

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

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 Pdgfr α and E-cadherin expression.

Product Information

Source **Purification**
 HEK293 cells $\geq 95\%$ as determined by SDS-PAGE.

Calculated MW **Observed MW**
 26.61 kDa 40-45 kDa

Endotoxin
 < 0.1 EU/ μ g of the protein by LAL method.

Formulation
 Lyophilized from a 0.22 μ m 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 freeze/thaw cycles.

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 \times His tag at the C-terminus.

Bio-Activity

1. Measured by its binding ability in a functional ELISA. Immobilized Human DKK-1 at 5 μ g/mL (100 μ L/well) can bind Human LRP-5 with a linear range of 0.027-0.559 μ g/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 μ g/mL of Recombinant Human Wnt3a.

Shipping

The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

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.

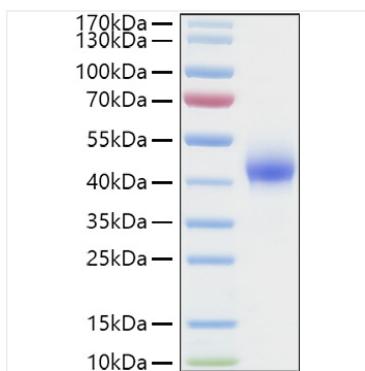
Operational Notes

For your safety and health, please wear a lab coat and disposable gloves for handling.

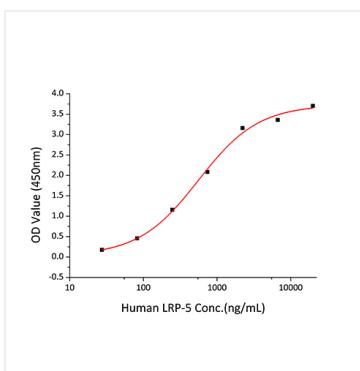
Contact

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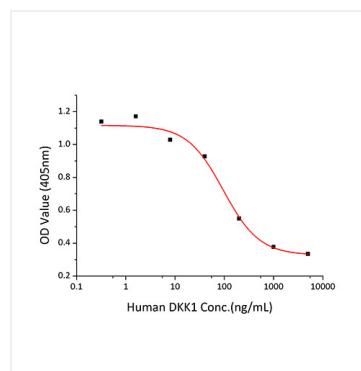
Validation Data



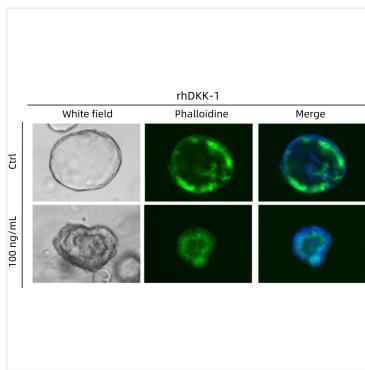
Recombinant Human Dkk-1 Protein was determined by SDS-PAGE under reducing conditions with Coomassie Blue.



Immobilized Human DKK-1 at 5 μ g/mL (100 μ L/well) can bind Human LRP-5 with a linear range of 0.027-0.559 μ g/mL.



Recombinant Human Dkk-1 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 μ g/mL of Recombinant Human Wnt3a.



Human kidney organoids were cultured with EGF(Cat. RP03287), FGF2(Cat. RP01042), FGF7(Cat. RP01717), FGF9(Cat. RP01710), FGF10(Cat. RP01140), IGF-(Cat. RP00996), NOG(Cat. RP01237), RSPO1(Cat. RP00071), WNT-3a(Cat. RP01618SLQ). And further, DKK-1(RP01343) was used to induce the establishment of cell polarity.