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TRB3 Antibody

Catalog # ASC11895

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q96RU7
Other Accession	NP_066981, 31542265
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	39578
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	TRB3 antibody can be used for detection of TRB3 by Western blot at 1 - 2 g/mL. Antibody can also be used for immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	57761
Other Names	Tribbles homolog 3, TRB-3, Neuronal cell death-inducible putative kinase, SINK, p65-interacting inhibitor of NF-kappa-B, TRIB3, C20orf97, NIPK, SKIP3, TRB3
Target/Specificity	TRB3; TRB3 antibody is human, mouse and rat reactive. At least two isoforms of TRB3 are known to exist; this antibody will detect both isoforms.
Reconstitution & Storage	TRB3 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	TRB3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TRIB3
Synonyms	C20orf97, NIPK, SKIP3, TRB3
Function	Inactive protein kinase which acts as a regulator of the integrated stress response (ISR), a process for adaptation to various stress (PubMed:15775988, PubMed:15781252). Inhibits the transcriptional activity of DDIT3/CHOP and is involved in DDIT3/CHOP-dependent cell death during ER stress (PubMed:15775988, PubMed:15781252). May play a role in programmed neuronal cell death but does not appear to affect non-neuronal cells (PubMed:15775988, PubMed:15781252). Acts as a negative feedback

	regulator of the ATF4-dependent transcription during the ISR: while TRIB3 expression is promoted by ATF4, TRIB3 protein interacts with ATF4 and inhibits ATF4 transcription activity (By similarity). Disrupts insulin signaling by binding directly to Akt kinases and blocking their activation (By similarity). May bind directly to and mask the 'Thr-308' phosphorylation site in AKT1 (By similarity). Interacts with the NF-kappa-B transactivator p65 RELA and inhibits its phosphorylation and thus its transcriptional activation activity (PubMed:12736262). Interacts with MAPK kinases and regulates activation of MAP kinases (PubMed:15299019). Can inhibit APOBEC3A editing of nuclear DNA (PubMed:22977230).
Cellular Location	Nucleus.
Tissue Location	Highest expression in liver, pancreas, peripheral blood leukocytes and bone marrow. Also highly expressed in a number of primary lung, colon and breast tumors. Expressed in spleen, thymus, and prostate and is undetectable in other examined tissues, including testis, ovary, small intestine, colon, leukocyte, heart, brain, placenta, lung, skeletal muscle, and kidney

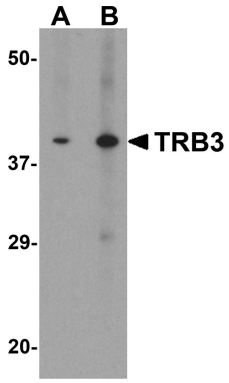
Background

TRB3 was initially identified as a novel kinase-like gene that was overexpressed in multiple human tumors and regulated by hypoxia (1). In the liver, TRB3 binds and inhibits AKT activity, leading to impaired insulin signaling (2), whereas in adipose tissue TRB3 is involved in the regulation of fatty acid oxidation through ubiquitination of Acetyl-CoA carboxylase (3). Endoplasmic reticulum (ER) stress induces TRB3 expression in skeletal muscle, leading to a decrease in insulin signaling and glucose uptake, suggesting that inhibition of TRB3 expression may be a potential therapeutic treatment for managing insulin resistance (4).

References

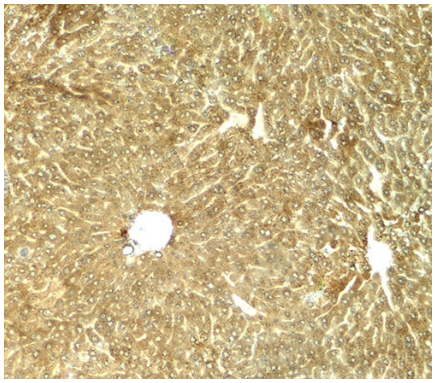
Bowers AJ, Scully S, and Boylan JF. SKIP3, a novel drosophila tribbles ortholog, is overexpressed in human tumors and is regulated by hypoxia. Oncogene 2003; 22:2823-35.
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Qi L, Heredia JE, Altarejos JY, et al. TRB3 inks the E3 ubiquitin ligase COP1 to lipid metabolism. Science 2006; 312:1763-6.
Koh HJ, Toyoda T, Didesch MM, et al. Tribbles 3 mediates endoplasmic reticulum stress-induced insulin resistance in skeletal muscle. Nat. Commun. 2013; 4:1871.

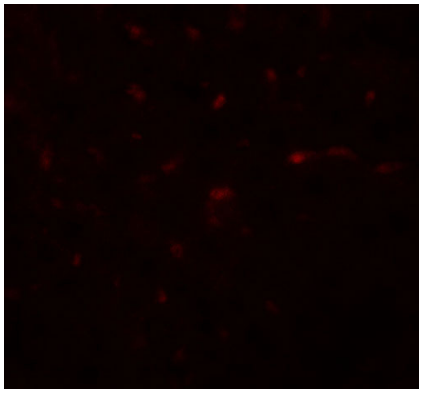
Images



Western blot analysis of TRB3 in mouse kidney tissue lysate with TRB3 antibody at (A) 1 and (B) 2 µg/ml.

Immunohistochemistry of TRB3 in mouse liver tissue with TRB3 antibody at 5 µg/mL.





Immunofluorescence of TRB3 in mouse liver tissue with TRB3 antibody at 20 µg/mL.

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