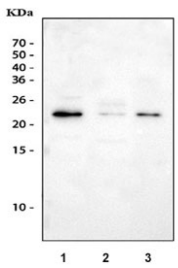
Gremlin 1 Antibody / GREM1 (R31825)

Catalog No.	Formulation	Size
R31825	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	O60565
Applications	Western Blot : 0.5-1ug/ml
Limitations	This Gremlin 1 antibody is available for research use only.



Western blot testing of 1) human A549, 2) rat testis and 3) mouse testis tissue lysate with Gremlin 1 antibody. Expected molecular weight 21~23 kDa.

Description

Gremlin 1 antibody detects Gremlin 1, a secreted glycoprotein encoded by the GREM1 gene that functions as a bone morphogenetic protein (BMP) antagonist and regulator of tissue differentiation. The UniProt recommended name is Gremlin 1 (GREM1). This protein belongs to the DAN family of BMP antagonists, which includes Cerberus, Noggin, and Chordin, all of which modulate growth factor signaling during embryogenesis and tissue remodeling. Gremlin 1 binds directly to BMP2, BMP4, and BMP7, preventing their interaction with cell surface receptors and thereby inhibiting downstream SMAD signaling.

Functionally, Gremlin 1 plays an essential role in developmental processes including limb formation, kidney

morphogenesis, and lung branching. By fine-tuning BMP activity, it helps balance proliferation and differentiation in mesenchymal and epithelial cell populations. In adults, Gremlin 1 is expressed at low levels in normal tissues but can be reactivated during fibrosis, inflammation, and cancer progression. The GREM1 gene, located on chromosome 15q13.3, is transcriptionally regulated by developmental signals and environmental stressors such as hypoxia and transforming growth factor beta (TGF-beta).

Beyond its role in embryonic patterning, Gremlin 1 is involved in pathophysiological processes such as tumorigenesis and organ fibrosis. Elevated Gremlin 1 expression has been observed in renal and pulmonary fibrosis, where it promotes fibroblast activation and extracellular matrix deposition. In cancer biology, GREM1 has been implicated in tumor growth, angiogenesis, and epithelial-mesenchymal transition through BMP-independent mechanisms involving vascular endothelial growth factor receptor 2 (VEGFR2) activation. These functions position Gremlin 1 as both a developmental morphogen and a disease-associated signaling modulator.

Research using Gremlin 1 antibody has provided valuable insights into BMP pathway regulation, tissue regeneration, and fibrotic disease mechanisms. Immunohistochemical studies show that Gremlin 1 localizes primarily to the extracellular space and basement membranes, consistent with its role as a secreted BMP inhibitor. In developmental biology, antibody-based detection of GREM1 helps map spatial and temporal expression patterns critical for organogenesis. In disease research, it aids in identifying fibrogenic or oncogenic cell populations where BMP signaling is dysregulated.

Gremlin 1 antibody is suitable for applications such as immunohistochemistry, immunofluorescence, and related assays for studying BMP regulation, fibrosis, and cancer signaling. NSJ Bioreagents provides Gremlin 1 antibody reagents optimized for research into developmental biology, tissue remodeling, and growth factor signaling control.

Application Notes

Optimal dilution of the Gremlin 1 antibody should be determined by the researcher.

Immunogen

Amino acids TMMVTLNCPELQPPTKKKRVTRVKQCRCISIDLD of human Gremlin 1 were used as the immunogen for the Gremlin 1 antibody.

Storage

After reconstitution, the Gremlin 1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.