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NUDT3 siRNA (m): sc-150111

BACKGROUND

NUDT3 (nudix (nucleoside diphosphate linked moiety X)-type motif 3), also known as DIPP, DIPP1 (diphosphoinositol polyphosphate phosphohydrolase 1) or diadenosine 5',5'''-P₁,P₆-hexaphosphate hydrolase 1, is a 172 amino acid cytoplasmic protein belonging to the nudix hydrolase family and DIPP subfamily. Suggested to play a role in signal transduction, NUDT3 acts as a negative regulator of the ERK 1/2 pathway and hydrolyzes 5-phosphoribose 1-diphosphate. Existing as a monomer and known to bind magnesium as a cofactor, NUDT3 is widely expressed but found at highest levels in liver, pancreas, brain and heart. NUDT3 is inhibited by IP6K1 and fluoride, and is encoded by a gene that maps to human chromosome 6p21.31.

REFERENCES

1. Safrany, S.T., et al. 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., et al. 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. Yang, X., et al. 1999. Site-directed mutagenesis of diphosphoinositol polyphosphate phosphohydrolase, a dual specificity NUDT enzyme that attacks diadenosine polyphosphates and diphosphoinositol polyphosphates. *J. Biol. Chem.* 274: 35434-35440.
4. 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.
5. Online Mendelian Inheritance in Man, OMIM[™]. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609228. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: Nudt3 (mouse) mapping to 17 A3.3.

PRODUCT

NUDT3 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 NUDT3 shRNA Plasmid (m): sc-150111-SH and NUDT3 shRNA (m) Lentiviral Particles: sc-150111-V as alternate gene silencing products.

For independent verification of NUDT3 (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-150111A, sc-150111B and sc-150111C.

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 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

NUDT3 siRNA (m) is recommended for the inhibition of NUDT3 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

NUDT3/4/10/11 (B-8): sc-398923 is recommended as a control antibody for monitoring of NUDT3 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 NUDT3 gene expression knockdown using RT-PCR Primer: NUDT3 (m)-PR: sc-150111-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.