SANTA CRUZ BIOTECHNOLOGY, INC.

p115 (Y-20): sc-16273

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The mammalian protein p115, known also as transcytosis-associated protein (TAP), tethering factor or vesicle docking protein (VDP), and its yeast homologue Uso1p have an essential role in membrane trafficking. p115 is phosphorylated in interphase but not in mitotic cells. Phosphorylated p115 is localized to the cytosol, whereas the unphosphorylated form is associated with membranes, mostly of the Golgi complex. Upon phosphorylation of p115 at Ser942, p115 is released from the membranes. In mammary glands, p115 synthesis is dependent of the stage of lactation. Both giantin and GM130 compete for binding to the C-terminal acidic domain of p115, and p115-giantin and p115-GM130 interactions mediate independent membrane tethering events. The amino terminal region of p115 is required for its localization to the Golgi. p115 is also expressed on transcytotic vesicles, where p115 is required for vesicle fusion with the target membrane and vesicular tubular clusters, which are involved in ER to Golgi transport. Rab1 recruits p115 to coat protein complex II (COPII) vesicles during budding from the endoplasmic reticulum, where it interacts with a select set of SNAREs. p115 is a general factor acting within the secretory and endocytic pathways to bind transport vesicles prior to membrane fusion.

REFERENCES

1. Barroso, M., Nelson, D.S. and Sztul, E. 1995. Transcytosis-associated protein (TAP)/p115 is a general fusion factor required for binding of vesicles to acceptor membranes. Proc. Natl. Acad. Sci. USA 92: 527-531.
2. Nelson, D.S., Alvarez, C., Gao, Y.S., Garcia-Mata, R., Fialkowski, E. and Sztul, E. 1998. The membrane transport factor TAP/p115 cycles between the Golgi and earlier secretory compartments and contains distinct domains required for its localization and function. J. Cell Biol. 143: 319-331.
3. Sohda, M., Misumi, Y., Yano, A., Takami, N. and Ikehara, Y. 1998. Phosphorylation of the vesicle docking protein p115 regulates its association with the Golgi membrane. J. Biol. Chem. 273: 5385-5388.
4. Watanabe, A., Uchida, I., Kadota, K. and Katch, N. 2000. Development changes in the protein and mRNA content of a p115/transcytosis-associated protein in the bovine mammary gland. J. Endocrinol. 166: 319-327.
5. Linstedt, A.D., Jesch, S.A., Mehta, A., Lee, T.H., Garcia-Mata, R., Nelson, D.S. and Sztul, E. 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.
6. Allan, B.B., Moyer, B.D. and Balch, W.E. 2000. Rab1 recruitment of p115 into a cis-SNARE complex: programming budding COPII vesicles for fusion. Science 289: 444-448.
7. Moyer, B.D., Allan, B.B. and Balch, W.E. 2001. Rab1 interaction with a GM130 effector complex regulates COPII vesicles *cis*-Golgi tethering. Traffic 2: 268-276.

CHROMOSOMAL LOCATION

Genetic locus: USO1 (human) mapping to 4q21.1; Uso1 (mouse) mapping to 5 E2.

SOURCE

p115 (Y-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of p115 of human 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-16273 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p115 (Y-20) is recommended for detection of p115 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

p115 (Y-20) is also recommended for detection of p115 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for p115 siRNA (h): sc-41281, p115 siRNA (m): sc-41283, p115 shRNA Plasmid (h): sc-41281-SH, p115 shRNA Plasmid (m): sc-41283-SH, p115 shRNA (h) Lentiviral Particles: sc-41281-V and p115 shRNA (m) Lentiviral Particles: sc-41283-V.

Molecular Weight of p115: 115 kDa.

Positive Controls: Rat liver extract: sc-2395, HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

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) 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.

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.