

Recombinant Human Dkk-1 Protein

Catalog No.: RP01343

Recombinant

1 Publications

Sequence Information

Species	Gene ID	Swiss Prot
Human	22943	O94907

Tags

C-His

Synonyms

DKK1;DKK-1;SK

Product Information

Source	Purification
HEK293 cells	> 95% by SDS-PAGE.

Endotoxin

<0.1EU/μg

Formulation

Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4.

Reconstitution

Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stabilizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

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Background

Members of the dickkopf-related protein family (DKK-1, -2, -3, and -4) are secreted proteins with two cysteine-rich domains separated by a linker region. And DKK1 takes part in embryonic development through its inhibition of the WNT signaling pathway, binds to LRP6 with high affinity and prevents the Frizzled-Wnt-LRP6 complex formation in response to Wnts. DKK1 promotes LRP6 internalization and degradation when it forms a ternary complex with the cell surface receptor Kremen. DKK1 not only functions as a head inducer during development, but also regulates joint remodeling and bone formation, which suggests roles for DKK1 in the pathogenesis of rheumatoid arthritis and multiple myeloma. More recently research reported, DKK1 impacts eye development from a defined developmental time point on, and is critical for lens separation from the surface ectoderm via β-catenin mediated Pdgfrα and E-cadherin expression.

Basic Information

Description

Recombinant Human Dkk-1 Protein is produced by HEK293 cells expression system. The target protein is expressed with sequence (Thr32-His266) of human DKK-1 (Accession #NP_036374.1) fused with 6×His tag at the C-terminus.

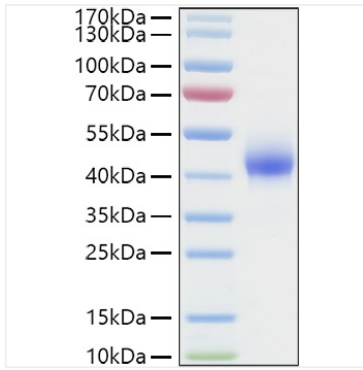
Bio-Activity

1. Measured by its binding ability in a functional ELISA. Immobilized Human DKK-1 at 5 μg/mL (100 μL/well) can bind Human LRP-5 with a linear range of 0.027-0.559 μg/mL. 2. Measured by its ability to inhibit Wnt3a-induced alkaline phosphatase production by C3H10T1/2 cells. The EC₅₀ for this effect is approximately 95 ng/ml in the presence of 2 μg/mL of Recombinant Human Wnt3a.

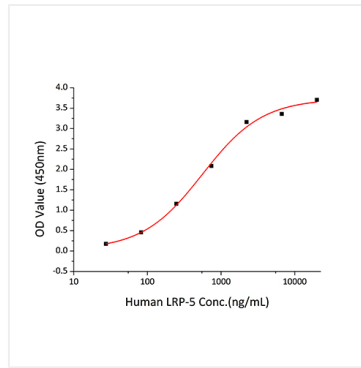
Storage

Store at -20°C. Store the lyophilized protein at -20°C to -80 °C up to 1 year from the date of receipt. After reconstitution, the protein solution is stable at -20°C for 3 months, at 2-8°C for up to 1 week. Avoid repeated freeze/thaw cycles.

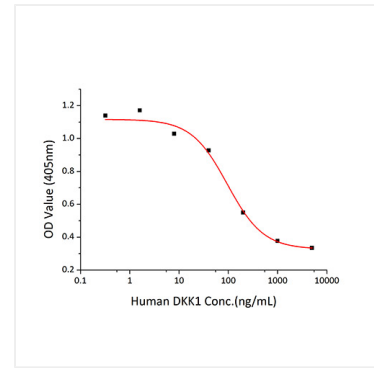
Validation Data



Recombinant Human Dkk-1 Protein was determined by SDS-PAGE with Coomassie Blue, showing bands at 40-45 kDa.



Immobilized Human DKK-1 at 5 $\mu\text{g/mL}$ (100 $\mu\text{L/well}$) can bind Human LRP-5 with a linear range of 0.027-0.559 $\mu\text{g/mL}$.



Recombinant Human Dkk-1 inhibit Wnt3a-induced alkaline phosphatase production by C3H10T1/2 cells. The EC_{50} for this effect is approximately 95 ng/ml in the presence of 2 $\mu\text{g/mL}$ of Recombinant Human Wnt3a.