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SANTA CRUZ BIOTECHNOLOGY, INC.

TBCC siRNA (m): sc-154115

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Microtubules, the primary component of the cytoskeletal network, are highly dynamic structures composed of α/β Tubulin heterodimers. Biosynthesis of functional microtubules involve the participation of several chaperones, termed tubulin folding cofactors A (TBCA), D (TBCD), E (TBCE) and C (TBCC), that act on folding intermediates downstream of the cytosolic chaperonin, alternatively named TCP. TBCC (Tubulin-specific chaperone C), also known as β Tubulin-folding cofactor C or CFC, is a 346 amino acid protein belonging to the TBCD family. Interaction with TBCC causes the release of Tubulin polypeptides that are committed to the native state. TBCC shares significant homology with X-linked retinitis pigmentosa 2 gene RP2, in which mutations cause the progressive degeneration of photoreceptor cells.

REFERENCES

1. Tian, G., et al. 1996. Pathway leading to correctly folded β-Tubulin. Cell 86: 287-296.
2. Bartolini, F., et al. 2002. Functional overlap between retinitis pigmentosa 2 protein and the Tubulin-specific chaperone cofactor C. J. Biol. Chem. 277: 14629-14634.
3. Grynberg, M., et al. 2003. Domain analysis of the Tubulin cofactor system: a model for tubulin folding and dimerization. BMC Bioinformatics 4: 46.
4. Tian, G., et al. 2006. Cryptic out-of-frame translational initiation of TBCE rescues tubulin formation in compound heterozygous HRD. Proc. Natl. Acad. Sci. USA 103: 13491-13496.
5. Kortazar, D., et al. 2007. Role of cofactors B (TBCB) and E (TBCE) in tubulin heterodimer dissociation. Exp. Cell Res. 313: 425-436.
6. Cunningham, L.A. and Kahn, R.A. 2008. Cofactor D functions as a centrosomal protein and is required for the recruitment of the γ-Tubulin ring complex at centrosomes and organization of the mitotic spindle. J. Biol. Chem. 283: 7155-7165.
7. Hage-Sleiman, R., et al. 2010. Tubulin binding cofactor C (TBCC) suppresses tumor growth and enhances chemosensitivity in human breast cancer cells. BMC Cancer 10: 135.

CHROMOSOMAL LOCATION

Genetic locus: Tbcc (mouse) mapping to 17 C.

PRODUCT

TBCC siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs 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 TBCC shRNA Plasmid (m): sc-154115-SH and TBCC shRNA (m) Lentiviral Particles: sc-154115-V as alternate gene silencing products.

For independent verification of TBCC (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-154115A, sc-154115B and sc-154115C.

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

TBCC siRNA (m) is recommended for the inhibition of TBCC 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

TBCC (G-10): sc-390635 is recommended as a control antibody for monitoring of TBCC 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 TBCC gene expression knockdown using RT-PCR Primer: TBCC (m)-PR: sc-154115-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.