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Molecular characterization of copper-dependent enzymes involved in *Streptomyces* morphology

Petrus, Maria Louise Catharina

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Author: Petrus, Marloes

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STELLINGEN

Propositions accompanying the thesis

Molecular characterization of copper-dependent enzymes involved in *Streptomyces* morphology

1. The complex object parametric analyzer and sorter (COPAS) provides a valuable tool for the analysis of a large number of *Streptomyces* pellets. (This thesis, Chapter 3)
2. The cellulose synthase-like protein CslA and the radical copper oxidase GlxA are functionally coupled in the production of a tip-localized glycan. (This thesis, Chapter 4)
3. The copper-chaperone Sco and the Dyp-type peroxidase DtpA are required for *Streptomyces* development under copper-limiting growth conditions. (This thesis, Chapter 5)
4. Although there is a strong belief that the twin-arginine transport components TatA, TatB and TatC are equally important in all organisms possessing them, it does not explain why the *Streptomyces tat* mutants show differences in their phenotypes. (This thesis, Chapter 5)
5. Predicting the specificity of glycosyltransferases in Gram-positive bacteria is complicated, since hardly any sequence motifs determining substrate specificity have been described (This thesis, Chapter 6; Sánchez-Rodríguez et al., 2014)
6. The urgent problems with antibiotic resistance dictate that all antibiotics should only be available on doctor's prescription.

7. The popularity of “super foods” and extreme diets shows that people are willing to invest in their own health but also that they are gullible enough to fall for smart marketing tricks.
8. DNA sequencing has given us the most interesting book of life, but we need to learn how to read between the lines.
9. The comment by Charles Bukowski that “The problem with the world is that the intelligent people are full of doubts while the stupid ones are full of confidence” is reflected by the false and misleading information on the internet.

“Charles Bukowski”, Alden Mills, Arete, July/August 1989, Pages 66-69, 73, 76-77
10. Team sports provide the necessary skills to tackle the challenges imposed by a PhD.

Marloes Petrus
Leiden, February 18th, 2016