PRODUCT INFORMATION

Sclerostin (human, recombinant)

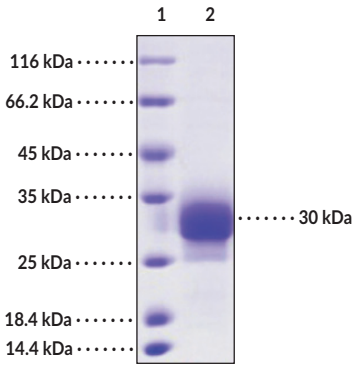
Item No. 44192

Overview and Properties

Synonym:	SOST
Source:	Active recombinant human N-terminal His-tagged sclerostin expressed in HEK293 cells
Amino Acids:	24-213
Uniprot No.:	Q9BQB4
Molecular Weight:	22.5 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥90% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing:	<1.0 EU per g of the protein as determined by the LAL method
Bioactivity:	See figures for details

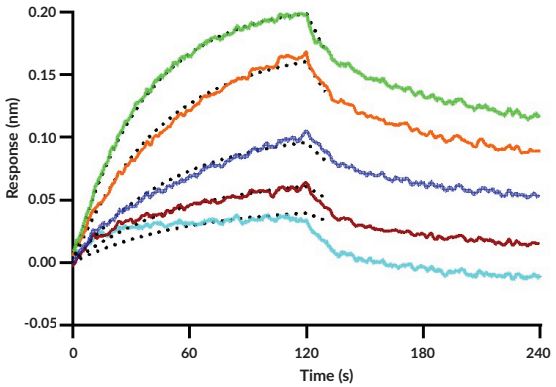
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: Sclerostin

SDS-PAGE Analysis of Sclerostin. This protein has a calculated molecular weight of 22.5 kDa. It has an apparent molecular weight of approximately 30 kDa by SDS-PAGE under reducing conditions due to glycosylation.



Loaded biotinylated Recombinant Human LRP-6 Protein, His & on SA Biosensor, can bind Sclerostin (human, recombinant) (Item No. 44192) with an affinity constant of 39.5 nM as determined in BLI assay (Sartorius Octet RED384) (routinely tested).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Description

Sclerostin is a secreted glycoprotein and a member of the DAN/Cerberus protein family involved in Wnt signaling in bone.[1-3] It contains a cystine-knot motif and heparin binding site and is expressed by osteocytes and cementocytes.[3,4] Sclerostin competes with Wnt ligands for binding to LDL receptor-related protein 5/6 (LRP5/6), where it acts as a Wnt inhibitor and inhibits osteoblast activity.[1,2] It also acts as an antagonist against several members of the bone morphogenetic protein (BMP) family. Inhibition of sclerostin *via* monoclonal antibodies increases bone mineral density in mice.[3] Loss-of-function mutations in the gene encoding sclerostin, *SOST*, are associated with sclerosteosis, craniodiaphyseal dysplasia (CDD), and van Buchem disease.[1] Formulations containing a monoclonal antibody against sclerostin have been used in the treatment of osteoporosis. Cayman's Sclerostin (human, recombinant) protein can be used for binding assays. This protein consists of 197 amino acids and has a calculated molecular weight of 22.5 kDa. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is approximately 30 kDa due to glycosylation.

References

1. Pietrzyk, B., Smertka, M., and Chudek, J. Sclerostin: Intracellular mechanisms of action and its role in the pathogenesis of skeletal and vascular disorders. *Adv. Clin. Exp. Med.* **26(8)**, 1283-1291 (2017).
2. Ke, H.Z., Richards, W.G., Li, X., *et al.* Sclerostin and Dickkopf-1 as therapeutic targets in bone diseases. *Endocr. Rev.* **33(5)**, 747-783 (2012).
3. Veverka, V., Henry, A.J., Slocombe, P.M., *et al.* Characterization of the structural features and interactions of sclerostin: Molecular insight into a key regulator of Wnt-mediated bone formation. *J. Biol. Chem.* **284(16)**, 10890-10900 (2009).
4. Jäger, A., Götz, W., Lossdörfer, S., *et al.* Localization of SOST/sclerostin in cementocytes *in vivo* and in mineralizing periodontal ligament cells *in vitro*. *J. Periodontal. Res.* **45(2)**, 246-254 (2010).

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WWW.CAYMANCHEM.COM