SANTA CRUZ BIOTECHNOLOGY, INC.

PTPRCAP siRNA (h): sc-96314

BACKGROUND

Protein tyrosine phosphorylation influences cell responses including growth, proliferation, differentiation, migration, metabolism and survival. Tyrosine phosphorylation is a reversible process in balance with the activities of protein tyrosine kinases and protein tyrosine phosphatases (PTP). The PTP superfamily includes transmembrane receptor-like PTPs, cytosolic phosphotyrosine specific PTPs, Dual Specificity PTPs (DSP), and Multiple Specificity PTP (MSPs). PTPRCAP (protein tyrosine phosphatase, receptor type, C-associated protein), also designated LPAP or CD45-AP, is 206 amino acid single-pass membrane protein that specifically associated with CD45, a key regulator of T- and B-lymphocyte activation. PTPRCAP stabilizes the association of CD45 with sub in activating the oncogenic Src family kinases.

REFERENCES

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2. Bruyns, E., et al. 1995. Identification of the sites of interaction between lymphocyte phosphatase-associated phosphoprotein (LPAP) and CD45. J. Biol. Chem. 270: 31372-31376.
3. Fortin, M., et al. 2002. Apoptosis mediated through CD45 is independent of its phosphatase activity and association with leukocyte phosphatase-associated phosphoprotein. J. Immunol. 168: 6084-6089.
4. Nicholas, R.S., et al. 2003. The role of the PTPRC (CD45) mutation in the development of multiple sclerosis in the North West region of the United Kingdom. J. Neurol. Neurosurg. Psychiatry 74: 944-945.
5. Takeda, A., et al. 2004. CD45-associated protein inhibits CD45 dimerization and upregulates its protein tyrosine phosphatase activity. Blood 103: 3440-3447.
6. Cocco, E., et al. 2004. PTPRC (CD45) C77G mutation does not contribute to multiple sclerosis susceptibility in Sardinian patients. J. Neurol. 251: 1085-1088.
7. Maljaei, S.H., et al. 2005. Usefulness of CD45 density in the diagnosis of B cell chronic lymphoproliferative disorders. Indian J. Med. Sci. 59: 187-194.
8. Leitenberg, D., et al. 2007. CD45-associated protein promotes the response of primary CD4 T cells to low-potency T cell receptor (TCR) stimulation and facilitates CD45 association with CD3/TCR and Lck. Immunology 121: 545-554.

CHROMOSOMAL LOCATION

Genetic locus: PTPRCAP (human) mapping to 11q13.2.

PRODUCT

PTPRCAP 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PTPRCAP shRNA Plasmid (h): sc-96314-SH and PTPRCAP shRNA (h) Lentiviral Particles: sc-96314-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 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

PTPRCAP siRNA (h) is recommended for the inhibition of PTPRCAP 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 PTPRCAP gene expression knockdown using RT-PCR Primer: PTPRCAP (h)-PR: sc-96314-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.

PROTOCOLS

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