SANTA CRUZ BIOTECHNOLOGY, INC.

EMP-2 siRNA (h): sc-93419

BACKGROUND

EMP-2 (epithelial membrane protein 2), also known as XMP, is a 167 amino acid multi-pass membrane protein that contains four-transmembrane domains and belongs to the GAS3/PMP22 (growth arrest-specific-3/peripheral myelin protein-22) family. Localized to lipid raft domains in the plasma membrane, EMP-2 regulates the expression of several target proteins and is necessary for blastocyst implantation in the uterine endometrium. Specifically, EMP-2 mediates blastocyst implantation by controlling the cell membrane expression of MHC and glycosylphosphatidylinositol-anchored proteins, as well as Integrins and caveolin-1. In adult tissues, EMP-2 is expressed in heart, lung, ovary and intestine, while fetal expression is highest in kidney, brain and liver. Overexpression of EMP-2 is associated with endometrial adenocarcinoma, suggesting a possible role for EMP-2 in tumorigenesis.

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 (EMP-1, EMP-2, EMP-3) to 12p12.3, 16p13.2, and 19q13.3. Genomics 58: 106-108.
4. Wadehra, M., et al. 2003. Epithelial membrane protein-2 is expressed in discrete anatomical regions of the eye. Exp. Mol. Pathol. 74: 106-112.
5. Wadehra, M., et al. 2005. Epithelial membrane protein-2 regulates surface expression of $\alpha_v\beta_3$ integrin in the endometrium. Dev. Biol. 287: 336-345.
6. Wadehra, M., et al. 2006. Expression of epithelial membrane protein-2 is associated with endometrial adenocarcinoma of unfavorable outcome. Cancer 107: 90-98.
7. Forbes, A., et al. 2007. The tetraspan protein EMP-2 regulates expression of caveolin-1. J. Biol. Chem. 282: 26542-26551.
8. Shimazaki, K., et al. 2007. Epithelial membrane protein 2 modulates infectivity of *Chlamydia muridarum* (MoPn). Microbes Infect. 9: 1003-1010.

CHROMOSOMAL LOCATION

Genetic locus: EMP2 (human) mapping to 16p13.13.

PRODUCT

EMP-2 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 EMP-2 shRNA Plasmid (h): sc-93419-SH and EMP-2 shRNA (h) Lentiviral Particles: sc-93419-V as alternate gene silencing products.

For independent verification of EMP-2 (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-93419A, sc-93419B and sc-93419C.

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-2 siRNA (h) is recommended for the inhibition of EMP-2 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 EMP-2 gene expression knockdown using RT-PCR Primer: EMP-2 (h)-PR: sc-93419-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Ma, Y., et al. 2021. Epithelial membrane protein 2 suppresses non-small cell lung cancer cell growth by inhibition of MAPK pathway. Int. J. Mol. Sci. 22: 2944.

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.