SANTA CRUZ BIOTECHNOLOGY, INC.

α4a Tubulin (h2): 293 Lysate: sc-158214

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. There are five β Tubulin isoforms (β1, β2, β3, β4A and β4B) that are expressed in mammalian tissues. β1 and β4 are present throughout the cytosol, β2 is present in the nuclei and nucleoplasm, and β3 is a neuron-specific cytoskeletal protein. γ Tubulin forms the gammasome, 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

1. Weisenberg, R. 1981. Invited review: the role of nucleotide triphosphate in Actin and tubulin assembly and function. Cell Motil. 1: 485-497.
2. Burns, R.G. 1991. α, β, and γ Tubulins: sequence comparisons and structural constraints. Cell Motil. Cytoskeleton 20: 181-189.
3. Zheng, Y., et al. 1991. γ Tubulin is present in *Drosophila melangaster* and *Homo sapiens* and is associated with the centrosome. Cell 65: 817-823.
4. Leask, A. and Stearns, T. 1998. Expression of amino- and carboxyl-terminal γ and β Tubulin mutants in cultured epithelial cells. J. Biol. Chem. 273: 2661-2668.
5. Ludueña, R.F. 1998. Multiple forms of tubulin: different gene products and covalent modifications. Int. Rev. Cytol. 178: 207-275.
6. Walss, C., et al. 1999. Presence of the β2 isotype of tubulin in the nuclei of cultured mesangial cells from rat kidney. Cell Motil. Cytoskeleton 42: 274-284.
7. Modig, C., et al. 1999. Identification of β3 and β4 Tubulin isotypes in cold-adapted microtubules from Atlantic cod *(Gadus morhua):* antibody mapping and cDNA sequencing. Cell Motil. Cytoskeleton 42: 315-330.
8. Woulfe, J. and Munoz, D. 2000. Tubulin immunoreactive neuronal intranuclear inclusions in the human brain. Neuropathol. Appl. Neurobiol. 26: 161-171.

CHROMOSOMAL LOCATION

Genetic locus: TUBA4A (human) mapping to 2q35.

PRODUCT

α4a Tubulin (h2): 293 Lysate represents a lysate of human α4a Tubulin transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

α4a Tubulin (h2): 293 Lysate is suitable as a Western Blotting positive control for human reactive α4a Tubulin antibodies. Recommended use: 10-20 µl per lane.

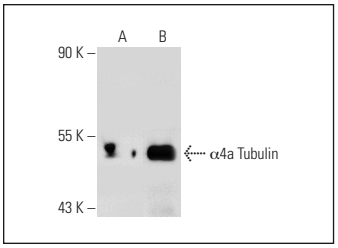
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

α Tubulin (6A204): sc-69969 is recommended as a positive control antibody for Western Blot analysis of enhanced human α4a Tubulin expression in α4a Tubulin transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

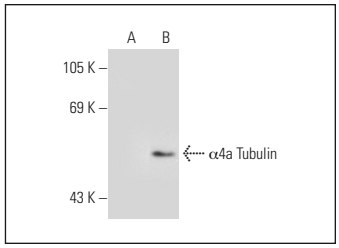
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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.

DATA



α Tubulin (6A204): sc-69969. Western blot analysis of α4a Tubulin expression in non-transfected: sc-110760 (**A**) and human α4a Tubulin transfected: sc-158214 (**B**) 293 whole cell lysates.



α Tubulin (YOL1/34): sc-53030. Western blot analysis of α4a Tubulin expression in non-transfected: sc-110760 (**A**) and human α4a Tubulin transfected: sc-158214 (**B**) 293 whole cell lysates.

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.