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EMR2 shRNA (h) Lentiviral Particles: sc-45381-V

BACKGROUND

The epidermal growth factor (EGF) family constitutes a group of class B, G protein-coupled receptors, which includes CD97 and EMR2. EMR2 is a member of the EGF-TM7 receptor subfamily. EGF-TM7 receptors are a family of class B, seven-span transmembrane (TM7) receptors predominantly expressed by cells of the immune system. Within the TM7 superfamily, the molecular structure and ligand-binding properties of EGF-TM7 receptors are unique. Derived from the processing of a single polypeptide, they are expressed at the cell surface as heterodimers consisting of a large extracellular region associated with a TM7 moiety. Through a variable number of N-terminal EGF-like domains, EGF-TM7 receptors interact with cellular ligands such as CD55 and chondroitin sulfate. EMR2 is a heptahelical molecule predominantly expressed on cells of the immune system such as leukocytes. EMR2 is proteolytically cleaved into two separate subunits: a seven-transmembrane subunit, and an extracellular α subunit.

REFERENCES

1. Lin, H.H., et al. 2000. Human EMR2, a novel EGF-TM7 molecule on chromosome 19p13.1, is closely related to CD97. *Genomics* 67: 188-200.
2. Kwakkenbos, M.J., et al. 2002. The human EGF-TM7 family member EMR2 is a heterodimeric receptor expressed on myeloid cells. *J. Leukoc. Biol.* 71: 854-862.
3. Chang, G.W., et al. 2003. Proteolytic cleavage of the EMR2 receptor requires both the extracellular stalk and the GPS motif. *FEBS Lett.* 547: 145-150.
4. Stacey, M., et al. 2003. The epidermal growth factor-like domains of the human EMR2 receptor mediate cell attachment through chondroitin sulfate glycosaminoglycans. *Blood* 102: 2916-2924.

CHROMOSOMAL LOCATION

Genetic locus: EMR2 (human) mapping to 19p13.12.

PRODUCT

EMR2 shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 μ l frozen stock containing 1.0×10^6 infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see EMR2 siRNA (h): sc-45381 and EMR2 shRNA Plasmid (h): sc-45381-SH as alternate gene silencing products.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

APPLICATIONS

EMR2 shRNA (h) Lentiviral Particles is recommended for the inhibition of EMR2 expression in human cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

GENE EXPRESSION MONITORING

EMR2 (A-20): sc-34336 is recommended as a control antibody for monitoring of EMR2 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 (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor EMR2 gene expression knockdown using RT-PCR Primer: EMR2 (h)-PR: sc-45381-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.