SANTA CRUZ BIOTECHNOLOGY, INC.

β Tubulin (TU-06): sc-51712

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The Power to Question

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 (β1, β2, β3, β4, β5, β6 and β8) have been characterized and 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., et al. 1998. Expression of amino-and carboxyl-terminal γ and α Tubulin mutants in cultured epithelial cells. J. Biol. Chem. 273: 2661-2668.
5. Luduena, 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 β-II 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 β-III and β-IV Tubulin isotypes in cold-adapted microtubules from Atlantic cod *(Gadus morhua):* antibody mapping and cDNA sequencing. Cell Motil. Cytoskeleton 42: 315-330.

SOURCE

β Tubulin (TU-06) is a mouse monoclonal antibody raised against β subunits of Tubulin from brain tissue homogenate of porcine origin.

PRODUCT

Each vial contains 100 µg IgM in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

β Tubulin (TU-06) is recommended for detection of phylogenetically conserved, N-terminal structural domain (amino acids 81-95) of β Tubulin of mouse, rat, human, porcine, yeast and bovine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

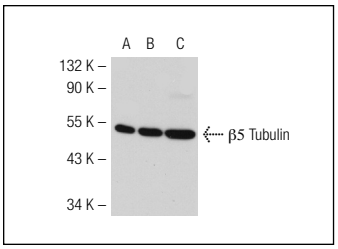
Molecular Weight of β Tubulin: 55 kDa.

Positive Controls: β5 Tubulin (h): 293T Lysate: sc-111777, β5 Tubulin (m): 293T Lysate: sc-118032 or BJAB whole cell lysate: sc-2207.

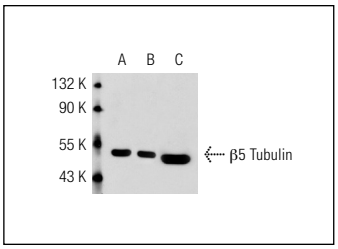
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgM-HRP: sc-2064 (dilution range: 1:500-1:5,000), TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L PLUS-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgM-FITC: sc-2082 (dilution range: 1:100-1:400) or goat anti-mouse IgM-TR: sc-2983 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



β Tubulin (TU-06): sc-51712. Western blot analysis of β5 Tubulin expression in non-transfected 293T: sc-117752 (**A**), human β5 Tubulin transfected 293T: sc-111777 (**B**) and BJAB (**C**) whole cell lysates.



β Tubulin (TU-06): sc-51712. Western blot analysis of β5 Tubulin expression in non-transfected 293T: sc-117752 (**A**), mouse β5 Tubulin transfected 293T: sc-118032 (**B**) and K-562 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Kamanga-Sollo, E., et al. 2011. Effects of heat stress on proliferation, protein turnover, and levels of heat shock protein mRNA in cultured porcine muscle satellite cells. J. Anim. Sci. 89: 3473-3480.

RESEARCH USE

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