SANTA CRUZ BIOTECHNOLOGY, INC.

NUDT9 siRNA (h): sc-89144

BACKGROUND

NUDT9 (nudix (nucleoside diphosphate linked moiety X)-type motif 9), also known as NUDT10, is a 350 amino acid protein belonging to the superfamily of nudix hydrolases. Expressed as two isoforms that are produced as a result of alternative splicing events, NUDT9 isoform 1 localizes to the mitochondria and is the predominant isoform. NUDT9 is known to function as a highly specific adenosine diphosphate ribose pyrophosphatase that hydrolyzes ADP-ribose (ADPR) to AMP and ribose 5'-phosphate. It has been suggested that NUDT9 may be involved in the regulation of the menstrual cycle and may be related to the proliferation of glandular cells in the human endometrium. NUDT9 consist of two distinct domains: a proteolytically resistant C-terminal domain that retains essentially full specific ADPR pyrophosphatase activity, and a proteolytically labile N-terminal portion that functions to enhance the affinity of the C-terminal domain for ADPR.

REFERENCES

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2. Lin, S., et al. 2002. Cloning, expression and characterisation of a human Nudix hydrolase specific for adenosine 5'-diphosphoribose (ADP-ribose). Biochim. Biophys. Acta 1594: 127-135.
3. Perraud, A.L., et al. 2003. TRPM2 Ca^{2+} permeable cation channels: from gene to biological function. Cell Calcium 33: 519-531.
4. Perraud, A.L., et al. 2003. NUDT9, a member of the Nudix hydrolase family, is an evolutionarily conserved mitochondrial ADP-ribose pyrophosphatase. J. Biol. Chem. 278: 1794-1801.
5. Shen, B.W., et al. 2003. The crystal structure and mutational analysis of human NUDT9. J. Mol. Biol. 332: 385-398.
6. Zhang, H.T., et al. 2003. Interaction of C17orf25 with ADP-ribose pyrophosphatase NUDT9 detected via yeast two-hybrid method. Sheng Wu Hua Xue Yu Sheng Wu Wu Li Xue Bao 35: 747-751.
7. Zha, M., et al. 2006. Crystal structures of human NUDT5 reveal insights into the structural basis of the substrate specificity. J. Mol. Biol. 364: 1021-1033.

CHROMOSOMAL LOCATION

Genetic locus: NUDT9 (human) mapping to 4q22.1.

PRODUCT

NUDT9 siRNA (h) 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 NUDT9 shRNA Plasmid (h): sc-89144-SH and NUDT9 shRNA (h) Lentiviral Particles: sc-89144-V as alternate gene silencing products.

For independent verification of NUDT9 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-89144A, sc-89144B and sc-89144C.

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

NUDT9 siRNA (h) is recommended for the inhibition of NUDT9 expression in human 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 NUDT9 gene expression knockdown using RT-PCR Primer: NUDT9 (h)-PR: sc-89144-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.