

# β3 Tubulin (2G10): sc-80005

## 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

β3 Tubulin (2G10) is a mouse monoclonal antibody raised against amino acids 436-450 of β3 Tubulin of rat origin.

## PRODUCT

Each vial contains 200 μg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

β3 Tubulin (2G10) is available conjugated to agarose (sc-80005 AC), 500 μg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-80005 HRP), 200 μg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-80005 PE), fluorescein (sc-80005 FITC), Alexa Fluor® 488 (sc-80005 AF488), Alexa Fluor® 546 (sc-80005 AF546), Alexa Fluor® 594 (sc-80005 AF594) or Alexa Fluor® 647 (sc-80005 AF647), 200 μg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-80005 AF680) or Alexa Fluor® 790 (sc-80005 AF790), 200 μg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

β3 Tubulin (2G10) is recommended for detection of neuronal specific β3 Tubulin of mouse, rat, human and bovine 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).

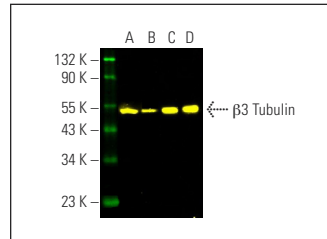
Suitable for use as control antibody for β3 Tubulin siRNA (h): sc-105009, β3 Tubulin siRNA (m): sc-108023, β3 Tubulin shRNA Plasmid (h): sc-105009-SH, β3 Tubulin shRNA Plasmid (m): sc-108023-SH, β3 Tubulin shRNA (h) Lentiviral Particles: sc-105009-V and β3 Tubulin shRNA (m) Lentiviral Particles: sc-108023-V.

Molecular Weight of β3 Tubulin: 55 kDa.

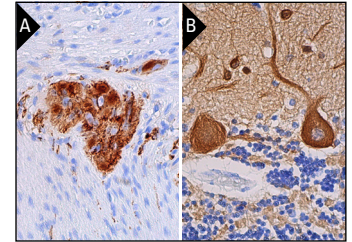
## STORAGE

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

## DATA



β3 Tubulin (2G10) Alexa Fluor® 488: sc-80005 AF488. Direct fluorescent western blot analysis of β3 Tubulin expression in Neuro-2A (A), BJAB (B) and SH-SY5Y (C) whole cell lysates and mouse brain tissue extract (D). Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 680: sc-516730.



β3 Tubulin (2G10): sc-80005. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing cytoplasmic staining of peripheral nerves and ganglion (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of purkinje cells and nuclear staining of cells in molecular layer (B).

## SELECT PRODUCT CITATIONS

- Song, M.Y., et al. 2010. Contribution of the delayed-rectifier potassium channel Kv2.1 to acute spinal cord injury in rats. *BMB Rep.* 43: 756-760.
- Ying, C., et al. 2012. Neural differentiation of rat adipose-derived stem cells *in vitro*. *Cell. Mol. Neurobiol.* 32: 1255-1263.
- Vega-Naredo, I., et al. 2014. Mitochondrial metabolism directs stemness and differentiation in P19 embryonal carcinoma stem cells. *Cell Death Differ.* 21: 1560-1574.
- Jha, M.K., et al. 2015. Metabolic connection of inflammatory pain: pivotal role of a pyruvate dehydrogenase kinase-pyruvate dehydrogenase-lactic acid axis. *J. Neurosci.* 35: 14353-14369.
- Sharif, T., et al. 2016. Autophagic homeostasis is required for the pluripotency of cancer stem cells. *Autophagy* 13: 264-284.
- Pashkovskaia, N., et al. 2018. Mitochondrial ROS direct the differentiation of murine pluripotent P19 cells. *Stem Cell Res.* 30: 180-191.
- Sharif, T., et al. 2018. Phosphoglycerate dehydrogenase inhibition induces p-mTOR-independent autophagy and promotes multilineage differentiation in embryonal carcinoma stem-like cells. *Cell Death Dis.* 9: 990.
- Magalhães-Novais, S., et al. 2019. Cell quality control mechanisms maintain stemness and differentiation potential of p19 embryonic carcinoma cells. *Autophagy* 16: 313-333.
- Yang, Z., et al. 2019. Platycodigenin as potential drug candidate for Alzheimer's disease via modulating microglial polarization and neurite regeneration. *Molecules* 24: 3207.

## RESEARCH USE

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

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