

University of Groningen

Tuning the lipid bilayer: the influence of small molecules on domain formation and membrane fusion

Bartelds, Rianne

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2018

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Bartelds, R. (2018). Tuning the lipid bilayer: the influence of small molecules on domain formation and membrane fusion [Groningen]: Rijksuniversiteit Groningen

Copyright

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

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Tuning the lipid bilayer: the influence of small molecules on domain forma- tion and membrane fusion

Rianne Bartelds
2017

Cover: microscopy pictures of vesicles and a schematic representation of their membrane on the molecular level.

Cover design: Rianne Bartelds

ISBN: 978-94-034-0371-7 (printed version)
978-94-034-0370-0 (electronic version)

Printed by: Gildeprint, Enschede



The work was published in this thesis was carried out in the Membrane Enzymology group of the Biochemistry Department of the University of Groningen, the Netherlands. The research was financially supported by the Netherlands Organisation for Scientific Research (NWO) (NWO ChemThem grant 728.011.202)

Copyright © 2018 by Rianne Bartelds. All rights reserved. No part of this thesis may be reproduced, stored in a retrieval system or transmitted in any form or by any means without the prior written permission of the autor.



rijksuniversiteit
 groningen

Tuning the lipid bilayer: the influence of small molecules on domain forma- tion and membrane fusion

Proefschrift

ter verkrijging van de graad van doctor aan de
Rijksuniversiteit Groningen
op gezag van de rector magnificus prof. dr. E. Sterken
en volgens besluit van het College voor promoties.

De openbare verdediging zal plaatsvinden op

vrijdag 16 februari 2018 om 12.45 uur

door

Rianne Bartelds

geboren op 22 april 1989
te Gieten

Promotor

Prof. dr. B. Poolman

Beoordelingscommissie

Prof. dr. J.A. Killian

Prof. dr. A. J. M. Driessen

Prof. dr. D. J. Slotboom

Table of contents

| | | |
|------------------|---|-----|
| Chapter 1 | Cell membrane organization and membrane model systems | 7 |
| Chapter 2 | Disaccharides impact the lateral organization of lipid emembranes | 23 |
| Chapter 3 | Lipid phase separation in the presence of hydrocarbons in giant unilamellar vesicles | 51 |
| Chapter 4 | A trifunctional linker to study palmitoylation and peptide localization in biological membranes | 67 |
| Chapter 5 | Niosomes, an alternative for liposomal delivery | 93 |
| Chapter 6 | Membrane fusion: from in vivo to in vitro | 113 |
| | Summary | 133 |
| | Nederlandse samenvatting | 135 |
| | Acknowledgements/dankwoord | 137 |

