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Biodegradable implants for the biphasic pulsatile delivery of antigens

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Biodegradable implants for the biphasic pulsatile delivery of antigens

Toward single-injection vaccines

Max Beugeling

Paranymphs

Bahez Gareb

Wouter F. Tonnis

The majority of the research presented in this PhD thesis was performed at the department of Pharmaceutical Technology and Biopharmacy of the University of Groningen. The animal studies described in chapter 3 & 5 were performed at Janssen Pharmaceutica (Beerse, Belgium). The OVA-specific IgG1 antibody titers (chapter 3) and the RSV VNA titers (chapter 5) were determined at Janssen Pharmaceutica and Janssen Infectious Diseases and Vaccines (Leiden, The Netherlands), respectively. A part of the research was funded by Janssen Sciences Ireland UC (Dublin, Ireland). Financial support for printing this thesis was received from the University Library and the Graduate School of Science and Engineering.

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 groningen

Biodegradable implants for the biphasic pulsatile delivery of antigens

Toward single-injection vaccines

PhD thesis

to obtain the degree of PhD at the
University of Groningen
on the authority of the
Rector Magnificus Prof. C. Wijmenga
and in accordance with
the decision by the College of Deans.

This thesis will be defended in public on

Friday 16 October 2020 at 14.30 hours

by

Max Beugeling

born on 3 April 1991
in Groningen

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Table of contents

Chapter 1	General introduction & Outline of this thesis	7
Chapter 2	The mechanism behind the biphasic pulsatile drug release from physically mixed poly(DL-lactic(-co-glycolic acid)-based compacts	15
Chapter 3	Ovalbumin-containing core-shell implants suitable to obtain a delayed IgG1 antibody response in support of a biphasic pulsatile release profile in mice	35
Chapter 4	Respiratory syncytial virus subunit vaccines based on the viral envelope glycoproteins intended for pregnant women and the elderly	55
Chapter 5	Development of a stable respiratory syncytial virus pre-fusion protein powder suitable for a core-shell implant with a delayed release in mice: A proof of concept study	91
Chapter 6	Poly(DL-lactic-co-glycolic acid) micro-tubes as an injectable device for the biphasic pulsatile release of protein-based antigens	119
Chapter 7	General discussion & Directions for future research	131
Appendices	I Summary	147
	II Samenvatting	151
	III Biography & List of publications	154
	IV Dankwoord / Acknowledgements	157