



Universiteit
Leiden
The Netherlands

Hemodialysis vascular access failure: novel pathophysiological mechanisms and therapeutic strategies

Bezhaeva, T.

Citation

Bezhaeva, T. (2019, March 7). *Hemodialysis vascular access failure: novel pathophysiological mechanisms and therapeutic strategies*. Retrieved from <https://hdl.handle.net/1887/68702>

Version: Not Applicable (or Unknown)

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

Downloaded from: <https://hdl.handle.net/1887/68702>

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

Cover Page



Universiteit Leiden



The following handle holds various files of this Leiden University dissertation:

<http://hdl.handle.net/1887/68702>

Author: Bezhaeva, T.

Title: Hemodialysis vascular access failure: novel pathophysiological mechanisms and therapeutic strategies

Issue Date: 2019-03-07

**Hemodialysis vascular access failure:
novel pathophysiological mechanisms and
therapeutic strategies**

by

Taisiya Bezhaeva

Hemodialysis vascular access failure: novel pathophysiological mechanisms and therapeutic strategies

ISBN: 978-94-6380-202-4

Cover design: Zhenya Pashkina and Taisiya Bezhaeva

Layout and printing: proeschriftmaken.nl

Copyright © T. Bezhaeva, 2019

All rights are reserved. No parts of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, without permission of the copyright owners.

Hemodialysis vascular access failure: novel pathophysiological mechanisms and therapeutic strategies

Proefschrift

ter verkrijging van graad van doctor aan de Universiteit Leiden, op gezag van de Rector
Magnificus Prof. Mr. C.J.J.M. Stolker,

volgens besluit van het College voor Promoties

ter verdedigen op 7 maart 2019

klokke 16:15 uur

door

Taisiya Bezhaeva

Geboren te Moskou

in 1986

| | |
|-------------------|--|
| Promotores | Prof. Dr. A.J. van Zonneveld Prof. Dr. P.H.A. Quax |
| Co-Promotores | Dr. J.I. Rotmans |
| Promotiecommissie | Prof. Dr. T. Lee <i>University of Alabama at Birmingham, United States</i> Prof. Dr. M.J.T.H. Goumans Prof. Dr. E.S.G. Stroes <i>Academic Medical Center, Amsterdam, the Netherlands</i> Prof. Dr. J.F. Hamming |

The research described in this thesis was supported by a grant by the Leiden University Medical Center.

Financial support by the Dutch Kidney Foundation and the Dutch Heart Foundation is gratefully acknowledged.

Publication of the thesis was further supported by Proteon Therapeutics.

Table of Contents

| | | |
|------------------|---|-----|
| Chapter 1 | General introduction | 7 |
| Chapter 2 | Deficiency of TLR4 homologue RP105 aggravates outward remodeling in a murine model of arteriovenous fistula failure. <i>Sci Rep. 2017 Aug 31;7(1):10269</i> | 21 |
| Chapter 3 | Liposomal prednisolone inhibits vascular inflammation and enhances venous outward remodeling in a murine arteriovenous fistula model. <i>Sci Rep. 2016 Jul 27; 6:30439</i> | 45 |
| Chapter 4 | Relaxin receptor deficiency promotes vascular inflammation and impairs outward remodeling in arteriovenous fistulas. <i>FASEB. 2018 Nov Vol.32</i> | 67 |
| Chapter 5 | The battlefield at arteriovenous crossroads: invading arterial smooth muscle cells occupy the outflow tract of fistulas. <i>Kidney Int. 2015 Sep;88(3):431-3</i> | 93 |
| Chapter 6 | Contribution of bone marrow-derived cells to in situ engineered tissue capsules in a rat model of chronic kidney disease. <i>Biomaterials - In press (available online 15 December 2018)</i> | 101 |
| Chapter 7 | Summary and discussion | 125 |
| Chapter 8 | Nederlandse Samenvatting | 143 |
| | Curriculum Vitae | 147 |
| | List of Publications | 149 |
| | Acknowledgement | 151 |

