SANTA CRUZ BIOTECHNOLOGY, INC.

IL-1RAcP siRNA (h): sc-60831

BACKGROUND

Interleukin-1 (IL-1) is a key pro-inflammatory cytokine that has diverse actions in the brain as a regulator of host defense responses and a mediator of inflammation. Two major agonists, IL-1α and IL-1β, bind to a single known functional type-1 IL-1 receptor (IL-1RI), which associates with the accessory protein (IL-1RAcP), resulting in signal transduction. IL-1F6, IL-1F8, and IL-1F9 signal through IL-1RAcP to activate NFκB. The membrane bound form of IL-1RAcP (mIL-1RAcP) facilitates signal transduction. Two alternatively spliced isoforms, soluble IL-1RAcP (sIL-1RAcP) and sIL-1RAcP-β, which lack transmembrane and intracellular domains, can inhibit IL-1 signaling. Although both mIL-1RAcP and sIL-1RAcP mRNAs are widely expressed in human tissue, their relative proportions differ significantly in a tissue-specific manner.

REFERENCES

1. Greenfeder, S.A., et al. 1995. Molecular cloning and characterization of a second subunit of the interleukin 1 receptor complex. J. Biol. Chem. 270: 13757-13765.
2. Jensen, L.E., et al. 2003. Expression of alternatively spliced interleukin-1 receptor accessory protein mRNAs is differentially regulated during inflammation and apoptosis. Cell. Signal. 15: 793-802.
3. Smeets, R.L., et al. 2003. Effectiveness of the soluble form of the interleukin-1 receptor accessory protein as an inhibitor of interleukin-1 in collagen-induced arthritis. Arthritis Rheum. 48: 2949-2958.
4. Jensen, L.E., et al. 2004. The 3' untranslated region of the membrane-bound IL-1R accessory protein mRNA confers tissue-specific destabilization. J. Immunol. 173: 6248-6258.
5. Towne, J.E., et al. 2004. Interleukin (IL)-1F6, IL-1F8, and IL-1F9 signal through IL-1Rrp2 and IL-1RAcP to activate the pathway leading to NFκB and MAPKs. J. Biol. Chem. 279: 13677-13688.
6. Smeets, R.L., et al. 2005. Soluble interleukin-1 receptor accessory protein ameliorates collagen-induced arthritis by a different mode of action from that of interleukin-1 receptor antagonist. Arthritis Rheum. 52: 2202-2211.
7. Andre, R., et al. 2005. Regulation of expression of the novel IL-1 receptor family members in the mouse brain. J. Neurochem. 95: 324-330.

CHROMOSOMAL LOCATION

Genetic locus: IL1RAP (human) mapping to 3q28.

PRODUCT

IL-1RAcP 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 IL-1RAcP shRNA Plasmid (h): sc-60831-SH and IL-1RAcP shRNA (h) Lentiviral Particles: sc-60831-V as alternate gene silencing products.

For independent verification of IL-1RAcP (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-60831A, sc-60831B and sc-60831C.

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-1RAcP siRNA (h) is recommended for the inhibition of IL-1RAcP 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.

GENE EXPRESSION MONITORING

IL-1RAcP (D-5): sc-376872 is recommended as a control antibody for monitoring of IL-1RAcP 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-1RAcP gene expression knockdown using RT-PCR Primer: IL-1RAcP (h)-PR: sc-60831-PR (20 µl, 576 bp). 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.