SANTA CRUZ BIOTECHNOLOGY, INC.

TBCE siRNA (m): sc-106600

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 chaperon, alternatively named TCP. TBCE (tubulin folding cofactor E), also known as HRD, KCS, KCS1 or pac2, is a 527 amino acid cytoplasmic protein containing one CAP-Gly domain and seven LRR (leucine-rich repeats). TBCE is involved in the second step of the Tubulin folding pathway and is implicated in the maintenance of the neuronal microtubule network. TBCE associates with microtubules and proteasomes, and protects against misfolded protein stress. Mutations in the gene encoding TBCE are the cause of hypoparathyroidism-retardation-dysmorphism syndrome and Kenny-Caffey syndrome type 1.

REFERENCES

1. Tian, G., Huang, Y., Rommelaere, H., Vandekerckhove, J., Ampe and C., Cowan, N.J. 1996. Pathway leading to correctly folded β-tubulin. Cell 86: 287-296.
2. Parvari, R., Hershkovitz, E., Grossman, N., Gorodischer, R., Loeys, B., Zecic, A., Mortier, G., Gregory, S., Sharony, R., Kambouris, M., Sakati, N., Meyer, B.F., Al Aqeel, A.I., Al Humaidan, A.K., Al Zanhrani, F., Al Swaid, A., et al. 2002. Mutation of TBCE causes hypoparathyroidism-retardation-dysmorphism and autosomal recessive Kenny-Caffey syndrome. Nat. Genet. 32: 448-452.
3. Grynberg, M., Jaroszewski and L., Godzik, A. 2003. Domain analysis of the tubulin cofactor system: a model for tubulin folding and dimerization. BMC Bioinformatics 4: 46.
4. Tian, G., Huang, M.C., Parvari, R., Diaz and G.A., Cowan, N.J. 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. Naguib, K., Elshafey, A., Gouda and S., Mohammad, F. 2007. Hypoparathyroidism-retardation-dysmorphism (HRD): is there a new variant not caused by a TBCE mutation? Am. J. Med. Genet. A 143A: 301-302.

CHROMOSOMAL LOCATION

Genetic locus: Tbce (mouse) mapping to 13 A1.

PRODUCT

TBCE 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 TBCE shRNA Plasmid (m): sc-106600-SH and TBCE shRNA (m) Lentiviral Particles: sc-106600-V as alternate gene silencing products.

For independent verification of TBCE (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-106600A, sc-106600B and sc-106600C.

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

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

TBCE (D-11): sc-398209 is recommended as a control antibody for monitoring of TBCE 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TBCE gene expression knockdown using RT-PCR Primer: TBCE (m)-PR: sc-106600-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.