SANTA CRUZ BIOTECHNOLOGY, INC.

β3 Tubulin (TU-20): sc-51670

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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.

CHROMOSOMAL LOCATION

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

SOURCE

β3 Tubulin (TU-20) is a mouse monoclonal antibody raised against amino acids 441-448 of β3 Tubulin of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

β3 Tubulin (TU-20) is recommended for detection of β3 Tubulin of mouse, rat and human 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).

Suitable for use as control antibody for β3 Tubulin siRNA (h): sc-105009, β3 Tubulin siRNA (m): sc-108023, β3 Tubulin shRNA Plasmid (h): sc-105009-SH, β3 Tubulin shRNA Plasmid (m): sc-108023-SH, β3 Tubulin shRNA (h) Lenti-viral Particles: sc-105009-V and β3 Tubulin shRNA (m) Lentiviral Particles: sc-108023-V.

Molecular Weight of β3 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.

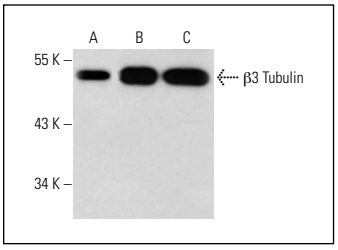
PROTOCOLS

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



β3 Tubulin (TU-20): sc-51670. Western blot analysis of β3 Tubulin expression in SK-N-SH whole cell lysate (**A**) and rat brain (**B**) and mouse brain (**C**) tissue extracts.

SELECT PRODUCT CITATIONS

1. 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.
2. 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.
3. 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.
4. Kanakasabai, S., et al. 2012. PPARγ agonists promote oligodendrocyte differentiation of neural stem cells by modulating stemness and differentiation genes. PLoS ONE 7: e50500.
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6. 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.
7. Pan, B., et al. 2015. Painful nerve injury upregulates thrombospondin-4 expression in dorsal root ganglia. J. Neurosci. Res. 93: 443-453.
8. 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.
9. 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.