

University of Groningen

Lipocalin 2 and the pathophysiology of Alzheimer's disease

Dekens, Doortje W.

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:
2019

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

Citation for published version (APA):

Dekens, D. W. (2019). *Lipocalin 2 and the pathophysiology of Alzheimer's disease*. [Thesis fully internal (DIV), University of 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).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

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.

Lipocalin 2 and the pathophysiology of Alzheimer's disease

Doortje Dekens

The work described in this thesis was performed at the Department of Molecular Neurobiology, Groningen Institute for Evolutionary Life Sciences (GELIFES), University of Groningen, Groningen, The Netherlands and at the Department of Neurology and Alzheimer Centrum Groningen (ACG), University Medical Center Groningen, Groningen, The Netherlands. The studies in this thesis were financially supported by the Research School of Behavioral and Cognitive Neurosciences (BCN), the Internationale Stichting Alzheimer Onderzoek (ISAO#06511), and Stichting Hadders-De Cock (#2017-30).

Printing of this thesis was financially supported by the University of Groningen, the Graduate School of Medical Sciences (GSMS), University Medical Center Groningen (UMCG), and the Research School of Behavioral and Cognitive Neurosciences (BCN).



ISBN: 978-94-034-1611-3 (printed version)

ISBN: 978-94-034-1610-6 (electronic version)

Layout and cover design: Doortje Dekens

Printed by: Ipskamp Printing (www.proefschriften.net)

Copyright © D.W.Dekens, 2019.

All rights reserved. No part of this book may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, without prior written permission of the author.



rijksuniversiteit
groningen

Lipocalin 2 and the pathophysiology of Alzheimer's disease

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 15 mei 2019 om 11:00 uur

door

Dorine Willemijn Dekens

geboren op 2 juli 1990
te Groningen

Promotores

Prof. dr. P.P. De Deyn

Prof. dr. U.L.M. Eisel

Copromotor

Dr. P.J.W. Naudé

Beoordelingscommissie

Prof. dr. P.J. Lucassen

Prof. dr. J.A. Palha

Prof. dr. E.A. van der Zee

Contents

Chapter 1	7
General introduction	
Chapter 2	19
Neutrophil Gelatinase-Associated Lipocalin and its Receptors in Alzheimer's Disease (AD) Brain Regions: Differential Findings in AD with and without Depression	
Chapter 3	43
Lipocalin 2 contributes to brain iron dysregulation but does not affect cognition, plaque load, and glial activation in the J20 Alzheimer mouse model	
Chapter 4	71
Iron chelators inhibit amyloid- β -induced production of Lipocalin 2 in cultured astrocytes	
Chapter 5	83
Dynamics of neutrophil gelatinase-associated lipocalin plasma and cerebrospinal fluid concentrations in older males	
Chapter 6	97
Lipocalin 2 as a link between aging, risk factor conditions and age-related brain diseases	
Chapter 7	145
General discussion	
Appendix	165
Summary	167
Nederlandse samenvatting	171
Dankwoord	175
Curriculum vitae	179
List of publications	180

