

**Synonym**

GREM1,CKTSF1B1,DAND2,DRM,PIG2

**Source**

Human Gremlin, His Tag(GR1-H52H3) is expressed from human 293 cells (HEK293). It contains AA Lys 25 - Asp 184 (Accession # [NP\\_037504](#)).

Predicted N-terminus: Lys 25

**Molecular Characterization**

**Gremlin(Lys 25 - Asp 184)**  
**NP\_037504**

**Poly-his**

This protein carries a polyhistidine tag at the C-terminus.

The protein has a calculated MW of 20.2 kDa. The protein migrates as 28-35 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

**Endotoxin**

Less than 1.0 EU per  $\mu$ g by the LAL method / rFC method.

**Purity**

>95% as determined by SDS-PAGE.

**Formulation**

Lyophilized from 0.22  $\mu$ m filtered solution in 10 mM Sodium Citrate, pH3.0 with trehalose as protectant.

Contact us for customized product form or formulation.

**Reconstitution**

Please see Certificate of Analysis for specific instructions.

*For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.*

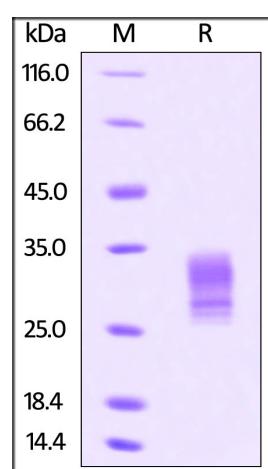
**Storage**

For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

**SDS-PAGE**

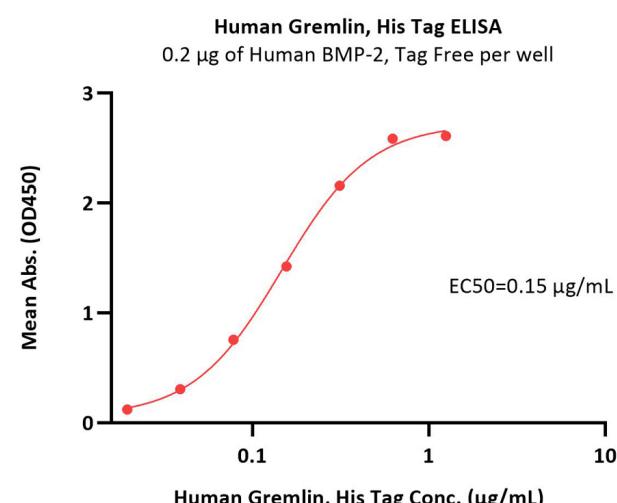
Human Gremlin, His Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

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Immobilized Human BMP-2, Tag Free (Cat. No. BM2-H4117) at 2 µg/mL (100 µL/well) can bind Human Gremlin, His Tag (Cat. No. GR1-H52H3) with a linear range of 0.02-0.313 µg/mL (QC tested).

## Background

Gremlin is also known as Cysteine knot superfamily 1, BMP antagonist 1 (CKTSF1B1), DAN domain family member 2 (DAND2), Down-regulated in Mos-transformed cells protein (DRM), Increased in high glucose protein 2 (IHG-2), Cell proliferation-inducing gene 2 protein (PIG2) or Gremlin-1 (GREM1), which is highly expressed in small intestine, fetal brain and colon. Gremlin / GREM-1 interacts with SLIT1 and SLIT2 in a glycosylation-dependent manner. Gremlin 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. Gremlin down-regulates the BMP4 signaling in a dose-dependent manner and acts as inhibitor of monocyte chemotaxis.

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