SANTA CRUZ BIOTECHNOLOGY, INC.

β Tubulin (3F3-G2): sc-53140

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.

SOURCE

β Tubulin (3F3-G2) is a mouse monoclonal antibody raised against brain extract of rat origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

β Tubulin (3F3-G2) is recommended for detection of all vertebrate forms 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).

Molecular Weight of β Tubulin: 55 kDa.

Positive Controls: rat brain extract: sc-2392, Raji whole cell lysate: sc-364236 or BJAB whole cell lysate: sc-2207.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

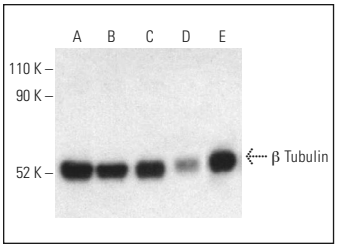
STORAGE

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

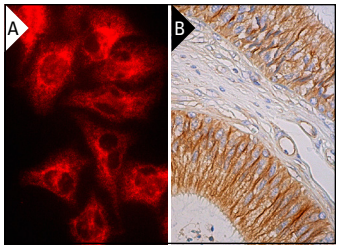
RESEARCH USE

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

DATA



β Tubulin (3F3-G2): sc-53140. Western blot analysis of β Tubulin expression in BJAB (**A**), Raji (**B**), NAMALWA (**C**) and NIH/3T3 (**D**) whole cell lysates and rat brain tissue extract (**E**). Detection reagent used: m-IgGκ BP-HRP: sc-516102.



β Tubulin (3F3-G2): sc-53140. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human epididymis tissue showing cytoplasmic and membrane staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Orio, L., et al. 2009. A role for the endocannabinoid system in the increased motivation for cocaine in extended-access conditions. J. Neurosci. 29: 4846-4857.
2. Romanel, A., et al. 2017. Inherited determinants of early recurrent somatic mutations in prostate cancer. Nat. Commun. 8: 48.
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5. Gunn, T.M., et al. 2019. Chronic and age-dependent effects of the spongiform neurodegeneration-associated MGRN1 E3 ubiquitin ligase on mitochondrial homeostasis. Mamm. Genome 30: 151-165.
5. Shim, J., et al. 2020. YAP-mediated repression of HRK regulates tumor growth, therapy response, and survival under tumor environmental stress in neuroblastoma. Cancer Res. 80: 4741-4753.
6. Pezzè, L., et al. 2021. ETV7 regulates breast cancer stem-like cell features by repressing IFN-response genes. Cell Death Dis. 12: 742.
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8. Yamazaki, K., et al. 2023. Lipid nanoparticle-targeted mRNA formulation as a treatment for ornithine-transcarbamylase deficiency model mice. Mol. Ther. Nucleic Acids 33: 210-226.
9. Cocchi, S., et al. 2024. EGCG disrupts the LIN28B/Let-7 interaction and reduces neuroblastoma aggressiveness. Int. J. Mol. Sci. 25: 4795.