

Synip (D-20): sc-15427

BACKGROUND

Insulin-responsive glucose transporter (GLUT4) is a member of the facilitative glucose transporters that is predominantly, but not exclusively, expressed in adipose tissues and skeletal and cardiac muscle. Insulin-stimulated glucose transport and GLUT4 translocation between the plasma membrane and one or more intracellular compartments require regulated interaction between the v-SNARE, VAMP2, t-SNARE and syntaxin 4. A novel syntaxin 4-binding protein, Synip, specifically interacts with syntaxin 4 protein. Insulin induces the dissociation of the Synip: syntaxin 4 complex by reducing the binding affinity of Synip for syntaxin 4. However, the C-terminal domain of Synip does not dissociate from syntaxin 4 in response to Insulin, but rather inhibits glucose transport and GLUT4 translocation. In conclusion, Synip is an Insulin-regulated syntaxin 4-binding protein directly involved in the control of glucose transport and GLUT4 vesicle translocation.

REFERENCES

1. Slot, J.W., Geuze, H.J., Gigengack, S., James, D.E. and Lienhard, G.E. 1991. Translocation of the glucose transporter GLUT4 in cardiac myocytes of the rat. *Proc. Natl. Acad. Sci. USA* 88: 7815-7819.
2. Slot, J.W., Geuze, H.J., Gigengack, S., Lienhard, G.E. and James, D.E. 1991. Immuno-localization of the Insulin regulatable glucose transporter in brown adipose tissue of the rat. *J. Cell Biol.* 113: 123-135.
3. Jhun, B.H., Rampal, A.L., Liu, H., Lachaal, M. and Jung, C.Y. 1992. Effects of Insulin on steady state kinetics of GLUT4 subcellular distribution in rat adipocytes. *J. Biol. Chem.* 268: 17710-17715.
4. Yang, J. and Holman, G.D. 1993. Comparison of GLUT4 and GLUT1 subcellular trafficking in basal and Insulin-stimulated 3T3-L1 cells. *J. Biol. Chem.* 268: 4600-4603.
5. Min, J., Okada, S., Kanzaki, M., Elmendorf, J.S., Coker, K.J., Ceresa, B.P., Syu, L.J., Noda, Y., Saltiel, A.R. and Pessin, J.E. 1999. Synip: a novel Insulin-regulated syntaxin 4-binding protein mediating GLUT4 translocation in adipocytes. *Mol. Cell* 3: 751-760.
6. Holman, G.D. 1999. A new deadly Syn? *Curr. Biol.* 9: 735-737.
7. Foster, L.J. and Klip, A. 2000. Mechanism and regulation of GLUT-4 vesicle fusion in muscle and fat cells. *Am. J. Physiol., Cell Physiol.* 279: 877-890.

CHROMOSOMAL LOCATION

Genetic locus: Stxbp4 (mouse) mapping to 11 D.

SOURCE

Synip (D-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Synip of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-15427 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Synip (D-20) is recommended for detection of Synip 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Synip siRNA (m): sc-153987, Synip shRNA Plasmid (m): sc-153987-SH and Synip shRNA (m) Lentiviral Particles: sc-153987-V.

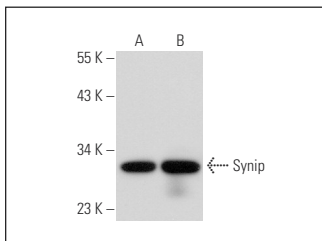
Molecular Weight of Synip isoforms: 25/28/58/62 kDa.

Positive Controls: mouse heart extract: sc-2254, RAW 264.7 whole cell lysate: sc-2211 or rat liver extract: sc-2395.

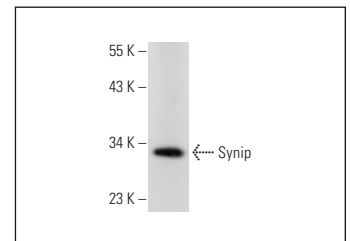
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Synip (D-20): sc-15427. Western blot analysis of Synip expression in RAW 264.7 whole cell lysate (A) and mouse heart tissue extract (B).



Synip (D-20): sc-15427. Western blot analysis of Synip expression in rat liver tissue extract.

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.

PROTOCOLS

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