

# granuphilin (C-3): sc-374544

## BACKGROUND

Granuphilin, also designated synaptotagmin-like protein 4 or exophilin 2, is a member of the synaptotagmin-like protein family. In rodents, two isoforms have been characterized as granuphilin-a and granuphilin-b, and alternative splicing in human has also been described. Granuphilin-b is a shorter isoform which contains a different C-terminal sequence than the longer isoform. Granuphilin 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  $\beta$ -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. Over-expression 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., et al. 2002. Granuphilin modulates the exocytosis of secretory granules through interaction with Syntaxin 1A. *Mol. Cell. Biol.* 22: 5518-5526.
2. Coppola, T., et al. 2002. Pancreatic  $\beta$ -cell protein granuphilin binds Rab 3 and Munc-18 and controls exocytosis. *Mol. Biol. Cell* 13: 1906-1915.

## CHROMOSOMAL LOCATION

Genetic locus: SYTL4 (human) mapping to Xq22.1.

## SOURCE

granuphilin (C-3) is a mouse monoclonal antibody raised against amino acids 44-298 mapping near the N-terminus of granuphilin of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $\gamma$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

granuphilin (C-3) is available conjugated to agarose (sc-374544 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374544 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374544 PE), fluorescein (sc-374544 FITC), Alexa Fluor<sup>®</sup> 488 (sc-374544 AF488), Alexa Fluor<sup>®</sup> 546 (sc-374544 AF546), Alexa Fluor<sup>®</sup> 594 (sc-374544 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-374544 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-374544 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-374544 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA

## STORAGE

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

## APPLICATIONS

granuphilin (C-3) is recommended for detection of granuphilin of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

Suitable for use as control antibody for granuphilin siRNA (h): sc-45507, granuphilin shRNA Plasmid (h): sc-45507-SH and granuphilin shRNA (h) Lentiviral Particles: sc-45507-V.

Molecular Weight of granuphilin-a: 79 kDa.

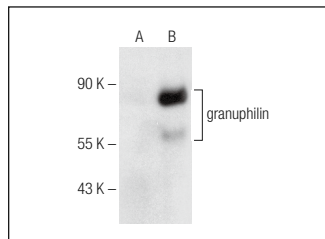
Molecular Weight of granuphilin-b: 59 kDa.

Positive Controls: granuphilin (h): 293 Lysate: sc-111865 or OVCAR-3 whole cell lysate.

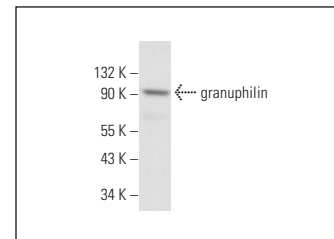
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## 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.



granuphilin (C-3): sc-374544. Western blot analysis of granuphilin expression in OVCAR-3 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Schillemans, M., et al. 2018. Weibel-palade body localized syntaxin-3 modulates von willebrand factor secretion from endothelial cells. *Arterioscler. Thromb. Vasc. Biol.* 38: 1549-1561.

## RESEARCH USE

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