SANTA CRUZ BIOTECHNOLOGY, INC.

EMP-1 siRNA (h): sc-62274

BACKGROUND

Epithelial membrane protein-1 (EMP-1) is a four pass transmembrane protein consisting of 160 amino acids. It is a member of a small family of epithelial membrane proteins. EMP-1 is very similar in structure to its close relative, peripheral myelin protein 22 (PMP22). It is most predominantly expressed in tissues of the gastrointestinal tract but has also been found to be a junctional protein in the liver expressed along the intercellular border. EMP-1 directly interacts with the C-terminus of the P2X7 receptor and may be involved in membrane blebbing. EMP-1 may also be an important regulator in cell communication, signaling, and adhesion. When EMP-1 is overexpressed, cell proliferation is inhibited, S phase is arrested and G_1 phase is prolonged in esophogeal cancer cells. EMP-1 may play a role in tumorigenesis and has been identified as a biomarker for Gefitinib treatment resistance for patients with lung cancer.

REFERENCES

1. Taylor, V., et al. 1995. Epithelial membrane protein-1, peripheral myelin protein 22, and lens membrane protein 20 define a novel gene family. J. Biol. Chem. 270: 28824-28833.
2. Chen, Y., et al. 1997. cDNA cloning, genomic structure, and chromosome mapping of the human epithelial membrane protein CL-20 gene (EMP1), a member of the PMP22 family. Genomics 41: 40-48.
3. Jetten, A.M., et al. 2000. The peripheral myelin protein 22 and epithelial membrane protein family. Prog. Nucleic Acid Res. Mol. Biol. 64: 97-129.
4. Wang, H.T., et al. 2002. Effect of EMP-1 gene on human esophageal cancer cell line. Ai Zheng 21: 229-232.
5. Wilson, H.L., et al. 2002. Epithelial membrane proteins induce membrane blebbing and interact with the P2X7 receptor C terminus. J. Biol. Chem. 277: 34017-34023.

CHROMOSOMAL LOCATION

Genetic locus: EMP1 (human) mapping to 12p13.1.

PRODUCT

EMP-1 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-1 shRNA Plasmid (h): sc-62274-SH and EMP-1 shRNA (h) Lentiviral Particles: sc-62274-V as alternate gene silencing products.

For independent verification of EMP-1 (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-62274A, sc-62274B and sc-62274C.

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.

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-1 siRNA (h) is recommended for the inhibition of EMP-1 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-1 gene expression knockdown using RT-PCR Primer: EMP-1 (h)-PR: sc-62274-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.