Homo sapiens cDNA clone IMAGE:2682203 3, mRNA sequence	5.58 Down	1.95E-02
NM_022128	Homo sapiens ribokinase (RBKS), mRNA	5.58 Down	1.87E-04
N66105	yy65e06.s1 Soares_multiple_sclerosis_2NbHMSP Homo sapiens cDNA clone IMAGE:278434 3, mRNA sequence	5.57 Down	2.84E-04
BC035116	Homo sapiens cDNA clone IMAGE:5263177, partial cds	5.56 Down	5.49E-04
BM988642	UI-H-DH0-arx-p-21-0-UI.s1 NCI_CGAP_DH0 Homo sapiens cDNA clone IMAGE:5855492 3, mRNA sequence	5.56 Down	2.48E-03
NM_003947	Homo sapiens huntingtin-associated protein interacting protein (duo) (HAPIP), mRNA	5.56 Down	9.71E-04
AI697906	we18f06.x1 NCI_CGAP_Lu24 Homo sapiens cDNA clone IMAGE:2341475 3, mRNA sequence	5.56 Down	3.52E-03
AK095399	Homo sapiens cDNA FLJ38080 fis, clone CTONG2016185	5.55 Down	7.43E-03

AL110252	Homo sapiens mRNA; cDNA DKFZp566A1046 (from clone DKFZp566A1046)	5.54 Down	3.44E-03
NM_024572	Homo sapiens UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 14 (GalNAc-T14) (GALNT14), mRNA	5.54 Down	5.93E-03
NM_000775	Homo sapiens cytochrome P450, family 2, subfamily J, polypeptide 2 (CYP2J2), mRNA	5.53 Down	1.57E-03
NM_018317	Homo sapiens hypothetical protein FLJ11082 (FLJ11082), mRNA	5.51 Down	5.10E-04
NM_030915	Homo sapiens likely ortholog of mouse limb-bud and heart gene (LBH), mRNA	5.51 Down	6.86E-04
NM_139241	Homo sapiens FYVE, RhoGEF and PH domain containing 4 (FGD4), mRNA	5.5 Down	9.42E-03
CB047092	NISC_gf08f03.x1 NCI_CGAP_Kid12 Homo sapiens cDNA clone IMAGE:3253013 3, mRNA sequence	5.5 Down	5.38E-04
NM_005711	Homo sapiens EGF-like repeats and discoidin I-like domains 3 (EDIL3), mRNA	5.5 Down	6.04E-04
AA974968	on02e08.s1 NCI_CGAP_Kid3 Homo sapiens cDNA clone IMAGE:1555526 3, mRNA sequence	5.49 Down	1.63E-03
NM_000129	Homo sapiens coagulation factor XIII, A1 polypeptide (F13A1), mRNA	5.49 Down	1.09E-02
NM_007366	Homo sapiens phospholipase A2 receptor 1, 180kDa (PLA2R1), transcript variant 1, mRNA	5.47 Down	4.66E-03
AL353944	Homo sapiens mRNA; cDNA DKFZp761J1112 (from clone DKFZp761J1112)	5.46 Down	5.38E-04
AK095647	Homo sapiens cDNA FLJ38328 fis, clone FCBBF3025142	5.46 Down	1.61E-03

BQ188860	UI-E-EJ1-ajx-h-03-0-UI.r1 UI-E-EJ1 Homo sapiens cDNA clone UI-E-EJ1-ajx-h-03-0-UI 5, mRNA sequence	5.46 Down	3.33E-03
NM_017594	Homo sapiens DIRAS family, GTP-binding RAS-like 2 (DIRAS2), mRNA	5.44 Down	1.22E-02
NM_014399	Homo sapiens transmembrane 4 superfamily member 13 (TM4SF13), mRNA	5.43 Down	2.64E-04
NM_033255	Homo sapiens epithelial stromal interaction 1 (breast) (EPSTI1), mRNA	5.43 Down	1.73E-03
AW269270	xs35c11.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2771636 3 similar to contains L1.t3 L1 repetitive element ;, mRNA sequence	5.42 Down	1.33E-03
AK092456	Homo sapiens cDNA FLJ35137 fis, clone PLACE6009419	5.42 Down	1.09E-04
NM_031935	Homo sapiens hemicentin (FIBL-6), mRNA	5.42 Down	7.69E-04
BU751966	UI-1-BB0-acy-c-09-0-UI.s1 NCI_CGAP_PI4 Homo sapiens cDNA clone UI-1-BB0-acy-c-09-0-UI 3, mRNA sequence	5.4 Down	1.61E-03
NM_001747	Homo sapiens capping protein (actin filament), gelsolin-like (CAPG), mRNA	5.4 Down	1.33E-03
NM_002260	Homo sapiens killer cell lectin-like receptor subfamily C, member 2 (KLRC2), mRNA	5.4 Down	1.21E-02
AA732841	zg77f01.s1 Soares_fetal_heart_NbHH19W Homo sapiens cDNA clone IMAGE:399385 3, mRNA sequence	5.4 Down	3.48E-03
AK055468	Homo sapiens cDNA FLJ30906 fis, clone FEBRA2006055	5.4 Down	1.36E-03

AI080164	oz48c05.x1 Soares_NhHMPu_S1 Homo sapiens cDNA clone IMAGE:1678568 3, mRNA sequence	5.38 Down	2.44E-03
NM_005562	Homo sapiens laminin, gamma 2 (LAMC2), transcript variant 1, mRNA	5.38 Down	3.78E-04
NM_080659	Homo sapiens similar to RIKEN cDNA 2310030G06 gene (MGC14839), mRNA	5.36 Down	3.81E-03
NM_015085	Homo sapiens GTPase activating Rap/RanGAP domain-like 4 (GARNL4), mRNA	5.36 Down	1.86E-04
BX097034	BX097034 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGp998F14169 ; IMAGE:39685, mRNA sequence	5.36 Down	8.59E-05
NM_002147	Homo sapiens homeo box B5 (HOXB5), mRNA	5.35 Down	8.21E-05
NM_181785	Homo sapiens hypothetical protein LOC283537 (LOC283537), mRNA	5.33 Down	3.48E-04
NM_032857	Homo sapiens lactamase, beta (LACTB), nuclear gene encoding mitochondrial protein, transcript variant 1, mRNA	5.33 Down	2.45E-04
BX113144	BX113144 Soares placenta Nb2HP Homo sapiens cDNA clone IMAGp998N07225 ; IMAGE:148038, mRNA sequence	5.32 Down	1.53E-03
NM_014905	Homo sapiens glutaminase (GLS), mRNA	5.31 Down	1.63E-03
NM_138396	Homo sapiens membrane-associated RING-CH protein IX (MARCH-IX), mRNA	5.31 Down	1.39E-04
NM_004433	Homo sapiens E74-like factor 3 (ets domain transcription factor, epithelial-specific) (ELF3), mRNA	5.3 Down	5.32E-05
AA553553	nk78d11.s1 NCI_CGAP_Sch1 Homo sapiens cDNA clone	5.27 Down	1.69E-03

AW188195	IMAGE:1019637 3, mRNA sequence xj93e12.x1 Soares_NFL_T_GBC_S1 Homo sapiens cDNA clone IMAGE:2664814 3 similar to contains element THR repetitive element ;, mRNA sequence	5.27 Down	5.32E-05
NM_006169	Homo sapiens nicotinamide N-methyltransferase (NNMT), mRNA	5.26 Down	7.45E-05
NM_000071	Homo sapiens cystathionine-beta-synthase (CBS), mRNA	5.26 Down	1.49E-03
NM_001958	Homo sapiens eukaryotic translation elongation factor 1 alpha 2 (EEF1A2), mRNA	5.25 Down	5.20E-03
AK055356	Homo sapiens cDNA FLJ30794 fis, clone FEBRA2001093, weakly similar to MONOCARBOXYLATE TRANSPORTER 4	5.25 Down	8.65E-04
NM_014578	Homo sapiens ras homolog gene family, member D (RHOD), mRNA	5.24 Down	5.43E-03
NM_013230	Homo sapiens CD24 antigen (small cell lung carcinoma cluster 4 antigen) (CD24), mRNA	5.22 Down	7.65E-04
AF086158	Homo sapiens full length insert cDNA clone ZB72E12	5.2 Down	6.04E-03
NM_004932	Homo sapiens cadherin 6, type 2, K-cadherin (fetal kidney) (CDH6), mRNA	5.18 Down	2.11E-04
NM_020466	Homo sapiens hypothetical protein dJ122O8.2 (DJ122O8.2), mRNA	5.18 Down	2.99E-03
AL117425	Homo sapiens mRNA; cDNA DKFZp566L203 (from clone DKFZp566L203)	5.17 Down	8.64E-03
AI732568	zo23d12.x5 Stratagene colon (#937204) Homo sapiens cDNA clone IMAGE:587735 3, mRNA sequence	5.17 Down	9.19E-04

AI150192	qf34d12.x1 Soares_testis_NHT Homo sapiens cDNA clone IMAGE:1751927 3, mRNA sequence	5.17 Down	1.21E-02
AK125852	Homo sapiens cDNA FLJ43864 fis, clone TESTI4007799	5.17 Down	4.82E-03
NM_017912	Homo sapiens hect domain and RLD 6 (HERC6), mRNA	5.15 Down	3.63E-04
NM_006174	Homo sapiens neuropeptide Y receptor Y5 (NPY5R), mRNA	5.14 Down	1.13E-02
AK025281	Homo sapiens cDNA: FLJ21628 fis, clone COL08076	5.14 Down	9.71E-04
NM_153742	Homo sapiens cystathionase (cystathionine gamma-lyase) (CTH), transcript variant 2, mRNA	5.12 Down	1.27E-04
NM_003107	Homo sapiens SRY (sex determining region Y)-box 4 (SOX4), mRNA	5.11 Down	3.48E-04
NM_003948	Homo sapiens cyclin-dependent kinase-like 2 (CDC2-related kinase) (CDKL2), mRNA	5.11 Down	2.05E-03
NM_173660	Homo sapiens hypothetical protein FLJ33718 (FLJ33718), mRNA	5.11 Down	1.30E-03
AI693580	wd12d01.x1 NCI_CGAP_Co3 Homo sapiens cDNA clone IMAGE:2327905 3, mRNA sequence	5.1 Down	6.19E-03
NM_004482	Homo sapiens UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 3 (GalNAc-T3) (GALNT3), mRNA	5.1 Down	2.31E-03
NM_030965	Homo sapiens sialyltransferase 7 ((alpha-N-acetylneuraminyl-2,3-beta-galactosyl-1,3)-N-acetyl galactosaminide alpha-2,6-sialyltransferase) E (SIAT7E), mRNA	5.1 Down	2.61E-04
NM_016147	Homo sapiens protein phosphatase methylesterase-1 (PME-1), mRNA	5.09 Down	9.71E-04

NM_006259	Homo sapiens protein kinase, cGMP-dependent, type II (PRKG2), mRNA	5.08 Down	1.36E-03
NM_002993	Homo sapiens chemokine (C-X-C motif) ligand 6 (granulocyte chemotactic protein 2) (CXCL6), mRNA	5.07 Down	2.32E-03
BE671338	7e49f03.x1 NCI_CGAP_Lu24 Homo sapiens cDNA clone IMAGE:3285821 3, mRNA sequence	5.07 Down	1.28E-02
BX647256	Homo sapiens mRNA; cDNA DKFZp686K0753 (from clone DKFZp686K0753)	5.07 Down	2.05E-02
BG186566	RST5534 Athersys RAGE Library Homo sapiens cDNA, mRNA sequence	5.05 Down	8.91E-04
AV652758	AV652758 GLC Homo sapiens cDNA clone GLCDDG05 3, mRNA sequence	5.04 Down	1.05E-03
AI672441	wa03c03.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2296996 3, mRNA sequence	5.04 Down	1.11E-02
AA769642	ob20h04.s1 NCI_CGAP_Kid5 Homo sapiens cDNA clone IMAGE:1324279 3, mRNA sequence	5.02 Down	1.59E-02
AL706653	DKFZp686E1543_r1 686 (synonym: hlcc3) Homo sapiens cDNA clone DKFZp686E1543 5, mRNA sequence	5.02 Down	1.09E-03
AW296834	UI-H-BI2-ahz-a-10-0-UI.s1 NCI_CGAP_Sub4 Homo sapiens cDNA clone IMAGE:2728243 3, mRNA sequence	5.01 Down	5.93E-03

TABLE VII B: GENES THAT WERE DIFFERENTIALLY EXPRESSED AT LEAST 5 FOLD IN EPITHELIAL VERSUS FIBROBLAST CELLS

Gene Identifier	Gene Name	Average fold change in Epithelial versus fibroblast cells	Direction	adj. p-value
NM_018658	Homo sapiens potassium inwardly-rectifying channel, subfamily J, member 16 (KCNJ16), transcript variant 1, mRNA	481.28	UP	2.64E-05
NM_014358	Homo sapiens C-type (calcium dependent, carbohydrate-recognition domain) lectin, superfamily member 9 (CLECSF9), mRNA	375.12	UP	6.56E-05
AB032980	Homo sapiens mRNA for KIAA1154 protein, partial cds	331.92	UP	1.60E-05
BG219729	RST39494 Athersys RAGE Library Homo sapiens cDNA, mRNA sequence	316.78	UP	8.39E-06
NM_002899	Homo sapiens retinol binding protein 1, cellular (RBP1), mRNA	314.6	UP	5.37E-05
NM_007038	Homo sapiens a disintegrin-like and metalloprotease (reprolysin type) with thrombospondin type 1 motif, 5 (aggrecanase-2) (ADAMTS5), mRNA	280.99	UP	1.26E-05
NM_002423	Homo sapiens matrix metalloproteinase 7 (matrilysin, uterine) (MMP7), mRNA	269.82	UP	8.65E-06
NM_001977	Homo sapiens glutamyl aminopeptidase (aminopeptidase A) (ENPEP), mRNA	242.27	UP	5.43E-05
D29453	HUMNK566 Human epidermal keratinocyte Homo sapiens cDNA clone 566, mRNA sequence	208.36	UP	1.72E-05
NM_024508	Homo sapiens zinc finger, BED domain containing 2 (ZBED2), mRNA	168.99	UP	8.39E-06

AI335277	tb29h06.x1 NCI_CGAP_Kid12 Homo sapiens cDNA clone IMAGE:2055803 3, mRNA sequence	165.99 UP	8.46E-06
BE877764	601486331F1 NIH_MGC_69 Homo sapiens cDNA clone IMAGE:3888943 5, mRNA sequence	145.52 UP	2.36E-05
AI765021	wh56c02.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2384738 3, mRNA sequence	145.09 UP	1.15E-05
NM_024726	Homo sapiens IQ motif containing with AAA domain (IQCA), mRNA	143.09 UP	8.39E-06
NM_004221	Homo sapiens natural killer cell transcript 4 (NK4), mRNA	142.15 UP	1.88E-05
NM_019000	Homo sapiens hypothetical protein FLJ20152 (FLJ20152), mRNA	131.23 UP	1.88E-05
NM_000104	Homo sapiens cytochrome P450, family 1, subfamily B, polypeptide 1 (CYP1B1), mRNA	127.7 UP	1.51E-05
BM993116	UI-H-DT0-aty-f-17-0-UI.s1 NCI_CGAP_DT0 Homo sapiens cDNA clone IMAGE:5866000 3, mRNA sequence	127.35 UP	4.13E-05
NM_031426	Homo sapiens chromosome 9 open reading frame 58 (C9orf58), transcript variant 1, mRNA	116.09 UP	3.82E-05
NM_152369	Homo sapiens hypothetical protein MGC45474 (MGC45474), mRNA	112.28 UP	2.18E-05
NM_003810	Homo sapiens tumor necrosis factor (ligand) superfamily, member 10 (TNFSF10), mRNA	112.19 UP	2.96E-05
NM_023942	Homo sapiens hypothetical protein MGC3036 (MGC3036), mRNA	111.27 UP	1.15E-05
NM_005560	Homo sapiens laminin, alpha 5 (LAMA5), mRNA	110.51 UP	1.37E-05
NM_001453	Homo sapiens forkhead box C1 (FOXC1), mRNA	107.21 UP	1.15E-05
BU734212	UI-E-CQ1-agd-e-21-0-UI.s1 UI-E-CQ1 Homo sapiens cDNA clone UI-E-CQ1-agd-e-21-0-UI 3, mRNA sequence	103.23 UP	2.89E-05
AK026966	Homo sapiens cDNA: FLJ23313 fis, clone HEP11919	103.17 UP	1.78E-05

CA425961	UI-H-FE1-beg-p-18-0-UI.s1 NCI_CGAP_FE1 Homo sapiens cDNA clone UI-H-FE1-beg-p-18-0-UI 3, mRNA sequence	102.53 UP	6.21E-05
AK075003	Homo sapiens cDNA FLJ90522 fis, clone NT2RP4000108, highly similar to Human gene for neurofilament subunit NF-L	101.8 UP	2.31E-04
NM_018265	Homo sapiens hypothetical protein FLJ10901 (FLJ10901), mRNA	99.41 UP	3.66E-05
AK058012	Homo sapiens cDNA FLJ25283 fis, clone STM06716	98.88 UP	9.08E-06
NM_004098	Homo sapiens empty spiracles homolog 2 (Drosophila) (EMX2), mRNA	97.96 UP	4.13E-05
AK096481	Homo sapiens cDNA FLJ39162 fis, clone OCBBF2002376	94.93 UP	2.83E-05
NM_003238	Homo sapiens transforming growth factor, beta 2 (TGFB2), mRNA	91.63 UP	2.31E-05
AI244954	qj93h05.x1 NCI_CGAP_Kid3 Homo sapiens cDNA clone IMAGE:1867065 3, mRNA sequence	85.24 UP	1.78E-05
NM_173505	Homo sapiens ankyrin repeat domain 29 (ANKRD29), mRNA	82.89 UP	3.53E-05
AK130281	Homo sapiens cDNA FLJ26771 fis, clone PRS03189	82.02 UP	3.66E-06
NM_153026	Homo sapiens prickle-like 1 (Drosophila) (PRICKLE1), mRNA	81.73 UP	1.78E-05
AK092401	Homo sapiens cDNA FLJ35082 fis, clone PLACE6005351	79.69 UP	1.70E-05
AB011539	Homo sapiens mRNA for MEGF6 protein (KIAA0815), partial cds	79.31 UP	8.41E-05
NM_016356	Homo sapiens doublecortin domain containing 2 (DCDC2), mRNA	78.04 UP	6.98E-05
AK023631	Homo sapiens cDNA FLJ13569 fis, clone PLACE1008369	77.68 UP	2.09E-05
NM_024422	Homo sapiens desmocollin 2 (DSC2), transcript variant Dsc2a, mRNA	73.14 UP	7.38E-05
BX648964	Homo sapiens mRNA; cDNA DKFZp686J0156 (from clone DKFZp686J0156)	70.68 UP	6.92E-05

T56535	yb33g07.r1 Stratagene fetal spleen (#937205) Homo sapiens cDNA clone IMAGE:73020 5, mRNA sequence	69.74 UP	2.03E-05
BG197054	RST16291 Athersys RAGE Library Homo sapiens cDNA, mRNA sequence	69.48 UP	4.96E-05
NM_005949	Homo sapiens metallothionein 1F (functional) (MT1F), mRNA	68.1 UP	2.03E-05
AK090808	Homo sapiens cDNA FLJ33489 fis, clone BRAMY2003585	65.29 UP	2.87E-05
CA306881	UI-H-FT1-bht-n-22-0-UI.s1 NCI_CGAP_FT1 Homo sapiens cDNA clone UI-H-FT1-bht-n-22-0-UI 3, mRNA sequence	64.98 UP	2.93E-05
NM_001448	Homo sapiens glypican 4 (GPC4), mRNA	64.85 UP	2.45E-04
AL833276	Homo sapiens mRNA; cDNA DKFZp451D088 (from clone DKFZp451D088)	64.7 UP	1.98E-05
BC044843	Homo sapiens hypothetical protein LOC339535, mRNA (cDNA clone IMAGE:5186761), partial cds	63.8 UP	7.59E-05
BF798098	RC1-CI0045-021000-021-f02 CI0045 Homo sapiens cDNA, mRNA sequence	58.58 UP	3.04E-05
H89526	yw28b04.r1 Morton Fetal Cochlea Homo sapiens cDNA clone IMAGE:253519 5, mRNA sequence	56.92 UP	3.82E-05
BF509573	UI-H-BI4-apf-b-11-0-UI.s1 NCI_CGAP_Sub8 Homo sapiens cDNA clone IMAGE:3086949 3, mRNA sequence	56.79 UP	2.83E-05
NM_000990	Homo sapiens ribosomal protein L27a (RPL27A), mRNA	56.36 UP	1.73E-05
BC042028	Homo sapiens, clone IMAGE:4794726, mRNA	55.75 UP	1.64E-05
NM_003287	Homo sapiens tumor protein D52-like 1 (TPD52L1), transcript variant 1, mRNA	55.25 UP	8.46E-06
NM_018168	Homo sapiens chromosome 14 open reading frame 105 (C14orf105), mRNA	54.64 UP	4.79E-05
NM_152284	Homo sapiens Snf7 homologue associated with Alix 3 (Shax3), mRNA	54.16 UP	9.09E-06
AK096975	Homo sapiens cDNA FLJ39656 fis, clone SMINT2005956	54.14 UP	8.37E-05

AI249696	qj64a03.x1 NCI_CGAP_Kid3 Homo sapiens cDNA clone IMAGE:1864204 3, mRNA sequence	53.24 UP	7.14E-05
NM_003551	Homo sapiens non-metastatic cells 5, protein expressed in (nucleoside-diphosphate kinase) (NME5), mRNA	53.01 UP	4.75E-05
BX118238	BX118238 NCI_CGAP_Kid3 Homo sapiens cDNA clone IMAGp998L153800 ; IMAGE:1501598, mRNA sequence	51.99 UP	5.64E-05
BX102632	BX102632 NCI_CGAP_Co3 Homo sapiens cDNA clone IMAGp998J052307 ; IMAGE:928228, mRNA sequence	51.79 UP	9.10E-05
AF055376	Homo sapiens short form transcription factor C-MAF (c-maf) mRNA, complete cds	51.22 UP	3.94E-05
NM_012464	Homo sapiens tolloid-like 1 (TLL1), mRNA	51.19 UP	6.57E-04
NM_030949	Homo sapiens protein phosphatase 1, regulatory (inhibitor) subunit 14C (PPP1R14C), mRNA	49.96 UP	5.80E-05
BM669002	UI-E-CK1-afn-m-04-0-UI.s2 UI-E-CK1 Homo sapiens cDNA clone UI-E-CK1-afn-m-04-0-UI 3, mRNA sequence	49.05 UP	1.78E-05
NM_000582	Homo sapiens secreted phosphoprotein 1 (osteopontin, bone sialoprotein I, early T-lymphocyte activation 1) (SPP1), mRNA	46.79 UP	6.18E-05
NM_006722	Homo sapiens microphthalmia-associated transcription factor (MITF), transcript variant 3, mRNA	46.73 UP	1.26E-05
NM_152423	Homo sapiens melanoma associated antigen (mutated) 1-like 1 (MUM1L1), mRNA	46.24 UP	1.48E-04
AA075748	zm89e04.r1 Stratagene ovarian cancer (#937219) Homo sapiens cDNA clone IMAGE:545118 5, mRNA sequence	45.76 UP	4.39E-05
NM_017549	Homo sapiens upregulated in colorectal cancer gene 1 (UCC1), mRNA	45.18 UP	1.24E-05
BF431030	7o18c06.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:3574283 3, mRNA sequence	44.98 UP	7.75E-05

NM_002245	Homo sapiens potassium channel, subfamily K, member 1 (KCNK1), mRNA	44.3 UP	4.65E-05
NM_003494	Homo sapiens dysferlin, limb girdle muscular dystrophy 2B (autosomal recessive) (DYSF), mRNA	44.23 UP	1.78E-05
AK074097	Homo sapiens mRNA for FLJ00168 protein	43.88 UP	7.31E-05
NM_013410	Homo sapiens adenylate kinase 3 (AK3), nuclear gene encoding mitochondrial protein, transcript variant 2, mRNA	42.34 UP	2.96E-05
AK000075	Homo sapiens cDNA FLJ20068 fis, clone COL01755	42.18 UP	1.35E-04
NM_001200	Homo sapiens bone morphogenetic protein 2 (BMP2), mRNA	41.13 UP	2.11E-05
NM_032782	Homo sapiens hepatitis A virus cellular receptor 2 (HAVCR2), mRNA	41.13 UP	2.83E-05
AW151660	xf67d04.x1 NCI_CGAP_Gas4 Homo sapiens cDNA clone IMAGE:2623111 3, mRNA sequence	40.6 UP	8.65E-05
NM_130435	Homo sapiens protein tyrosine phosphatase, receptor type, E (PTPRE), transcript variant 2, mRNA	40.41 UP	1.62E-04
AA738254	nx13b02.s1 NCI_CGAP_GC3 Homo sapiens cDNA clone IMAGE:1255947 3, mRNA sequence	40.24 UP	2.43E-05
AK124873	Homo sapiens cDNA FLJ42883 fis, clone BRHIP3006683	40.2 UP	1.25E-04
NM_000170	Homo sapiens glycine dehydrogenase (decarboxylating; glycine decarboxylase, glycine cleavage system protein P) (GLDC), mRNA	40.06 UP	4.98E-05
AK125490	Homo sapiens cDNA FLJ43501 fis, clone PEBLM2004497	39.93 UP	1.64E-04
NM_004862	Homo sapiens lipopolysaccharide-induced TNF factor (LITAF), mRNA	39.52 UP	1.37E-05
NM_004617	Homo sapiens transmembrane 4 superfamily member 4 (TM4SF4), mRNA	39.3 UP	9.32E-05
NM_001263	Homo sapiens CDP-diacylglycerol synthase	39.26 UP	3.44E-05

	(phosphatidate cytidylyltransferase) 1 (CDS1), mRNA		
AK000776	Homo sapiens cDNA FLJ20769 fis, clone COL06674	38.12 UP	2.83E-05
AL833166	Homo sapiens mRNA; cDNA DKFZp686I2118 (from clone DKFZp686I2118)	37.72 UP	1.14E-04
NM_198488	Homo sapiens FLJ46072 protein (FLJ46072), mRNA	37.66 UP	2.46E-05
NM_005562	Homo sapiens laminin, gamma 2 (LAMC2), transcript variant 1, mRNA	37.4 UP	8.46E-06
AW268540	xv51e10.x1 NCI_CGAP_Lu28 Homo sapiens cDNA clone IMAGE:2816682 3, mRNA sequence	37.26 UP	5.82E-05
NM_012198	Homo sapiens grancalcin, EF-hand calcium binding protein (GCA), mRNA	36.52 UP	2.13E-05
NM_020808	Homo sapiens signal-induced proliferation-associated 1 like 2 (SIPA1L2), mRNA	36.28 UP	9.39E-05
NM_000927	Homo sapiens ATP-binding cassette, sub-family B (MDR/TAP), member 1 (ABCB1), mRNA	35.89 UP	2.20E-04
AK127644	Homo sapiens cDNA FLJ45742 fis, clone KIDNE2016327	35.81 UP	3.60E-04
NM_006158	Homo sapiens neurofilament, light polypeptide 68kDa (NEFL), mRNA	35.78 UP	2.64E-05
AK074181	Homo sapiens mRNA for FLJ00254 protein	35.75 UP	8.46E-06
BC043195	Homo sapiens cDNA clone IMAGE:5288757, partial cds	35.12 UP	1.24E-04
AL389942	Homo sapiens mRNA full length insert cDNA clone EUROIMAGE 2005635	34.31 UP	1.37E-04
BC045828	Homo sapiens zinc finger protein 608, mRNA (cDNA clone IMAGE:5262896), partial cds	34.02 UP	1.88E-05
NM_153229	Homo sapiens hypothetical protein FLJ33318 (FLJ33318), mRNA	34.02 UP	9.39E-05
NM_184087	Homo sapiens tripartite motif-containing 55 (TRIM55), transcript variant 4, mRNA	33.68 UP	2.18E-05
NM_000216	Homo sapiens Kallmann syndrome 1 sequence (KAL1), mRNA	33.32 UP	1.78E-05

BF696790	602125323F1 NIH_MGC_56 Homo sapiens cDNA clone IMAGE:4282540 5, mRNA sequence	32.7 UP	5.00E-05
NM_006598	Homo sapiens solute carrier family 12 (potassium/chloride transporters), member 7 (SLC12A7), mRNA	32.41 UP	8.39E-06
BQ003401	UI-H-EI1-azd-j-23-0-UI.s1 NCI_CGAP_EI1 Homo sapiens cDNA clone IMAGE:5847286 3, mRNA sequence	32.41 UP	1.72E-05
NM_003222	Homo sapiens transcription factor AP-2 gamma (activating enhancer binding protein 2 gamma) (TFAP2C), mRNA	32.33 UP	4.75E-05
NM_000599	Homo sapiens insulin-like growth factor binding protein 5 (IGFBP5), mRNA	32.1 UP	5.66E-05
NM_198389	Homo sapiens lung type-I cell membrane-associated glycoprotein (T1A-2), transcript variant 2, mRNA	31.44 UP	1.03E-04
NM_180991	Homo sapiens solute carrier organic anion transporter family, member 4C1 (SLCO4C1), mRNA	30.86 UP	3.05E-04
NM_031311	Homo sapiens carboxypeptidase, vitellogenic-like (CPVL), transcript variant 1, mRNA	29.97 UP	4.30E-05
NM_052947	Homo sapiens heart alpha-kinase (HAK), mRNA	29.53 UP	4.34E-05
H89053	yw24c06.r1 Morton Fetal Cochlea Homo sapiens cDNA clone IMAGE:253162 5, mRNA sequence	29.27 UP	2.78E-05
AI819186	wj32d10.x1 NCI_CGAP_Kid12 Homo sapiens cDNA clone IMAGE:2404531 3, mRNA sequence	29.14 UP	1.21E-04
NM_003761	Homo sapiens vesicle-associated membrane protein 8 (endobrevin) (VAMP8), mRNA	28.5 UP	7.47E-05
NM_080743	Homo sapiens serine-arginine repressor protein (35 kDa) (SRrp35), mRNA	27.83 UP	1.02E-05
NM_007069	Homo sapiens HRAS-like suppressor 3 (HRASLS3), mRNA	27.51 UP	6.86E-06
NM_002345	Homo sapiens lumican (LUM), mRNA	27.17 UP	2.20E-05

BU569937	AGENCOURT_10399817 NIH_MGC_82 Homo sapiens cDNA clone IMAGE:6618011 5, mRNA sequence	27.05 UP	3.20E-05
NM_024901	Homo sapiens hypothetical protein FLJ22457 (FLJ22457), mRNA	27.04 UP	5.37E-05
N25875	yw78d12.s1 Soares_placenta_8to9weeks_2NbHP8to9W Homo sapiens cDNA clone IMAGE:258359 3, mRNA sequence	26.94 UP	3.36E-05
NM_152573	Homo sapiens RAS and EF hand domain containing (RASEF), mRNA	26.91 UP	4.75E-05
NM_018728	Homo sapiens myosin VC (MYO5C), mRNA	26.81 UP	4.47E-05
AB033048	Homo sapiens mRNA for KIAA1222 protein, partial cds	26.76 UP	1.90E-04
NM_153256	Homo sapiens chromosome 10 open reading frame 47 (C10orf47), mRNA	26.61 UP	2.48E-05
BG221364	RST41175 Athersys RAGE Library Homo sapiens cDNA, mRNA sequence	26.25 UP	2.06E-04
NM_000094	Homo sapiens collagen, type VII, alpha 1 (epidermolysis bullosa, dystrophic, dominant and recessive) (COL7A1), mRNA	26.16 UP	6.51E-05
NM_001854	Homo sapiens collagen, type XI, alpha 1 (COL11A1), transcript variant A, mRNA	25.88 UP	1.36E-04
BU740051	UI-E-EO0-ahw-n-18-0-UI.s1 UI-E-EO0 Homo sapiens cDNA clone UI-E-EO0-ahw-n-18-0-UI 3, mRNA sequence	25.64 UP	5.14E-05
NM_014936	Homo sapiens ectonucleotide pyrophosphatase/phosphodiesterase 4 (putative function) (ENPP4), mRNA	25.62 UP	2.82E-04
NM_024898	Homo sapiens family with sequence similarity 31, member C (FAM31C), mRNA	25.44 UP	7.17E-04
W93585	zd95g01.s1 Soares_fetal_heart_NbHH19W Homo sapiens cDNA clone IMAGE:357264 3, mRNA sequence	25.41 UP	1.78E-05
BF510493	UI-H-BI4-apa-b-08-0-UI.s1 NCI_CGAP_Sub8 Homo sapiens cDNA clone IMAGE:3086558 3, mRNA sequence	25.28 UP	2.11E-05

NM_020962	Homo sapiens likely ortholog of mouse neighbor of Punc E11 (NOPE), mRNA	25.23 UP	7.99E-05
NM_016212	Homo sapiens TP53TG3 protein (TP53TG3), mRNA	25.14 UP	4.07E-05
NM_021012	Homo sapiens potassium inwardly-rectifying channel, subfamily J, member 12 (KCNJ12), mRNA	24.7 UP	2.10E-04
NM_001935	Homo sapiens dipeptidylpeptidase 4 (CD26, adenosine deaminase complexing protein 2) (DPP4), mRNA	24.67 UP	8.46E-06
NM_001993	Homo sapiens coagulation factor III (thromboplastin, tissue factor) (F3), mRNA	24.47 UP	6.12E-05
NM_184087	Homo sapiens tripartite motif-containing 55 (TRIM55), transcript variant 4, mRNA	24.38 UP	8.46E-06
AK056431	Homo sapiens cDNA FLJ31869 fis, clone NT2RP7002151	24.34 UP	2.73E-05
NM_000775	Homo sapiens cytochrome P450, family 2, subfamily J, polypeptide 2 (CYP2J2), mRNA	24.04 UP	3.53E-05
NM_006722	Homo sapiens microphthalmia-associated transcription factor (MITF), transcript variant 3, mRNA	23.95 UP	5.23E-06
NM_001977	Homo sapiens glutamyl aminopeptidase (aminopeptidase A) (ENPEP), mRNA	23.91 UP	1.88E-05
AK058012	Homo sapiens cDNA FLJ25283 fis, clone STM06716	23.55 UP	1.88E-05
BU680661	UI-CF-DU1-aaz-f-04-0-UI.s1 UI-CF-DU1 Homo sapiens cDNA clone UI-CF-DU1-aaz-f-04-0-UI 3, mRNA sequence	23.17 UP	1.82E-05
NM_002246	Homo sapiens potassium channel, subfamily K, member 3 (KCNK3), mRNA	22.96 UP	2.27E-05
NM_052923	Homo sapiens zinc finger protein 452 (ZNF452), mRNA	22.72 UP	3.77E-05
NM_014373	Homo sapiens G protein-coupled receptor 160 (GPR160), mRNA	22.71 UP	3.94E-05
BX538226	Homo sapiens mRNA; cDNA DKFZp686E1944 (from clone DKFZp686E1944)	22.58 UP	1.05E-04
NM_173660	Homo sapiens hypothetical protein FLJ33718	22.46 UP	2.83E-05

	(FLJ33718), mRNA		
NM_002354	Homo sapiens tumor-associated calcium signal transducer 1 (TACSTD1), mRNA	21.97 UP	2.83E-05
NM_005822	Homo sapiens Down syndrome critical region gene 1-like 1 (DSCR1L1), mRNA	21.78 UP	2.21E-04
W20132	zb40c10.r1 Soares_parathyroid_tumor_NbHPA Homo sapiens cDNA clone IMAGE:306066 5, mRNA sequence	21.76 UP	4.41E-04
NM_001680	Homo sapiens FXYD domain containing ion transport regulator 2 (FXYD2), transcript variant a, mRNA	21.75 UP	3.26E-05
NM_006379	Homo sapiens sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3C (SEMA3C), mRNA	21.57 UP	3.15E-05
H23441	ym52f11.s1 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGE:51888 3, mRNA sequence	21.43 UP	3.51E-05
BG211832	RST31404 Athersys RAGE Library Homo sapiens cDNA, mRNA sequence	21.35 UP	5.06E-05
N51335	yz15e08.s1 Soares_multiple_sclerosis_2NbHMSP Homo sapiens cDNA clone IMAGE:283142 3, mRNA sequence	21.19 UP	6.92E-03
NM_022843	Homo sapiens protocadherin 20 (PCDH20), mRNA	21.17 UP	2.03E-05
NM_002521	Homo sapiens natriuretic peptide precursor B (NPPB), mRNA	21.01 UP	4.54E-04
NM_021101	Homo sapiens claudin 1 (CLDN1), mRNA	20.92 UP	3.04E-05
NM_004165	Homo sapiens Ras-related associated with diabetes (RRAD), mRNA	20.76 UP	6.04E-04
NM_005329	Homo sapiens hyaluronan synthase 3 (HAS3), transcript variant 1, mRNA	20.73 UP	4.13E-05
NM_138432	Homo sapiens serine dehydratase-like (SDSL), mRNA	20.41 UP	7.27E-05
NM_004591	Homo sapiens chemokine (C-C motif) ligand 20 (CCL20), mRNA	20.34 UP	3.29E-04
NM_003063	Homo sapiens sarcolipin (SLN), mRNA	20.26 UP	1.18E-04

