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SANTA CRUZ BIOTECHNOLOGY, INC.

IRAK-2 siRNA (m): sc-146281

BACKGROUND

The interleukin-1 receptor-associated kinases (IRAKs) are important downstream signaling components of toll-like receptors (TLRs). Four mammalian IRAKs have been found, namely IRAK-1, IRAK-2, IRAK-4 and IRAK-M, all of which share sequence homology to the *Drosophila melanogaster* protein kinase Pelle, and all contain a death domain (DD). The DD is used for protein-protein interactions with the DDs of other molecules. IRAK2 uses its DD to mediate its interaction with MyD88. The IRAKs have putative kinase domains, although IRAK-1 has dispensable kinase activity because interleukin-1-induced NFκB activation could still be driven by a kinase-inactive mutant. Due to the absence of certain key residues within their putative kinase domains, both IRAK-2 and IRAK-M are catalytically inactive.

REFERENCES

1. Sims, J.E., et al. 1989. Cloning of the interleukin-1 receptor from human T cells. Proc. Natl. Acad. Sci. USA 86: 8946-8950.
2. McMahan, C.J., et al. 1991. A novel IL-1 receptor, cloned from B cells by mammalian expression, is expressed in many cell types. EMBO J. 10: 2821-2832.
3. Dower, S.K., et al. 1992. The interleukin-1 system: receptors, ligands and signals. In Kishimoto, T., et al, eds. Interleukins: Molecular Biology and Immunology. Basel, Switzerland: S. Karger, 33.
4. Arend, W.P., et al. 1994. Binding of IL-1α, IL-1β and IL-1 receptor antagonist by soluble IL-1 receptors and levels of soluble IL-1 receptors in synovial fluids. J. Immunol. 153: 4766-4774.
5. Giri, J.G., et al. 1994. Elevated levels of shed type II IL-1 receptor in sepsis. Potential role for type II receptor in regulation of IL-1 responses. J. Immunol. 153: 5802-5809.

CHROMOSOMAL LOCATION

Genetic locus: Irak2 (mouse) mapping to 6 E3.

PRODUCT

IRAK-2 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 IRAK-2 shRNA Plasmid (m): sc-146281-SH and IRAK-2 shRNA (m) Lentiviral Particles: sc-146281-V as alternate gene silencing products.

For independent verification of IRAK-2 (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-146281A, sc-146281B and sc-146281C.

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.

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

IRAK-2 siRNA (m) is recommended for the inhibition of IRAK-2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IRAK-2 gene expression knockdown using RT-PCR Primer: IRAK-2 (m)-PR: sc-146281-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.