Exploring natural products: from herbal resources, microbial synthesis to animal models

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DOI:
10.33612/diss.846916968

STELLINGEN

Behorende bij het proefschrift

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1. When dealing with bio-materials that contain multiple active ingredients, utilizing the difference in polarity of these active ingredients can make the “pomace” into a promising alternative source for pharmaceutical purpose. (This thesis)

2. *Bacillus subtilis* is a microbial expression host that is no less capable than *Escherichia coli* and yeast when it comes to the biosynthesis of diverse structures of terpenoid compounds for medicinal or dietary purposes. (This thesis)

3. The introduction of enzymes from closely related species into *Bacillus subtilis* facilitates the attainment of favorable expression of target genes and enhances the levels of compound synthesis. (This thesis)

4. Squalene synthase-like enzymes possess multifunctionality in biosynthesis. (This thesis)

5. The main factor contributing to the differential selective synthesis efficiency of squalene and dehydrosqualene by squalene synthase-like enzymes is the variation in steric hindrance experienced by NADPH upon its binding to the enzyme. (This thesis)

6. The dysregulation of cholesterol metabolism is the main factor that leads to the progression (inflammation, fibrosis, and cirrhosis) of non-alcoholic fatty liver disease (NAFLD) in gerbils. (This thesis)

7. “This world is still new, many things are nameless, have to point with your fingers.” --e.g., the discovered functions of perilla seed pomace, and the promiscuity of the squalene synthase like enzymes. (Adapted from “One Hundred Years of Solitude” by Gabriel García Márquez)

8. “Science has taught us that everything is more complicated than we first assume.”--e.g., the squalene produced from the dehydrosqualene synthase—CrtM, and the lipids (triglycerides and free fatty acids) rise and down tendency in gerbil NAFLD progression. (Adapted from “Lab Girl” by Hope Jahren)