



# Recombinant Human DKK-1

20151105BB



**FOR RESEARCH ONLY! NOT FOR HUMAN USE!**

<b>Cat.-no:</b>	<b>200-013S</b>
<b>Size:</b>	5 µg
<b>Lot. No.:</b>	According to product label
<b>Country of origin:</b>	Germany

## Scientific Background

<b>Gene-ID (NIBC):</b>	22943
<b>Synonyms:</b>	Dickkopf-related protein-1, Dickkopf-1, SK

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 / $\beta$ -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/ $\beta$ -catenin signaling system. LRP5 and LRP6 are single-pass transmembrane proteins that appear to act as co-receptors for Wnt ligands involved in the Wnt/ $\beta$ -catenin signaling cascade. It has been suggested that by inhibiting Wnt/ $\beta$ -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. Recombinant human DKK-1 fused to a C terminal His-tag derived from *E. coli* is a 26 kDa protein containing 235 amino-acid residues.

## References

1. Fedi P et al, J Biol Chem 274:19465 (1999)
2. Krupnik VE et al, Gene 238:301 (1999)
3. Semenov MV et al, Curr Biol 11:951 (2001)
4. Niehrs C, Oncogene 25:7469 (2006)
5. Murrills RJ et al, J Cell Biochem 108:1066 (2009)
6. Bourhis E et al, J Biol. Chem. 285:9172 (2010)
7. Haniu M et al, Protein Sci 20:1802 (2011)
8. Ahn VE et al, Dev Cell 21:862 (2011)

## Sequence

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TLNSVLNSNA IKNLPPPLGG AAGHPGSAVS AAPGILYPPG  
NKYQTIDNYQ PYPCAEDEEC GTDEYCASPT RGGDAGVQIC  
LACRKRKRC MRHAMCCPGN YCKNGICVSS DQNHFRGEIE  
ETITESFGND HSTLDGYSRR TTLSSKMYHT KGQEGSVCLR  
SSDCASGLCC ARHFWSKICK PVLKEGQVCT KHRRKGSGL  
EIFQRRCYCGE GLSCRIQKDH HQASNSSRLH TCQRLEHHHH HH
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## Database References

<b>Protein RefSeq:</b>	NP_036374.1
<b>Uniprot ID:</b>	O94907
<b>mRNA RefSeq:</b>	NM_012242.2

## Product Specifications

<b>Expressed in</b>	<i>E.coli</i>
<b>Purity</b>	95% by SDS-PAGE & Coomassie stain
<b>Buffer</b>	PBS
<b>Stabilizer</b>	None
<b>Formulation</b>	lyophilized
<b>Length (aa):</b>	242
<b>MW:</b>	26.0 kDa (~ 32 kDa in SDS-PAGE)
<b>Result by N-terminal sequencing</b>	TLNSV

**Stability:** The lyophilized human DKK-1, though stable at room temperature, is best stored desiccated below 0°C. Reconstituted human DKK-1 should be stored in working aliquots at -20°C.

**Reconstitution:** Human DKK-1 should be reconstituted in water to a concentration of 0.1 mg/ml. This solution can be diluted in water or other buffer solutions or stored at -20°C.



**AVOID REPEATED FREEZE AND THAW CYCLES!**

**Biological activity:** Not tested so far.

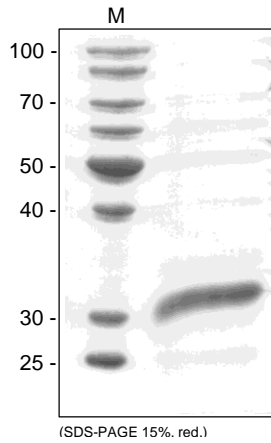
## Applications:

1. Positive control for Western blot analysis



## Recombinant Human DKK-1

### Handling/Application



**Fig. 1:** SDS-PAGE analysis of recombinant human DKK-1. Sample was loaded in 15% SDS-polyacrylamide gel under reducing condition and stained with Coomassie blue.