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RTP801 Antibody

Catalog # ASC10658

Product Information

Application	WB, E
Primary Accession	Q9NX09
Other Accession	NP_061931, 9506687
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	25371
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	RTP801 antibody can be used for the detection of RTP801 by Western blot at 2 - 4 □g/mL.

Additional Information

Gene ID	54541
Other Names	DNA damage-inducible transcript 4 protein, HIF-1 responsive protein RTP801, Protein regulated in development and DNA damage response 1, REDD-1, DDIT4, REDD1, RTP801
Target/Specificity	DDIT4;
Reconstitution & Storage	RTP801 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	RTP801 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	DDIT4
Synonyms	REDD1, RTP801
Function	Regulates cell growth, proliferation and survival via inhibition of the activity of the mammalian target of rapamycin complex 1 (mTORC1). Inhibition of mTORC1 is mediated by a pathway that involves DDIT4/REDD1, AKT1, the TSC1-TSC2 complex and the GTPase RHEB. Plays an important role in responses to cellular energy levels and cellular stress, including responses to hypoxia and DNA damage. Regulates p53/TP53-mediated apoptosis in response to DNA damage via its effect on mTORC1 activity. Its role in the

	response to hypoxia depends on the cell type; it mediates mTORC1 inhibition in fibroblasts and thymocytes, but not in hepatocytes (By similarity). Required for mTORC1-mediated defense against viral protein synthesis and virus replication (By similarity). Inhibits neuronal differentiation and neurite outgrowth mediated by NGF via its effect on mTORC1 activity. Required for normal neuron migration during embryonic brain development. Plays a role in neuronal cell death.
Cellular Location	Mitochondrion. Cytoplasm, cytosol
Tissue Location	Broadly expressed, with lowest levels in brain, skeletal muscle and intestine. Up-regulated in substantia nigra neurons from Parkinson disease patients (at protein level)

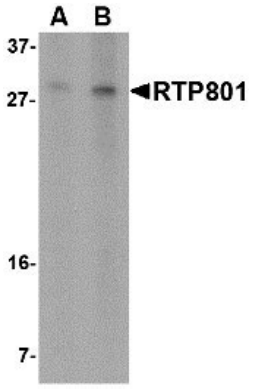
Background

RTP801 Antibody: RTP801 was initially identified as a gene induced by DNA damage, and later found to also be regulated by other cellular stresses such as hypoxia and glucocorticoid treatment. Recently, RTP801 has been shown to act as a mediator of tuberous sclerosis complex (TSC)-dependent regulation of the mammalian Target of Rapamycin (mTOR), an evolutionarily conserved serine/threonine kinase that regulates cell growth and cell cycle. In response to energy stress, RTP801 inhibits mTOR function, resulting in dephosphorylation of downstream targets such as ribosomal protein S6 kinase 1 and 4EBP1 and decreasing cell growth. Disregulation of RTP801 may thus contribute to human tumorigenesis.

References

Ellisen LW, Ramsayer KD, Johannessen CM, et al. REDD1, a developmentally regulated transcriptional target of p63 and p53, links p63 to regulation of reactive oxygen species. Mol. Cell2002; 10:995-1005.
Shoshani T, Faerman A, Mett I, et al. Identification of a novel hypoxia-inducible factor 1-responsive gene, RTP801, involved in apoptosis. Mol. Cell. Biol.2002; 22:2283-93.
Wang Z, Malone MH, Thomenius MJ, et al. Dexamethasone-induced gene 2 (dig2) is a novel pro-survival stress gene induced rapidly by diverse apoptotic signals. J. Biol. Chem.2003; 278:27053-8.
Sofer A, Lei K, Johannessen CM, et al. Regulation of mTOR and cell growth in response to energy stress by REDD1. Mol. Cell. Biol.2005; 25:5834-45.

Images



Western blot analysis of RTP801 in 293 cell lysate with RTP801 antibody at (A) 2 and (B) 4 µg/mL.