

α Tubulin (3H3085): sc-69970

BACKGROUND

Tubulin is a major cytoskeleton component that has five distinct forms, designated α , β , γ , δ and ϵ Tubulin. α and β Tubulins form heterodimers which multimerize to form a microtubule filament. Multiple β Tubulin isoforms ($\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$, $\beta 5$, $\beta 6$ and $\beta 8$) have been characterized and are expressed in mammalian tissues. $\beta 1$ and $\beta 4$ are present throughout the cytosol, $\beta 2$ is present in the nuclei and nucleoplasm, and $\beta 3$ is a neuron-specific cytoskeletal protein. γ Tubulin forms the gammaosome, which is required for nucleating microtubule filaments at the centrosome. Both δ Tubulin and ϵ Tubulin are associated with the centrosome. δ Tubulin is a homolog of the *Chlamydomonas* δ Tubulin Uni3 and is found in association with the centrioles, whereas ϵ Tubulin localizes to the pericentriolar material. ϵ Tubulin exhibits a cell-cycle-specific pattern of localization, first associating with only the older of the centrosomes in a newly duplicated pair and later associating with both centrosomes.

REFERENCES

- Weisenberg, R. 1981. Invited review: the role of nucleotide triphosphate in Actin and Tubulin assembly and function. *Cell Motil.* 1: 485-497.
- Burns, R.G. 1991. α -, β -, and γ -Tubulins: sequence comparisons and structural constraints. *Cell Motil. Cytoskeleton* 20: 181-189.
- Zheng, Y., et al. 1991. γ Tubulin is present in *Drosophila melanogaster* and *Homo sapiens* and is associated with the centrosome. *Cell* 65: 817-823.
- Leask, A. and Stearns, T. 1998. Expression of amino- and carboxyl-terminal γ and α Tubulin mutants in cultured epithelial cells. *J. Biol. Chem.* 273: 2661-2668.
- Ludueno, R.F. 1998. Multiple forms of Tubulin: different gene products and covalent modifications. *Int. Rev. Cytol.* 178: 207-275.

SOURCE

α Tubulin (3H3085) is a rat monoclonal antibody raised against full length purified α Tubulin of *Saccharomyces cerevisiae* origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

α Tubulin (3H3085) is recommended for detection of α Tubulin of mouse, rat, human and yeast origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); also recommended for detection of the tyrosinated form of α Tubulin.

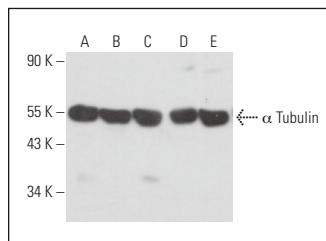
Molecular Weight of α Tubulin: 55 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, K-562 whole cell lysate: sc-2203 or A549 cell lysate: sc-2413.

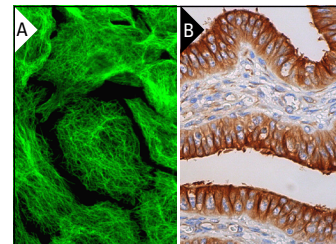
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



α Tubulin (3H3085): sc-69970. Western blot analysis of α Tubulin expression in PC-12 (A), K-562 (B), A549 (C), HeLa (D) and NIH/3T3 (E) whole cell lysates.



α Tubulin (3H3085): sc-69970. Immunofluorescence staining of formalin-fixed A-431 cells showing cytoskeletal localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing cytoplasmic and membrane staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- De, S. and Kline, D. 2013. Evidence for the requirement of 14-3-3 η (YWHAH) in meiotic spindle assembly during mouse oocyte maturation. *BMC Dev. Biol.* 13: 10.
- Luo, G., et al. 2018. TNF α and RANKL promote osteoclastogenesis by upregulating RANK via the NF κ B pathway. *Mol. Med. Rep.* 17: 6605-6611.
- Li, X., et al. 2018. A novel cell-penetrating peptide protects against neuron apoptosis after cerebral ischemia by inhibiting the nuclear translocation of Annexin A1. *Cell Death Differ.* 26: 260-275.
- Wu, L., et al. 2020. Niche-selective inhibition of pathogenic Th17 cells by targeting metabolic redundancy. *Cell* 182: 641-654.e20.
- Li, S., et al. 2020. PKC δ deficiency in B cells displays osteopenia accompanied with upregulation of RANKL expression and osteoclast-osteoblast uncoupling. *Cell Death Dis.* 11: 762.
- Jeong, S.H., et al. 2021. Refractoriness of STING therapy is relieved by AKT inhibitor through effective vascular disruption in tumour. *Nat. Commun.* 12: 4405.
- Xu, H., et al. 2021. Arkadia-SKI/SnoN signaling differentially regulates TGF- β -induced iTreg and Th17 cell differentiation. *J. Exp. Med.* 218: e20210777.
- Yoganathan, K., et al. 2022. Regulation of the signal-dependent E protein HEBAIt through a YYY motif is required for progression through T cell development. *Front. Immunol.* 13: 848577.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.