The gremlin protein family contains antagonists of bone morphogenetic protein (BMP) signaling that are expressed in the neural crest. All family members are secreted proteins that act as BMP antagonists in embryonic explants and are expressed in the proximal airway epithelium of the lung during embryonic development. Gremlin-1 is required for early limb outgrowth and patterning in the FGF4-SHH feedback loop, while gremlin-2 binds and blocks the activity of BMP-2 and BMP-4. The dorsaling factor gremlin belongs to a novel gene family that includes the head-inducing factor Cerberus and the tumor suppressor DAN. Additionally, secreted gremlin relays the Sonic hedgehog signal from the polarizing region to the apical ectodermal ridge.

**REFERENCES**


**CHROMOSOMAL LOCATION**

Genetic locus: GREM1 (human) mapping to 15q13-q15; Grem1 (mouse) mapping to 2 E4.

**SOURCE**

gremlin-1 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of gremlin-1 of human origin.

**PRODUCT**

Each vial contains 200 µg IgG in 1.0 ml of PBS with 0.1% sodium azide and 0.2% gelatin.

Blocking peptide available for competition studies, sc-18274 P, (100 µg peptide in 0.5 ml PBS containing 0.1% sodium azide and 0.2% BSA)

**STORAGE**

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

**APPLICATIONS**

Gremlin-1 (N-20) is recommended for detection of gremlin-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with gremlin-2.

Suitable for use as control antibody for gremlin-1 siRNA (h): sc-39408 and gremlin-1 siRNA (m): sc-39409.

**RECOMMENDED SECONDARY REAGENTS**

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2033 and Western Blotting Luminal Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

**SELECT PRODUCT CITATIONS**


**RESEARCH USE**

For research use only, not for use in diagnostic procedures.

**PROTOCOLS**

See our web site at www.scbt.com or our catalog for detailed protocols and support products.