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An

Stellingen (propositions)

Behorende bij het proefschrift

Itaconic acid production in *Aspergillus*

1. A clone-based transcriptomics approach was shown to be a very suitable approach to identify genes encoding biosynthetic and transport functions crucial in the biosynthesis pathway for itaconic acid in *Aspergillus terreus* (chapter 2 this thesis).
2. Medium optimization showed a previously not discovered role of copper in improved itaconic acid production, while in previous studies copper was inhibiting fungal growth (Ghasemian et al., 2012. *J Mycol Med*) (chapter 3 this thesis).
3. In contrast to the observation that undisturbed oxygen was previously shown to be essential for itaconic acid production in *Aspergillus* strains (Lin et al., 2004), applying lower levels of D.O. (dissolved oxygen) has a positive influence on itaconic acid production (chapter 4 this thesis).
4. Co-expression of different transporters that individually enhance itaconic acid production does not always lead to improved levels of itaconic acid, suggesting that a careful balance of transport steps may be required (chapter 4 this thesis).
5. Single step modification on the production process of itaconic acid in *Aspergillus niger* is not sufficient for increasing the production level to commercially interesting levels (this thesis).

6. Because of their ability of using natural biomass—substrates for growth, their high tolerance to harsh environmental conditions and their natural capability of producing organic acids and proteins, *Aspergillus spp* are prime candidates for the production of novel chemical building blocks and heterologous proteins.
7. Although aminolevulinic acid synthase has the same enzymatic function in *Aspergillus niger* and *Saccaromyces cerevisiae*, analysis of the expression of the corresponding genes in these organisms shows clear differences in regulation of the heme biosynthesis pathway (Franken et al., 2012 *FEMS Microbiology Letters*).
8. Whereas lignocellulosic biomass hydrolysates as fermentation media are inhibitory to currently used ethanologens, bioprospecting allows the isolation of novel resistant strains as hosts for bioethanol production (Ying et al., 2013 *FEMS*).
9. Only a combination of different analytical methods allows an unbiased approach to identify growth inhibiting compounds in biomass hydrolysates used for bioethanol production (Ying et al., 2013 *Biotechnology for Biofuels*)
10. Beyond providing decoration and ambiance, colors and music as environmental elements make a significant impact on the mood and health of human beings. (Schweitzer et al., 2004 *J Altern Complem Med*)
11. The influx of fast food and iphones corresponds to an outflux of traditional values in China.

An Li

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