BU951469	in60a05.x3 HR85 islet Homo sapiens cDNA clone IMAGE:6126249 3, mRNA sequence	20.02 UP	4.52E-04
AI436290	th81c01.x1 Soares_NhHMPu_S1 Homo sapiens cDNA clone IMAGE:2125056 3, mRNA sequence	19.92 UP	9.28E-05
NM_014452	Homo sapiens tumor necrosis factor receptor superfamily, member 21 (TNFRSF21), mRNA	19.39 UP	2.96E-05
AA099748	zl78c09.s1 Stratagene colon (#937204) Homo sapiens cDNA clone IMAGE:510736 3, mRNA sequence	19.2 UP	1.78E-05
NM_018354	Homo sapiens chromosome 20 open reading frame 46 (C20orf46), mRNA	18.87 UP	5.05E-04
NM_194298	Homo sapiens solute carrier family 16 (monocarboxylic acid transporters), member 9 (SLC16A9), mRNA	18.87 UP	9.82E-03
NM_033554	Homo sapiens major histocompatibility complex, class II, DP alpha 1 (HLA-DPA1), mRNA	18.6 UP	5.61E-04
NM_004524	Homo sapiens lethal giant larvae homolog 2 (Drosophila) (LLGL2), mRNA	18.45 UP	2.11E-05
NM_032293	Homo sapiens GTPase activating Rap/RanGAP domain-like 3 (GARNL3), mRNA	18.19 UP	2.24E-04
NM_022842	Homo sapiens CUB domain-containing protein 1 (CDCP1), transcript variant 1, mRNA	18.14 UP	1.64E-05
NM_000227	Homo sapiens laminin, alpha 3 (LAMA3), transcript variant 2, mRNA	18.04 UP	3.92E-05
NM_000214	Homo sapiens jagged 1 (Alagille syndrome) (JAG1), mRNA	18.03 UP	1.26E-04
AK096580	Homo sapiens cDNA FLJ39261 fis, clone OCBBF2009391	17.89 UP	3.05E-04
NM_014243	Homo sapiens a disintegrin-like and metalloprotease (reprolysin type) with thrombospondin type 1 motif, 3 (ADAMTS3), mRNA	17.86 UP	1.78E-05
NM_000856	Homo sapiens guanylate cyclase 1, soluble, alpha 3 (GUCY1A3), mRNA	17.85 UP	1.19E-04
NM_018404	Homo sapiens centaurin, alpha 2 (CENTA2),	17.8 UP	3.05E-04

	mRNA		
NM_001165	Homo sapiens baculoviral IAP repeat-containing 3 (BIRC3), transcript variant 1, mRNA	17.74 UP	2.56E-04
NM_003706	Homo sapiens phospholipase A2, group IVC (cytosolic, calcium-independent) (PLA2G4C), mRNA	17.65 UP	4.77E-05
AK056882	Homo sapiens cDNA FLJ32320 fis, clone PROST2003537	17.65 UP	4.33E-04
NM_017640	Homo sapiens leucine rich repeat containing 16 (LRRC16), mRNA	17.43 UP	1.04E-04
NM_000480	Homo sapiens adenosine monophosphate deaminase (isoform E) (AMPD3), mRNA	17.4 UP	1.15E-05
BX103476	BX103476 NCI_CGAP_Lu5 Homo sapiens cDNA clone IMAGp998C053946 ; IMAGE:1557436, mRNA sequence	17.29 UP	7.13E-05
NM_013427	Homo sapiens Rho GTPase activating protein 6 (ARHGAP6), transcript variant 1, mRNA	17.27 UP	1.48E-04
S70348	Homo sapiens integrin beta 3 mRNA, partial cds, alternatively spliced	17.24 UP	3.37E-05
NM_032024	Homo sapiens chromosome 10 open reading frame 11 (C10orf11), mRNA	16.95 UP	3.03E-05
BM988642	UI-H-DH0-arx-p-21-0-UI.s1 NCI_CGAP_DH0 Homo sapiens cDNA clone IMAGE:5855492 3, mRNA sequence	16.94 UP	1.94E-04
NM_021102	Homo sapiens serine protease inhibitor, Kunitz type, 2 (SPINT2), mRNA	16.94 UP	1.85E-04
AI632692	wa33b05.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2299857 3, mRNA sequence	16.88 UP	7.19E-04
NM_152487	Homo sapiens hypothetical protein FLJ31842 (FLJ31842), mRNA	16.75 UP	2.55E-04
NM_173567	Homo sapiens abhydrolase domain containing 7 (ABHD7), mRNA	16.66 UP	2.13E-05
CA502927	UI-CF-FN0-afq-j-12-0-UI.s1 UI-CF-FN0 Homo sapiens cDNA clone UI-CF-FN0-afq-j-12-0-UI 3, mRNA sequence	16.59 UP	2.35E-04

NM_015888	Homo sapiens hook homolog 1 (Drosophila) (HOOK1), mRNA	16.44 UP	4.12E-05
NM_178177	Homo sapiens nicotinamide nucleotide adenylyltransferase 3 (NMNAT3), mRNA	16.43 UP	1.56E-04
NM_005181	Homo sapiens carbonic anhydrase III, muscle specific (CA3), mRNA	16.42 UP	4.93E-05
NM_000599	Homo sapiens insulin-like growth factor binding protein 5 (IGFBP5), mRNA	16.27 UP	4.97E-04
NM_006393	Homo sapiens nebulette (NEBL), transcript variant 1, mRNA	16.13 UP	6.06E-04
NM_006252	Homo sapiens protein kinase, AMP-activated, alpha 2 catalytic subunit (PRKAA2), mRNA	16.12 UP	5.64E-04
NM_002338	Homo sapiens limbic system-associated membrane protein (LSAMP), mRNA	16.11 UP	2.81E-04
NM_006378	Homo sapiens sema domain, immunoglobulin domain (Ig), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 4D (SEMA4D), mRNA	16.09 UP	1.78E-05
AI819863	wj45h05.x1 NCI_CGAP_Lu19 Homo sapiens cDNA clone IMAGE:2405817 3, mRNA sequence	15.95 UP	3.04E-04
BM979825	UI-CF-DU1-adt-f-12-0-UI.s1 UI-CF-DU1 Homo sapiens cDNA clone UI-CF-DU1-adt-f-12-0-UI 3, mRNA sequence	15.9 UP	2.77E-05
BX647876	Homo sapiens mRNA; cDNA DKFZp313A1525 (from clone DKFZp313A1525)	15.83 UP	4.39E-05
NM_003730	Homo sapiens ribonuclease T2 (RNASET2), mRNA	15.6 UP	2.41E-05
AL117425	Homo sapiens mRNA; cDNA DKFZp566L203 (from clone DKFZp566L203)	15.59 UP	3.31E-04
AL833346	Homo sapiens mRNA; cDNA DKFZp686M2234 (from clone DKFZp686M2234)	15.59 UP	2.99E-05
NM_199169	Homo sapiens transmembrane, prostate androgen induced RNA (TMEPAI), transcript variant 2, mRNA	15.58 UP	1.34E-04
NM_002559	Homo sapiens purinergic receptor P2X, ligand-gated ion channel, 3 (P2RX3), mRNA	15.51 UP	9.39E-05

NM_032148	Homo sapiens solute carrier family 41, member 2 (SLC41A2), mRNA	15.46 UP	2.38E-05
BC021684	Homo sapiens, clone IMAGE:3827252, mRNA	15.41 UP	2.31E-05
BF000009	7h15g04.x1 NCI_CGAP_Co16 Homo sapiens cDNA clone IMAGE:3316086 3, mRNA sequence	15.33 UP	2.09E-05
NM_000147	Homo sapiens fucosidase, alpha-L- 1, tissue (FUCA1), mRNA	15.31 UP	9.99E-04
NM_001252	Homo sapiens tumor necrosis factor (ligand) superfamily, member 7 (TNFSF7), mRNA	14.88 UP	1.85E-04
NM_013322	Homo sapiens sorting nexin 10 (SNX10), mRNA	14.84 UP	2.64E-05
NM_022440	Homo sapiens mal, T-cell differentiation protein (MAL), transcript variant d, mRNA	14.65 UP	2.14E-04
NM_178470	Homo sapiens WD repeat domain 40B (WDR40B), mRNA	14.53 UP	3.34E-05
NM_001873	Homo sapiens carboxypeptidase E (CPE), mRNA	14.51 UP	6.23E-05
BM719937	UI-E-EJ0-ahu-a-10-0-UI.r1 UI-E-EJ0 Homo sapiens cDNA clone UI-E-EJ0-ahu-a-10-0-UI 5, mRNA sequence	14.46 UP	1.64E-05
NM_032551	Homo sapiens G protein-coupled receptor 54 (GPR54), mRNA	14.45 UP	5.64E-04
T53523	ya89h12.r1 Stratagene placenta (#937225) Homo sapiens cDNA clone IMAGE:68903 5, mRNA sequence	14.42 UP	1.81E-04
NM_173354	Homo sapiens SNF1-like kinase (SNF1LK), mRNA	14.19 UP	5.72E-05
NM_014585	Homo sapiens solute carrier family 40 (iron-regulated transporter), member 1 (SLC40A1), mRNA	14.17 UP	4.06E-05
N38753	yy42d01.s1 Soares melanocyte 2NbHM Homo sapiens cDNA clone IMAGE:273889 3, mRNA sequence	14.02 UP	1.15E-05
NM_001710	Homo sapiens B-factor, properdin (BF), mRNA	13.95 UP	2.05E-04
BC038556	Homo sapiens, clone IMAGE:3446976, mRNA	13.9 UP	4.45E-04
AK125608	Homo sapiens cDNA FLJ43620 fis, clone	13.88 UP	2.56E-04

	SPLEN2021701, highly similar to HLA CLASS I HISTOCOMPATIBILITY ANTIGEN, A-2 ALPHA CHAIN PRECURSOR		
AW248516	2820632.3prime NIH_MGC_7 Homo sapiens cDNA clone IMAGE:2820632 3, mRNA sequence	13.79 UP	2.22E-04
NM_000600	Homo sapiens interleukin 6 (interferon, beta 2) (IL6), mRNA	13.62 UP	1.64E-05
AK125852	Homo sapiens cDNA FLJ43864 fis, clone TESTI4007799	13.46 UP	1.66E-04
BM728728	UI-E-EO1-aiv-c-02-0-UI.r1 UI-E-EO1 Homo sapiens cDNA clone UI-E-EO1-aiv-c-02-0-UI 5, mRNA sequence	13.46 UP	2.77E-04
NM_018650	Homo sapiens MAP/microtubule affinity-regulating kinase 1 (MARK1), mRNA	13.45 UP	4.39E-05
NM_022154	Homo sapiens solute carrier family 39 (zinc transporter), member 8 (SLC39A8), mRNA	13.39 UP	4.78E-05
AA908815	og77h08.s1 NCI_CGAP_Ov8 Homo sapiens cDNA clone IMAGE:1454367 3, mRNA sequence	13.23 UP	3.11E-05
NM_016463	Homo sapiens CXXC finger 5 (CXXC5), mRNA	13.22 UP	9.67E-05
AB011538	Homo sapiens mRNA for MEGF5, partial cds	13.19 UP	3.38E-04
CA413744	UI-H-EZ0-bat-h-12-0-UI.s1 NCI_CGAP_Ch1 Homo sapiens cDNA clone UI-H-EZ0-bat-h-12-0-UI 3, mRNA sequence	13.17 UP	2.09E-05
BM712072	UI-E-DW1-ahc-b-11-0-UI.r1 UI-E-DW1 Homo sapiens cDNA clone UI-E-DW1-ahc-b-11-0-UI 5, mRNA sequence	13.16 UP	9.39E-05
BU727096	UI-E-CR0-ach-e-12-0-UI.s1 UI-E-CR0 Homo sapiens cDNA clone UI-E-CR0-ach-e-12-0-UI 3, mRNA sequence	13.14 UP	4.30E-05
NM_032858	Homo sapiens hypothetical protein FLJ14904 (FLJ14904), mRNA	13.09 UP	1.83E-05
BU729783	UI-E-CK1-afh-h-18-0-UI.s1 UI-E-CK1 Homo sapiens cDNA clone UI-E-CK1-afh-h-18-0-UI 3, mRNA sequence	12.92 UP	8.39E-06
AB011095	Homo sapiens mRNA for KIAA0523 protein,	12.91 UP	3.44E-04

	partial cds		
BC033116	Homo sapiens chromodomain helicase DNA binding protein 7, mRNA (cDNA clone IMAGE:3352674), partial cds	12.87 UP	2.31E-05
CB135276	K-EST0187371 L5HLK1 Homo sapiens cDNA clone L5HLK1-32-B12 5, mRNA sequence	12.75 UP	4.93E-05
NM_182920	Homo sapiens a disintegrin-like and metalloprotease (reprolysin type) with thrombospondin type 1 motif, 9 (ADAMTS9), transcript variant 1, mRNA	12.73 UP	9.10E-05
NM_000236	Homo sapiens lipase, hepatic (LIPC), mRNA	12.71 UP	1.16E-03
NM_152694	Homo sapiens zinc finger, CCHC domain containing 5 (ZCCHC5), mRNA	12.66 UP	4.93E-05
AB020640	Homo sapiens mRNA for KIAA0833 protein, partial cds	12.51 UP	2.31E-04
NM_018330	Homo sapiens KIAA1598 (KIAA1598), mRNA	12.46 UP	6.01E-05
NM_000064	Homo sapiens complement component 3 (C3), mRNA	12.42 UP	5.12E-04
NM_152864	Homo sapiens chromosome 20 open reading frame 58 (C20orf58), mRNA	12.4 UP	1.66E-03
AW591723	xt85h10.x1 NCI_CGAP_Ut1 Homo sapiens cDNA clone IMAGE:2793283 3 similar to contains element MER32 repetitive element ;, mRNA sequence	12.4 UP	3.71E-05
NM_152768	Homo sapiens hypothetical protein FLJ25378 (FLJ25378), mRNA	12.28 UP	2.03E-05
NM_152366	Homo sapiens kelch/ankyrin repeat containing cyclin A1 interacting protein (KARCA1), transcript variant 1, mRNA	12.19 UP	2.62E-05
AW300043	xs45a09.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2772568 3, mRNA sequence	12.13 UP	2.31E-05
NM_006741	Homo sapiens protein phosphatase 1, regulatory (inhibitor) subunit 1A (PPP1R1A), mRNA	12.12 UP	2.10E-04
NM_024726	Homo sapiens IQ motif containing with AAA domain (IQCA), mRNA	12.08 UP	5.33E-03

NM_194284	Homo sapiens claudin 23 (CLDN23), mRNA	12.02 UP	2.87E-05
AL049974	Homo sapiens mRNA; cDNA DKFZp564B222 (from clone DKFZp564B222)	12 UP	1.48E-04
AI420213	te92g09.x1 NCI_CGAP_Pr28 Homo sapiens cDNA clone IMAGE:2094208 3, mRNA sequence	11.95 UP	3.59E-04
NM_002800	Homo sapiens proteasome (prosome, macropain) subunit, beta type, 9 (large multifunctional protease 2) (PSMB9), transcript variant 1, mRNA	11.85 UP	4.69E-05
CA391258	cs13a10.x1 Human Retinal pigment epithelium/choroid cDNA (Un-normalized, unamplified): cs Homo sapiens cDNA clone cs13a10 3, mRNA sequence	11.85 UP	3.64E-05
NM_013430	Homo sapiens gamma-glutamyltransferase 1 (GGT1), transcript variant 3, mRNA	11.79 UP	1.38E-04
NM_199169	Homo sapiens transmembrane, prostate androgen induced RNA (TMEPAI), transcript variant 2, mRNA	11.79 UP	8.39E-06
NM_032471	Homo sapiens protein kinase (cAMP-dependent, catalytic) inhibitor beta (PKIB), transcript variant 3, mRNA	11.73 UP	1.28E-04
NM_016269	Homo sapiens lymphoid enhancer-binding factor 1 (LEF1), mRNA	11.72 UP	4.57E-05
NM_003851	Homo sapiens cellular repressor of E1A-stimulated genes 1 (CREG1), mRNA	11.61 UP	1.83E-05
NM_003236	Homo sapiens transforming growth factor, alpha (TGFA), mRNA	11.61 UP	6.51E-05
BX110418	BX110418 NCI_CGAP_Kid3 Homo sapiens cDNA clone IMAGp998C224149 ; IMAGE:1635405, mRNA sequence	11.59 UP	1.89E-05
NM_006033	Homo sapiens lipase, endothelial (LIPG), mRNA	11.55 UP	8.79E-04
NM_025151	Homo sapiens RAB11 family interacting protein 1 (class I) (RAB11FIP1), transcript variant 1, mRNA	11.5 UP	2.65E-05
BI759570	603046987F1 NIH_MGC_116 Homo sapiens	11.49 UP	3.71E-05

	cDNA clone IMAGE:5187285 5, mRNA sequence		
NM_013261	Homo sapiens peroxisome proliferative activated receptor, gamma, coactivator 1, alpha (PPARGC1A), mRNA	11.3 UP	2.83E-04
AI830524	wh52c02.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2384354 3, mRNA sequence	11.29 UP	8.65E-04
NM_139161	Homo sapiens crumbs homolog 3 (Drosophila) (CRB3), transcript variant 2, mRNA	11.15 UP	1.22E-04
AK055362	Homo sapiens cDNA FLJ30800 fis, clone FEBRA2001197	11.13 UP	1.02E-05
BF055156	7j75f03.x1 Soares_NSF_F8_9W_OT_PA_P_S1 Homo sapiens cDNA clone IMAGE:3392285 3, mRNA sequence	11.11 UP	4.94E-04
BC016962	Homo sapiens, clone IMAGE:4182947, mRNA	11.05 UP	1.06E-04
AY358775	Homo sapiens clone DNA170212 WGAR9166 (UNQ9166) mRNA, complete cds	11.05 UP	2.32E-04
NM_175056	Homo sapiens hypothetical protein LOC131368 (LOC131368), mRNA	10.98 UP	1.33E-03
AI311296	ta48d10.x2 NCI_CGAP_Lu25 Homo sapiens cDNA clone IMAGE:2047315 3, mRNA sequence	10.93 UP	2.19E-04
AW296834	UI-H-BI2-ahz-a-10-0-UI.s1 NCI_CGAP_Sub4 Homo sapiens cDNA clone IMAGE:2728243 3, mRNA sequence	10.91 UP	1.71E-04
NM_014464	Homo sapiens tubulointerstitial nephritis antigen (TINAG), mRNA	10.89 UP	3.87E-04
AK024270	Homo sapiens cDNA FLJ14208 fis, clone NT2RP3003264	10.88 UP	3.05E-04
H00617	yj25f02.s1 Soares placenta Nb2HP Homo sapiens cDNA clone IMAGE:149787 3, mRNA sequence	10.87 UP	2.09E-04
AK126467	Homo sapiens cDNA FLJ44503 fis, clone UTERU3001158	10.87 UP	5.06E-05
NM_181847	Homo sapiens amphoterin induced gene 2	10.86 UP	8.91E-04

	(AMIGO2), mRNA		
NM_014751	Homo sapiens metastasis suppressor 1 (MTSS1), mRNA	10.86 UP	2.68E-05
N70752	za72d02.s1 Soares_fetal_lung_NbHL19W Homo sapiens cDNA clone IMAGE:298083 3, mRNA sequence	10.84 UP	1.34E-04
NM_005302	Homo sapiens G protein-coupled receptor 37 (endothelin receptor type B-like) (GPR37), mRNA	10.84 UP	2.63E-03
NM_003264	Homo sapiens toll-like receptor 2 (TLR2), mRNA	10.83 UP	1.01E-04
NM_017594	Homo sapiens DIRAS family, GTP-binding RAS-like 2 (DIRAS2), mRNA	10.81 UP	7.23E-04
AI688800	wd41b03.x1 Soares_NFL_T_GBC_S1 Homo sapiens cDNA clone IMAGE:2330669 3, mRNA sequence	10.8 UP	8.56E-04
H08012	yl91b08.r1 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGE:45474 5, mRNA sequence	10.8 UP	3.26E-04
AW014126	UI-H-BI0-aaj-a-05-0-UI.s1 NCI_CGAP_Sub1 Homo sapiens cDNA clone IMAGE:2709393 3, mRNA sequence	10.79 UP	1.88E-05
NM_014422	Homo sapiens phosphatidylinositol (4,5) bisphosphate 5-phosphatase, A (PIB5PA), transcript variant 1, mRNA	10.73 UP	4.47E-05
H62713	yr28c08.r1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:206606 5 similar to gb:X01683 ALPHA-1-ANTITRYPSIN PRECURSOR (HUMAN);, mRNA sequence	10.73 UP	1.01E-03
AI870547	wl47a04.x1 NCI_CGAP_Ut1 Homo sapiens cDNA clone IMAGE:2428014 3, mRNA sequence	10.65 UP	4.82E-03
NM_025202	Homo sapiens EF hand domain containing 1 (EFHD1), mRNA	10.64 UP	5.59E-05
N78460	yz76h06.r1 Soares_multiple_sclerosis_2NbHMSP Homo sapiens cDNA clone IMAGE:289019 5, mRNA	10.63 UP	3.90E-04

	sequence		
NM_020661	Homo sapiens activation-induced cytidine deaminase (AICDA), mRNA	10.63 UP	7.27E-05
NM_173549	Homo sapiens hypothetical protein FLJ39553 (FLJ39553), mRNA	10.57 UP	3.11E-04
AI767472	wh27a07.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2381940 3 similar to contains L1.t3 L1 repetitive element ;, mRNA sequence	10.56 UP	8.39E-06
NM_145804	Homo sapiens ankyrin repeat and BTB (POZ) domain containing 2 (ABTB2), mRNA	10.55 UP	1.41E-06
NM_013230	Homo sapiens CD24 antigen (small cell lung carcinoma cluster 4 antigen) (CD24), mRNA	10.54 UP	1.12E-04
NM_000758	Homo sapiens colony stimulating factor 2 (granulocyte-macrophage) (CSF2), mRNA	10.51 UP	7.66E-04
AB032945	Homo sapiens mRNA for KIAA1119 protein, partial cds	10.48 UP	1.32E-03
NM_024572	Homo sapiens UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 14 (GalNAc-T14) (GALNT14), mRNA	10.46 UP	2.62E-04
NM_181332	Homo sapiens neuroligin 4, X-linked (NLGN4X), transcript variant 2, mRNA	10.46 UP	1.95E-04
NM_022128	Homo sapiens ribokinase (RBKS), mRNA	10.45 UP	2.73E-05
AB046810	Homo sapiens mRNA for KIAA1590 protein, partial cds	10.39 UP	2.36E-05
NM_022168	Homo sapiens interferon induced with helicase C domain 1 (IFIH1), mRNA	10.38 UP	2.83E-05
NM_153715	Homo sapiens homeo box A10 (HOXA10), transcript variant 2, mRNA	10.37 UP	5.50E-05
BF090392	QV3-NT0023-120900-324-b04 NT0023 Homo sapiens cDNA, mRNA sequence	10.35 UP	1.25E-03
NM_000880	Homo sapiens interleukin 7 (IL7), mRNA	10.34 UP	3.60E-04
NM_018650	Homo sapiens MAP/microtubule affinity-regulating kinase 1 (MARK1), mRNA	10.29 UP	1.57E-04
NM_017899	Homo sapiens hypothetical protein FLJ20607 (TSC), mRNA	10.27 UP	6.79E-04

NM_032367	Homo sapiens zinc finger, BED domain containing 3 (ZBED3), mRNA	10.27 UP	4.12E-05
NM_012206	Homo sapiens hepatitis A virus cellular receptor 1 (HAVCR1), mRNA	10.23 UP	8.15E-04
AK092245	Homo sapiens cDNA FLJ34926 fis, clone NT2RP7003319, highly similar to Mus musculus neuralin mRNA	10.21 UP	1.92E-03
NM_031469	Homo sapiens SH3 domain binding glutamic acid-rich protein like 2 (SH3BGRL2), mRNA	10.18 UP	1.63E-05
CA311343	UI-CF-FN0-aff-b-19-0-UI.s1 UI-CF-FN0 Homo sapiens cDNA clone UI-CF-FN0-aff-b-19-0-UI 3, mRNA sequence	10.15 UP	1.89E-05
NM_030923	Homo sapiens hypothetical protein DKFZp566N034 (DKFZP566N034), mRNA	10.15 UP	2.23E-05
AK024261	Homo sapiens cDNA FLJ14199 fis, clone NT2RP3002713	10.14 UP	2.08E-04
NM_174900	Homo sapiens zinc finger protein 42 (ZFP42), mRNA	10.1 UP	5.14E-05
NM_198495	Homo sapiens CTAGE family, member 4 (CTAGE4), mRNA	10.07 UP	4.65E-05
BX105791	BX105791 Soares_testis_NHT Homo sapiens cDNA clone IMAGp998I101824 ; IMAGE:742737, mRNA sequence	10.06 UP	2.15E-03
AI672441	wa03c03.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2296996 3, mRNA sequence	10.05 UP	2.40E-04
AK002097	Homo sapiens cDNA FLJ11235 fis, clone PLACE1008488	10.01 UP	2.75E-05
BX647256	Homo sapiens mRNA; cDNA DKFZp686K0753 (from clone DKFZp686K0753)	9.97 UP	1.81E-03
AK092456	Homo sapiens cDNA FLJ35137 fis, clone PLACE6009419	9.96 UP	5.02E-05
NM_001853	Homo sapiens collagen, type IX, alpha 3 (COL9A3), mRNA	9.96 UP	2.87E-05
NM_004946	Homo sapiens dedicator of cytokinesis 2 (DOCK2), mRNA	9.94 UP	3.94E-05
NM_005139	Homo sapiens annexin A3 (ANXA3), mRNA	9.92 UP	5.14E-05

NM_002260	Homo sapiens killer cell lectin-like receptor subfamily C, member 2 (KLRC2), mRNA	9.92 UP	5.95E-04
BX649112	Homo sapiens mRNA; cDNA DKFZp686E02109 (from clone DKFZp686E02109)	9.89 UP	6.13E-05
AK127437	Homo sapiens cDNA FLJ45529 fis, clone BRTHA2027546	9.85 UP	2.09E-05
NM_080659	Homo sapiens similar to RIKEN cDNA 2310030G06 gene (MGC14839), mRNA	9.81 UP	1.33E-03
NM_014867	Homo sapiens KIAA0711 gene product (KIAA0711), mRNA	9.81 UP	4.12E-05
BG149255	nad25d01.x1 NCI_CGAP_Lu24 Homo sapiens cDNA clone IMAGE:3366553 3, mRNA sequence	9.7 UP	1.54E-04
AK022598	Homo sapiens cDNA FLJ12536 fis, clone NT2RM4000265	9.7 UP	1.38E-02
AI792194	ov03c02.y5 NCI_CGAP_Kid3 Homo sapiens cDNA clone IMAGE:1636226 5, mRNA sequence	9.65 UP	6.10E-04
NM_005502	Homo sapiens ATP-binding cassette, sub-family A (ABC1), member 1 (ABCA1), mRNA	9.65 UP	4.03E-04
BE070450	QV4-BT0407-020300-122-d08 BT0407 Homo sapiens cDNA, mRNA sequence	9.62 UP	5.52E-05
NM_006255	Homo sapiens protein kinase C, eta (PRKCH), mRNA	9.56 UP	2.09E-05
NM_005114	Homo sapiens heparan sulfate (glucosamine) 3-O-sulfotransferase 1 (HS3ST1), mRNA	9.55 UP	1.44E-04
AK123427	Homo sapiens cDNA FLJ41433 fis, clone BRHIP2007307	9.46 UP	1.99E-04
NM_013430	Homo sapiens gamma-glutamyltransferase 1 (GGT1), transcript variant 3, mRNA	9.4 UP	1.15E-04
AK094353	Homo sapiens cDNA FLJ37034 fis, clone BRACE2011478	9.4 UP	3.08E-05
NM_016584	Homo sapiens interleukin 23, alpha subunit p19 (IL23A), mRNA	9.38 UP	3.77E-05
NM_002089	Homo sapiens chemokine (C-X-C motif) ligand 2 (CXCL2), mRNA	9.38 UP	4.55E-04

NM_032023	Homo sapiens Ras association (RalGDS/AF-6) domain family 4 (RASSF4), transcript variant 1, mRNA	9.38 UP	5.39E-05
D62831	HUM330B12B Clontech human aorta polyA+ mRNA (#6572) Homo sapiens cDNA clone GEN-330B12 5, mRNA sequence	9.32 UP	9.48E-05
AI963999	wt87g07.x1 NCI_CGAP_GC6 Homo sapiens cDNA clone IMAGE:2514492 3, mRNA sequence	9.31 UP	8.57E-04
NM_005978	Homo sapiens S100 calcium binding protein A2 (S100A2), mRNA	9.31 UP	1.64E-05
NM_006622	Homo sapiens polo-like kinase 2 (Drosophila) (PLK2), mRNA	9.3 UP	2.93E-05
NM_033495	Homo sapiens kelch-like 13 (Drosophila) (KLHL13), mRNA	9.25 UP	2.38E-05
L07615	Human neuropeptide Y receptor Y1 (NPYY1) mRNA, exon 2-3 and complete cds	9.23 UP	1.09E-03
NM_018076	Homo sapiens armadillo repeat containing 4 (ARMC4), mRNA	9.16 UP	5.96E-04
CA778369	ip17f03.y1 HR85 islet Homo sapiens cDNA clone IMAGE:6217493 5, mRNA sequence	9.12 UP	5.40E-05
NM_024554	Homo sapiens piggyBac transposable element derived 5 (PGBD5), mRNA	9.12 UP	2.63E-04
NM_182487	Homo sapiens olfactomedin-like 2A (OLFML2A), mRNA	9.04 UP	1.64E-04
T78754	yd01f08.r1 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGE:24180 5, mRNA sequence	9.01 UP	1.09E-03
NM_004024	Homo sapiens activating transcription factor 3 (ATF3), mRNA	9 UP	1.50E-03
NM_030583	Homo sapiens matrilin 2 (MATN2), transcript variant 2, mRNA	8.98 UP	2.15E-04
NM_145032	Homo sapiens F-box and leucine-rich repeat protein 13 (FBXL13), mRNA	8.97 UP	1.78E-05
NM_020130	Homo sapiens chromosome 8 open reading frame 4 (C8orf4), mRNA	8.93 UP	4.79E-04
NM_005737	Homo sapiens ADP-ribosylation factor-like 7	8.87 UP	1.79E-04

	(ARL7), mRNA		
BG675167	602621444F1 NCI_CGAP_Skn3 Homo sapiens cDNA clone IMAGE:4755106 5, mRNA sequence	8.86 UP	7.41E-04
NM_194463	Homo sapiens ring finger protein 128 (RNF128), transcript variant 1, mRNA	8.85 UP	8.97E-05
NM_018349	Homo sapiens multiple C2-domains with two transmembrane regions 2 (MCTP2), mRNA	8.81 UP	8.37E-05
AK026740	Homo sapiens cDNA: FLJ23087 fis, clone LNG06994, highly similar to AF161368 Homo sapiens HSPC105 mRNA	8.8 UP	3.17E-04
NM_000693	Homo sapiens aldehyde dehydrogenase 1 family, member A3 (ALDH1A3), mRNA	8.78 UP	4.72E-04
NM_005459	Homo sapiens guanylate cyclase activator 1C (GUCA1C), mRNA	8.77 UP	1.57E-04
BF509074	UI-H-BI4-aou-b-08-0-UI.s1 NCI_CGAP_Sub8 Homo sapiens cDNA clone IMAGE:3086150 3, mRNA sequence	8.74 UP	2.11E-05
AL117425	Homo sapiens mRNA; cDNA DKFZp566L203 (from clone DKFZp566L203)	8.69 UP	2.83E-04
NM_006257	Homo sapiens protein kinase C, theta (PRKCQ), mRNA	8.64 UP	1.78E-05
NM_005567	Homo sapiens lectin, galactoside-binding, soluble, 3 binding protein (LGALS3BP), mRNA	8.64 UP	1.26E-05
NM_173508	Homo sapiens solute carrier family 35, member F3 (SLC35F3), mRNA	8.62 UP	1.04E-04
AK025281	Homo sapiens cDNA: FLJ21628 fis, clone COL08076	8.48 UP	7.96E-05
NM_145252	Homo sapiens similar to common salivary protein 1 (LOC124220), mRNA	8.48 UP	1.94E-04
AI764969	wh57b02.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2384811 3, mRNA sequence	8.48 UP	6.82E-05
NM_002313	Homo sapiens actin binding LIM protein 1 (ABLIM1), transcript variant 1, mRNA	8.48 UP	3.03E-05
NM_017641	Homo sapiens kinesin family member 21A (KIF21A), mRNA	8.42 UP	2.43E-05

AA564703	nj22h06.s1 NCI_CGAP_AA1 Homo sapiens cDNA clone IMAGE:993275 3, mRNA sequence	8.4 UP	6.11E-05
NM_001323	Homo sapiens cystatin E/M (CST6), mRNA	8.37 UP	1.02E-04
NM_014333	Homo sapiens immunoglobulin superfamily, member 4 (IGSF4), mRNA	8.35 UP	1.82E-03
NM_022454	Homo sapiens SRY (sex determining region Y)-box 17 (SOX17), mRNA	8.33 UP	6.04E-05
NM_000186	Homo sapiens complement factor H (CFH), mRNA	8.32 UP	1.06E-03
BF512544	UI-H-BW1-amf-c-08-0-UI.s1 NCI_CGAP_Sub7 Homo sapiens cDNA clone IMAGE:3069687 3, mRNA sequence	8.31 UP	1.09E-04
AF036977	Homo sapiens clone HCG IV.9 unknown mRNA	8.27 UP	1.12E-03
AK095500	Homo sapiens cDNA FLJ38181 fis, clone FCBBF1000125	8.19 UP	6.56E-05
NM_001955	Homo sapiens endothelin 1 (EDN1), mRNA	8.18 UP	4.43E-04
NM_002053	Homo sapiens guanylate binding protein 1, interferon-inducible, 67kDa (GBP1), mRNA	8.17 UP	8.39E-06
NM_031476	Homo sapiens hypothetical protein DKFZp434B044 (DKFZP434B044), mRNA	8.12 UP	8.06E-04
AA844712	ai70e12.s1 Soares_testis_NHT Homo sapiens cDNA clone IMAGE:1376206 3, mRNA sequence	8.11 UP	2.36E-04
BM976385	UI-CF-EN1-acz-f-03-0-UI.s1 UI-CF-EN1 Homo sapiens cDNA clone UI-CF-EN1-acz-f-03-0-UI 3, mRNA sequence	8.11 UP	7.27E-04
BX647876	Homo sapiens mRNA; cDNA DKFZp313A1525 (from clone DKFZp313A1525)	8.11 UP	6.87E-04
NM_001845	Homo sapiens collagen, type IV, alpha 1 (COL4A1), mRNA	8.06 UP	2.72E-05
NM_014900	Homo sapiens COBL-like 1 (COBLL1), mRNA	8.04 UP	9.67E-05
NM_203306	Homo sapiens hypothetical protein MGC39606 (MGC39606), mRNA	7.98 UP	1.95E-03
BI963896	ie66c06.x1 Melton Normalized Human Islet 4 N4-HIS 1 Homo sapiens cDNA clone IMAGE:5671691 3, mRNA sequence	7.97 UP	2.73E-05

NM_005025	Homo sapiens serine (or cysteine) proteinase inhibitor, clade I (neuroserpin), member 1 (SERPINI1), mRNA	7.97 UP	3.03E-05
AK024238	Homo sapiens cDNA FLJ14176 fis, clone NT2RP2003101	7.96 UP	4.75E-05
NM_005951	Homo sapiens metallothionein 1H (MT1H), mRNA	7.95 UP	3.19E-03
CF887677	UI-CF-FN0-aev-o-22-18-UI.r18 UI-CF-FN0 Homo sapiens cDNA clone UI-CF-FN0-aev-o-22-18-UI 5, mRNA sequence	7.93 UP	4.30E-05
NM_024423	Homo sapiens desmocollin 3 (DSC3), transcript variant Dsc3b, mRNA	7.91 UP	1.23E-04
AI355761	qt94a11.x1 NCI_CGAP_Co14 Homo sapiens cDNA clone IMAGE:1962908 3 similar to gb:X74929 KERATIN, TYPE II CYTOSKELETAL 8 (HUMAN);, mRNA sequence	7.91 UP	6.82E-05
BF445031	nad20f02.x1 NCI_CGAP_Lu24 Homo sapiens cDNA clone IMAGE:3366266 3, mRNA sequence	7.91 UP	1.78E-05
CA444471	UI-H-DP0-avv-a-16-0-UI.s1 NCI_CGAP_Fs1 Homo sapiens cDNA clone UI-H-DP0-avv-a-16-0-UI 3, mRNA sequence	7.89 UP	7.69E-05
NM_014942	Homo sapiens ankyrin repeat domain 6 (ANKRD6), mRNA	7.89 UP	2.49E-05
AK021801	Homo sapiens cDNA FLJ11739 fis, clone HEMBA1005497	7.86 UP	1.15E-04
NM_001766	Homo sapiens CD1D antigen, d polypeptide (CD1D), mRNA	7.85 UP	5.10E-04
NM_005360	Homo sapiens v-maf musculoaponeurotic fibrosarcoma oncogene homolog (avian) (MAF), mRNA	7.81 UP	7.59E-05
NM_018700	Homo sapiens tripartite motif-containing 36 (TRIM36), mRNA	7.8 UP	2.55E-05
BX640643	Homo sapiens mRNA; cDNA DKFZp686O24114 (from clone DKFZp686O24114)	7.79 UP	2.59E-05

