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OTUD5 siRNA (m): sc-151941

BACKGROUND

OTUD5 (OTU domain containing 5), also known as DUBA (deubiquitinating enzyme A), is a 571 amino acid protein that belongs to the OTU (ovarian tumor) domain-containing family and contains one OTU domain. Expressed in a variety of tissues, including placenta, liver and peripheral blood leukocytes, OTUD5 functions as a deubiquitinase that acts as a negative regulator of immune system function and is inhibited by N-ethyl-maleimide. Multiple isoforms of OTUD5 exist due to alternative splicing events. The gene encoding OTUD5 maps to human chromosome X, which contains nearly 153 million base pairs and houses over 1,000 genes. In conjunction with chromosome Y, chromosome X is responsible for sex determination, as an X and a Y chromosome lead to normal male development, while two copies of an X chromosome lead to normal female development. There are a number of conditions related to an abnormal number and combination of sex chromosomes, some of which include Turner's syndrome, color blindness, hemophilia and Duchenne muscular dystrophy.

REFERENCES

1. Givens, J.R., et al. 1975. Features of Turner's syndrome in women with polycystic ovaries. *Obstet. Gynecol.* 45: 619-624.
2. Makarova, K.S., et al. 2000. A novel superfamily of predicted cysteine proteases from eukaryotes, viruses and *Chlamydia pneumoniae*. *Trends Biochem. Sci.* 25: 50-52.
3. Bernardino-Sgherri, J., et al. 2002. Overall DNA methylation and chromatin structure of normal and abnormal X chromosomes. *Cytogenet. Genome Res.* 99: 85-91.
4. Muntoni, F., et al. 2003. Dystrophin and mutations: one gene, several proteins, multiple phenotypes. *Lancet Neurol.* 2: 731-740.
5. Stevenson, R.E. 2005. Advances in X-linked mental retardation. *Curr. Opin. Pediatr.* 17: 720-724.
6. Hayashi, T., et al. 2006. Novel form of a single X-linked visual pigment gene in a unique dichromatic color-vision defect. *Vis. Neurosci.* 23: 411-417.
7. Kayagaki, N., et al. 2007. DUBA: a deubiquitinase that regulates type I interferon production. *Science* 318: 1628-1632.
8. Augui, S., et al. 2007. Sensing X chromosome pairs before X inactivation via a novel X-pairing region of the Xic. *Science* 318: 1632-1636.

CHROMOSOMAL LOCATION

Genetic locus: Otud5 (mouse) mapping to X A1.1.

PRODUCT

OTUD5 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 OTUD5 shRNA Plasmid (m): sc-151941-SH and OTUD5 shRNA (m) Lentiviral Particles: sc-151941-V as alternate gene silencing products.

For independent verification of OTUD5 (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-151941A, sc-151941B and sc-151941C.

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

OTUD5 siRNA (m) is recommended for the inhibition of OTUD5 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor OTUD5 gene expression knockdown using RT-PCR Primer: OTUD5 (m)-PR: sc-151941-PR (20 μ l, 600 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. González-Navajas, J.M., et al. 2010. Interleukin 1 receptor signaling regulates DUBA expression and facilitates Toll-like receptor 9-driven antiinflammatory cytokine production. *J. Exp. Med.* 207: 2799-2807.

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.