

EML5 siRNA (h): sc-92278

BACKGROUND

EML5 (echinoderm microtubule-associated protein-like 5), also known as EMAP-5 or EMAP-2, is a 1,169 amino acid cytoplasmic protein that belongs to the WD repeat EMAP family. EML5 is thought to modify the assembly dynamics of microtubules, perhaps causing slightly longer and more dynamic microtubules. EML5 contains 29 WD repeats, a motif known to mediate protein-protein interactions, and is expressed as five isoforms produced by alternative splicing. The gene that encodes EML5 maps to human chromosome 14, which houses over 700 genes and comprises nearly 3.5% of the human genome. Chromosome 14 encodes the presenilin 1 (PSEN1) gene, which is one of the three key genes associated with the development of Alzheimer's disease (AD). The SERPINA1 gene is also located on chromosome 14 and, when defective, leads to the genetic disorder α 1-antitrypsin deficiency, which is characterized by severe lung complications and liver dysfunction.

REFERENCES

1. van der Voorn, L. and Ploegh, H.L. 1992. The WD-40 repeat. *FEBS Lett.* 307: 131-134.
2. Neer, E.J., Schmidt, C.J., Nambudripad, R. and Smith, T.F. 1994. The ancient regulatory-protein family of WD-repeat proteins. *Nature* 371: 297-300.
3. Garcia-Higuera, I., Fenoglio, J., Li, Y., Lewis, C., Panchenko, M.P., Reiner, O., Smith, T.F. and Neer, E.J. 1996. Folding of proteins with WD-repeats: comparison of six members of the WD-repeat superfamily to the G protein β subunit. *Biochemistry* 35: 13985-13994.
4. O'Connor, V., Houtman, S.H., De Zeeuw, C.I., Bliss, T.V. and French, P.J. 2004. Eml5, a novel WD40 domain protein expressed in rat brain. *Gene* 336: 127-137.
5. Avramopoulos, D., Fallin, M.D. and Bassett, S.S. 2005. Linkage to chromosome 14q in Alzheimer's disease (AD) patients without psychotic symptoms. *Am. J. Med. Genet. B Neuropsychiatr. Genet.* 132B: 9-13.
6. Larner, A.J. and Doran, M. 2009. Genotype-phenotype relationships of presenilin-1 mutations in Alzheimer's disease: an update. *J. Alzheimers Dis.* 17: 259-265.
7. Topic, A., Alempijevic, T., Milutinovic, A.S. and Kovacevic, N. 2009. α -1-antitrypsin phenotypes in adult liver disease patients. *Ups. J. Med. Sci.* 114: 228-234.

CHROMOSOMAL LOCATION

Genetic locus: EML5 (human) mapping to 14q31.3.

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.

PRODUCT

EML5 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see EML5 shRNA Plasmid (h): sc-92278-SH and EML5 shRNA (h) Lentiviral Particles: sc-92278-V as alternate gene silencing products.

For independent verification of EML5 (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-92278A, sc-92278B and sc-92278C.

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

APPLICATIONS

EML5 siRNA (h) is recommended for the inhibition of EML5 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 μ M in 66 μ 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 EML5 gene expression knockdown using RT-PCR Primer: EML5 (h)-PR: sc-92278-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.