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SANTA CRUZ BIOTECHNOLOGY, INC.

EMR3 shRNA (h) Lentiviral Particles: sc-45399-V

BACKGROUND

The epidermal growth factor (EGF)-TM7 family constitutes a group of leukocyte-restricted, class B, G protein-coupled receptors (GPCRs). These include CD97, EMR1 (EGF-like molecule containing mucin-like hormone receptor 1, designated F4/80 in mouse), EMR2, EMR3, FIRE and ETL. These family members are characterized by an extended extracellular region with several N-terminal EGF domains and are predominantly expressed on cells of the immune system. Unlike other GPCRs, neither EMR2 nor EMR3 have mouse orthologs. The molecular twins CD97 and EMR2 only differ by six out of 236 amino acids, but this slight difference is enough to alter ligand specificity and confer nonredundant functions. EMR3 may function in myeloid-myeloid interactions during immune and inflammatory responses.

REFERENCES

1. Stacey, M., et al. 2001. Human epidermal growth factor (EGF) module-containing mucin-like hormone receptor 3 is a new member of the EGF-TM7 family that recognizes a ligand on human macrophages and activated neutrophils. J. Biol. Chem. 276: 18863-18870.
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. Bjarnadottir, T.K., et al. 2004. The human and mouse repertoire of the adhesion family of G protein-coupled receptors. Genomics 84: 23-33.
4. Leemans, J.C., et al. 2004. The epidermal growth factor-seven transmembrane (EGF-TM7) receptor CD97 is required for neutrophil migration and host defense. J. Immunol. 172: 1125-1131.
5. Matmati, M., et al. 2007. The human EGF-TM7 receptor EMR3 is a marker for mature granulocytes. J. Leukoc. Biol. 81: 440-448.

CHROMOSOMAL LOCATION

Genetic locus: EMR3 (human) mapping to 19p13.12.

PRODUCT

EMR3 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 µl frozen stock containing 1.0 x 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 EMR3 siRNA (h): sc-45399 and EMR3 shRNA Plasmid (h): sc-45399-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

EMR3 shRNA (h) Lentiviral Particles is recommended for the inhibition of EMR3 expression in human cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 µl frozen viral stock containing 1.0 x 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

EMR3 (L-17): sc-34338 is recommended as a control antibody for monitoring of EMR3 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 EMR3 gene expression knockdown using RT-PCR Primer: EMR3 (h)-PR: sc-45399-PR (20 µl). 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.