SANTA CRUZ BIOTECHNOLOGY, INC.

TIP47 (h): 293T Lysate: sc-175043

BACKGROUND

Tail-interacting 47 kDa protein (TIP47), known also as human placental tissue protein 17b (PP17b), binds to cytoplasmic domains of the cation-dependent (CD) and cation-independent (CI) mannose 6-phosphate receptors (MPRs) and facilitates their transport from endosomes to the Golgi complex. The inability of TIP47 to bind several proteins also transported from endosomes to the *trans* Golgi network indicates that TIP47 associates with a very select set of cargo molecules. In CD-MPR, TIP47 recognizes a phenylalanine/tryptophan signal sequence essential for proper sorting within the endosomal pathway. For CI-MPR binding, TIP47 requires cytoplasmic residues 48-74 of CI-MPR for high-affinity binding while residues 75-163 of CI-MPR aid in the presentation of the higher-affinity residues. Additionally, TIP47 competes with AP-2 clathrin adaptor for binding residues 24-29 of CI-MPR. In tissue extracts of cervical carcinoma patients, TIP47 is overexpressed. Dysplastic cells in high grade dysplasias express more TIP47 than dysplastic cells in low grade dysplasias, and both cytoplasmic types of dysplasias express more TIP47 than normal cervical epithelial cells. The gene encoding human TIP47 maps to chromosome 19p13.3.

REFERENCES

1. Diaz, E. and Pfeffer, S.R. 1998. TIP47: a cargo selection device for mannose 6-phosphate receptor trafficking. Cell 93: 433-443.
2. Than, N.G., Sumegi, B., Than, G.N., Kispal, G. and Bohn, H. 1998. Cloning and sequence analysis of cDNAs encoding human placental tissue protein 17 (PP17) variants. Eur. J. Biochem. 258: 752-757.
3. Orsel, J.G., Sincock, P.M., Krise, J.P. and Pfeffer, S.R. 2000. Recognition of the 300-kDa mannose 6-phosphate receptor cytoplasmic domain by 47-kDa tail-interacting protein. Proc. Natl. Acad. Sci. USA 97: 9047-9051.
4. Than, G.N., Turoczy, T., Sumegi, B., Than, N.G., Bellyei, S., Bohn, H. and Szekeres, G. 2001. Overexpression of placental tissue protein 17b/TIP47 in cervical dysplasias and cervical carcinoma. Anticancer Res. 21: 639-642.
5. Krise, J.P., Sincock, P.M., Orsel, J.G. and Pfeffer, S.R. 2000. Quantitative analysis of TIP47-receptor cytoplasmic domain interactions: implications for endosome-to-*trans* Golgi network trafficking. J. Biol. Chem. 275: 25188-25193.

CHROMOSOMAL LOCATION

Genetic locus: PLIN3 (human) mapping to 19p13.3.

PRODUCT

TIP47 (h): 293T Lysate represents a lysate of human TIP47 transfected 293T cells and is provided as 100 µg protein in 200 µl 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

TIP47 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive TIP47 antibodies. Recommended use: 10-20 µl per lane.

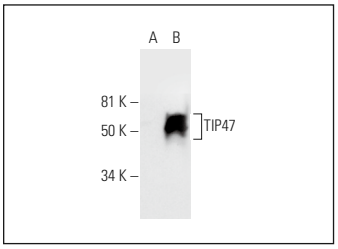
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

TIP47 (B-3): sc-390981 is recommended as a positive control antibody for Western Blot analysis of enhanced human TIP47 expression in TIP47 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

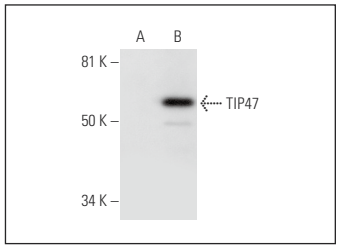
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-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.

DATA



TIP47 (B-3): sc-390981. Western blot analysis of TIP47 expression in non-transfected: sc-117752 (**A**) and human TIP47 transfected: sc-175043 (**B**) 293T whole cell lysates.



TIP47 (E-5): sc-393461. Western blot analysis of TIP47 expression in non-transfected: sc-117752 (**A**) and human TIP47 transfected: sc-175043 (**B**) 293T whole cell lysates.

RESEARCH USE

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