

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/21710> holds various files of this Leiden University dissertation.

**Author:** Buurma, Aletta

**Title:** On the pathology of preeclampsia : genetic variants, complement dysregulation, and angiogenesis

**Issue Date:** 2013-09-11

**ON THE PATHOLOGY OF PREECLAMPSIA**

*genetic variants, complement dysregulation, and angiogenesis*

*Aan mijn ouders en grootouders  
die mij leerden om  
zorgvuldig te planten  
geduldig te zorgen  
dankbaar te oogsten  
en liefdevol te delen*

**ON THE PATHOLOGY OF  
PREECLAMPSIA**

*genetic variants, complement dysregulation,  
and angiogenesis*

**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 woensdag 11 september 2013  
klokke 16:15 uur

**DOOR**

Aletta Atje Jacoba Buurma  
Geboren te Lelystad  
in 1988

## PROMOTIECOMMISSIE

Promotor: Prof. dr. J.A. Bruijn  
Co-promotores: Dr. J.J. Baelde  
Dr. K.W.M. Bloemenkamp

Overige Leden: Prof. dr. F.H.J. Claas  
Prof. dr. C. van Kooten  
Prof. dr. C.J.M. de Groot (*VUMC, Amsterdam*)

ISBN 9789082101003

The studies described in this thesis were performed at the Department of Pathology of the Leiden University Medical Center, the Netherlands.

The publication of this thesis was financially supported by:  
The departments of Pathology and Obstetrics of the Leiden University Medical Center, Stichting HELLP-syndroom Nederland, NVLE fonds, Rabobank Medicidesk, Medical Dynamics, ABN Amro, PerkinElmer, BMA BV (Mosos)

Cover: Patience Anders  
Design: Jelmer Buurma (jelmer@jelmerbuurma.nl)

## TABLE OF CONTENTS

I	General introduction	6
II	Genetic variants in preeclampsia: a meta-analysis	36
III	Classical complement activation as a footprint for murine and human antiphospholipid antibody- induced fetal loss	74
IV	Preeclampsia is characterized by placental complement dysregulation	100
V	Placental complement activation is related to placental dysfunction in the setting of preeclampsia	126
VI	Preeclampsia and placental fragments in the maternal lung	144
VII	Summary and general discussion	160
	Nederlandse samenvatting	178
	Curriculum Vitae	184
	Bibliography	188
	Acknowledgements	190