



Universiteit
Leiden

The Netherlands

Validating the genetic alterations in cutaneous T-cell lymphoma: unraveling the role of SOCS1 and HNRNPK through genetically engineered mouse models

Luo, Y.

Citation

Luo, Y. (2024, November 12). *Validating the genetic alterations in cutaneous T-cell lymphoma: unraveling the role of SOCS1 and HNRNPK through genetically engineered mouse models*. Retrieved from <https://hdl.handle.net/1887/4108742>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/4108742>

Note: To cite this publication please use the final published version (if applicable).

Validating the Genetic Alterations in Cutaneous T-cell Lymphoma:

**Unraveling the Role of SOCS1 and HNRNPK
through Genetically Engineered Mouse Models**



**Yixin Luo
2024**

The research described in this thesis was performed at the department of Dermatology, Leiden University Medical Center, the Netherlands.

ISBN: 978-90-7401-319-2

Uitgever: Tensen Scientific

Lay-out: Yixin Luo

Cover design: Yixin Luo

Thesis printing: PRINTSUPPORT4U

Copyright © 2024 by Yixin Luo. All rights reserved. Nothing from this thesis may be reproduced or transmitted in any form or by any means without written and explicit permission from the author.

Validating the Genetic Alterations in Cutaneous T-cell Lymphoma:

**Unraveling the Role of *SOCS1* and *HNRNPK* through
Genetically Engineered Mouse Models**

Proefschrift

ter verkrijging van
de graad van doctor aan de Universiteit Leiden,
op gezag van rector magnificus prof.dr.ir. H. Bijl,
volgens besluit van het college voor promoties
te verdedigen op dinsdag 12 november 2024
klokke 11:30 uur

door

Yixin Luo

geboren te Henan, China
in 1990

Promotors:

Prof. dr. M. H. Vermeer

Co-promotor:

Dr. C. P. Tensen

Dr. F. R. de Gruijl

Leden promotiecommissie:

Prof. dr. R. van Doorn

Prof. dr. T. van Hall

Prof. dr. M. W. Bekkenk (AMC)

Prof. dr. P. W. B. Derksen (UMC Utrecht)

Prof. dr. K. E. de Visser (NKI)

Contents

Chapter 1	General introduction	10
Chapter 2	<i>In vivo</i> modelling of Cutaneous T-cell lymphoma: The role of <i>SOCS1</i>	36
Chapter 3	<i>Socs1</i> -knockout in skin-resident CD4 T cells in a protracted contact-allergic reaction results in an autonomous skin inflammation with features of early-stage mycosis fungoides	62
Chapter 4	A novel knockout mouse model to assess the impact of one-copy loss of <i>Hnrnpk</i> in CD4+ T cells in chronically inflamed skin as a prelude to CTCL	84
Chapter 5	Role of <i>HNRNPK</i> Deletion in Initiating Cutaneous T-Cell Lymphoma Pathogenesis: An Inducible Knockout Mouse Model	106
Chapter 6	General discussion and future perspective	140
Appendix	Nederlandse Samenvatting List of publications Curriculum vitae Portfolio Acknowledgement	154

