



Universiteit
Leiden
The Netherlands

Salmonella typhimurium and its host : host-pathogen cross-talk, immune evasion, and persistence

Diepen, A. van

Citation

Diepen, A. van. (2005, November 2). *Salmonella typhimurium and its host : host-pathogen cross-talk, immune evasion, and persistence*. Retrieved from <https://hdl.handle.net/1887/4339>

Version: Corrected Publisher's Version

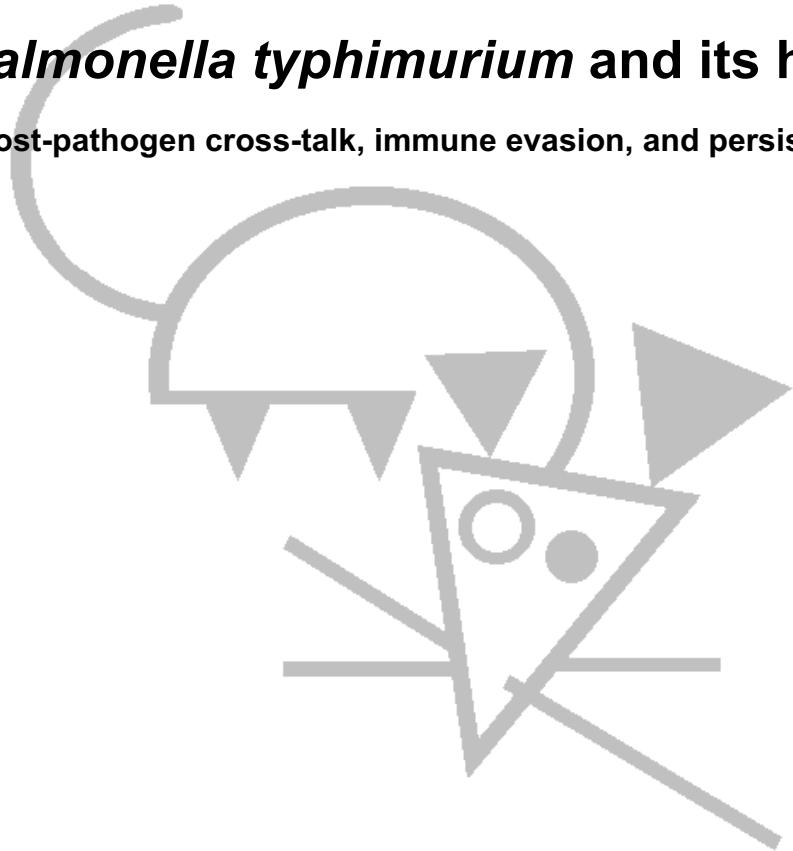
License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/4339>

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

***Salmonella typhimurium* and its host:**

host-pathogen cross-talk, immune evasion, and persistence



Angela van Diepen

Salmonella typhimurium and its host:

host-pathogen cross-talk, immune evasion, and persistence

Proefschrift

ter verkrijging van
de graad Doctor aan de Universiteit Leiden,
op gezag van de Rector Magnificus Dr. D.D. Breimer,
hoogleraar in de faculteit der Wiskunde en
Natuurwetenschappen en die der Geneeskunde,
volgens besluit van het College voor Promoties
te verdedigen op woensdag 2 november 2005
klokke 15.15 uur

door

Angela van Diepen

geboren te Hattem
in 1975

Promotiecommissie

Promotor:

Prof. Dr. J.T. van Dissel

Co-promotor:

Dr. C.M. Janssen

Referent:

Dr. J.G. Kusters (Erasmus MC Rotterdam)

Overige leden:

Prof. Dr. E.J.H.J. Wiertz

Prof. Dr. T.H.M. Ottenhoff

Front cover image:

“Salmonella” by Bess O’Malley B.A.M.A. (visual arts), College of Fine Arts, University of N.S.W., Sydney, Australia.

ISBN: 90-9020146-7

Printed by: Febodruk B.V., Enschede

The research presented in this thesis was performed at the Department of Infectious Diseases, Leiden University Medical Center, Leiden, The Netherlands.

This thesis was financially supported by the J.E. Jurriaanse Stichting

*aan mijn ouders
voor Sjaak*

Table of contents

	Page
Chapter 1 General introduction	9
Chapter 2 Gamma irradiation or CD4 ⁺ T cell depletion causes reactivation of latent <i>Salmonella enterica</i> serovar Typhimurium infection in C3H/HeN mice	39
Chapter 3 Treatment with anti-TNF α does not induce reactivation of latent <i>Salmonella enterica</i> serovar Typhimurium infection in C3H/HeN mice	57
Chapter 4 An <i>rmlC</i> <i>Salmonella enterica</i> serovar Typhimurium mutant is attenuated in vivo but is able to persist in RAW264.7 macrophages	71
Chapter 5 A superoxide-hypersusceptible <i>Salmonella enterica</i> serovar Typhimurium PNPase mutant is attenuated in RAW264.7 macrophages but is more virulent in C3H/HeN mice	87
Appendix 1 Isolation and characterization of <i>Salmonella enterica</i> serovar Typhimurium mutants with increased or decreased susceptibility to intracellular superoxide	99
Chapter 6 Novel <i>Salmonella enterica</i> serovar Typhimurium protein that is indispensable for virulence and intracellular replication	107
Chapter 7 A superoxide-hypersusceptible <i>Salmonella enterica</i> serovar Typhimurium mutant strain is attenuated but regains virulence in p47 ^{phox-/-} mice	123
Chapter 8 Comparison of mRNA levels from RAW264.7 macrophages infected with <i>Salmonella enterica</i> serovar Typhimurium 14028s and the superoxide-hypersusceptible mutant DLG294 by microarray analysis	139
Chapter 9 Gene expression profiling of intracellular wild-type <i>Salmonella enterica</i> serovar Typhimurium and mutant DLG294 that is hypersusceptible to the redox cycling agent menadione	161
Chapter 10 Summarizing discussion	177
Samenvatting in het Nederlands	191
Curriculum vitae	199
List of publications	203
Notes	207

