SANTA CRUZ BIOTECHNOLOGY, INC.

GM130 (4i375): sc-71166

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 phosphorylation the *cis*-Golgi matrix protein GM130 and is required for Golgi fragmentation in mitosis. Cell 94: 783-793.

CHROMOSOMAL LOCATION

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

SOURCE

GM130 (4i375) is a mouse monoclonal antibody raised against recombinant GM130 of rat origin.

PRODUCT

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

APPLICATIONS

GM130 (4i375) 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.

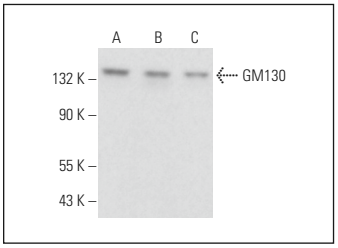
Molecular Weight of GM130: 130 kDa.

Positive Controls: C6 whole cell lysate: sc-364373, PC-12 cell lysate: sc-2250 or AT3B-1 whole cell lysate: sc-364372.

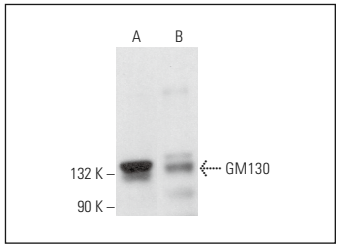
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



GM130 (4i375): sc-71166. Western blot analysis of GM130 expression in C6 (**A**), PC-12 (**B**) and AT3B-1 (**C**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



GM130 (4i375): sc-71166. Western blot analysis of GM130 expression in AT3B-1 whole cell lysate (**A**) and rat liver tissue extract (**B**).

SELECT PRODUCT CITATIONS

1. Li, Z., et al. 2019. *In vitro* and *in vivo* RNA inhibition by CD9-HuR functionalized exosomes encapsulated with miRNA or CRISPR/dCas9. Nano Lett. 19: 19-28.
2. Zhou, X., et al. 2020. Brown adipose tissue-derived exosomes mitigate the metabolic syndrome in high fat diet mice. Theranostics 10: 8197-8210.
3. Li, Z., et al. 2021. Exosome-based Ldlr gene therapy for familial hypercholesterolemia in a mouse model. Theranostics 11: 2953-2965.
4. Liu, Y., et al. 2021. Maternal obesity increases the risk of fetal cardiac dysfunction via visceral adipose tissue derived exosomes. Placenta 105: 85-93.
5. Zhang, R., et al. 2022. An optimized exosome production strategy for enhanced yield while without sacrificing cargo loading efficiency. J. Nanobiotechnology 20: 463.
6. Yang, Z., et al. 2023. Improved extracellular vesicle-based mRNA delivery for familial hypercholesterolemia treatment. Theranostics 13: 3467-3479.

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.