

urotensin IIB siRNA (m): sc-154938

BACKGROUND

Two major regulatory peptides were originally isolated from fish urophysal extracts, urotensin I and II. In both frog and human, the urotensin II sequence is located at the carboxy-terminal position of the precursor. Human urotensin II is composed of only 11 amino acid residues, while fish and frog urotensin II possess 12 and 13 amino acid residues, respectively. The cyclic region of urotensin II, which is responsible for the biological activity of the peptide, has been fully conserved from fish to human. Urotensin IIB, also known as UTS2B, U2B, URP or UTS2D, is a 119 amino acid secreted protein that is considered to be a potent vasoconstrictor. Primarily expressed in motoneurons of the brainstem and spinal cord, urotensin IIB is encoded by a gene located on human chromosome 3, which houses over 1,100 genes.

REFERENCES

- Bern, H.A., et al. 1985. Neurohormones from fish tails: the caudal neurosecretory system. I. "Urophysiology" and the caudal neurosecretory system of fishes. *Recent Prog. Horm. Res.* 41: 533-552.
- Coulouarn, Y., et al. 1998. Cloning of the cDNA encoding the urotensin II precursor in frog and human reveals intense expression of the urotensin II gene in motoneurons of the spinal cord. *Proc. Natl. Acad. Sci. USA* 95: 15803-15808.
- Ames, R.S., et al. 1999. Human Urotensin-II is a potent vasoconstrictor and agonist for the orphan receptor GPR14. *Nature* 401: 282-286.
- Chartrel, N., et al. 2004. Biochemical characterization and immunohistochemical localization of urotensin II in the human brainstem and spinal cord. *J. Neurochem.* 91: 110-118.
- Russell, F.D., et al. 2004. Investigation of signaling pathways that mediate the inotropic effect of urotensin II in human heart. *Cardiovasc. Res.* 63: 673-681.
- Bousette, N., et al. 2004. Increased expression of urotensin II and its cognate receptor GPR14 in atherosclerotic lesions of the human aorta. *Atherosclerosis* 176: 117-123.
- Cheung, B.M., et al. 2004. Plasma concentration of urotensin II is raised in hypertension. *J. Hypertens.* 22: 1341-1344.
- Tostivint, H., et al. 2006. Comparative genomics provides evidence for close evolutionary relationships between the urotensin II and somato- statin gene families. *Proc. Natl. Acad. Sci. USA* 103: 2237-2242.
- Bougerol, M., et al. 2015. Generation of BAC transgenic tadpoles enabling live imaging of motoneurons by using the urotensin II-related peptide (ust2b) gene as a driver. *PLoS ONE* 10: e0117370.

CHROMOSOMAL LOCATION

Genetic locus: Uts2d (mouse) mapping to 16 B2.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

urotensin IIB 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 urotensin IIB shRNA Plasmid (m): sc-154938-SH and urotensin IIB shRNA (m) Lentiviral Particles: sc-154938-V as alternate gene silencing products.

For independent verification of urotensin IIB (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-154938A, sc-154938B and sc-154938C.

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

urotensin IIB siRNA (m) is recommended for the inhibition of urotensin IIB 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 urotensin IIB gene expression knockdown using RT-PCR Primer: urotensin IIB (m)-PR: sc-154938-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.