

# $\gamma$ 2 Tubulin (SP-30): sc-134228

## BACKGROUND

Tubulin exists as five distinct forms, designated  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$  and  $\epsilon$ , all of which function as critical components of the cytoskeleton, specifically forming heterodimers which multimerize to produce microtubule filaments.  $\gamma$ 2 Tubulin, also known as TUBG2, is a 451 amino acid member of the Tubulin family and, like other Tubulin proteins, plays a role in the minus-end nucleation of microtubule assembly. The gene encoding  $\gamma$ 2 Tubulin maps to human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1. Tumor suppressor p53 is necessary for maintenance of cellular genetic integrity by moderating cell fate through DNA repair versus cell death. Malfunction or loss of p53 expression is associated with malignant cell growth and Li-Fraumeni syndrome. Like p53, BRCA1 is directly involved in DNA repair, though specifically it is recognized as a genetic determinant of early onset breast cancer and predisposition to cancers of the ovary, colon, prostate gland and fallopian tubes.

## REFERENCES

- Burns, R.G. 1995. Analysis of the  $\gamma$  Tubulin sequences: implications for the functional properties of  $\gamma$  Tubulin. *J. Cell Sci.* 108: 2123-2130.
- Tassin, A.M., et al. 1998. Characterization of the human homologue of the yeast Spc98p and its association with  $\gamma$  Tubulin. *J. Cell Biol.* 141: 689-701.
- Wise, D.O., et al. 2000. The  $\gamma$  Tubulin gene family in humans. *Genomics* 67: 164-170.
- Herrerros, L., et al. 2000. Paxillin localizes to the lymphocyte microtubule organizing center and associates with the microtubule cytoskeleton. *J. Biol. Chem.* 275: 26436-26440.
- Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 605785. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Yuba-Kubo, A., et al. 2005. Gene knockout analysis of two  $\gamma$  Tubulin isoforms in mice. *Dev. Biol.* 282: 361-373.

## CHROMOSOMAL LOCATION

Genetic locus: TUBG2 (human) mapping to 17q21.2; Tubg2 (mouse) mapping to 11 D.

## SOURCE

$\gamma$ 2 Tubulin (SP-30) is a mouse monoclonal antibody raised against recombinant  $\gamma$ 2 Tubulin protein of human origin.

## PRODUCT

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

## STORAGE

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

## APPLICATIONS

$\gamma$ 2 Tubulin (SP-30) is recommended for detection of  $\gamma$ 2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for  $\gamma$ 2 Tubulin siRNA (h): sc-105004,  $\gamma$ 2 Tubulin shRNA Plasmid (h): sc-105004-SH and  $\gamma$ 2 Tubulin shRNA (h) Lentiviral Particles: sc-105004-V.

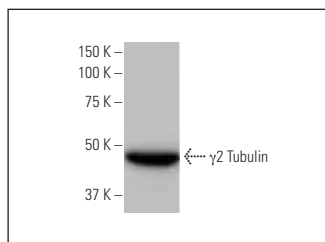
Molecular Weight of  $\gamma$ 2 Tubulin: 51 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

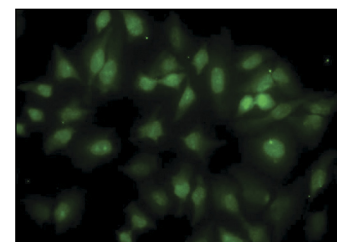
## RECOMMENDED SUPPORT REAGENTS

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.

## DATA



$\gamma$ 2 Tubulin (SP-30): sc-134228. Western blot analysis of  $\gamma$ 2 Tubulin expression in HeLa whole cell lysate.



$\gamma$ 2 Tubulin (SP-30): sc-134228. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

## SELECT PRODUCT CITATIONS

- Furuya, F., et al. 2010. Liganded thyroid hormone receptor- $\alpha$  enhances proliferation of pancreatic  $\beta$ -cells. *J. Biol. Chem.* 285: 24477-24486.

## 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.