

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/42996> holds various files of this Leiden University dissertation.

**Author:** Gram., A.M.

**Title:** Mechanisms of immune evasion in Epstein-Barr virus infection

**Issue Date:** 2016-09-08

**Mechanisms of immune evasion  
in Epstein-Barr virus infection**

**Anna M. Gram**

About the cover: To understand the phenotype displayed by a cell, we need to take a look behind the scenes and realize that it is a net sum of ongoing processes.

Cover: Anna Gram

Layout: Anna Gram

Printing: GVO printers & designers B.V., [www.phd-thesis.nl](http://www.phd-thesis.nl)

ISBN: 978-94-6332-048-1

© Anna Gram, Leiden, The Netherlands. All rights reserved. No parts of this thesis may be reproduced, stored in an online retrieval system or transmitted in any form or by any means without permission of the author. The copyright of articles that have been published has been transferred to the respective journals.

Printing of this thesis was financially supported by Infection & Immunity Utrecht.

# **Mechanisms of immune evasion in Epstein-Barr virus infection**

**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

donderdag 8 september 2016 klokke 11.15 uur  
door

**Anna Magdalena Gram**

geboren te Basel, Zwitserland  
in 1987

**Promotoren:** Prof. dr. Rob C. Hoeben  
Prof. dr. Emmanuel J.H.J. Wiertz

**Co-promotor:** Dr. Maaïke E. Rensing

**Promotiecommissie:** Prof. dr. Tom H.M. Ottenhoff  
Dr. Mirjam H.M. Heemskerk  
Prof. dr. Frank J.M. van Kuppeveld, Universiteit Utrecht  
Prof. dr. Martine J. Smit, Vrije Universiteit Amsterdam

# Contents

## Chapter 1 **General Introduction**

Partly published in

*Curr Top Microbiol Immunol.* 2015; 391:355-81.

*Viruses.* 2012 Oct 23;4(10):2379-99.

*J Gen Virol.* 2012 Oct;93(Pt 10):2063-75.

## Chapter 2 **Silencing the shutoff protein of Epstein-Barr virus in productively infected B cells points to (innate) targets for immune evasion**

*J Gen Virol.* 2015 Apr;96(Pt 4):858-65

## Chapter 3 **The Epstein-Barr Virus glycoprotein gp150 forms an immune-evasive glycan shield at the surface of infected cells**

*PLoS Pathog.* 2016 Apr 14;12(4):e1005550

## Chapter 4 **EBV BILF1 evolved to downregulate cell surface display of a wide range of HLA class I molecules through their cytoplasmic tail**

*J Immunol.* 2013 Feb 15;190(4):1672-84.

## Chapter 5 **Human B cells fail to secrete interferons upon cytoplasmic DNA exposure**

*Manuscript in preparation*

## Chapter 6 **Summarizing Discussion**

## Addendum

Nederlandse samenvatting

Deutsche Zusammenfassung

List of publications

Curriculum Vitae

