

# β Tubulin (SAP.4G5): sc-58884

## 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.

## 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.  $\alpha$ -,  $\beta$ -, and  $\gamma$  Tubulins: sequence comparisons and structural constraints. *Cell Motil. Cytoskeleton* 20: 181-189.
- Zheng, Y., et al. 1991.  $\gamma$  Tubulin is present in *Drosophila melanogaster* and *Homo sapiens* and is associated with the centrosome. *Cell* 65: 817-823.
- Ludueno, R.F. 1998. Multiple forms of Tubulin: different gene products and covalent modifications. *Int. Rev. Cytol.* 178: 207-275.

## SOURCE

$\beta$  Tubulin (SAP.4G5) is a mouse monoclonal antibody raised against the C-terminus of  $\beta$  Tubulin isotype I of chicken origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

$\beta$  Tubulin (SAP.4G5) is recommended for detection of  $\beta$  Tubulin of mouse, rat, human, *Xenopus*, avian, bovine and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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  $\beta$  Tubulin: 55 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, A-431 whole cell lysate: sc-2201 or HeLa whole cell lysate: sc-2200.

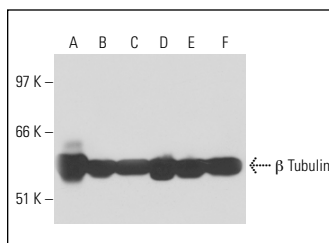
## STORAGE

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

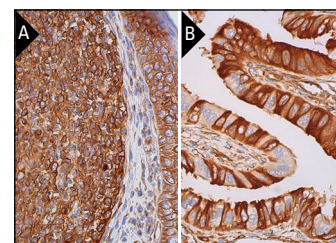
## RESEARCH USE

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

## DATA



$\beta$  Tubulin (SAP.4G5): sc-58884. Western blot analysis of  $\beta$  Tubulin expression in NIH/3T3 (A), F9 (B), A-431 (C), BJAB (D), KNRK (E) and HeLa (F) whole cell lysates.



$\beta$  Tubulin (SAP.4G5): sc-58884. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing cytoplasmic staining of squamous epithelial cells and cells in germinal center and cytoplasmic and membrane staining of cells in non-germinal center (A), and of human fallopian tube tissue showing cytoplasmic and membrane staining of glandular cells (B).

## SELECT PRODUCT CITATIONS

- Busso, C.S., et al. 2011. Ubiquitination of human AP-endonuclease 1 (APE1) enhanced by T233E substitution and by Cdk5. *Nucleic Acids Res.* 39: 8017-8028.
- Demir, O., et al. 2012. Elk-1 interacts with Dynein upon serum stimulation but independent of serine 383 phosphorylation. *Cell. Mol. Neurobiol.* 32: 18518-18519.
- Goto, T., et al. 2013. IQGAP1 functions as a modulator of dishevelled nuclear localization in Wnt signaling. *PLoS ONE* 8: e60865.
- Iwasaki, Y. and Thomsen, G.H. 2014. The splicing factor PQBP1 regulates mesodermal and neural development through FGF signaling. *Development* 141: 3740-3751.
- Scott, T.L., et al. 2017. Polyubiquitination of apurinic/aprimidinic endonuclease 1 by Parkin. *Mol. Carcinog.* 56: 325-336.
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- Chen, P., et al. 2019. Nucleoplasmin is a limiting component in the scaling of nuclear size with cytoplasmic volume. *J. Cell Biol.* 218: 4063-4078.
- Bisht, J., et al. 2019. Light-inducible activation of cell cycle progression in *Xenopus* egg extracts under microfluidic confinement. *Lab Chip* 19: 3499-3511.
- Kim, K., et al. 2020. Rev-erb $\alpha$  negatively regulates osteoclast and osteoblast differentiation through p38 MAPK signaling pathway. *Mol. Cells* 43: 34-47.

## CONJUGATES

See  **$\beta$  Tubulin (D-10): sc-5274** for  $\beta$  Tubulin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor<sup>®</sup> 488, 546, 594, 647, 680 and 790.