SANTA CRUZ BIOTECHNOLOGY, INC.

Gm98 siRNA (m): sc-145641

BACKGROUND

Gm98, also known as Myrf (myelin regulatory factor), Mrf or Gm1804, is a 1,138 amino acid single-pass membrane protein that is specifically expressed in postmitotic oligodendrocytes in the central nervous system (CNS). During postnatal developmental stage P3, Gm98 expression is restricted to hindbrain and cerebellum, spreading rostrally through the white matter tracks over the first two weeks after birth. Belonging to the MRF family, Gm98 contains a NDT80 DNA-binding domain and is thought to function as a transcriptional regulator required for the expression of CNA myelin genes. Gm98 also plays a role in oligodendrocyte maturation and differentiation, and CNS myelination. The gene encoding Gm98 maps to mouse chromosome 19 A. Disruptions to the gene encoding Gm98 results in severe deficits in myelin gene expression, and acute neurological abnormalities leading to seizures during the third postnatal week, typically resulting in death.

REFERENCES

1. Emery, B., et al. 2009. Myelin gene regulatory factor is a critical transcriptional regulator required for CNS myelination. Cell 138: 172-185.
2. Yan, X., et al. 2011. Decreased expression of myelin gene regulatory factor in Niemann-Pick type C 1 mouse. Metab. Brain Dis. 26: 299-306.
3. Diez-Roux, G., et al. 2011. A high-resolution anatomical atlas of the transcriptome in the mouse embryo. PLoS Biol. 9: e1000582.
4. Koenning, M., et al. 2012. Myelin gene regulatory factor is required for maintenance of myelin and mature oligodendrocyte identity in the adult CNS. J. Neurosci. 32: 12528-12542.
5. Weng, Q., et al. 2012. Dual-mode modulation of Smad signaling by Smad-interacting protein Sip1 is required for myelination in the central nervous system. Neuron 73: 713-728.

CHROMOSOMAL LOCATION

Genetic locus: Gm98 (mouse) mapping to 19 A.

PRODUCT

Gm98 siRNA (m) is a target-specific 19-25 nt siRNA 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 Gm98 shRNA Plasmid (m): sc-145641-SH and Gm98 shRNA (m) Lentiviral Particles: sc-145641-V as alternate gene silencing products.

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

Gm98 siRNA (m) is recommended for the inhibition of Gm98 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Gm98 gene expression knockdown using RT-PCR Primer: Gm98 (m)-PR: sc-145641-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.