

# β3 Tubulin (TUJ-1): sc-58888

## BACKGROUND

Tubulin is a major cytoskeleton component that has five distinct forms, designated  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$  and  $\epsilon$  tubulin.  $\alpha$  and  $\beta$  Tubulins form heterodimers which multimerize to form a microtubule filament. Multiple  $\beta$  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.  $\gamma$  Tubulin forms the gammasome, which is required for nucleating microtubule filaments at the centrosome. Both  $\delta$  Tubulin and  $\epsilon$  Tubulin are associated with the centrosome.  $\delta$  Tubulin is a homolog of the *Chlamydomonas*  $\delta$  Tubulin Uni3 and is found in association with the centrioles, whereas  $\epsilon$  Tubulin localizes to the pericentriolar material.  $\epsilon$  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

$\beta 3$  Tubulin (TUJ-1) is a mouse monoclonal antibody raised against raised against microtubules derived from rat brain.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

$\beta 3$  Tubulin (TUJ-1) is recommended for detection of  $\beta 3$  Tubulin (neuron specific class III  $\beta$  Tubulin) of broad mammalian origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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); non cross-reactive with  $\beta$  Tubulin found in glial cells.

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

Molecular Weight of  $\beta 3$  Tubulin: 55 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, K-562 whole cell lysate: sc-2203 or BJAB whole cell lysate: sc-2207.

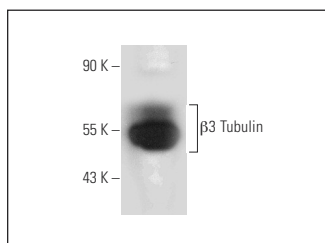
## STORAGE

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

## RESEARCH USE

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

## DATA



$\beta 3$  Tubulin (TUJ-1): sc-58888. Western blot analysis of  $\beta 3$  Tubulin expression in BJAB whole cell lysate.

## SELECT PRODUCT CITATIONS

- D'Angelo, F., et al. 2010. Micropatterned hydrogenated amorphous carbon guides mesenchymal stem cells towards neuronal differentiation. *Eur. Cell Mater.* 20: 231-244.
- Li, Y., et al. 2013. Cell recognition molecule L1 promotes embryonic stem cell differentiation through the regulation of cell surface glycosylation. *Biochem. Biophys. Res. Commun.* 440: 405-412.
- Meng, F., et al. 2013. Induction of retinal ganglion-like cells from fibroblasts by adenoviral gene delivery. *Neuroscience* 250: 381-393.
- Kong, H., et al. 2014. Aquaporin-4 knockout exacerbates corticosterone-induced depression by inhibiting astrocyte function and hippocampal neurogenesis. *CNS Neurosci. Ther.* 20: 391-402.
- Zhang, H., et al. 2014. Mechanisms controlling the smooth muscle cell death in progeria via down-regulation of poly(ADP-ribose) polymerase 1. *Proc. Natl. Acad. Sci. USA* 111: E2261-E2270.
- San Miguel-Ruiz, J.E. and Letourneau, P.C. 2014. The role of Arp2/3 in growth cone Actin dynamics and guidance is substrate dependent. *J. Neurosci.* 34: 5895-5908.
- Hong, J.Y., et al. 2014. Therapeutic potential of induced neural stem cells for spinal cord injury. *J. Biol. Chem.* 289: 32512-32525.
- Peretz, Y., et al. 2015. Inhibitor of DNA Binding 4 (ID4) is highly expressed in human melanoma tissues and may function to restrict normal differentiation of melanoma cells. *PLoS ONE* 10: e0116839.
- Morales-Hernández, A., et al. 2016. Alu retrotransposons promote differentiation of human carcinoma cells through the aryl hydrocarbon receptor. *Nucleic Acids Res.* 44: 4665-4683.

## CONJUGATES

See  **$\beta 3$  Tubulin (2G10): sc-80005** for  $\beta 3$  Tubulin antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.