

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects human and mouse Gremlin in direct ELISAs.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Gremlin Lys25-Asp184 Accession # O70326
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

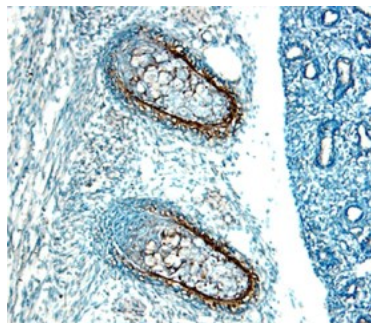
APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Immunohistochemistry	3-15 µg/mL	See Below
Blockade of Receptor-ligand Interaction	In a functional ELISA, 1-3 µg/mL of this antibody will block 50% of the binding of 100 ng/mL of Recombinant Human BMP-4 (Catalog # 314-BP) to immobilized Recombinant Mouse Gremlin (Catalog # 956-GR) coated at 5 µg/mL (100 µL/well).	

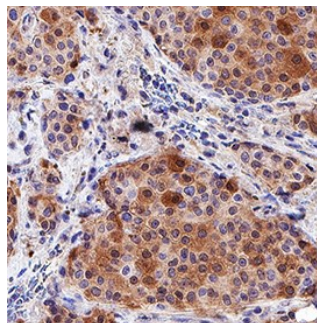
DATA

Immunohistochemistry



Gremlin in Embryonic Mouse Ribs.
Gremlin was detected in immersion fixed frozen sections of embryonic mouse ribs (15 d.p.c.) using 15 µg/mL Goat Anti-Human/Mouse Gremlin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF956) overnight at 4 °C. Tissue was stained with the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for [Chromogenic IHC Staining of Frozen Tissue Sections](#).

Immunohistochemistry



Gremlin in Human Breast Cancer Tissue.
Gremlin was detected in immersion fixed paraffin-embedded sections of human breast cancer tissue using Goat Anti-Human/Mouse Gremlin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF956) at 3 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Goat IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC004). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to cytoplasm. View our protocol for [IHC Staining with VisUCyte HRP Polymer Detection Reagents](#).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> 12 months from date of receipt, -20 to -70 °C as supplied. 1 month, 2 to 8 °C under sterile conditions after reconstitution. 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Gremlin was identified in a *Xenopus* expression-cloning screen as a dorsalizing factor that can induce a secondary axis. A rat homolog, called Drm, was identified as a cDNA that was downregulated in v-mos transfected cells. Gremlin/Drm belongs to the DAN family of secreted glycoproteins that are BMP antagonists. Other members of the family include: cerberus, Dante, PRDC, caronte and DAN. DAN family members share a cysteine-rich domain that is structurally related to the cysteine-knot motif found in TGF- β superfamily ligands. In vitro, Gremlin/Drm binds BMP-4 and BMP-2 indicating that it might interfere with BMP signaling. Gremlin/Drm acts as a BMP-2/4 antagonist in a variety of tissues and developmental processes including: *Xenopus* animal cap explants, chick limb bud outgrowth and chondrogenesis, murine lung branching morphogenesis, and osteogenic differentiation of mouse myoblasts and bone marrow stromal cells. In addition, expression of Gremlin/Drm has been shown to be downregulated in a wide range of human cancer cell lines. Mouse, human, chick and *Xenopus* homologs of Gremlin share over 80% amino acid identity. It is likely that various DAN family members and other BMP antagonists including Noggin, Chordin, Follistatin and TSG can selectively antagonize the activities of different subsets of TGF- β superfamily ligands.

References:

1. Hsu, D.R. *et al.* (1998) Mol. Cell **1**:673.
2. Merino, R. *et al.* (1999) Development **126**:5515.
3. Shi, W. *et al.* (2001) Am. J. Physiol. Lung Cell Mol. Physiol. **280**:L1030.
4. Topol, L.Z. *et al.* (2000) J. Biol. Chem. **275**:8785.