NM_005331	Homo sapiens hemoglobin, theta 1 (HBQ1), mRNA	7.77 UP	3.73E-04
NM_194298	Homo sapiens solute carrier family 16 (monocarboxylic acid transporters), member 9 (SLC16A9), mRNA	7.77 UP	2.66E-04
NM_012413	Homo sapiens glutaminyl-peptide cyclotransferase (glutaminyl cyclase) (QPCT), mRNA	7.76 UP	4.60E-04
NM_005860	Homo sapiens follistatin-like 3 (secreted glycoprotein) (FSTL3), mRNA	7.76 UP	2.64E-05
AB033029	Homo sapiens mRNA for KIAA1203 protein, partial cds	7.7 UP	8.39E-06
NM_012216	Homo sapiens midline 2 (MID2), transcript variant 1, mRNA	7.62 UP	6.12E-05
NM_018986	Homo sapiens SH3 domain and tetratricopeptide repeats 1 (SH3TC1), mRNA	7.61 UP	8.69E-04
BM665101	UI-E-CQ1-aew-l-09-0-UI.s1 UI-E-CQ1 Homo sapiens cDNA clone UI-E-CQ1-aew-l-09-0-UI 3, mRNA sequence	7.58 UP	4.09E-05
AL706653	DKFZp686E1543_r1 686 (synonym: hlcc3) Homo sapiens cDNA clone DKFZp686E1543 5, mRNA sequence	7.57 UP	2.36E-05
BF920409	QV2-NT0144-071100-463-b06 NT0144 Homo sapiens cDNA, mRNA sequence	7.55 UP	6.70E-04
NM_173462	Homo sapiens papilin, proteoglycan-like sulfated glycoprotein (PAPLN), mRNA	7.55 UP	5.64E-05
NM_031419	Homo sapiens nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, zeta (NFKBIZ), transcript variant 1, mRNA	7.55 UP	1.49E-04
NM_016423	Homo sapiens zinc finger protein 219 (ZNF219), mRNA	7.53 UP	1.71E-05
NM_020859	Homo sapiens Shroom-related protein (ShrmL), mRNA	7.52 UP	1.26E-05
NM_004932	Homo sapiens cadherin 6, type 2, K-cadherin (fetal kidney) (CDH6), mRNA	7.52 UP	1.64E-05
NM_182797	Homo sapiens phospholipase C, beta 4 (PLCB4), transcript variant 2, mRNA	7.52 UP	5.49E-05

AL512697	Homo sapiens mRNA; cDNA DKFZp547F134 (from clone DKFZp547F134)	7.5 UP	6.17E-05
BC035116	Homo sapiens cDNA clone IMAGE:5263177, partial cds	7.47 UP	2.32E-05
AL353944	Homo sapiens mRNA; cDNA DKFZp761J1112 (from clone DKFZp761J1112)	7.45 UP	1.72E-05
NM_152780	Homo sapiens hypothetical protein FLJ14503 (FLJ14503), mRNA	7.45 UP	1.19E-03
AA888443	nw74f10.s1 NCI_CGAP_Pr12 Homo sapiens cDNA clone IMAGE:1252363, mRNA sequence	7.43 UP	5.18E-04
AW450938	UI-H-BI3-all-g-05-0-UI.s1 NCI_CGAP_Sub5 Homo sapiens cDNA clone IMAGE:2737329 3, mRNA sequence	7.4 UP	4.98E-05
NM_053039	Homo sapiens UDP glycosyltransferase 2 family, polypeptide B28 (UGT2B28), mRNA	7.38 UP	1.12E-03
NM_016946	Homo sapiens F11 receptor (F11R), transcript variant 1, mRNA	7.36 UP	4.65E-05
AW969742	EST381820 MAGE resequences, MAGK Homo sapiens cDNA, mRNA sequence	7.36 UP	1.15E-04
BX117866	BX117866 NCI_CGAP_GCB1 Homo sapiens cDNA clone IMAGp998N233105 ; IMAGE:1234774, mRNA sequence	7.34 UP	2.20E-04
NM_005739	Homo sapiens RAS guanyl releasing protein 1 (calcium and DAG-regulated) (RASGRP1), mRNA	7.31 UP	2.20E-04
CB047287	NISC_gg01h01.y1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:3253464 5, mRNA sequence	7.25 UP	3.52E-05
NM_013951	Homo sapiens paired box gene 8 (PAX8), transcript variant PAX8B, mRNA	7.25 UP	5.00E-05
AK125695	Homo sapiens cDNA FLJ43707 fis, clone TESOP2001865	7.24 UP	1.62E-03
NM_020796	Homo sapiens sema domain, transmembrane domain (TM), and cytoplasmic domain, (semaphorin) 6A (SEMA6A), mRNA	7.21 UP	1.01E-04
BM929354	UI-E-EJ1-aje-o-19-0-UI.r1 UI-E-EJ1 Homo sapiens cDNA clone UI-E-EJ1-aje-o-19-0-UI 5,	7.19 UP	5.49E-05

	mRNA sequence		
BX103949	BX103949 NCI_CGAP_Co3 Homo sapiens cDNA clone IMAGp998C112296 ; IMAGE:923842, mRNA sequence	7.16 UP	6.37E-05
NM_003475	Homo sapiens chromosome 11 open reading frame 13 (C11orf13), mRNA	7.14 UP	1.56E-04
BE735115	601566084F1 NIH_MGC_21 Homo sapiens cDNA clone IMAGE:3840837 5, mRNA sequence	7.12 UP	1.41E-03
NM_207517	Homo sapiens ADAMTS-like 3 (ADAMTSL3), mRNA	7.11 UP	1.26E-05
BU688263	UI-CF-EC1-aea-g-11-0-UI.s1 UI-CF-EC1 Homo sapiens cDNA clone UI-CF-EC1-aea-g-11-0-UI 3, mRNA sequence	7.06 UP	2.97E-05
AK022971	Homo sapiens cDNA FLJ12909 fis, clone NT2RP2004400	7.06 UP	7.80E-05
NM_001740	Homo sapiens calbindin 2, 29kDa (calretinin) (CALB2), transcript variant CALB2, mRNA	7.05 UP	1.81E-04
NM_022073	Homo sapiens egl nine homolog 3 (C. elegans) (EGLN3), mRNA	7.04 UP	5.64E-04
BX117230	BX117230 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGp998I235695 ; IMAGE:2298718, mRNA sequence	7.03 UP	1.56E-03
NM_002230	Homo sapiens junction plakoglobin (JUP), transcript variant 1, mRNA	7.03 UP	2.78E-05
AK023793	Homo sapiens cDNA FLJ13731 fis, clone PLACE3000142	7.02 UP	4.04E-04
AL117598	Homo sapiens mRNA; cDNA DKFZp564H1663 (from clone DKFZp564H1663)	7 UP	1.59E-04
NM_001958	Homo sapiens eukaryotic translation elongation factor 1 alpha 2 (EEF1A2), mRNA	6.99 UP	5.20E-04
NM_007029	Homo sapiens stathmin-like 2 (STMN2), mRNA	6.97 UP	4.47E-04
BE968596	601649770F1 NIH_MGC_74 Homo sapiens cDNA clone IMAGE:3933472 5, mRNA sequence	6.97 UP	8.39E-04
AK126467	Homo sapiens cDNA FLJ44503 fis, clone UTERU3001158	6.97 UP	3.82E-05

AA832510	oe62d06.s1 NCI_CGAP_Lu5 Homo sapiens cDNA clone IMAGE:1416203 3, mRNA sequence	6.93 UP	9.67E-04
CF137545	UI-HF-BN0-ane-d-05-0-UI.r1 NIH_MGC_50 Homo sapiens cDNA clone IMAGE:3092384 5, mRNA sequence	6.93 UP	2.70E-03
NM_004895	Homo sapiens cold autoinflammatory syndrome 1 (CIAS1), transcript variant 1, mRNA	6.9 UP	1.46E-03
NM_018424	Homo sapiens erythrocyte membrane protein band 4.1 like 4B (EPB41L4B), mRNA	6.9 UP	4.68E-05
NM_004390	Homo sapiens cathepsin H (CTSH), transcript variant 1, mRNA	6.89 UP	2.72E-05
NM_024603	Homo sapiens hypothetical protein FLJ11588 (FLJ11588), mRNA	6.87 UP	3.80E-05
AI492941	qz42h08.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2029599 3, mRNA sequence	6.82 UP	8.39E-04
NM_003985	Homo sapiens tyrosine kinase, non-receptor, 1 (TNK1), mRNA	6.8 UP	4.55E-05
AK095399	Homo sapiens cDNA FLJ38080 fis, clone CTONG2016185	6.8 UP	9.23E-04
BQ020597	UI-H-DP0-avd-a-13-0-UI.s1 NCI_CGAP_Fs1 Homo sapiens cDNA clone IMAGE:5877780 3, mRNA sequence	6.8 UP	4.53E-05
NM_001432	Homo sapiens epiregulin (EREG), mRNA	6.77 UP	1.25E-05
NM_005485	Homo sapiens poly (ADP-ribose) polymerase family, member 3 (PARP3), transcript variant 2, mRNA	6.76 UP	6.46E-05
AB058769	Homo sapiens mRNA for KIAA1866 protein, partial cds	6.76 UP	9.84E-05
BU753362	UI-1-BB1-air-h-09-0-UI.s1 NCI_CGAP_PI5 Homo sapiens cDNA clone UI-1-BB1-air-h-09-0-UI 3, mRNA sequence	6.75 UP	1.08E-04
AL834140	Homo sapiens mRNA; cDNA DKFZp434A2029 (from clone DKFZp434A2029)	6.73 UP	4.49E-05
BX092501	BX092501 NCI_CGAP_Lu5 Homo sapiens cDNA clone IMAGp998K143946 ;	6.71 UP	2.56E-04

	IMAGE:1557637, mRNA sequence		
BX640973	Homo sapiens mRNA; cDNA DKFZp686B15184 (from clone DKFZp686B15184)	6.71 UP	2.36E-04
NM_015277	Homo sapiens neural precursor cell expressed, developmentally down-regulated 4-like (NEDD4L), mRNA	6.7 UP	1.60E-05
NM_021192	Homo sapiens homeo box D11 (HOXD11), mRNA	6.69 UP	8.94E-04
NM_032621	Homo sapiens brain expressed X-linked 2 (BEX2), mRNA	6.69 UP	1.83E-04
X02851	Human mRNA for interleukin-1 precursor (pre IL-1)	6.68 UP	3.32E-04
NM_014258	Homo sapiens synaptonemal complex protein 2 (SYCP2), mRNA	6.68 UP	4.96E-02
NM_000682	Homo sapiens adrenergic, alpha-2B-, receptor (ADRA2B), mRNA	6.67 UP	3.64E-05
BQ435580	AGENCOURT_7836890 NIH_MGC_82 Homo sapiens cDNA clone IMAGE:6102371 5, mRNA sequence	6.64 UP	1.64E-04
NM_024608	Homo sapiens nei endonuclease VIII-like 1 (E. coli) (NEIL1), mRNA	6.63 UP	3.23E-05
AK057113	Homo sapiens cDNA FLJ32551 fis, clone SPLEN1000087	6.63 UP	6.06E-04
NM_130897	Homo sapiens dynein, cytoplasmic, light polypeptide 2B (DNCL2B), mRNA	6.62 UP	2.40E-03
N39597	yy51e04.s1 Soares_multiple_sclerosis_2NbHMSP Homo sapiens cDNA clone IMAGE:277086 3, mRNA sequence	6.62 UP	8.33E-04
BU616749	UI-H-FH1-bfj-a-11-0-UI.s1 NCI_CGAP_FH1 Homo sapiens cDNA clone UI-H-FH1-bfj-a-11-0-UI 3, mRNA sequence	6.59 UP	1.93E-04
AW195474	xn38g09.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2696032 3, mRNA sequence	6.59 UP	6.82E-05
AK127437	Homo sapiens cDNA FLJ45529 fis, clone	6.57 UP	1.76E-04

	BRTHA2027546		
NM_004717	Homo sapiens diacylglycerol kinase, iota (DGKI), mRNA	6.56 UP	7.54E-05
BU584197	2513030T6 LIVRTUT04 Homo sapiens cDNA clone 2513030 3, mRNA sequence	6.53 UP	8.82E-04
BU634363	UI-H-FL1-bgx-o-20-0-UI.s1 NCI_CGAP_FL1 Homo sapiens cDNA clone UI-H-FL1-bgx-o-20-0-UI 3, mRNA sequence	6.53 UP	1.24E-04
NM_178868	Homo sapiens chemokine-like factor super family 8 (CKLFSF8), mRNA	6.52 UP	1.59E-03
NM_002247	Homo sapiens potassium large conductance calcium-activated channel, subfamily M, alpha member 1 (KCNMA1), mRNA	6.49 UP	4.49E-05
AW188195	xj93e12.x1 Soares_NFL_T_GBC_S1 Homo sapiens cDNA clone IMAGE:2664814 3 similar to contains element THR repetitive element ;, mRNA sequence	6.49 UP	3.81E-05
NM_153634	Homo sapiens copine VIII (CPNE8), mRNA	6.48 UP	1.72E-04
NM_145205	Homo sapiens HMG2 like (LOC127540), mRNA	6.47 UP	6.39E-05
NM_178868	Homo sapiens chemokine-like factor super family 8 (CKLFSF8), mRNA	6.47 UP	1.15E-05
U63828	Human tissue plasminogen activator mRNA, partial cds	6.46 UP	5.51E-05
NM_004529	Homo sapiens myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila); translocated to, 3 (MLLT3), mRNA	6.46 UP	8.21E-05
BX647655	Homo sapiens mRNA; cDNA DKFZp451A211 (from clone DKFZp451A211)	6.46 UP	6.94E-05
AW470401	xz83g01.x1 NCI_CGAP_Lu24 Homo sapiens cDNA clone IMAGE:2870832 3 similar to contains L1.t2 L1 repetitive element ;, mRNA sequence	6.46 UP	1.30E-04
BG570144	602591134F1 NIH_MGC_77 Homo sapiens cDNA clone IMAGE:4717761 5, mRNA sequence	6.45 UP	1.08E-03
BX115325	BX115325 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGp998K085276 ;	6.45 UP	1.04E-04

	IMAGE:2137855, mRNA sequence		
NM_002214	Homo sapiens integrin, beta 8 (ITGB8), mRNA	6.44 UP	6.77E-05
CA314926	UI-CF-FN0-afi-b-19-0-UI.s1 UI-CF-FN0 Homo sapiens cDNA clone UI-CF-FN0-afi-b-19-0-UI 3, mRNA sequence	6.43 UP	6.61E-05
AK093870	Homo sapiens cDNA FLJ36551 fis, clone TRACH2008127	6.43 UP	1.28E-03
NM_000860	Homo sapiens hydroxyprostaglandin dehydrogenase 15-(NAD) (HPGD), mRNA	6.42 UP	1.76E-05
AI831068	wj62d12.x1 NCI_CGAP_Lu19 Homo sapiens cDNA clone IMAGE:2407415 3, mRNA sequence	6.41 UP	1.37E-04
NM_000349	Homo sapiens steroidogenic acute regulator (STAR), nuclear gene encoding mitochondrial protein, transcript variant 1, mRNA	6.41 UP	1.26E-04
NM_014181	Homo sapiens HSPC159 protein (HSPC159), mRNA	6.4 UP	1.67E-04
NM_024534	Homo sapiens hypothetical protein FLJ12684 (FLJ12684), mRNA	6.38 UP	6.57E-04
NM_002843	Homo sapiens protein tyrosine phosphatase, receptor type, J (PTPRJ), mRNA	6.38 UP	1.32E-03
AI926616	wo48e04.x1 NCI_CGAP_Gas4 Homo sapiens cDNA clone IMAGE:2458590 3 similar to contains MER27.b2 MER27 repetitive element ;, mRNA sequence	6.37 UP	7.01E-03
NM_002273	Homo sapiens keratin 8 (KRT8), mRNA	6.36 UP	2.91E-03
NM_207303	Homo sapiens attractin-like 1 (ATRNL1), mRNA	6.35 UP	7.85E-04
AK001007	Homo sapiens cDNA FLJ10145 fis, clone HEMBA1003322	6.35 UP	1.82E-05
CB047092	NISC_gf08f03.x1 NCI_CGAP_Kid12 Homo sapiens cDNA clone IMAGE:3253013 3, mRNA sequence	6.33 UP	6.92E-05
BC060805	Homo sapiens hypothetical protein FLJ12788, mRNA (cDNA clone IMAGE:5266931), partial cds	6.31 UP	2.93E-05
AI359782	qy41h10.x1 NCI_CGAP_Brn23 Homo sapiens cDNA clone IMAGE:2014627 3, mRNA	6.31 UP	3.23E-04

	sequence		
CA426602	UI-H-FE1-bef-f-11-0-UI.s1 NCI_CGAP_FE1 Homo sapiens cDNA clone UI-H-FE1-bef-f-11-0-UI 3, mRNA sequence	6.29 UP	2.14E-04
AK091686	Homo sapiens cDNA FLJ34367 fis, clone FEBRA2016621	6.27 UP	1.93E-03
AK091336	Homo sapiens cDNA FLJ34017 fis, clone FCBBF2002626	6.26 UP	5.49E-05
NM_015068	Homo sapiens paternally expressed 10 (PEG10), mRNA	6.26 UP	4.53E-05
R79128	yi86c12.r1 Soares placenta Nb2HP Homo sapiens cDNA clone IMAGE:146134 5, mRNA sequence	6.23 UP	2.04E-04
H08785	yl94f04.s1 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGE:45882 3, mRNA sequence	6.22 UP	1.66E-03
AI953708	wq47d09.x1 NCI_CGAP_GC6 Homo sapiens cDNA clone IMAGE:2474417 3, mRNA sequence	6.21 UP	4.58E-03
NM_015236	Homo sapiens latrophilin 3 (LPHN3), mRNA	6.2 UP	5.35E-04
AL833609	Homo sapiens mRNA; cDNA DKFZp686O1267 (from clone DKFZp686O1267)	6.19 UP	7.53E-04
AK127421	Homo sapiens cDNA FLJ45513 fis, clone BRTHA2021450	6.19 UP	4.68E-05
NM_015085	Homo sapiens GTPase activating Rap/RanGAP domain-like 4 (GARNL4), mRNA	6.18 UP	6.82E-05
NM_001305	Homo sapiens claudin 4 (CLDN4), mRNA	6.17 UP	3.48E-05
NM_173078	Homo sapiens SLIT and NTRK-like family, member 4 (SLITRK4), mRNA	6.16 UP	1.08E-03
BG165745	602344592F1 NIH_MGC_89 Homo sapiens cDNA clone IMAGE:4454470 5, mRNA sequence	6.16 UP	1.20E-04
NM_006074	Homo sapiens tripartite motif-containing 22 (TRIM22), mRNA	6.15 UP	1.15E-03
NM_005928	Homo sapiens milk fat globule-EGF factor 8 protein (MFGE8), mRNA	6.15 UP	1.63E-02
BF939703	nac80e07.x1 NCI_CGAP_Brn23 Homo sapiens	6.12 UP	6.35E-05

	cDNA clone IMAGE:3440725 3 similar to contains MER30.t3 MER30 repetitive element ;, mRNA sequence		
BX115301	BX115301 NCI_CGAP_Kid5 Homo sapiens cDNA clone IMAGp998J093989 ; IMAGE:1574120, mRNA sequence	6.11 UP	8.26E-05
NM_018849	Homo sapiens ATP-binding cassette, sub-family B (MDR/TAP), member 4 (ABCB4), transcript variant B, mRNA	6.09 UP	3.23E-05
NM_015478	Homo sapiens l(3)mbt-like (Drosophila) (L3MBTL), transcript variant l, mRNA	6.09 UP	2.43E-05
NM_015669	Homo sapiens protocadherin beta 5 (PCDHB5), mRNA	6.08 UP	7.52E-05
NM_147189	Homo sapiens hypothetical protein MGC39325 (MGC39325), mRNA	6.06 UP	3.18E-04
BQ018133	UI-H-DP0-avv-l-18-0-UI.s1 NCI_CGAP_Fs1 Homo sapiens cDNA clone IMAGE:5884961 3, mRNA sequence	6.06 UP	1.78E-05
N34295	yy51e10.s1 Soares_multiple_sclerosis_2NbHMSP Homo sapiens cDNA clone IMAGE:277098 3, mRNA sequence	6.04 UP	8.29E-05
NM_006472	Homo sapiens thioredoxin interacting protein (TXNIP), mRNA	6.03 UP	6.87E-05
NM_012472	Homo sapiens leucine rich repeat containing 6 (LRRC6), mRNA	6.02 UP	2.66E-05
AK123319	Homo sapiens cDNA FLJ41325 fis, clone BRAMY2046871	6 UP	2.55E-04
AK123807	Homo sapiens cDNA FLJ41813 fis, clone NT2RI2011450	5.98 UP	7.92E-05
NM_017786	Homo sapiens hypothetical protein FLJ20366 (FLJ20366), mRNA	5.98 UP	1.85E-03
NM_000212	Homo sapiens integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61) (ITGB3), mRNA	5.97 UP	2.73E-05
NM_000817	Homo sapiens glutamate decarboxylase 1 (brain, 67kDa) (GAD1), transcript variant	5.96 UP	9.94E-03

	GAD67, mRNA		
AK123617	Homo sapiens cDNA FLJ41623 fis, clone CTONG3009227	5.92 UP	1.38E-03
BI493986	df106g12.y1 Morton Fetal Cochlea Homo sapiens cDNA clone IMAGE:2538815 5, mRNA sequence	5.91 UP	3.68E-04
NM_005264	Homo sapiens GDNF family receptor alpha 1 (GFRA1), transcript variant 1, mRNA	5.91 UP	4.09E-05
CN478597	UI-CF-FN0-aeo-g-21-0-UI.s1 UI-CF-FN0 Homo sapiens cDNA clone UI-CF-FN0-aeo-g-21-0-UI 3, mRNA sequence	5.88 UP	1.13E-03
BQ021695	UI-H-DH1-axi-f-22-0-UI.s1 NCI_CGAP_DH1 Homo sapiens cDNA clone IMAGE:5829141 3, mRNA sequence	5.88 UP	1.72E-04
AL137698	Homo sapiens mRNA; cDNA DKFZp434C1915 (from clone DKFZp434C1915); partial cds	5.88 UP	2.03E-05
NM_014905	Homo sapiens glutaminase (GLS), mRNA	5.88 UP	1.24E-04
AA993234	ot60a08.s1 Soares_testis_NHT Homo sapiens cDNA clone IMAGE:1621142 3, mRNA sequence	5.87 UP	2.88E-05
N38890	yy81f12.s1 Soares_multiple_sclerosis_2NbHMSP Homo sapiens cDNA clone IMAGE:279983 3 similar to contains OFR.t3 OFR repetitive element ;, mRNA sequence	5.87 UP	1.25E-04
NM_197955	Homo sapiens normal mucosa of esophagus specific 1 (NMES1), transcript variant 1, mRNA	5.85 UP	1.85E-04
NM_014399	Homo sapiens transmembrane 4 superfamily member 13 (TM4SF13), mRNA	5.84 UP	2.18E-05
NM_024704	Homo sapiens chromosome 20 open reading frame 23 (C20orf23), mRNA	5.82 UP	1.24E-04
NM_002276	Homo sapiens keratin 19 (KRT19), mRNA	5.8 UP	7.06E-03
CD248442	AGENCOURT_14095939 NIH_MGC_172 Homo sapiens cDNA 5, mRNA sequence	5.79 UP	2.16E-04
AK024850	Homo sapiens cDNA: FLJ21197 fis, clone COL00201	5.79 UP	1.45E-04
H83499	ys91f12.r1 Soares retina N2b5HR Homo	5.77 UP	1.37E-02

	sapiens cDNA clone IMAGE:222191 5, mRNA sequence		
NM_153377	Homo sapiens leucine-rich repeats and immunoglobulin-like domains 3 (LRIG3), mRNA	5.77 UP	2.43E-05
NM_153267	Homo sapiens MAM domain containing 2 (MAMDC2), mRNA	5.76 UP	2.31E-04
NM_144595	Homo sapiens hypothetical protein FLJ30046 (FLJ30046), mRNA	5.76 UP	1.38E-03
BF509155	UI-H-BI4-aov-b-05-0-UI.s1 NCI_CGAP_Sub8 Homo sapiens cDNA clone IMAGE:3086145 3, mRNA sequence	5.75 UP	6.59E-05
NM_002735	Homo sapiens protein kinase, cAMP-dependent, regulatory, type I, beta (PRKAR1B), mRNA	5.73 UP	2.73E-05
NM_025044	Homo sapiens bicaudal C homolog 1 (Drosophila) (BICC1), mRNA	5.72 UP	5.81E-05
BM969191	UI-CF-EN0-acp-e-22-0-UI.s1 UI-CF-EN0 Homo sapiens cDNA clone UI-CF-EN0-acp-e-22-0-UI 3, mRNA sequence	5.69 UP	1.67E-03
NM_000203	Homo sapiens iduronidase, alpha-L- (IDUA), mRNA	5.68 UP	1.10E-03
AI693580	wd12d01.x1 NCI_CGAP_Co3 Homo sapiens cDNA clone IMAGE:2327905 3, mRNA sequence	5.67 UP	9.23E-04
NM_006169	Homo sapiens nicotinamide N-methyltransferase (NNMT), mRNA	5.66 UP	2.18E-05
H46176	yo14a11.s1 Soares adult brain N2b5HB55Y Homo sapiens cDNA clone IMAGE:177884 3, mRNA sequence	5.65 UP	1.88E-05
NM_024306	Homo sapiens fatty acid 2-hydroxylase (FA2H), mRNA	5.63 UP	4.19E-03
BX110683	BX110683 NCI_CGAP_GC6 Homo sapiens cDNA clone IMAGp998E175727 ; IMAGE:2310904, mRNA sequence	5.62 UP	7.42E-04
NM_030765	Homo sapiens UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 4 (B3GNT4), mRNA	5.58 UP	1.80E-03

NM_003929	Homo sapiens RAB7, member RAS oncogene family-like 1 (RAB7L1), mRNA	5.55 UP	2.14E-05
AI220066	qg84d01.x1 Soares_NFL_T_GBC_S1 Homo sapiens cDNA clone IMAGE:1841857 3, mRNA sequence	5.54 UP	2.13E-05
AA664452	ae94d02.s1 Human bone marrow stromal cells Homo sapiens cDNA clone IMAGE:1026723 3 similar to contains element LTR4 repetitive element ;, mRNA sequence	5.54 UP	4.13E-05
NM_007237	Homo sapiens SP140 nuclear body protein (SP140), transcript variant 1, mRNA	5.53 UP	2.41E-04
NM_173662	Homo sapiens hypothetical protein LOC285533 (LOC285533), mRNA	5.52 UP	3.69E-03
NM_003020	Homo sapiens secretory granule, neuroendocrine protein 1 (7B2 protein) (SGNE1), mRNA	5.52 UP	2.08E-04
NM_206808	Homo sapiens citrate lyase beta like (CLYBL), transcript variant 2, mRNA	5.52 UP	1.87E-04
NM_004867	Homo sapiens integral membrane protein 2A (ITM2A), mRNA	5.51 UP	2.13E-05
NM_006333	Homo sapiens nuclear DNA-binding protein (C1D), transcript variant 1, mRNA	5.51 UP	7.84E-04
NM_014251	Homo sapiens solute carrier family 25, member 13 (citrin) (SLC25A13), mRNA	5.5 UP	5.96E-04
NM_006863	Homo sapiens leukocyte immunoglobulin-like receptor, subfamily A (with TM domain), member 1 (LILRA1), mRNA	5.49 UP	6.51E-05
AK057166	Homo sapiens cDNA FLJ32604 fis, clone STOMA1000133	5.49 UP	1.85E-03
NM_000076	Homo sapiens cyclin-dependent kinase inhibitor 1C (p57, Kip2) (CDKN1C), mRNA	5.48 UP	4.65E-05
BC040701	Homo sapiens cDNA clone IMAGE:5736259, partial cds	5.47 UP	1.48E-04
NM_152765	Homo sapiens hypothetical protein MGC33510 (MGC33510), mRNA	5.46 UP	4.76E-05
NM_019034	Homo sapiens ras homolog gene family, member F (in filopodia) (RHOF), mRNA	5.46 UP	2.64E-05

S81734	tissue transglutaminase homologue {alternatively spliced} [human, erythroleukemia cell line HEL GM06141A, mRNA, 2362 nt]	5.46 UP	3.92E-05
BM670793	UI-E-DX1-agv-p-03-0-UI.s1 UI-E-DX1 Homo sapiens cDNA clone UI-E-DX1-agv-p-03-0-UI 3, mRNA sequence	5.46 UP	3.77E-05
NM_002829	Homo sapiens protein tyrosine phosphatase, non-receptor type 3 (PTPN3), mRNA	5.45 UP	4.79E-05
BM727151	UI-E-EJ0-aij-f-05-0-UI.r1 UI-E-EJ0 Homo sapiens cDNA clone UI-E-EJ0-aij-f-05-0-UI 5, mRNA sequence	5.45 UP	4.13E-05
BF966833	602286668T1 NIH_MGC_95 Homo sapiens cDNA clone IMAGE:4375360 3, mRNA sequence	5.45 UP	2.83E-05
NM_004904	Homo sapiens cAMP responsive element binding protein 5 (CREB5), mRNA	5.44 UP	1.09E-04
AA635788	nr32h01.s1 NCI_CGAP_Pr22 Homo sapiens cDNA clone IMAGE:1169713 3 similar to contains Alu repetitive element;, mRNA sequence	5.43 UP	2.02E-03
BM701989	UI-E-CQ1-aex-j-06-0-UI.r1 UI-E-CQ1 Homo sapiens cDNA clone UI-E-CQ1-aex-j-06-0-UI 5, mRNA sequence	5.42 UP	7.55E-04
NM_020665	Homo sapiens transmembrane protein 27 (TMEM27), mRNA	5.4 UP	5.46E-05
NM_019034	Homo sapiens ras homolog gene family, member F (in filopodia) (RHOF), mRNA	5.39 UP	5.72E-05
NM_017912	Homo sapiens hect domain and RLD 6 (HERC6), mRNA	5.38 UP	5.85E-05
NM_152433	Homo sapiens kelch repeat and BTB (POZ) domain containing 3 (KBTBD3), transcript variant 1, mRNA	5.37 UP	4.29E-04
CA314843	UI-CF-FN0-afi-a-06-0-UI.s1 UI-CF-FN0 Homo sapiens cDNA clone UI-CF-FN0-afi-a-06-0-UI 3, mRNA sequence	5.37 UP	2.05E-04
NM_006058	Homo sapiens TNFAIP3 interacting protein 1 (TNIP1), mRNA	5.36 UP	2.25E-03

BU191317	AGENCOURT_8074912 NIH_MGC_110 Homo sapiens cDNA clone IMAGE:6086274 5, mRNA sequence	5.36 UP	4.45E-02
AL049437	Homo sapiens mRNA; cDNA DKFZp586E1120 (from clone DKFZp586E1120)	5.34 UP	7.78E-04
NM_030952	Homo sapiens likely ortholog of rat SNF1/AMP-activated protein kinase (SNARK), mRNA	5.31 UP	4.21E-05
NM_004170	Homo sapiens solute carrier family 1 (neuronal/epithelial high affinity glutamate transporter, system Xag), member 1 (SLC1A1), mRNA	5.31 UP	1.15E-04
AW269776	xv45b09.x1 Soares_NFL_T_GBC_S1 Homo sapiens cDNA clone IMAGE:2816057 3, mRNA sequence	5.3 UP	1.97E-04
BM977716	UI-CF-EN1-aef-b-21-0-UI.s1 UI-CF-EN1 Homo sapiens cDNA clone UI-CF-EN1-aef-b-21-0-UI 3, mRNA sequence	5.3 UP	4.01E-03
AK023658	Homo sapiens cDNA FLJ13596 fis, clone PLACE1009637	5.29 UP	6.83E-04
AF196185	Homo sapiens atypical PKC isotype-specific interacting protein long variant mRNA, complete cds	5.28 UP	4.57E-05
AL045014	DKFZp434F134_s1 434 (synonym: htes3) Homo sapiens cDNA clone DKFZp434F134 3, mRNA sequence	5.27 UP	2.67E-05
NM_004496	Homo sapiens forkhead box A1 (FOXA1), mRNA	5.27 UP	2.88E-03
NM_033132	Homo sapiens Zic family member 5 (odd-paired homolog, Drosophila) (ZIC5), mRNA	5.26 UP	2.09E-05
NM_198182	Homo sapiens transcription factor CP2-like 2 (TFCP2L2), transcript variant 2, mRNA	5.26 UP	1.35E-02
NM_001657	Homo sapiens amphiregulin (schwannoma-derived growth factor) (AREG), mRNA	5.26 UP	3.99E-05
R92346	yq06b10.s1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:196123 3, mRNA sequence	5.25 UP	1.16E-04
BX537539	Homo sapiens mRNA; cDNA DKFZp686A1130	5.25 UP	4.80E-04

	(from clone DKFZp686A1130)		
AB041269	Homo sapiens mRNA for keratin 19, partial cds, isolate:K19-141	5.23 UP	1.15E-02
BX090717	BX090717 NCI_CGAP_Kid5 Homo sapiens cDNA clone IMAGp998O154699 ; IMAGE:1916390, mRNA sequence	5.2 UP	9.02E-04
AK025743	Homo sapiens cDNA: FLJ22090 fis, clone HEP16084	5.2 UP	1.04E-04
NM_002413	Homo sapiens microsomal glutathione S-transferase 2 (MGST2), mRNA	5.2 UP	3.34E-05
AA780946	ag99c12.s1 Gessler Wilms tumor Homo sapiens cDNA clone IMAGE:1155286 3, mRNA sequence	5.2 UP	2.40E-04
NM_032488	Homo sapiens cornifelin (CNFN), mRNA	5.2 UP	1.78E-05
NM_024997	Homo sapiens activating transcription factor 7 interacting protein 2 (ATF7IP2), mRNA	5.19 UP	2.40E-03
NM_002222	Homo sapiens inositol 1,4,5-triphosphate receptor, type 1 (ITPR1), mRNA	5.19 UP	1.41E-04
NM_000784	Homo sapiens cytochrome P450, family 27, subfamily A, polypeptide 1 (CYP27A1), nuclear gene encoding mitochondrial protein, mRNA	5.17 UP	7.39E-03
NM_005760	Homo sapiens CCAAT/enhancer binding protein zeta (CEBPZ), mRNA	5.16 UP	5.52E-05
BQ011746	UI-1-BC1p-atk-b-09-0-UI.s1 NCI_CGAP_PI3 Homo sapiens cDNA clone UI-1-BC1p-atk-b-09-0-UI 3, mRNA sequence	5.16 UP	5.86E-04
NM_032728	Homo sapiens chromosome 9 open reading frame 67 (C9orf67), mRNA	5.15 UP	1.85E-03
NM_005755	Homo sapiens Epstein-Barr virus induced gene 3 (EBI3), mRNA	5.15 UP	2.33E-04
AK056852	Homo sapiens cDNA FLJ32290 fis, clone PROST2000463	5.15 UP	1.32E-03
AK054990	Homo sapiens cDNA FLJ30428 fis, clone BRACE2008941	5.15 UP	1.85E-03
D54580	HUM144G01B Clontech human fetal brain polyA+ mRNA (#6535) Homo sapiens cDNA clone GEN-144G01 5, mRNA sequence	5.13 UP	2.03E-04

