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ProductInformation

Anti-Tuberin (VV-18)
Developed in Rabbit
Affinity Isolated Antibody

Product Number **T 5075**

Product Description

Anti-Tuberin (VV-18) is developed in rabbit using as immunogen a synthetic peptide corresponding to amino acid residues 1790-1807 of human Tuberin with N-terminal added cysteine, conjugated to KLH. The corresponding sequence differs by two amino acids in rat and mouse tuberin. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Tuberin (VV-18) recognizes human, rat, and mouse tuberin. Applications include the detection of tuberin by immunoblotting (180-200 kDa) and immunoprecipitation. Detection of the tuberin band by immunoblotting is specifically inhibited with the immunizing peptide.

Tuberin is the protein product of the tumor suppressor gene TSC2.[1] Hamartin, the product of the TSC1 tumor suppressor gene, contains two coiled-coil regions that have been shown to mediate its binding to tuberin.[2, 3] Hamartin and tuberin are involved in the regulation of cell cycle, cell growth, cell differentiation, cell adhesion and vesicular trafficking.[4] Mutations in either the TSC1 or the TSC2 gene are responsible for tuberous sclerosis complex (TSC), an autosomal dominant hereditary disease characterized by mental retardation, seizures, and benign tumors (hamartomas) in multiple organs including the kidney, brain, heart and skin.[5]

Tuberin is widely expressed in mammalian cell lines and tissues. It co-localizes with hamartin in most tissues and cell types.[6] Tuberin is found in cytosolic, microsomal, cytoskeletal, and vesicular fractions, and in certain cells it is also localized to the nucleus.[7, 8]

Tuberin has a GTPase activating protein homology (GAP) domain that has been reported to be involved in the regulation of the small GTPase Rheb both *in vitro* and *in vivo*.[9] Tuberin forms together with hamartin a functional cytoplasmic complex that inhibits growth by inhibiting phosphorylation of S6K and 4EBP, probably through their upstream modulator mammalian target of rapamycin (mTOR).[10]

Tuberin phosphorylation is required for complex formation as well for its interaction with several isoforms of the regulatory 14-3-3 protein.[11] Tuberin and hamartin are involved in the phosphoinositide 3-kinase/ Akt signal transduction pathway.[4] Phosphorylation by Akt and mitogenic factors abrogates hamartin-tuberin suppressor activity by inducing proteasome-mediated degradation of both proteins.[12, 13]

Reagent

Anti-Tuberin (VV-18) is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: Approx. 1.0 mg/ml

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in frost-free freezers is also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

By immunoblotting, a working antibody concentration of 0.2-0.4 µg/ml is recommended using whole extract of rat brain.

By immunoblotting, a working antibody concentration of 0.1-0.2 µg/ml is recommended using whole extract of mouse NIH-3T3 cells.

5-10 µg of the antibody immunoprecipitates tuberin from 0.5 mg of RIPA extract of human HeLa cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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KAA/ST 09/04