SANTA CRUZ BIOTECHNOLOGY, INC.

proenkephalin B siRNA (m): sc-72062

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The Power to Question

BACKGROUND

The proenkephalin precursor proteins are secreted proteins belonging to the opioid neuropeptide precursor family. The proenkephalin proteins are proteolytically processed to form active secreted opioid peptides, which function as ligands for the κ-type of opioid receptor. The proenkephalin A precursor contains Synenkephalin, Leu-enkephalin and Met-enkephalin processed active peptides, while the proenkephalin B precursor contains β-neoendorphin, Dynorphin, Leumorphin, Leu-enkephalin and rimorphin processed active peptides. β-endorphin and Met-enkephalin are endogenous opiates, while ACTH is crucial for adrenal gland stimulation to release cortisol. MSH increases melanin production in melanocytes, which leads to an increase in skin pigmentation. Leumorphin may be important in apoptosis prevention by being involved in the MAP kinase and PI 3-kinase pathways.

REFERENCES

1. Roberts, J.L., et al. 1979. Corticotropin and β-endorphin: construction and analysis of recombinant DNA complementary to mRNA for the common precursor. Proc. Natl. Acad. Sci. USA 76: 2153-2157.
2. Notake, M., et al. 1983. Isolation and characterization of the mouse corticotropin-β-lipotropin precursor gene and a related pseudogene. FEBS Lett. 156: 67-71.
3. Thorne, B.A., et al. 1989. Expression of mouse proopiomelanocortin in an insulinoma cell line. Requirements for β-endorphin processing. J. Biol. Chem. 264: 3545-3552.
4. Smith, E.M., et al. 1990. Nucleotide and amino acid sequence of lymphocyte-derived corticotropin: endotoxin induction of a truncated peptide. Proc. Natl. Acad. Sci. USA 87: 1057-1060.
5. Lee, B.D., et al. 2005. Leumorphin has an anti-apoptotic effect by activating epidermal growth factor receptor kinase in rat pheochromocytoma PC12 cells. J. Neurochem. 95: 56-67.
6. Younes, A., et al. 2005. Ischemic preconditioning increases the bioavailability of cardiac enkephalins. Am. J. Physiol. Heart Circ. Physiol. 289: H1652-H1661.

CHROMOSOMAL LOCATION

Genetic locus: Pdyn (mouse) mapping to 2 F1.

PRODUCT

proenkephalin B 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see proenkephalin B shRNA Plasmid (m): sc-72062-SH and proenkephalin B shRNA (m) Lentiviral Particles: sc-72062-V as alternate gene silencing products.

For independent verification of proenkephalin B (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-72062A, sc-72062B and sc-72062C.

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

proenkephalin B siRNA (m) is recommended for the inhibition of proenkephalin B 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 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.

GENE EXPRESSION MONITORING

proenkephalin B (D-6): sc-398808 is recommended as a control antibody for monitoring of proenkephalin B gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor proenkephalin B gene expression knockdown using RT-PCR Primer: proenkephalin B (m)-PR: sc-72062-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.