



## Anti-human DLK1/Pref1

20141128BB



**FOR RESEARCH ONLY! NOT FOR HUMAN USE!**

<b>Cat.-no.:</b>	<b>102-PA137</b>
Size:	200 µg
Lot. No.:	According to product label
Country of origin:	Germany

**Preparation:** Produced from sera of rabbits pre-immunized with highly pure (>98%) recombinant human soluble DLK1/Pref1 (Ala24-Pro297) derived from E. coli.

### Target Background

<b>Synonyms:</b>	Protein delta homolog 1, pG2, Fetal antigen 1, FA1, ZOG
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Delta-like 1 (DLK1), also known as Pref-1 and FA1, is a transmembrane protein pertaining to the epidermal growth factor superfamily. DLK1 affects several differentiation processes, including adipogenesis, muscular and neuronal differentiation, bone differentiation, and haematopoiesis. Several reports support that DLK1 may operate as a non-canonical ligand of the NOTCH pathway. Since the NOTCH signaling pathway is essential for vascular development and physiology by controlling angiogenesis in pre- and post-natal life, it was reasoned that DLK1 could contribute to regulate this process in adult endothelial cells through the interaction with NOTCH receptors. It was found that overexpression of DLK1 inhibits migration and angiotube formation in mammalian vascular endothelial cells and disrupts normal embryonic vascularization in zebrafish. Genetic ablation of DLK1 in mice is associated with increased angiogenesis in vitro and with focal areas of retinal hyper-vascularization. Specific knockdown of the orthologous Dlk1 of zebrafish results in ectopic angiogenesis. Moreover, in a tumor angiogenesis model in zebrafish, suppression of Dlk1 promotes vessel migration towards the tumor cell mass. It was also found that the NOTCH signaling pathway is targeted by DLK1 in the context of angiogenesis and that DLK1 antagonizes NOTCH-dependent signaling in endothelial cells, while, in contrast, this signaling is enhanced in Dlk1-null mice.

### References

1. Kume T, Adv Exp Med Biol 727:210-22, 2012
2. Yevtodiyyenko A and Schmidt JV, Dev Dyn 235(4):1115-23, 2006
3. Limbourg A et al, Circ Res 100(3):363-71, 2007
4. Andersen DC et al, FEBS Lett 583(17):2947-53, 2009
5. Rodríguez P et al, Cardiovasc Res 93(2):232-41, 2012
6. Napp LC et al, Circ Res 110(4):530-5, 2012
7. Chi Sabins N et al, Mol Ther 21(10):1958-68, 2013
8. Schober A et al, Nat Med 20(4):368-76, 2014
9. Zhao XC et al, Neoplasia 15(7):815-25, 2013
10. Appelbe OK et al, Mech Dev 130(2-3):143-59, 2013

### Database References Antigen

<b>Protein RefSeq:</b>	NP_003827.3
<b>Uniprot ID:</b>	P80370
<b>mRNA RefSeq:</b>	NM_003836.5

### Product Specifications

<b>Species reactivity</b>	human
<b>Clone/Ab feature</b>	rabbit IgG
<b>Cross reactivity</b>	n.d.
<b>Host</b>	rabbit
<b>Clonality</b>	polyclonal
<b>Purification</b>	Protein A purified
<b>Immunogen</b>	recombinant human sDLK1/Pref1 (RT #400-020)
<b>Formulation</b>	Lyophilized
<b>Buffer</b>	PBS, pH 7.2

**Stability:** The lyophilized antibody is stable at room temperature for up to 1 month. The reconstituted antibody is stable for at least two weeks at 2-8°C. Frozen aliquots are stable for at least 6 months when stored at -20°C.

**Reconstitution:** Centrifuge vial prior to opening. Reconstitute in sterile water to a concentration of 0.1-1.0 mg/ml.



**AVOID REPEATED FREEZE AND THAW CYCLES!**

### Applications

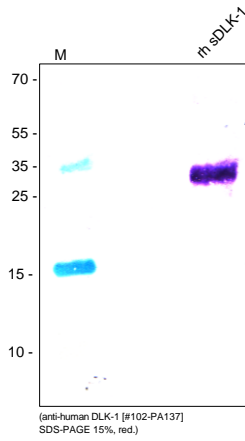
**Western Blot:** Use at 1-5 µg/ml

**NOTE: OPTIMAL DILUTIONS SHOULD BE DETERMINED BY EACH LABORATORY FOR EACH APPLICATION!**



## Anti-human DLK1/Pref1

### Handling/Applications



**Figure 1:** Western analysis of recombinant human soluble DLK1/Pref1 [Cat# 400-020] using an anti-human DLK1/Pref1 polyclonal antibody. [WB: AP-conjugated secondary antibody]