

University of Groningen

## Secondary metabolism by industrially improved *Penicillium chrysogenum* strains

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*Document Version*

Publisher's PDF, also known as Version of record

*Publication date:*

2016

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

*Citation for published version (APA):*

Salo, O. (2016). Secondary metabolism by industrially improved *Penicillium chrysogenum* strains. [Groningen]: University of Groningen.

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## Propositions with the thesis:

# “ Secondary metabolism by industrially improved *Penicillium chrysogenum* strains”

by Oleksandr Salo

1. A successful strain improvement programme requires a narrow focus on the desired phenotype. Therefore, not all the features of the evolved mutant are predictable (*Chapter 2*)
2. The improved titer of  $\beta$ -lactam production obtained by the classical strain improvement programme is only a minor reflection of the broad mutational impact on secondary metabolism of *P. chrysogenum* (*Chapter 2*)
3. NRPS related secondary metabolite production is a main beneficiary of the amino acid flux alternations induced by the industrial strain improvement program of *P.chrysogenum* (*Chapter 2*)
4. The single amino acid substitution of Pks13 (*Pc21g05080*) led to the elimination of sorbicillionoids from the secondary metabolism of the *P. chrysogenum* (*Chapter 4*)
5. Histone deacetylase HdaA is a pleiotropic regulator of secondary metabolism in *P.chrysogenum* (*Chapter 3*)
6. Reliable studies on epigenetic regulation of fungal secondary metabolism can be only achieved when using strains with a wild-type background (*Chapter 3*)
7. In *P.chrysogenum*, there are two functional 6-methylsalicylic acid synthases (Pks4 and Pks18) that operate in two putative biosynthetic pathways (*Chapter 5*)
8. All you have to do is take a close look at yourself and you will understand everyone else. (*Isaak Asimov, Foundation's Edge*)