

Cytokines

Human Recombinant DKK-1



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TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713

INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM

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Dickkopf-related protein 1

Catalog # 78013
78013.1

10 µg
50 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 cells (iPSCs; Lian et al.).

Product Information

Alternative Names: Dickkopf-1, hDkk-1, SK, Dickkopf WNT signaling pathway inhibitor 1

Accession Number: O94907

Amino Acid Sequence: TLNSVLNSNA IKNLPPPLGG AAGHPGSAVS AAPGILYPGG NKYQTIDNYQ PYPCAEDEEC GTDEYCASPT
RGGDAGVQIC LACRKRRC MRHAMCCPGN YCKNGICVSS DQNHFRGEIE ETITESFGND HSTLDGYSRR
TTLSSKMYHT KGQEGSVCLR SSDCASGLCC ARHFWKICK PVLKEGQVCT KHRKRGSHGL EIFQRCYCGE
GLSRIQKDH HQASNSSLRH TCQRH

Predicted Molecular Mass: 25.8 kDa

Species: Human

Cross Reactivity: Mouse

Formulation: Lyophilized after dialysis against phosphate-buffered saline.

Source: CHO

Specifications

Activity: The specific activity is ≥ 166 units/mg ($EC_{50} \leq 6$ µg/mL) as determined by the 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.

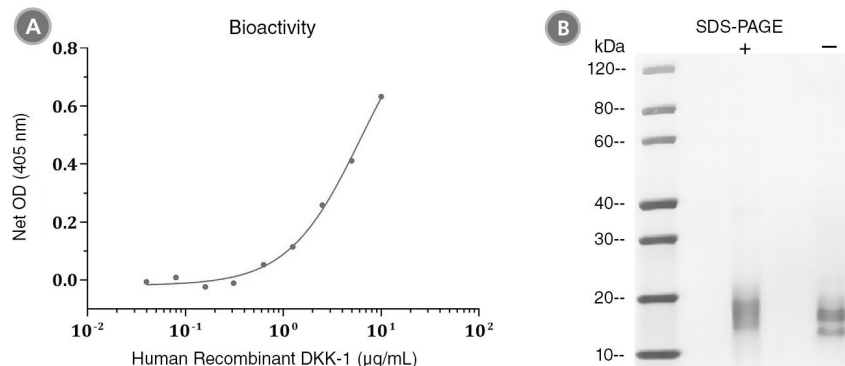
Preparation and Storage

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 or phosphate-buffered saline to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. 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 of 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 6 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 26.5 kDa.

Related Products

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References

- Chae W-J et al. (2016) The Wnt antagonist Dickkopf-1 promotes pathological type 2 cell-mediated inflammation. *Immunity* 44(2): 246–58.
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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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