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Recombinant human DKK-1 protein (Qk068)



Type: Stem cells

Available for purchase: Unit Size (µg): 25, 50, 100, 500, 1000

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Product Information

Dickkopf-related protein 1 (DKK-1) is a key player in the Wnt signaling pathway and regulates embryonic development, tissue balance, and diseases, including cancer. DKK-1 is a member of the DKK protein family and acts as a potent Wnt pathway antagonist. In cell culture, DKK-1 is pivotal for controlling cell fate, self-renewal, and differentiation by inhibiting the canonical Wnt/β-catenin pathway through LRP5/6 co-receptors. DKK-1 has been widely used in various applications including guiding stem cell differentiation, particularly in neural and osteogenic pathways, and mimicking dysregulated Wnt signaling seen in cancers.

Human DKK-1 has a molecular weight of 25.7 kDa, animal origin-free, carrier-free and tag-free to ensure its purity with exceptional lot-to-lot consistency. DKK-1 is suitable for the culture of reproducible and high-quality stem cells and other relevant cells.

This protein is also available as GMP compliant Cell Therapy Grade, to enquire email support@qkine.com.

Alternative protein names

Dickkopf-related protein 1, Dickkopf-1, DKK1, hDkk-1, SK, Dickkopf-like protein 1, Dickkopf 1 homolog, Dickkopf WNT signaling pathway inhibitor, Qk68

Molecular weight

25.7 kDa (monomer)

Protein Uniprot number

High purity human DKK-1 protein (Uniprot number: O94907)

Species reactivity

- human
- species similarity:
- mouse - 86%
- rat - 86%
- bovine - 93%
- porcine - 33%

Product Information

- >98%, by SDS-PAGE quantitative densitometry
- Expressed in *E. coli*
- Animal origin-free (AOF) and carrier protein-free
- Manufactured in our Cambridge, UK laboratories
- Lyophilized from acetonitrile, TFA, mannitol

Reconstitution instructions

- Resuspend in sterile-filtered water at >50 µg/ml

Featured applications

- Differentiation of iPSC derived neural progenitors to neurons
- Osteogenic differentiation
- Maintenance of pluripotency in iPSC
- Mesenchymal stem cell research
- Expansion of induced pluripotent, embryonic and mesenchymal stem cells

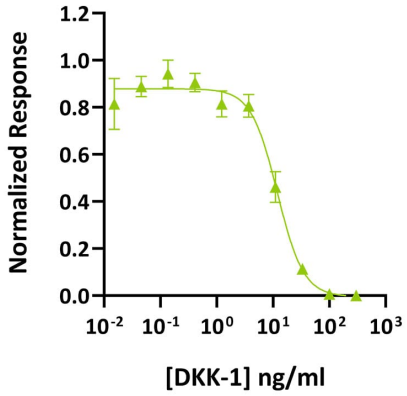
Further quality assays

- Mass spectrometry: single species with expected mass
- Recovery from stock vial: >95%
- Endotoxin: <0.05 EU/µg protein

Scientific Information

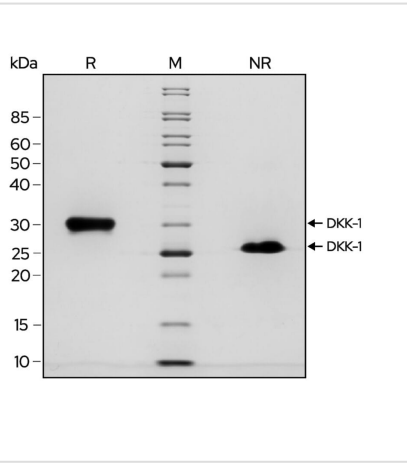
Bioactivity

DKK-1 activity was determined using the Wnt-3a-responsive firefly luciferase reporter assay. Transfected HEK293T cells were treated in triplicate with a serial dilution of DKK-1 and a standard concentration of Wnt-3a for 24 hours. Firefly luciferase activity was measured and normalized to the control Renilla luciferase activity. EC50 = 12 ng/ml (0.47 nM). Data from Qk068 lot #204593.



Purity

Recombinant DKK-1 migrates as a single band at approximately 26 kDa in non-reduced (NR) and at approximately 30 kDa in reduced conditions. No contaminating protein bands are present. The purified recombinant protein (3 µg) was resolved using 15% w/v SDS-PAGE in reduced (+β-mercaptothanol, R) and non-reduced (NR) conditions and stained with Coomassie Brilliant Blue R250. Data from Qk068 lot #204593.



Original product page: https://qkine.com/product/recombinant-human-dkk-1-protein-qk068/

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