SANTA CRUZ BIOTECHNOLOGY, INC.

Pre-TCRα siRNA (h): sc-44040

BACKGROUND

Maturation of cytotoxic T lymphocytes is mediated in part by a structure on the T cell surface known as the T cell antigen receptor (TCR) complex. The pre-TCR complex consists of pre-TCR alpha, pre-TCR β and CD3, which together help coordinate early thymocyte development. Pre-TCR α chain is a type I transmembrane glycoprotein with an extracellular region similar to the constant domain of the immunoglobulin supergene family. Notch3 transgenic mice lacking pre-TCR α inhibits tumor development. In humans, acute lymphoblastic leukemias (ALL) in remission have lower transcript levels of Notch3, HES-1 and pre-TCR alpha transcripts α and β relative to proliferating ALLs. The human pre-TCR α gene is expressed in immature T cells and maps to chromosome 6p21.3.

REFERENCES

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2. von Boehmer, H., et al. 1997. Structure and function of the pre-T cell receptor. Annu. Rev. Immunol. 15: 433-452.
3. Kosugi, A., et al. 1997. Subunit composition of the pre-T cell receptor complex analysed by monoclonal antibody against the pre-T cell receptor α chain. Immunology 91: 618-622.
4. Saint-Ruf, C., et al. 1998. Genomic structure of the human pre-T cell receptor α chain and expression of two mRNA isoforms. Eur. J. Immunol. 28: 3824-3831.
5. Bellavia, D., et al. 2002. Combined expression of pTα and Notch 3 in T cell leukemia identifies the requirement of preTCR for leukemogenesis. Proc. Natl. Acad. Sci. USA 99: 3788-3793.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606817. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. LocusLink Report (LocusID: 171558). http://www.ncbi.nlm.nih.gov/LocusLink

CHROMOSOMAL LOCATION

Genetic locus: PTCRA (human) mapping to 6p21.1.

PRODUCT

Pre-TCRα 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 Pre-TCRα shRNA Plasmid (h): sc-44040-SH and Pre-TCRα shRNA (h) Lentiviral Particles: sc-44040-V as alternate gene silencing products.

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

Pre-TCRα siRNA (h) is recommended for the inhibition of Pre-TCRα 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 Pre-TCRα gene expression knockdown using RT-PCR Primer: Pre-TCRα (h)-PR: sc-44040-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.