

granuphilin (h): 293 Lysate: sc-111865

BACKGROUND

Granuphilin, also designated synaptotagmin-like protein 4 or exophilin 2, is a member of the synaptotagmin-like protein family. It is part of a ternary complex consisting of Syntaxin 1A (STX1A) and Rab 27A. The interaction between granuphilin and Syntaxin 1A on the plasma membrane is regulated by Rab 27A. Granuphilin is a peripheral membrane protein mainly expressed in pancreatic β cells and in the pituitary gland. It has been detected on secretory granules and close to the plasma membrane. In the pancreas, granuphilin interacts with Insulin-containing vesicles while in both the pancreas and pituitary, granuphilin modulates the secretion of hormones and the exocytosis of dense-core granules. Overexpression of granuphilin enhances basal Insulin secretion but also inhibits high K^+ -induced Insulin secretion. The effect of granuphilin on Insulin secretion may be impaired by a mutation that disrupts the binding to either Rab 27A or Syntaxin 1A, making granuphilin a possible regulator in the exocytotic pathway.

REFERENCES

1. Torii, S., Zhao, S., Yi, Z., Takeuchi, T. and Izumi, T. 2002. Granuphilin modulates the exocytosis of secretory granules through interaction with Syntaxin 1A. *Mol. Cell. Biol.* 22: 5518-5526.
2. Coppola, T., Frantz, C., Perret-Menoud, V., Gattesco, S., Hirling, H. and Regazzi, R. 2002. Pancreatic β -cell protein granuphilin binds Rab 3 and Munc18 and controls exocytosis. *Mol. Biol. Cell* 13: 1906-1915.
3. Izumi, T., Gomi, H. and Torii, S. 2005. Functional analysis of Rab 27A effector granuphilin in Insulin exocytosis. *Meth. Enzymol.* 403: 216-229.
4. Gomi, H., Mizutani, S., Kasai, K., Itohara, S. and Izumi, T. 2005. Granuphilin molecularly docks Insulin granules to the fusion machinery. *J. Cell Biol.* 171: 99-109.
5. Fukuda, M., Imai, A., Nashida, T. and Shimomura, H. 2005. Slp4 α /granuphilin α interacts with Syntaxin 2/3 in a Munc18-2-dependent manner. *J. Biol. Chem.* 280: 39175-39184.
6. SWISS-PROT/TrEMBL (Q96C24). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: SYTL4 (human) mapping to Xq21.33.

PRODUCT

granuphilin (h): 293 Lysate represents a lysate of human granuphilin transfected 293 cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

APPLICATIONS

granuphilin (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive granuphilin antibodies. Recommended use: 10-20 μ l per lane.

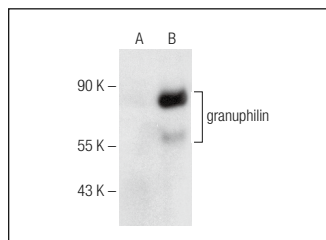
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

granuphilin (C-3): sc-374544 is recommended as a positive control antibody for Western Blot analysis of enhanced human granuphilin expression in granuphilin transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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.

DATA



granuphilin (C-3): sc-374544. Western blot analysis of granuphilin expression in non-transfected: sc-110760 (A) and human granuphilin transfected: sc-111865 (B) 293 whole cell lysates.

RESEARCH USE

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