UNIVERSITY OF AMSTERDAM

UvA-DARE (Digital Academic Repository)

Shaping erythropoiesis under in vitro flow

Abay, A.

Publication date
2021

Link to publication

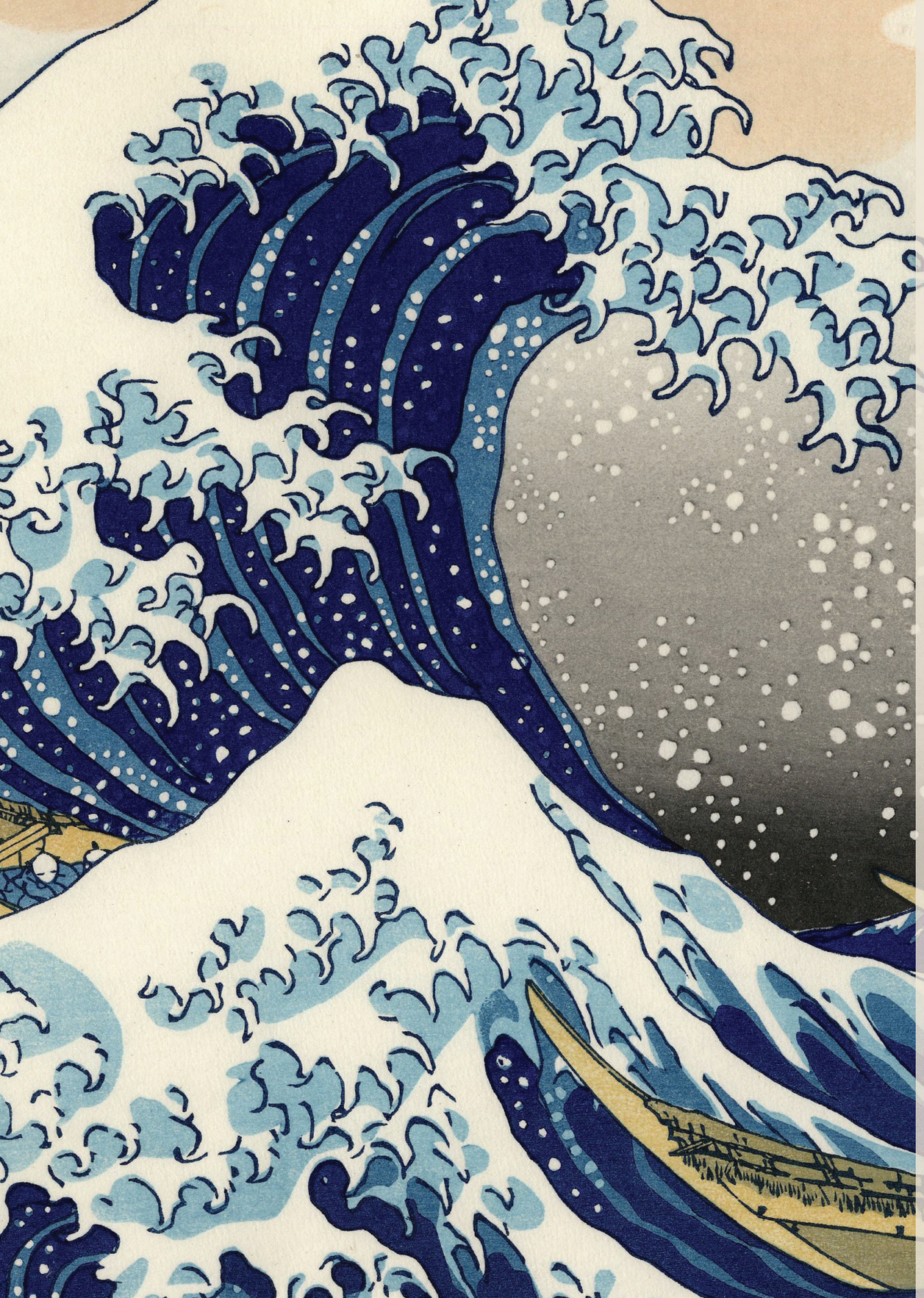
Citation for published version (APA):
Abay, A. (2021). *Shaping erythropoiesis under in vitro flow*. [Thesis, externally prepared, Universiteit van Amsterdam].

General rights
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), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: https://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, P.O. Box 19185, 1000 GD Amsterdam, The Netherlands. You will be contacted as soon as possible.

UvA-DARE is a service provided by the library of the University of Amsterdam (https://dare.uva.nl)

Download date:10 11月 2026



Shaping erythropoiesis under *in vitro* flow

Asena Abay

Shaping erythropoiesis under *in vitro* flow

Asena Abay

Shaping erythropoiesis under *in vitro* flow

Asena Abay

Shaping erythropoiesis under *in vitro* flow

ISBN: 978-94-6423-434-3

Cover: Mercedes Benjaminse || ProefschriftMaken.nl
Cover artwork is based on 'The Great Wave off Kanagawa' by Hokusai Okinami
Layout: Dennis Hendriks || ProefschriftMaken.nl
Printed: ProefschriftMaken.nl

Printing was supported by Sanquin Research

No part of this publication may be reproduced or transmitted in any form or by means, electronic or mechanical, including photocopy, recording or any other information storage or retrieval system without the prior written permission of the author.
All rights reserved.

© 2021 A. Abay

Shaping erythropoiesis under *in vitro* flow

ter verkrijging van de graad van doctor
aan de Universiteit van Amsterdam
op gezag van de Rector Magnificus
prof. dr. ir. K.I.J. Maex
ten overstaan van een door het College voor Promoties ingestelde commissie,
in het openbaar te verdedigen in de Aula der Universiteit
op woensdag 13 oktober 2021, te 11.00 uur

by
Asena Abay
geboren te Konak

Promotiecommissie

Promotor:	dr. M.M. von Lindern AMC-UvA
Copromotores:	dr. E. van den Akker Sanquin Research
	prof. dr. L. Kaestner Universität des Saarlandes
Overige leden:	dr. H.A. van Wijk UMC Utrecht
	prof. dr. C.E. van der Schoot AMC-UvA
	prof. dr. M. de Haas Universiteit Leiden
	prof. dr. ir. A.G. Hoekstra Universiteit van Amsterdam
	dr. S.A. Wahl Technische Universiteit Delft
	prof. dr. M.J. Kersten AMC-UvA (Faculteit der Geneeskunde)

Everything flows and nothing abides; everything gives way and nothing stays fixed.
Heraclitus of Ephesus

Contents

Chapter 1	General Introduction	9
Chapter 2	Glutaraldehyde – A Subtle Tool in the Investigation of Healthy and Pathologic Red Blood Cells	39
Chapter 3	Cross-sectional focusing of red blood cells in a constricted microfluidic channel	65
Chapter 4	Mechanical Stress Induces Ca2+-Dependent Signal Transduction in Erythroblasts and Modulates Erythropoiesis	95
Chapter 5	Orbital shaking accelerates erythroblast differentiation to enucleated reticulocytes	121
Chapter 6	General Discussion	145
Appendices	Summary	165
	Samenvatting	168
	PhD Portfolio	171
	Curriculum Vitae	172
	Acknowledgements	173