

## Human Gremlin-1

Synonyms: GREM1, DRM, PIG2, DAND2, IHG-2, GREMLIN, CKTSF1B1, Cell proliferation-inducing gene 2 protein, Cysteine knot superfamily 1, BMP antagonist 1, DAN domain family member 2, Down-regulated in Mos-transformed cells protein, Increased in high glucose protein 2

*PLEASE NOTE: ALWAYS CENTRIFUGE VIAL BEFORE OPENING*

Size	Order #	Lot #	Expiry Date
50 µg	4412.950.050		

Please enquire for bulk quantities and other vial sizes

### Description

Gremlin, also known as "Increased in High Glucose protein 2" (IHG2) and "Down regulated in Mos-transformed cells protein" (Drm), is a 28 kDa member of the Dan family of secreted glycoproteins. Native human Gremlin consist of 160 amino acids. The mature region contains one potential site for N-linked glycosylation (Asn42), a cysteine-rich region, and a cysteine-knot motif (aa94-184) whose structure is shared by members of the TGFβ superfamily. Posttranslational modifications include glycosylation and phosphorylation (1-3). Human Gremlin exists in both secreted and membrane-associated forms and there exist 2 isoforms. The aa sequence identity of human Gremlin with mouse and chicken Gremlin is 99% and 86%, respectively. Northern blot analysis shows that Gremlin mRNA is highly expressed in the small intestine, fetal brain and colon, and weakly expressed in adult brain, ovary, prostate, pancreas and skeletal muscle. Gremlin functions as a bone morphogenetic protein (BMP) antagonist. It acts by binding to, and forming heterodimers with, BMP2, BMP4, and BMP7, thus preventing them from interacting with their cell surface receptors. This mechanism is thought to be responsible for the pattern-inducing activity of Gremlin during embryonic development and to play a role in human diseases, such as diabetic nephropathy). However, intracellular BMP-independent mechanisms of action may mediate the ability of Gremlin to suppress transformation and tumor genesis under certain experimental conditions. Gremlin also interacts with Slit proteins and acts as an inhibitor of monocyte chemotaxis. In addition, Gremlin has been found to be a proangiogenic factor expressed by endothelium. Furthermore Gremlin is a novel agonist of the major proangiogenic receptor VEGFR2.

- **Source** *E. Coli*
- **Purity** ≥ 95 % (SDS-PAGE, silver stained)

### Biological Activity

Data not available.

### Reconstitution

Human Grem1 should be reconstituted in 50mM acetic acid or sterile water to a concentration of 0.1 mg/ml. This solution can be diluted in water or other buffer solutions or stored at -20 °C.

### Amino Acid Sequence

MKKKGSQGAI PPPDKAQHND SEQTQSPQQP GSRNRGRGQG RGTAMPGEEV LESSQEALHV TERKYLKRDW  
 CKTQPLKQTI HEEGCNSRTI INRFCYGQCN SFYIPRHIRK EEGSFQSCSF CKPKKFTTMM VTLNCPQLQP  
 PTKKKRVTRV KQCRCSIDL D

**Usage:** For research use only. Not for use in diagnostic or therapeutic procedures. Not for human use.

\*The Buffer may vary depending on the Lot #. Please contact our technical support if you have specific requirements.

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