AL137535	Homo sapiens mRNA; cDNA DKFZp434H2019 (from clone DKFZp434H2019)	5.13 UP	2.45E-02
AL110252	Homo sapiens mRNA; cDNA DKFZp566A1046 (from clone DKFZp566A1046)	5.12 UP	2.19E-03
AI659523	tt99d12.x1 NCI_CGAP_Pr28 Homo sapiens cDNA clone IMAGE:2249687 3, mRNA sequence	5.1 UP	1.16E-03
AW137001	UI-H-BI1-acu-c-05-0-UI.s1 NCI_CGAP_Sub3 Homo sapiens cDNA clone IMAGE:2715632 3, mRNA sequence	5.1 UP	6.90E-05
BM969331	UI-CF-DU1-aar-g-23-0-UI.s1 UI-CF-DU1 Homo sapiens cDNA clone UI-CF-DU1-aar-g-23-0-UI 3, mRNA sequence	5.08 UP	3.31E-03
NM_178823	Homo sapiens chromosome 6 open reading frame 165 (C6orf165), mRNA	5.08 UP	3.66E-05
NM_018476	Homo sapiens brain expressed, X-linked 1 (BEX1), mRNA	5.06 UP	3.05E-05
BF107212	601824290F1 NIH_MGC_79 Homo sapiens cDNA clone IMAGE:4043879 5, mRNA sequence	5.06 UP	1.75E-04
NM_052890	Homo sapiens peptidoglycan recognition protein 2 (PGLYRP2), mRNA	5.05 UP	3.95E-05
BX459043	BX459043 Homo sapiens PLACENTA Homo sapiens cDNA clone CS0DE011YN10 3-PRIME, mRNA sequence	5.03 UP	2.88E-05
NM_032857	Homo sapiens lactamase, beta (LACTB), nuclear gene encoding mitochondrial protein, transcript variant 1, mRNA	5.02 UP	1.76E-05
NM_022746	Homo sapiens hypothetical protein FLJ22390 (FLJ22390), mRNA	5.02 UP	4.49E-04
AK025909	Homo sapiens cDNA: FLJ22256 fis, clone HRC02860	5.02 UP	4.54E-04
NM_002247	Homo sapiens potassium large conductance calcium-activated channel, subfamily M, alpha member 1 (KCNMA1), mRNA	5.02 UP	1.33E-03
AI434849	ti13b01.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2130313 3 similar to	5.01 UP	2.82E-04

	contains MER37.b1 MER37 MER37 repetitive element ;, mRNA sequence		
AK091933	Homo sapiens cDNA FLJ34614 fis, clone KIDNE2014268	5.01 UP	2.18E-05
NM_004331	Homo sapiens BCL2/adenovirus E1B 19kDa interacting protein 3-like (BNIP3L), mRNA	5 UP	3.53E-05
AL119769	DKFZp761E1224_r1 761 (synonym: hamy2) Homo sapiens cDNA clone DKFZp761E1224 5, mRNA sequence	5 UP	1.92E-03
NM_001451	Homo sapiens forkhead box F1 (FOXF1), mRNA	465.04 Down	2.67E-05
NM_144594	Homo sapiens hypothetical protein FLJ32942 (FLJ32942), mRNA	379.94 Down	1.12E-05
NM_002421	Homo sapiens matrix metalloproteinase 1 (interstitial collagenase) (MMP1), mRNA	365.32 Down	2.43E-05
AK026784	Homo sapiens cDNA: FLJ23131 fis, clone LNG08502	331.17 Down	8.46E-06
NM_016307	Homo sapiens paired related homeobox 2 (PRRX2), mRNA	309.99 Down	8.39E-06
NM_006350	Homo sapiens follistatin (FST), transcript variant FST317, mRNA	232.51 Down	8.39E-06
NM_000089	Homo sapiens collagen, type I, alpha 2 (COL1A2), mRNA	220.95 Down	2.96E-05
NM_007036	Homo sapiens endothelial cell-specific molecule 1 (ESM1), mRNA	217.57 Down	2.01E-05
AK021543	Homo sapiens cDNA FLJ11481 fis, clone HEMBA1001803	215.51 Down	2.31E-05
NM_004460	Homo sapiens fibroblast activation protein, alpha (FAP), mRNA	205.38 Down	1.15E-05
AK122739	Homo sapiens cDNA FLJ16260 fis, clone IMR322006947, highly similar to Rattus norvegicus mRNA for dHand protein	190.76 Down	1.15E-05
NM_000474	Homo sapiens twist homolog 1 (acrocephalosyndactyly 3; Saethre-Chotzen syndrome) (Drosophila) (TWIST1), mRNA	151.94 Down	5.23E-06
NM_152270	Homo sapiens hypothetical protein FLJ34922 (FLJ34922), mRNA	144.24 Down	1.73E-05

NM_001884	Homo sapiens hyaluronan and proteoglycan link protein 1 (HAPLN1), mRNA	134.45 Down	2.18E-05
NM_000710	Homo sapiens bradykinin receptor B1 (BDKRB1), mRNA	132.74 Down	1.18E-05
NM_021637	Homo sapiens transmembrane protein 35 (TMEM35), mRNA	126.76 Down	8.39E-06
NM_006350	Homo sapiens follistatin (FST), transcript variant FST317, mRNA	106.55 Down	2.28E-05
NM_000362	Homo sapiens tissue inhibitor of metalloproteinase 3 (Sorsby fundus dystrophy, pseudoinflammatory) (TIMP3), mRNA	102.59 Down	1.76E-05
NM_002091	Homo sapiens gastrin-releasing peptide (GRP), mRNA	101.58 Down	2.46E-05
NM_000609	Homo sapiens chemokine (C-X-C motif) ligand 12 (stromal cell-derived factor 1) (CXCL12), mRNA	97.42 Down	3.48E-05
NM_032638	Homo sapiens GATA binding protein 2 (GATA2), mRNA	84.58 Down	1.37E-05
NM_198148	Homo sapiens carboxypeptidase X (M14 family), member 2 (CPXM2), mRNA	77.44 Down	9.50E-05
W38393	zb15c07.r1 Soares_fetal_lung_NbHL19W Homo sapiens cDNA clone IMAGE:302124 5, mRNA sequence	77.37 Down	1.26E-05
AL831863	Homo sapiens mRNA; cDNA DKFZp761J2017 (from clone DKFZp761J2017)	77.09 Down	2.65E-05
AB067499	Homo sapiens mRNA for KIAA1912 protein, partial cds	76.12 Down	3.65E-05
BX089019	BX089019 Soares_testis_NHT Homo sapiens cDNA clone IMAGp998K243513 ; IMAGE:1391375, mRNA sequence	72.98 Down	1.25E-05
AI962169	wq45c10.x1 NCI_CGAP_GC6 Homo sapiens cDNA clone IMAGE:2474226 3, mRNA sequence	65.52 Down	4.53E-05
NM_139211	Homo sapiens homeodomain-only protein (HOP), transcript variant 2, mRNA	64.01 Down	1.72E-05
CD677332	ho15f06.y1 Human Trabecular meshwork cDNA: hohphq Homo sapiens cDNA clone	63.91 Down	2.35E-05

	ho15f06 5, mRNA sequence		
NM_001442	Homo sapiens fatty acid binding protein 4, adipocyte (FABP4), mRNA	63.47 Down	1.37E-05
NM_205855	Homo sapiens HWKM1940 (UNQ1940), mRNA	58.05 Down	1.89E-05
W03013	za02c04.r1 Soares melanocyte 2NbHM Homo sapiens cDNA clone IMAGE:291366 5 similar to contains THR.t3 THR repetitive element ;, mRNA sequence	53.58 Down	2.67E-06
NM_002852	Homo sapiens pentaxin-related gene, rapidly induced by IL-1 beta (PTX3), mRNA	53.13 Down	8.15E-04
NM_024633	Homo sapiens chromosome 14 open reading frame 139 (C14orf139), mRNA	51.58 Down	3.58E-05
AK021543	Homo sapiens cDNA FLJ11481 fis, clone HEMBA1001803	51.28 Down	1.09E-04
NM_002593	Homo sapiens procollagen C-endopeptidase enhancer (PCOLCE), mRNA	48.32 Down	2.03E-05
AI422199	tf58d04.x1 NCI_CGAP_Brn23 Homo sapiens cDNA clone IMAGE:2103463 3, mRNA sequence	48.23 Down	4.98E-05
NM_014459	Homo sapiens protocadherin 17 (PCDH17), mRNA	45.53 Down	2.11E-05
NM_016588	Homo sapiens neuritin 1 (NRN1), mRNA	44.52 Down	1.78E-05
NM_012242	Homo sapiens dickkopf homolog 1 (Xenopus laevis) (DKK1), mRNA	43.26 Down	7.16E-06
NM_000685	Homo sapiens angiotensin II receptor, type 1 (AGTR1), transcript variant 1, mRNA	42.51 Down	2.57E-04
AK056725	Homo sapiens cDNA FLJ32163 fis, clone PLACE6000371	42.21 Down	2.67E-06
AI124557	am58g02.x1 Johnston frontal cortex Homo sapiens cDNA clone IMAGE:1539794 3, mRNA sequence	41.42 Down	8.25E-03
NM_020404	Homo sapiens CD164 sialomucin-like 1 (CD164L1), mRNA	39.82 Down	2.32E-05
NM_015170	Homo sapiens sulfatase 1 (SULF1), mRNA	38.91 Down	2.36E-05
CA843592	ir49c12.x1 HR85 islet Homo sapiens cDNA clone IMAGE:6548544 3, mRNA sequence	37.67 Down	1.25E-05
AY335938	Homo sapiens homeodomain protein IRXA1	36.92 Down	3.15E-05

	(IRX1) mRNA, complete cds		
NM_002961	Homo sapiens S100 calcium binding protein A4 (calcium protein, calvasculin, metastasin, murine placental homolog) (S100A4), transcript variant 1, mRNA	35.31 Down	6.57E-05
AK091731	Homo sapiens cDNA FLJ34412 fis, clone HEART2002432	34.47 Down	2.83E-05
NM_006329	Homo sapiens fibulin 5 (FBLN5), mRNA	34.03 Down	4.55E-05
BQ020357	UI-H-ED0-axk-p-07-0-UI.s1 NCI_CGAP_ED0 Homo sapiens cDNA clone IMAGE:5830134 3, mRNA sequence	33.2 Down	1.82E-05
NM_018013	Homo sapiens hypothetical protein FLJ10159 (FLJ10159), mRNA	32.86 Down	1.15E-05
NM_002402	Homo sapiens mesoderm specific transcript homolog (mouse) (MEST), transcript variant 1, mRNA	32.83 Down	2.14E-05
BQ001571	UI-H-DH1-awr-i-18-0-UI.s1 NCI_CGAP_DH1 Homo sapiens cDNA clone IMAGE:5893337 3, mRNA sequence	32.34 Down	8.96E-06
NM_032777	Homo sapiens G protein-coupled receptor 124 (GPR124), mRNA	31.96 Down	1.18E-04
AK124396	Homo sapiens cDNA FLJ42405 fis, clone ASTRO3000474	31.36 Down	2.24E-05
NM_002448	Homo sapiens msh homeo box homolog 1 (Drosophila) (MSX1), mRNA	31.23 Down	2.03E-05
NM_000090	Homo sapiens collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal dominant) (COL3A1), mRNA	29.77 Down	3.23E-04
NM_001147	Homo sapiens angiopoietin 2 (ANGPT2), mRNA	29.68 Down	2.51E-05
NM_001146	Homo sapiens angiopoietin 1 (ANGPT1), transcript variant 1, mRNA	29.26 Down	6.83E-05
NM_000576	Homo sapiens interleukin 1, beta (IL1B), mRNA	29.06 Down	1.15E-05
AF052115	Homo sapiens clone 23688 mRNA sequence	26.15 Down	1.15E-05
NM_006439	Homo sapiens mab-21-like 2 (C. elegans) (MAB21L2), mRNA	25.51 Down	1.20E-04
NM_016192	Homo sapiens transmembrane protein with	25.46 Down	2.55E-05

	EGF-like and two follistatin-like domains 2 (TMEFF2), mRNA		
NM_002575	Homo sapiens serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 2 (SERPINB2), mRNA	24.67 Down	5.40E-05
NM_007361	Homo sapiens nidogen 2 (osteonidogen) (NID2), mRNA	23.56 Down	2.64E-05
NM_152399	Homo sapiens hypothetical protein FLJ30834 (FLJ30834), mRNA	23.42 Down	6.51E-05
NM_203370	Homo sapiens similar to RIKEN cDNA 6530418L21 (LOC389119), mRNA	22.99 Down	1.43E-05
NM_001002295	Homo sapiens GATA binding protein 3 (GATA3), transcript variant 1, mRNA	22.51 Down	1.41E-04
AK093256	Homo sapiens cDNA FLJ35937 fis, clone TESTI2011480	22.26 Down	3.04E-05
U83115	Human non-lens beta gamma-crystallin like protein (AIM1) mRNA, partial cds	22.18 Down	3.77E-05
NM_006475	Homo sapiens periostin, osteoblast specific factor (POSTN), mRNA	21.99 Down	7.38E-05
NM_014178	Homo sapiens syntaxin binding protein 6 (amisyn) (STXBP6), mRNA	21.69 Down	3.36E-05
NM_005127	Homo sapiens C-type (calcium dependent, carbohydrate-recognition domain) lectin, superfamily member 2 (activation-induced) (CLECSF2), mRNA	21.46 Down	3.71E-05
NM_022475	Homo sapiens hedgehog interacting protein (HHIP), mRNA	21.42 Down	4.57E-05
BX112628	BX112628 Soares_fetal_lung_NbHL19W Homo sapiens cDNA clone IMAGp998A09669 ; IMAGE:299024, mRNA sequence	20.99 Down	4.47E-05
NM_000810	Homo sapiens gamma-aminobutyric acid (GABA) A receptor, alpha 5 (GABRA5), mRNA	20.84 Down	5.50E-05
BQ934941	AGENCOURT_8810373 NIH_MGC_101 Homo sapiens cDNA clone IMAGE:6429485 5, mRNA sequence	20.45 Down	2.55E-05
BC071787	Homo sapiens cDNA clone IMAGE:4610527,	20.44 Down	1.25E-05

	partial cds		
NM_033292	Homo sapiens caspase 1, apoptosis-related cysteine protease (interleukin 1, beta, convertase) (CASP1), transcript variant alpha, mRNA	19.88 Down	6.18E-05
NM_020809	Homo sapiens Rho GTPase activating protein 20 (ARHGAP20), mRNA	19.54 Down	5.26E-05
BE866150	601679068F1 NIH_MGC_53 Homo sapiens cDNA clone IMAGE:3961768 5, mRNA sequence	19.3 Down	2.38E-05
AW021686	df26h11.y1 Morton Fetal Cochlea Homo sapiens cDNA clone IMAGE:2484717 5, mRNA sequence	18.86 Down	2.59E-05
BX109483	BX109483 NCI_CGAP_Ov23 Homo sapiens cDNA clone IMAGp998C165481 ; IMAGE:2216391, mRNA sequence	18.74 Down	9.84E-05
NM_001463	Homo sapiens frizzled-related protein (FRZB), mRNA	18.63 Down	2.05E-04
AK128325	Homo sapiens cDNA FLJ46467 fis, clone THYMU3022668	18.11 Down	1.78E-05
AK096661	Homo sapiens cDNA FLJ39342 fis, clone OCBBF2018873	17.95 Down	5.14E-05
NM_002531	Homo sapiens neurotensin receptor 1 (high affinity) (NTSR1), mRNA	17.64 Down	5.02E-05
NM_031908	Homo sapiens C1q and tumor necrosis factor related protein 2 (C1QTNF2), mRNA	17.61 Down	1.23E-04
AI085016	ow88e06.s1 Soares_fetal_liver_spleen_1NFLS_S1 Homo sapiens cDNA clone IMAGE:1653922 3, mRNA sequence	17.36 Down	4.39E-05
AK095791	Homo sapiens cDNA FLJ38472 fis, clone FEBRA2022148	17.31 Down	2.76E-04
NM_020927	Homo sapiens KIAA1576 protein (KIAA1576), mRNA	17 Down	2.13E-05
NM_024600	Homo sapiens chromosome 16 open reading frame 30 (C16orf30), mRNA	16.96 Down	6.00E-04
NM_012449	Homo sapiens six transmembrane epithelial	16.92 Down	5.06E-05

	antigen of the prostate (STEAP), mRNA		
NM_004787	Homo sapiens slit homolog 2 (Drosophila) (SLIT2), mRNA	16.69 Down	1.78E-05
N95448	zb81e11.s1 Soares_senescent_fibroblasts_NbHSF Homo sapiens cDNA clone IMAGE:310028 3, mRNA sequence	16.55 Down	1.72E-05
NM_004657	Homo sapiens serum deprivation response (phosphatidylserine binding protein) (SDPR), mRNA	16.4 Down	1.60E-05
BC046364	Homo sapiens flavoprotein oxidoreductase MICAL3, mRNA (cDNA clone IMAGE:5737121), with apparent retained intron	16.35 Down	1.15E-05
NM_053044	Homo sapiens serine protease HTRA3 (HTRA3), mRNA	16.29 Down	3.77E-05
BQ011545	UI-1-BC1p-asi-a-02-0-UI.s1 NCI_CGAP_PI3 Homo sapiens cDNA clone UI-1-BC1p-asi-a-02-0-UI 3, mRNA sequence	16.22 Down	5.21E-04
BC017939	Homo sapiens, clone IMAGE:4275711, mRNA, partial cds	15.98 Down	5.83E-05
NM_007289	Homo sapiens membrane metallo-endopeptidase (neutral endopeptidase, enkephalinase, CALLA, CD10) (MME), transcript variant 2b, mRNA	15.83 Down	3.04E-05
CA437861	UI-H-DH0-aur-k-12-0-UI.s1 NCI_CGAP_DH0 Homo sapiens cDNA clone UI-H-DH0-aur-k-12-0-UI 3, mRNA sequence	15.77 Down	2.56E-04
NM_006182	Homo sapiens discoidin domain receptor family, member 2 (DDR2), mRNA	15.71 Down	4.79E-05
NM_145239	Homo sapiens similar to lymphocyte antigen 6 complex, locus G5B; G5b protein; open reading frame 31 (LOC112476), mRNA	15.64 Down	3.37E-05
H15096	ym29e11.r1 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGE:49250 5, mRNA sequence	15.58 Down	2.20E-04
NM_002851	Homo sapiens protein tyrosine phosphatase, receptor-type, Z polypeptide 1 (PTPRZ1),	15.57 Down	1.90E-04

	mRNA		
NM_014217	Homo sapiens potassium channel, subfamily K, member 2 (KCNK2), mRNA	15.13 Down	1.31E-04
NM_000963	Homo sapiens prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase) (PTGS2), mRNA	14.94 Down	1.88E-05
BX115659	BX115659 Soares_total_fetus_Nb2HF8_9w Homo sapiens cDNA clone IMAGp998C204119 ; IMAGE:1623883, mRNA sequence	14.81 Down	2.66E-04
NM_002729	Homo sapiens hematopoietically expressed homeobox (HHEX), mRNA	14.78 Down	1.09E-03
AI082087	oz52h09.x1 Soares_senescent_fibroblasts_NbHSF Homo sapiens cDNA clone IMAGE:1679009 3, mRNA sequence	14.73 Down	3.66E-05
NM_018431	Homo sapiens docking protein 5 (DOK5), transcript variant 1, mRNA	14.67 Down	8.15E-04
NM_004791	Homo sapiens integrin, beta-like 1 (with EGF-like repeat domains) (ITGBL1), mRNA	14.42 Down	2.18E-05
AK021531	Homo sapiens cDNA FLJ11469 fis, clone HEMBA1001658	14.36 Down	5.21E-04
NM_057179	Homo sapiens twist homolog 2 (Drosophila) (TWIST2), mRNA	14.27 Down	1.25E-05
NM_003619	Homo sapiens protease, serine, 12 (neurotrypsin, motopsin) (PRSS12), mRNA	14.1 Down	1.78E-05
NM_002518	Homo sapiens neuronal PAS domain protein 2 (NPAS2), mRNA	14.05 Down	5.49E-05
NM_000396	Homo sapiens cathepsin K (pycnodysostosis) (CTSK), mRNA	13.81 Down	2.31E-04
NM_016206	Homo sapiens colon carcinoma related protein (FLJ38507), mRNA	13.76 Down	1.81E-04
NM_021643	Homo sapiens tribbles homolog 2 (Drosophila) (TRIB2), mRNA	13.62 Down	8.39E-06
NM_000955	Homo sapiens prostaglandin E receptor 1 (subtype EP1), 42kDa (PTGER1), mRNA	13.52 Down	1.70E-05
NM_058187	Homo sapiens chromosome 21 open reading frame 63 (C21orf63), mRNA	13.44 Down	1.53E-04

CN479391	UI-H-DF1-aug-f-02-0-UI.s9 NCI_CGAP_DF1 Homo sapiens cDNA clone UI-H-DF1-aug-f-02-0-UI 3, mRNA sequence	13.26 Down	8.65E-05
NM_006209	Homo sapiens ectonucleotide pyrophosphatase/phosphodiesterase 2 (autotaxin) (ENPP2), mRNA	13.21 Down	3.28E-04
NM_005584	Homo sapiens mab-21-like 1 (C. elegans) (MAB21L1), mRNA	12.73 Down	1.01E-04
BM468332	AGENCOURT_6432296 NIH_MGC_71 Homo sapiens cDNA clone IMAGE:5535773 5, mRNA sequence	12.64 Down	2.13E-05
NM_020353	Homo sapiens phospholipid scramblase 4 (PLSCR4), mRNA	12.39 Down	2.08E-04
NM_031302	Homo sapiens gycosyltransferase (LOC83468), mRNA	12.39 Down	1.88E-03
NM_005308	Homo sapiens G protein-coupled receptor kinase 5 (GRK5), mRNA	12.28 Down	1.18E-04
NM_032883	Homo sapiens chromosome 20 open reading frame 100 (C20orf100), mRNA	12.17 Down	1.78E-05
NM_000110	Homo sapiens dihydropyrimidine dehydrogenase (DPYD), mRNA	12.16 Down	2.75E-05
BU536871	AGENCOURT_10224340 NIH_MGC_141 Homo sapiens cDNA clone IMAGE:6565454 5, mRNA sequence	12.05 Down	4.21E-05
NM_016270	Homo sapiens Kruppel-like factor 2 (lung) (KLF2), mRNA	11.98 Down	1.94E-03
NM_005110	Homo sapiens glutamine-fructose-6-phosphate transaminase 2 (GFPT2), mRNA	11.92 Down	2.93E-05
AK130711	Homo sapiens cDNA FLJ27201 fis, clone SYN03133	11.81 Down	5.02E-05
BM991890	UI-H-DF1-auk-h-02-0-UI.s1 NCI_CGAP_DF1 Homo sapiens cDNA clone IMAGE:5870641 3, mRNA sequence	11.78 Down	2.03E-05
NM_000304	Homo sapiens peripheral myelin protein 22 (PMP22), transcript variant 1, mRNA	11.77 Down	1.04E-03
BM926469	AGENCOURT_6644776 NIH_MGC_122 Homo sapiens cDNA clone IMAGE:5766855 5, mRNA	11.53 Down	7.16E-06

	sequence		
NM_001424	Homo sapiens epithelial membrane protein 2 (EMP2), mRNA	11.39 Down	5.12E-04
AK093762	Homo sapiens cDNA FLJ36443 fis, clone THYMU2012891	11.18 Down	1.34E-04
NM_006288	Homo sapiens Thy-1 cell surface antigen (THY1), mRNA	11.17 Down	4.26E-04
NM_006183	Homo sapiens neurotensin (NTS), mRNA	11.14 Down	8.52E-04
NM_002522	Homo sapiens neuronal pentraxin I (NPTX1), mRNA	11.08 Down	3.03E-04
NM_016428	Homo sapiens ABI gene family, member 3 (ABI3), mRNA	11.03 Down	2.83E-05
NM_001769	Homo sapiens CD9 antigen (p24) (CD9), mRNA	11 Down	2.45E-04
AL833655	Homo sapiens mRNA; cDNA DKFZp667O0320 (from clone DKFZp667O0320)	10.8 Down	1.73E-05
R56121	yg94d04.s1 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGE:41388 3, mRNA sequence	10.64 Down	1.04E-04
NM_012445	Homo sapiens spondin 2, extracellular matrix protein (SPON2), mRNA	10.63 Down	1.36E-04
NM_004811	Homo sapiens leupaxin (LPXN), mRNA	10.6 Down	2.09E-05
NM_002977	Homo sapiens sodium channel, voltage-gated, type IX, alpha (SCN9A), mRNA	10.51 Down	2.09E-05
BI598031	603248155F1 NIH_MGC_96 Homo sapiens cDNA clone IMAGE:5300149 5, mRNA sequence	10.5 Down	3.34E-05
NM_173553	Homo sapiens hypothetical protein FLJ25801 (FLJ25801), mRNA	10.49 Down	2.32E-05
NM_001311	Homo sapiens cysteine-rich protein 1 (intestinal) (CRIP1), mRNA	10.31 Down	2.73E-05
NM_015916	Homo sapiens family with sequence similarity 26, member B (FAM26B), mRNA	10.28 Down	1.59E-04
NM_005595	Homo sapiens nuclear factor I/A (NFIA), mRNA	10.12 Down	7.43E-04
NM_182728	Homo sapiens solute carrier family 7 (cationic amino acid transporter, y+ system), member 8 (SLC7A8), transcript variant 2, mRNA	9.98 Down	6.78E-05

NM_152996	Homo sapiens sialyltransferase 7 ((alpha-N-acetylneuraminyl-2,3-beta-galactosyl-1,3)-N-acetyl galactosaminide alpha-2,6-sialyltransferase) C (SIAT7C), mRNA	9.95 Down	1.25E-05
AK091713	Homo sapiens cDNA FLJ34394 fis, clone HCHON2000676	9.92 Down	2.31E-05
AK022877	Homo sapiens cDNA FLJ12815 fis, clone NT2RP2002546	9.89 Down	3.15E-05
NM_194250	Homo sapiens similar to C630007C17Rik protein (LOC91752), mRNA	9.84 Down	7.08E-05
BC039450	Homo sapiens, clone IMAGE:5311619, mRNA	9.77 Down	2.60E-04
NM_031894	Homo sapiens ferritin, heavy polypeptide-like 17 (FTHL17), mRNA	9.76 Down	5.99E-04
BI561641	603256058F1 NIH_MGC_97 Homo sapiens cDNA clone IMAGE:5298374 5, mRNA sequence	9.68 Down	1.96E-03
BC028245	Homo sapiens, Similar to hypothetical gene LOC130797, clone IMAGE:5395354, mRNA	9.68 Down	1.88E-05
NM_031957	Homo sapiens keratin associated protein 1-5 (KRTAP1-5), mRNA	9.66 Down	2.31E-05
AA947461	ok20f03.s1 Soares_NSF_F8_9W_OT_PA_P_S1 Homo sapiens cDNA clone IMAGE:1508381 3, mRNA sequence	9.56 Down	4.34E-05
AK127309	Homo sapiens cDNA FLJ45377 fis, clone BRHIP3019956	9.55 Down	1.17E-04
NM_016247	Homo sapiens interphotoreceptor matrix proteoglycan 2 (IMPG2), mRNA	9.51 Down	2.09E-05
NM_005574	Homo sapiens LIM domain only 2 (rhombotin-like 1) (LMO2), mRNA	9.46 Down	4.10E-05
NM_004369	Homo sapiens collagen, type VI, alpha 3 (COL6A3), transcript variant 1, mRNA	9.36 Down	2.14E-05
NM_003973	Homo sapiens ribosomal protein L14 (RPL14), mRNA	9.3 Down	6.77E-05
NM_000459	Homo sapiens TEK tyrosine kinase, endothelial (venous malformations, multiple cutaneous and mucosal) (TEK), mRNA	9.25 Down	3.10E-04

NM_005397	Homo sapiens podocalyxin-like (PODXL), mRNA	9.06 Down	6.52E-04
BU675964	UI-CF-DU1-aaf-b-24-0-UI.s1 UI-CF-DU1 Homo sapiens cDNA clone UI-CF-DU1-aaf-b-24-0-UI 3, mRNA sequence	9 Down	6.82E-05
AI640484	wa27f01.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2299321 3, mRNA sequence	8.92 Down	8.54E-05
NM_030781	Homo sapiens collectin sub-family member 12 (COLEC12), transcript variant II, mRNA	8.54 Down	8.65E-05
NM_001998	Homo sapiens fibulin 2 (FBLN2), transcript variant 2, mRNA	8.53 Down	4.60E-04
BC039369	Homo sapiens, clone IMAGE:5271073, mRNA, partial cds	8.51 Down	4.85E-04
AA436084	zu03a02.r1 Soares_testis_NHT Homo sapiens cDNA clone IMAGE:730730 5 similar to contains element PTR5 PTR5 repetitive element ;, mRNA sequence	8.51 Down	8.23E-05
NM_015192	Homo sapiens phospholipase C, beta 1 (phosphoinositide-specific) (PLCB1), transcript variant 1, mRNA	8.48 Down	2.34E-04
NM_024420	Homo sapiens phospholipase A2, group IVA (cytosolic, calcium-dependent) (PLA2G4A), mRNA	8.48 Down	2.23E-03
BX095887	BX095887 Soares_total_fetus_Nb2HF8_9w Homo sapiens cDNA clone IMAGp998G124121 ; IMAGE:1624739, mRNA sequence	8.42 Down	7.38E-05
NM_006417	Homo sapiens interferon-induced protein 44 (IFI44), mRNA	8.37 Down	2.46E-04
AK022033	Homo sapiens cDNA FLJ11971 fis, clone HEMBB1001208	8.35 Down	2.06E-04
N69782	yz60b07.s1 Morton Fetal Cochlea Homo sapiens cDNA clone IMAGE:287413 3, mRNA sequence	8.02 Down	2.78E-04
NM_023003	Homo sapiens transmembrane 6 superfamily member 1 (TM6SF1), mRNA	7.93 Down	1.20E-04
BC036034	Homo sapiens endothelial differentiation,	7.86 Down	2.31E-05

	lysophosphatidic acid G-protein-coupled receptor, 2, transcript variant 2, mRNA (cDNA clone MGC:33157 IMAGE:5272431), complete cds		
NM_005602	Homo sapiens claudin 11 (oligodendrocyte transmembrane protein) (CLDN11), mRNA	7.84 Down	2.43E-02
BC039676	Homo sapiens, clone IMAGE:5173389, mRNA	7.74 Down	3.04E-05
BC030692	Homo sapiens ELAV (embryonic lethal, abnormal vision, Drosophila)-like 2 (Hu antigen B), mRNA (cDNA clone MGC:26319 IMAGE:4826082), complete cds	7.72 Down	3.59E-05
NM_015278	Homo sapiens SAM and SH3 domain containing 1 (SASH1), mRNA	7.58 Down	1.38E-04
NM_031283	Homo sapiens transcription factor 7-like 1 (T-cell specific, HMG-box) (TCF7L1), mRNA	7.57 Down	4.12E-05
BC042378	Homo sapiens, clone IMAGE:5277693, mRNA	7.56 Down	9.91E-04
NM_013363	Homo sapiens procollagen C-endopeptidase enhancer 2 (PCOLCE2), mRNA	7.49 Down	5.18E-03
NM_005923	Homo sapiens mitogen-activated protein kinase kinase kinase 5 (MAP3K5), mRNA	7.48 Down	2.05E-04
R53688	yg84h04.r1 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGE:40175 5, mRNA sequence	7.43 Down	2.31E-05
AI216469	qh07h10.x1 Soares_NFL_T_GBC_S1 Homo sapiens cDNA clone IMAGE:1844035 3, mRNA sequence	7.28 Down	4.92E-05
NM_014331	Homo sapiens solute carrier family 7, (cationic amino acid transporter, y+ system) member 11 (SLC7A11), mRNA	7.27 Down	2.76E-03
NM_138801	Homo sapiens galactose mutarotase (aldose 1-epimerase) (GALM), mRNA	7.24 Down	5.50E-05
AL049443	Homo sapiens mRNA; cDNA DKFZp586N2020 (from clone DKFZp586N2020)	7.22 Down	2.83E-04
NM_005328	Homo sapiens hyaluronan synthase 2 (HAS2), mRNA	7.17 Down	3.96E-03
NM_006072	Homo sapiens chemokine (C-C motif) ligand 26 (CCL26), mRNA	7.12 Down	6.86E-05

NM_020987	Homo sapiens ankyrin 3, node of Ranvier (ankyrin G) (ANK3), transcript variant 1, mRNA	7.09 Down	7.31E-05
BX647541	Homo sapiens mRNA; cDNA DKFZp686P0492 (from clone DKFZp686P0492)	7.08 Down	4.47E-05
AI417595	tg79h09.x1 Soares_NhHMPu_S1 Homo sapiens cDNA clone IMAGE:2115041 3, mRNA sequence	7.07 Down	7.52E-04
AA158235	zo76b02.s1 Stratagene pancreas (#937208) Homo sapiens cDNA clone IMAGE:592779 3, mRNA sequence	7.06 Down	1.52E-04
NM_005583	Homo sapiens lymphoblastic leukemia derived sequence 1 (LYL1), mRNA	7.03 Down	4.69E-05
BU570253	AGENCOURT_10401698 NIH_MGC_82 Homo sapiens cDNA clone IMAGE:6618451 5, mRNA sequence	7 Down	2.35E-04
BM675371	UI-E-EJ0-aht-a-07-0-UI.s1 UI-E-EJ0 Homo sapiens cDNA clone UI-E-EJ0-aht-a-07-0-UI 3, mRNA sequence	6.95 Down	4.53E-05
AK024653	Homo sapiens cDNA: FLJ21000 fis, clone CAE03359	6.93 Down	6.77E-05
W31037	zb86c06.r1 Soares_senescent_fibroblasts_NbHSF Homo sapiens cDNA clone IMAGE:310474 5, mRNA sequence	6.91 Down	4.95E-05
AL831835	Homo sapiens mRNA; cDNA DKFZp547A0515 (from clone DKFZp547A0515)	6.9 Down	1.53E-03
NM_001849	Homo sapiens collagen, type VI, alpha 2 (COL6A2), transcript variant 2C2, mRNA	6.85 Down	3.34E-05
NM_007084	Homo sapiens SRY (sex determining region Y)-box 21 (SOX21), mRNA	6.85 Down	3.88E-02
NM_025107	Homo sapiens myc target 1 (MYCT1), mRNA	6.82 Down	6.89E-05
AA393981	zt58a03.r1 Soares_testis_NHT Homo sapiens cDNA clone IMAGE:726508 5, mRNA sequence	6.82 Down	4.58E-03
NM_170744	Homo sapiens unc-5 homolog B (C. elegans) (UNC5B), mRNA	6.82 Down	9.92E-04
AL133118	Homo sapiens mRNA; cDNA DKFZp586N0121	6.78 Down	1.42E-03

	(from clone DKFZp586N0121)		
AK090603	Homo sapiens cDNA FLJ33284 fis, clone ASTRO2009458	6.76 Down	1.36E-04
NM_002203	Homo sapiens integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor) (ITGA2), mRNA	6.74 Down	4.93E-05
NM_003713	Homo sapiens phosphatidic acid phosphatase type 2B (PPAP2B), transcript variant 1, mRNA	6.73 Down	1.06E-04
NM_001401	Homo sapiens endothelial differentiation, lysophosphatidic acid G-protein-coupled receptor, 2 (EDG2), transcript variant 1, mRNA	6.69 Down	9.75E-04
NM_020226	Homo sapiens PR domain containing 8 (PRDM8), mRNA	6.68 Down	2.31E-04
N71963	yz95e03.s1 Soares melanocyte 2NbHM Homo sapiens cDNA clone IMAGE:290812 3 similar to contains Alu repetitive element;, mRNA sequence	6.63 Down	2.47E-04
AK127536	Homo sapiens cDNA FLJ45629 fis, clone CHONS2000797, highly similar to T-box transcription factor TBX15	6.6 Down	1.09E-04
NM_006206	Homo sapiens platelet-derived growth factor receptor, alpha polypeptide (PDGFRA), mRNA	6.55 Down	6.30E-04
NM_016559	Homo sapiens peroxisomal biogenesis factor 5-like (PEX5L), mRNA	6.55 Down	6.77E-04
NM_012307	Homo sapiens erythrocyte membrane protein band 4.1-like 3 (EPB41L3), mRNA	6.51 Down	9.62E-04
R34294	yh84b01.s1 Soares placenta Nb2HP Homo sapiens cDNA clone IMAGE:136393 3, mRNA sequence	6.49 Down	2.78E-05
N36786	yy34e08.s1 Soares melanocyte 2NbHM Homo sapiens cDNA clone IMAGE:273158 3 similar to contains element MSR1 repetitive element ;, mRNA sequence	6.49 Down	6.12E-05
BX113851	BX113851 Soares_total_fetus_Nb2HF8_9w Homo sapiens cDNA clone IMAGp998G054116 ; IMAGE:1622812, mRNA sequence	6.44 Down	8.41E-05
BG484952	602503960F1 NIH_MGC_77 Homo sapiens cDNA clone IMAGE:4617278 5, mRNA	6.43 Down	9.06E-05

	sequence		
NM_005434	Homo sapiens BENE protein (BENE), mRNA	6.4 Down	1.64E-05
BX106577	BX106577 Soares_NhHMPu_S1 Homo sapiens cDNA clone IMAGp998H131854 ; IMAGE:754236, mRNA sequence	6.39 Down	4.12E-05
NM_144617	Homo sapiens heat shock protein, alpha-crystallin-related, B6 (HSPB6), mRNA	6.37 Down	2.83E-05
AK093529	Homo sapiens cDNA FLJ36210 fis, clone THYMU2000155	6.29 Down	1.52E-04
NM_022731	Homo sapiens nuclear ubiquitous casein kinase and cyclin-dependent kinase substrate (NUCKS), mRNA	6.27 Down	9.06E-05
NM_018286	Homo sapiens hypothetical protein FLJ10970 (FLJ10970), mRNA	6.26 Down	1.08E-03
NM_002290	Homo sapiens laminin, alpha 4 (LAMA4), mRNA	6.19 Down	6.97E-04
NM_015184	Homo sapiens phospholipase C-like 2 (PLCL2), mRNA	6.18 Down	5.91E-04
NM_017577	Homo sapiens hypothetical protein DKFZp434C0328 (DKFZp434C0328), mRNA	6.17 Down	3.60E-05
BQ350534	RC1-HT0256-120400-019-d06 HT0256 Homo sapiens cDNA, mRNA sequence	6.17 Down	2.04E-04
NM_004934	Homo sapiens cadherin 18, type 2 (CDH18), mRNA	6.17 Down	3.03E-05
NM_024769	Homo sapiens adipocyte-specific adhesion molecule (ASAM), mRNA	6.15 Down	2.41E-04
NM_197941	Homo sapiens similar to ADAMTS-10 precursor (A disintegrin and metalloproteinase with thrombospondin motifs 10) (ADAM-TS 10) (ADAM-TS10) (LOC345667), mRNA	6.14 Down	1.06E-04
BG118019	602351269F1 NIH_MGC_90 Homo sapiens cDNA clone IMAGE:4446065 5, mRNA sequence	6.14 Down	5.02E-05
NM_005531	Homo sapiens interferon, gamma-inducible protein 16 (IFI16), mRNA	6.13 Down	4.46E-04
NM_005613	Homo sapiens regulator of G-protein signalling 4 (RGS4), mRNA	6.08 Down	1.04E-04

