



NOXA1 siRNA (m): sc-150038

BACKGROUND

NOXA1 (NADPH oxidase activator 1), also known as p51NOX, NY-CO-31 or SDCCAG31, is a widely expressed 476 amino acid cytoplasmic protein belonging to the NCF2/NOXA1 family. NOXA1 functions as an activator of Mox1, a superoxide-producing NADPH oxidase, which is present in phagocytes, neuroepithelial bodies, vascular smooth muscle cells and endothelial cells. During activation of the Mox1, p47-phox and p67-phox migrate to the plasma membrane where they associate with cytochrome b558 to form an active enzyme complex. NOXA1 may be involved in the production of reactive oxygen species (ROS). ROS participates in a variety of biological processes including host defense, hormone biosynthesis, oxygen sensing and signal transduction. Expressed as three isoforms produced by alternative splicing events, it is suggested that NOXA1 may also activates gp91phox and Nox3.

REFERENCES

- Geiszt, M., et al. 2003. Proteins homologous to p47-phox and p67-phox support superoxide production by NAD(P)H oxidase 1 in colon epithelial cells. *J. Biol. Chem.* 278: 20006-20012.
- Takeya, R., et al. 2003. Novel human homologues of p47-phox and p67-phox participate in activation of superoxide-producing NADPH oxidases. *J. Biol. Chem.* 278: 25234-25246.
- Cheng, G. and Lambeth, J.D. 2004. NOXO1, regulation of lipid binding, localization, and activation of Nox1 by the Phox homology (PX) domain. *J. Biol. Chem.* 279: 4737-4742.
- Cheng, G., et al. 2004. Nox3 regulation by NOXO1, p47-phox, and p67-phox. *J. Biol. Chem.* 279: 34250-34255.

CHROMOSOMAL LOCATION

Genetic locus: Noxa1 (mouse) mapping to 2 A3.

PRODUCT

NOXA1 siRNA (m) is a pool of 2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NOXA1 shRNA Plasmid (m): sc-150038-SH and NOXA1 shRNA (m) Lentiviral Particles: sc-150038-V as alternate gene silencing products.

For independent verification of NOXA1 (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-150038A and sc-150038B.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

NOXA1 siRNA (m) is recommended for the inhibition of NOXA1 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 μ M in 66 μ l. 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

NOXA1 (H-6): sc-398873 is recommended as a control antibody for monitoring of NOXA1 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 NOXA1 gene expression knockdown using RT-PCR Primer: NOXA1 (m)-PR: sc-150038-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Chao, Y.M., et al. 2022. Disparate roles of oxidative stress in rostral ventrolateral medulla in age-dependent susceptibility to hypertension induced by systemic L-NAME treatment in rats. *Biomedicines* 10: 2232.

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.