SANTA CRUZ BIOTECHNOLOGY, INC.

CDO1 siRNA (m): sc-142234

BACKGROUND

CDO1 (cysteine dioxygenase, type I) is a 200 amino acid protein that belongs to the cysteine dioxygenase family and is involved in organosulfur biosynthesis. Existing as a monomer and expressed at high levels in liver and placenta and at lower levels in brain, pancreas and heart, CDO1 functions as a dioxygenase that uses iron and zinc as cofactors to catalyze the conversion of L-cysteine and oxygen to 3-sulfinoalanine. Via its catalytic activity, CDO1 is involved in pyruvate-, sulfate- and taurine-related metabolic pathways and is a crucial regulator of cysteine concentrations within the cell. Human CDO1 shares 94% amino acid identity with its rat counterpart, suggesting a conserved role between species. The gene encoding CDO1 maps to human chromosome 5, which contains 181 million base pairs and comprises nearly 6% of the human genome. Deletion of the p arm of chromosome 5 leads to Cri du chat syndrome, while deletion of the q arm or of chromosome 5 altogether is common in therapy-related acute myelogenous leukemias and myelodysplastic syndrome.

REFERENCES

1. Hosokawa, Y., et al. 1990. Isolation and characterization of a cDNA for rat liver cysteine dioxygenase. Biochem. Biophys. Res. Commun. 168: 473-478.
2. McCann, K.P., et al. 1994. Human cysteine dioxygenase type I: primary structure derived from base sequencing of cDNA. Biochim. Biophys. Acta 1209: 107-110.
3. Jeremiah, S., et al. 1996. Chromosomal localisation of genes coding for human and mouse liver cytosolic cysteine dioxygenase. Ann. Hum. Genet. 60: 29-33.
4. Ramsden, D.B., et al. 1997. Human cysteine dioxygenase type I (CDO-I; EC 1.13.11.20): 5' flanking region and intron-exon structure of the gene. MP, Mol. Pathol. 50: 269-271.
5. Qusti, S., et al. 2000. Development of an *in vitro* model for cysteine dioxygenase expression in the brain. Cell Biol. Toxicol. 16: 243-255.
6. Wilkinson, L.J., et al. 2002. Cysteine dioxygenase: modulation of expression in human cell lines by cytokines and control of sulphate production. Toxicol In Vitro. 16: 481-483.

CHROMOSOMAL LOCATION

Genetic locus: Cdo1 (mouse) mapping to 18 C.

PRODUCT

CDO1 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 CDO1 shRNA Plasmid (m): sc-142234-SH and CDO1 shRNA (m) Lentiviral Particles: sc-142234-V as alternate gene silencing products.

For independent verification of CDO1 (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-142234A, sc-142234B and sc-142234C.

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

CDO1 siRNA (m) is recommended for the inhibition of CDO1 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 CDO1 gene expression knockdown using RT-PCR Primer: CDO1 (m)-PR: sc-142234-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.