

Cover Page



Universiteit Leiden

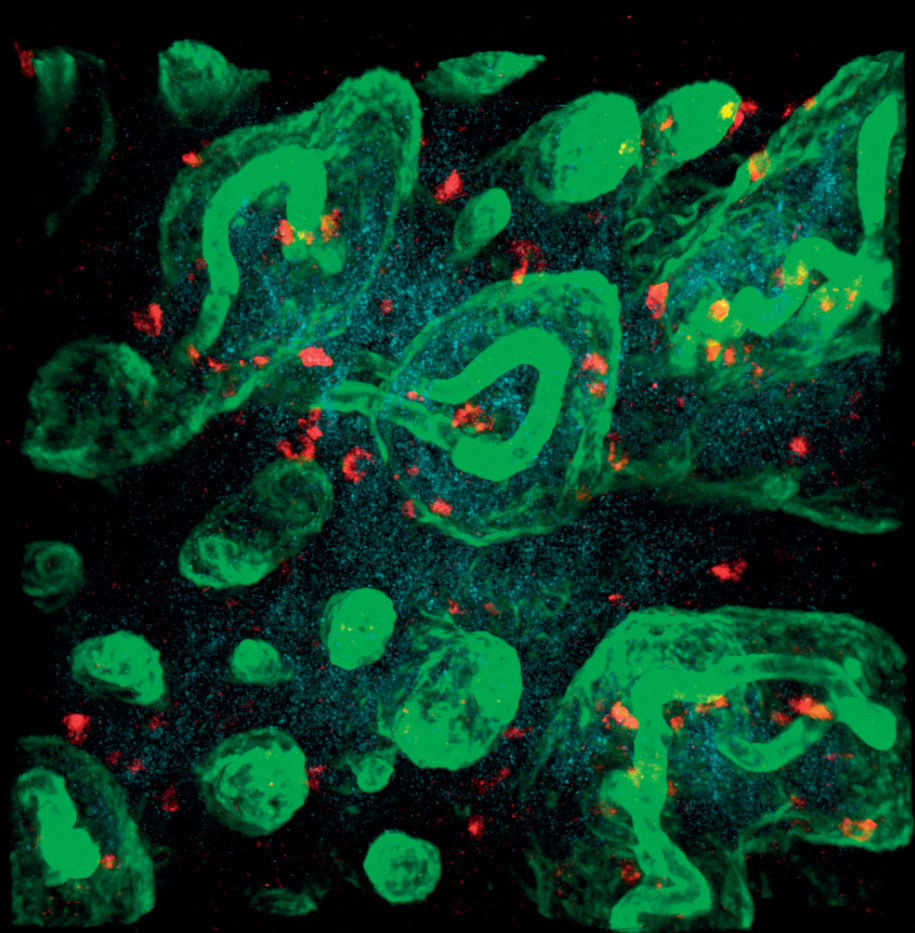


The handle <http://hdl.handle.net/1887/138854> holds various files of this Leiden University dissertation.

**Author:** Dijkgraaf, F.E.

**Title:** T cells in focus: Formation and function of tissue-resident memory

**Issue date:** 2021-01-12



About this thesis:

Throughout my PhD, I have focused on the biology of memory T cells that reside in the skin. The outside of this thesis represents the outside of the skin – the inside of the thesis represents the inside of the skin. The circle in the middle of the cover represents a biopsy and imaging window through which you can view what is happening below the skin surface. The images on the title pages take you through the various skin layers, and the different behaviors of skin-resident memory T cells.

Cover concept: Mirjam Hoekstra and Feline Dijkgraaf

Cover design: Tim Smit and Feline Dijkgraaf

Concept and design inside: Mirjam Hoekstra and Feline Dijkgraaf

Lay-out and printing: Optima Grafische Communicatie ([www.ogc.nl](http://www.ogc.nl))

ISBN: 978-94-6361-463-4

The research described in this thesis was performed at the division of Immunology and at the division of Molecular Oncology and Immunology, The Netherlands Cancer Institute - Antoni van Leeuwenhoek hospital (NKI-AVL).

The printing of this thesis was financially supported by the NKI-AVL.

Copyright © Feline Dijkgraaf, 2020. All rights reserved. No part of this thesis may be reproduced, stored in a retrieval system, or transmitted in any form or by any means without prior permission of the author and the publisher holding the copyright of the articles.

# T cells in focus: Formation and function of tissue-resident memory

PROEFSCHRIFT

ter verkrijging van de graad van Doctor aan de Universiteit Leiden,  
op gezag van Rector Magnificus prof.mr. C.J.J.M. Stolker,  
volgens besluit van het College voor Promoties  
te verdedigen op dinsdag 12 januari 2021  
klokke 13.45 uur

door

Feline Elise Dijkgraaf  
geboren te Naarden in 1988

Promotor	Prof. dr. T. N. M. Schumacher	
Co-promotor	Prof. dr. J. B. A. G. Haanen	
Leden promotiecommissie	Prof. dr. J. G. Keyser-Borst Prof. dr. K. E. de Visser Prof. dr. J. van Rheeën Prof. dr. R. A. W. van Lier	Universiteit Utrecht Universiteit van Amsterdam

# Table of contents

<b>Chapter 1</b>	Scope of the thesis	9
<b>Chapter 2</b>	Assessing T lymphocyte function and differentiation by genetically encoded reporter systems <i>Trends in Immunology</i> , 2015, Jul, 36(7):392-400	19
<b>Chapter 3</b>	A mouse model that is immunologically tolerant to reporter and modifier proteins <i>Communications Biology</i> , 2020, May 29;3(1):273	41
<b>Chapter 4</b>	Formation of tissue-resident CD8 <sup>+</sup> T cell memory <i>Cold Spring Harbor – Perspectives in Biology</i> , on invitation, manuscript under review	61
<b>Chapter 5</b>	Tissue-resident CD8 <sup>+</sup> memory T cell formation is clonally imprinted prior to tissue entry and fixed upon antigen re-encounter Published in revised format in: <i>Journal of Experimental Medicine</i> , 2020, Oct 5;217(10):e20191711	85
<b>Chapter 6</b>	Skin-resident memory CD8 <sup>+</sup> T cells trigger a state of tissue-wide pathogen alert <i>Science</i> , 2014, Oct, 3;346(6205):101-5	117
<b>Chapter 7</b>	Labeling and tracking of immune cells in <i>ex vivo</i> human skin <i>Nature Protocols</i> , on invitation, manuscript accepted	141
<b>Chapter 8</b>	Tissue patrol by resident memory CD8 <sup>+</sup> T cells in human skin <i>Nature Immunology</i> , 2019, Jun, 20(6):756-764	179
<b>Chapter 9</b>	General discussion	217
	English summary	231
	Nederlandse samenvatting	237
	PhD portfolio	241
	List of publications	245
	Curriculum vitae	247
	Dankwoord	249



*voor mama*