NM_002166	Homo sapiens inhibitor of DNA binding 2, dominant negative helix-loop-helix protein (ID2), mRNA	6.07 Down	1.16E-03
BC015720	Homo sapiens, clone IMAGE:3909165, mRNA	6.04 Down	1.15E-05
BF508005	UI-H-BI4-apw-e-06-0-UI.s1 NCI_CGAP_Sub8 Homo sapiens cDNA clone IMAGE:3088978 3, mRNA sequence	6.03 Down	1.15E-05
NM_007101	Homo sapiens sarcosine dehydrogenase (SARDH), mRNA	6.01 Down	4.54E-03
BG025371	602276295F1 NIH_MGC_85 Homo sapiens cDNA clone IMAGE:4364351 5, mRNA sequence	5.99 Down	6.94E-05
NM_152666	Homo sapiens hypothetical protein FLJ40773 (FLJ40773), mRNA	5.99 Down	4.55E-04
BM542398	AGENCOURT_6436663 NIH_MGC_72 Homo sapiens cDNA clone IMAGE:5539574 5, mRNA sequence	5.97 Down	3.34E-05
AK054783	Homo sapiens cDNA FLJ30221 fis, clone BRACE2001742	5.97 Down	2.40E-04
AI651524	wb06g07.x1 NCI_CGAP_GC6 Homo sapiens cDNA clone IMAGE:2304924 3, mRNA sequence	5.93 Down	3.22E-04
NM_005905	Homo sapiens SMAD, mothers against DPP homolog 9 (Drosophila) (SMAD9), mRNA	5.87 Down	4.76E-04
BG818762	602779092F2 NCI_CGAP_Brn67 Homo sapiens cDNA clone IMAGE:4914502 5, mRNA sequence	5.84 Down	1.07E-04
NM_002487	Homo sapiens necdin homolog (mouse) (NDN), mRNA	5.83 Down	2.72E-05
NM_000167	Homo sapiens glycerol kinase (GK), transcript variant 2, mRNA	5.8 Down	5.10E-03
BC070147	Homo sapiens cDNA clone IMAGE:4672631, containing frame-shift errors	5.74 Down	7.92E-04
NM_001711	Homo sapiens biglycan (BGN), mRNA	5.71 Down	4.13E-05
NM_000407	Homo sapiens glycoprotein Ib (platelet), beta polypeptide (GP1BB), mRNA	5.69 Down	3.03E-05
N28431	yx35c03.r1 Soares melanocyte 2NbHM Homo	5.69 Down	6.03E-04

	sapiens cDNA clone IMAGE:263716 5 similar to SP:PIR:S32603 S32603 collagen alpha 1(VI) chain - mouse ;, mRNA sequence		
NM_002615	Homo sapiens serine (or cysteine) proteinase inhibitor, clade F (alpha-2 antiplasmin, pigment epithelium derived factor), member 1 (SERPINF1), mRNA	5.66 Down	2.02E-03
H18367	yn49d06.r1 Soares adult brain N2b5HB55Y Homo sapiens cDNA clone IMAGE:171755 3, mRNA sequence	5.66 Down	4.41E-04
NM_018455	Homo sapiens uncharacterized bone marrow protein BM039 (BM039), mRNA	5.64 Down	3.03E-04
H24359	ym56b03.s1 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGE:52294 3, mRNA sequence	5.61 Down	2.57E-04
BU078105	im64b02.y1 HR85 islet Homo sapiens cDNA clone IMAGE:6039866 5, mRNA sequence	5.58 Down	3.60E-04
NM_022576	Homo sapiens phosducin (PDC), transcript variant 2, mRNA	5.55 Down	9.39E-05
NM_033196	Homo sapiens hypothetical ZNF-like protein (LOC91120), mRNA	5.54 Down	1.49E-04
BC035066	Homo sapiens, clone IMAGE:5259543, mRNA	5.54 Down	1.65E-04
R14261	yf79d05.r1 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGE:28642 5, mRNA sequence	5.51 Down	2.36E-04
BC042140	Homo sapiens, clone IMAGE:5932306, mRNA	5.48 Down	5.05E-05
NM_005654	Homo sapiens nuclear receptor subfamily 2, group F, member 1 (NR2F1), mRNA	5.48 Down	1.02E-05
NM_182746	Homo sapiens MCM4 minichromosome maintenance deficient 4 (S. cerevisiae) (MCM4), transcript variant 2, mRNA	5.48 Down	9.96E-04
BG573337	602595107F1 NIH_MGC_79 Homo sapiens cDNA clone IMAGE:4724521 5, mRNA sequence	5.43 Down	3.72E-04
NM_194250	Homo sapiens similar to C630007C17Rik protein (LOC91752), mRNA	5.43 Down	3.30E-04
NM_015430	Homo sapiens regeneration associated muscle	5.43 Down	3.49E-03

	protease (DKFZP586H2123), transcript variant 1, mRNA		
NM_006868	Homo sapiens RAB31, member RAS oncogene family (RAB31), mRNA	5.41 Down	2.11E-05
BI494495	df110f11.w1 Morton Fetal Cochlea Homo sapiens cDNA clone IMAGE:2539149 3, mRNA sequence	5.4 Down	2.64E-03
AW025556	wu97g10.x1 NCI_CGAP_Kid3 Homo sapiens cDNA clone IMAGE:2528034 3, mRNA sequence	5.36 Down	1.89E-04
AI793182	qz36a11.x5 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2028956 3 similar to contains L1.t3 L1 repetitive element ;, mRNA sequence	5.34 Down	8.09E-04
NM_006208	Homo sapiens ectonucleotide pyrophosphatase/phosphodiesterase 1 (ENPP1), mRNA	5.34 Down	2.36E-04
C02345	HUMGS0007544 Human adult (K.Okubo) Homo sapiens cDNA, mRNA sequence	5.33 Down	3.45E-04
NM_032297	Homo sapiens hypothetical protein DKFZp761D112 (DKFZp761D112), mRNA	5.32 Down	3.38E-04
BM724062	UI-E-EO1-aiy-a-22-0-UI.r1 UI-E-EO1 Homo sapiens cDNA clone UI-E-EO1-aiy-a-22-0-UI 5, mRNA sequence	5.25 Down	2.96E-03
NM_176891	Homo sapiens interferon epsilon 1 (IFNE1), mRNA	5.22 Down	2.67E-04
BX648959	Homo sapiens mRNA; cDNA DKFZp686N2348 (from clone DKFZp686N2348)	5.22 Down	4.12E-05
CA771688	io81c08.x1 HR85 islet Homo sapiens cDNA clone IMAGE:6132854 3, mRNA sequence	5.22 Down	3.35E-03
BC034315	Homo sapiens hypothetical protein LOC90529, mRNA (cDNA clone IMAGE:4827425), containing frame-shift errors	5.22 Down	1.90E-04
W88428	zh72g09.s1 Soares_fetal_liver_spleen_1NFLS_S1 Homo sapiens cDNA clone IMAGE:417664 3, mRNA sequence	5.22 Down	5.95E-04

AI468014	tj84g05.x1 Soares_NSF_F8_9W_OT_PA_P_S1 Homo sapiens cDNA clone IMAGE:2148248 3 similar to contains element TAR1 repetitive element ;, mRNA sequence	5.21 Down	9.55E-04
NM_197941	Homo sapiens similar to ADAMTS-10 precursor (A disintegrin and metalloproteinase with thrombospondin motifs 10) (ADAM-TS 10) (ADAM-TS10) (LOC345667), mRNA	5.2 Down	8.12E-04
U10991	Human G2 protein mRNA, partial cds	5.19 Down	7.92E-05
AI888390	wn30g10.x1 NCI_CGAP_Gas4 Homo sapiens cDNA clone IMAGE:2447010 3 similar to contains element MER8 repetitive element ;, mRNA sequence	5.19 Down	2.07E-04
NM_012411	Homo sapiens protein tyrosine phosphatase, non-receptor type 22 (lymphoid) (PTPN22), transcript variant 2, mRNA	5.19 Down	3.62E-04
NM_030806	Homo sapiens chromosome 1 open reading frame 21 (C1orf21), mRNA	5.17 Down	1.88E-05
NM_005654	Homo sapiens nuclear receptor subfamily 2, group F, member 1 (NR2F1), mRNA	5.17 Down	8.65E-05
NM_153014	Homo sapiens hypothetical protein FLJ30634 (FLJ30634), mRNA	5.13 Down	1.32E-03
AB020691	Homo sapiens mRNA for KIAA0884 protein, partial cds	5.13 Down	3.40E-05
NM_020211	Homo sapiens RGM domain family, member A (RGMA), mRNA	5.1 Down	1.51E-04
BG215747	RST35420 Athersys RAGE Library Homo sapiens cDNA, mRNA sequence	5.1 Down	1.30E-04
NM_002317	Homo sapiens lysyl oxidase (LOX), mRNA	5.09 Down	1.28E-04
NM_003608	Homo sapiens G protein-coupled receptor 65 (GPR65), mRNA	5.07 Down	7.41E-04
NM_031305	Homo sapiens Rho GTPase activating protein 24 (ARHGAP24), mRNA	5.05 Down	1.10E-04
AK124391	Homo sapiens cDNA FLJ42400 fis, clone ASTRO2003581	5.03 Down	9.74E-05
NM_005613	Homo sapiens regulator of G-protein signalling	5.02 Down	7.55E-05

	4 (RGS4), mRNA			
NM_054027	Homo sapiens ankylosis, progressive homolog (mouse) (ANKH), mRNA	5	Down	2.64E-05

TABLE VII C: GENES THAT WERE DIFFERENTIALLY EXPRESSED AT LEAST 5 FOLD IN EPITHELIAL VERSUS AF-I CELLS

Gene Identifier	Gene Name	Average fold change in Epithelial versus AF cells	Direction	adj. p-value
AK091336	Homo sapiens cDNA FLJ34017 fis, clone FCBBF2002626	97.64	UP	6.01E-03
NM_004098	Homo sapiens empty spiracles homolog 2 (Drosophila) (EMX2), mRNA	83.49	UP	8.10E-03
AV702977	AV702977 ADB Homo sapiens cDNA clone ADBCVD08 5, mRNA sequence	82.96	UP	3.74E-03
BE877764	601486331F1 NIH_MGC_69 Homo sapiens cDNA clone IMAGE:3888943 5, mRNA sequence	60.78	UP	2.79E-03
AK075003	Homo sapiens cDNA FLJ90522 fis, clone NT2RP4000108, highly similar to Human gene for neurofilament subunit NF-L	48.1	UP	1.02E-02
NM_014358	Homo sapiens C-type (calcium dependent, carbohydrate-recognition domain) lectin, superfamily member 9 (CLECSF9), mRNA	48.04	UP	1.99E-04
AK092401	Homo sapiens cDNA FLJ35082 fis, clone PLACE6005351	40.58	UP	1.77E-03
NM_007029	Homo sapiens stathmin-like 2 (STMN2),	38.31	UP	1.31E-02

	mRNA		
AW300043	xs45a09.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2772568 3, mRNA sequence	25.26 UP	1.35E-02
NM_006158	Homo sapiens neurofilament, light polypeptide 68kDa (NEFL), mRNA	23.08 UP	1.76E-03
NM_003222	Homo sapiens transcription factor AP-2 gamma (activating enhancer binding protein 2 gamma) (TFAP2C), mRNA	22.98 UP	1.59E-02
AK023647	Homo sapiens cDNA FLJ13585 fis, clone PLACE1009150	22.77 UP	7.48E-04
BC044843	Homo sapiens hypothetical protein LOC339535, mRNA (cDNA clone IMAGE:5186761), partial cds	21.74 UP	4.67E-03
BQ003501	UI-H-EI1-azd-p-06-0-UI.s1 NCI_CGAP_EI1 Homo sapiens cDNA clone IMAGE:5847413 3, mRNA sequence	20.08 UP	9.54E-04
AA075748	zm89e04.r1 Stratagene ovarian cancer (#937219) Homo sapiens cDNA clone IMAGE:545118 5, mRNA sequence	19.94 UP	7.10E-03
BF000009	7h15g04.x1 NCI_CGAP_Co16 Homo sapiens cDNA clone IMAGE:3316086 3, mRNA sequence	19.92 UP	7.67E-03
NM_004867	Homo sapiens integral membrane protein 2A (ITM2A), mRNA	19.86 UP	2.62E-02
H85497	yv88b07.r1 Soares melanocyte 2NbHM Homo sapiens cDNA clone IMAGE:249781 5, mRNA sequence	19.75 UP	7.71E-05
BM713465	UI-E-EJ0-aho-m-22-0-UI.r1 UI-E-EJ0 Homo sapiens cDNA clone UI-E-EJ0-aho-m-22-0-UI 5, mRNA sequence	18.57 UP	1.68E-02
BU569937	AGENCOURT_10399817 NIH_MGC_82 Homo sapiens cDNA clone IMAGE:6618011 5, mRNA sequence	18.3 UP	1.68E-02
NM_032782	Homo sapiens hepatitis A virus cellular receptor 2 (HAVCR2), mRNA	18.05 UP	2.97E-03

NM_013387	Homo sapiens ubiquinol-cytochrome c reductase complex (7.2 kD) (HSPC051), transcript variant 1, mRNA	17.68 UP	1.30E-04
BM988338	UI-H-DH0-asd-f-10-0-UI.s1 NCI_CGAP_DH0 Homo sapiens cDNA clone IMAGE:5857545 3, mRNA sequence	17.23 UP	9.27E-03
BQ025821	UI-1-BB1p-aye-f-10-0-UI.s1 NCI_CGAP_PI6 Homo sapiens cDNA clone UI-1-BB1p-aye-f-10-0-UI 3, mRNA sequence	15.46 UP	1.08E-02
BF515657	UI-H-BW1-anu-e-05-0-UI.s1 NCI_CGAP_Sub7 Homo sapiens cDNA clone IMAGE:3083601 3, mRNA sequence	15.17 UP	8.95E-03
NM_001977	Homo sapiens glutamyl aminopeptidase (aminopeptidase A) (ENPEP), mRNA	14.59 UP	5.24E-05
NM_197955	Homo sapiens normal mucosa of esophagus specific 1 (NMES1), transcript variant 1, mRNA	14.33 UP	2.54E-03
NM_180991	Homo sapiens solute carrier organic anion transporter family, member 4C1 (SLCO4C1), mRNA	13.46 UP	2.20E-02
R44402	yg37a01.s1 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGE:34639 3 similar to contains MER35 repetitive element ;, mRNA sequence	13.17 UP	1.56E-04
CF137545	UI-HF-BN0-ane-d-05-0-UI.r1 NIH_MGC_50 Homo sapiens cDNA clone IMAGE:3092384 5, mRNA sequence	12.96 UP	6.05E-03
NM_016269	Homo sapiens lymphoid enhancer-binding factor 1 (LEF1), mRNA	12.69 UP	7.27E-03
NM_001680	Homo sapiens FXYD domain containing ion transport regulator 2 (FXYD2), transcript variant a, mRNA	12.65 UP	2.38E-03

NM_003063	Homo sapiens sarcolipin (SLN), mRNA	12.54 UP	3.04E-02
NM_012204	Homo sapiens general transcription factor IIIC, polypeptide 4, 90kDa (GTF3C4), mRNA	12.51 UP	3.10E-02
NM_003810	Homo sapiens tumor necrosis factor (ligand) superfamily, member 10 (TNFSF10), mRNA	12.4 UP	9.19E-05
NM_004591	Homo sapiens chemokine (C-C motif) ligand 20 (CCL20), mRNA	11.84 UP	3.08E-02
NM_020927	Homo sapiens KIAA1576 protein (KIAA1576), mRNA	11.77 UP	6.78E-03
NM_014751	Homo sapiens metastasis suppressor 1 (MTSS1), mRNA	11.5 UP	6.60E-05
NM_031311	Homo sapiens carboxypeptidase, vitellogenic-like (CPVL), transcript variant 1, mRNA	10.36 UP	8.15E-03
NM_005382	Homo sapiens neurofilament 3 (150kDa medium) (NEF3), mRNA	10.12 UP	4.45E-02
NM_033554	Homo sapiens major histocompatibility complex, class II, DP alpha 1 (HLA-DPA1), mRNA	9.84 UP	4.35E-02
AI632692	wa33b05.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2299857 3, mRNA sequence	9.7 UP	3.01E-02
NM_030923	Homo sapiens hypothetical protein DKFZp566N034 (DKFZP566N034), mRNA	9.51 UP	2.72E-02
NM_152550	Homo sapiens SH3 domain containing ring finger 2 (SH3RF2), mRNA	9.31 UP	4.41E-02
AW445209	UI-H-BI3-akc-g-11-0-UI.s1 NCI_CGAP_Sub5 Homo sapiens cDNA clone IMAGE:2733908 3, mRNA sequence	9.27 UP	1.37E-03
AB011095	Homo sapiens mRNA for KIAA0523 protein, partial cds	8.77 UP	1.82E-04
NM_194463	Homo sapiens ring finger protein 128 (RNF128), transcript variant 1, mRNA	8.75 UP	2.95E-03

NM_013427	Homo sapiens Rho GTPase activating protein 6 (ARHGAP6), transcript variant 1, mRNA	8.73 UP	7.38E-04
NM_012105	Homo sapiens beta-site APP-cleaving enzyme 2 (BACE2), transcript variant a, mRNA	8.67 UP	1.49E-04
NM_000640	Homo sapiens interleukin 13 receptor, alpha 2 (IL13RA2), mRNA	8.29 UP	4.39E-02
NM_001977	Homo sapiens glutamyl aminopeptidase (aminopeptidase A) (ENPEP), mRNA	8.16 UP	6.01E-03
T56535	yb33g07.r1 Stratagene fetal spleen (#937205) Homo sapiens cDNA clone IMAGE:73020 5, mRNA sequence	8.08 UP	1.24E-04
NM_022440	Homo sapiens mal, T-cell differentiation protein (MAL), transcript variant d, mRNA	8.01 UP	4.29E-02
BM711923	UI-E-CL1-afc-m-16-0-UI.r1 UI-E-CL1 Homo sapiens cDNA clone UI-E-CL1-afc-m-16-0-UI 5, mRNA sequence	7.87 UP	8.56E-04
NM_005181	Homo sapiens carbonic anhydrase III, muscle specific (CA3), mRNA	7.69 UP	1.46E-02
NM_030781	Homo sapiens collectin sub-family member 12 (COLEC12), transcript variant II, mRNA	7.56 UP	8.07E-04
NM_001305	Homo sapiens claudin 4 (CLDN4), mRNA	7.41 UP	3.62E-04
NM_000055	Homo sapiens butyrylcholinesterase (BCHE), mRNA	7.26 UP	4.51E-03
NM_153183	Homo sapiens nudix (nucleoside diphosphate linked moiety X)-type motif 10 (NUDT10), mRNA	7.23 UP	3.53E-02
BI759570	603046987F1 NIH_MGC_116 Homo sapiens cDNA clone IMAGE:5187285 5, mRNA sequence	7.11 UP	3.86E-02
NM_015559	Homo sapiens SET binding protein 1 (SETBP1), mRNA	6.97 UP	3.67E-02
NM_005562	Homo sapiens laminin, gamma 2	6.95 UP	2.06E-04

	(LAMC2), transcript variant 1, mRNA		
NM_013430	Homo sapiens gamma-glutamyltransferase 1 (GGT1), transcript variant 3, mRNA	6.9 UP	3.86E-02
AA908815	og77h08.s1 NCI_CGAP_Ov8 Homo sapiens cDNA clone IMAGE:1454367 3, mRNA sequence	6.8 UP	3.10E-02
NM_022843	Homo sapiens protocadherin 20 (PCDH20), mRNA	6.73 UP	5.39E-03
NM_018076	Homo sapiens armadillo repeat containing 4 (ARMC4), mRNA	6.71 UP	7.53E-04
NM_005822	Homo sapiens Down syndrome critical region gene 1-like 1 (DSCR1L1), mRNA	6.67 UP	2.38E-02
NM_006393	Homo sapiens nebulette (NEBL), transcript variant 1, mRNA	6.66 UP	4.24E-02
CA391258	cs13a10.x1 Human Retinal pigment epithelium/choroid cDNA (Un-normalized, unamplified): cs Homo sapiens cDNA clone cs13a10 3, mRNA sequence	6.56 UP	9.19E-05
AK026966	Homo sapiens cDNA: FLJ23313 fis, clone HEP11919	6.31 UP	1.30E-04
NM_020661	Homo sapiens activation-induced cytidine deaminase (AICDA), mRNA	6.12 UP	3.01E-02
NM_004840	Homo sapiens Rac/Cdc42 guanine nucleotide exchange factor (GEF) 6 (ARHGEF6), mRNA	6.09 UP	1.19E-03
BC021684	Homo sapiens, clone IMAGE:3827252, mRNA	6.03 UP	4.71E-03
NM_032551	Homo sapiens G protein-coupled receptor 54 (GPR54), mRNA	5.96 UP	4.33E-02
NM_024726	Homo sapiens IQ motif containing with AAA domain (IQCA), mRNA	5.94 UP	1.84E-04
NM_001657	Homo sapiens amphiregulin (schwannoma-derived growth factor) (AREG), mRNA	5.91 UP	1.05E-03
NM_006033	Homo sapiens lipase, endothelial (LIPG),	5.9 UP	1.76E-04

	mRNA		
NM_002089	Homo sapiens chemokine (C-X-C motif) ligand 2 (CXCL2), mRNA	5.88 UP	1.13E-04
AK074097	Homo sapiens mRNA for FLJ00168 protein	5.87 UP	1.17E-03
BF509573	UI-H-BI4-apf-b-11-0-UI.s1 NCI_CGAP_Sub8 Homo sapiens cDNA clone IMAGE:3086949 3, mRNA sequence	5.78 UP	1.40E-04
H23441	ym52f11.s1 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGE:51888 3, mRNA sequence	5.77 UP	6.87E-04
NM_031426	Homo sapiens chromosome 9 open reading frame 58 (C9orf58), transcript variant 1, mRNA	5.63 UP	3.32E-05
NM_013410	Homo sapiens adenylate kinase 3 (AK3), nuclear gene encoding mitochondrial protein, transcript variant 2, mRNA	5.54 UP	1.14E-04
NM_003236	Homo sapiens transforming growth factor, alpha (TGFA), mRNA	5.51 UP	3.09E-02
NM_152369	Homo sapiens hypothetical protein MGC45474 (MGC45474), mRNA	5.46 UP	1.02E-04
NM_153229	Homo sapiens hypothetical protein FLJ33318 (FLJ33318), mRNA	5.4 UP	1.92E-03
NM_000216	Homo sapiens Kallmann syndrome 1 sequence (KAL1), mRNA	5.23 UP	1.13E-04
H89526	yw28b04.r1 Morton Fetal Cochlea Homo sapiens cDNA clone IMAGE:253519 5, mRNA sequence	5.15 UP	9.54E-05
AL832916	Homo sapiens mRNA; cDNA DKFZp762I0915 (from clone DKFZp762I0915)	5.12 UP	6.74E-03
NM_002899	Homo sapiens retinol binding protein 1, cellular (RBP1), mRNA	5.07 UP	1.11E-03
CA417015	UI-H-FE0-bbp-d-21-0-UI.s1 NCI_CGAP_FE0 Homo sapiens cDNA clone UI-H-FE0-bbp-d-21-0-UI 3, mRNA	5.07 UP	1.77E-03

	sequence		
AW263542	xn80f01.x1 Soares_NFL_T_GBC_S1 Homo sapiens cDNA clone IMAGE:2700793 3, mRNA sequence	5.07 UP	9.70E-03
T47612	yb15h03.s1 Stratagene placenta (#937225) Homo sapiens cDNA clone IMAGE:71285 3, mRNA sequence	5.02 UP	7.57E-03
NM_002402	Homo sapiens mesoderm specific transcript homolog (mouse) (MEST), transcript variant 1, mRNA	83.38 Down	1.30E-04
NM_001884	Homo sapiens hyaluronan and proteoglycan link protein 1 (HAPLN1), mRNA	71.21 Down	5.97E-05
NM_006439	Homo sapiens mab-21-like 2 (C. elegans) (MAB21L2), mRNA	70.58 Down	7.65E-05
NM_001202	Homo sapiens bone morphogenetic protein 4 (BMP4), transcript variant 1, mRNA	50.48 Down	3.32E-05
NM_017671	Homo sapiens chromosome 20 open reading frame 42 (C20orf42), mRNA	50.28 Down	4.04E-05
AK124396	Homo sapiens cDNA FLJ42405 fis, clone ASTRO3000474	45.55 Down	6.98E-05
NM_015170	Homo sapiens sulfatase 1 (SULF1), mRNA	38.04 Down	7.58E-05
BC037316	Homo sapiens, clone IMAGE:5259432, mRNA	34.94 Down	7.08E-05
NM_001562	Homo sapiens interleukin 18 (interferon-gamma-inducing factor) (IL18), mRNA	34.48 Down	7.58E-05
AI469032	ti70a01.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2137320 3, mRNA sequence	28.72 Down	4.44E-05
NM_016307	Homo sapiens paired related homeobox 2 (PRRX2), mRNA	28.57 Down	3.32E-05
NM_022475	Homo sapiens hedgehog interacting protein (HHIP), mRNA	27 Down	7.14E-05
NM_006072	Homo sapiens chemokine (C-C motif) ligand 26 (CCL26), mRNA	25.57 Down	5.83E-05

NM_007361	Homo sapiens nidogen 2 (osteonidogen) (NID2), mRNA	22.81 Down	5.24E-05
NM_006228	Homo sapiens prepronociceptin (PNOC), mRNA	21.34 Down	4.20E-04
N95448	zb81e11.s1 Soares_senescent_fibroblasts_NbHSF Homo sapiens cDNA clone IMAGE:310028 3, mRNA sequence	20.92 Down	1.24E-04
NM_018242	Homo sapiens hypothetical protein FLJ10847 (FLJ10847), mRNA	20.83 Down	6.60E-05
N63415	yy60d04.s1 Soares_multiple_sclerosis_2NbHMSP Homo sapiens cDNA clone IMAGE:277927 3 similar to contains L1.b3 L1 repetitive element ;, mRNA sequence	19.2 Down	5.24E-05
BQ001571	UI-H-DH1-awr-i-18-0-UI.s1 NCI_CGAP_DH1 Homo sapiens cDNA clone IMAGE:5893337 3, mRNA sequence	18.75 Down	6.98E-05
NM_022454	Homo sapiens SRY (sex determining region Y)-box 17 (SOX17), mRNA	18.21 Down	5.83E-05
BE788763	601475864F1 NIH_MGC_68 Homo sapiens cDNA clone IMAGE:3879014 5, mRNA sequence	17.84 Down	1.13E-04
BU633163	UI-H-FL1-bgt-n-07-0-UI.s1 NCI_CGAP_FL1 Homo sapiens cDNA clone UI-H-FL1-bgt-n-07-0-UI 3, mRNA sequence	17.41 Down	7.14E-05
AI289329	qw28c09.x1 NCI_CGAP_Ut4 Homo sapiens cDNA clone IMAGE:1992400 3 similar to contains L1.b2 L1 repetitive element ;, mRNA sequence	17.1 Down	6.98E-05
AF318382	Homo sapiens pp9974 mRNA, complete cds	16.45 Down	1.38E-04
NM_022350	Homo sapiens leukocyte-derived arginine aminopeptidase (LRAP), mRNA	15.8 Down	1.10E-04

BI561641	603256058F1 NIH_MGC_97 Homo sapiens cDNA clone IMAGE:5298374 5, mRNA sequence	14.77 Down	1.94E-04
NM_006350	Homo sapiens follistatin (FST), transcript variant FST317, mRNA	14.55 Down	7.14E-05
NM_016588	Homo sapiens neuritin 1 (NRN1), mRNA	14.52 Down	6.98E-05
CA437861	UI-H-DH0-aur-k-12-0-UI.s1 NCI_CGAP_DH0 Homo sapiens cDNA clone UI-H-DH0-aur-k-12-0-UI 3, mRNA sequence	14.45 Down	1.21E-04
NM_020873	Homo sapiens leucine rich repeat neuronal 1 (LRRN1), mRNA	13.74 Down	6.60E-05
NM_003385	Homo sapiens visinin-like 1 (VSNL1), mRNA	13.06 Down	7.75E-05
AI640484	wa27f01.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2299321 3, mRNA sequence	11.92 Down	5.48E-04
AK127309	Homo sapiens cDNA FLJ45377 fis, clone BRHIP3019956	11.87 Down	2.35E-04
M60502	Human profilaggrin mRNA, 3 end	11.74 Down	7.58E-05
NM_006475	Homo sapiens periostin, osteoblast specific factor (POSTN), mRNA	11.74 Down	1.19E-04
NM_207482	Homo sapiens FLJ44048 protein (FLJ44048), mRNA	11.63 Down	1.45E-04
NM_000519	Homo sapiens hemoglobin, delta (HBD), mRNA	11.61 Down	3.27E-04
BU567804	AGENCOURT_10398872 NIH_MGC_82 Homo sapiens cDNA clone IMAGE:6614502 5, mRNA sequence	11.59 Down	5.24E-05
AJ318805	AJ318805 Homo sapiens adipose tissue Homo sapiens cDNA clone 2040, mRNA sequence	11.59 Down	1.76E-04
AW451831	UI-H-BI3-alk-e-12-0-UI.s1 NCI_CGAP_Sub5 Homo sapiens cDNA clone IMAGE:2737246 3, mRNA sequence	11.57 Down	1.46E-04
R99527	yq79b11.s1 Soares fetal liver spleen	11.16 Down	1.13E-04

	1NFLS Homo sapiens cDNA clone IMAGE:201981 3, mRNA sequence		
NM_031894	Homo sapiens ferritin, heavy polypeptide-like 17 (FTHL17), mRNA	11.12 Down	4.85E-04
NM_007072	Homo sapiens HERV-H LTR-associating 2 (HHLA2), mRNA	10.94 Down	1.36E-04
NM_005654	Homo sapiens nuclear receptor subfamily 2, group F, member 1 (NR2F1), mRNA	10.91 Down	3.32E-05
NM_004574	Homo sapiens peanut-like 2 (Drosophila) (PNUTL2), transcript variant 1, mRNA	10.46 Down	3.48E-04
NM_005141	Homo sapiens fibrinogen, B beta polypeptide (FGB), mRNA	10.37 Down	4.85E-04
AI905628	CM-BT094-050299-147 BT094 Homo sapiens cDNA, mRNA sequence	10.36 Down	1.49E-04
BG622707	602647476F1 NIH_MGC_79 Homo sapiens cDNA clone IMAGE:4768963 5, mRNA sequence	10.35 Down	1.73E-04
W76003	zd58g07.r1 Soares_fetal_heart_NbHH19W Homo sapiens cDNA clone IMAGE:344892 5, mRNA sequence	10.32 Down	1.58E-04
H15096	ym29e11.r1 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGE:49250 5, mRNA sequence	10.23 Down	1.80E-04
AI493349	tg70f04.x1 Soares_NhHMPu_S1 Homo sapiens cDNA clone IMAGE:2114143 3, mRNA sequence	9.84 Down	7.54E-05
AK093762	Homo sapiens cDNA FLJ36443 fis, clone THYMU2012891	9.76 Down	8.07E-04
BU570253	AGENCOURT_10401698 NIH_MGC_82 Homo sapiens cDNA clone IMAGE:6618451 5, mRNA sequence	9.71 Down	3.65E-04
NM_005855	Homo sapiens receptor (calcitonin) activity modifying protein 1 (RAMP1), mRNA	9.33 Down	7.08E-05
NM_003328	Homo sapiens TXK tyrosine kinase	9.29 Down	1.19E-04

	(TXK), mRNA		
NM_003004	Homo sapiens secreted and transmembrane 1 (SECTM1), mRNA	9.23 Down	1.76E-04
NM_005596	Homo sapiens nuclear factor I/B (NFIB), mRNA	9.23 Down	4.97E-05
BC039450	Homo sapiens, clone IMAGE:5311619, mRNA	9.07 Down	1.13E-04
NM_005613	Homo sapiens regulator of G-protein signalling 4 (RGS4), mRNA	8.99 Down	7.65E-05
NM_003973	Homo sapiens ribosomal protein L14 (RPL14), mRNA	8.98 Down	6.60E-05
BM675270	UI-E-EJ0-ahr-j-07-0-UI.s1 UI-E-EJ0 Homo sapiens cDNA clone UI-E-EJ0-ahr-j-07-0-UI 3, mRNA sequence	8.96 Down	1.34E-03
NM_001311	Homo sapiens cysteine-rich protein 1 (intestinal) (CRIP1), mRNA	8.91 Down	7.14E-05
NM_000087	Homo sapiens cyclic nucleotide gated channel alpha 1 (CNGA1), mRNA	8.76 Down	1.33E-03
AW021686	df26h11.y1 Morton Fetal Cochlea Homo sapiens cDNA clone IMAGE:2484717 5, mRNA sequence	8.74 Down	4.04E-05
NM_002031	Homo sapiens fyn-related kinase (FRK), mRNA	8.67 Down	1.14E-04
NM_005279	Homo sapiens G protein-coupled receptor 1 (GPR1), mRNA	8.51 Down	4.16E-04
NM_004460	Homo sapiens fibroblast activation protein, alpha (FAP), mRNA	8.51 Down	7.71E-04
BE904671	601498784F1 NIH_MGC_70 Homo sapiens cDNA clone IMAGE:3900717 5, mRNA sequence	8.46 Down	1.73E-04
NM_000612	Homo sapiens insulin-like growth factor 2 (somatomedin A) (IGF2), mRNA	8.27 Down	1.19E-04
AL137488	Homo sapiens mRNA; cDNA DKFZp434N2030 (from clone DKFZp434N2030)	8.23 Down	1.13E-04
NM_006288	Homo sapiens Thy-1 cell surface antigen (THY1), mRNA	8.18 Down	1.43E-03

NM_002837	Homo sapiens protein tyrosine phosphatase, receptor type, B (PTPRB), mRNA	8.15 Down	1.19E-03
NM_030899	Homo sapiens zinc finger protein 323 (ZNF323), mRNA	8.08 Down	9.54E-05
NM_002193	Homo sapiens inhibin, beta B (activin AB beta polypeptide) (INHBB), mRNA	8.07 Down	1.90E-04
BX537698	Homo sapiens mRNA; cDNA DKFZp686F09166 (from clone DKFZp686F09166)	8.06 Down	1.34E-03
BC033567	Homo sapiens, clone IMAGE:4822266, mRNA	8.04 Down	1.88E-04
NM_052997	Homo sapiens ankyrin repeat domain 30A (ANKRD30A), mRNA	7.97 Down	1.42E-03
NM_178550	Homo sapiens hypothetical protein MGC48998 (MGC48998), mRNA	7.82 Down	5.76E-04
NM_178033	Homo sapiens cytochrome P450, family 4, subfamily X, polypeptide 1 (CYP4X1), mRNA	7.81 Down	8.00E-04
NM_002924	Homo sapiens regulator of G-protein signalling 7 (RGS7), mRNA	7.8 Down	5.38E-04
NM_012242	Homo sapiens dickkopf homolog 1 (Xenopus laevis) (DKK1), mRNA	7.77 Down	1.24E-04
AA740671	ob01h05.s1 NCI_CGAP_Kid3 Homo sapiens cDNA clone IMAGE:1322457 3, mRNA sequence	7.74 Down	2.22E-03
NM_005712	Homo sapiens HERV-H LTR-associating 1 (HHLA1), mRNA	7.67 Down	1.80E-04
BC040293	Homo sapiens, clone IMAGE:4820330, mRNA	7.65 Down	3.10E-04
NM_000089	Homo sapiens collagen, type I, alpha 2 (COL1A2), mRNA	7.64 Down	1.17E-03
NM_005654	Homo sapiens nuclear receptor subfamily 2, group F, member 1 (NR2F1), mRNA	7.63 Down	2.73E-04
BE465134	hv75e11.x1 NCI_CGAP_Lu24 Homo sapiens cDNA clone IMAGE:3179276 3,	7.53 Down	1.28E-03

	mRNA sequence		
NM_002522	Homo sapiens neuronal pentraxin I (NPTX1), mRNA	7.49 Down	6.53E-04
AK093529	Homo sapiens cDNA FLJ36210 fis, clone THYMU2000155	7.47 Down	1.18E-04
NM_003662	Homo sapiens pirin (iron-binding nuclear protein) (PIR), mRNA	7.29 Down	6.96E-05
NM_001769	Homo sapiens CD9 antigen (p24) (CD9), mRNA	7.23 Down	1.80E-04
AL359567	Homo sapiens mRNA; cDNA DKFZp547D023 (from clone DKFZp547D023)	7.21 Down	1.24E-04
BX647313	Homo sapiens mRNA; cDNA DKFZp686N1593 (from clone DKFZp686N1593)	7.19 Down	1.19E-04
NM_003979	Homo sapiens G protein-coupled receptor, family C, group 5, member A (GPCR5A), mRNA	7.18 Down	1.63E-03
AI365141	qx96e07.x1 NCI_CGAP_GC6 Homo sapiens cDNA clone IMAGE:2010372 3, mRNA sequence	7.04 Down	3.01E-04
CA948963	iq30f05.y1 HR85 islet Homo sapiens cDNA clone IMAGE: 5, mRNA sequence	7.03 Down	8.55E-04
NM_002977	Homo sapiens sodium channel, voltage-gated, type IX, alpha (SCN9A), mRNA	6.99 Down	5.83E-05
BC033124	Homo sapiens, clone IMAGE:2960615, mRNA	6.86 Down	6.60E-05
NM_003385	Homo sapiens visinin-like 1 (VSNL1), mRNA	6.73 Down	1.26E-04
NM_013262	Homo sapiens myosin regulatory light chain interacting protein (MYLIP), mRNA	6.65 Down	1.66E-04
NM_001843	Homo sapiens contactin 1 (CNTN1), transcript variant 1, mRNA	6.64 Down	3.37E-03
NM_006727	Homo sapiens cadherin 10, type 2 (T2-cadherin) (CDH10), mRNA	6.59 Down	1.91E-03
NM_016192	Homo sapiens transmembrane protein with EGF-like and two follistatin-like	6.58 Down	9.19E-05

	domains 2 (TMEFF2), mRNA		
NM_031847	Homo sapiens microtubule-associated protein 2 (MAP2), transcript variant 4, mRNA	6.57 Down	1.13E-03
CB115754	K-EST0159876 L8SCK0 Homo sapiens cDNA clone L8SCK0-8-H08 5, mRNA sequence	6.55 Down	8.55E-04
NM_025074	Homo sapiens Fraser syndrome 1 (FRAS1), transcript variant 1, mRNA	6.52 Down	4.97E-05
NM_016206	Homo sapiens colon carcinoma related protein (FLJ38507), mRNA	6.45 Down	5.30E-04
BC015159	Homo sapiens cDNA clone IMAGE:3885734, partial cds	6.35 Down	3.01E-04
NM_005613	Homo sapiens regulator of G-protein signalling 4 (RGS4), mRNA	6.33 Down	1.62E-03
W88428	zh72g09.s1 Soares_fetal_liver_spleen_1NFLS_S1 Homo sapiens cDNA clone IMAGE:417664 3, mRNA sequence	6.28 Down	7.53E-04
NM_058187	Homo sapiens chromosome 21 open reading frame 63 (C21orf63), mRNA	6.16 Down	5.39E-03
NM_020836	Homo sapiens brain-enriched guanylate kinase-associated protein (KIAA1446), mRNA	6.15 Down	3.75E-03
BX107838	BX107838 NCI_CGAP_Lu5 Homo sapiens cDNA clone IMAGp998A153853 ; IMAGE:1521686, mRNA sequence	6.14 Down	1.77E-03
NM_004496	Homo sapiens forkhead box A1 (FOXA1), mRNA	6.13 Down	1.94E-04
NM_021637	Homo sapiens transmembrane protein 35 (TMEM35), mRNA	6.1 Down	2.12E-03
NM_002521	Homo sapiens natriuretic peptide precursor B (NPPB), mRNA	6.1 Down	4.86E-04
BF431041	nab31g02.x1 Soares_NSF_F8_9W_OT_PA_P_S1 Homo sapiens cDNA clone IMAGE:3267627 3, mRNA sequence	6.08 Down	7.63E-05

