



University of Groningen

Diffusion and localization of proteins in the plasma	membrane of Saccharomyces cerevisiae
Syga, Lukasz	

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:

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA): Syga, L. (2018). Diffusion and localization of proteins in the plasma membrane of Saccharomyces cerevisiae. [Groningen]: University of 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).

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.

Download date: 29-04-2019

Diffusion and localization of proteins in the plasma membrane of *Saccharomyces* cerevisiae

Łukasz Syga

The work described in this thesis was carried out in the Membrane Enzymology	
group of the Groningen Biomolecular Sciences and Biotechnology Institute (GBB) of the University of Groningen and was financially supported by the BE-Basic R&D Program, which was granted a FES subsidy from the Dutch Ministry of Economic affairs, agriculture and innovation (EL&I).	
C over design: Łukasz Syga	
Printed by: Optima Grafische Communicatie B. V., Rotterdam	
SBN (printed version): 978-94-034-1223-8	
SBN (electronic version): 978-94-034-1222-1	

Copyright © 2018 by Łukasz Syga. All rights reserved. No parts of this thesis may be reproduced, stored in a retrieval system, or transmitter in any form or by any

means, without the permission of the author.



Diffusion and localization of proteins in the plasma membrane of Saccharomyces cerevisiae

PhD thesis

to obtain the degree of PhD at the University of Groningen on the authority of the Rector Magnificus Prof. E. Sterken and in accordance with the decision by the College of Deans.

This thesis will be defended in public on

Friday 14 December 2018 at 09.00 hours

by

Łukasz Syga

born on 24 June 1990 in Bielawa, Polen

Supervisors Prof. B. Poolman Prof. D.J. Slotboom

Assessment Committee

Prof. I.J. van der Klei Prof. B. Andre Prof. J. Kok

Table of Contents

Chapter 1: Introduction	7
Chapter 2: Method for immobilization of living and synthetic cells for high-resolution imaging and single-particle tracking	25
Chapter 3: Slow diffusion, steric exclusion and protein	
conformation determine the localization of plasma	40
membrane transporter	49
Chapter 4: Possible causes of slow diffusion in the plasma membrane of <i>Saccharomyces cerevisiae</i>	99
Chapter 5: Summary, discussion, perspectives 1	.43
Nederlandse Samenvatting 1	.51
Streszczenie w języku polskim1	.55
Chapter 6: Acknowledgments 1	.59