

DKK1 Protein, Human, Recombinant (His)

General Information

Synonyms:	dickkopf WNT signaling pathway inhibitor 1;SK;DKK-1
Protein Construction:	A DNA sequence encoding the human DKK1 precursor (NP_036374.1) (Met 2-His 266) was expressed with a C-terminal polyhistidine tag. Predicted N terminal: Thr 32
Species:	Human
Expression Host:	HEK293 Cells
Accession:	I1W660
Molecular Weight:	27.22 kDa (predicted); 42.9 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by its ability to inhibit Wnt3a-induced alkaline phosphatase production by C3H10T1/2 cells. The ED50 for this effect is approximately 0.1-0.4 µg/ml in the presence of 10 ng/mL of mouse Wnt3a.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Dickkopf (DKK) family proteins, consisting of DKK-1, DKK-2, DKK-3 and DKK-4, function as secreted Wnt antagonists by inhibiting Wnt coreceptors LRP5/6. DKK-1, DKK-2, and DKK-4 also bind cell surface Kremen-1 or Kremen-2 and promote the internalization of LRP5/6. Dickkopf related protein 1 (DKK-1) was initially identified as an inducer of head formation in *Xenopus* embryos. DKK-1 protein modulates Wnt signaling pathway during

embryonic development. Increased levels of DKK-1 are found in the majority of lung cancers, esophageal squamous cell carcinomas, and hormone-resistant breast cancers, while DKK-1 expression is decreased in malignant melanoma and colorectal cancers.

Reference

Horwitz EM. (2004) Dkk-1-mediated expansion of adult stem cells. Trends Biotechnol. 22(8): 386-8.

Jiang T, et al. (2009) Clinical significance of serum DKK-1 in patients with gynecological cancer. Int J Gynecol Cancer. 19(7): 1177-81.

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