NM_003713	Homo sapiens phosphatidic acid phosphatase type 2B (PPAP2B), transcript variant 1, mRNA	6.05 Down	6.44E-04
AV728294	AV728294 HTC Homo sapiens cDNA clone HTCBIE09 5, mRNA sequence	6.03 Down	7.71E-05
NM_002148	Homo sapiens homeo box D10 (HOXD10), mRNA	6.01 Down	7.14E-05
NM_176891	Homo sapiens interferon epsilon 1 (IFNE1), mRNA	6 Down	7.48E-04
NM_002317	Homo sapiens lysyl oxidase (LOX), mRNA	5.99 Down	3.17E-04
NM_016179	Homo sapiens transient receptor potential cation channel, subfamily C, member 4 (TRPC4), mRNA	5.99 Down	9.19E-05
AW134473	UI-H-BI1-abv-a-11-0-UI.s1 NCI_CGAP_Sub3 Homo sapiens cDNA clone IMAGE:2712885 3, mRNA sequence	5.98 Down	7.04E-05
NM_005130	Homo sapiens fibroblast growth factor binding protein 1 (FGFBP1), mRNA	5.95 Down	5.89E-04
AW512111	xx70e05.x1 NCI_CGAP_Lym12 Homo sapiens cDNA clone IMAGE:2849024 3 similar to contains Alu repetitive element;, mRNA sequence	5.93 Down	4.97E-05
NM_020349	Homo sapiens ankyrin repeat domain 2 (stretch responsive muscle) (ANKRD2), mRNA	5.91 Down	1.18E-04
NM_001083	Homo sapiens phosphodiesterase 5A, cGMP-specific (PDE5A), transcript variant 1, mRNA	5.88 Down	3.74E-03
H94320	yv18b10.s1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:243067 3, mRNA sequence	5.83 Down	3.18E-02
NM_032461	Homo sapiens SPANX family, member B1 (SPANXB1), mRNA	5.8 Down	1.08E-03
BM994473	UI-H-DH0-aul-l-18-0-UI.s1 NCI_CGAP_DH0 Homo sapiens cDNA	5.79 Down	1.10E-04

	clone IMAGE:5871137 3, mRNA sequence		
BE540906	601063027F1 NIH_MGC_10 Homo sapiens cDNA clone IMAGE:3449455 5, mRNA sequence	5.79 Down	4.45E-05
NM_033255	Homo sapiens epithelial stromal interaction 1 (breast) (EPSTI1), mRNA	5.75 Down	8.55E-04
BU616268	UI-H-DF0-bex-n-12-0-UI.s1 NCI_CGAP_DF0 Homo sapiens cDNA clone UI-H-DF0-bex-n-12-0-UI 3, mRNA sequence	5.73 Down	6.74E-04
BX112170	BX112170 Soares_fetal_heart_NbHH19W Homo sapiens cDNA clone IMAGp998O07742 ; IMAGE:327390, mRNA sequence	5.73 Down	7.32E-04
BC015108	Homo sapiens, Similar to otoconin 90, clone IMAGE:4044247, mRNA	5.72 Down	2.40E-03
NM_000576	Homo sapiens interleukin 1, beta (IL1B), mRNA	5.7 Down	2.97E-03
AW470868	ha34h03.x1 NCI_CGAP_Kid12 Homo sapiens cDNA clone IMAGE:2875637 3, mRNA sequence	5.7 Down	2.31E-03
AK093069	Homo sapiens cDNA FLJ35750 fis, clone TESTI2004539, weakly similar to Homo sapiens adlican mRNA	5.7 Down	1.11E-03
NM_032330	Homo sapiens calpain, small subunit 2 (CAPNS2), mRNA	5.68 Down	4.44E-03
U51694	HSU51694 Human normal gingiva Homo sapiens cDNA, mRNA sequence	5.62 Down	1.02E-04
NM_004335	Homo sapiens bone marrow stromal cell antigen 2 (BST2), mRNA	5.61 Down	2.84E-03
BF431460	7o14b05.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:3573849 3, mRNA sequence	5.59 Down	7.53E-04
BC046362	Homo sapiens voltage-dependent calcium channel gamma subunit-like protein, mRNA (cDNA clone MGC:50757	5.59 Down	8.07E-04

	IMAGE:5221396), complete cds		
NM_000961	Homo sapiens prostaglandin I2 (prostacyclin) synthase (PTGIS), mRNA	5.57 Down	1.01E-03
AK022877	Homo sapiens cDNA FLJ12815 fis, clone NT2RP2002546	5.56 Down	4.04E-05
NM_002277	Homo sapiens keratin, hair, acidic, 1 (KRTHA1), mRNA	5.51 Down	3.04E-04
AK092245	Homo sapiens cDNA FLJ34926 fis, clone NT2RP7003319, highly similar to Mus musculus neuralin mRNA	5.49 Down	1.40E-03
NM_002427	Homo sapiens matrix metalloproteinase 13 (collagenase 3) (MMP13), mRNA	5.47 Down	4.45E-04
BM991890	UI-H-DF1-auk-h-02-0-UI.s1 NCI_CGAP_DF1 Homo sapiens cDNA clone IMAGE:5870641 3, mRNA sequence	5.39 Down	7.53E-04
NM_002575	Homo sapiens serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 2 (SERPINB2), mRNA	5.39 Down	9.60E-03
NM_000782	Homo sapiens cytochrome P450, family 24, subfamily A, polypeptide 1 (CYP24A1), nuclear gene encoding mitochondrial protein, mRNA	5.36 Down	1.31E-02
NM_016276	Homo sapiens serum/glucocorticoid regulated kinase 2 (SGK2), transcript variant 2, mRNA	5.34 Down	6.73E-04
AK024689	Homo sapiens cDNA: FLJ21036 fis, clone CAE09578	5.32 Down	1.36E-04
N78829	zb17a05.s1 Soares_fetal_lung_NbHL19W Homo sapiens cDNA clone IMAGE:302288 3, mRNA sequence	5.31 Down	6.00E-03
AL080103	Homo sapiens mRNA; cDNA DKFZp564N2216 (from clone DKFZp564N2216)	5.26 Down	1.61E-04
BC035400	Homo sapiens, clone IMAGE:4822830, mRNA	5.17 Down	1.13E-02

AK056725	Homo sapiens cDNA FLJ32163 fis, clone PLACE6000371	5.13 Down	3.72E-04
AK025595	Homo sapiens cDNA: FLJ21942 fis, clone HEP04527	5.12 Down	1.56E-02
NM_015236	Homo sapiens latrophilin 3 (LPHN3), mRNA	5.11 Down	3.14E-04
NM_012411	Homo sapiens protein tyrosine phosphatase, non-receptor type 22 (lymphoid) (PTPN22), transcript variant 2, mRNA	5.1 Down	2.78E-03
AI190760	qd61c05.x1 Soares_testis_NHT Homo sapiens cDNA clone IMAGE:1733960 3, mRNA sequence	5.08 Down	2.24E-03
NM_139241	Homo sapiens FYVE, RhoGEF and PH domain containing 4 (FGD4), mRNA	5.04 Down	6.92E-03
NM_033066	Homo sapiens membrane protein, palmitoylated 4 (MAGUK p55 subfamily member 4) (MPP4), mRNA	5.04 Down	7.11E-03
BG573337	602595107F1 NIH_MGC_79 Homo sapiens cDNA clone IMAGE:4724521 5, mRNA sequence	5.03 Down	5.60E-03
AA158235	zo76b02.s1 Stratagene pancreas (#937208) Homo sapiens cDNA clone IMAGE:592779 3, mRNA sequence	5.01 Down	7.10E-03
BX092004	BX092004 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGp998B195924 ; IMAGE:2385330, mRNA sequence	5.01 Down	1.69E-02
AK058040	Homo sapiens cDNA FLJ25311 fis, clone SYN01066	5 Down	1.76E-03

TABLE VII D: GENES THAT WERE DIFFERENTIALLY EXPRESSED AT LEAST 5 FOLD IN AF-I VERSUS AF-I AT TERM CELLS

Gene Identifier	Gene Name	Average fold change in AF cells isolated from 2nd trimester amniotic fluid versus AF cells islolated at term	Direction	adj. p-value
NM_006228	Homo sapiens prepronociceptin (PNOC), mRNA	64.08	UP	1.14E-04
NM_006439	Homo sapiens mab-21-like 2 (C. elegans) (MAB21L2), mRNA	47.74	UP	1.03E-04
AK092245	Homo sapiens cDNA FLJ34926 fis, clone NT2RP7003319, highly similar to Mus musculus neuralin mRNA	44.83	UP	8.97E-05
AK056431	Homo sapiens cDNA FLJ31869 fis, clone NT2RP7002151	35.22	UP	5.97E-05
NM_015170	Homo sapiens sulfatase 1 (SULF1), mRNA	30.43	UP	1.53E-04
NM_001884	Homo sapiens hyaluronan and proteoglycan link protein 1 (HAPLN1), mRNA	27.82	UP	3.92E-05
NM_002487	Homo sapiens necdin homolog (mouse) (NDN), mRNA	25.93	UP	2.07E-04
BC037316	Homo sapiens, clone IMAGE:5259432, mRNA	25.16	UP	5.97E-05

	Homo sapiens leucine rich repeat neuronal 1	24.74 UP	6.46E-05
NM_020873	(LRRN1), mRNA		
H89053	yw24c06.r1 Morton Fetal Cochlea Homo sapiens cDNA clone IMAGE:253162 5, mRNA sequence	23.95 UP	6.63E-05
	Homo sapiens homeo box D10 (HOXD10),	20.48 UP	8.97E-05
NM_002148	mRNA		
	Homo sapiens dickkopf homolog 2 (Xenopus	20.41 UP	6.46E-05
NM_014421	laevis) (DKK2), mRNA		
	Homo sapiens TP53TG3 protein (TP53TG3),	20.08 UP	5.97E-05
NM_016212	mRNA		
	Homo sapiens serine-arginine repressor protein	19.58 UP	6.46E-05
NM_080743	(35 kDa) (SRrp35), mRNA		
	Homo sapiens glycine dehydrogenase	18.22 UP	9.61E-05
NM_000170	(decarboxylating; glycine decarboxylase, glycine cleavage system protein P) (GLDC), mRNA		
	Homo sapiens mRNA; cDNA DKFZp686N1593	17.47 UP	6.46E-05
BX647313	(from clone DKFZp686N1593)		
	Homo sapiens nidogen 2 (osteonidogen)	17.41 UP	9.75E-05
NM_007361	(NID2), mRNA		
	Homo sapiens HERV-H LTR-associating 2	16.06 UP	9.61E-05
NM_007072	(HHLA2), mRNA		
	Homo sapiens carnitine palmitoyltransferase 1C	15.65 UP	2.26E-04
NM_152359	(CPT1C), mRNA		
	Homo sapiens retinol binding protein 1, cellular	15.47 UP	1.40E-04
NM_002899	(RBP1), mRNA		
	Homo sapiens interferon, gamma-inducible	15.18 UP	1.67E-04

NM_0055 31	protein 16 (IFI16), mRNA		
	Homo sapiens homeo box D11 (HOXD11),	15.05 UP	1.11E-04
NM_0211 92	mRNA		
	Homo sapiens paired related homeobox 2	14.33 UP	5.97E-05
NM_0163 07	(PRRX2), mRNA		
	nx13b02.s1 NCI_CGAP_GC3 Homo sapiens	14.27 UP	1.64E-05
AA738254	cDNA clone IMAGE:1255947 3, mRNA sequence		
	601475864F1 NIH_MGC_68 Homo sapiens	14.17 UP	3.92E-05
BE788763	cDNA clone IMAGE:3879014 5, mRNA sequence		
	Homo sapiens cytoplasmic polyadenylation	14.01 UP	1.40E-04
NM_0306 27	element binding protein 4 (CPEB4), mRNA		
	BX113319 NCI_CGAP_Gas4 Homo sapiens	13.62 UP	5.09E-05
BX113319	cDNA clone IMAGp998G205398 ; IMAGE:2184619, mRNA sequence		
	Homo sapiens Fraser syndrome 1 (FRAS1),	13.55 UP	5.09E-05
NM_0250 74	transcript variant 1, mRNA		
	Homo sapiens cysteine-rich protein 1	13 UP	8.97E-05
NM_0013 11	(intestinal) (CRIP1), mRNA		
	Homo sapiens hypothetical protein BC008217	12.64 UP	2.09E-04
NM_1383 94	(LOC92906), mRNA		
	7o11d09.x1 NCI_CGAP_Kid11 Homo sapiens	12.04 UP	1.10E-04
BF431313	cDNA clone IMAGE:3573928 3, mRNA sequence		
	Homo sapiens decorin (DCN), transcript variant	11.74 UP	2.01E-04
NM_1335 04	B, mRNA		
	AGENCOURT_10398872 NIH_MGC_82 Homo	11.67 UP	5.09E-05
BU567804	sapiens cDNA clone IMAGE:6614502 5, mRNA		

	sequence		
	UI-H-DH0-aur-k-12-0-UI.s1 NCI_CGAP_DH0	10.89 UP	4.99E-05
CA437861	Homo sapiens cDNA clone UI-H-DH0-aur-k-12-0-UI 3, mRNA sequence		
	nab31g02.x1	10.78 UP	3.92E-05
BF431041	Soares_NSF_F8_9W_OT_PA_P_S1 Homo sapiens cDNA clone IMAGE:3267627 3, mRNA sequence		
	Homo sapiens neuropilin (NRP) and tolloid	10.4 UP	8.97E-05
NM_138966	(TLL)-like 1 (NETO1), transcript variant 3, mRNA		
	UI-H-FL1-bgt-n-07-0-UI.s1 NCI_CGAP_FL1	10.32 UP	6.63E-05
BU633163	Homo sapiens cDNA clone UI-H-FL1-bgt-n-07-0-UI 3, mRNA sequence		
M60502	Human profilaggrin mRNA, 3 end	10.26 UP	1.40E-04
	Homo sapiens armadillo repeat containing, X-	9.9 UP	1.62E-04
NM_177949	linked 2 (ARMCX2), mRNA		
	602647476F1 NIH_MGC_79 Homo sapiens	9.78 UP	1.24E-04
BG622707	cDNA clone IMAGE:4768963 5, mRNA sequence		
	Homo sapiens mRNA; cDNA DKFZp434A2029	9.75 UP	1.34E-04
AL834140	(from clone DKFZp434A2029)		
	Homo sapiens phospholipid scramblase 4	9.71 UP	8.97E-05
NM_020353	(PLSCR4), mRNA		
AI905628	CM-BT094-050299-147 BT094 Homo sapiens cDNA, mRNA sequence	9.65 UP	1.03E-04
	Homo sapiens HERV-H LTR-associating 1	9.52 UP	1.10E-04
NM_005712	(HHLA1), mRNA		
	Homo sapiens TXK tyrosine kinase (TXK),	9.49 UP	2.35E-04
NM_003328	mRNA		
	Homo sapiens cDNA FLJ38254 fis, clone	9.39 UP	3.92E-05
AK095573	FCBBF3000847		
	Homo sapiens ribosomal protein L14 (RPL14),	9.37 UP	9.74E-05

NM_0039	mRNA		
73			
	Homo sapiens mRNA; cDNA DKFZp434C1915	9.32 UP	1.48E-03
AL137698	(from clone DKFZp434C1915); partial cds		
	Homo sapiens F-box protein 9 (FBXO9),	9.29 UP	1.40E-04
NM_0334	transcript variant 2, mRNA		
80			
	Homo sapiens neuritin 1 (NRN1), mRNA	9.16 UP	4.09E-04
NM_0165			
88			
	Homo sapiens cDNA FLJ45377 fis, clone	9 UP	4.86E-04
AK127309	BRHIP3019956		
	Homo sapiens FLJ44048 protein (FLJ44048),	8.93 UP	4.37E-04
NM_2074	mRNA		
82			
	hx89g05.x1 NCI_CGAP_Kid11 Homo sapiens	8.92 UP	6.16E-04
BE464407	cDNA clone IMAGE:3195032 3, mRNA		
	sequence		
	Homo sapiens cytochrome P450, family 4,	8.59 UP	1.35E-04
NM_1780	subfamily X, polypeptide 1 (CYP4X1), mRNA		
33			
	Homo sapiens collagen, type XI, alpha 1	8.58 UP	4.86E-04
NM_0018	(COL11A1), transcript variant A, mRNA		
54			
	Homo sapiens fibrinogen, B beta polypeptide	8.52 UP	5.39E-04
NM_0051	(FGB), mRNA		
41			
	Homo sapiens SRY (sex determining region Y)-	8.52 UP	6.46E-05
NM_0224	box 17 (SOX17), mRNA		
54			
AI651524	wb06g07.x1 NCI_CGAP_GC6 Homo sapiens	8.5 UP	3.47E-04
	cDNA clone IMAGE:2304924 3, mRNA		
	sequence		
AI288404	qv89b01.x1 NCI_CGAP_Ut2 Homo sapiens	8.22 UP	3.47E-04
	cDNA clone IMAGE:1988713 3, mRNA		
	sequence		
	Homo sapiens mRNA full length insert cDNA	8.12 UP	1.82E-04

AL359058	clone EUROIMAGE 592473		
	Homo sapiens matrix metalloproteinase 13	7.92 UP	2.93E-04
NM_0024	(collagenase 3) (MMP13), mRNA		
27			
	AJ318805 Homo sapiens adipose tissue Homo	7.91 UP	1.03E-04
AJ318805	sapiens cDNA clone 2040, mRNA sequence		
	Homo sapiens, clone IMAGE:2960615, mRNA	7.83 UP	6.63E-05
BC033124			
BI561641	603256058F1 NIH_MGC_97 Homo sapiens	7.82 UP	1.18E-03
	cDNA clone IMAGE:5298374 5, mRNA		
	sequence		
	Homo sapiens cDNA FLJ30398 fis, clone	7.67 UP	1.12E-03
AK054960	BRACE2008402, highly similar to Homo		
	sapiens steroid receptor RNA activator isoform		
	3 mRNA		
	Homo sapiens zinc finger protein 42 (ZFP42),	7.64 UP	1.40E-04
NM_1749	mRNA		
00			
	Homo sapiens acid phosphatase 1, soluble	7.6 UP	1.36E-03
NM_0070	(ACP1), transcript variant 2, mRNA		
99			
	Homo sapiens, Similar to otoconin 90, clone	7.54 UP	6.63E-05
BC015108	IMAGE:4044247, mRNA		
AI640484	wa27f01.x1 NCI_CGAP_Kid11 Homo sapiens	7.49 UP	1.03E-03
	cDNA clone IMAGE:2299321 3, mRNA		
	sequence		
	Homo sapiens cDNA FLJ10237 fis, clone	7.49 UP	9.13E-04
AK001099	HEMBB1000438		
	Homo sapiens mRNA for KIAA1211 protein,	7.34 UP	7.16E-05
AB033037	partial cds		
	Homo sapiens, clone IMAGE:4822266, mRNA	7.29 UP	1.67E-04
BC033567			
	Homo sapiens autocrine motility factor receptor	7.23 UP	3.06E-04
NM_0011	(AMFR), transcript variant 1, mRNA		
44			
AI792194	ov03c02.y5 NCI_CGAP_Kid3 Homo sapiens	7.23 UP	4.37E-04
	cDNA clone IMAGE:1636226 5, mRNA		

	sequence		
AI939297	oy50g08.x5 NCI_CGAP_Brn23 Homo sapiens cDNA clone IMAGE:1669310 3, mRNA sequence	7.21 UP	1.87E-04
	UI-H-BW1-amf-c-08-0-UI.s1 NCI_CGAP_Sub7	7.17 UP	8.19E-05
BF512544	Homo sapiens cDNA clone IMAGE:3069687 3, mRNA sequence		
	Homo sapiens nuclear receptor subfamily 2,	7.09 UP	6.63E-05
NM_0056	group F, member 1 (NR2F1), mRNA		
54			
H94320	yv18b10.s1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:243067 3, mRNA sequence	6.65 UP	2.20E-03
	Homo sapiens growth differentiation factor 5	6.5 UP	1.74E-03
NM_0005	(cartilage-derived morphogenetic protein-1)		
57	(GDF5), mRNA		
H15096	ym29e11.r1 Soares infant brain 1NIB Homo sapiens cDNA clone IMAGE:49250 5, mRNA sequence	6.48 UP	5.09E-05
	Homo sapiens neuro-oncological ventral	6.25 UP	5.77E-05
NM_0025	antigen 1 (NOVA1), transcript variant 1, mRNA		
15			
	Homo sapiens fibroblast growth factor binding	6.13 UP	1.03E-04
NM_0051	protein 1 (FGFBP1), mRNA		
30			
	UI-E-EJ0-ahr-j-07-0-UI.s1 UI-E-EJ0 Homo	6.1 UP	1.23E-03
BM67527	sapiens cDNA clone UI-E-EJ0-ahr-j-07-0-UI 3,		
0	mRNA sequence		
	xv51e10.x1 NCI_CGAP_Lu28 Homo sapiens	6.09 UP	1.09E-04
AW26854	cDNA clone IMAGE:2816682 3, mRNA		
0	sequence		
	Homo sapiens cathepsin H (CTSH), transcript	6.03 UP	1.03E-04
NM_0043	variant 1, mRNA		
90			
	AGENCOURT_6432296 NIH_MGC_71 Homo	5.97 UP	7.63E-05
BM46833	sapiens cDNA clone IMAGE:5535773 5, mRNA		
2	sequence		

	Homo sapiens ankyrin repeat domain 30A	5.87 UP	3.09E-03
NM_0529	(ANKRD30A), mRNA		
97			
	Homo sapiens cDNA FLJ41325 fis, clone	5.81 UP	3.81E-04
AK123319	BRAMY2046871		
	Homo sapiens Kruppel-like factor 4 (gut)	5.77 UP	1.81E-04
NM_0042	(KLF4), mRNA		
35			
	Homo sapiens cDNA clone IMAGE:5295023,	5.76 UP	2.39E-03
BC042976	partial cds		
	ob01h05.s1 NCI_CGAP_Kid3 Homo sapiens	5.61 UP	3.06E-03
AA740671	cDNA clone IMAGE:1322457 3, mRNA		
	sequence		
	Homo sapiens cyclic nucleotide gated channel	5.53 UP	2.39E-03
NM_0000	alpha 1 (CNGA1), mRNA		
87			
	Homo sapiens brain expressed, X-linked 1	5.52 UP	1.07E-03
NM_0184	(BEX1), mRNA		
76			
	BX107838 NCI_CGAP_Lu5 Homo sapiens	5.41 UP	2.69E-03
BX107838	cDNA clone IMAGp998A153853 ;		
	IMAGE:1521686, mRNA sequence		
	Homo sapiens similar to CG3714 gene product	5.36 UP	5.77E-05
NM_1452	(PP3856), mRNA		
01			
	Homo sapiens single-minded homolog 2	5.34 UP	7.88E-05
NM_0050	(Drosophila) (SIM2), transcript variant SIM2,		
69	mRNA		
	Homo sapiens dehydrogenase/reductase (SDR	5.32 UP	4.71E-04
NM_0047	family) member 3 (DHRS3), mRNA		
53			
	Homo sapiens limbic system-associated	5.32 UP	6.88E-04
NM_0023	membrane protein (LSAMP), mRNA		
38			
	Homo sapiens solute carrier family 38, member	5.28 UP	3.14E-03
NM_0335	5 (SLC38A5), mRNA		
18			

	BX117317 NCI_CGAP_Co3 Homo sapiens	5.22 UP	1.36E-03
BX117317	cDNA clone IMAGp998E242234 ;		
	IMAGE:900095, mRNA sequence		
	K-EST0159876 L8SCK0 Homo sapiens cDNA	5.21 UP	1.22E-03
CB115754	clone L8SCK0-8-H08 5, mRNA sequence		
	Homo sapiens mRNA; cDNA DKFZp547D023	5.18 UP	5.41E-04
AL359567	(from clone DKFZp547D023)		
	Homo sapiens phospholipid scramblase 4	5.13 UP	1.36E-03
NM_0203	(PLSCR4), mRNA		
53			
	Homo sapiens neuro-oncological ventral	5.12 UP	9.13E-04
NM_0025	antigen 1 (NOVA1), transcript variant 1, mRNA		
15			
U51694	HSU51694 Human normal gingiva Homo	5.11 UP	1.10E-04
	sapiens cDNA, mRNA sequence		
	Homo sapiens IGF-II mRNA-binding protein 1	5.1 UP	2.50E-03
NM_0065	(IMP-1), mRNA		
46			
	602595107F1 NIH_MGC_79 Homo sapiens	5.1 UP	5.54E-03
BG57333	cDNA clone IMAGE:4724521 5, mRNA		
7	sequence		
	Homo sapiens cadherin 10, type 2 (T2-	5.01 UP	3.47E-03
NM_0067	cadherin) (CDH10), mRNA		
27			
	Homo sapiens C-type (calcium dependent,	36.05 Down	3.68E-04
NM_0143	carbohydrate-recognition domain) lectin,		
58	superfamily member 9 (CLECSF9), mRNA		
	Homo sapiens keratin, hair, acidic, 4 (KRTHA4),	33.84 Down	9.33E-04
NM_0210	mRNA		
13			
	UI-H-DH0-asd-f-10-0-UI.s1 NCI_CGAP_DH0	31.23 Down	4.43E-03
BM98833	Homo sapiens cDNA clone IMAGE:5857545 3,		
8	mRNA sequence		
	Homo sapiens, clone IMAGE:5271073, mRNA,	25.01 Down	1.51E-03
BC039369	partial cds		
	601486331F1 NIH_MGC_69 Homo sapiens	24.69 Down	5.74E-03
BE877764	cDNA clone IMAGE:3888943 5, mRNA		

	sequence		
	xs45a09.x1 NCI_CGAP_Kid11 Homo sapiens	21.86 Down	1.45E-02
AW30004	cDNA clone IMAGE:2772568 3, mRNA		
3	sequence		
	UI-1-BB1p-aye-f-10-0-UI.s1 NCI_CGAP_Pl6	20.35 Down	7.39E-03
BQ02582	Homo sapiens cDNA clone UI-1-BB1p-aye-f-10-		
1	0-UI 3, mRNA sequence		
	UI-H-EI1-azd-p-06-0-UI.s1 NCI_CGAP_EI1	19.16 Down	9.49E-04
BQ00350	Homo sapiens cDNA clone IMAGE:5847413 3,		
1	mRNA sequence		
	Homo sapiens ubiquinol-cytochrome c	18.22 Down	1.43E-04
NM_0133	reductase complex (7.2 kD) (HSPC051),		
87	transcript variant 1, mRNA		
	cs13a10.x1 Human Retinal pigment	17.83 Down	3.92E-05
CA391258	epithelium/choroid cDNA (Un-normalized,		
	unamplified): cs Homo sapiens cDNA clone		
	cs13a10 3, mRNA sequence		
	AV702977 ADB Homo sapiens cDNA clone	17.04 Down	1.41E-02
AV702977	ADBCVD08 5, mRNA sequence		
	Homo sapiens putative lymphocyte G0/G1	15.4 Down	9.27E-03
NM_0157	switch gene (G0S2), mRNA		
14			
H85497	yv88b07.r1 Soares melanocyte 2NbHM Homo	14.88 Down	1.03E-04
	sapiens cDNA clone IMAGE:249781 5, mRNA		
	sequence		
	Homo sapiens renal tumor antigen (RAGE),	14.77 Down	2.43E-03
NM_0142	mRNA		
26			
	Homo sapiens cDNA FLJ13585 fis, clone	14.09 Down	1.22E-03
AK023647	PLACE1009150		
	Homo sapiens cDNA FLJ46426 fis, clone	12.83 Down	2.34E-02
AK128288	THYMU3013897		
	Homo sapiens NACHT, leucine rich repeat and	12.69 Down	1.36E-03
NM_0178	PYD containing 2 (NALP2), mRNA		
52			
	Homo sapiens iroquois homeobox protein 3	12.29 Down	1.29E-02
NM_0243	(IRX3), mRNA		

36			
	Homo sapiens chemokine (C-C motif) ligand 20	11.11 Down	3.13E-02
NM_0045	(CCL20), mRNA		
91			
	UI-H-BW1-anu-e-05-0-UI.s1 NCI_CGAP_Sub7	11.02 Down	1.26E-02
BF515657	Homo sapiens cDNA clone IMAGE:3083601 3,		
	mRNA sequence		
W69644	zd45f10.r1 Soares_fetal_heart_NbHH19W	10.54 Down	8.66E-03
	Homo sapiens cDNA clone IMAGE:343627 5,		
	mRNA sequence		
	Homo sapiens mRNA; cDNA DKFZp762I0915	9.98 Down	1.94E-03
AL832916	(from clone DKFZp762I0915)		
	Homo sapiens RAS guanyl releasing protein 1	9.82 Down	3.85E-03
NM_0057	(calcium and DAG-regulated) (RASGRP1),		
39	mRNA		
	7h15g04.x1 NCI_CGAP_Co16 Homo sapiens	9.64 Down	1.78E-02
BF000009	cDNA clone IMAGE:3316086 3, mRNA		
	sequence		
	Homo sapiens beta-site APP-cleaving enzyme	9.3 Down	1.50E-04
NM_0121	2 (BACE2), transcript variant a, mRNA		
05			
	AGENCOURT_10399817 NIH_MGC_82 Homo	9.27 Down	3.61E-02
BU569937	sapiens cDNA clone IMAGE:6618011 5, mRNA		
	sequence		
	Homo sapiens hepatitis A virus cellular receptor	8.92 Down	6.61E-03
NM_0327	2 (HAVCR2), mRNA		
82			
	Homo sapiens normal mucosa of esophagus	8.82 Down	4.10E-03
NM_1979	specific 1 (NMES1), transcript variant 1, mRNA		
55			
	Homo sapiens tumor necrosis factor (ligand)	8.08 Down	2.84E-04
NM_0038	superfamily, member 10 (TNFSF10), mRNA		
10			
	Homo sapiens NADH dehydrogenase	7.99 Down	1.59E-02
NM_0142	(ubiquinone) 1 alpha subcomplex, 8, 19kDa		
22	(NDUFA8), nuclear gene encoding		
	mitochondrial protein, mRNA		

NM_019119	Homo sapiens protocadherin beta 9 (PCDHB9), mRNA	7.85 Down	7.39E-03
NM_014867	Homo sapiens KIAA0711 gene product (KIAA0711), mRNA	6.89 Down	9.61E-05
BF509573	UI-H-BI4-apf-b-11-0-UI.s1 NCI_CGAP_Sub8 Homo sapiens cDNA clone IMAGE:3086949 3, mRNA sequence	6.85 Down	8.97E-05
BQ012774	UI-1-BC1p-auz-h-01-0-UI.s1 NCI_CGAP_PI3 Homo sapiens cDNA clone UI-1-BC1p-auz-h-01-0-UI 3, mRNA sequence	6.44 Down	5.30E-02
NM_018836	Homo sapiens transmembrane protein SHREW1 (SHREW1), mRNA	6.32 Down	2.36E-02
AW139066	UI-H-BI1-adz-d-02-0-UI.s1 NCI_CGAP_Sub3 Homo sapiens cDNA clone IMAGE:2718387 3, mRNA sequence	6.28 Down	1.03E-04
NM_018076	Homo sapiens armadillo repeat containing 4 (ARMC4), mRNA	6.17 Down	2.20E-03
BI759570	603046987F1 NIH_MGC_116 Homo sapiens cDNA clone IMAGE:5187285 5, mRNA sequence	6.03 Down	5.06E-02
NM_004496	Homo sapiens forkhead box A1 (FOXA1), mRNA	5.79 Down	1.03E-04
NM_004473	Homo sapiens forkhead box E1 (thyroid transcription factor 2) (FOXE1), mRNA	5.48 Down	6.27E-05
NM_182920	Homo sapiens a disintegrin-like and metalloprotease (reprolysin type) with thrombospondin type 1 motif, 9 (ADAMTS9), transcript variant 1, mRNA	5.35 Down	1.87E-04
AI830524	wh52c02.x1 NCI_CGAP_Kid11 Homo sapiens cDNA clone IMAGE:2384354 3, mRNA sequence	5.34 Down	3.42E-02

DEMANDES OU BREVETS VOLUMINEUX

LA PRÉSENTE PARTIE DE CETTE DEMANDE OU CE BREVETS COMPREND PLUS D'UN TOME.

CECI EST LE TOME 1 DE 2

NOTE: Pour les tomes additionels, veillez contacter le Bureau Canadien des Brevets.

02547845

JUMBO APPLICATIONS / PATENTS

THIS SECTION OF THE APPLICATION / PATENT CONTAINS MORE THAN ONE VOLUME.

THIS IS VOLUME 1 OF 2

NOTE: For additional volumes please contact the Canadian Patent Office.

CLAIMS:

1. A substantially pure population of cells obtained from amniotic fluid, wherein said cells are:

negative for the expression of the CD117 and Oct-4 protein markers, and

positive for the expression of GATA-6 and SSEA-4,

wherein the cells are negative for a factor when the factor is not present or expressed in at least 70% of the cell population, and the cells are positive for a factor when the factor is present or expressed in at least 50% of the cell population.

2. The population of cells according to claim 1, wherein said cells are positive for the expression of SOX-17

3. The population of cells according to claim 1, wherein said cells are positive in the expression of cytokeratin.

4. The population of cells according to claim 1, wherein said cells are positive for the expression of SOX-17 and cytokeratin.

5. The population of cells according to claim 4, wherein said cells are positive for the expression of the HNF-1 beta and HNF-3 beta protein markers.

6. The population of cells according to claim 1, wherein said cells do not express the markers HNF-3 beta and GATA-4.

7. The population of cells according to claim 6, wherein said cells do not express any of the markers of HNF-3 beta, GATA-4 and Tra2-54.

8. The population of cells according to claim 3, wherein said cells do not express the markers HNF-3 beta and GATA-4.

9. The population of cells according to claim 8, wherein said cells do not express the markers HNF-3 beta, GATA-4 and Tra2-54.

10. The population of cells according to any one of claims 1 to 9, wherein said cells are substantially positive for the expression of the HES-1 gene.

11. The population of cells according to any one of claims 1 to 10, capable of propagating in vitro.

12. The population of cells according to any one of claims 1 to 11, capable of propagating in vitro under hypoxic conditions.

13. The population of cells according to any one of claims 1 to 12, capable of differentiating into a gut hormone-producing cell.

14. A population of cells as defined in any one of claims 1 to 13, for use in treating a patient with diabetes mellitus or at risk of developing diabetes.

15. In vitro use of the population of cells according to any one of claims 1 to 13, in a method wherein the cells of said population are differentiated into pancreatic hormone producing cells.

