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NUDT10 siRNA (m): sc-150100

BACKGROUND

NUDT10 (nudix (nucleoside diphosphate linked moiety X)-type motif 10), also known as APS2 (Ap6A hydrolase 2) or DIPP3 α (diphosphoinositol polyphosphate phosphohydrolase 3 α), is a member of the Nudix hydrolase family of pyrophosphatases. Nudix hydrolases contain a characteristic Nudix domain and are responsible for catalyzing the hydrolysis of nucleoside diphosphate derivatives. NUDT10 functions as a manganese-dependent polyphosphate phosphohydrolase with an optimum pH of 8.5. NUDT10 specifically metabolizes diadenosine-polyphosphates and, to a lesser extent, diphosphoinositol polyphosphates. Localizing to the cytoplasm, NUDT10 is predominantly expressed in brain and liver tissues, but is also found in prostate, testis, ovary, kidney, pancreas, placenta, spleen, lung and heart. NUDT10 is very closely related to NUDT11; the two proteins differ from one another by only one amino acid.

REFERENCES

1. Hidaka, K., et al. 2002. An adjacent pair of human NUDT genes on chromosome X are preferentially expressed in testis and encode two new isoforms of diphosphoinositol polyphosphate phosphohydrolase. *J. Biol. Chem.* 277: 32730-32738.
2. Fisher, D.I., et al. 2002. Nudix hydrolases that degrade dinucleoside and diphosphoinositol polyphosphates also have 5-phosphoribosyl 1-pyrophosphate (PRPP) pyrophosphatase activity that generates the glycolytic activator ribose 1,5-bisphosphate. *J. Biol. Chem.* 277: 47313-47317.
3. Leslie, N.R., et al. 2002. Cloning and characterisation of hAps1 and hAps2, human diadenosine polyphosphate-metabolising Nudix hydrolases. *BMC Biochem.* 3: 20-20.
4. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 300527. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Hua, L.V., et al. 2003. Paralogous murine Nudt10 and Nudt11 genes have differential expression patterns but encode identical proteins that are physiologically competent diphosphoinositol polyphosphate phosphohydrolases. *Biochem. J.* 373: 81-89.

CHROMOSOMAL LOCATION

Genetic locus: Nudt10 (mouse) mapping to X A1.1.

PRODUCT

NUDT10 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NUDT10 shRNA Plasmid (m): sc-150100-SH and NUDT10 shRNA (m) Lentiviral Particles: sc-150100-V as alternate gene silencing products.

For independent verification of NUDT10 (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-150100A, sc-150100B and sc-150100C.

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

NUDT10 siRNA (m) is recommended for the inhibition of NUDT10 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.

GENE EXPRESSION MONITORING

NUDT10 (4B7): sc-100571 is recommended as a control antibody for monitoring of NUDT10 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 NUDT10 gene expression knockdown using RT-PCR Primer: NUDT10 (m)-PR: sc-150100-PR (20 μ l). 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.