

University of Groningen

Design and delivery strategies of alphavirus replicon-based cervical cancer vaccines

van de Wall, Marie Nicole

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2018

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

van de Wall, M-N. S. (2018). Design and delivery strategies of alphavirus replicon-based cervical cancer vaccines [Groningen]: Rijksuniversiteit Groningen

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Design and delivery strategies of alphavirus replicon-based cervical cancer vaccines

Stephanie van de Wall

The research described in this thesis was primarily performed at the Department of Medical Microbiology of the University Medical Center Groningen (UMCG) within the Groningen University Institute for Drug Exploration (GUIDE), research programme Microbes in Health and Disease (MHD).

The work in this thesis was supported by GUIDE, the Dutch Cancer Society, the National Cancer Control Program, the European Fund for Regional Development and the Jan Kornelis de Kock foundation (Groningen).

The printing of this thesis was financially supported by:



**rijksuniversiteit
groningen**



ISBN: 978-94-034-0489-9 (printed version)

ISBN: 978-94-034-0488-2 (electronic version)

Cover and layout design: Iliana Boshoven-Gkini | www.AgileColor.com

Printed by: Ridderprint | www.ridderprint.nl

Copyright © 2018 by Stephanie van de Wall. 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 permission of the author and when appropriate, the publisher holding the copyrights of the published articles.



rijksuniversiteit
 groningen

Design and delivery strategies of alphavirus replicon-based cervical cancer vaccines

Proefschrift

ter verkrijging van de graad van doctor aan de
 Rijksuniversiteit Groningen
 op gezag van de
 rector magnificus prof. dr. E. Sterken
 en volgens besluit van het College voor Promoties.

De openbare verdediging zal plaatsvinden op

woensdag 28 maart 2018 om 12.45 uur

door

Marie-Nicole Stephanie van de Wall

geboren op 7 maart 1987 te Voorburg

Promotores

Prof. dr. C.A.H.H. Daemen

Prof. dr. H.W. Nijman

Beoordelingscommissie

Prof. dr. A.G.J. van der Zee

Prof. dr. A.L.W. Huckriede

Prof. dr. T.D. de Gruij

Paranimfen

Georgia Koutsoumpli

José Alberto Aguilar Briseño

Table of Contents

Chapter 1	
General Introduction and outline	9
Chapter 2	
Development and preclinical evaluation of an alphavirus therapeutic cancer vaccine against cervical cancer	23
<i>Manuscript in preparation</i>	
Chapter 3	
Potent therapeutic efficacy of an alphavirus replicon DNA vaccine expressing human papilloma virus E6 and E7 antigens	41
<i>Submitted</i>	
Chapter 4	
HPV-Specific Immunotherapy: Key Role for Immunomodulators	61
<i>Anti-Cancer Agents Med Chem. 2014 Feb;14(2):265-79.</i>	
Chapter 5	
An immunotherapeutic design approach an alphavirus-based immunotherapeutic vaccine, PD-1 blockade and sunitinib	95
<i>Study in progress</i>	
Chapter 6	
Tattoo Delivery of a Semliki Forest Virus-Based Vaccine Encoding Human Papillomavirus E6 and E7	111
<i>Vaccines. 2015 Mar;3(2):221-38.</i>	

Chapter 7	
The prognostic benefit of CD27+ tumor-infiltrating lymphocytes in cervical cancer: implications for treatment regimen	131
<i>Manuscript in preparation</i>	
Chapter 8	
CD103+ tumor-infiltrating lymphocytes are tumor-reactive intraepithelial CD8+ T cells associated with prognostic benefit and therapy response in cervical cancer	153
<i>Oncoimmunology. 2017 Jul 24;6(9):e1338230.</i>	
Chapter 9	
Noninvasive monitoring of cancer therapy-induced activated T cells using [¹⁸ F] FB-IL-2 PET imaging	183
<i>Oncoimmunology. 2016 Nov 18;6(1):e1248014.</i>	
Chapter 10	
Summarizing Discussion and Future Perspectives	201
Addendum	
Nederlandse Samenvatting	219
Curriculum Vitae	225
Acknowledgments	227

