Heterologous production of fungal secondary metabolites in Aspergilli

Fungal natural products comprise a wide range of compounds. Some are medically attractive as drugs and drug leads, some are used as food additives, while others are harmful mycotoxins. In recent years the genome sequence of several fungi has become available providing genetic information of a large number of putative biosynthetic pathways. However, compound discovery is difficult as the genes required for the production of the compounds often are silent or barely expressed under laboratory conditions. Furthermore, the lack of available tools for genetic manipulation of most fungal species hinders pathway discovery. Heterologous expression of the biosynthetic pathway in model systems or cell factories facilitates product discovery, elucidation, and production. This review summarizes the recent strategies for heterologous expression of fungal biosynthetic pathways in Aspergilli.

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