

β3 Tubulin (TU-20): sc-51670

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

CHROMOSOMAL LOCATION

Genetic locus: TUBB3 (human) mapping to 16q24.3; Tubb3 (mouse) mapping to 8 E1.

SOURCE

β 3 Tubulin (TU-20) is a mouse monoclonal antibody raised against amino acids 441-448 of β 3 Tubulin of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

β 3 Tubulin (TU-20) is recommended for detection of β 3 Tubulin of mouse, rat and human 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).

Suitable for use as control antibody for β 3 Tubulin siRNA (h): sc-105009, β 3 Tubulin siRNA (m): sc-108023, β 3 Tubulin shRNA Plasmid (h): sc-105009-SH, β 3 Tubulin shRNA Plasmid (m): sc-108023-SH, β 3 Tubulin shRNA (h) Lenti-viral Particles: sc-105009-V and β 3 Tubulin shRNA (m) Lentiviral Particles: sc-108023-V.

Molecular Weight of β 3 Tubulin: 55 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, rat brain extract: sc-2392 or mouse brain extract: sc-2253.

RESEARCH USE

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

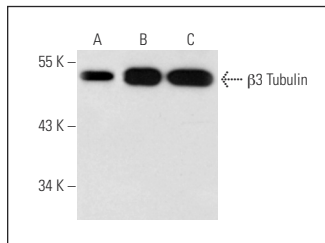
PROTOCOLS

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

STORAGE

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

DATA



β 3 Tubulin (TU-20): sc-51670. Western blot analysis of β 3 Tubulin expression in Sk-N-SH whole cell lysate (A) and rat brain (B) and mouse brain (C) tissue extracts.

SELECT PRODUCT CITATIONS

- Suzuki, K., et al. 2010. Activin A induces neuronal differentiation and survival via ALK4 in a SMAD-independent manner in a subpopulation of human neuroblastomas. *Biochem. Biophys. Res. Commun.* 394: 639-645.
- Lyashenko, N., et al. 2011. Differential requirement for the dual functions of β -catenin in embryonic stem cell self-renewal and germ layer formation. *Nat. Cell Biol.* 13: 753-761.
- Martinez, Y., et al. 2012. Cellular diversity within embryonic stem cells: pluripotent clonal sublines show distinct differentiation potential. *J. Cell. Mol. Med.* 16: 456-467.
- Kanakasabai, S., et al. 2012. PPAR γ agonists promote oligodendrocyte differentiation of neural stem cells by modulating stemness and differentiation genes. *PLoS ONE* 7: e50500.
- Liedmann, A., et al. 2012. Cultivation of human neural progenitor cells in a 3-dimensional self-assembling peptide hydrogel. *J. Vis. Exp.* 11: e3830.
- Honda, D., et al. 2013. The ALS/FTLD-related RNA-binding proteins TDP-43 and FUS have common downstream RNA targets in cortical neurons. *FEBS Open Bio.* 4: 1-10.
- Pan, B., et al. 2015. Painful nerve injury upregulates thrombospondin-4 expression in dorsal root ganglia. *J. Neurosci. Res.* 93: 443-453.
- Shi, F., et al. 2016. Cellular prion protein promotes neuronal differentiation of adipose-derived stem cells by upregulating miRNA-124. *J. Mol. Neurosci.* 59: 48-55.
- Shetty, D.K. and Inamdar, M.S. 2016. Generation of a heterozygous knockout human embryonic stem cell line for the OCIAD1 locus using CRISPR/CAS9 mediated targeting: BJNhem20-OCIAD1-CRISPR-39. *Stem Cell Res.* 16: 308-310.

CONJUGATES

See **β 3 Tubulin (2G10): sc-80005** for β 3 Tubulin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.