SANTA CRUZ BIOTECHNOLOGY, INC.

GW182 (H-70): sc-66915

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

GW bodies (GWBs) function as storage centers and degradation sites for mRNAs. GWBs are crucial intracellular structures for miRNA function. Disassembly or disruption of GWBs has been shown to impair siRNA and miRNA silencing activity. GW182 is a cytoplasmic marker protein for GWBs. GW182 autoantigen, also designated EMSY interactor protein, plays a role in the maintenance and stability of the GWB structures. GW182 is an ubiquitously expressed protein that binds to mRNA. The GW182 protein may interact with endogenous argonaute-2 (Ago2), which is also enriched in GWBs. The GW182 protein is detected in patients with ataxia, Sjoegren's syndrome (SS) and sensor neuropathy disease, who develop autoantibodies against GWB structure proteins.

REFERENCES

1. Eystathioy, T., et al. 2002. A phosphorylated cytoplasmic autoantigen, GW182, associates with a unique population of human mRNAs within novel cytoplasmic speckles. Mol. Biol. Cell 13: 1338-1351.
2. Eystathioy, T., et al. 2003. Clinical and serological associations of autoantibodies to GW bodies and a novel cytoplasmic autoantigen GW182. J. Mol. Med. 81: 811-818.
3. Eystathioy, T., et al. 2003. The GW182 protein co-localizes with mRNA degradation associated proteins hDcp1 and hLSm4 in cytoplasmic GW bodies. RNA 9: 1171-1173.
4. Eystathioy, T., et al. 2003. A panel of monoclonal antibodies to cytoplasmic GW bodies and the mRNA binding protein GW182. Hybrid. Hybridomics 22: 79-86.
5. Yang, Z., et al. 2004. GW182 is critical for the stability of GW bodies expressed during the cell cycle and cell proliferation. J. Cell Sci. 117: 5567-5578.
6. Jakymiw, A., et al. 2005. Disruption of GW bodies impairs mammalian RNA interference. Nat. Cell Biol. 7: 1167-1174.
7. Rehwinkel, J., et al. 2005. A crucial role for GW182 and the DCP1:DCP2 decapping complex in miRNA-mediated gene silencing. RNA 11: 1640-1647.

CHROMOSOMAL LOCATION

Genetic locus: TNRC6A (human) mapping to 16p12.1; Tnrc6a (mouse) mapping to 7 F3.

SOURCE

GW182 (H-70) is a rabbit polyclonal antibody raised against amino acids 1856-1925 mapping near the C-terminus of GW182 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.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

GW182 (H-70) is recommended for detection of GW182 isoforms 1-4 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

GW182 (H-70) is also recommended for detection of GW182 isoforms 1-4 in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for GW182 siRNA (h): sc-45516, GW182 siRNA (m): sc-45517, GW182 shRNA Plasmid (h): sc-45516-SH, GW182 shRNA Plasmid (m): sc-45517-SH, GW182 shRNA (h) Lentiviral Particles: sc-45516-V and GW182 shRNA (m) Lentiviral Particles: sc-45517-V.

Molecular Weight of GW182: 182 kDa.

Positive Controls: GW182 (h): 293T Lysate : sc-113721.

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.

SELECT PRODUCT CITATIONS

1. Shen, X.H., et al. 2010. Ago2 and GW182 expression in mouse preimplantation embryos: a link between microRNA biogenesis and GW182 protein synthesis. Reprod. Fertil. Dev. 22: 634-643.
2. Ogawa, Y., et al. 2011. Proteomic analysis of two types of exosomes in human whole saliva. Biol. Pharm. Bull. 34: 13-23.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.