SANTA CRUZ BIOTECHNOLOGY, INC.

β2B Tubulin siRNA (m): sc-108882

BACKGROUND

Tubulin exists as five distinct forms, designated α, β, γ, δ and ε, all of which function as critical components of the cytoskeleton, specifically forming heterodimers which multimerize to produce microtubule filaments. There are five β Tubulin isoforms (β-I, β-II, β-III, β-IVa and β-IVb) that are expressed in mammalian tissues. β-I and β-IV are present throughout the cytosol, while β-II is present in the nuclei and nucleoplasm and β-III is a neuron-specific cytoskeletal protein. β2B Tubulin, also known as TUBB2B, is a 445 amino acid protein that exists as a heterodimer of α and β chains and plays an important role in the formation and maintenance of microtubules. Over expression of β2B Tubulin is associated with nonsmall cell lung carcinoma, suggesting a role for β2B Tubulin in carcinogenesis.

REFERENCES

1. Lee, M.G., et al. 1983. Evolutionary history of a multigene family: an expressed human β-tubulin gene and three processed pseudogenes. Cell 33: 477-487.
2. Burns, R.G. 1991. α-, β-, and γ-tubulins: sequence comparisons and structural constraints. Cell Motil. Cytoskeleton 20: 181-189.
3. Leask, A., et al. 1998. Expression of amino- and carboxyl-terminal γ and β Tubulin mutants in cultured epithelial cells J. Biol. Chem. 273: 2661-2668.
4. Luduena, R.F. 1998. Multiple forms of tubulin: different gene products and covalent modifications. Int. Rev. Cytol. 178: 207-275.
5. Walss, C., et al. 1999. Presence of the β2 isotype of tubulin in the nuclei of cultured mesangial cells from rat kidney. Cell Motil. Cytoskeleton 42: 274-284.
6. Modig, C., et al. 1999. Identification of β3 and β4 Tubulin isotypes in cold-adapted microtubules from Atlantic cod *(Gadus morhua):* antibody mapping and cDNA sequencing. Cell Motil. Cytoskeleton 42: 315-330.

CHROMOSOMAL LOCATION

Genetic locus: Tubb2b (mouse) mapping to 13 A3.3.

PRODUCT

β2B Tubulin siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see β2B Tubulin shRNA Plasmid (m): sc-108882-SH and β2B Tubulin shRNA (m) Lentiviral Particles: sc-108882-V as alternate gene silencing products.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

β2B Tubulin siRNA (m) is recommended for the inhibition of β2B Tubulin expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

β2B Tubulin (AT5B3): sc-517430 is recommended as a control antibody for monitoring of β2B Tubulin gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor β2B Tubulin gene expression knockdown using RT-PCR Primer: β2B Tubulin (m)-PR: sc-108882-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.