

β Tubulin (TUB 2.1): sc-58886

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 ($\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$, $\beta 5$, $\beta 6$ and $\beta 8$) have been characterized and are expressed in mammalian tissues. $\beta 1$ and $\beta 4$ are present throughout the cytosol, $\beta 2$ is present in the nuclei and nucleoplasm, and $\beta 3$ 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

- 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.

SOURCE

β Tubulin (TUB 2.1) is a mouse monoclonal antibody raised against purified brain β Tubulin of rat origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

β Tubulin (TUB 2.1) is available conjugated to agarose (sc-58886 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-58886 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-58886 PE), fluorescein (sc-58886 FITC), Alexa Fluor[®] 488 (sc-58886 AF488), Alexa Fluor[®] 546 (sc-58886 AF546), Alexa Fluor[®] 594 (sc-58886 AF594) or Alexa Fluor[®] 647 (sc-58886 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-58886 AF680) or Alexa Fluor[®] 790 (sc-58886 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

β Tubulin (TUB 2.1) is recommended for detection of β Tubulin of mouse, rat, human and bovine 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)], 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).

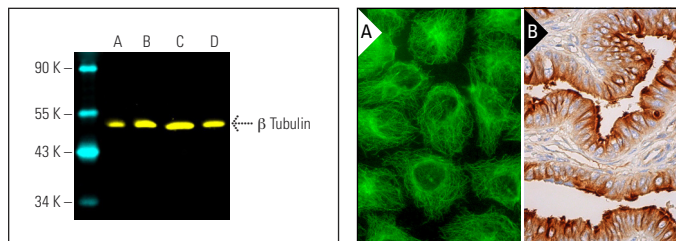
Molecular Weight of β Tubulin: 55 kDa.

Positive Controls: Raji whole cell lysate: sc-364236, PC-12 cell lysate: sc-2250 or BJAB whole cell lysate: sc-2207.

STORAGE

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

DATA



β Tubulin (TUB 2.1) Alexa Fluor[®] 488: sc-58886 AF488. Direct fluorescent western blot analysis of β Tubulin expression in BJAB (A), PC-12 (B), Raji (C) and HeLa (D) whole cell lysates. Blocked with UltraCruz[®] Blocking Reagent: sc-516214. Cruz Marker[™] Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor[®] 647: sc-516791.

β Tubulin (TUB 2.1): sc-58886. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing cytoplasmic and membrane staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Kwon, S., et al. 2007. The deacetylase HDAC6 is a novel critical component of stress granules involved in the stress response. *Genes Dev.* 21: 3381-3394.
- Cartier-Michaud, A., et al. 2012. Matrix-bound PAI-1 supports cell blebbing via RhoA/ROCK1 signaling. *PLoS ONE* 7: e32204.
- Piroli, G.G., et al. 2014. Identification of protein succination as a novel modification of Tubulin. *Biochem. J.* 462: 231-245.
- Liu, Y., et al. 2015. Mutations in the microtubule-associated protein 1A (Map1a) gene cause Purkinje cell degeneration. *J. Neurosci.* 35: 4587-4598.
- Wang, D. and Mitchell, E.S. 2016. Cognition and synaptic-plasticity related changes in aged rats supplemented with 8- and 10-carbon medium chain triglycerides. *PLoS ONE* 11: e0160159.
- Lavallée-Adam, M., et al. 2017. Functional 5' UTR motif discovery with LESMoN: local enrichment of sequence motifs in biological networks. *Nucleic Acids Res.* 45: 10415-10427.
- Yamamoto, Y., et al. 2018. FABP3 in the anterior cingulate cortex modulates the methylation status of the glutamic acid decarboxylase₆₇ promoter region. *J. Neurosci.* 38: 10411-10423.
- Feng, Y.Y., et al. 2019. Essential role of NADPH oxidase-dependent production of reactive oxygen species in maintenance of sustained B cell receptor signaling and B cell proliferation. *J. Immunol.* 202: 2546-2557.
- Du, W., et al. 2019. Stella protein facilitates DNA demethylation by disrupting the chromatin association of the RING finger-type E3 ubiquitin ligase UHRF1. *J. Biol. Chem.* 294: 8907-8917.

RESEARCH USE

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