

VU Research Portal

Design and implementation of a bacterial signaling circuit

Lazova, M.D.

2013

document version

Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

citation for published version (APA)

Lazova, M. D. (2013). *Design and implementation of a bacterial signaling circuit*.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

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.

E-mail address:

vuresearchportal.ub@vu.nl

Design and implementation of a bacterial signaling circuit

Milena Dimitrova Lazova

The work described in this thesis was performed at the FOM Institute AMOLF, Science Park 104, 1098 XG Amsterdam, The Netherlands. This work is part of the research program of the Foundation for Fundamental Research on Matter (FOM), which is financially supported by the Netherlands Organization for Scientific Research (NWO).



© M. D. Lazova, 2013

ISBN/EAN: 978-90-77209-71-4

A digital version of this thesis is available at www.ubvu.nl/dissertations and www.amolf.nl/publications/theses. Printed copies can be obtained by request to the library at FOM Institute AMOLF, library@amolf.nl.

Cover design by Nickola Nickolov.

Printed by CPI Wöhrmann Print Service(WPS), The Netherlands



VRIJE UNIVERSITEIT

Design and implementation of a bacterial signaling circuit

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad Doctor aan
de Vrije Universiteit Amsterdam,
op gezag van de rector magnificus
prof.dr. F.A. van der Duyn Schouten,
in het openbaar te verdedigen
ten overstaan van de promotiecommissie
van de faculteit der Exacte Wetenschappen
op dinsdag 11 juni 2013 om 11.45 uur
in de aula van de universiteit,
De Boelelaan 1105

door

Milena Dimitrova Lazova

geboren te Sofia, Bulgarije

promotor: prof.dr. P.R. ten Wolde
copromotor: dr. T.S. Shimizu

To my grandmother

This thesis was reviewed by:

prof.dr. K.J. Hellingwerf
prof.dr. V. Sourjik
dr. Y.J.M. Bollen
dr. R.T. Dame
dr. Y. Tu

Publications covered in this thesis:

Lazova, M. D., Ahmed, T., Bellomo, D., Stocker, R., and Shimizu, T. S., Response rescaling in bacterial chemotaxis. *Proc Natl Acad Sci U S A* **108** (33), 13870 (2011).
(Chapter 2)

Lazova, M. D.*, Butler, M. T.*, Shimizu, T. S., and Harshey, R. M., *Salmonella* chemoreceptors McpB and McpC mediate a repellent response to L-cystine: a potential mechanism to avoid oxidative conditions. *Mol Microbiol* **84** (4), 697 (2012).
*authors contributed equally
(Chapter 4)

Lazova, M. D., Menolascina, F., Sontag, E. D., Stocker, R., and Shimizu, T. S., Chemotactic control physiology determines the behavioral strategy of enteric bacteria. (in preparation).
(Chapter 3)

Lazova, M. D. and Shimizu, T. S., Role of the phospho-regulated scaffolding protein CheV in *Salmonella typhimurium* (in preparation).
(Chapter 5)

Lazova, M. D.*, Rosier B. T.*, and Shimizu, T. S., Multiple pathways of cystine-induced repellent responses in *Salmonella typhimurium* (in preparation).
*authors contributed equally
(Appendix A)

Other publications by the same author:

van Hemert, F.*, Lazova, M. D.*, Snaar-Jagaska, B. E., and Schmidt, T., Mobility of G proteins is heterogeneous and polarized during chemotaxis. *J Cell Sci* **123** (Pt 17), 2922 (2010).
*authors contributed equally