

GM130 (NN 2C10/1): sc-53296

BACKGROUND

The docking of transport vesicles to their target membrane is mediated by p115. GM130, a *cis*-Golgi matrix protein, interacts specifically with p115 and provides a membrane docking site. Both GM130 and p115 are involved in vesicle tethering to Golgi membranes. The amino-terminus of GM130 binds to p115, whereas the carboxy-terminus binds to Golgi membranes. Both Giantin and GM130 compete for binding to p115. Thus, p115-Giantin and p115-GM130 interactions might mediate independent membrane tethering events. Transport from the ER to the *cis*/medial Golgi compartments requires the action of p115, GM130 and Giantin via a sequential rather than a coordinate mechanism. Mitotic phosphorylation of GM130 at Serine 25 is mediated by Cdc2, prevents binding to p115 and is directly involved in mitotic Golgi fragmentation. GM130 is phosphorylated in prophase as the Golgi complex starts to break down, and remains phosphorylated in metaphase and anaphase. In telophase, GM130 is dephosphorylated by PP2A as the Golgi fragments start to reassemble.

REFERENCES

1. Nakamura, N., et al. 1997. The vesicle docking protein p115 binds GM130, a *cis*-Golgi matrix protein, in a mitotically regulated manner. *Cell* 89: 445-455.
2. Lowe, M., et al. 1998. Cdc2 kinase directly phosphorylates the *cis*-Golgi matrix protein GM130 and is required for Golgi fragmentation in mitosis. *Cell* 94: 783-793.
3. Mizoguchi, T., et al. 2000. Determination of functional regions of p125, a novel mammalian Sec23p-interacting protein. *Biochem. Biophys. Res. Commun.* 279: 144-149.
4. Linstedt, A.D., et al. 2000. Binding relationships of membrane tethering components. The Giantin N-terminus and the GM130 N-terminus compete for binding to the p115 C-terminus. *J. Biol. Chem.* 275: 10196-10201.
5. Alvarez, C.I., et al. 2000. The p115-interactive proteins, GM130 and Giantin participate in ER-Golgi traffic. *J. Biol. Chem.* 276: 2693-2700.
6. Lowe, M., et al. 2000. The mitotic phosphorylation cycle of the *cis*-Golgi matrix protein GM130. *J. Cell Biol.* 149: 341-356.
7. Seemann, J., et al. 2000. The role of the tethering proteins p115 and GM130 in transport through the Golgi apparatus *in vivo*. *Mol. Biol. Cell* 11: 635-645.

CHROMOSOMAL LOCATION

Genetic locus: Golga2 (mouse) mapping to 2 B.

SOURCE

GM130 (NN 2C10/1) is a mouse monoclonal antibody raised against recombinant GM130 of rat origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

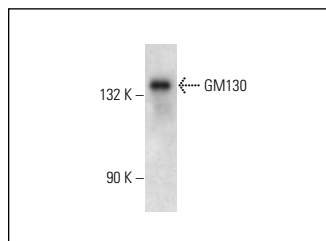
GM130 (NN 2C10/1) is recommended for detection of GM130 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for GM130 siRNA (m): sc-41225, GM130 shRNA Plasmid (m): sc-41225-SH and GM130 shRNA (m) Lentiviral Particles: sc-41225-V.

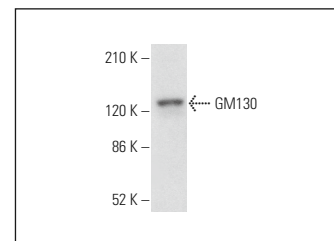
Molecular Weight of GM130: 130 kDa.

Positive Controls: rat liver extract: sc-2395 or AT3B-1 whole cell lysate: sc-364372.

DATA



GM130 (NN 2C10/1): sc-53296. Western blot analysis of GM130 expression in rat liver tissue extract.



GM130 (NN 2C10/1): sc-53296. Western blot analysis of GM130 expression in AT3B-1 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Men, Y., et al. 2019. Exosome reporter mice reveal the involvement of exosomes in mediating neuron to astroglia communication in the CNS. *Nat. Commun.* 10: 4136.
2. Ruan, Z., et al. 2022. Functional genome-wide short hairpin RNA library screening identifies key molecules for extracellular vesicle secretion from microglia. *Cell Rep.* 39: 110791.
3. Abdullah, M., et al. 2024. P2RX7 plays a critical role in extracellular vesicle-mediated secretion of pathogenic molecules from microglia and astrocytes. *J. Extracell. Biol.* 3: e155.

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.



See **GM130 (H-7): sc-55590** for GM130 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.