

TOB1 (h): 293T Lysate: sc-111567

BACKGROUND

TOB1 (TROB, APR06, PIG49) and TOB2 (TOB4, TROB2, TOBL) are anti-proliferative proteins that modulate cell cycle progression from the G₀/G₁ to S phases through interactions with the mammalian homologue of yeast Caf1. TOB proteins present in the central nervous system may be engaged in acquisition of motor skill. TOB1 in T lymphocytes can interact with Smad2/4, augment Smad DNA binding to the IL-2 promoter and lead to an inhibition of IL-2 transcription. In oncogenic ErbB-2-transformed cells, nuclear export of TOB1 results in a decrease in antiproliferative activity. ERK/MAPK (ERK 2) and JNK/SAPK (JNK2) phosphorylate TOB1 *in vitro*, and TOB1 can undergo phosphorylation at Ser 152, Ser 154 and Ser 164 by ERK 1/2 upon growth-factor stimulation. TOB2 gene encodes a 4.1 kb transcript with high expression in skeletal muscle, thymus and ovary.

REFERENCES

1. Matsuda, S., et al. 1996. TOB, a novel protein that interacts with p185 ErbB-2, is associated with anti-proliferative activity. *Oncogene* 12: 705-713.
2. Ikematsu, N., et al. 1999. TOB2, a novel anti-proliferative TOB/BTG1 family member, associates with a component of the CCR4 transcriptional regulatory complex capable of binding cyclin-dependent kinases. *Oncogene* 18: 7432-7441.
3. Ajima, R., et al. 2000. Cloning and characterization of the mouse Tob2 gene. *Gene* 253: 215-220.
4. Yoshida, Y., et al. 2000. Negative regulation of BMP/Smad signaling by TOB in osteoblasts. *Cell* 103: 1085-1097.
5. Tzachanis, D., et al. 2001. TOB is a negative regulator of activation that is expressed in anergic and quiescent T cells. *Nat. Immunol.* 2: 1174-1182.
6. Suzuki, T., et al. 2002. Phosphorylation of three regulatory serines of TOB by ERK 1 and ERK 2 is required for Ras-mediated cell proliferation and transformation. *Genes Dev.* 16: 1356-1370.
7. Maekawa, M., et al. 2002. Identification of the anti-proliferative protein TOB as a MAPK substrate. *J. Biol. Chem.* 277: 37783-37787.
8. Kawamura-Tsuzuku, J., et al. 2004. Nuclear localization of TOB is important for regulation of its antiproliferative activity. *Oncogene* 23: 6630-6638.
9. Jin, M., et al. 2005. The negative cell cycle regulator, TOB (transducer of ErbB-2), is a multifunctional protein involved in hippocampus-dependent learning and memory. *Neuroscience* 131: 647-659.

CHROMOSOMAL LOCATION

Genetic locus: TOB1 (human) mapping to 17q21.33.

PRODUCT

TOB1 (h): 293T Lysate represents a lysate of human TOB1 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.

APPLICATIONS

TOB1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive TOB1 antibodies. Recommended use: 10-20 µl per lane.

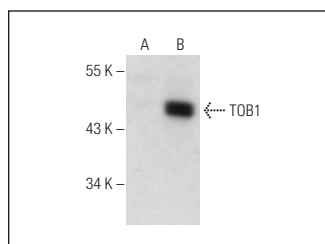
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

TOB1 (D-7): sc-136969 is recommended as a positive control antibody for Western Blot analysis of enhanced human TOB1 expression in TOB1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

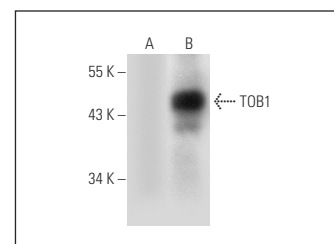
RECOMMENDED SUPPORT REAGENTS

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



TOB1 (D-7): sc-136969. Western blot analysis of TOB1 expression in non-transfected: sc-117752 (A) and human TOB1 transfected: sc-111567 (B) 293T whole cell lysates.



TOB1 (E-1): sc-133095. Western blot analysis of TOB1 expression in non-transfected: sc-117752 (A) and human TOB1 transfected: sc-111567 (B) 293T whole cell lysates.

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.