

University of Groningen

Inflammatory matters

Becking, Karlijn

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):

Becking, K. (2018). Inflammatory matters: Exploring the underlying pathophysiology of unipolar and bipolar disorder [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.

Inflammatory Matters

**Exploring the underlying pathophysiology of
unipolar and bipolar disorder**

Karlijn Becking

Illustration cover Florian Becking
Layout TZ Media
Printed by Thesisprint.eu

The studies described in this thesis were performed at the Department of Psychiatry, University Medical Center Groningen, Groningen, the Netherlands; Department of Immunology, Erasmus MC, Rotterdam, the Netherlands, VU University Medical Center, Amsterdam, the Netherlands, and Leiden University Medical Center, Leiden, the Netherlands.

These studies were financed by the GeestKracht program from ZonMW until 2012 and by the European Commission EU-FP7-HEALTH-222963 'MOODINFLAME' and EU-FP7-PEOPLE-286334 'PSYCHAID'.

ISBN 978-94-034-0666-4 (printed version)
 978-94-034-0665-7 (digital version)

© 2018 K. Becking. All rights reserved. No part of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval system, without written permission from the author.



rijksuniversiteit
 groningen

Inflammatory Matters

Exploring the underlying pathophysiology of
 unipolar and bipolar disorder

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 6 juni 2018 om 16.15 uur

door

Karlijn Becking

geboren op 8 mei 1990
 te Delft

Promotor

Prof. dr. R.A. Schoevers

Copromotor

Dr. B.C.M. Haarman

Beoordelingscommissie

Prof. dr. R. Kupka

Prof. dr. J.D. Laman

Prof. dr. U.L.M. Eisel

Table of Contents

Chapter 1	Introduction	<i>1</i>
Chapter 2	Association between immune activation and manic symptoms in patients with a depressive disorder	<i>17</i>
Chapter 3	T-helper cell differentiation in bipolar disorder and major depressive disorder	<i>37</i>
Chapter 4	Cytokine production capacity in unipolar versus bipolar depressive episodes	<i>61</i>
Chapter 5	Inflammatory monocyte gene expression: state or trait?	<i>79</i>
Chapter 6	Hypothalamic-pituitary-adrenal axis disturbances in bipolar disorder and major depressive disorder	<i>91</i>
Chapter 7	Hypothalamic-pituitary-adrenal axis and immunological activity in unipolar versus bipolar depressive episodes	<i>109</i>
Chapter 8	Summary and general discussion	<i>129</i>
	Dutch Summary	<i>157</i>
	Acknowledgements	<i>169</i>
	Curriculum Vitae	<i>173</i>
	List of Publications	<i>175</i>

