SANTA CRUZ BIOTECHNOLOGY, INC.

TOB2 (B-4): sc-515829

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

TOB1 (TROB, APRO6, PIG49) and TOB2 (TOB4, TROB2, TOBL) are anti-proliferative proteins that modulate cell cycle progression from the G_0/G_1 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 (ERK2) and JNK/SAPK (JNK2) phosphorylate TOB1 *in vitro,* and TOB1 can undergo phosphorylation at Ser 152, Ser 154 and Ser 164 by ERK1/2 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 p185erbB2, 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 Erk1 and Erk2 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.

CHROMOSOMAL LOCATION

Genetic locus: TOB2 (human) mapping to 22q13.2; Tob2 (mouse) mapping to 15 E1.

SOURCE

TOB2 (B-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 61-86 near the N-terminus of TOB2 of human origin.

PRODUCT

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

APPLICATIONS

TOB2 (B-4) is recommended for detection of TOB2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 TOB2 siRNA (h): sc-37506, TOB2 siRNA (m): sc-37507, TOB2 shRNA Plasmid (h): sc-37506-SH, TOB2 shRNA Plasmid (m): sc-37507-SH, TOB2 shRNA (h) Lentiviral Particles: sc-37506-V and TOB2 shRNA (m) Lentiviral Particles: sc-37507-V.

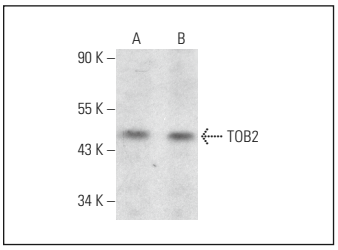
Molecular Weight of TOB2: 45 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or IB4 whole cell lysate: sc-364780.

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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



TOB2 (B-4): sc-515829. Western blot analysis of TOB2 expression in IB4 (**A**) and K-562 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Fonseca-Camarillo, G., et al. 2021. Expression of TOB/BTG family members in patients with inflammatory bowel disease. Scand. J. Immunol. 93: e13004.

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.