

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/138641> holds various files of this Leiden University dissertation.

Author: Du, C.

Title: Multi-omics studies of the control of growth and antibiotic production of streptomyces

Issue Date: 2020-12-09

Multi-omics studies of the control of
growth and antibiotic production of
Streptomyces

Chao DU (杜超)

Design and layout: Chao Du
Printing: Ridderprint BV, the Netherlands

Multi-omics studies of the control of growth and antibiotic production of *Streptomyces*

Proefschrift

ter verkrijging van
de graad van Doctor aan de Universiteit Leiden,
op gezag van Rector Magnificus prof.mr. C.J.J.M. Stolk,
volgens besluit van het College voor Promoties
te verdedigen op woensdag 9 december 2020
klokke 10:00 uur

door
Chao DU (杜超)
geboren te Fushun, China
in 1987

PROMOTORES

Prof.dr. G.P. van Wezel

Prof.dr. J.M. Raaijmakers

PROMOTIECOMMISSIE

Prof.dr. A.H. Meijer

Prof.dr. H.P. Spaink

Prof.dr. J.H. de Winde

Dr. A. Wentzel (SINTEF)

Dr. J.J.J. van der Hooft (Wageningen University)

Table of Contents

Chapter 1	
Introduction	2
Chapter 2	
Mining for Microbial Gems: Integrating Proteomics in the Postgenomic Natural Product Discovery Pipeline	6
Chapter 3	
Application of systems biology methods for the identification of novel natural products in <i>Streptomyces</i> species	22
Chapter 4	
Unravelling the response of <i>Streptomyces roseifaciens</i> to challenge with small molecules by genome-wide proteomics	40
Chapter 5	
Analysis of the background-reduced antibiotic production host <i>Streptomyces coelicolor</i> M1152 using quantitative proteomics	64
Chapter 6	
A novel nucleoid-associated protein specific to Actinobacteria that binds to GATC sequences	84
Chapter 7	
General discussion and future perspectives	110
Nederlandse Samenvatting	113
References	118
Appendix I	
Supplementary materials for Chapter 3	144
Appendix II	
Supplementary materials for Chapter 4	148
Appendix III	
Supplementary materials for Chapter 5	156
Appendix IV	
Supplementary materials for Chapter 6	160