



Universiteit
Leiden

The Netherlands

Modulation of vascular remodeling : a role for the immune system, growth factors, and transcriptional regulation

Seghers, L.

Citation

Seghers, L. (2011, November 30). *Modulation of vascular remodeling : a role for the immune system, growth factors, and transcriptional regulation.*

Retrieved from <https://hdl.handle.net/1887/18166>

Version: Corrected 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/1887/18166>

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

**Modulation of Vascular Remodeling:
a role for the immune system, growth factors,
and transcriptional regulation**

Leonard Seghers

ISBN: 978-94-6108-224-4

© 2011 L Seghers, The Netherlands. All rights reserved.

Cover illustration: 3D artist impression of the aortoiliac bifurcation and of the ilio caval junction respectively. (source: istockphoto)

Cover design, layout and printed by: Gildeprint Drukkerijen, Enschede, The Netherlands

Financial support for printing of this thesis by Moor Instruments and by Merck Sharp & Dohme BV is gratefully acknowledged.

**Modulation of Vascular Remodeling:
a role for the immune system, growth factors,
and transcriptional regulation**

Proefschrift

ter verkrijging van
de graad van Doctor aan de Universiteit van Leiden,
op gezag van Rector Magnificus prof. mr. P.F. van der Heijden,
volgens besluit van het College voor Promoties
te verdedigen op woensdag 30 november 2011
klokke 15:00 uur

door

Leonard Seghers
geboren te Winterswijk in 1981

Promotiecommissie

Promotores:

Prof. Dr. P.H.A. Quax

Prof. Dr. V.W.M. van Hinsbergh (VU medisch centrum, Amsterdam)

Overige leden:

Prof. Dr. J.W. Jukema

Prof. Dr. R.E.M. Toes

Prof. Dr. J.F. Hamming

Dr. I.E. Hoefler (UMC, Utrecht)

't komt altijd anders

Voor mijn moeder

Contents

1.	General introduction	9
2.	Review: Bone marrow derived cells in arteriogenesis: a crucial role for leukocytes <i>Published in Deindl E and Schaper W, editors. Arteriogenesis – Molecular Regulation, Pathophysiology and Therapeutics. E-book 2010: 145-154</i>	29
3.	Variations in surgical procedures for hind limb ischemia mouse models result in differences in collateral formation. <i>European Journal of Vascular and Endovascular Surgery. 2010 Dec;40(6):796-803</i>	43
4.	Natural Killer Cells and CD4+ T-cells modulate collateral artery development. <i>Arteriosclerosis Thrombosis Vascular Biology. 2007 Nov;27(11):2310-8</i>	59
5.	Differences in NK gene complex between C57BL/6 and BALB/c mice determine post ischemic blood flow recovery. <i>Submitted for publication</i>	85
6.	C57BL/6 NK gene complex involved in vascular remodeling in general. <i>Submitted for publication</i>	103
7.	Expression of Vascular Endothelial Growth Factor, Stromal Cell-Derived Factor-1 and CXCR4 in human limb muscle with acute and chronic ischemia. <i>Arteriosclerosis Thrombosis Vascular Biology. 2007 Jun;27(6):1426-32.</i>	119
8.	Antagomir-mediated silencing of endothelial cell specific microRNA-126 impairs ischemia-induced angiogenesis. <i>Journal of Cellular and Molecular Medicine. 2009 Aug;13(8A):1577-85.</i>	139
9.	Shear induced collateral artery growth modulated by endoglin, but not by ALK1. <i>Submitted for publication</i>	159
10.	Summary and general discussion	179

Samenvatting en discussie	189
Publications	201
Curriculum vitae	205
Color figures	209