SANTA CRUZ BIOTECHNOLOGY, INC.

α Tubulin (3H3087): sc-69971

SANTA CRUZ BIOTECHNOLOGY

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.

SOURCE

α Tubulin (3H3087) is a rat monoclonal antibody raised against full length purified α Tubulin of *Saccharomyces cerevisiae* origin.

PRODUCT

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

APPLICATIONS

α Tubulin (3H3087) 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 µg per 100-500 µg 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.

Suitable for use as control antibody for α Tubulin siRNA (h): sc-29188, α Tubulin siRNA (m): sc-29189, α Tubulin shRNA Plasmid (h): sc-29188-SH, α Tubulin shRNA Plasmid (m): sc-29189-SH, α Tubulin shRNA (h) Lentiviral Particles: sc-29188-V and α Tubulin shRNA (m) Lentiviral Particles: sc-29189-V.

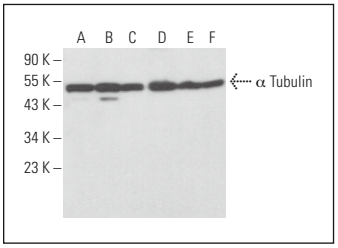
Molecular Weight of α Tubulin: 55 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, MCF7 whole cell lysate: sc-2206 or K-562 whole cell lysate: sc-2203.

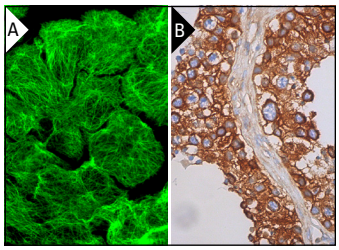
STORAGE

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

DATA



α Tubulin (3H3087): sc-69971. Western blot analysis of α Tubulin expression in K-562 (**A**), Jurkat (**B**), MCF7 (**C**), C6 (**D**), HL-60 (**E**) and Hep G2 (**F**) whole cell lysates.



α Tubulin (3H3087): sc-69971. Immunofluorescence staining of formalin-fixed A-431 cells showing cytoskeletal localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic and membrane staining of cells in seminiferous ducts (**B**).

SELECT PRODUCT CITATIONS

1. Mayer, A., et al. 2012. The spt5 C-terminal region recruits yeast 3' RNA cleavage factor I. Mol. Cell. Biol. 32: 1321-1331.
2. Schulz, D., et al. 2014. Rpb4 subunit functions mainly in mRNA synthesis by RNA polymerase II. J. Biol. Chem. 289: 17446-17452.
3. Masachis, S., et al. 2016. A fungal pathogen secretes plant alkalinizing peptides to increase infection. Nat. Microbiol. 1: 16043.
4. Segorbe, D., et al. 2017. Three *Fusarium oxysporum* mitogen-activated protein kinases (MAPKs) have distinct and complementary roles in stress adaptation and cross-kingdom pathogenicity. Mol. Plant Pathol. 18: 912-924.
5. Pérez-González, A., et al. 2017. Adaptation of the GoldenBraid modular cloning system and creation of a toolkit for the expression of heterologous proteins in yeast mitochondria. BMC Biotechnol. 17: 80.
6. Burén, S., et al. 2017. Formation of nitrogenase NifDK tetramers in the mitochondria of *Saccharomyces cerevisiae*. ACS Synth. Biol. 6: 1043-1055.
7. Li, Y., et al. 2018. SIRT3 deficiency exacerbates p53/Parkin-mediated mitophagy inhibition and promotes mitochondrial dysfunction: implication for aged hearts. Int. J. Mol. Med. 41: 3517-3526.
8. Nunez-Rodriguez, J.C., et al. 2020. The phosphatase Ptc6 is involved in virulence and MAPK signalling in *Fusarium oxysporum*. Mol. Plant Pathol. 21: 206-217.
9. Jiang, X., et al. 2021. Exploiting genetic diversity and gene synthesis to identify superior nitrogenase NifH protein variants to engineer N_2-fixation in plants. Commun. Biol. 4: 4.
10. Zumer, K., et al. 2021. Two distinct mechanisms of RNA polymerase II elongation stimulation *in vivo*. Mol. Cell 81: 3096-3109.e8.

RESEARCH USE

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