

# $\alpha$ 3 Tubulin (10J1): sc-134240

## 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

1. Weisenberg, R. 1981. Invited review: the role of nucleotide triphosphate in Actin and Tubulin assembly and function. *Cell Motil.* 1: 485-497.
2. Burns, R.G. 1991.  $\alpha$ ,  $\beta$ , and  $\gamma$  Tubulins: sequence comparisons and structural constraints. *Cell Motil. Cytoskeleton* 20: 181-189.
3. 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.
4. Leask, A. and Stearns, T. 1998. Expression of amino- and carboxyl-terminal  $\gamma$  and  $\alpha$  Tubulin mutants in cultured epithelial cells. *J. Biol. Chem.* 273: 2661-2668.
5. Luduena, R.F. 1998. Multiple forms of Tubulin: different gene products and covalent modifications. *Int. Rev. Cytol.* 178: 207-275.

## SOURCE

$\alpha$ 3 Tubulin (10J1) is a mouse monoclonal antibody raised against recombinant  $\alpha$ 3C Tubulin protein of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG $\gamma$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

$\alpha$ 3 Tubulin (10J1) is recommended for detection of  $\alpha$ 3 Tubulin and  $\alpha$ 1 Tubulin of mouse, rat and human 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

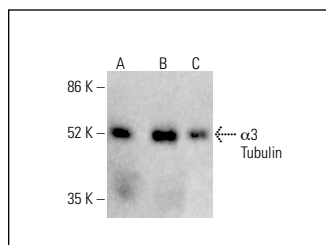
Molecular Weight of  $\alpha$ 3 Tubulin isoforms 1/2: 50/46 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or HCT-116 whole cell lysate: sc-364175

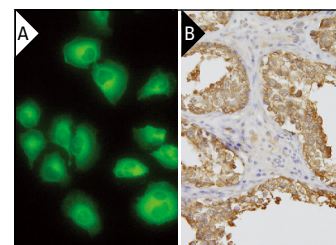
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



$\alpha$ 3 Tubulin (10J1): sc-134240. Western blot analysis of  $\alpha$ 3 Tubulin expression in HeLa (A), K-562 (B) and HCT-116 (C) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



$\alpha$ 3 Tubulin (10J1): sc-134240. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane localization (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human testis tissue showing cytoplasmic localization (B).

## SELECT PRODUCT CITATIONS

1. Hao, X.D., et al. 2017. *De novo* mutations of TUBA3D are associated with keratoconus. *Sci. Rep.* 7: 13570.
2. Hausrat, T.J., et al. 2021.  $\alpha$  and  $\beta$  Tubulin isotypes are differentially expressed during brain development. *Dev. Neurobiol.* 81: 333-350.
3. Granados-López, A.J., et al. 2021. UVB inhibits proliferation, cell cycle and induces apoptosis via p53, E2F1 and microtubules system in cervical cancer cell lines. *Int. J. Mol. Sci.* 22: 5197.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.