SANTA CRUZ BIOTECHNOLOGY, INC.

CDD siRNA (m): sc-60342

BACKGROUND

Cytidine deaminase (CDD or CDA) is a member of the cytidine and deoxycytidylate deaminase family of proteins. CDD catalyzes the deamination of chemotherapeutic cytosine nucleoside analogs such as Ara-C and 5-azacytidine, which results in the loss of their cytotoxic and antitumor function. Ara-C is used in the treatment of acute myeloid leukemia (AML), and the antileukemic activity of the drug is contingent on phosphorylation by deoxycytidine kinase (DCK). Resistance to Ara-C is a major determinant of unsucessful AML treatment, the failure of which has been attributed to a DCK functional defect and increased CDD activity. CDD also scavenges endogenous and exogenous cytidine and 2'-deoxycytidine for UMP synthesis. CDD can form homotetramers and is mainly expressed in granulocytes.

REFERENCES

1. Teng, Y.S., et al. 1975. Cytidine deaminase: a new genetic polymorphism demonstrated in human granulocytes. Am. J. Hum. Genet. 27: 492-497.
2. Kühn, K., et al. 1993. Cloning of a functional cDNA for human cytidine deaminase (CDD) and its use as a marker of monocyte/macrophage differentiation. Biochem. Biophys. Res. Commun. 190: 1-7.
3. Laliberté, J., et al. 1994. Human cytidine deaminase: purification of enzyme, cloning, and expression of its complementary DNA. Cancer Res. 54: 5401-5407.
4. Jahns-Streubel, G., et al. 1997. Activity of thymidine kinase and of polymerase alpha as well as activity and gene expression of deoxycytidine deaminase in leukemic blasts are correlated with clinical response in the setting of granulocyte-macrophage colony-stimulating factor-based priming before and during TAD-9 induction therapy in acute myeloid leukemia. Blood 90: 1968-1976.
5. Demontis, S., et al. 1999. Isolation and characterization of the gene coding for human cytidine deaminase. Biochim. Biophys. Acta 1443: 323-333.

CHROMOSOMAL LOCATION

Genetic locus: Cda (mouse) mapping to 4 D3.

PRODUCT

CDD 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 CDD shRNA Plasmid (m): sc-60342-SH and CDD shRNA (m) Lentiviral Particles: sc-60342-V as alternate gene silencing products.

For independent verification of CDD (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-60342A, sc-60342B and sc-60342C.

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

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

CDD (D-5): sc-365292 is recommended as a control antibody for monitoring of CDD 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 CDD gene expression knockdown using RT-PCR Primer: CDD (m)-PR: sc-60342-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.