Datasheet

Cat. No. PM2036

Recombinant Mouse mDKK1-His, Tag Free

Information

Accession #	PM2036
Alternate Names	dickkopf (Xenopus laevis) homolog 1; dickkopf homolog 1 (Xenopus laevis); dickkopf related protein-1; Dickkopf-1; dickkopf-related protein 1; Dkk1; Dkk-1; hDkk-1; SKdickkopf-1 like
Source	Ser30-His272.
Protein sequence	
M.Wt	26.1 kDa
Appearance	Solution protein
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. 3 years from date of receipt, -20 to -70°C as supplied.
Concentration	0. 2 mg/mL
Formulation	Dissolved in sterile PBS buffer.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This solution can be diluted into other aqueous buffers.
Biological Activity	
Shipping Condition	Shipping with dry ice.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Quality Control

Purity	> 95%, determined by SDS-PAGE.
Endotoxin	＜1.0 EU per 1 ug of the protein by the LAL method.

Description

Dickkopf related protein 1 (Dkk-1) is the founding member of the Dickkopf family of proteins that includes Dkk-1, -2, -3, -4, and a related protein, Soggy [1, 2]. Dkk proteins are secreted proteins that contain two conserved cysteine-rich domains separated by a linker region. Each domain contains ten cysteine residues [1-3]. Mature mouse Dkk-1 is a 40 kDa glycosylated protein that shares 86%, 96%, 83% and 82% amino acid (aa) sequence identity with human, rat, rabbit and bovine Dkk-1, respectively. It also shares 41% and 36% aa identity with human Dkk-2 and Dkk-4, respectively. Dkk-1 and Dkk-4 are well documented antagonists of the canonical Wnt signaling pathway [1, 2]. This pathway is activated by Wnt engagement of a receptor complex composed of the Frizzled proteins and

one of two low-density lipoprotein receptor-related proteins, LRP5 or LRP6 [4]. Dkk-1 antagonizes Wnt by forming ternary complexes of LRP5/6 with Kremen1 or Kremen2 [4, 5]. Dkk-1/LRP6/Krm2 complex internalization has been shown to down-regulate Wnt signaling [4, 5]. Dkk-1 is expressed throughout development and antagonizes Wnt-7a during limb development [6, 7]. Other sites of expression include developing neurons, hair follicles and the retina of the eye [8, 9]. The balance between Wnt signaling and Dkk-1 inhibition is critical for bone formation and homeostasis [10]. Insufficient or excess Dkk-1 activity in bone results in increased or decreased bone density, respectively [8, 11]. In adults, Dkk-1 is expressed in osteoblasts and osteocytes, and neurons. Cerebral ischemia induces Dkk-1 expression, which contributes to neuronal cell death [12]

Reference

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[7] Adamska, M. et al. (2004) Dev. Biol. 272:134.

[8] Li, J. et al. (2006) Bone 36:754.

[9] Verani, R. et al. (2006) J. Neurochem. 101:242.

[10] Pinzone, J.J. et al. (2009) Blood 113:517.

[11] Morvan, F. et al. (2006) J. Bone Miner. Res. 21:934.

[12] Cappuccio, I. et al. (2005) J. Neurosci. 25:2647

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