SANTA CRUZ BIOTECHNOLOGY, INC.

Gem (H-85): sc-28584

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Gem belongs to the Rad/Gem/Kir (RGK) subfamily of Ras-related GTPases, which lack typical C-terminal amino acid motifs for isoprenylation. Rad and Gem bind calmodulin in a Ca^{2+}-dependent manner via this C-terminal extension, involving residues 278-297 in human Rad. High intracellular Gem levels, which interact with intact microtubules and microfilaments, promote profound changes in cell morphology. Ectopic Gem expression is sufficient to stimulate cell flattening and neurite extension in N1E-115 and SH-SY5Y neuroblastoma cells, suggesting a role for Gem in cytoskeletal rearrangement and/or morphological differentiation of neurons. Gem was also observed in developing trigeminal nerve ganglia in 12.5 day mouse embryos, demonstrating that Gem expression is a property of normal ganglionic development. The interaction of Gem with β-subunits regulates Ca^{2+} channel expression at the cell surface. The human Gem gene maps to chromosome 8q22.1.

REFERENCES

1. Bilan, P.J., et al. 1998. The Ras-related protein Rad associates with the cytoskeleton in a non-lipid-dependent manner. Exp. Cell Res. 242: 391-400.
2. Moyers, J.S., et al. 1998. Effects of phosphorylation on function of the Rad GTPase. Biochem. J. 333: 609-614.

CHROMOSOMAL LOCATION

Genetic locus: GEM (human) mapping to 8q22.1; Gem (mouse) mapping to 4 A1.

SOURCE

Gem (H-85) is a rabbit polyclonal antibody raised against amino acids 1-85 mapping at the N-terminus of Gem of human origin.

PRODUCT

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

APPLICATIONS

Gem (H-85) is recommended for detection of Gem of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Gem (H-85) is also recommended for detection of Gem in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Gem siRNA (h): sc-41719, Gem siRNA (m): sc-41720, Gem shRNA Plasmid (h): sc-41719-SH, Gem shRNA Plasmid (m): sc-41720-SH, Gem shRNA (h) Lentiviral Particles: sc-41719-V and Gem shRNA (m) Lentiviral Particles: sc-41720-V.

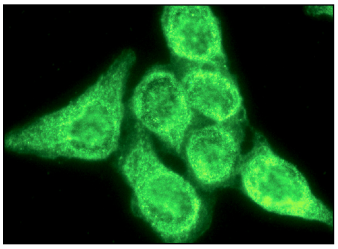
Molecular Weight of Gem: 35 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

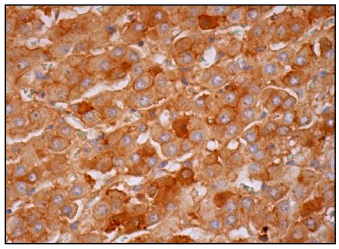
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



Gem (H-85): sc-28584. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane localization.



Gem (H-85): sc-28584. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic and membrane staining of glandular cells.

STORAGE

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

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.