

Mouse Gremlin 1 / GREM1 Protein (His Tag)

Catalog Number: 50016-M08B



Sino Biological Inc.
Biological Solution Specialist

General Information

Gene Name Synonym:

C15DUPq; CKTSF1B1; CRAC1; CRCS4; DAND2; DRM; DUP15q; GREMLIN; HMPS; HMPS1; IHG-2; MPSH; PIG2; Cktsf1b1; Drm; Grem; Id

Protein Construction:

A DNA sequence encoding the mouse GREM1 (O70326) (Met1-Asp184) was fused with a polyhistidine tag at the C-terminus.

Source: Mouse

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 97 % as determined by SDS-PAGE

Bio Activity:

Measured by its ability to inhibit recombinant human BMP4-induced alkaline phosphatase production by MC3T3-E1 cells. The ED₅₀ for this effect is typically 1-7 µg/mL in the presence of 50 ng/mL of recombinant human BMP4.

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Lys 25

Molecular Mass:

The recombinant mouse GREM1 consists of 171 amino acids and has a calculated molecular mass of 19.7 kDa. The recombinant protein migrates as an approximately 25 kDa band in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 20mM Tris, 500mM NaCl, pH 7.4, 10% gly, 0.5mM EDTA, 3mM DTT

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

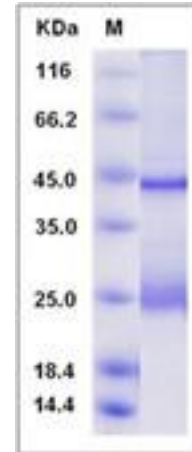
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

GREM1 belongs to the DAN family. It contains 1 CTCK (C-terminal cystine knot-like) domain. GREM1 is a cysteine knot-secreted protein and acts as an inhibitor in the TGF beta signaling pathway. It inhibits BMP-2, -4, and -7. Inhibition by grem 1 of BMPs in mice allow the expression of fibroblast growth factors (FGFs) 4 and 8 and Sonic hedgehog (SHH) which are necessary for proper limb development. It interacts with SLIT1 and SLIT2 in a glycosylation-dependent manner. As a cytokine, GREM1 may play an important role during carcinogenesis and metanephric kidney organogenesis, as a BMP antagonist required for early limb outgrowth and patterning in maintaining the FGF4-SHH feedback loop. It down-regulates the BMP4 signaling in a dose-dependent manner. It also acts as inhibitor of monocyte chemotaxis. GREM1 is highly expressed in small intestine, fetal brain and colon.

References

- 1.Dimitrov BI, *et al.* (2010) Genomic rearrangements of the GREM1-FMN1 locus cause oligosyndactyly, radio-ulnar synostosis, hearing loss, renal defects syndrome and Cenani--Lenz-like non-syndromic oligosyndactyly. *J Med Genet.* 47(8):569-74.
- 2.Heron M, *et al.* (2011) Genetic variation in GREM1 is a risk factor for fibrosis in pulmonary sarcoidosis. *Tissue Antigens.* 77(2):112-7.
- 3.van Vlodrop IJ, *et al.* (2010) Prognostic significance of Gremlin1 (GREM1) promoter CpG island hypermethylation in clear cell renal cell carcinoma. *Am J Pathol.* 176(2):575-84.

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