

# α Tubulin (aN-18): sc-12836

## BACKGROUND

Tubulin is a major cytoskeleton component that has three distinct forms, designated  $\alpha$ ,  $\beta$  and  $\gamma$  Tubulin.  $\alpha$  and  $\beta$  Tubulins form heterodimers, which multimerize to form a microtubule filament.  $\gamma$  Tubulin forms a soluble multi-protein particle with several other proteins. This particle, designated the gamma-some, is required for nucleating microtubule filaments at the centrosome. In several organisms, numerous isoforms of the Tubulins exist that are encoded by different genes. The  $\alpha$  and  $\beta$  isoforms undergo a variety of post-translational modifications, which may affect microtubule stability and protein interactions. High expression of class II  $\beta$  Tubulin has been seen in elongating axons, indicating a role in neurite outgrowth. Tubulins may also play a role in non-neuronal cell process formation.

## 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. Hoffman, P.N. 1988. Distinct roles of neurofilament and Tubulin gene expression in axonal growth. *Ciba Found. Symp.* 138: 192-204.
3. Burns, R.G. 1991.  $\alpha$ ,  $\beta$ , and  $\gamma$  Tubulins: sequence comparisons and structural constraints. *Cell Motil. Cytoskeleton* 20: 181-189.
4. 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.
5. Leask, A., et al. 1998. Expression of amino- and carboxyl-terminal  $\gamma$  and  $\alpha$  Tubulin mutants in cultured epithelial cells. *J. Biol. Chem.* 273: 2661-2668.
6. Luduena, R.F. 1998. Multiple forms of Tubulin: different gene products and covalent modifications. *Int. Rev. Cytol.* 178: 207-275.
7. Kobayashi, N., et al. 1998. A role of microtubules during the formation of cell processes in neuronal and non-neuronal cells. *Cell Tissue Res.* 291: 163-174.

## CHROMOSOMAL LOCATION

Genetic locus: TUBA1 (human) mapping to 2q35; Tuba1 (mouse) mapping to 15 F1.

## SOURCE

$\alpha$  Tubulin (aN-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of  $\alpha$  Tubulin of *Arabidopsis thaliana* origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12836 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

$\alpha$  Tubulin (aN-18) is recommended for detection of  $\alpha$  Tubulin of *Arabidopsis thaliana*, *Nicotiana tabacum* and *Pisum sativum* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Molecular Weight of  $\alpha$  Tubulin: 55 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

1. Besser, Daniel, et al. 2004. Expression of Nodal, Lefty-A, and Lefty-B in undifferentiated human embryonic stem cells requires activation of Smad2/3. *J. Biol. Chem.* 279: 45076-45084.
2. Pan, S.L., et al. 2005. A potential role of YC-1 on the inhibition of cytokine release in peripheral blood mononuclear leukocytes and endotoxemic mouse models. *Thromb. Haemost.* 93: 940-948.

## 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) or our catalog for detailed protocols and support products.