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TXNIP Antibody

Catalog # ASC11842

Product Information

Application	WB, E
Primary Accession	Q9H3M7
Other Accession	NP_006463, 171184421
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	43661
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	TXNIP body can be used for detection of TXNIP by Western blot at 0.5 - 1 g/ml.

Additional Information

Gene ID	10628
Other Names	Thioredoxin-interacting protein, Thioredoxin-binding protein 2, Vitamin D3 up-regulated protein 1, TXNIP, VDUP1
Target/Specificity	TXNIP; TXNIP antibody is human, mouse and rat reactive.
Reconstitution & Storage	TXNIP antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	TXNIP Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TXNIP
Synonyms	VDUP1
Function	May act as an oxidative stress mediator by inhibiting thioredoxin activity or by limiting its bioavailability (PubMed:17603038). Interacts with COPS5 and restores COPS5-induced suppression of CDKN1B stability, blocking the COPS5-mediated translocation of CDKN1B from the nucleus to the cytoplasm (By similarity). Functions as a transcriptional repressor, possibly by acting as a bridge molecule between transcription factors and corepressor complexes, and over-expression will induce G0/G1 cell cycle arrest (PubMed:12821938). Required for the maturation of natural killer cells (By similarity). Acts as a suppressor of tumor cell growth (PubMed:18541147). Inhibits the proteasomal degradation of DDIT4, and thereby contributes to the inhibition

	of the mammalian target of rapamycin complex 1 (mTORC1) (PubMed:21460850).
Cellular Location	Cytoplasm. Nucleus

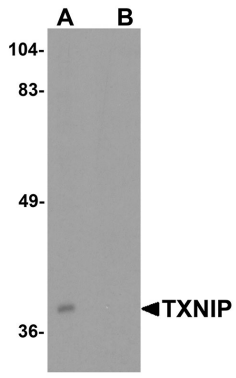
Background

Thioredoxin-interacting protein (TXNIP) belongs to the arrestin family and plays a critical role in the antioxidant defense mechanisms of hematopoietic cells by activating the p53 pathway during oxidative stress (1,2). It functions as a transcriptional repressor and acts as an oxidative stress mediator by inhibiting thioredoxin activity (2). TXNIP expression is reduced in many types of tumors, and TXNIP overexpression inhibits tumor growth by blocking cell-cycle progression (3). It has recently reported that TXNIP deficiency correlates with a high incidence of hepatocellular carcinoma (HCC) (4). TXNIP and p53 interactions could potentially be a therapeutic target for oxidative stress-related diseases such as hematopoietic malignancies and metabolic diseases (5).

References

Chen KS and DeLuca HF. Isolation and characterization of a novel cDNA from HL-60 cells treated with 1, 25-dihydroxyvitamin D-3. Biochim. Biophys. Acta. 1994; 1219:26-32.
Jeong M, Piao ZH, Kim MS, et al. Thioredoxin-interacting protein regulates hematopoietic stem cell quiescence and mobilization under stress conditions. J. Immunol. 2009; 183:2495–505.
Han SH, Jeon JH, Ju HR, et al. VDUP1 upregulated by TGF-beta1 and 1,25-dihydorxyvitamin D3 inhibits tumor cell growth by blocking cell-cycle progression. Oncogene 2003; 22:4035–46.
Kwon HJ, Won YS, Yoon YD, et al. Vitamin D3 up-regulated protein 1 deficiency accelerates liver regeneration after partial hepatectomy in mice. J. Hepatol. 2011; 54:1168–76.

Images



Western blot analysis of TXNIP in C2C12 cell lysate with TXNIP antibody at 0.5 µg/ml in (A) the absence and (B) the presence of blocking peptide.