SANTA CRUZ BIOTECHNOLOGY, INC.

EMP-3 siRNA (h): sc-97634

BACKGROUND

EMP-3 (epithelial membrane protein 3), also known as YMP, is a 163 amino acid multi-pass membrane protein that contains two N-linked glycosylation sites and four transmembrane domains. Expressed ubiquitously with highest expression in peripheral blood leukocytes, EMP-3 is a myelin-related protein that is thought to be involved in cell-cell interactions and cell proliferation. The gene encoding EMP-2 is implicated as a possible tumor suppressor that silences CpG promotor action, thereby inhibiting the growth of neuroblastomas and gliomas. Overexpression of EMP-3, however, may be associated with the development of oligodendroglial tumors (tumors that develop on the myelin producing cells of the central nervous system). Its ability to both repress and induce tumor formation suggests that normal amounts of EMP-3 keep tumor activity low, while increased EMP-3 expression may play a role in carcinogenesis.

REFERENCES

1. Taylor, V., et al. 1996. Epithelial membrane protein-2 and epithelial membrane protein-3: two novel members of the peripheral myelin protein 22 gene family. Gene 175: 115-120.
2. Ben-Porath, I., et al. 1996. Characterization of a tumor-associated gene, a member of a novel family of genes encoding membrane glycoproteins. Gene 183: 69-75.
3. Liehr, T., et al. 1999. Regional localization of the human epithelial membrane protein genes 1, 2, and 3 (EMP1, EMP2, EMP3) to 12p12.3, 16p13.2, and 19q13.3. Genomics 58: 106-108.
4. Luedtke, B., et al. 2003. A single nucleotide polymorphism in the Emp3 gene defines the H4 minor histocompatibility antigen. Immunogenetics 55: 284-295.
5. Knuepfer, E., et al. 2005. Trafficking determinants for PfEMP3 export and assembly under the *Plasmodium falciparum*-infected red blood cell membrane. Mol. Microbiol. 58: 1039-1053.
6. Nielsen, K., et al. 2005. Altered expression of CLC, DSG3, EMP3, S100A2, and SLPI in corneal epithelium from keratoconus patients. Cornea 24: 661-668.
7. Alaminos, M., et al. 2005. EMP3, a myelin-related gene located in the critical 19q13.3 region, is epigenetically silenced and exhibits features of a candidate tumor suppressor in glioma and neuroblastoma. Cancer Res. 65: 2565-2571.

CHROMOSOMAL LOCATION

Genetic locus: EMP3 (human) mapping to 19q13.3.

PRODUCT

EMP-3 siRNA (h) 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 EMP-3 shRNA Plasmid (h): sc-97634-SH and EMP-3 shRNA (h) Lentiviral Particles: sc-97634-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

EMP-3 siRNA (h) is recommended for the inhibition of EMP-3 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.

GENE EXPRESSION MONITORING

EMP-3 (SW-5): sc-81797 is recommended as a control antibody for monitoring of EMP-3 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 EMP-3 gene expression knockdown using RT-PCR Primer: EMP-3 (h)-PR: sc-97634-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.