SANTA CRUZ BIOTECHNOLOGY, INC.

M6A siRNA (h): sc-89093

BACKGROUND

Neuronal membrane glycoprotein M6-a (GPM6A), also known as M6A, is a 278 amino acid protein belonging to the myelin proteolipid protein family. Expressed exclusively in the brain, M6A is localized to the plasma membrane and contains four transmembrane domains. The gene encoding M6A has been identified as a stress-responsive gene. The protein is down-regulated in the hippocampus of socially and physically stressed animals, and the effects are reversed with the administration of anti-depressants. M6A is thought to play a role in filopodium/spine outgrowth, synapse formation, neuronal migration, and mood disorders, such as depression. The gene encoding human M6A maps to chromosome 4q34.2. Two splice variants of M6A exist as a result of alternative splicing events.

REFERENCES

1. Alfonso, J., et al. 2005. The stress-regulated protein M6A is a key modulator for neurite outgrowth and filopodium/spine formation. Proc. Natl. Acad. Sci. USA 102: 17196-17201.
2. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 601275. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Boks, M.P., et al. 2008. Do mood symptoms subdivide the schizophrenia phenotype? Association of the GMP6A gene with a depression subgroup. Am. J. Med. Genet. B Neuropsychiatr. Genet. 147B: 707-711.
4. Honda, Y., et al. 2008. Clinico-pathological characteristics of erythroblast-rich RAEB and AML M6A in children. Int. J. Hematol. 88: 524-529.
5. Michibata, H., et al. 2008. Inhibition of mouse GPM6A expression leads to decreased differentiation of neurons derived from mouse embryonic stem cells. Stem Cells Dev. 17: 641-651.
6. Cooper, B., et al. 2009. Expression of the axonal membrane glycoprotein M6A is regulated by chronic stress. PLoS ONE 4: e3659.
7. Michibata, H., et al. 2009. Human GPM6A is associated with differentiation and neuronal migration of neurons derived from human embryonic stem cells. Stem Cells Dev. 18: 629-639.
8. Diaconescu, A.O., et al. 2010. Dopamine-induced changes in neural network patterns supporting aversive conditioning. Brain Res. 1313: 143-161.

CHROMOSOMAL LOCATION

Genetic locus: GPM6A (human) mapping to 4q34.2.

PRODUCT

M6A 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 M6A shRNA Plasmid (h): sc-89093-SH and M6A shRNA (h) Lentiviral Particles: sc-89093-V as alternate gene silencing products.

For independent verification of M6A (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-89093A, sc-89093B and sc-89093C.

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

M6A siRNA (h) is recommended for the inhibition of M6A 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 M6A gene expression knockdown using RT-PCR Primer: M6A (h)-PR: sc-89093-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.