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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

EMR2 siRNA (h): sc-45381

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.
5. Kwakkenbos, M.J., et al. 2005. Expression of the largest CD97 and EMR2 isoforms on leukocytes facilitates a specific interaction with chondroitin sulfate on B cells. *J. Leukoc. Biol.* 77: 112-119.
6. Kop, E.N., et al. 2005. Identification of the epidermal growth factor-TM7 receptor EMR2 and its ligand dermatan sulfate in rheumatoid synovial tissue. *Arthritis Rheum.* 52: 442-450.

CHROMOSOMAL LOCATION

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

PRODUCT

EMR2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see EMR2 shRNA Plasmid (h): sc-45381-SH and EMR2 shRNA (h) Lentiviral Particles: sc-45381-V as alternate gene silencing products.

For independent verification of EMR2 (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-45381A, sc-45381B and sc-45381C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

EMR2 siRNA (h) is recommended for the inhibition of EMR2 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 μ M in 66 μ l. 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 EMR2 gene expression knockdown using RT-PCR Primer: EMR2 (h)-PR: sc-45381-PR (20 μ l, 562 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Le, Q.T., et al. 2019. Impact of naturally forming human α/β -tryptase heterotetramers in the pathogenesis of hereditary α -tryptasemia. *J. Exp. Med.* pii: jem.20190701.

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.