

α 4a Tubulin (MH-17): sc-134241

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 (β 1, β 2, β 3, β 4, β 5, β 6 and β 8) have been characterized and are expressed in mammalian tissues. β 1 and β 4 are present throughout the cytosol, β 2 is present in the nuclei and nucleoplasm, and β 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.
- Walss, C., et al. 1999. Presence of the β II isotype of Tubulin in the nuclei of cultured mesangial cells from rat kidney. *Cell Motil. Cytoskeleton* 42: 274-284.
- Modig, C., et al. 1999. Identification of β 3 and β 4 Tubulin isotypes in cold-adapted microtubules from Atlantic cod (*Gadus morhua*): antibody mapping and cDNA sequencing. *Cell Motil. Cytoskeleton* 42: 315-330.

CHROMOSOMAL LOCATION

Genetic locus: TUBA4A (human) mapping to 2q35; Tuba4a (mouse) mapping to 1 C3.

SOURCE

α 4a Tubulin (MH-17) is a mouse monoclonal antibody raised against recombinant α 4a Tubulin protein of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

α 4a Tubulin (MH-17) is recommended for detection of α 4a Tubulin of mouse, rat and human 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for α 4a Tubulin siRNA (h): sc-105024, α 4a Tubulin shRNA Plasmid (h): sc-105024-SH and α 4a Tubulin shRNA (h) Lentiviral Particles: sc-105024-V.

Molecular Weight of α 4a Tubulin: 50 kDa.

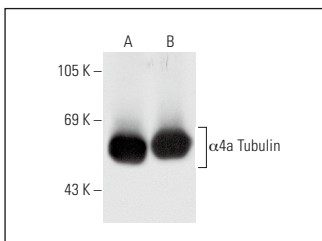
Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or A-431 whole cell lysate: sc-2201.

RECOMMENDED SUPPORT REAGENTS

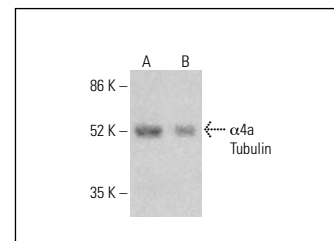
To ensure optimal results, the following support reagents are recommended:

1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



α 4a Tubulin (MH-17): sc-134241. Western blot analysis of α 4a Tubulin expression in HeLa (A) and A-431 (B) whole cell lysates.



α 4a Tubulin (MH-17): sc-134241. Western blot analysis of α 4a Tubulin expression in K-562 (A) and HCT-116 (B) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

SELECT PRODUCT CITATIONS

- Colás-Algora, N., et al. 2020. Compensatory increase of VE-cadherin expression through ETS1 regulates endothelial barrier function in response to TNF α . *Cell. Mol. Life Sci.* 77: 2125-2140.
- Zhang, M., et al. 2021. Targeting the Lnc-OPHN1-5/androgen receptor/hnRNP A1 complex increases Enzalutamide sensitivity to better suppress prostate cancer progression. *Cell Death Dis.* 12: 855.
- Cacho-Navas, C., et al. 2022. Plasmolipin regulates basolateral-to-apical transcytosis of ICAM-1 and leukocyte adhesion in polarized hepatic epithelial cells. *Cell. Mol. Life Sci.* 79: 61.

STORAGE

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