SANTA CRUZ BIOTECHNOLOGY, INC.

BCDO2 siRNA (m): sc-141667

BACKGROUND

BCDO2 (β-carotene dioxygenase 2), also known as BCO2 or B-DIOX-II, is a 579 amino acid enzyme that belongs to the carotenoid oxygenase family. BCDO2 is expressed in retinal pigment epithelium, stomach, small intestine, liver, testis, kidney, adrenal gland, pancreas, heart, skeletal muscle and prostate. BCDO2 catalyzes the asymmetric oxidative cleavage of β-carotene in carotene metabolism. The apocarotenals formed by BCDO2 may be the precursors for the biosynthesis of retinoic acid. Four isoforms exist through alternative splicing events.

REFERENCES

1. von Lintig, J. and Vogt, K. 2000. Filling the gap in vitamin A research. Molecular identification of an enzyme cleaving β-carotene to retinal. J. Biol. Chem. 275: 11915-11920.
2. Kiefer, C., et al. 2001. Identification and characterization of a mammalian enzyme catalyzing the asymmetric oxidative cleavage of provitamin A. J. Biol. Chem. 276: 14110-14116.
3. Wyss, A. 2004. Carotene oxygenases: a new family of double bond cleavage enzymes. J. Nutr. 134: 246S-250S.
4. Chichili, G.R., et al. 2005. β-carotene conversion into vitamin A in human retinal pigment epithelial cells. Invest. Ophthalmol. Vis. Sci. 46: 3562-3569.
5. Biesalski, H.K., et al. 2007. Conversion of β-carotene to retinal pigment. Vitam. Horm. 75: 117-130.
6. Levi, L., et al. 2008. Expression of genes associated with retinoid metabolism in the trout ovarian follicle. Biol. Reprod. 79: 570-577.
7. Eriksson, J., et al. 2008. Identification of the yellow skin gene reveals a hybrid origin of the domestic chicken. PLoS Genet. 4: e1000010.

CHROMOSOMAL LOCATION

Genetic locus: Bco2 (mouse) mapping to 9 A5.3.

PRODUCT

BCDO2 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 BCDO2 shRNA Plasmid (m): sc-141667-SH and BCDO2 shRNA (m) Lentiviral Particles: sc-141667-V as alternate gene silencing products.

For independent verification of BCDO2 (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-141667A, sc-141667B and sc-141667C.

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.

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

BCDO2 siRNA (m) is recommended for the inhibition of BCDO2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor BCDO2 gene expression knockdown using RT-PCR Primer: BCDO2 (m)-PR: sc-141667-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.