

# TRB-3 (E-7): sc-514455

## BACKGROUND

TRB-3 (tribbles 3), also called NIPK (neuronal cell death-inducible protein kinase) disrupts Insulin signaling by binding directly to Akt kinases and blocking their activation. TRB3 binds to ATF4, inhibiting its transcriptional activation activity, and regulates activation of MAP kinases. In the liver, TRB-3 is a target for PPAR- $\alpha$ . Amounts of TRB3 RNA and protein are higher in livers of diabetic mice compared with those in wildtype mice. TRB3 contributes to Insulin resistance in individuals with susceptibility to type II diabetes. Highest expression of TRB-3 is in liver, pancreas, peripheral blood leukocytes and bone marrow.

## REFERENCES

1. Du, K., et al. 2003. TRB-3: a tribbles homolog that inhibits Akt/PKB activation by Insulin in liver. *Science* 300: 1574-1577.
2. Kiss-Toth, E., et al. 2004. Human tribbles, a protein family controlling mitogen-activated protein kinase cascades. *J. Biol. Chem.* 279: 42703-42708.
3. Koo, S.H., et al. 2004. PGC-1 promotes Insulin resistance in liver through PPAR- $\alpha$ -dependent induction of TRB-3. *Nat. Med.* 10: 530-534.
4. Ohoka, N., et al. 2005. TRB3, a novel ER stress-inducible gene, is induced via ATF4-CHOP pathway and is involved in cell death. *EMBO J.* 24: 1243-1255.
5. Ord, D. and Ord, T. 2005. Characterization of human NIPK (TRB3, SKIP3) gene activation in stressful conditions. *Biochem. Biophys. Res. Commun.* 330: 210-218.
6. Prudente, S., et al. 2005. The functional Q84R polymorphism of mammalian Tribbles homolog TRB-3 is associated with Insulin resistance and related cardiovascular risk in Caucasians from Italy. *Diabetes* 54: 2807-2811.
7. Wood, J.R., et al. 2005. Valproate-induced alterations in human theca cell gene expression: clues to the association between valproate use and metabolic side effects. *Physiol. Genomics* 20: 233-243.
8. Stayrook, K.R., et al. 2005. Regulation of carbohydrate metabolism by the farnesoid X receptor. *Endocrinology* 146: 984-991.

## CHROMOSOMAL LOCATION

Genetic locus: TRIB3 (human) mapping to 20p13.

## SOURCE

TRB-3 (E-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 331-348 near the C-terminus of TRB-3 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-514455 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

TRB-3 (E-7) is recommended for detection of TRB-3 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 TRB-3 siRNA (h): sc-44426, TRB-3 shRNA Plasmid (h): sc-44426-SH and TRB-3 shRNA (h) Lentiviral Particles: sc-44426-V.

Molecular Weight of TRB-3: 45 kDa.

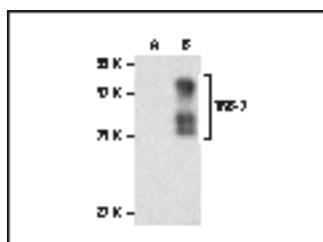
Positive Controls: TRB-3 (h): 293T Lysate: sc-114588 or Hep G2 cell lysate: sc-2227.

## RECOMMENDED SUPPORT REAGENTS

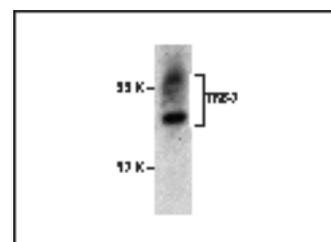
To ensure optimal results, the following support reagents are recommended:

- 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™ 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 m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



TRB-3 (E-7) sc-514455 Western blot analysis of Hep G2 lysate immunoprecipitated with m-IgG $\kappa$  BP-HRP (A) and human TRB-3 antibody sc-514455 (B) 293T cell lysate.



TRB-3 (E-7) sc-514455 Western blot analysis of Hep G2 lysate immunoprecipitated with Hep G2 whole cell lysate.

## 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](http://www.scbt.com) for detailed protocols and support products.