HUMANZYME

PRODUCT DATA SHEET
A XKine™ Product

Recombinant Human DKK-1 (Dickkopf-related protein-1)

Product Description

DKK-1 is a member of the DKK protein family which also includes DKK-2, DKK-3 and DKK-4. DKK-1 was originally identified as a Xenopus head-forming molecule that behaves as an antagonist for Wnt signaling. Subsequent studies have shown that DKK-1 and DKK-4 play an important regulatory role in the Wnt/β-catenin signaling pathway by forming inhibitory complexes with LDL receptor-related proteins 5 and 6 (LRP5 and LRP6), which are essential components of the Wnt/β-catenin signaling system. LPR5 and LPR6 are single-pass transmembrane proteins that appear to act as co-receptors for Wnt ligands involved in the Wnt/β-catenin signaling cascade. It has been suggested that by inhibiting Wnt/β-catenin signaling, which is essential for posterior patterning in vertebrates, DKK-1 permits anterior development. This notion is supported by the finding that mice deficient of DKK-1 expression lack head formation and die during embryogenesis. Mature human DKK-1 expressed in *HEK293* cells is a 35-40 kDa glycoprotein containing 235 amino acid residues.

Typical Specifications

Species	Human
Expression	HEK293 Cell Expressed
Purity	≥97%
Endotoxin	<1.0 EU/μg
Molecular Mass	25.8 kDa
Formulation	1x PBS, pH 7.4
Country of Origin	USA

Purity Confirmation

This was determined by SDS-PAGE gel and HPLC analysis.

Activity Assay

Determined by its ability to inhibit the proliferation of HCT116 colorectal carcinoma cells. Approximately 40% growth inhibition was achieved at a DKK-1 concentration of 200ng/ml.

AA Sequence

TLNSVLNSN	IKNLPPPLGG	AAGHPGSAVS
AAPGILYPGG	NKYQTIDNYQ	PYPCAEDEEC
GTDEYCASPT	RGGDAGVQIC	LACRKRRKRC
MRHAMCCPGN	YCKNGICVSS	DQNHFRGEIE
ETITESFGND	HSTLDGYSRR	TTLSSKMYHT
KGQEGSVCLR	SSDCASGLCC	ARHFWSKICK
PVLKEGQVCT	KHRRKGSHGL	EIFQRCYCGE
GLSCRIQKDH	HQASNSSRLH	TCQRH

Reconstitution Buffer

Centrifuge the vial prior to opening. Reconstitute in water to a concentration of 0.1-1.0 mg/ml. Do not vortex.

Storage

For extended storage, it is recommended to further dilute in a buffer containing a carrier protein (example 0.1% HSA) and store in working aliquots at -20°C to -80°C.

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