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encephalopsin shRNA (m) Lentiviral Particles: sc-45990-V

BACKGROUND

Encephalopsin is the first putative extraocular opsin identified in mammals and may play a role in encephalic photoreception. Also designated Panopsin, encephalopsin may play a role in non-visual photic processes such as the entrainment of circadian rhythm or the regulation of pineal melatonin production. Encephalopsin shows strong and specific expression in the brain. In the cortex and cerebellum, encephalopsin expression is considerably higher and more highly patterned in the adult than in the neonate. In addition to encephalopsin, other classical visual opsins Rgr-opsin, peropsin and melanopsin are all expressed in fetal development by E11.5, unlike the murine rod and cone opsins that exhibit post-natal expression, such as P1 for ultra-violet cone opsin and P5 for rod opsin.

REFERENCES

1. Blackshaw, S., et al. 1999. Encephalopsin: a novel mammalian extraretinal opsin discretely localized in the brain. *J. Neurosci.* 19: 3681-3690.
2. Kasper, G., et al. 2002. Different structural organization of the encephalopsin gene in man and mouse. *Gene* 295: 27-32.
3. Tarttelin, E.E., et al. 2003. Expression of opsin genes early in ocular development of humans and mice. *Exp. Eye Res.* 76: 393-396.
4. Kumbalasisri, T., et al. 2005. Melanopsin and other novel mammalian opsins. *Exp. Eye Res.* 81: 368-375.
5. Terakita, A. 2005. The opsins. *Genome Biol.* 6: 213.

CHROMOSOMAL LOCATION

Genetic locus: *Opn3* (mouse) mapping to 1 H4.

PRODUCT

encephalopsin shRNA (m) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 μ l frozen stock containing 1.0×10^6 infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see encephalopsin siRNA (m): sc-45990 and encephalopsin shRNA Plasmid (m): sc-45990-SH as alternate gene silencing products.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

PROTOCOLS

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

APPLICATIONS

encephalopsin shRNA (m) Lentiviral Particles is recommended for the inhibition of encephalopsin expression in mouse cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

GENE EXPRESSION MONITORING

encephalopsin (H-76): sc-98799 is recommended as a control antibody for monitoring of encephalopsin 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor encephalopsin gene expression knockdown using RT-PCR Primer: encephalopsin (m)-PR: sc-45990-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.