

NUDT4 siRNA (h): sc-95725

BACKGROUND

NUDT (nucleoside diphosphate linked moiety X)-type motif 3, 4, 10 and 11 are members 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. NUDT3 acts as a negative regulator of the ERK 1/2 pathway, hydrolyzes 5-phosphoribose 1-diphosphate and is suggested to play a role in signal transduction. NUDT4 is also implicated in signal transduction and catalyzes dinucleoside oligophosphate Ap6A hydrolysis. NUDT10 functions as a manganese-dependent polyphosphate phosphohydrolase and specifically metabolizes diadenosine-polyphosphates and diphosphoinositol polyphosphates, to a lesser extent. NUDT10 is very closely related to NUDT11; the two proteins differ from one another by only one amino acid.

REFERENCES

1. Safrany, S.T., Caffrey, J.J., Yang, X., Bembek, M.E., Moyer, M.B., Burkhart and W.A., Shears, S.B. 1998. A novel context for the "MutT" module, a guardian of cell integrity, in a diphosphoinositol polyphosphate phosphohydrolase. *EMBO J.* 17: 6599-6607.
2. Safrany, S.T., Ingram, S.W., Cartwright, J.L., Falck, J.R., McLennan, A.G., Barnes and L.D., Shears, S.B. 1999. The diadenosine hexaphosphate hydrolases from *Schizosaccharomyces pombe* and *Saccharomyces cerevisiae* are homologues of the human diphosphoinositol polyphosphate phosphohydrolase. Overlapping substrate specificities in a MutT-type protein. *J. Biol. Chem.* 274: 21735-21740.
3. Caffrey, J.J., Safrany, S.T., Yang and X., Shears, S.B. 2000. Discovery of molecular and catalytic diversity among human diphosphoinositol-polyphosphate phosphohydrolases. An expanding Nudt family. *J. Biol. Chem.* 275: 12730-12736.
4. Caffrey, J.J., Shears, S.B. 2001. Genetic rationale for microheterogeneity of human diphosphoinositol polyphosphate phosphohydrolase type 2. *Gene* 269: 53-60.
5. Leslie, N.R., McLennan and A.G., Safrany, S.T. 2002. Cloning and characterisation of hAps1 and hAps2, human diadenosine polyphosphate-metabolising Nudix hydrolases. *BMC Biochem.* 3: 20.

CHROMOSOMAL LOCATION

Genetic locus: NUDT4 (human) mapping to 12q22.

PRODUCT

NUDT4 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NUDT4 shRNA Plasmid (h): sc-95725-SH and NUDT4 shRNA (h) Lentiviral Particles: sc-95725-V as alternate gene silencing products.

For independent verification of NUDT4 (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-95725A, sc-95725B and sc-95725C.

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

NUDT4 siRNA (h) is recommended for the inhibition of NUDT4 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 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

NUDT3/4/10/11 (B-8): sc-398923 is recommended as a control antibody for monitoring of NUDT4 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 NUDT4 gene expression knockdown using RT-PCR Primer: NUDT4 (h)-PR: sc-95725-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.