SANTA CRUZ BIOTECHNOLOGY, INC.

p47phox siRNA (m): sc-36157

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The Power to Question

BACKGROUND

The heredity chronic granulomatous disease (CGF) has been linked to mutations in p47phox and p67-phox. The cytosolic proteins p47phox and p67-phox, also designated neutrophil cytosol factor (NCF)1 and NCF2, respectively, are required for activation of the superoxide-producing NADPH oxidase in neutrophils and other phagocytic cells. During activation of the NADPH oxidase, p47phox and p67-phox migrate to the plasma membrane where they associate with cytochrome b558 and the small G protein Rac to form the functional enzyme complex. Both p47phox and p67-phox contain two Src homology 3 (SH3) domains. The C-terminal SH3 domain of p67-phox has been shown to interact with the proline-rich domain of p47phox, suggesting that p47phox may faciliate the transport of p67-phox to the membrane.

CHROMOSOMAL LOCATION

Genetic locus: Ncf1 (mouse) mapping to 5 G2.

PRODUCT

p47phox 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 p47phox shRNA Plasmid (m): sc-36157-SH and p47phox shRNA (m) Lentiviral Particles: sc-36157-V as alternate gene silencing products.

For independent verification of p47phox (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-36157A, sc-36157B and sc-36157C.

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

p47phox siRNA (m) is recommended for the inhibition of p47phox 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

p47phox (D-10): sc-17845 is recommended as a control antibody for monitoring of p47phox 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 p47phox gene expression knockdown using RT-PCR Primer: p47phox (m)-PR: sc-36157-PR (20 µl, 581 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

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2. Chao, H.H., et al. 2008. Uric acid stimulates endothelin-1 gene expression associated with NADPH oxidase in human aortic smooth muscle cells. Acta Pharmacol. Sin. 29: 1301-1312.
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4. Barbieri, S.S., et al. 2011. Tobacco smoke regulates the expression and activity of microsomal prostaglandin E synthase-1: role of prostacyclin and NADPH-oxidase. FASEB J. 25: 3731-3740.
5. Barakat, D.J., et al. 2012. Astroglial NFκB mediates oxidative stress by regulation of NADPH oxidase in a model of retinal ischemia reperfusion injury. J. Neurochem. 120: 586-897.
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7. Kim, W.K., et al. 2013. Monocyte chemoattractant protein-1 deficiency attenuates oxidative stress and protects against ovariectomy-induced chronic inflammation in mice. PLoS ONE 8: e72108.
8. Ke, K., et al. 2015. Cilostazol attenuates ovariectomy-induced bone loss by inhibiting osteoclastogenesis. PLoS ONE 10: e0124869.
9. Ke, K., et al. 2015. Heme Oxygenase 1 maintains bone mass via attenuating a redox imbalance in osteoclast. Mol. Cell. Endocrinol. 409: 11-20.
10. Qiao, H., et al. 2016. Sex-determining region Y-box 9 acts downstream of NADPH oxidase to influence the effect of leptin on PPARγ1 expression in hepatic stellate cells. Biochim. Biophys. Acta 1862: 2186-2196.
11. Kim, T.H., et al. 2019. Fas-associated factor 1 mediates NADPH oxidase-induced reactive oxygen species production and proinflammatory responses in macrophages against *Listeria* infection. PLoS Pathog. 15: e1008004.

RESEARCH USE

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