

## Recombinant human gremlin 1 protein (Qk015)



**Type:** Stem cells

**Available for purchase:** Unit Size (µg): 25, 50, 100, 500, 1000

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### Product Information

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Human gremlin 1 protein is a [BMP-inhibitor](#) present in the natural intestinal niche and provides an alternative to [noggin](#) for optimization of intestinal [organoid](#) culture and iPSC differentiation.

Qkine gremlin 1 has been optimized by our experts to be an exceptionally high-purity 18 kDa highly bioactive dimeric protein, [animal origin-free](#) (AOF) and carrier protein free.

**This protein is also available as GMP compliant [Cell Therapy Grade](#), to enquire email [ryan.weber@matriq.com](mailto:ryan.weber@matriq.com).**

#### Alternative protein names

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, CKTSF1B1, DAND2, DRM, gremlin-1, Qk15

#### Molecular weight

18 kDa

#### Protein Uniprot number

High purity human gremlin 1 protein (Uniprot: O60565)

#### Species reactivity

- human
- bovine
- porcine
- species similarity:

- mouse – 99%
- rat – 99%

### **Product Information**

- >98%, by SDS-PAGE quantitative densitometry
- Expressed in *E. coli*
- Animal origin-free (AOF) and carrier protein-free
- Manufactured in our Cambridge, UK laboratories
- Lyophilized from acetonitrile, TFA

### **Reconstitution instructions**

- Resuspend in 10 mM HCl (Reconstitution solution A) at >50 µg/ml

### **Featured applications**

- Tumor organoid culture

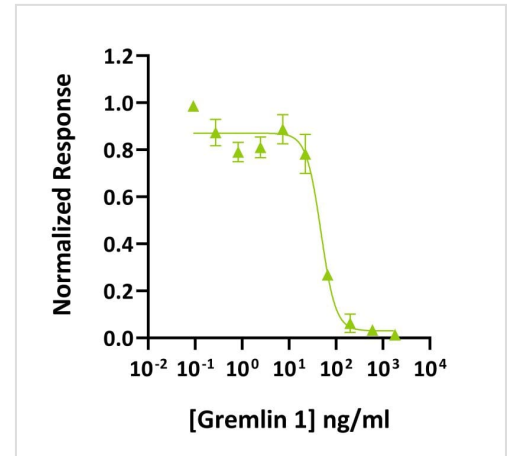
### **Further quality assays**

- Mass spectrometry: single species with expected mass
- Recovery from stock vial: >95%
- Endotoxin: <0.05 EU/µg protein

## Scientific Information

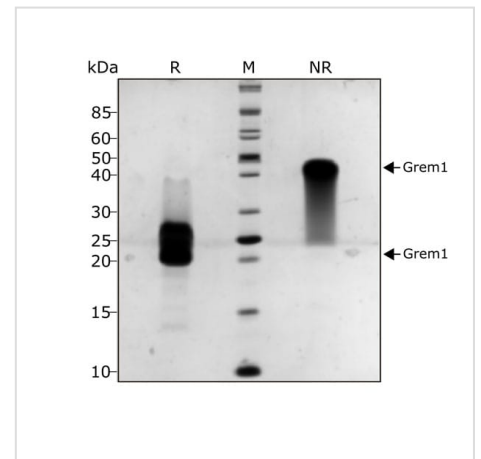
### Bioactivity

Gremlin-1 inhibits BMP-2 induced luciferase activity BRE-HEK293 luciferase reporter assay with an  $IC_{50} = 34 \text{ ng/ml}$  (1.88 nM). Gremlin 1 activity was determined using inhibition of the BMP-2 response (Qk007 #010, 52 ng/ml) from a BMP2-responsive firefly luciferase reporter in stably transfected HEK293T cells. Cells were treated (n=4) with a serial dilution of gremlin 1 in BMP-2 for 6 hours. Firefly luciferase activity was measured and normalized to the control Renilla luciferase activity. Data from Qk015 batch #011.



### Purity

Gremlin 1 protein migrates as a single diffuse band at ~36 kDa in non-reducing (NR) and 19 kDa in reducing (R) conditions. The protein is a non-covalent dimer and it is the dissociation of the dimer during electrophoresis which gives the characteristic diffuse band. Purified recombinant protein (7 µg) was resolved using 15% w/v SDS-PAGE in reduced (+β-mercaptoethanol, R) and non-reduced conditions (NR) and stained with Coomassie Brilliant Blue R250. Data from Qk015 lot #011.



**Original product page:** <https://ryan.calliope-alpha.ts.net/product/recombinant-human-gremlin-1-protein/>

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