



Universiteit
Leiden
The Netherlands

Influencing the homing and differentiation of MNCs in hereditary hemorrhagic telangiectasia

Dingenouts, C.K.E.

Citation

Dingenouts, C. K. E. (2019, February 27). *Influencing the homing and differentiation of MNCs in hereditary hemorrhagic telangiectasia*. Retrieved from <https://hdl.handle.net/1887/69046>

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/1887/69046>

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

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/69046> holds various files of this Leiden University dissertation.

Author: Dingenouts, C.K.E.

Title: Influencing the homing and differentiation of MNCs in hereditary hemorrhagic telangiectasia

Issue Date: 2019-02-27

Influencing the homing and differentiation of MNCs in hereditary hemorrhagic telangiectasia

Calinda Kiana Estel Dingenouts

Promotor:

Prof. Dr. M.J. Goumans

Co-promotor:

Dr. W. Bakker

Promotiecommissie:

Prof. Dr. H.H. Versteeg

Prof. Dr. A.J. van Zonneveld

Prof. Dr. A. Zwijsen

Dr. I.E. Hoefler

Catholic University of Leuven

University Medical Center Utrecht

Printed by: Gildeprint, Enschede

Cover: Artwork by Aboriginal artist Caroline Numina, 'Bush Medicine Leaves',
Darwin, Australia

ISBN 978-94-6323-485-6

Copyright © 2019, Calinda K.E. Dingenouts

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

The studies were performed at the Department of Cell and Chemical Biology of the Leiden University Medical Centre and were supported by the Netherlands Institute of Regenerative Medicine (NIRM, grant No. FES0908) and the Dutch Heart Foundation (grant No. NHS2009B063)

This publication of this dissertation was made possible by the Dutch Heart Foundation.

Influencing the homing and differentiation of MNCs in hereditary hemorrhagic telangiectasia

Proefschrift

ter verkrijging van
de graad van Doctor aan de Universiteit Leiden,
op gezag van Rector Magnificus prof.mr. C.J.J.M. Stolker,
volgens besluit van het College voor Promoties
te verdedigen op woensdag 27 februari 2019
klokke 16:15 uur

door

Calinda Dingenouts

geboren te Vlaardingen
in 1986

Table of contents

Chapter 1:	General introduction	7
Chapter 2:	Mononuclear cells and vascular repair in HHT	19
Chapter 3:	Inhibiting DPP4 in a mouse model of HHT1 results in a shift towards regenerative macrophages and reduces fibrosis after myocardial infarction	39
Chapter 4:	BMP receptor inhibition enhances tissue repair in endoglin deficient mice	69
Chapter 5:	DPP4 inhibition enhances wound healing in endoglin heterozygous mice through modulation of macrophage signaling and differentiation	93
Chapter 6:	Endoglin deficiency alters the epicardial response following myocardial infarction	117
Chapter 7:	General discussion	141
	Summary	157
	Nederlandse Samenvatting	159
	Acknowledgements	161
	Curriculum Vitae	163
	List of Publications	165

