SANTA CRUZ BIOTECHNOLOGY, INC.

β Tubulin (AA2): sc-80011

BACKGROUND

Tubulin is a major cytoskeleton component that has five distinct forms, designated α, β, γ, δ and ε Tubulin. α and β Tubulins form heterodimers which multimerize to form a microtubule filament. Multiple β Tubulin isoforms (β1, β2, β3, β4, β5, β6 and β8) have been characterized and are expressed in mammalian tissues. β1 and β4 are present throughout the cytosol, β2 is present in the nuclei and nucleoplasm, and β3 is a neuron-specific cytoskeletal protein. γ Tubulin forms the gammasome, which is required for nucleating microtubule filaments at the centrosome. Both δ Tubulin and ε Tubulin are associated with the centrosome. δ Tubulin is a homolog of the *Chlamydomonas* δ Tubulin Uni3 and is found in association with the centrioles, whereas ε Tubulin localizes to the pericentriolar material. ε 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. α-, β-, and γ Tubulins: sequence comparisons and structural constraints. Cell Motil. Cytoskeleton 20: 181-189.
3. Zheng, Y., et al. 1991. γ Tubulin is present in *Drosophila melangaster* and *Homo sapiens* and is associated with the centrosome. Cell 65: 817-823.

SOURCE

β Tubulin (AA2) is a mouse monoclonal antibody raised against β Tubulin derived from brain tissue of bovine origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

β Tubulin (AA2) is recommended for detection of amino acids 412-430 of β Tubulin of mouse, rat and human 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).

β Tubulin (AA2) is also recommended for detection of amino acids 412-430 of β Tubulin in additional species, including bovine.

Molecular Weight of β Tubulin: 55 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Ramos cell lysate: sc-2216 or Jurkat whole cell lysate: sc-2204.

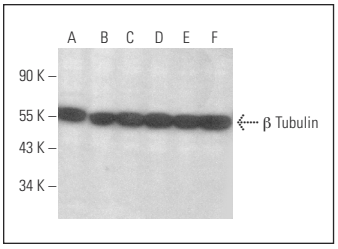
STORAGE

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

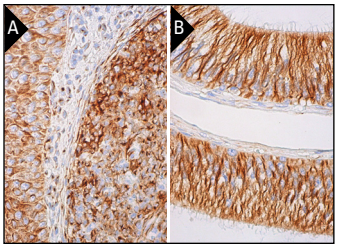
RESEARCH USE

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

DATA



β Tubulin (AA2): sc-80011. Western blot analysis of β Tubulin expression in HEL 92.1.7 (**A**), NIH/3T3 (**B**), TF-1 (**C**), CCRF-CEM (**D**), Jurkat (**E**) and Ramos (**F**) whole cell lysates.



β Tubulin (AA2): sc-80011. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing cytoplasmic and membrane staining of cells in germinal center and cells in non-germinal center and cytoplasmic staining of squamous epithelial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human epididymis tissue showing cytoplasmic and membrane staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Amodio, N., et al. 2010. Oncogenic role of the E3 ubiquitin ligase NEDD4-1, a PTEN negative regulator, in non-small-cell lung carcinomas. Am. J. Pathol. 177: 2622-2634.
2. Yew, T.L., et al. 2011. Knockdown of $p21^{Cip1/Waf1}$ enhances proliferation, the expression of stemness markers, and osteogenic potential in human mesenchymal stem cells. Aging Cell 10: 349-361.
3. Zheng, D., et al. 2013. Role of Wnt7B-induced noncanonical pathway in advanced prostate cancer. Mol. Cancer Res. 11: 482-493.
4. Yang, X., et al. 2015. miR-135 family members mediate podocyte injury through the activation of Wnt/β-catenin signaling. Int. J. Mol. Med. 36: 669-677.
5. Zheng, D., et al. 2016. Secretory leukocyte protease inhibitor is a survival and proliferation factor for castration-resistant prostate cancer. Oncogene 35: 4807-4815.
6. Yang, X., et al. 2017. MicroRNA-135a is involved in podocyte injury in a transient receptor potential channel 1-dependent manner. Int. J. Mol. Med. 40: 1511-1519.
7. Baek, K.I., et al. 2018. Ultrafine particle exposure reveals the importance of FOXO1/Notch activation complex for vascular regeneration. Antioxid. Redox Signal. 28: 1209-1223.
8. Li, X., et al. 2019. Promoter hypermethylation of SOX11 promotes the progression of cervical cancer *in vitro* and *in vivo*. Oncol. Rep. 41: 2351-2360.

CONJUGATES

See **β Tubulin (D-10): sc-5274** for β Tubulin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.