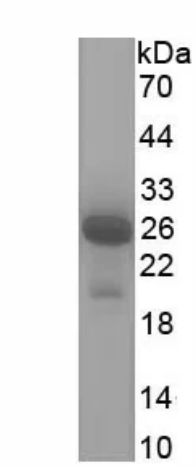
Active Gremlin 1 (GREM1)

Catalog#:PER12820

概述（Summary）

别称（Alternative Names）	PIG2; CKTSF1B1; DAND2; IHG-2; DAND2; DRM; Increased in high glucose protein 2; Cell proliferation-inducing gene 2 protein; Cysteine knot superfamily 1, BMP antagonist 1
纯度（Purity）	Greater than 95% as determined by reducing SDS-PAGE.
内毒素（Endotoxin level）	Please contact with the lab for this information
蛋白构建（Construction）	【Lys25-Asp184】
Accession #	O35793
表达宿主（Host）	E.coli
种属（Species）	Rattus norvegicus (Rat)
预测分子量（Predicted MW）	22.0 kDa
制剂（Form）	Lyophilized from a 0.2 μm filtered solution of PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.
运输方式（Shipping）	The product is shipped with ice bag. Upon receipt, store it immediately at the temperature listed below.
稳定性&储存（Stability &Storage）	12 months at -20°C to -80°C in lyophilized state.6 months at -20°C to -80°C under sterile conditions after reconstitution.7-10 days at 2°C to 8°C under sterile conditions after reconstitution.Please minimize freeze-thaw cycles.
复溶（Reconstitution）	Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.
背景介绍（References）	Cytokine that may play an important role during carcinogenesis and metanephric kidney organogenesis, as a BMP antagonist required for early limb outgrowth and patterning in maintaining the FGF4-SHH feedback loop. Down-regulates the BMP4 signaling in a dose-dependent manner. Antagonist of BMP2; inhibits BMP2-mediated differentiation of osteoblasts (in vitro). Acts as inhibitor of monocyte chemotaxis. Can inhibit the growth or viability of normal cells but not transformed cells when is overexpressed.

电泳图（SDS-PAGE image）



Greater than 95% as determined by reducing SDS-PAGE.

活性图（Bioactivity image）

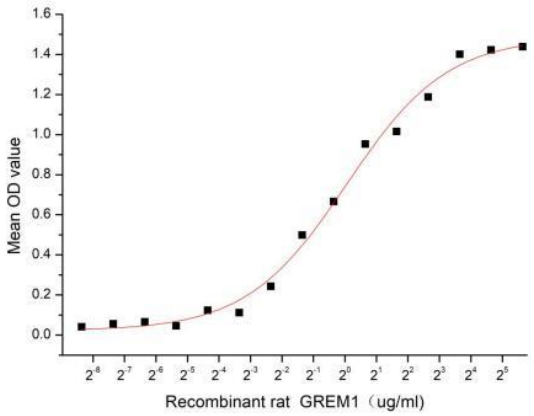


Figure 3. The binding activity of recombinant rat GREM1 and recombinant human BMP2

Figure 1. Cell proliferation of MCF-7 cells after stimulated with GREM1. Gremlin(GREM1) is an inhibitor in the TGF beta signaling pathway. GREM1and other BMP antagonists are important in the survival of cancer stroma survival and proliferation in some cancers. The protein expression is found in many cancers and is thought to play important roles in uterine cervix, lung, ovary, kidney, breast, colon, pancreas, and sarcoma carcinomas. A proliferation assay was conducted to detect the bioactivity of recombinant rat GREM1 using A549 cells. Briefly, A549 cells were seeded into triplicate wells of 96-well plates at a density of 5,000 cells/well and allowed to attach, replaced with serum-free overnight, then the medium was replaced with 2% serum standard DMEM prior to the addition of various concentrations of GREM1. After incubated for 96h, cells were observed by inverted microscope and cell proliferation was measured by Cell Counting Kit-8(CCK-8). Briefly， 10 µl of CCK-8 solution was added to each well of the plate, then the absorbance at 450 nm was measured using a microplate reader after incubating the plate for 1-4 hours at 37 °C. Proliferation of A549 cells after incubation with GREM1 for 96h observed by inverted microscope was shown in Figure1. Cell viability was assessed by CCK-8(Cell Counting Kit-8) assay after incubation with recombinant GREM1 for 96h. The result was shown in Figure2. It was obvious that GREM1 significantly increased cell viability of A549 cells.(A)MCF-7 cells cultured in DMEM, stimulated with 0.001ng/ml GREM1 for 96h; (B)Unstimulated MCF7 cells cultured in DMEM for 96h.

Figure. Cell proliferation of MCF-7 cells after stimulated with GREM1. Gremlin (GREM1) is an inhibitor in the TGF beta signaling pathway. GREM1 and other BMP antagonists are important in the survival of cancer stroma survival and proliferation in some cancers. The protein expression is found in many cancers and is thought to play important roles in uterine cervix, lung, ovary,

kidney, breast, colon, pancreas, and sarcoma carcinomas. It is reported that some BMP target genes is antagonised by GREM1 and GREM2, thus a binding ELISA assay was conducted to detect the interaction of recombinant rat GREM1 and recombinant human BMP2. Briefly, GREM1 was diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100 µl were then transferred to BMP2-coated microtiter wells and incubated for 2h at 37℃. Wells were washed with PBST and incubated for 1h with anti-GREM1 pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody, wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37℃. Finally, add 50 µL stop solution to the wells and read at 450 nm immediately. The binding activity of GREM1 and BMP2 was shown in Figure 3, the EC50 for this effect is 1.042 ug/mL.

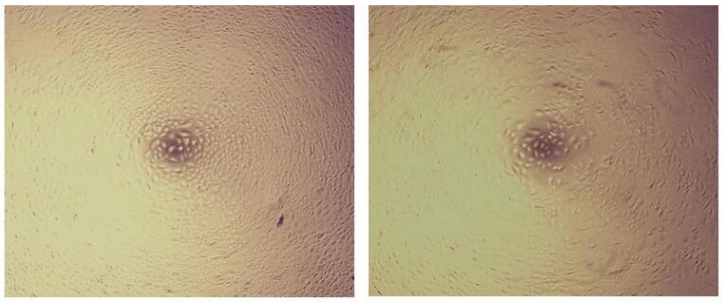


Figure 1. Cell proliferation of A549 cells after stimulated with GREM1.

注意事项（Note）

For Research Use Only , Not for Diagnostic Use.