

Cytokines

Human Recombinant Sclerostin

Sclerostin, His tag

Catalog #100-1299

50 µg



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Product Description

Sclerostin, also known as SOST, is a member of the cerberus/DAN family of glycoproteins whose members share a C-terminal cysteine-knot-like (CTCK) domain. This protein contains a His-residue tag at the carboxyl end of the polypeptide chain. Sclerostin is predominantly produced by osteocytes with significant levels of expression found in bone, cartilage, kidney, and liver (Weivoda et al.). It is an osteoclast-derived BMP antagonist which binds to BMP6 and BMP7 with high affinity but to BMP2 and BMP4 with lower affinity (Kusu et al.). It plays an important role in regulating bone remodeling homeostasis, inhibiting bone formation in vivo and in vitro, likely through Wnt/ β -catenin signaling (Ellies et al.; Lin et al.). Mutations in the SOST gene have been associated with sclerosteosis (Brunkow et al.), van Buchem disease (Staehling-Hampton et al.), and bone dysplasia disorders characterized by increased bone density.

Product Information

Alternative Names: CDD, DAND6, SOST, SOST1, VBCH

Accession Number: NP_079513.1 (Gln24-Tyr213) was expressed with a polyhistidine tag at the N-terminus.

Amino Acid Sequence: HHHHHHHQGW QAFKNDAT EI IPELGEY PEP PPELENNKTM NRAENGGRPP HHPFETKDVS EYSCRELHFT RYVTDGPCRS AKPVTELVCS GQCGPARLLP NAIGRGKWWR PSGPDFRCIP DRYRAQRVQL LCPGGGEAPRA RKVRLVASCK CKRLTRFHNQ SELKDFGTEA ARPQKGRKPR PRARSAKANQ AELENAY

Predicted Molecular Mass: 22.5 kDa

Species: Human

Formulation: Lyophilized from sterile PBS, pH 7.4. Trehalose (5 - 8%), mannitol, and 0.01% TWEEN® 80 are normally added as protectants before lyophilization.

Source: HEK293 cells

Specifications

Activity: The EC₅₀ is ≤ 1 µg/mL as determined by the ability to inhibit Wnt3a-induced alkaline phosphatase production using C3H10T1/2 cells.

Purity: $\geq 87\%$

Endotoxin Level: Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

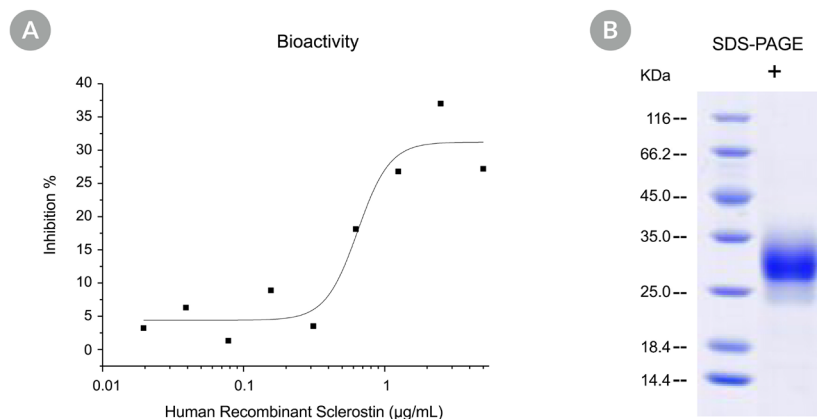
Preparation and Storage

Storage: Store at -20 to -80°C.

Stability: Stable as supplied for 12 months from date of receipt.

Preparation: Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.25 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant Sclerostin was tested by its ability to inhibit Wnt3a-induced alkaline phosphatase production by C3H10T1/2 cells. The EC50 is defined as the effective concentration of the cytokine at which inhibition of enzyme production is at 50% of maximum. The EC50 in the above example is ≤ 1 µg/mL.

(B) Human Recombinant Sclerostin was resolved with SDS-PAGE under reducing (+) conditions and visualized by Coomassie Blue staining. Human Recombinant Sclerostin has a predicted molecular mass of 22.5 kDa and an apparent molecular mass of 29.9 kDa due to glycosylation.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines, or contact us at techsupport@stemcell.com.

References

- Brunkow ME et al. (2001) Bone dysplasia sclerosteosis results from loss of the SOST gene product, a novel cystine knot-containing protein. *Am J Hum Genet* 68(3): 577–89.
- Ellies DL et al. (2006) Bone density ligand, sclerostin, directly interacts with LRP5 but not LRP5G171V to modulate Wnt activity. *J Bone Miner Res* 21(11): 1738–49.
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- Lin C et al. (2009) Sclerostin mediates bone response to mechanical unloading through antagonizing Wnt/ β -catenin signaling. *J Bone Miner Res* 24(10): 1651–61.
- Staehling-Hampton K et al. (2002) A 52-kb deletion in the SOST-MEOX1 intergenic region on 17q12-q21 is associated with van Buchem disease in the Dutch population. *Am J Med Genet* 110(2): 144–52.
- Weivoda MM et al. (2017) Sclerostin expression and functions beyond the osteocyte. *Bone* 96: 45–50.

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