SANTA CRUZ BIOTECHNOLOGY, INC.

RhAG (G-18): sc-27809

BACKGROUND

The Rh proteins in the red blood cell form a complex made up of one D-subunit, one CE-subunit and two Rh-associated glycoprotein (RhAG) subunits. Along with its antigenic properties, this complex functions as a major interaction site between the membrane lipid bilayer and the cytoskeleton of the red cell, via ankyrin-R interaction with the C-terminal cytoplasmic domain of the Rh and RhAG proteins. Furthermore, studies comparing ammonium concentration in normal and Rh(null) red cells show that the complex also contributes to ammonium export from the cells. Rh(null) is a rare autosomal recessive disorder characterized by an absence of Rh antigens and a varying degree of hemolytic anemia and spherostomatocytosis. The associated genetic mutations effect the transmembrane domain of the protein, correlating the structural defect with the loss of transport function characteristic in these cells.

REFERENCES

1. Huang, C.H., et al. 1999. Molecular basis for Rh(null) syndrome: identification of three new missense mutations in the Rh50 glycoprotein gene. Am. J. Hematol. 62: 25-32.
2. Suyama, K., et al. 2000. Surface expression of Rh-associated glycoprotein (RhAG) in nonerythroid COS-1 cells. Blood 95: 336-341.
3. Mouro-Chanteloup, I., et al. 2002. Cell-surface expression of RhD blood group polypeptide is posttranscriptionally regulated by the RhAG glycoprotein. Blood 100: 1038-1047.
4. Nicolas, V., et al. 2003. Rh-RhAG/ankyrin-R, a new interaction site between the membrane bilayer and the red cell skeleton, is impaired by Rh(null)-associated mutation. J. Biol. Chem. 278: 25526-25533.
5. Hemker, M.B., et al. 2003. The Rh complex exports ammonium from human red blood cells. Br. J. Haematol. 122: 333-340.
6. Nakhoul, N.L., et al. 2004. Non-erythroid Rh glycoproteins: a putative new family of mammalian ammonium transporters. Pflugers Arch. 447: 807-812.

CHROMOSOMAL LOCATION

Genetic locus: RHAG (human) mapping to 6q21.

SOURCE

RhAG (G-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of RhAG 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.

Blocking peptide available for competition studies, sc-27809 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

RhAG (G-18) is recommended for detection of RhAG (also designated CD241) of 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).

Suitable for use as control antibody for RhAG siRNA (h): sc-106869, RhAG shRNA Plasmid (h): sc-106869-SH and RhAG shRNA (h) Lentiviral Particles: sc-106869-V.

Molecular Weight of RhAG: 50 kDa.

Positive Controls: human red blood cells.

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-2333 and Western Blotting Luminol 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.

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.