10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-Hamartin Picoband Antibody

Catalog # ABO11822

Product Information

Application	WB
Primary Accession	Q92574
Host	Rabbit
Reactivity	Human, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Hamartin(TSC1) detection. Tested with WB in Human;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	7248
Other Names	Hamartin, Tuberous sclerosis 1 protein, TSC1, KIAA0243, TSC
Calculated MW	129767
Application Details	Western blot, 0.1-0.5 □g/ml, Human, Rat
Subcellular Localization	Cytoplasm . Membrane ; Peripheral membrane protein . At steady state found in association with membranes.
Tissue Specificity	Highly expressed in skeletal muscle, followed by heart, brain, placenta, pancreas, lung, liver and kidney. Also expressed in embryonic kidney cells.
Source	Eukaryota
Protein Name	Hamartin
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Immunogen	E.coli-derived human Hamartin recombinant protein (Position: D686-Y884). Human Hamartin shares 96% and 95% amino acid (aa) sequences identity with mouse and rat Hamartin, respectively.
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins
Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated

freezing and thawing.

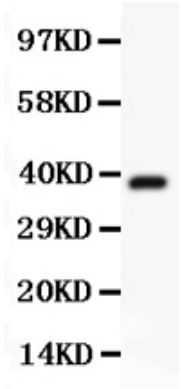
Protein Information

Name	TSC1 {ECO:0000303|PubMed:9242607, ECO:0000312|HGNC:HGNC:12362}
Function	Non-catalytic component of the TSC-TBC complex, a multiprotein complex that acts as a negative regulator of the canonical mTORC1 complex, an evolutionarily conserved central nutrient sensor that stimulates anabolic reactions and macromolecule biosynthesis to promote cellular biomass generation and growth (PubMed:12172553, PubMed:12271141, PubMed:12906785, PubMed:15340059, PubMed:24529379, PubMed:28215400). The TSC-TBC complex acts as a GTPase-activating protein (GAP) for the small GTPase RHEB, a direct activator of the protein kinase activity of mTORC1 (PubMed:12906785, PubMed:15340059, PubMed:24529379). In absence of nutrients, the TSC-TBC complex inhibits mTORC1, thereby preventing phosphorylation of ribosomal protein S6 kinase (RPS6KB1 and RPS6KB2) and EIF4EBP1 (4E-BP1) by the mTORC1 signaling (PubMed:12271141, PubMed:24529379, PubMed:28215400, PubMed:33215753). The TSC-TBC complex is inactivated in response to nutrients, relieving inhibition of mTORC1 (PubMed:12172553, PubMed:24529379). Within the TSC-TBC complex, TSC1 stabilizes TSC2 and prevents TSC2 self-aggregation (PubMed:10585443, PubMed:28215400). Acts as a tumor suppressor (PubMed:9242607). Involved in microtubule- mediated protein transport via its ability to regulate mTORC1 signaling (By similarity). Also acts as a co-chaperone for HSP90AA1 facilitating HSP90AA1 chaperoning of protein clients such as kinases, TSC2 and glucocorticoid receptor NR3C1 (PubMed:29127155). Increases ATP binding to HSP90AA1 and inhibits HSP90AA1 ATPase activity (PubMed:29127155). Competes with the activating co-chaperone AHSA1 for binding to HSP90AA1, thereby providing a reciprocal regulatory mechanism for chaperoning of client proteins (PubMed:29127155). Recruits TSC2 to HSP90AA1 and stabilizes TSC2 by preventing the interaction between TSC2 and ubiquitin ligase HERC1 (PubMed:16464865, PubMed:29127155).
Cellular Location	Lysosome membrane; Peripheral membrane protein. Cytoplasm, cytosol Note=Recruited to lysosomal membranes in a RHEB-dependent process in absence of nutrients (PubMed:24529379). In response to nutrients, the complex dissociates from lysosomal membranes and relocalizes to the cytosol (PubMed:24529379).
Tissue Location	Highly expressed in skeletal muscle, followed by heart, brain, placenta, pancreas, lung, liver and kidney (PubMed:9242607). Also expressed in embryonic kidney cells (PubMed:9242607).

Background

Hamartin also known as tuberous sclerosis 1 is a protein that in humans is encoded by the TSC1 gene. It is mapped to 9q34.13. This peripheral membrane protein was implicated as a tumor suppressor. It forms a complex with TSC2 that regulates mTORC1 signaling and may be also involved in vesicular transport and docking. Hamartin and TSC2 have critical roles in neuronal polarity, and that a common pathway regulates polarization and growth in neurons and cell size in other tissues. Hamartin is a growth inhibitory protein whose biologic effect is probably dependent on its interaction with tuberin. It also can affect cell proliferation via deregulation of G1 phase. Loss or perturbation of Hamartin function leads to loss of adhesion to the cellular matrix and initiates the development of TSC hamartomas.

Images



Anti-Hamartin Picoband antibody, ABO11822-1.jpgAll lanes: Anti Hamartin (ABO11822) at 0.5ug/mlWB: Recombinant Human Hamartin Protein 0.5ngPredicted bind size: 38KDObserved bind size: 38KD



Anti-Hamartin Picoband antibody, ABO11822-2.jpgAll lanes: Anti Hamartin (ABO11822) at 0.5ug/mlLane 1: Rat Brain Tissue Lysate at 50ug Lane 2: Hela Whole Cell Lysate at 40ugPredicted bind size: 130KDObserved bind size: 130KD

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.