SANTA CRUZ BIOTECHNOLOGY, INC.

IL-1F5 siRNA (m): sc-72167

BACKGROUND

IL-1 (Interleukin-1) is a cytokine responsible for initiating a variety of activities through the activation of transcription factors, NFκB and AP-1, thereby promoting host response to injury or infection. The IL-1 superfamily is comprised of several ligands and receptors. IL-1F5, also known as IL-1δ, IL-1 like protein 1 (IL-1L1), IL-1HY1, IL-1ra (receptor antagonist) homolog 1 or IL-1 related protein 3 (IL-1rp3), is a secreted ligand belonging to this superfamily. IL-1F5 is expressed in monocytes and macrophages and is activated by endotoxins. It shares 47% sequence identity with IL-1ra and similarly lacks the loop between the fourth and fifth β-strands. IL-1F5 acts as an antagonist, inhibiting the IL-1F9 activation of NFκB. Similar to other family members, IL-1F5 can be regulated by bacterial lipopolysaccharide (LPS).

REFERENCES

1. Mulero, J.J., et al. 1999. IL1HY1: A novel interleukin-1 receptor antagonist gene. Biochem. Biophys. Res. Commun. 263: 702-706.
2. Smith, D.E., et al. 2000. Four new members expand the interleukin-1 superfamily. J. Biol. Chem. 275: 1169-1175.
3. Kumar, S., et al. 2000. Identification and initial characterization of four novel members of the interleukin-1 family. J. Biol. Chem. 275: 10308-10314.
4. Busfield, S.J., et al. 2000. Identification and gene organization of three novel members of the IL-1 family on human chromosome 2. Genomics 66: 213-216.
5. Debets, R., et al. 2001. Two novel IL-1 family members, IL-1 antagonist and agonist of NFκB activation through the orphan IL-1 receptor-related protein 2. J. Immunol. 167: 1440-1446.
6. Dunn, E.F., et al. 2003. High-resolution structure of murine interleukin 1 homologue IL-1F5 reveals unique loop conformations for receptor binding specificity. Biochemistry 42: 10938-10944.
7. Dinarello, C.A. 2004. The IL-1 family and inflammatory diseases. Clin. Exp. Rheumatol. 20: S1-S13.
8. Towne, J.E., et al. 2004. Interleukin (IL)-1F6, IL-1 to activate the pathway leading to NFκB and MAPKs. J. Biol. Chem. 279: 13677-13688.

CHROMOSOMAL LOCATION

Genetic locus: Il1f5 (mouse) mapping to 2 A3.

PRODUCT

IL-1F5 siRNA (m) 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 IL-1F5 shRNA Plasmid (m): sc-72167-SH and IL-1F5 shRNA (m) Lentiviral Particles: sc-72167-V as alternate gene silencing products.

For independent verification of IL-1F5 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72167A, sc-72167B and sc-72167C.

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

IL-1F5 siRNA (m) is recommended for the inhibition of IL-1F5 expression in mouse 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.

GENE EXPRESSION MONITORING

IL-1F5 (D-11): sc-398515 is recommended as a control antibody for monitoring of IL-1F5 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 reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IL-1F5 gene expression knockdown using RT-PCR Primer: IL-1F5 (m)-PR: sc-72167-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.

PROTOCOLS

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