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SANTA CRUZ BIOTECHNOLOGY, INC.

NUDT16 siRNA (m): sc-150106

BACKGROUND

NUDT16 (nudix (nucleoside diphosphate linked moiety X)-type motif 16) is a 195 amino acid protein belonging to the Nudix hydrolase family of pyrophosphatases. Nudix hydrolases contain a characteristic Nudix domain and are responsible for catalyzing the hydrolysis of nucleoside diphosphate derivatives. Localized to the nucleus, NUDT16 is a homodimer that utilizes magnesium, manganese or cobalt as a cofactor. NUDT16 is part of the U8 snoRNP complex that is important for accumulation of mature 5.8S and 28S rRNA. NUDT16 specifically binds to U8 snoRNA and removes the m7G and m227G caps. NUDT16 has also been found to have broad substrate specificity with manganese or cobalt as a cofactor.

REFERENCES

1. Suzuki, Y., Yamashita, R., Shirota, M., Sakakibara, Y., Chiba, J., Mizushima-Sugano, J., Nakai, K. and Sugano, S. 2004. Sequence comparison of human and mouse genes reveals a homologous block structure in the promoter regions. Genome Res. 14: 1711-1718.
2. Peculis, B.A., Reynolds, K. and Cleland, M. 2007. Metal determines efficiency and substrate specificity of the nuclear NUDIX decapping proteins X29 and H29K (Nudt16). J. Biol. Chem. 282: 24792-24805.
3. Lin, J., Tian, B. and Hua, Y. 2008. Structural and functional diversity of Nudix fold. Protein Pept. Lett. 15: 108-112.
4. Zhang, J., Gao, F., Zhang, Q., Chen, Q., Qi, J. and Yan, J. 2008. Crystallization and crystallographic analysis of human NUDT16. Acta Crystallogr. Sect. F Struct. Biol. Cryst. Commun. 64: 639-640.
5. Taylor, M.J. and Peculis, B.A. 2008. Evolutionary conservation supports ancient origin for Nudt16, a nuclear-localized, RNA-binding, RNA-decapping enzyme. Nucleic Acids Res. 36: 6021-6034.

CHROMOSOMAL LOCATION

Genetic locus: Nudt16 (mouse) mapping to 9 F1.

PRODUCT

NUDT16 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 NUDT16 shRNA Plasmid (m): sc-150106-SH and NUDT16 shRNA (m) Lentiviral Particles: sc-150106-V as alternate gene silencing products.

For independent verification of NUDT16 (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-150106A, sc-150106B and sc-150106C.

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.

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

NUDT16 siRNA (m) is recommended for the inhibition of NUDT16 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NUDT16 gene expression knockdown using RT-PCR Primer: NUDT16 (m)-PR: sc-150106-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.