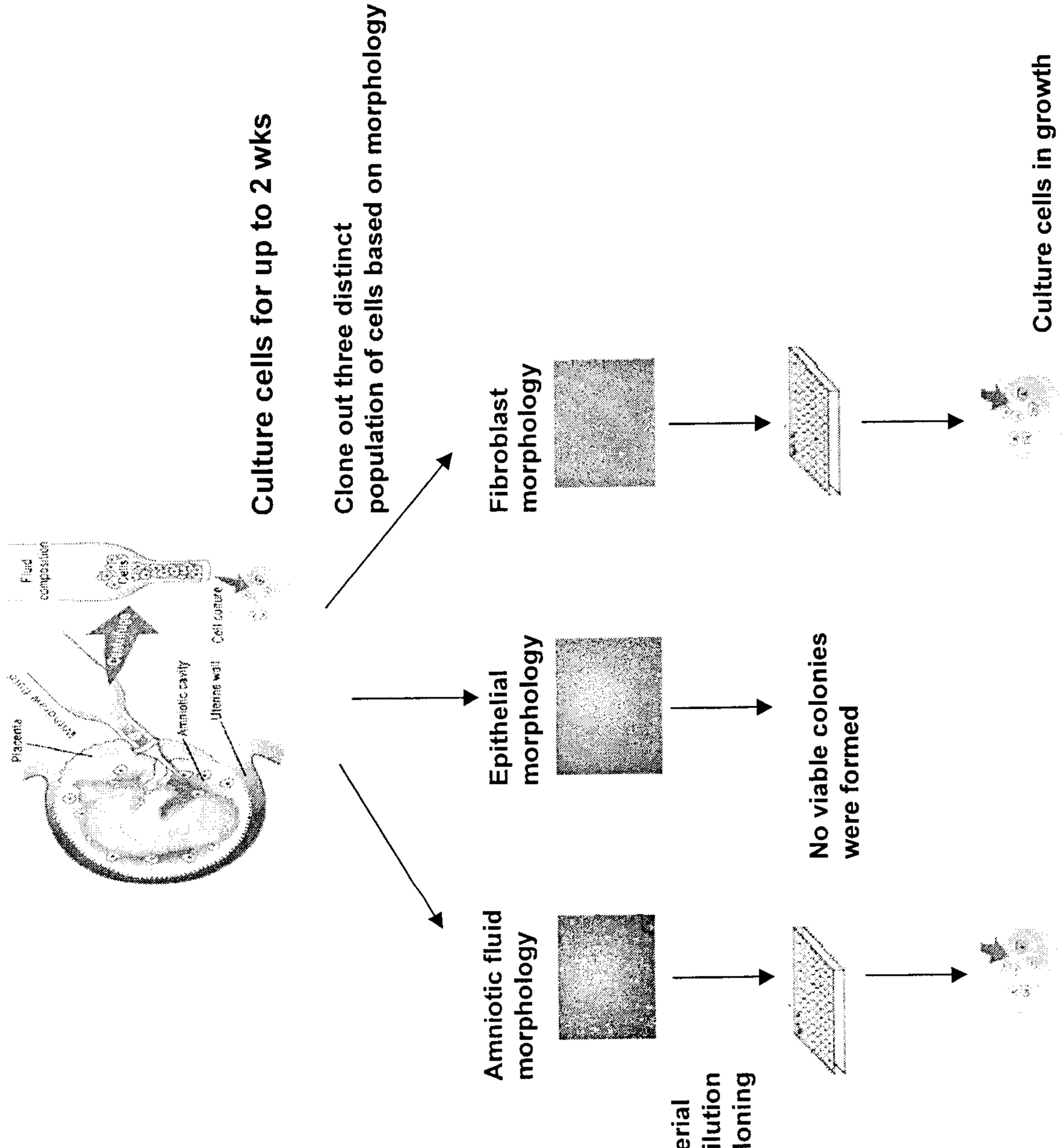
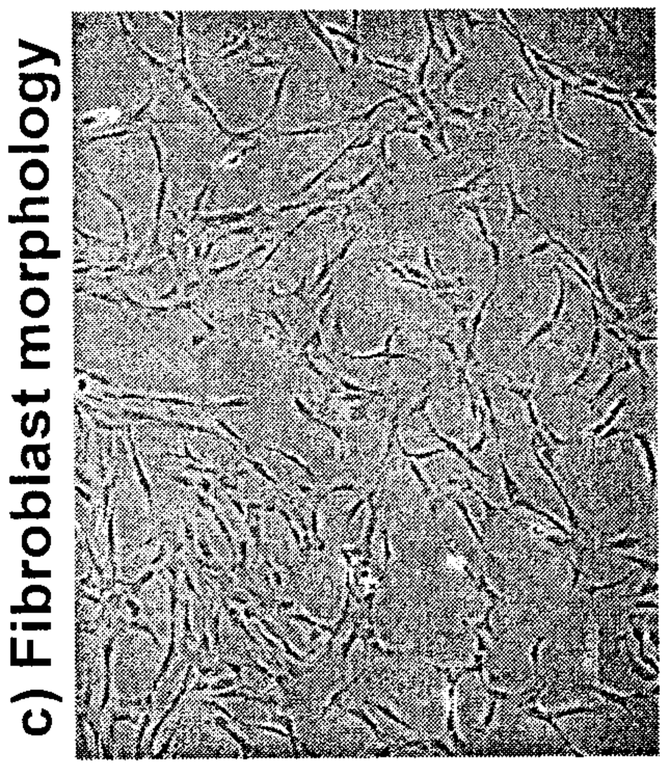
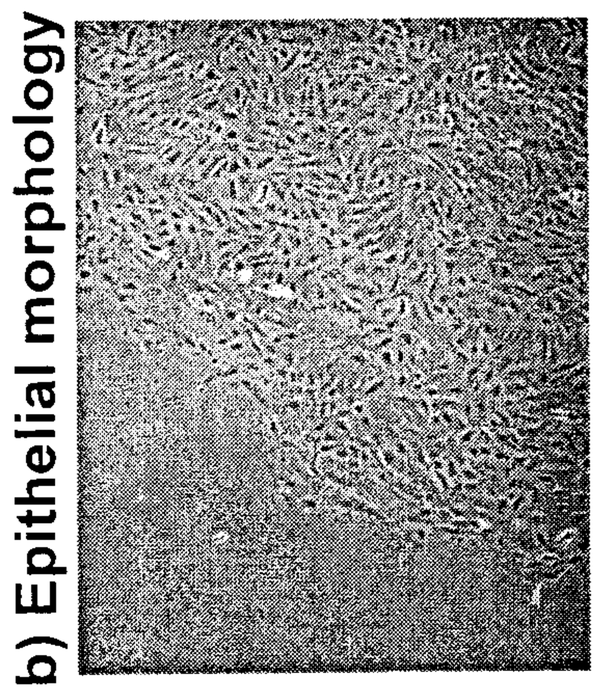

Culture cells for up to 2 wks
Clone out three distinct population of cells based on morphology
Fibroblast morphology
Culture cells in growth media
Epithelial morphology
No viable colonies were formed
Amniotic fluid morphology
Serial Dilution Cloning
Placenta
Amniotic cavity
Uterine wall
Cell culture

Figure 1


c) Fibroblast morphology


b) Epithelial morphology

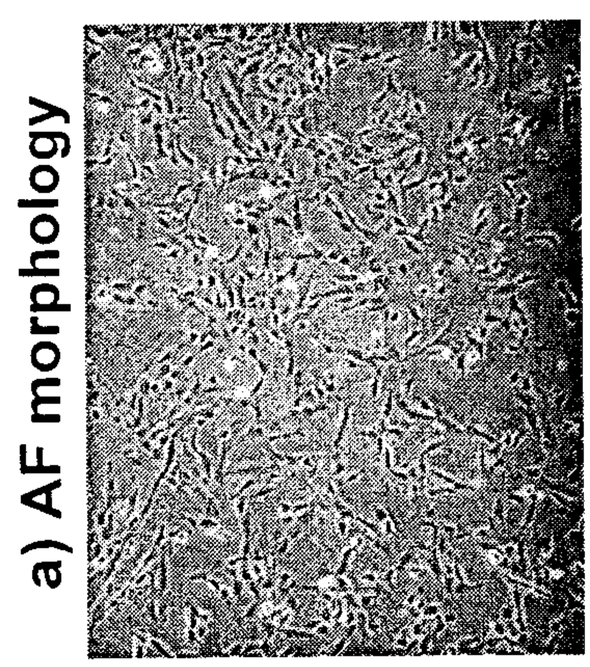

a) AF morphology

Figure 2

Figure 3

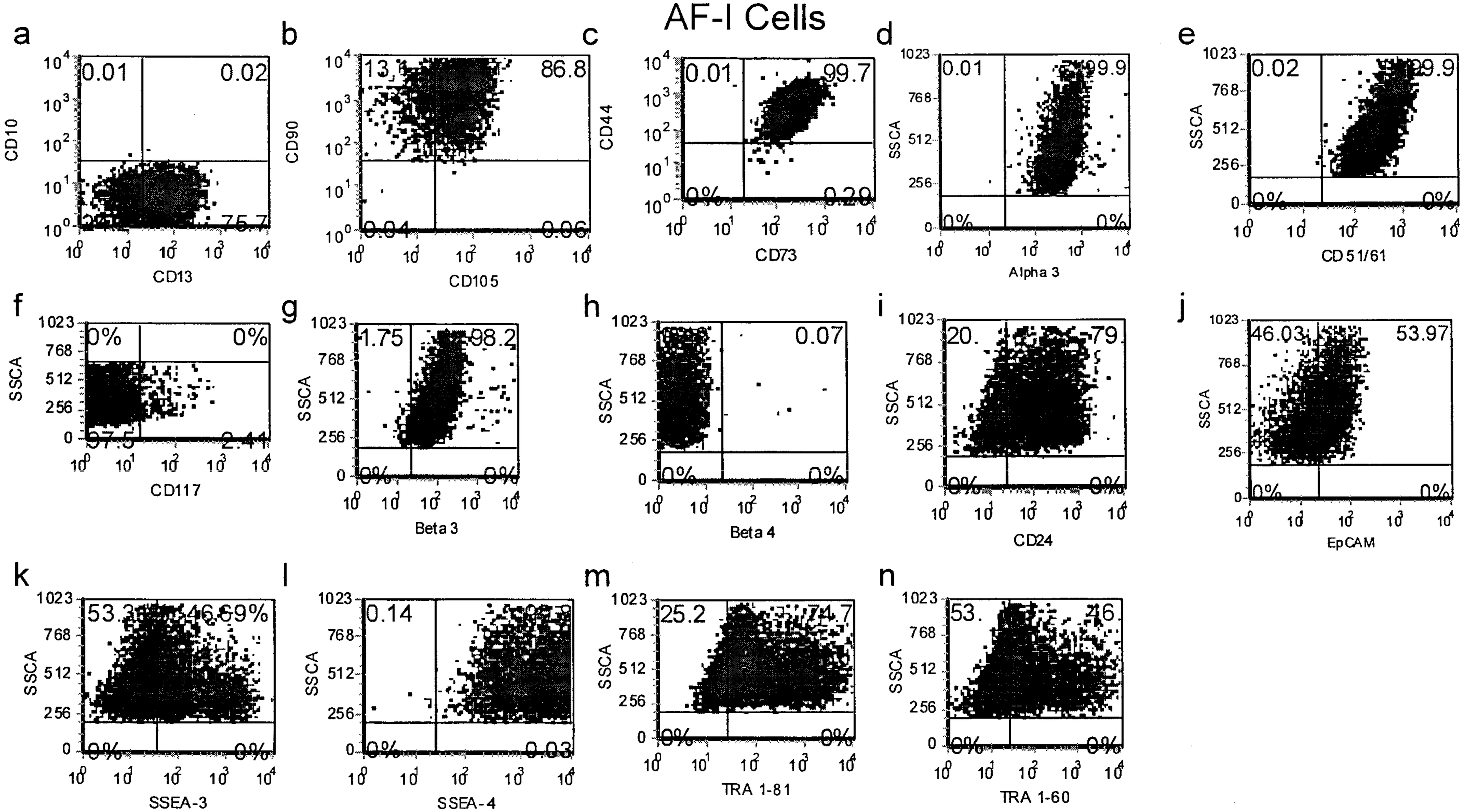


Figure 4

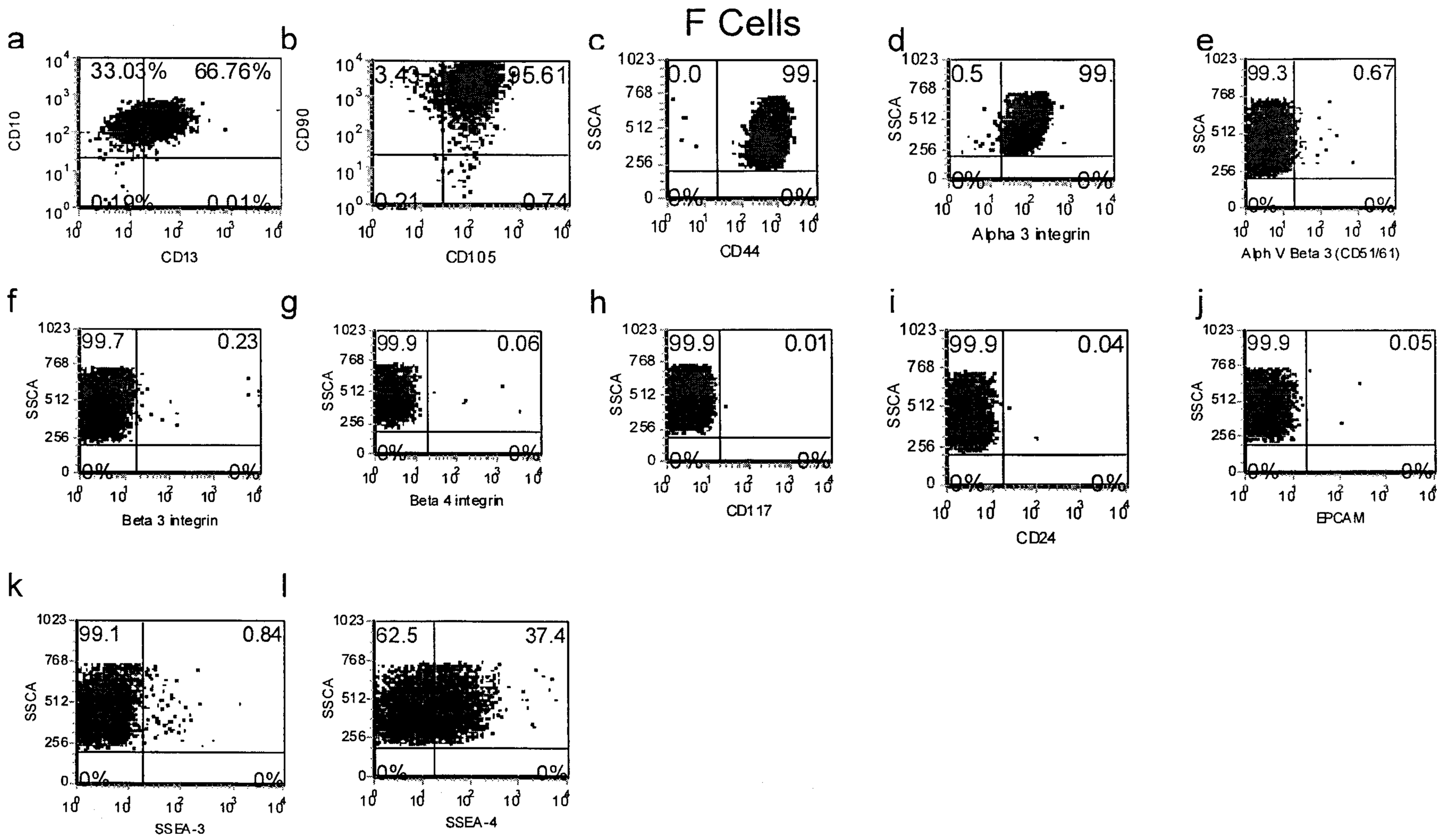
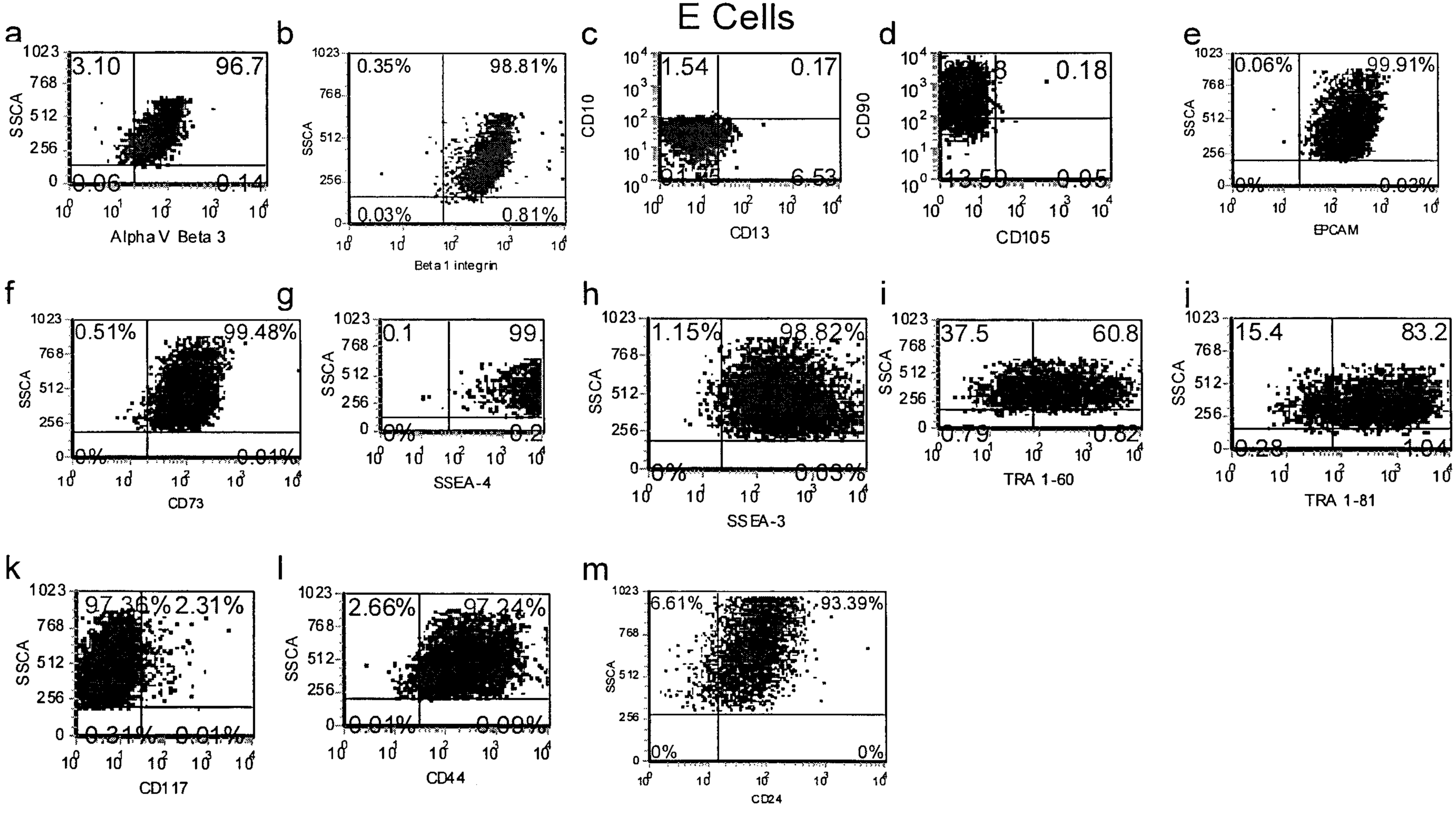


Figure 5



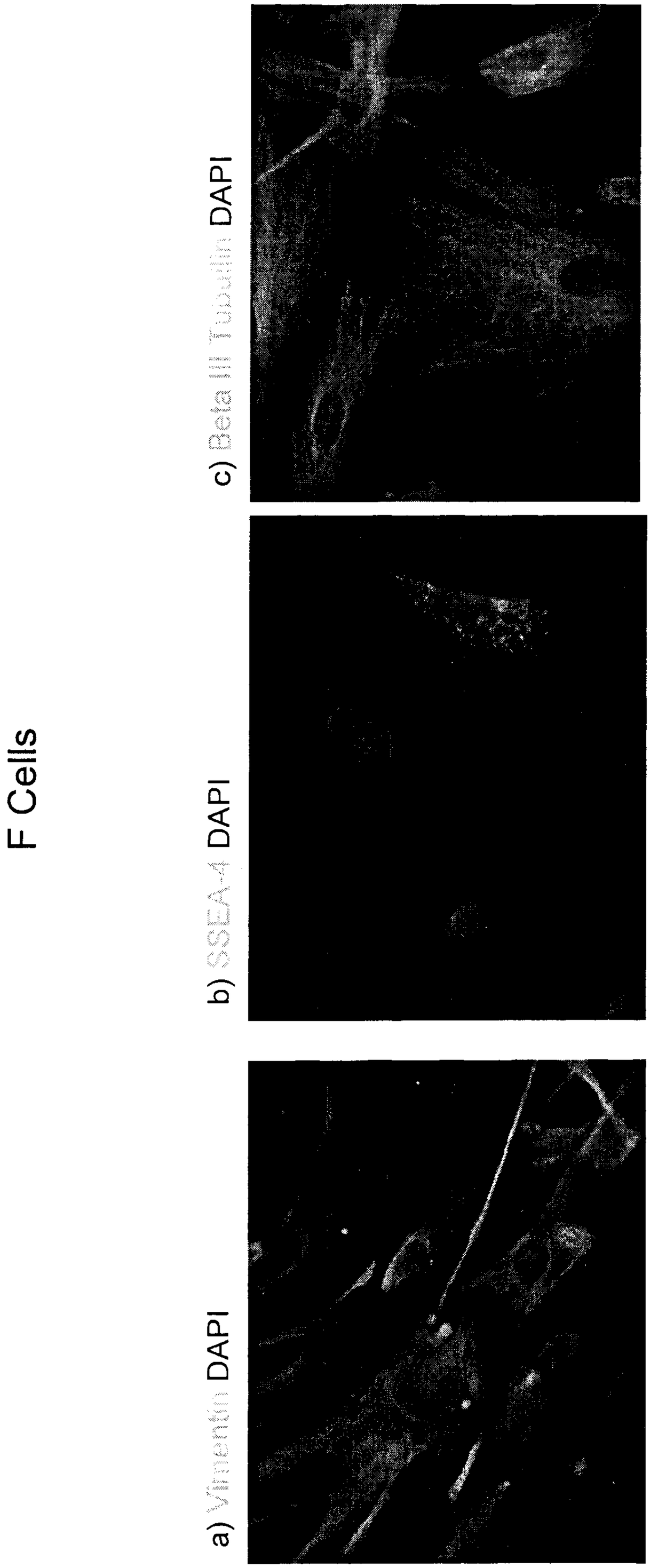
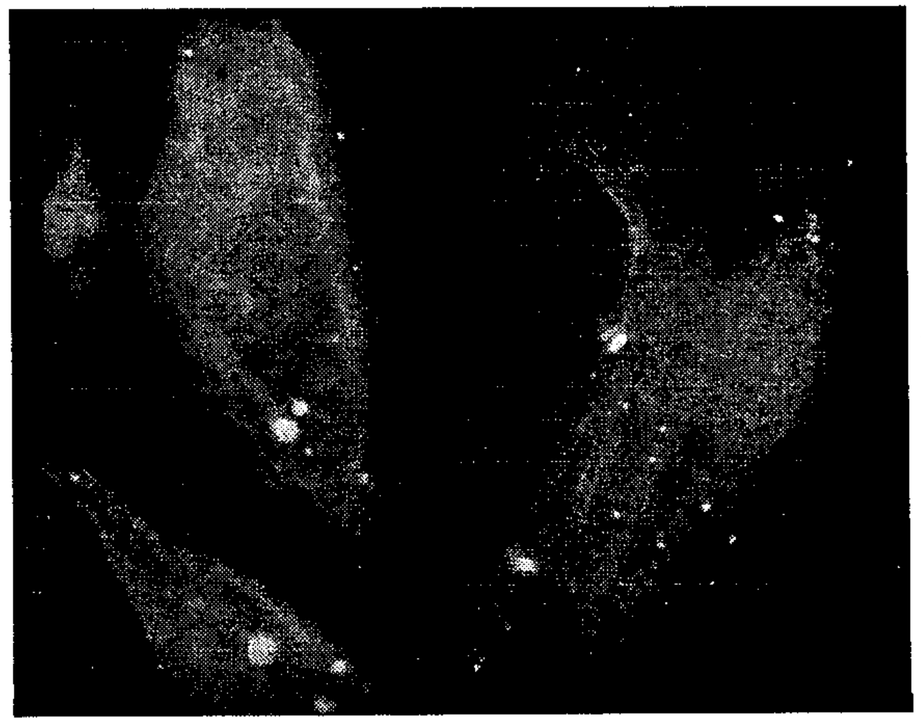


Figure 6

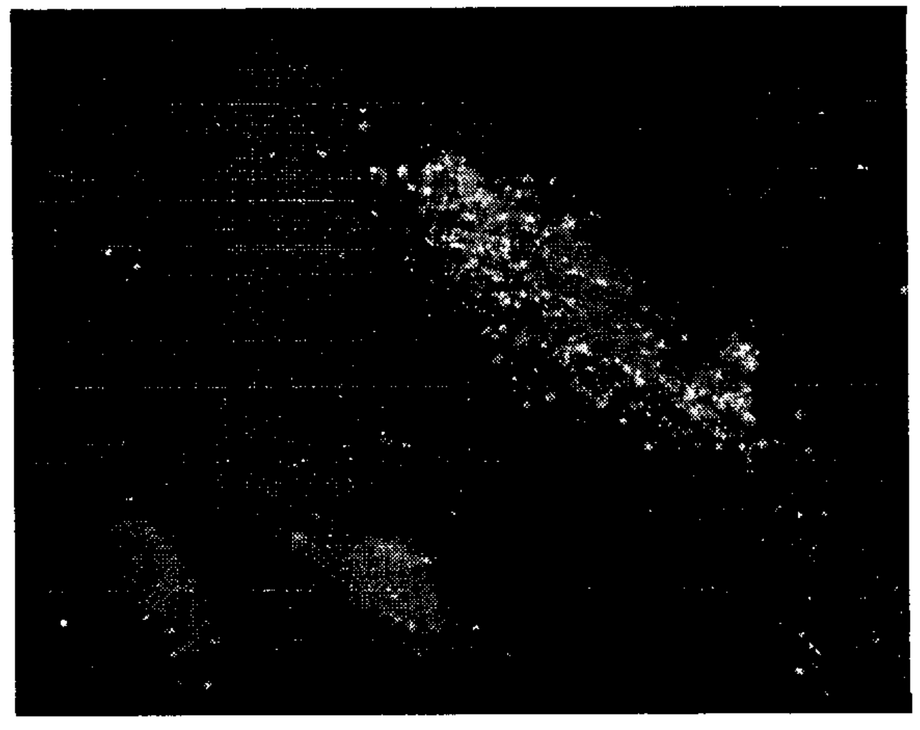
Figure 7

E Cells

a) Vimentin Nestin DAPI

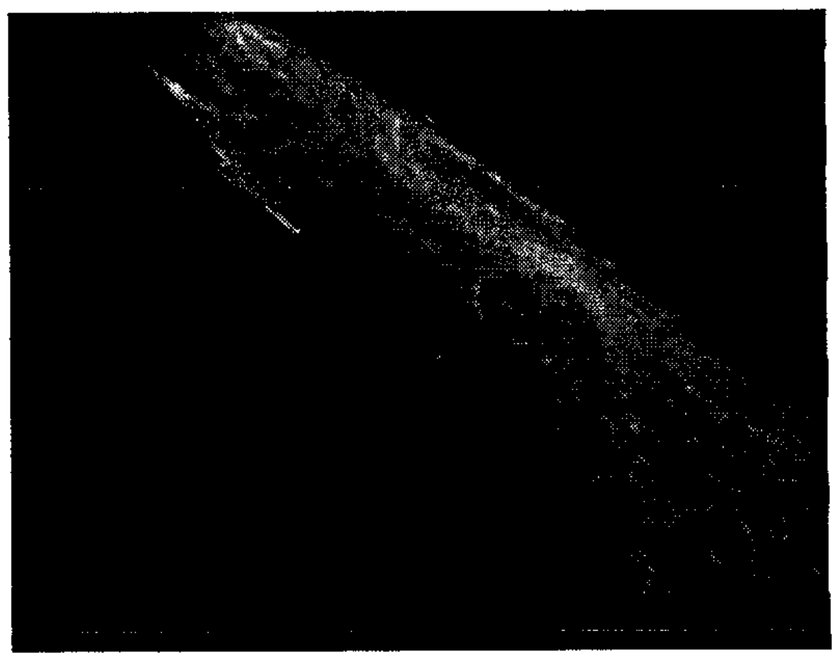


b) SSEA-4 DAPI

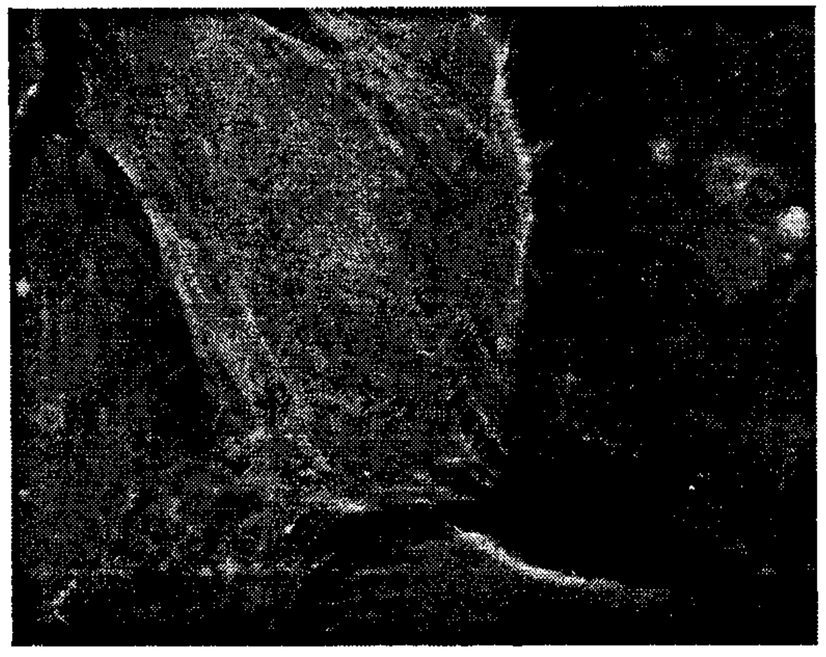


c) Beta III tubulin DAPI

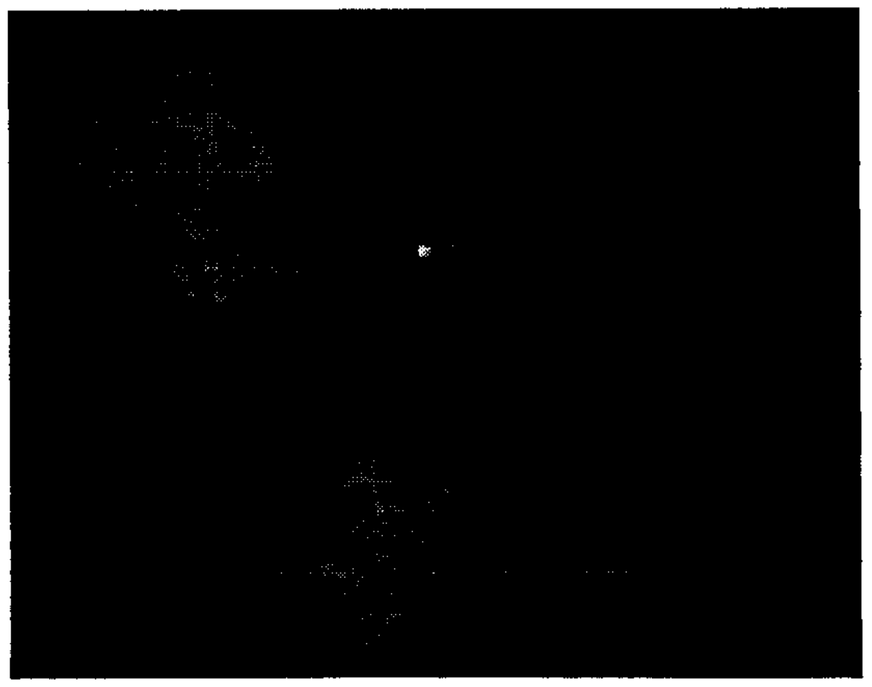
g) Pan CytoKeratin DAPI



h) SM-Actin DAPI



i) CK 19 DAPI



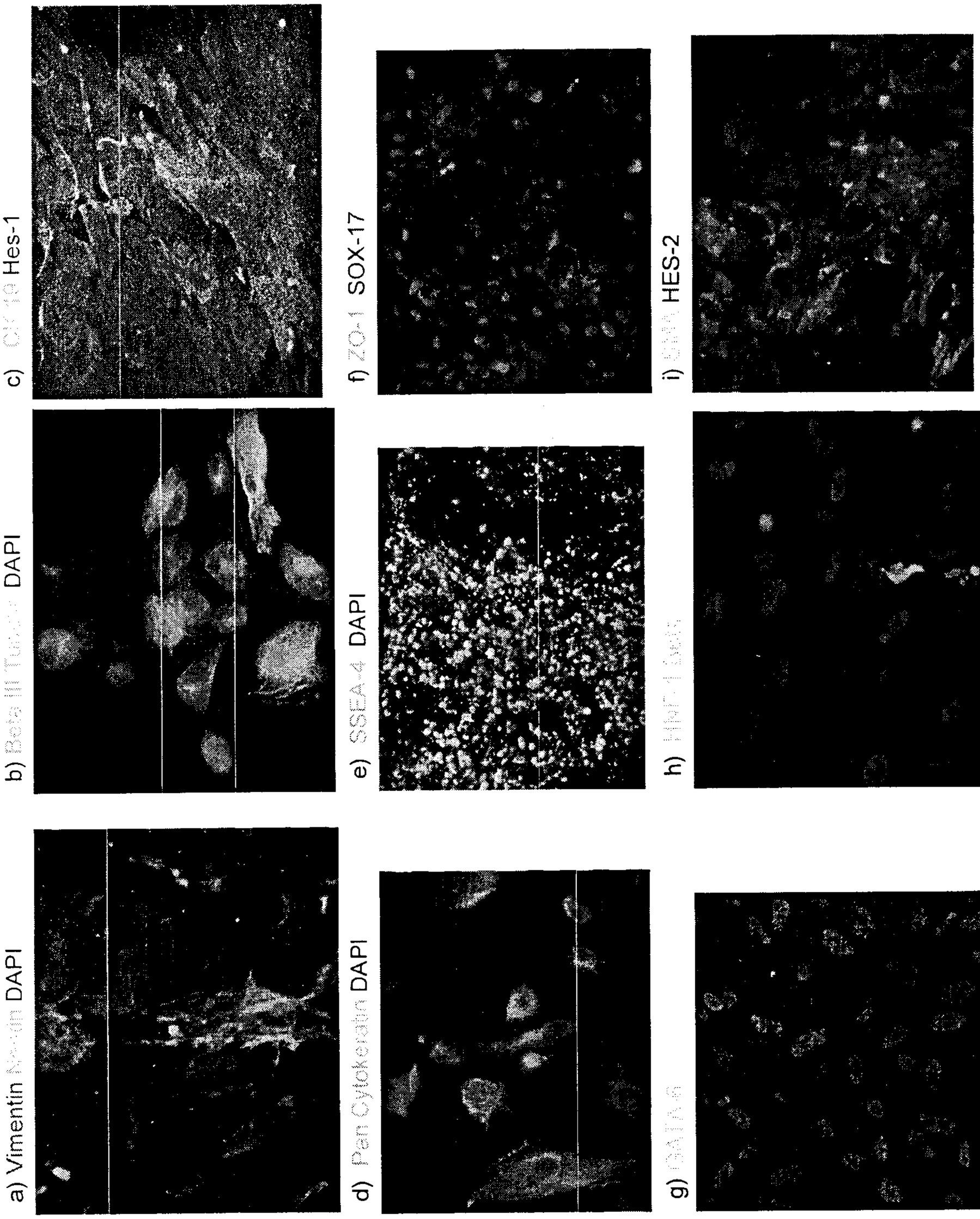
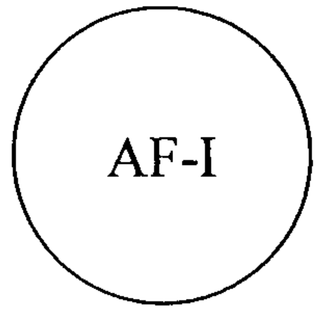
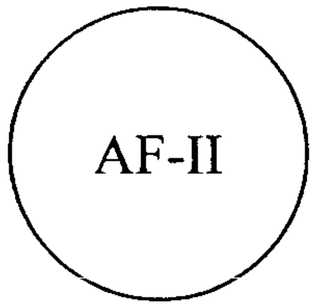

AF-I Cells
a) Vimentin Nestin DAPI
b) Beta III Tubulin DAPI
c) CK 19 Hes-1
d) Pan Cytokeratin DAPI
e) SSEA-4 DAPI
f) ZO-1 SOX-17
g) PAX-6
h) Nkx-2.5
i) SMA HES-2

