

DLK (A-17): sc-8625

BACKGROUND

The human DLK gene maps to human chromosome 14q32 and encodes a 383 amino acid protein. DLK, also designated preadipocyte factor 1 (Pref-1), ZOG, pG2 or FA1, is a transmembrane protein with six tandem EGF-like repeats in the putative extracellular domain, which is characteristic of the EGF-like protein family. DLK shares homology with invertebrate homeotic proteins, including Delta and Notch, which are proteins that mediate normal neural differentiation in *Drosophila*. In mammalian preadipocytes, multiple discrete forms of DLK protein are present due to N-linked glycosylation. DLK is expressed in tumors with neuroendocrine features, such as neuroblastoma and pheochromocytoma cell lines. Normal tissue expression is restricted to the adrenal gland and placenta. Protein-protein interaction between DLK proteins belonging to the same or to different cells, or the interaction between soluble and membrane DLK variants, may be important in regulation of DLK function.

REFERENCES

1. Smas, C.M., et al. 1993. Pref-1, a protein containing EGF-like repeats, inhibits adipocyte differentiation. *Cell* 73: 725-734.
2. Laborda, J., et al. 1993. DLK, a putative mammalian homeotic gene differentially expressed in small cell lung carcinoma and neuroendocrine tumor cell line. *J. Biol. Chem.* 268: 3817-3820.
3. Smas, C.M., et al. 1994. Structural characterization and alternate splicing of the gene encoding the preadipocyte EGF-like protein pref-1. *Biochemistry* 33: 9257-9265.
4. Lee, Y.L., et al. 1995. DLK, pG2 and Pref-1 mRNAs encode similar proteins belonging to the EGF-like superfamily. Identification of polymorphic variants of this RNA. *Biochim. Biophys. Acta* 1261: 223-232.
5. Gubina, E., et al. 1999. Assignment of DLK1 to human chromosome band 14q32 by *in situ* hybridization. *Cytogenet. Cell Genet.* 84: 206-207.
6. Baladron, V., et al. 2001. Specific regions of the extracellular domain of DLK, an EGF-like homeotic protein involved in differentiation, participate in intramolecular interactions. *Front. Biosci.* 6: 25-32.
7. Online Mendelian Inheritance in Man, OMIM[™]. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 176290. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: Dlk1 (mouse) mapping to 12 F1.

SOURCE

DLK (A-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of DLK of mouse origin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-8625 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

DLK (A-17) is recommended for detection of DLK of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for DLK siRNA (m): sc-39670, DLK shRNA Plasmid (m): sc-39670-SH and DLK shRNA (m) Lentiviral Particles: sc-39670-V.

Molecular Weight of DLK isoforms: 45-60 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, rat placenta extract: sc-364808 or mouse placenta extract: sc-364247.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Pantoja, C., et al. 2008. Glucocorticoid signaling defines a novel commitment state during adipogenesis *in vitro*. *Mol. Biol. Cell* 19: 4032-4041.
2. Orr, B., et al. 2009. A role for Notch signaling in stromal survival and differentiation during prostate development. *Endocrinology* 150: 463-472.
3. Zhang, H., et al. 2010. Cross talk between insulin and bone morphogenetic protein signaling systems in brown adipogenesis. *Mol. Cell. Biol.* 30: 4224-4233.
4. Pan, R.L., et al. 2011. Δ-like 1 serves as a new target and contributor to liver fibrosis down-regulated by mesenchymal stem cell transplantation. *J. Biol. Chem.* 286: 12340-12348.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.