SANTA CRUZ BIOTECHNOLOGY, INC.

tNOX siRNA (h): sc-91254

BACKGROUND

tNOX (tumor-associated hydroquinone oxidase), also known as ENOX2 (ecto-NOX disulfide-thiol exchanger 2), COVA1 or APK1, is a 610 amino acid protein that localizes to the cell membrane, as well as to the extracellular space, and contains one RRM domain. Expressed on cell borders and in the sera of breast, lung, prostate, kidney and ovarian cancers, tNOX is involved in cell growth and is thought to act as a terminal oxidase that uses copper as a cofactor to catalyze the transfer of electrons from cytosolic NAD(P)H via hydroquinones to acceptors at the cell surface. tNOX is subject to post-translational glycosylation and is functionally inhibited by the antitumor sulfonylurea LY181984, the vabilloid capsaicin and retinoids. Multiple isoforms of tNOX exist due to alternative splicing events.

REFERENCES

1. Yantiri, F. and Morre, D.J. 2001. Isolation and characterization of a tumor-associated NADH oxidase (tNOX) from the HeLa cell surface. Arch. Biochem. Biophys. 391: 149-159.
2. Kelker, M., et al. 2001. Cancer isoform of a tumor-associated cell surface NADH oxidase (tNOX) has properties of a prion. Biochemistry 40: 7351-7354.
3. Chueh, P.J., et al. 2002. Molecular cloning and characterization of a tumor-associated, growth-related, and time-keeping hydroquinone (NADH) oxidase (tNOX) of the HeLa cell surface. Biochemistry 41: 3732-3741.
4. Chueh, P.J., et al. 2002. A site-directed mutagenesis analysis of tNOX functional domains. Biochim. Biophys. Acta 1594: 74-83.
5. Cho, N., et al. 2002. Monoclonal antibody to a cancer-specific and drug-responsive hydroquinone (NADH) oxidase from the sera of cancer patients. Cancer Immunol. Immunother. 51: 121-129.
6. Chueh, P.J., et al. 2004. tNOX is both necessary and sufficient as a cellular target for the anticancer actions of capsaicin and the green tea catechin (-)-epigallocatechin-3-gallate. Biofactors. 20: 235-249.

CHROMOSOMAL LOCATION

Genetic locus: ENOX2 (human) mapping to Xq26.1.

PRODUCT

tNOX siRNA (h) 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 tNOX shRNA Plasmid (h): sc-91254-SH and tNOX shRNA (h) Lentiviral Particles: sc-91254-V as alternate gene silencing products.

For independent verification of tNOX (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-91254A, sc-91254B and sc-91254C.

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

tNOX siRNA (h) is recommended for the inhibition of tNOX 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor tNOX gene expression knockdown using RT-PCR Primer: tNOX (h)-PR: sc-91254-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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