

BCAT2 siRNA (m): sc-141665

BACKGROUND

Class-IV pyridoxal-phosphate-dependent aminotransferase family members ECA39 and BCAT2 are both enzymes that catalyze the first reaction in the catabolism of the essential branched chain amino acids valine, leucine and isoleucine. ECA39, also known as BCAT1 (branched-chain-amino-acid aminotransferase 1, cytosolic) is localized to the cytoplasm where it forms a homodimer. ECA39 is expressed in the brain and kidney during embryogenesis and is overexpressed in c-Myc induced tumors. BCAT2 (branched-chain-amino-acid aminotransferase 2, mitochondrial), also known as placental protein 18 (PP18), is expressed as two isoforms produced by alternative splicing. The first isoform of BCAT2, designated BCAT2A, is expressed in the mitochondrion, while the second isoform, designated BCAT2B, is expressed in the cytoplasm. Ubiquitously expressed, BCAT2 is also thought to act as a transporter of branched chain α -keto acids.

REFERENCES

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3. Eden, A. and Benvenisty, N. 1999. Involvement of branched-chain amino acid aminotransferase (BCAT1/ECA39) in apoptosis. *FEBS Lett.* 457: 255-261.
4. Grimm, C.H., et al. 2003. Lrmp and BCAT1 are candidates for the type I diabetes susceptibility locus Idd6. *Autoimmunity* 36: 241-246.
5. Yoshikawa, R., et al. 2006. ECA39 is a novel distant metastasis-related biomarker in colorectal cancer. *World J. Gastroenterol.* 12: 5884-5889.
6. Zhou, W., et al. 2007. Functional evidence for a nasopharyngeal carcinoma-related gene BCAT1 located at 12p12. *Oncol. Res.* 16: 405-413.
7. Conway, M.E., et al. 2008. Regulatory control of human cytosolic branched-chain aminotransferase by oxidation and S-glutathionylation and its interactions with redox sensitive neuronal proteins. *Biochemistry* 47: 5465-5479.

CHROMOSOMAL LOCATION

Genetic locus: Bcat2 (mouse) mapping to 7 B4.

PRODUCT

BCAT2 siRNA (m) is a pool of 2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see BCAT2 shRNA Plasmid (m): sc-141665-SH and BCAT2 shRNA (m) Lentiviral Particles: sc-141665-V as alternate gene silencing products.

For independent verification of BCAT2 (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-141665A and sc-141665B.

RESEARCH USE

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

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

BCAT2 siRNA (m) is recommended for the inhibition of BCAT2 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 μ M in 66 μ l. 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 BCAT2 gene expression knockdown using RT-PCR Primer: BCAT2 (m)-PR: sc-141665-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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