SANTA CRUZ BIOTECHNOLOGY, INC.

GW182 (4B6): sc-56314

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.

CHROMOSOMAL LOCATION

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

SOURCE

GW182 (4B6) is a mouse monoclonal antibody raised against partial length GW182 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GW182 (4B6) is available conjugated to either Alexa Fluor® 546 (sc-56314 AF546) or Alexa Fluor® 594 (sc-56314 AF594), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-56314 AF680) or Alexa Fluor® 790 (sc-56314 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

GW182 (4B6) is recommended for detection of GW182 of mouse, rat, human, *Drosophila melanogaster* and *Xenopus laevis* 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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.

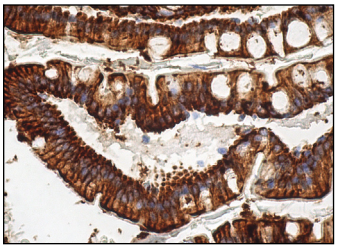
STORAGE

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.

DATA



GW182 (4B6): sc-56314. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Moser, J.J., et al. 2009. Optimization of immunoprecipitation-western blot analysis in detecting GW182-associated components of $G_{W/P}$ bodies. Nat. Protoc. 4: 674-685.
2. Lee, L.W., et al. 2010. Complexity of the microRNA repertoire revealed by next-generation sequencing. RNA 16: 2170-2180.
3. Ryu, I., et al. 2013. eIF4GI facilitates the MicroRNA-mediated gene silencing. PLoS ONE 8: e55725.
4. Rajgor, D., et al. 2014. Mammalian microtubule P-body dynamics are mediated by nesprin-1. J. Cell Biol. 205: 457-475.
5. Bhowmick, R., et al. 2015. Rotavirus disrupts cytoplasmic P bodies during infection. Virus Res. 210: 344-354.
6. Nishino, T., et al. 2016. Antagonizing effect of CLPABP on the function of HuR as a regulator of ARE-containing leptin mRNA stability and the effect of its depletion on obesity in old male mouse. Biochim. Biophys. Acta 1861: 1816-1827.
7. Park, C., et al. 2017. Stress granules contain Rbfox2 with cell cycle-related mRNAs. Sci. Rep. 7: 11211.
8. Kourtidis, A., et al. 2017. Cadherin complexes recruit mRNAs and RISC to regulate epithelial cell signaling. J. Cell Biol. 216: 3073-3085.
9. Nair-Menon, J., et al. 2020. Predominant distribution of the RNAi machinery at apical adherens junctions in colonic epithelia is disrupted in cancer. Int. J. Mol. Sci. 21: 2559.
10. Roy, N., et al. 2021. mRNP granule proteins Fmrp and Dcp1a differentially regulate mRNP complexes to contribute to control of muscle stem cell quiescence and activation. Skelet. Muscle 11: 18.

PROTOCOLS

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