

UNC93B1 siRNA (h): sc-97050

BACKGROUND

UNC93B1 (UNC93 homolog B1), also known as UNC93 or UNC93B, is a 597 amino acid multi-pass membrane protein that is the human homolog of *C. elegans* UNC93, a protein involved in the coordination and regulation of muscle contraction. Expressed in various tissues including heart and kidney, UNC93B1 localizes to the endoplasmic reticulum (ER) and is responsible for shuttling TLR7 (Toll-like receptor 7) and TLR9 (Toll-like receptor 9) from the ER to the endolysosomes, an event that leads to the subsequent activation of TLR7 and TLR9. Defects in the gene encoding UNC93B1 are associated with an increased susceptibility to herpes simplex encephalitis (HSE), a form of human herpesvirus (HHV) that is characterized by hemorrhagic necrosis of parts of the temporal and frontal lobes that often leads to death. Additionally, mutations in the UNC93B1 gene may be a cause of left ventricular diastolic heart failure in elderly men, suggesting an important role for UNC93B1 in proper heart function.

REFERENCES

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2. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608204. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Arnlov, J., et al. 2005. hUNC93B1, a novel gene mainly expressed in the heart, is related to left ventricular diastolic function, heart failure morbidity and mortality in elderly men. *Eur. J. Heart Fail.* 7: 958-965.
4. Tabeta, K., et al. 2006. The UNC93B1 mutation 3d disrupts exogenous antigen presentation and signaling via Toll-like receptors 3, 7 and 9. *Nat. Immunol.* 7: 156-164.
5. Casrouge, A., et al. 2006. Herpes simplex virus encephalitis in human UNC93B deficiency. *Science* 314: 308-312.
6. Koehn, J., et al. 2007. Assessing the function of human UNC93B in Toll-like receptor signaling and major histocompatibility complex II response. *Hum. Immunol.* 68: 871-878.
7. Conley, M.E. 2007. Immunodeficiency: UNC-93B gets a Toll call. *Trends Immunol.* 28: 99-101.
8. Huang, Y.H., et al. 2008. New therapeutic targets in immune disorders: ItpkB, Orail and UNC93B. *Expert Opin. Ther. Targets* 12: 391-413.

CHROMOSOMAL LOCATION

Genetic locus: UNC93B1 (human) mapping to 11q13.2.

PRODUCT

UNC93B1 siRNA (h) is a target-specific 19-25 nt siRNA 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 UNC93B1 shRNA Plasmid (h): sc-97050-SH and UNC93B1 shRNA (h) Lentiviral Particles: sc-97050-V as alternate gene silencing 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

UNC93B1 siRNA (h) is recommended for the inhibition of UNC93B1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor UNC93B1 gene expression knockdown using RT-PCR Primer: UNC93B1 (h)-PR: sc-97050-PR (20 μ l, 440 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wagai, S., et al. 2019. UNC93B1 promotes tumoral growth by controlling the secretion level of granulocyte macrophage colony-stimulating factor in human oral cancer. *Biochem. Biophys. Res. Commun.* 513: 81-87.

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.