SANTA CRUZ BIOTECHNOLOGY, INC.

EPX siRNA (h): sc-60014

BACKGROUND

Eosinophil peroxidase (EPX) is an antimycobacterial protein that localizes to cytoplasmic granules of eosinophils and recruits bromide to generate a halogenating oxidant. EPX-dependent generation of hypobromous acid causes damage to tissue during inflammatory conditions that include asthma, allergies, cancer, and parasitic/helminthic infections. Human EPX gene product can form a tetramer of two light chains and two heavy chains. EPX is a major enzyme present in eosinophils and upon degranulation, becomes released into the airways of asthmatics. As a result of its cationic nature and its ability to catalyze the formation of highly toxic oxidants, EPX can induce lung injury in a JNK-dependent manner. Other peroxidase family members include myeloperoxidase (MPO), lactoperoxidase (LPO), and thyroid peroxidase (TPO).

REFERENCES

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4. Lincoln, J.A., et al. 1999. Enzymatically inactive eosinophil peroxidase inhibits proinflammatory cytokine transcription and secretion by macrophages. Cell. Immunol. 196: 23-33.
5. Sakamaki, K., et al. 2000. The eosinophil peroxidase gene forms a cluster with the genes for myeloperoxidase and lactoperoxidase on human chromosome 17. Cytogenet. Cell Genet. 88: 246-248.
6. Henderson, J.P., et al. 2001. Bromination of deoxycytidine by eosinophil peroxidase: a mechanism for mutagenesis by oxidative damage of nucleotide precursors. Proc. Natl. Acad. Sci. USA 98: 1631-1636.
7. Shen, Z., et al. 2001. Eosinophil peroxidase catalyzes bromination of free nucleosides and double-stranded DNA. Biochemistry 40: 2041-2051.
8. van Dalen, C.J., et al. 2001. Substrates and products of eosinophil peroxidase. Biochem. J. 358: 233-239.
9. McElhinney, B., et al. 2003. Eosinophil peroxidase catalyzes JNK-mediated membrane blebbing in a Rho kinase-dependent manner. J. Leukoc. Biol. 74: 897-907.

CHROMOSOMAL LOCATION

Genetic locus: EPX (human) mapping to 17q22.

PROTOCOLS

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

PRODUCT

EPX 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 EPX shRNA Plasmid (h): sc-60014-SH and EPX shRNA (h) Lentiviral Particles: sc-60014-V as alternate gene silencing products.

For independent verification of EPX (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-60014A, sc-60014B and sc-60014C.

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

EPX siRNA (h) is recommended for the inhibition of EPX 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 EPX gene expression knockdown using RT-PCR Primer: EPX (h)-PR: sc-60014-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.