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SANTA CRUZ BIOTECHNOLOGY, INC.

NMU-23 siRNA (h): sc-42091

BACKGROUND

Neuromedin U (NMU) is a neuropeptide with potent contractile activity on smooth muscle that was first identified in porcine spinal cord. NMU is widely disributed in the gastrointestinal tract and nervous system with highest expression levels in the duodenum and jejunum, and lower expression level in spinal cord, hypothalamus, and stomach. Receptors for NMU are FM-3/NMU1R, which is significantly expressed in peripheral tissues, and FM-4/NMU2R, which is expressed in specific regions of the brain. The 174 amino acid rat NMU precursor encodes more than one bioactive peptide that contains the 23 residue NMU peptide (NMU-23) near the C-terminus of the precursor. NMU has a hydrophobic signal peptide and a number of paired dibasic amino acids, which serve as signals for enzymatic cleavage that releases NMU and other peptides. NMU-23 and other NMU peptides have similar functions, but differ in their lengths and activities which are both tissue and species specific. In rat, NMU-23 stimulates contractions of stomach circular muscle and involves in the central control of feeding. Peripheral activities of NMU include stimulation of smooth muscle, increase of blood pressure, alteration of ion transport in the gut, control of local blood flow and regulation of adrenocortical function.

REFERENCES

1. Domin, J., et al. 1987. Neuromedin U—a study of its distribution in the rat. Peptides 8: 779-784.
2. Steel, J.H., et al. 1988. Localization of 7B2, neuromedin B, and neuromedin U in specific cell types of rat, mouse, and human pituitary, in rat hypothalamus, and in 30 human pituitary and extrapituitary tumors. Endocrinology 122: 270-282.
3. Gardiner, S.M., et al. 1990. Regional hemodynamic effects of neuromedin U in conscious rats. Am. J. Physiol. 258: R323-R328.
4. Benito-Orfila, M.A., et al. 1991. The motor effect of neuromedin U on rat stomach *in vitro*. Eur. J. Pharmacol. 193: 329-333.
5. Lo, G., et al. 1992. Characterization of complementary DNA encoding the rat neuromedin U precursor. Mol. Endocrinol. 6: 1538-1544.
6. Austin, C., et al., 1994. Distribution and development pattern of neuromedin U expression in the rat gastrointestinal tract. J. Mol. Endocrinol. 12: 257-263.

CHROMOSOMAL LOCATION

Genetic locus: NMU (human) mapping to 4q12.

PRODUCT

NMU-23 siRNA (h) 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 NMU-23 shRNA Plasmid (h): sc-42091-SH and NMU-23 shRNA (h) Lentiviral Particles: sc-42091-V as alternate gene silencing products.

For independent verification of NMU-23 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-42091A, sc-42091B and sc-42091C.

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

NMU-23 siRNA (h) is recommended for the inhibition of NMU-23 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 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 NMU-23 gene expression knockdown using RT-PCR Primer: NMU-23 (h)-PR: sc-42091-PR (20 µl). 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.

PROTOCOLS

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