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TTBK2 Antibody

Catalog # ASC10850

Product Information

Application	E, IHC-P
Primary Accession	Q6IQ55
Other Accession	AAH71556, 47940064
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	137412
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	TTBK2 antibody can be used for detection of TTBK2 by immunohistochemistry at 5 □g/mL.

Additional Information

Gene ID	146057
Other Names	Tau-tubulin kinase 2, 2.7.11.1, TTBK2, KIAA0847
Target/Specificity	TTBK2; TTBK2 antibody is human specific. At least four isoforms of TTBK2 are known to exist; this antibody will detect only the two largest isoforms.
Reconstitution & Storage	TTBK2 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	TTBK2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TTBK2
Synonyms	KIAA0847
Function	Serine/threonine kinase that acts as a key regulator of ciliogenesis: controls the initiation of ciliogenesis by binding to the distal end of the basal body and promoting the removal of CCP110, which caps the mother centriole, leading to the recruitment of IFT proteins, which build the ciliary axoneme. Has some substrate preference for proteins that are already phosphorylated on a Tyr residue at the +2 position relative to the phosphorylation site. Able to phosphorylate tau on serines in vitro (PubMed:23141541). Phosphorylates MPHOSPH9 which promotes its ubiquitination and proteasomal degradation,

	loss of MPHOSPH9 facilitates the removal of the CP110-CEP97 complex (a negative regulator of ciliogenesis) from the mother centrioles, promoting the initiation of ciliogenesis (PubMed:30375385). Required for recruitment of CPLANE2 and INTU to the mother centriole (By similarity).
Cellular Location	Cell projection, cilium. Cytoplasm, cytoskeleton, cilium basal body. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome, centriole. Cytoplasm, cytosol. Nucleus Note=Localizes at the transition zone, a region between the basal body and the ciliary axoneme (PubMed:23141541). May also be present in cytosol and, at lower level in the nucleus (PubMed:21548880)

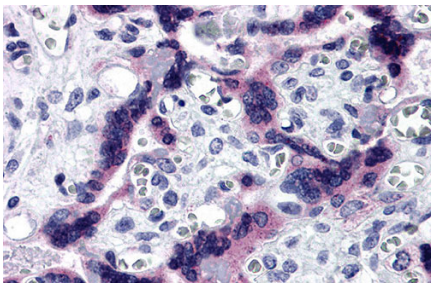
Background

TTBK2 Antibody: Tau tubulin kinase (TTBK2) is a serine/threonine kinase whose substrates are thought to include the tau and tubulin proteins. Mutations in the TTBK2 gene cause spinocerebellar ataxia type 11 (SCA11), a neurodegenerative disease characterized by progressive ataxia and atrophy of the cerebellum and brainstem. Recent studies have shown that increased levels of TTBK2 expression in kidney carcinoma and melanoma cell lines increases resistance to the chemotherapeutic agent Sunitinib, and that reduction of TTBK2 though the use of siRNA sensitized these cell lines to the effects of Sunitib, suggesting that TTBK2 can be used as a resistance marker as well a potential target to overcome resistance.

References

Kitano-Takahashi M, Morita H, Kondo S, et al. Expression, purification and crystallization of a human tau-tubulin kinase 2 that phosphorylates tau protein. Acta Crystallogr. Sect. F Struct. Biol. Cryst. Commun. 2007; 63:602-4.
Edener U, Kurth I, Meiner A, et al. Missense exchanges in the TTBK2 gene mutated in SCA11. J. Neurol. 2009; 1856-9.
Bender C and Ullrich A. PRKX, TTBK2 and RSK4 expression causes sunitinib resistance in kidney carcinoma- and melanoma cell lines. Int. J. Cancer 2011; epub.

Images



Immunohistochemistry of TTBK2 in human placenta tissue with TTBK2 antibody at 5 µg/mL.

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