



Universiteit
Leiden
The Netherlands

Dyslipidemia at the crossroad of the skin barrier and the arterial wall

Martins Cardoso, R.

Citation

Martins Cardoso, R. (2021, October 5). *Dyslipidemia at the crossroad of the skin barrier and the arterial wall*. Retrieved from <https://hdl.handle.net/1887/3214899>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/3214899>

Note: To cite this publication please use the final published version (if applicable).

Dyslipidemia at the crossroad of the skin barrier and the arterial wall

Renata Martins Cardoso

Dyslipidemia at the crossroad of the skin barrier and the arterial wall

Renata Martins Cardoso

05 October 2021

Institute: Leiden Academic Centre for Drug Research

Cover design: The cover illustrates the classic brick and mortar structure of the stratum corneum layer with a glance of the vascular bed that lies under the skin. Cover design by Renata Martins Cardoso and Richard W. J. Helder with technical support from Science Ink.

Thesis layout: Renata Martins Cardoso

Printer: Ipskamp Printing

©2021 Renata Martins Cardoso

ISBN: 978-94-6421-466-6

All rights reserved. No part of this thesis may be reproduced or transmitted in any form, or by any means, without permission of the author

Dyslipidemia at the crossroad of the skin barrier and the arterial wall

Proefschrift

ter verkrijging van
de graad van doctor aan de Universiteit Leiden,
op gezag van rector magnificus prof.dr.ir. H. Bijl,
volgens besluit van het college voor promoties
te verdedigen op 5 oktober 2021
klokke 13:45 uur

door
Renata Martins Cardoso

geboren te Vitória, Brazilië
in 1986

Promotor: Prof. Dr. J. A. Bouwstra

Promotor: Prof. Dr. M. van Eck

Promotiecommissie:

Prof. Dr. H. Irth	- LACDR (voorzitter)
Prof. Dr. J. Kuiper	- LACDR (secretaris)

Overige leden

Dr. J. van Smeden	- Leiden University
Prof. Dr. P. C. N. Rensen	- LUMC
Prof. Dr. T. Vermonden	- Utrecht University
Dr. M. T. Mulder	- Erasmus Medical Centre

The research described in this thesis was performed at the division of BioTherapeutics at the Leiden Academy Centre for Drug Research (Leiden University, Leiden, The Netherlands). This research was supported by Leiden Academic Centre for Drug Research. The realization of this thesis was also supported by Leiden University.

To my beloved grandmother Maria

Table of contents

Chapter 1	General introduction	9
Chapter 2	Hypercholesterolemia in young adult <i>APOE</i> ^{-/-} mice alters epidermal lipid composition and impairs barrier function	33
Chapter 3	Hyperalphalipoproteinemic scavenger receptor BI knockout mice exhibit a disrupted epidermal lipid barrier	65
Chapter 4	Compensatory lipid metabolism in the skin of apolipoprotein AI deficient mice in response to hypoalphalipoproteinemia	99
Chapter 5	Barrier lipid composition and response to plasma lipids: a direct comparison of mouse dorsal back and ear skin	121
Chapter 6	Complement receptor targeted liposomes encapsulating the liver X receptor agonist GW3965 accumulate in and stabilize atherosclerotic plaques	145
Chapter 7	Summary, Discussion, and Perspectives	169
Appendix	Nederlandse Samenvatting Curriculum Vitae List of publications	193

