



Universiteit  
Leiden  
The Netherlands

## **The IL-17 and Th17 cell immune response in cervical cancer : angels or demons : it depends on the context**

Punt, B.S.

### **Citation**

Punt, B. S. (2015, September 8). *The IL-17 and Th17 cell immune response in cervical cancer : angels or demons : it depends on the context*. Retrieved from <https://hdl.handle.net/1887/35116>

Version: Corrected 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/1887/35116>

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

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/35116> holds various files of this Leiden University dissertation

**Author:** Punt, Simone

**Title:** The IL-17 and Th17 cell immune response in cervical cancer : angels or demons : it depends on the context

**Issue Date:** 2015-09-08



**The IL-17 and Th17 cell  
immune response in cervical cancer**

Simone Punt

Cover art: Diede Beckers  
Design: Simone Punt  
Print: Ipskamp Drukkers  
ISBN: 978-94-62596-88-7

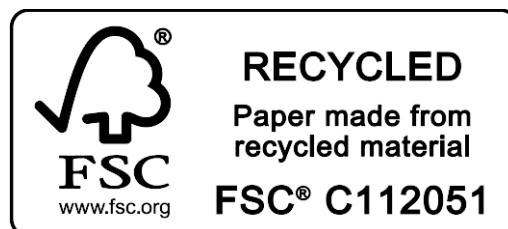
© Simone Punt, 2015

All rights reserved. No part of this thesis may be reproduced or transmitted, in any form or by any means, without permission of the author.

The studies described in this thesis were supported by grant UL2010-4801 from the Dutch Cancer Society and a SASC sequencing grant.

Financial support for the printing of this thesis was provided by:  
ChipSoft BV, Dako Netherlands BV, SouthernBiotech and BD Biosciences

This thesis was printed on recycled BalancePure<sup>®</sup> paper, with ink from renewable resources and alcohol free fountain solution.



# **The IL-17 and Th17 cell immune response in cervical cancer**

## **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 8 september 2015  
klokke 15.00 uur

door

**Birgitte Simone Punt**

geboren te Hoek van Holland  
in 1987

## **Promotores en promotiecommissie**

### **Promotor**

Prof. Dr. G.J. Fleuren

### **Copromotores**

Dr. A. Gorter

Dr. E.S. Jordanova

### **Leden promotiecommissie**

Prof. Dr. S. van der Burg

Prof. Dr. T.D. de Gruijl

Prof. Dr. P. Hwu

Dr. E. Lubberts

Prof. Dr. J. Morreau

Dr. V.L.J.L. Thijssen

Prof. Dr. J.B.M.Z. Trimbos

**With an open mind,  
in combination with the right amount of curiosity,  
dreams and the need to explore,  
you will find things beyond imagination.**

*Freddy van der Garde*





## Table of contents

<b>I</b>	General introduction	8
<b>II</b>	Role of IL-12p40 in cervical carcinoma <i>British Journal of Cancer, 2012, 107: 1956-62</i>	36
<b>III</b>	Angels and demons: Th17 cells represent a beneficial response, while neutrophil IL-17 is associated with poor prognosis in squamous cervical cancer <i>OncoImmunology, 2015, 4: e984539</i>	54
<b>IV</b>	FoxP3 <sup>+</sup> and IL-17 <sup>+</sup> cells are correlated with improved prognosis in cervical adenocarcinoma <i>Cancer Immunology, Immunotherapy, 2015, 64: 745-53</i>	80
<b>V</b>	Correlations between immune response and vascularization qRT-PCR gene expression clusters in squamous cervical cancer <i>Molecular Cancer, 2015, 14: 71</i>	98
<b>VI</b>	Whole-transcriptome analysis of flow-sorted cervical cancer samples reveals that B cell expressed TCL1A is correlated with improved survival <i>Oncotarget, 2015</i>	120
<b>VII</b>	The correlations between IL-17 versus Th17 cells and cancer patient survival: a systematic review <i>OncoImmunology, 2015, 4: e984547</i>	144
<b>VIII</b>	Conclusion and discussion	180
<b>IX</b>	Nederlandse samenvatting	194
	List of abbreviations	204
	List of publications	206
	Curriculum Vitae	208
	Acknowledgements	209