|  |  |  |
| --- | --- | --- |
| gene symbol (top hits) | Enzyme/ protein function  | connection with BMI/obesity/WHR/body FD  |
| *Alx1* | in rodents: necessary for survival of the forebrain mesenchyme; involved in cervix development; in humans: not known |  |
| *Ptn* | significant roles in cell growth and survival, cell migration, angiogenesis and tumorigenesis | (Laramie et al., 2009) |
| *Epha3* | mediation of developmental events, particularly in the nervous system | (Justice et al., 2017) |
| *Dkk2* | Important role in vertebrate development by inhibition of Wnt regulated processes (antero-posterior axial patterning, limb development, somitogenesis, eye formation) | (Chazenbalk et al., 2012; Henninger et al., 2014) |
| *Gatm* | encodes for a mitochondrial enzyme, involved in creatine biosynthesis | (Kazak et al., 2017) |
| *Negr1* | may be involved in cell-adhesion; may function as a trans-neural growth promoting factor in mammalian brain | (Boender et al., 2014; Joo et al., 2019) |
| *Cd36* | may have important function as cell adhesion molecule; binds collagen, thrombospondin, anionic phospholipids and oxidized LDL; binds long chain fatty acids and may be a regulator of fatty acid transport | (Love-Gregory and Abumrad, 2011; Yang et al., 2018) |
| *Apod* | component of HDL; may be involved in lipoprotein metabolism | (Perdomo et al., 2010) |
| *Tbx5* | transcription factor; may be involved in heart development and limb identity | (Karpe and Pinnick, 2015) |
| *Hoxc10* | transcription factor; important role in morphogenesis; may have a role in origin activation during cell differentiation and proliferation | (Brune et al., 2016; Ng et al., 2017) |
| *Hoxa5* | transcription factor; may regulate gene expression, morphogenesis and differentiation | (Yamamoto et al., 2010; Karastergiou et al., 2013; Karpe and Pinnick, 2015; Passaro et al., 2017) |
| *Irx1* | supposed to play multiple roles during pattern formation in embryos |  |
| *Ace* | enzyme is key player in renin-angiotensin system | (Riera-Fortuny et al., 2005; Passaro et al., 2011; Bouwman et al., 2014) |
| *Dlk1* | involved in differentiation of several cell types including adipocytes; may have a role in neuroendocrine differentiation | (Abdallah et al., 2007; Mitterberger et al., 2012; Jensen et al., 2019) |
| *Adh7* | retinol dehydrogenase that may participate in cellular differentiation |  |
| *Irx2* | supposed to play multiple roles during pattern formation in embryos | (Karastergiou et al., 2013; Karpe and Pinnick, 2015) |
| *Arhgdib* | regulator of GDP/GTP exchange |  |
| *Mmp2* | Thought to be involved in multiple pathways including roles in nervous system, endometrial menstrual breakdown, regulation of vascularization and metastasis | (Bouwman et al., 2014) |
| *Hoxa10* | transcription factor; may function in fertility, embryo viability and regulation of hematopoietic lineage commitment | (Karastergiou et al., 2013; Schleinitz et al., 2014) |
| *Cidec* | promotion of lipid droplet formation in adipocytes and mediation of adipocyte apoptosis  |  (Ito et al., 2010) |
| *Eif2s3* | part of GTP-binding protein involved in recruitment of methionyl-tRNA to the 40S ribosomal subunit |  |
| *Oas2* | innate immune response to viral infection |  |
| *Tbx15* | transcription factor; probable transcriptional regulator involved in development of skeleton of the limb, vertebral column and head | (Yamamoto et al., 2010; Gesta et al., 2011; Schleinitz et al., 2014) |
| *Gm24598* | no orthologues in humans/ not on gene chip |  |
| *NONMMUT00716[3-5]* | no orthologues in humans/ not on gene chip |  |
| *NONMMUT01574[5-7]* | no orthologues in humans/ not on gene chip |  |
| *9930111J21Rik[1/2]* | no orthologues in humans/ not on gene chip |  |
| *Gm4955* | no orthologues in humans/ not on gene chip |  |
| *Tgtp2* | no orthologues in humans/ not on gene chip |  |
| *KnowTID\_00007994* | no orthologues in humans/ not on gene chip |  |
| *Tnfrsf26* | no orthologues in humans/ not on gene chip |  |
| *Lhx8* | not expressed in humans |  |
| *Gbp6* | not expressed in humans |  |

 BMI: body-mass-index; WHR: waist-to-hip ratio; FD: fat distribution

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