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- Trockeneiszuschlag
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- Expressversand

### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

# Pre-TCR $\alpha$ siRNA (m): sc-152454

## 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  $\beta$  and CD3, which together help coordinate early thymocyte development. Pre-TCR  $\alpha$  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  $\alpha$  inhibits tumor development. In humans, acute lymphoblastic leukemias (ALL) in remission have lower transcript levels of Notch3, HES-1 and pre-TCR  $\alpha$  transcripts  $\alpha$  and  $\beta$  relative to proliferating ALLs. The human pre-TCR  $\alpha$  gene is expressed in immature T cells and maps to chromosome 6p21.3.

## REFERENCES

1. Del Porto, P., et al. 1995. Cloning and comparative analysis of the human pre-T cell receptor  $\alpha$  chain gene. *Proc. Natl. Acad. Sci. USA* 92: 12105-12109.
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  $\alpha$  chain. *Immunol.* 91: 618-622.
4. Saint-Ruf, C., et al. 1998. Genomic structure of the human pre-T cell receptor  $\alpha$  chain and expression of two mRNA isoforms. *Eur. J. Immunol.* 28: 3824-3831.
5. Bellavia, D., et al. 2002. Combined expression of pT $\alpha$  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 (mouse) mapping to 17 C.

## PRODUCT

Pre-TCR $\alpha$  siRNA (m) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Pre-TCR $\alpha$  shRNA Plasmid (m): sc-152454-SH and Pre-TCR $\alpha$  shRNA (m) Lentiviral Particles: sc-152454-V as alternate gene silencing products.

For independent verification of Pre-TCR $\alpha$  (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-152454A, sc-152454B and sc-152454C.

## RESEARCH USE

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

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Pre-TCR $\alpha$  siRNA (m) is recommended for the inhibition of Pre-TCR $\alpha$  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  $\mu$ M in 66  $\mu$ 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 Pre-TCR $\alpha$  gene expression knockdown using RT-PCR Primer: Pre-TCR $\alpha$  (m)-PR: sc-152454-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.