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DLK1 Antibody



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Applications: W, IP	Reactivity: H M	Sensitivity: Transfected Only	MW (kDa): 41	Source/Isotype: Rabbit	UniProt ID: #P80370	Entrez-Gene Id: 8788
Product Usage Information	Application		Dilution			
	Western Blotting		1:1000			
	Immunoprecipitation		1:50			
Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at – 20°C. Do not aliquot the antibody.					
Specificity/Sensitivity	DLK1 Antibody detects transfected levels of total DLK1 protein.					
Species predicted to react based on 100% sequence homology	Rat					
Source / Purification	Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to a residues surrounding Met371 of human DLK1. Antibodies are purified by protein A and peptide affinity chromatography.					
Background	<p>Delta-like-1 homolog (DLK1), also known as fetal antigen 1 (FA1) and preadipocyte factor 1 (pref-1), is a member of the epidermal growth factor (EGF)-like family of proteins, containing six tandem EGF-like repeats (1,2). <i>DLK1</i> is a paternally expressed, imprinted gene that plays an important role in normal development and homeostasis maintenance of adipose tissue mass (3). DLK1-deficient mice display growth retardation, obesity, skeletal malformation, and increased serum lipid metabolites (4). It has been reported that the DLK1 ectodomain is shredded from the cell surface and inhibits adipocyte differentiation (5-7).</p> <p>Humans and rodents express multiple DLK1 isoforms, which are either membrane-bound or contain an ADAM17/TACE cleavage site for release of the soluble ectodomain (8). As high DLK1 expression is pro-oncogenic in some contexts, differential isoform expression may promote cancer cell survival, with both the ectodomain and intracellular domain having distinct functions (9). Under hypoxic conditions, HIF proteins induce ADAM17/TACE cleavage and internalization of the DLK1 intracellular domain, which localizes to the nucleus and alters Akt and p53 signaling cascades in glioma (10). Hypoxia increases DLK1 expression, and phosphorylation of the DLK1 C-terminus at Tyr339 and Ser355 increases neuronal tumor sphere growth (11). Nuclear DLK1 directly interacts with tumor suppressor NCoR1, correlating with poor prognosis in non-small cell lung cancer (NSCLC) (12). DLK1 has emerged as a target for novel antibody drug conjugates (ADCs) in neuroblastoma and adrenocortical carcinoma (13,14).</p>					
Background References	<div>1. Laborda, J. et al. (1993) <i>J Biol Chem</i> 268, 3817-20.</div> <div>2. Smas, C.M. and Sul, H.S. (1993) <i>Cell</i> 73, 725-34.</div> <div>3. Kobayashi, S. et al. (2000) <i>Genes Cells</i> 5, 1029-37.</div> <div>4. Moon, Y.S. et al. (2002) <i>Mol Cell Biol</i> 22, 5585-92.</div> <div>5. Smas, C.M. et al. (1997) <i>Mol Cell Biol</i> 17, 977-88.</div> <div>6. Mei, B. et al. (2002) <i>Biochem J</i> 364, 137-44.</div> <div>7. Wang, Y. et al. (2006) <i>J Nutr</i> 136, 2953-6.</div> <div>8. Grassi, E.S. and Pietras, A. (2022) <i>J Histochem Cytochem</i> 70, 17-28.</div> <div>9. Pittaway, J.F.H. et al. (2021) <i>Endocr Relat Cancer</i> 28, R271-R287.</div> <div>10. Grassi, E.S. et al. (2020) <i>Oncogene</i> 39, 4028-4044.</div> <div>11. Kim, Y. et al. (2009) <i>Cancer Res</i> 69, 9271-80.</div> <div>12. Tan, J. et al. (2019) <i>Biosci Rep</i> 39, BSR20192362. doi: 10.1042/BSR20192362.</div> <div>13. Hamilton, A.K. et al. (2024) <i>Cancer Cell</i> 42, 1970-1982.e7.</div> <div>14. Sun, N.Y. et al. (2024) <i>bioRxiv</i>, 0.09.617077. doi: 10.1101/2024.10.09.617077.</div>					

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse

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