

## RFRP siRNA (m): sc-44798

### BACKGROUND

The human RFamide-related peptide gene, RFRP (also designated NPVF or C7orf9), is responsible for encoding three small neuropeptides designated RFRP-1 (NPSF), RFRP-2 and RFRP-3 (NPVF). The homologous gene in rodents encodes only two functional neuropeptide: RFRP-1 (NPSF) and RFRP-3 (NPVF). RFamide-related peptides constitute a large family of neuropeptides in a wide range of species that are known to play a role in neurotransmission, neuro-modulation, cardioexcitation and control of muscle contraction. Neuropeptides RFRP-1 and RFRP-3 efficiently inhibit Forskolin-induced production of cAMP. RFRP-2, however, does not appear to have a similar inhibitory activity. RFamide-related peptides are secreted and abundantly expressed in retina. RFRP-1 and RFRP-3 are also widely distributed in fetal and adult brain, including the forebrain, hypothalamus, thalamus, midbrain, pons and medulla oblongata. RFRP-1 and the prolactin (PRL)-releasing peptide-31 (PrRP-31) may be involved in the stimulation of stress hormone secretion by either direct pituitary or indirect hypothalamic actions.

### REFERENCES

1. Hinuma, S., et al. 2000. New neuropeptides containing carboxy-terminal RFamide and their receptor in mammals. *Nat. Cell Biol.* 2: 703-708.
2. Fukusumi, S., et al. 2001. Characteristics and distribution of endogenous RFamide-related peptide-1. *Biochim. Biophys. Acta* 1540: 221-232.
3. Schulz, H.L., et al. 2002. Genomic structure and assessment of the retinally expressed RFamide-related peptide gene in dominant cystoid macular dystrophy. *Mol. Vis.* 8: 67-71.
4. Yano, T., et al. 2003. Localization and neuronal response of RFamide related peptides in the rat central nervous system. *Brain Res.* 982: 156-167.
5. Samson, W.K., et al. 2003. Prolactin-releasing peptide and its homolog RFRP-1 act in hypothalamus but not in anterior pituitary gland to stimulate stress hormone secretion. *Endocrine* 20: 59-66.
6. Yano, T., et al. 2004. Developmental expression of RFamide-related peptides in the rat central nervous system. *Brain Res. Dev. Brain Res.* 152: 109-120.
7. Johnson, M.A., et al. 2007. Rat RFamide-related peptide-3 stimulates GH secretion, inhibits LH secretion, and has variable effects on sex behavior in the adult male rat. *Horm. Behav.* 51: 171-180.

### CHROMOSOMAL LOCATION

Genetic locus: Npvf (mouse) mapping to 6 B2.3.

### PRODUCT

RFRP 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RFRP shRNA Plasmid (m): sc-44798-SH and RFRP shRNA (m) Lentiviral Particles: sc-44798-V as alternate gene silencing products.

For independent verification of RFRP (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-44798A, sc-44798B and sc-44798C.

### 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

### APPLICATIONS

RFRP siRNA (m) is recommended for the inhibition of RFRP 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  $\mu$ M in 66  $\mu$ 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 RFRP gene expression knockdown using RT-PCR Primer: RFRP (m)-PR: sc-44798-PR (20  $\mu$ 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.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.