SANTA CRUZ BIOTECHNOLOGY, INC.

Nox5 siRNA (bovine): sc-270601

BACKGROUND

The superoxide-generating NADPH oxidase includes a membrane-bound flavocytochrome containing two subunits (gp91 phox and p22 phox) and the cytosolic proteins p47 phox and p67 phox. During activation of the NADPH oxidase, p47 phox and p67 phox migrate to the plasma membrane, where they associate with the flavocytochrome cytochrome b558 to form the active enzyme complex. The p22 and gp91 phox subunits also function as surface O_2 sensors that initiate cellular signaling in response to hypoxic conditions. NADPH oxidase 5 (Nox5) is a homolog of the gp91 phox subunit of the phagocyte NADPH oxidase. Nox5 is expressed in lymphoid organs and testis and is distinguished from the other NADPH oxidases by its unique N-terminus, which contains three canonical EF-hands, Ca^{2+}-binding domains. Upon heterologous expression, Nox5 generates superoxide in response to intracellular Ca^{2+} elevations.

REFERENCES

1. Ushio-Fukai, M., et al. 1996. p22 phox is a critical component of the superoxide-generating NADH/NADPH oxidase system and regulates angiotensin II-induced hypertrophy in vascular smooth muscle cells. J. Biol. Chem. 271: 23317-23321.
2. Nisimoto, Y., et al. 1999. The p67 phox activation domain regulates electron flow from NADPH to flavin in flavocytochrome b558. J. Biol. Chem. 274: 22999-23005.
3. Archer, S.L., et al. 1999. O_2 sensing is preserved in mice lacking the gp91 phox subunit of NADPH oxidase. Proc. Natl. Acad. Sci. USA 96: 7944-7949.
4. Geiszt, M., et al. 2000. Identification of renox, an NAD(P)H oxidase in kidney. Proc. Natl. Acad. Sci. USA 97: 8010-8014.

CHROMOSOMAL LOCATION

Genetic locus: NOX5 (bovine) mapping to 10.

PRODUCT

Nox5 siRNA (bovine) 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 Nox5 shRNA Plasmid (bovine): sc-270601-SH and Nox5 shRNA (bovine) Lentiviral Particles: sc-270601-V as alternate gene silencing products.

For independent verification of Nox5 (bovine) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270601A, sc-270601B and sc-270601C.

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

Nox5 siRNA (bovine) is recommended for the inhibition of Nox5 expression in bovine 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 gene expression knockdown using RT-PCR Primer: Nox5 (bovine)-PR: sc-270601-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.