SANTA CRUZ BIOTECHNOLOGY, INC.

MyD88 siRNA (h): sc-35986

BACKGROUND

Interleukin-1 (IL-1)-induced activation of the NFκB pathway is mediated through the IL-1 receptor and the subsequent phosphorylation of IL-1 receptor-associated kinase (IRAK). The myeloid differentiation protein MyD88 was originally characterized as a protein upregulated in myeloleukemic cells following IL-6-induced growth arrest and terminal differentiation. MyD88 is now known to function as an adaptor protein for the association of IRAK with the IL-1 receptor. MyD88 is functionally homologous to the adaptor protein tube in the Toll signaling pathway of *Drosophilia,* and both proteins are members of the Toll/IL-1R superfamily. MyD88 contains a characteristic N-terminal death domain that is essential for NFκB activation and an adjacent Toll/IL-1R homology domain (TIR domain). Collectively, these domains enable the protein-protein interactions of MyD88 with IRAK and the IL-1 receptor complex.

REFERENCES

1. Galindo, R.L., et al. 1995. Interaction of the pelle kinase with the membrane-associated protein tube is required for transduction of the dorsoventral signal in *Drosophilia* embryos. Development 121: 2209-2218.
2. Hardiman, G., et al. 1996. Molecular characterization and modular analysis of human MyD88. Oncogene 13: 2467-2475.

CHROMOSOMAL LOCATION

Genetic locus: MYD88 (human) mapping to 3p22.2.

PRODUCT

MyD88 siRNA (h) is a pool of 4 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 MyD88 shRNA Plasmid (h): sc-35986-SH and MyD88 shRNA (h) Lentiviral Particles: sc-35986-V as alternate gene silencing products.

For independent verification of MyD88 (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-35986A, sc-35986B, sc-35986C and sc-35986D.

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

MyD88 siRNA (h) is recommended for the inhibition of MyD88 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

MyD88 (E-11): sc-74532 is recommended as a control antibody for monitoring of MyD88 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MyD88 gene expression knockdown using RT-PCR Primer: MyD88 (h)-PR: sc-35986-PR (20 µl, 512 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Lee, S.H., et al. 2009. The major outer membrane protein of a periodontopathogen induces IFN-β and IFN-stimulated genes in monocytes via lipid raft and TANK-binding kinase 1/IFN regulatory factor-3. J. Immunol. 182: 5823-5835.
2. Haileselassie, Y., et al. 2013. Lactobacilli regulate *Staphylococcus aureus* 161:2-induced pro-inflammatory T-cell responses *in vitro.* PLoS ONE 8: e77893.
3. Webster Marketon, J.I., et al. 2014. The respiratory syncytial virus (RSV) nonstructural proteins mediate RSV suppression of glucocorticoid receptor transactivation. Virology 449: 62-69.
4. Yin, Y.W., et al. 2015. TLR4-mediated inflammation promotes foam cell formation of vascular smooth muscle cell by upregulating ACAT1 expression. Cell Death Dis. 6: 1659.
5. Hu, Y., et al. 2016. Activation of MTOR in pulmonary epithelium promotes LPS-induced acute lung injury. Autophagy 12: 2286-2299.
6. Gilardini Montani, M.S., et al. 2018. EBV up-regulates PD-L1 on the surface of primary monocytes by increasing ROS and activating TLR signaling and STAT3. J. Leukoc. Biol. 104: 821-832.
7. Rathore, M., et al. 2019. Cancer cell-derived long pentraxin 3 (PTX3) promotes melanoma migration through a Toll-like receptor 4 (TLR4)/NFκB signaling pathway. Oncogene 38: 5873-5889.

RESEARCH USE

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