CL:0000057 fibroblast

(Unique DEGs among top-100 found by the distance-based method, 22 genes)
4 genes are specifically related to fibroblast

gm15093: predicted gene 15093.

gm15085: predicted gene 15085.

gfy: golgi-associated olfactory signaling regulator.
Required for **proper function of the olfactory system**. May be involved in establishing the acuity of olfactory sensory signaling.

zfp980: zinc finger protein 980.

rex2: reduced expression 2.

acacb: acetyl-Coenzyme A carboxylase beta:
Catalyzes the ATP-dependent carboxylation of acetyl-CoA to malonyl-CoA (By similarity). Carries out three functions- biotin carboxyl carrier protein, biotin carboxylase and carboxyltransferase. **Involved in inhibition of fatty acid and glucose oxidation and enhancement of fat storage**. May play a role in regulation of mitochondrial fatty acid oxidation through malonyl-CoA- dependent inhibition of carnitine palmitoyltransferase 1.

hepacam2: HEPACAM family member 2:
Required during prometaphase for centrosome maturation. Following poly-ADP-ribosylation (PARsylation) by TNKS, translocates from the Golgi apparatus to mitotic centrosomes and **plays a key role in the formation of robust microtubules for prompt movement of chromosomes- anchors** AKAP9/CG-NAP, a scaffold protein of the gamma-tubulin ring complex and promotes centrosome maturation.

phkb: phosphorylase kinase beta:
Phosphorylase b kinase catalyzes the phosphorylation of serine in certain substrates, including troponin I. The beta chain acts as **a regulatory unit and modulates the activity of the holoenzyme in response to phosphorylation**.

pls1: plastin 1:
Actin-bundling protein in the absence of calcium.

aw112010: expressed sequence AW112010.

prkag2: protein kinase, AMP-activated, gamma 2 non-catalytic subunit:
AMP/ATP-binding subunit of AMP-activated protein kinase (AMPK), an energy sensor protein kinase that **plays a key role in regulating cellular energy metabolism**. In response to reduction of intracellular ATP levels, AMPK activates energy-producing pathways and inhibits energy-consuming processes- inhibits protein, carbohydrate and

lipid biosynthesis, as well as cell growth and proliferation. AMPK acts via direct phosphorylation of metabolic enzymes, and by longer-term effects via phosphorylation of transcription regulators.

galnt16: polypeptide N-acetylgalactosaminyltransferase 16.

uhrf2: ubiquitin-like, containing PHD and RING finger domains 2.

rlf: rearranged L-myc fusion sequence:

dsp: desmoplakin:

Major high molecular weight protein of desmosomes. Involved in the organization of the desmosomal cadherin- plakoglobin complexes into discrete plasma membrane domains and in the anchoring of intermediate filaments to the desmosomes

cald1: caldesmon 1.

abca1: ATP-binding cassette, sub-family A (ABC1), member 1

The membrane-associated protein encoded by this gene is a member of the superfamily of ATP-binding cassette (ABC) transporters. ABC proteins transport various molecules across extra- and intracellular membranes.

ABC1: cAMP-dependent and sulfonylurea-sensitive anion transporter. Key gatekeeper **influencing intracellular cholesterol transport**.

clic1: chloride intracellular channel 1:

Can **insert into membranes and form chloride ion channels**. Channel activity depends on the pH. Membrane insertion seems to be redox-regulated and may occur only under oxydizing conditions.

ehbp1l1: EH domain binding protein 1-like 1.

adam22: a disintegrin and metallopeptidase domain 22:

This gene encodes a member of a disintegrin and metalloprotease (ADAM) family of endoproteases that play important roles in various biological processes including cell signaling, **adhesion** and migration. The encoded preproprotein undergoes proteolytic processing to generate a mature, functional protein. The protein encoded by this gene is believed to lack metalloproteinase activity due to the lack of a critical catalytic motif. Mice lacking the encoded protein exhibit severe ataxia, hypomyelination and premature death.

This is a non catalytic metalloprotease-like protein. Involved in **regulation of cell adhesion and spreading** and in inhibition of cell proliferation. Neuronal receptor for LGI1.

add2: adducin 2 (beta):

This gene encodes the beta subunit of the **adducin family**. **Adducins**, encoded by alpha, beta and gamma genes, are **heteromeric proteins that crosslink actin filaments with**

spectrin at the cytoskeletal membrane. This protein, is regulated by phosphorylation and calmodulin interactions as it promotes spectrin assembly onto actin filaments, bundles actin and caps barbed ends of actin filaments. In mouse, deficiency of this gene can lead to mild hemolytic anemia and impaired synaptic plasticity. Mutations of this gene in mouse serve as a pathophysiological model for hereditary spherocytosis and hereditary elliptocytosis.
Membrane-cytoskeleton-associated protein that promotes the assembly of the spectrin-actin network. Binds to the erythrocyte membrane receptor SLC2A1/GLUT1 and may therefore provide a link between the spectrin cytoskeleton to the plasma membrane. Binds to calmodulin. Calmodulin binds preferentially to the beta subunit.

adm: adrenomedullin:

AM and PAMP are potent hypotensive and vasodilatator agents.