SANTA CRUZ BIOTECHNOLOGY, INC.

FIRE siRNA (h): sc-62322

BACKGROUND

FIRE is a 689 amino acid protein that maps to human gene EMR4. FIRE is also known as EGF-like module-containing mucin-like hormone receptor-like 4 and is a member of the the G protein-coupled receptor 2 family, LN-TM7 subfamily. The epidermal growth factor-transmembrane seven (EGF-TM7) family are proteins that express EGF-like domains at their extracellular N-terminus coupled to a classical seven transmembrane (TM7) cassette. FIRE is believed to mediate the cellular interaction between myeloid cells and B-cells. FIRE is a membrane bound, multi-pass protein that is proteolytically cleaved into two subunits, an extracellular α subunit and a seven-transmembrane subunit. FIRE contains one GPS (G protein-coupled receptor proteolytic cleavage site) domain and two EGF (epidermal growth factor)-like domains, the second of which mediates the interaction with the putative ligand.

REFERENCES

1. Stacey, M., et al. 2002. EMR4, a novel epidermal growth factor (EGF)-TM7 molecule up-regulated in activated mouse macrophages, binds to a putative cellular ligand on B lymphoma cell line A20. J. Biol. Chem. 277: 29283-29293.
2. Rautava, J., et al. 2003. Different mechanisms of syndecan-1 activation through a fibroblast-growth-factor-inducible response element (FIRE) in mucosal and cutaneous wounds. J. Dent. Res. 82: 382-387.
3. Hamann, J., et al. 2003. Inactivation of the EGF-TM7 receptor EMR4 after the Pan-Homo divergence. Eur. J. Immunol. 33: 1365-1371.
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. Kwakkenbos, M.J., et al. 2004. The EGF-TM7 family: a postgenomic view. Immunogenetics 55: 655-666.
6. Hamann, J. 2004. The EGF-TM7 family of the rat. Immunogenetics 56: 679-681.

CHROMOSOMAL LOCATION

Genetic locus: EMR4P (human) mapping to 19p13.2.

PRODUCT

FIRE 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 FIRE shRNA Plasmid (h): sc-62322-SH and FIRE shRNA (h) Lentiviral Particles: sc-62322-V as alternate gene silencing products.

For independent verification of FIRE (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-62322A, sc-62322B and sc-62322C.

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

FIRE siRNA (h) is recommended for the inhibition of FIRE 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 FIRE gene expression knockdown using RT-PCR Primer: FIRE (h)-PR: sc-62322-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.