Figure 8

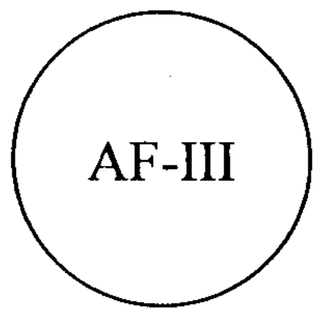
Figure 9



SOX-17+
Pan-Cytokeratin+
SSEA-4+
CD117-



SOX-17-
Pan-Cytokeratin+
SSEA-4+
CD117-



SOX-17-
Pan-Cytokeratin-
SSEA-4+
CD117-

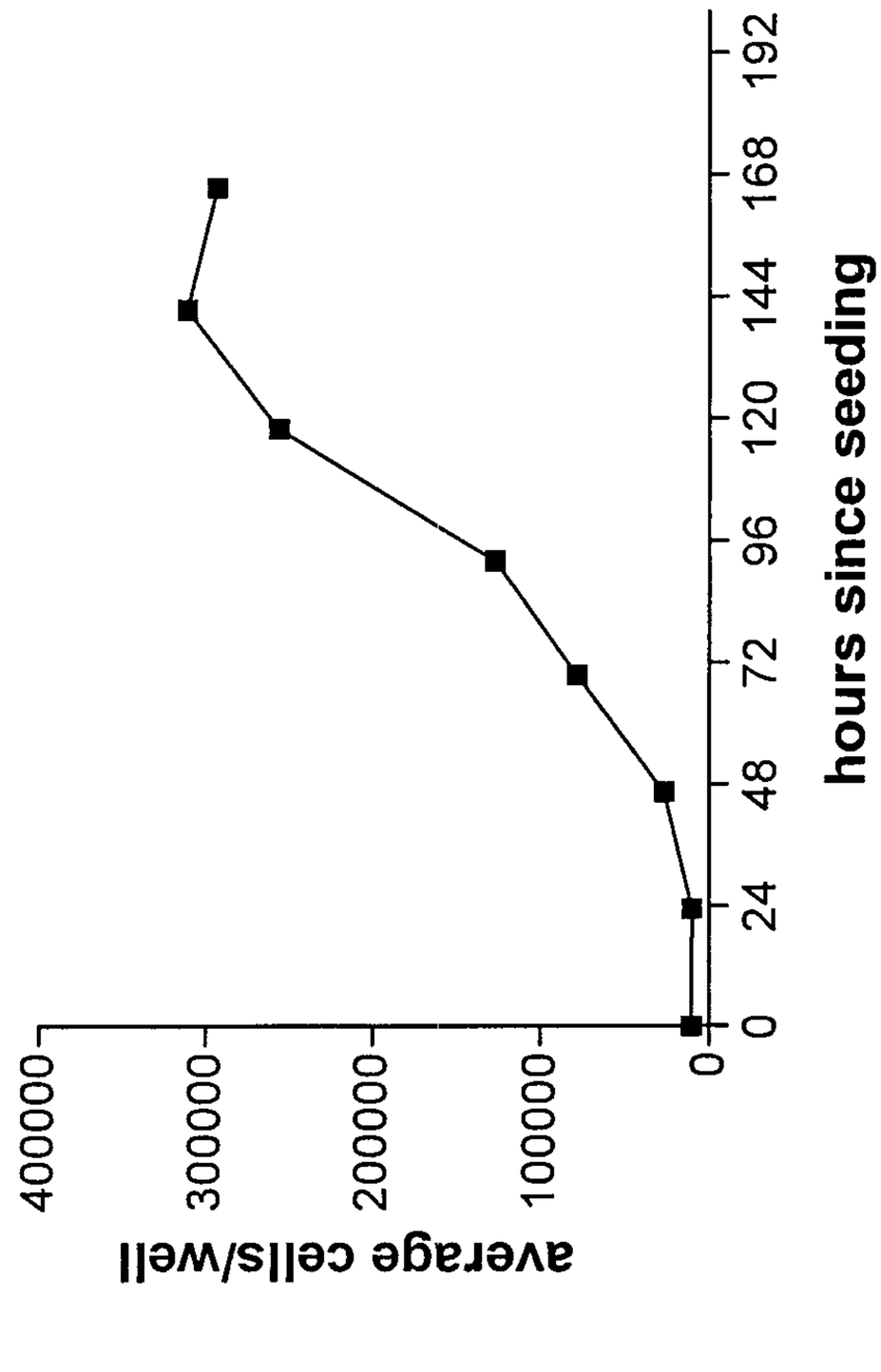

average cells/well
400000
300000
200000
100000
0
0
24
48
72
96
120
144
168
192
hours since seeding

Figure 10

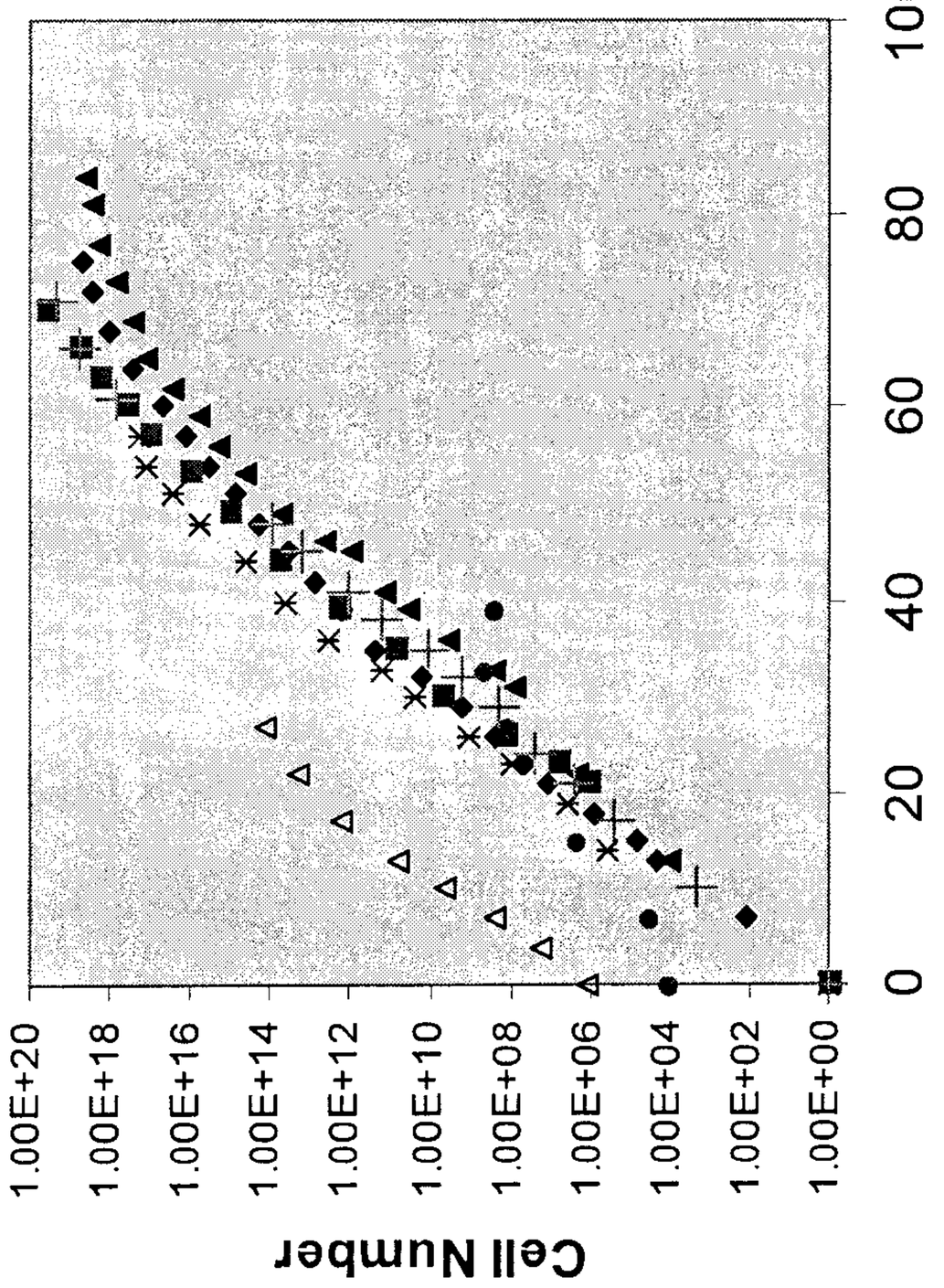
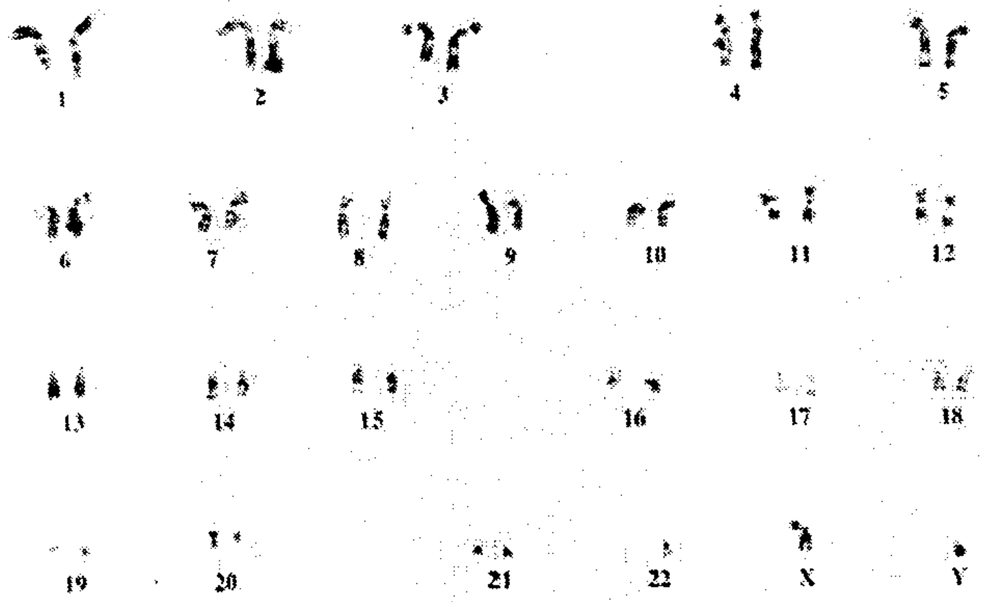

Cell Number
1.00E+20
1.00E+18
1.00E+16
1.00E+14
1.00E+12
1.00E+10
1.00E+08
1.00E+06
1.00E+04
1.00E+02
1.00E+00
0
20
40
60
80
100
Days

Figure 11

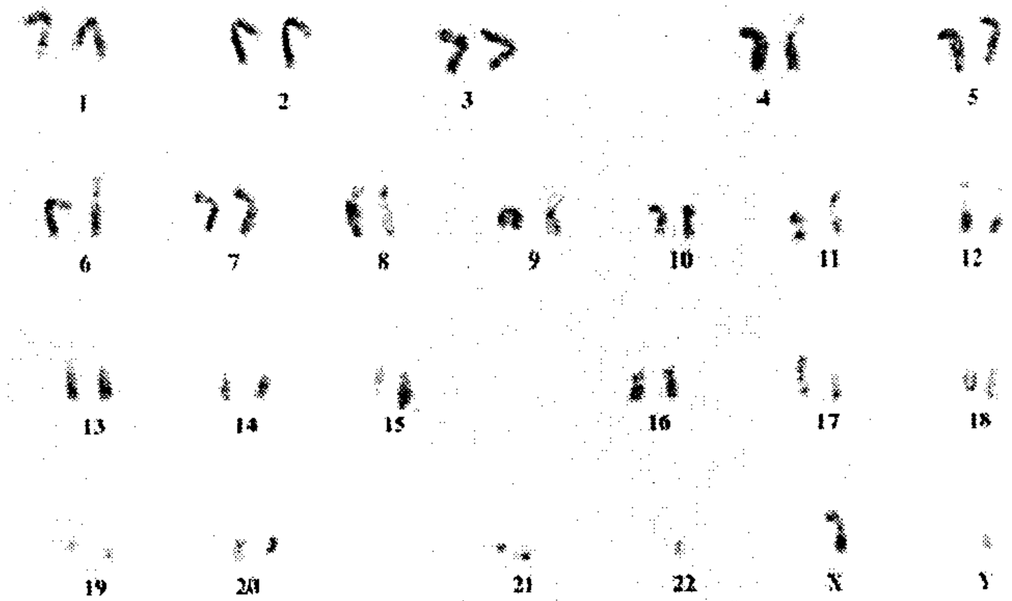
Figure 12

Figure 13

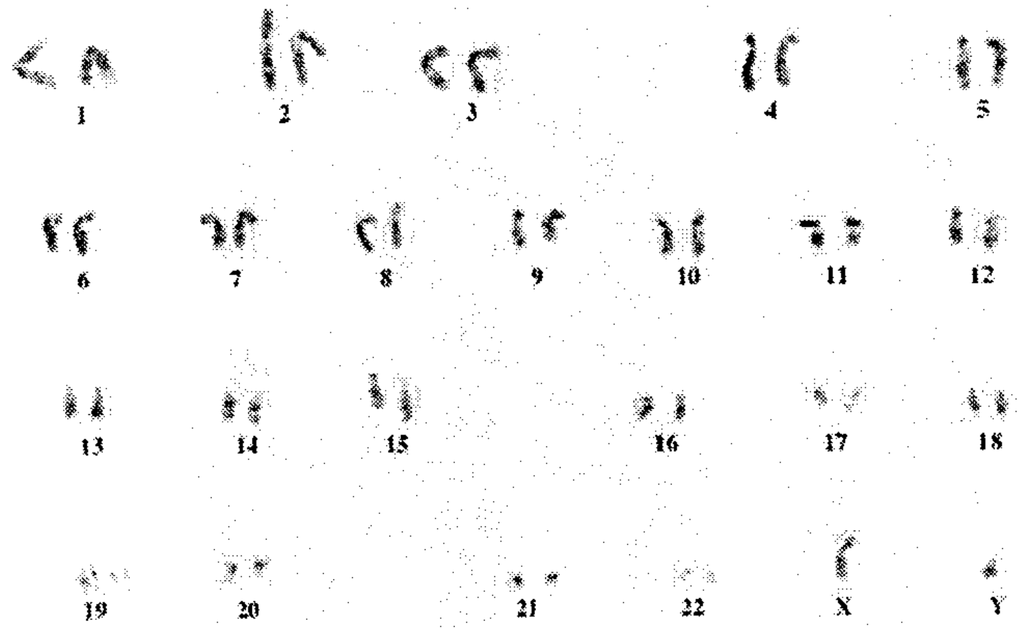
a) AF-I



b) AF-II



c) AF-III



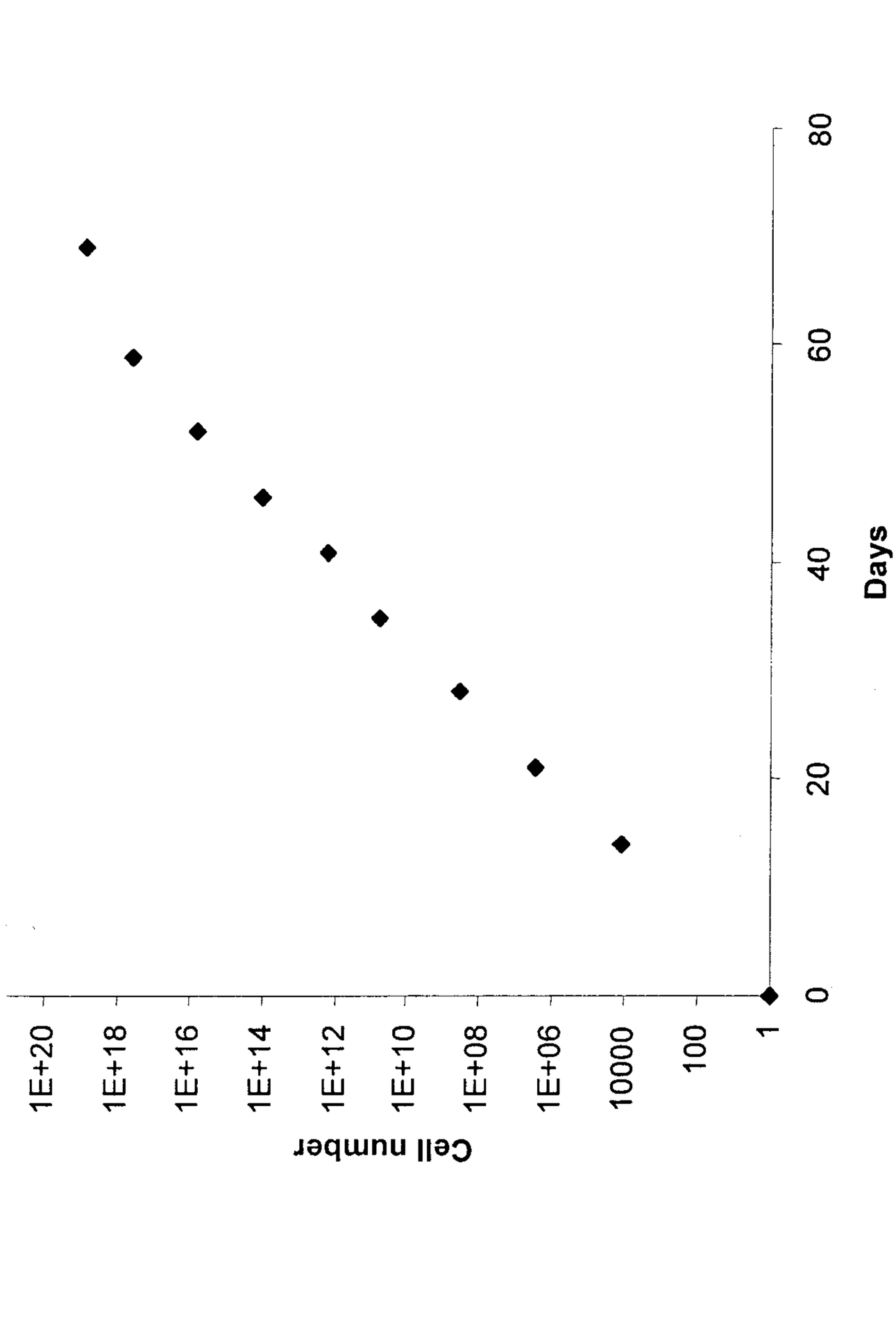
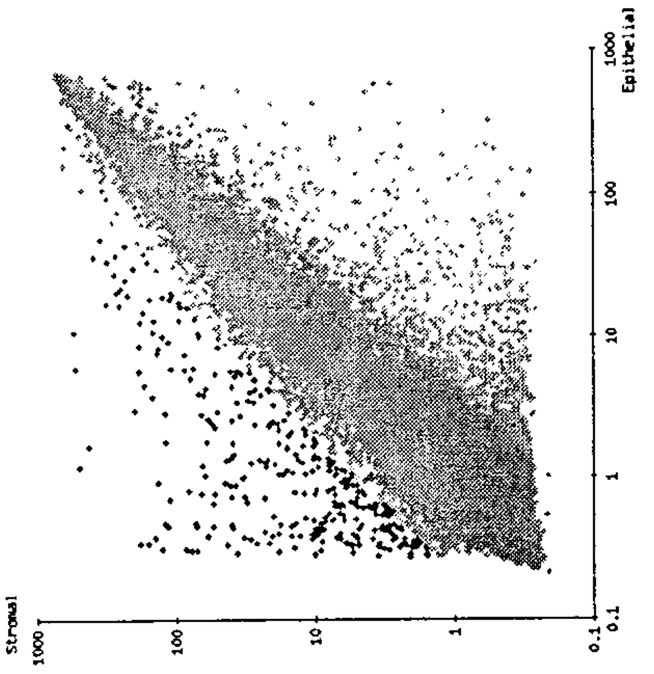
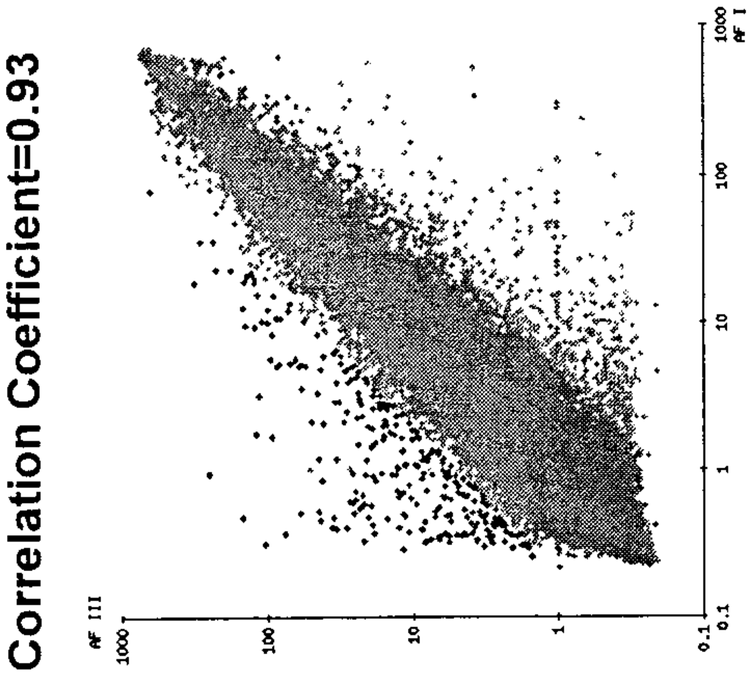
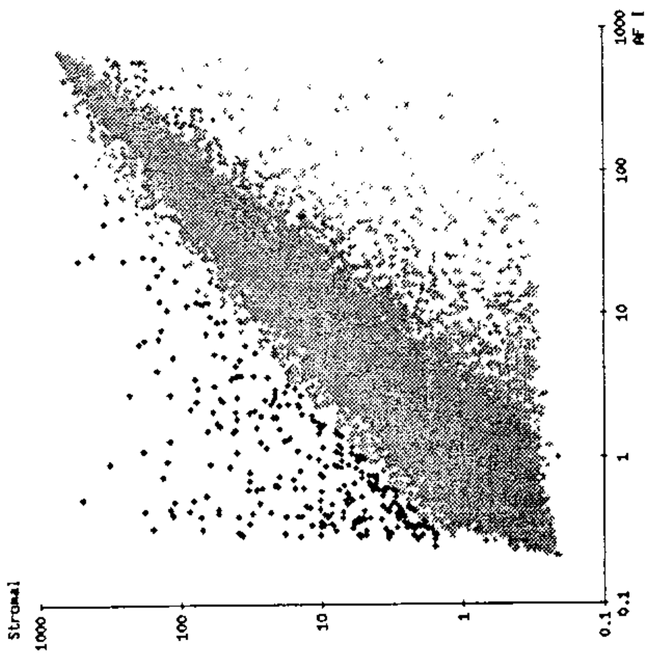

Cell number
1E+20
1E+18
1E+16
1E+14
1E+12
1E+10
1E+08
1E+06
10000
100
1
0
20
40
60
80
Days

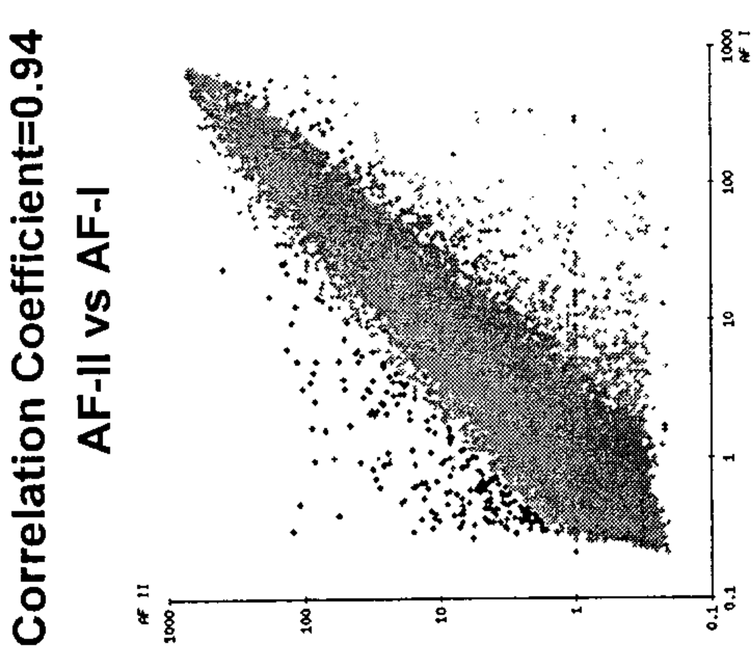
Figure 14

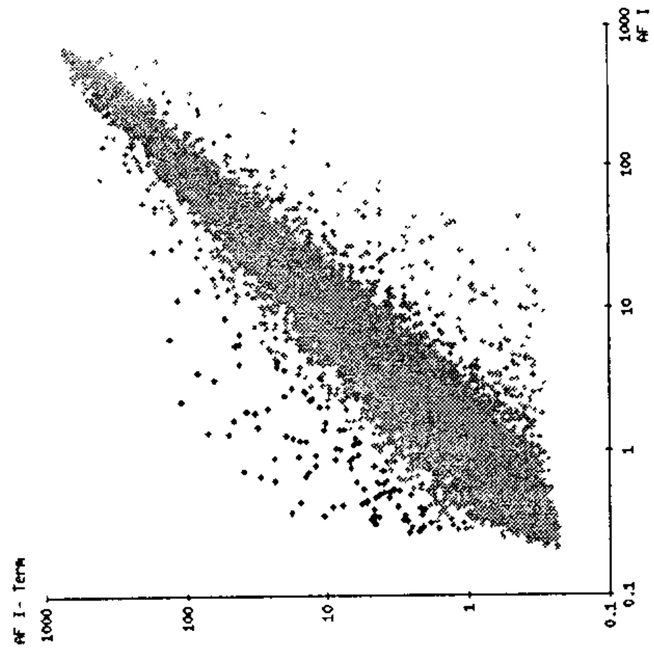
Figure 15


Correlation Coefficient=0.92
E vs Stromal
Stromal
Epithelial


Correlation Coefficient=0.93
AF III
AF I


Correlation Coefficient=0.93
AF-I vs Stromal
Stromal
AF I


Correlation Coefficient=0.94
AF-II vs AF-I
AF II
AF I


Correlation Coefficient=0.98
AF-I vs AF-I term
AF I - Term
AF I

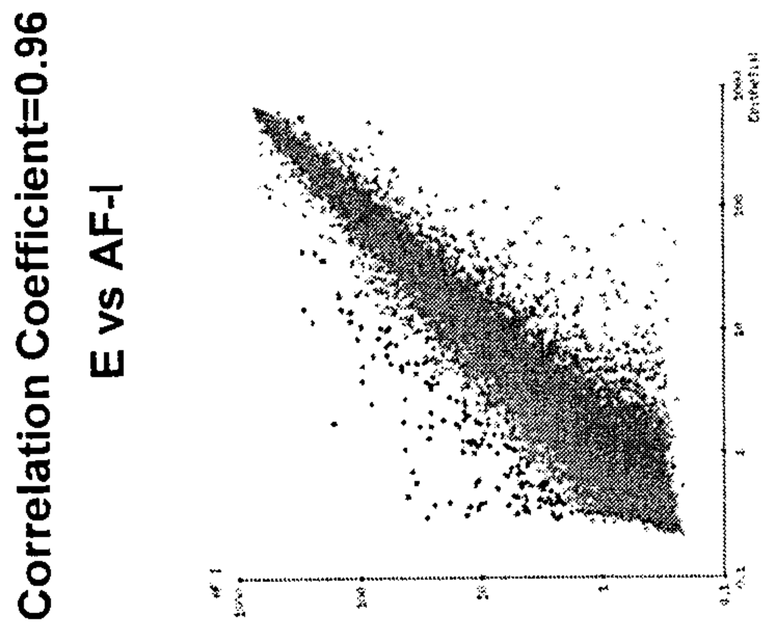
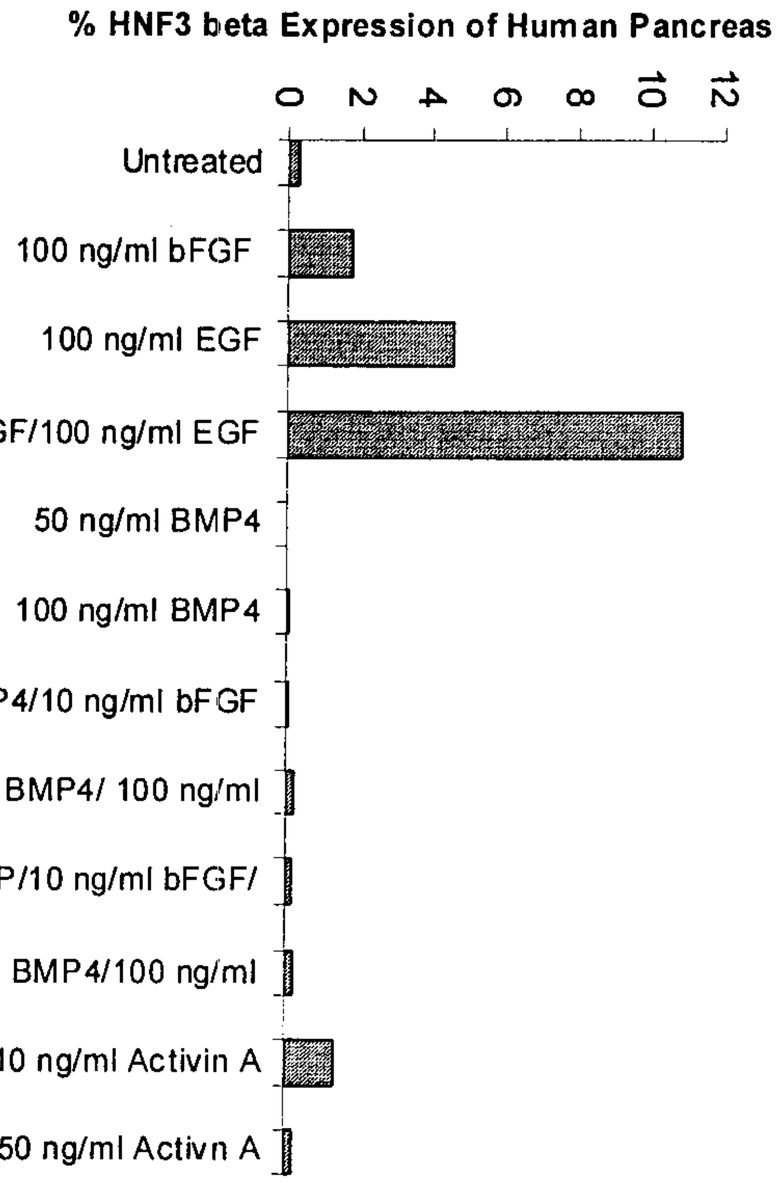
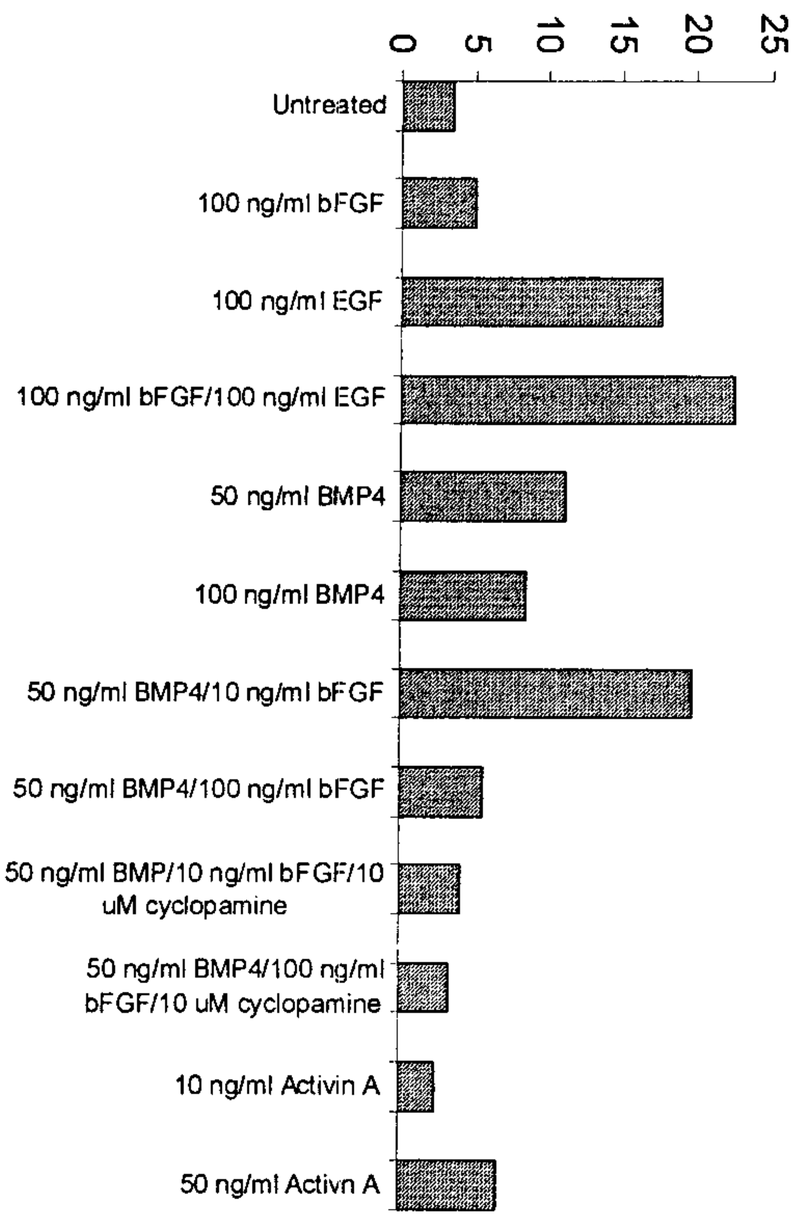

Correlation Coefficient=0.96
E vs AF-I

Figure 16

a



b



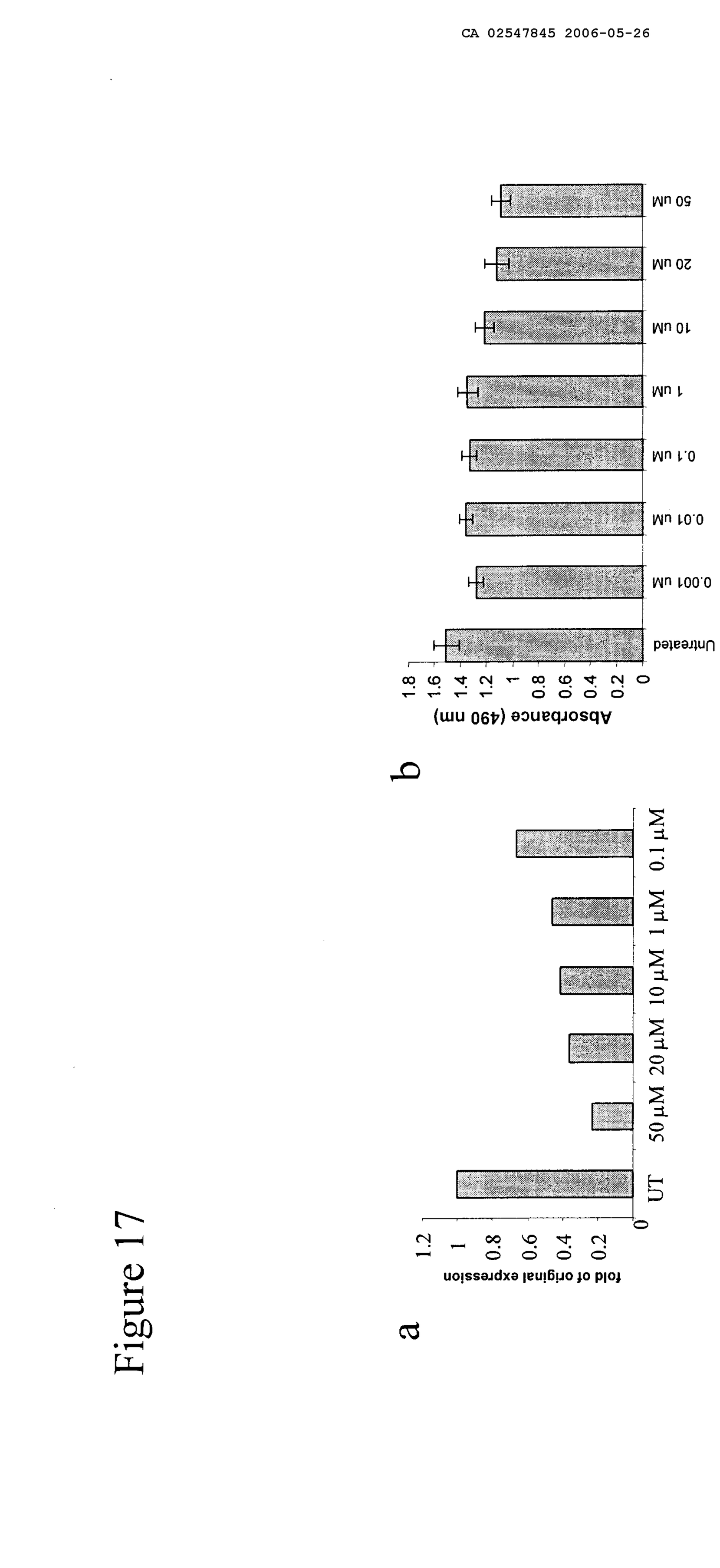

a
fold of original expression
1.2
1
0.8
0.6
0.4
0.2
0
UT
50 µM
20 µM
10 µM
1 µM
0.1 µM
b
Absorbance (490 nm)
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Untreated
0.001 uM
0.01 uM
0.1 uM
1 uM
10 uM
20 uM
50 uM

Figure 1