

PBXIP1 siRNA (m): sc-152044

BACKGROUND

PBXIP1 (pre-B-cell leukemia homeobox interacting protein 1), also known as HPIIP (hematopoietic PBX-interacting protein), is a 731 amino acid protein that localizes to both cytoplasm and nucleus. Expressed in early hematopoietic precursors, PBXIP1 shuttles between the cytosol and nucleus and is associated with microtubules. PBXIP1 contains a nuclear export signal in its C-terminal domain and a leucine rich-domain, which associates with the cytoskeleton, in its N-terminal domain. PBXIP1 regulates transcription factors in pre-B-cell leukemia and inhibits the binding of Pbx 1-Hox complex to DNA, thereby blocking transcriptional activity of E2A-Pbx-1. Enhancement of ER α phosphorylation and activation of both ERK and Akt by PBXIP1 increases ER α target gene expression. PBXIP1 exists as 3 alternatively spliced isoforms and is encoded by a gene located on human chromosome 1q21.3, which consists of 260 million bases pairs, contains approximately 3,000 genes and makes up about 8% of the human genome.

REFERENCES

1. Abramovich, C., Shen, W.F., Pineault, N., Imren, S., Montpetit, B., Largman, C. and Humphries, R.K. 2000. Functional cloning and characterization of a novel nonhomeodomain protein that inhibits the binding of PBX1-HOX complexes to DNA. *J. Biol. Chem.* 275: 26172-26177.
2. Mahajan, S.S., Little, M.M., Vazquez, R. and Wilson, A.C. 2002. Interaction of HCF-1 with a cellular nuclear export factor. *J. Biol. Chem.* 277: 44292-44299.
3. Abramovich, C., Chavez, E.A., Lansdorp, P.M. and Humphries, R.K. 2002. Functional characterization of multiple domains involved in the subcellular localization of the hematopoietic Pbx interacting protein (HPIIP). *Oncogene* 21: 6766-6771.
4. Ikeda, K. and Inoue, S. 2004. Estrogen receptors and their downstream targets in cancer. *Arch. Histol. Cytol.* 67: 435-442.
5. Olsen, J.V., Blagoev, B., Gnäd, F., Macek, B., Kumar, C., Mortensen, P. and Mann, M. 2006. Global, *in vivo*, and site-specific phosphorylation dynamics in signaling networks. *Cell* 127: 635-648.
6. Manavathi, B., Acconcia, F., Rayala, S.K. and Kumar, R. 2006. An inherent role of microtubule network in the action of nuclear receptor. *Proc. Natl. Acad. Sci. USA* 103: 15981-15986.
7. Wang, X., Yang, Z., Zhang, H., Ding, L., Li, X., Zhu, C., Zheng, Y. and Ye, Q. 2008. The estrogen receptor-interacting protein HPIIP increases estrogen-responsive gene expression through activation of MAPK and AKT. *Biochim. Biophys. Acta* 1783: 1220-1228.

CHROMOSOMAL LOCATION

Genetic locus: Pbxip1 (mouse) mapping to 3 F1.

PROTOCOLS

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

PRODUCT

PBXIP1 siRNA (m) 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 PBXIP1 shRNA Plasmid (m): sc-152044-SH and PBXIP1 shRNA (m) Lentiviral Particles: sc-152044-V as alternate gene silencing 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 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

PBXIP1 siRNA (m) is recommended for the inhibition of PBXIP1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PBXIP1 gene expression knockdown using RT-PCR Primer: PBXIP1 (m)-PR: sc-152044-PR (20 μ l). 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.