

Cytokines

Human Recombinant DKK-1



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Dickkopf-related protein 1

Catalog #	78208	10 µg
	78208.1	50 µg
	78208.2	1000 µg

Product Description

Dickkopf-related protein 1 (DKK-1) is a member of the Dickkopf family and is a secreted protein that inhibits the canonical WNT pathway by competitive binding to low-density lipoprotein receptors (LRP)-5 and 6 with high affinity, thereby decreasing β -catenin protein stability (Niehrs). DKK-1 regulates embryonic development and contains two conserved cysteine-rich domains separated by a linker region and an N-terminal signal peptide (Krupnik et al.; Lieven et al.). A family of human DKK-related genes composed of DKK-1, DKK-2, DKK-3, and DKK-4 have been characterized together with a unique DKK-3 related protein termed Soggy (Krupnik et al.). DKK-1 has been shown to support the generation of myeloid-derived suppressor cells (MDSCs) and thus is a negative regulator of antitumor immune responses (D'Amico et al.). DKK-1 from thrombocytes is an important regulator of leukocyte infiltration and induces Th2 cell polarization and potentiates Th2 cell cytokine expression (Chae et al.). DKK-1 has also been shown to drive cardiac and retinal differentiation from induced pluripotent stem (iPS) cells (Lian et al.). Protein contains a His-residue tag at the carboxyl end of the polypeptide chain.

Product Information

Alternative Names:	Dickkopf-1, Dickkopf WNT signaling pathway inhibitor 1, hDkk-1, SK
Accession Number:	O94907
Amino Acid Sequence:	TLNSVLNSNA IKNLPPPLGG AAGHPGSAVS AAPGILYPPG NKYQTIDNYQ PYPCAEDEEC GTDEYCASPT RGGDAGVQIC LACRKRKRC MRHAMCCPGN YCKNGICVSS DQNHFRGEIE ETITESFGND HSTLDGYSRR TTLSSKMYHT KGQEGSVCLR SSDCASGLCC ARHFWKICK PVLKEGQVCT KHRRKGGSHGL EIFQRCYCGE GLSRIQKDH HQASNSRLH TCQRHHHHHH H
Predicted Molecular Mass:	26.6 kDa
Species:	Human
Cross Reactivity:	Mouse, Rat
Formulation:	Lyophilized from a sterile-filtered solution containing phosphate-buffered saline.
Source:	HEK293

Specifications

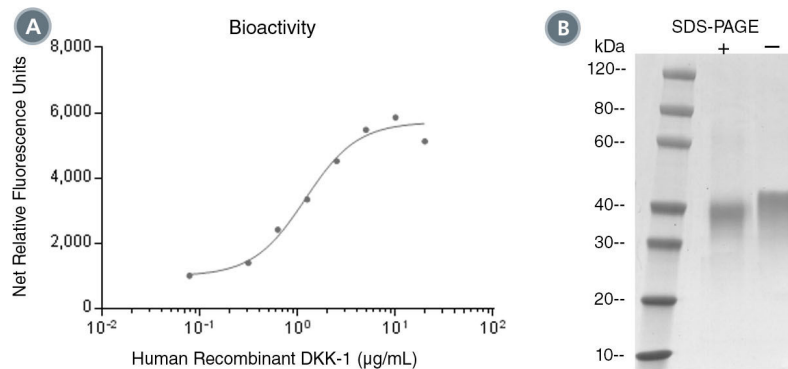
Activity:	The specific activity is ≥ 250 units/mg ($EC_{50} \leq 4$ µg/mL) as determined by alkaline phosphatase activity induced in CCL-226 cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

Preparation and Storage

Storage:	Store at -80°C .
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex.

OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at $2 - 8^{\circ}\text{C}$ for more than 1 week or at -20°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant DKK-1 was tested by its ability to promote alkaline phosphatase production in CCL-226 cells. Alkaline phosphatase production was measured using a fluorometric assay method. The EC₅₀ is defined as the effective concentration of the growth factor at which alkaline phosphatase production is at 50% of maximum. The EC₅₀ in the above example is less than 4 µg/mL.

(B) 2 µg of Human Recombinant DKK-1 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant DKK-1 has a predicted molecular mass of 26.6 kDa.

Related Products

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References

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- Niehrs C. (2006) Function and biological roles of the Dickkopf family of Wnt modulators. *Oncogene* 25(57): 7469–81.

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