

NOXA1 siRNA (h): sc-92533

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

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- 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.
- Kawahara, T., et al. 2004. Role of nicotinamide adenine dinucleotide phosphate oxidase 1 in oxidative burst response to Toll-like receptor 5 signaling in large intestinal epithelial cells. *J. Immunol.* 172: 3051-3058.
- Lassègue, B. and Griendling, K.K. 2006. Nox is playing with a full deck in vascular smooth muscle, a commentary on "NOXA1 is a central component of the smooth muscle NADPH oxidase in mice". *Free Radic. Biol. Med.* 41: 185-187.
- Ambasta, R.K., et al. 2006. NOXA1 is a central component of the smooth muscle NADPH oxidase in mice. *Free Radic. Biol. Med.* 41: 193-201.

CHROMOSOMAL LOCATION

Genetic locus: NOXA1 (human) mapping to 9q34.3.

PRODUCT

NOXA1 siRNA (h) is a target-specific 19-25 nt siRNA 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 (h): sc-92533-SH and NOXA1 shRNA (h) Lentiviral Particles: sc-92533-V as alternate gene silencing products.

RESEARCH USE

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

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 (h) is recommended for the inhibition of NOXA1 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 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 (h)-PR: sc-92533-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.