

p115 (5D6): sc-20021

BACKGROUND

The mammalian protein p115, known also as transcytosis-associated protein (TAP)/tethering factor/vesicle docking protein 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

- Barroso, M., et al. 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.
- Nelson, D.S., et al. 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.
- Sohda, M., et al. 1998. Phosphorylation of the vesicle docking protein p115 regulates its association with the Golgi membrane. *J. Biol. Chem.* 273: 5385-5388.
- Watanabe, A., et al. 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.
- Linstedt, A.D., et al. 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.
- Allan, B.B., et al. 2000. Rab1 recruitment of p115 into a *cis*-SNARE complex: programming budding COPII vesicles for fusion. *Science* 289: 444-448.
- Moyer, B.D., et al. 2001. Rab1 interaction with a GM130 effector complex regulates COPII vesicles *cis*-Golgi tethering. *Traffic* 2: 268-276.

CHROMOSOMAL LOCATION

Genetic locus: US01 (human) mapping to 4q21.1; Uso1 (mouse) mapping to 5 E2.

SOURCE

p115 (5D6) is a mouse monoclonal antibody raised against purified TAP p115 of rat origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p115 (5D6) 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) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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.

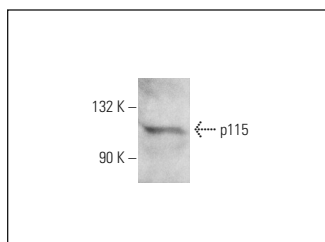
Molecular Weight of p115: 115 kDa.

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

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).

DATA



p115 (5D6): sc-20021. Western blot analysis of p115 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 for detailed protocols and support products.