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TRB3 Antibody
Catalog # ASC11895

Specification

TRB3 Antibody - Product Information

Application	**WB, IHC-P, IF, E**
Primary Accession	Q96RU7
Other Accession	NP_066981, 31542265
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Calculated MW	**Predicted: 39 kDa** **Observed: 39 kDa KDa**
Application Notes	**TRB3 antibody can be used for detection of TRB3 by Western blot at 1 - 2 µg/mL. Antibody can also be used for immunohistochemistry starting at 5 µg/mL. For immunofluorescence start at 20 µg/mL.**

TRB3 Antibody - Additional Information

Gene ID **57761**

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.

TRB3 Antibody - 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

TRB3 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

TRB3 Antibody - Images

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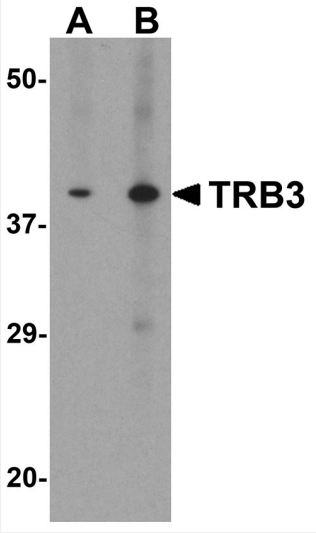
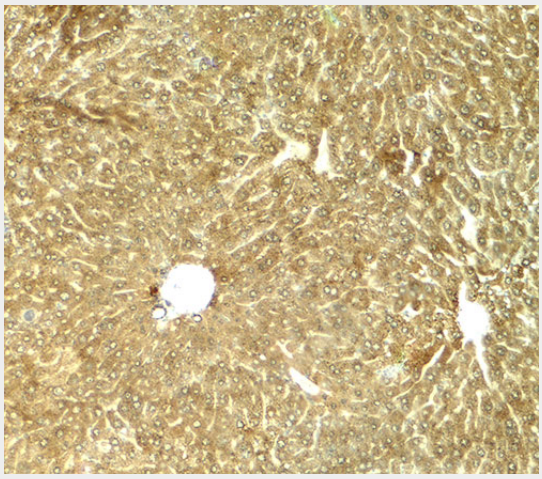
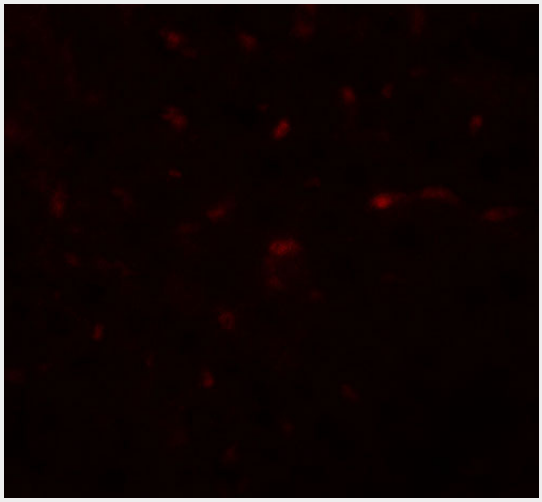


Western blot analysis of TRB3 in mouse kidney tissue lysate with TRB3 antibody at (A) 1 and (B) 2 µg/ml.



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.

TRB3 Antibody - 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).

TRB3 Antibody - 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.
Du K, Herzig S, Kulkarni RN, et al. TRB3: a tribbles homolog that inhibits Akt/PKB activation by insulin in liver. Science 2003; 300:1574-7.
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.