Recombinant Mouse SOST/Sclerostin

Catalog Number: 1589-ST/CF

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Gln24-Tyr211 with an N-terminal 7-His tag Accession # NP_077769
N-terminal Sequence Analysis	His
Predicted Molecular Mass	22 kDa

SPECIFICATIONS

SDS-PAGE	30 kDa, reducing conditions
Activity	Measured by its ability to inhibit Wnt-3a-induced alkaline phosphatase production by MC3T3-E1 mouse preosteoblast cells. The ED_{50} for this effect is 1-5 µg/mL in the presence of Recombinant Mouse Wnt-3a (Catalog # 1324-WN).
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 200 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

SOST, also known as sclerostin, is a member of the cerberus/DAN family, a group of secreted glycoproteins characterized by a cysteine-knot motif. Cerberus/DAN family members are putative BMP antagonists, and include Dan, Cerberus, Gremlin, PRDC, and Caronte. While the overall sequence identity between members of the family is low, they have conserved spacing of six cysteine residues. Cerberus and Dan have an additional cysteine residue used for dimerization; however, SOST does not and is secreted as a monomer. SOST was originally identified as an important regulator of bone homeostasis. Positional cloning studies identified that mutations in the SOST gene can cause sclerosteosis and van Buchem disease, bone dysplasia disorders characterized by progressive skeletal overgrowth. Significant levels of SOST expression are detected in bone, cartilage, kidney, and liver. SOST is expressed by osteoclasts in developing bones of mouse embryos, including both intramembranously forming skull bones and endochondrally forming long bones. SOST plays a physiological role as a negative regulator of bone formation by repressing BMP-induced osteogenesis. SOST has been shown to have unique ligand specificity, binding BMP-5, -6, and -7 with high affinity and BMP-2 and -4 with low affinity. This seems to be the first example of a BMP antagonist being localized to osteoclasts, cells derived from the hematopoietic lineage, that function to degrade bone matrix. Recombinant human SOST preparations from R&D Systems bind BMP-5 and BMP-6 in a functional ELISA. Human and mouse SOST share 88% amino acid identity (1-3).

References:

1. Kusu, N. *et al.* (2003) J. Biol. Chem. **278**:24113.
2. Balemans, W. *et al.* (2001) Hum. Mol. Genet. **10**:537.
3. Brunkow, M.E. *et al.* (2001) Am. J. Hum. Genet. **68**:577.

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