SANTA CRUZ BIOTECHNOLOGY, INC.

α Tubulin (4G1): sc-58666

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 (4G1) is a mouse monoclonal antibody raised against the C-terminus of α Tubulin of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of HEPES with 0.15 M NaCl, 0.01% stabilizer protein, 0.03% sodium azide and 50% glycerol.

APPLICATIONS

α Tubulin (4G1) is recommended for detection of α Tubulin of mouse, rat and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:50-1:2500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:50-1:2500).

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.

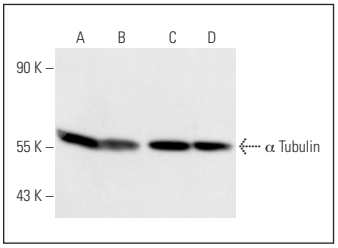
Molecular Weight of α Tubulin: 55 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, NIH/3T3 whole cell lysate: sc-2210 or K-562 whole cell lysate: sc-2203.

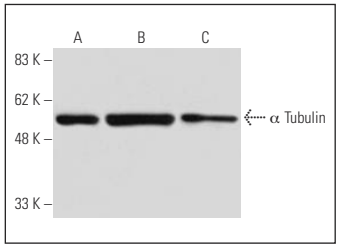
STORAGE

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

DATA



α Tubulin (4G1): sc-58666. Western blot analysis of α Tubulin expression in NIH/3T3 (**A**), HeLa (**B**), K-562 (**C**) and PC-12 (**D**) whole cell lysates.



α Tubulin (4G1): sc-58666. Western blot analysis of α Tubulin expression in SH-SY5Y (**A**) whole cell lysate and mouse brain (**B**) and rat brain (**C**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Scottà, C., et al. 2008. FOXP3 induced by CD28/B7 interaction regulates CD25 and anergic phenotype in human $CD4^+CD25^-$ T lymphocytes. J. Immunol. 181: 1025-1033.
2. Yadav, G.P., et al. 2014. Characterization of *M. tuberculosis* SerB2, an essential HAD-family phosphatase, reveals novel properties. PLoS ONE 9: e115409.
3. Esposito, T., et al. 2015. A novel diagnostic method to detect truncated neurofibromin in neurofibromatosis 1. J. Neurochem. 135: 1123-1128.
4. Shree, S., et al. 2016. The *M. tuberculosis* HAD phosphatase (Rv3042c) interacts with host proteins and is inhibited by Clofazimine. Cell. Mol. Life Sci. 73: 3401-3417.
5. Bononi, A., et al. 2017. BAP1 regulates IP3R3-mediated Ca^{2+} flux to mitochondria suppressing cell transformation. Nature 546: 549-553.
6. Duan, R., et al. 2018. Spectrin is a mechanoresponsive protein shaping fusogenic synapse architecture during myoblast fusion. Nat. Cell Biol. 20: 688-698.
7. Tee, J.K., et al. 2019. Angiopoietin-1 accelerates restoration of endothelial cell barrier integrity from nanoparticle-induced leakiness. Nanotoxicology 13: 682-700.
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10. Cruz-Cosme, R., et al. 2022. A novel diG motif in ORF3a protein of SARS-Cov-2 for intracellular transport. Front. Cell Dev. Biol. 10: 1011221.

RESEARCH USE

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