Regulation of fungal secondary metabolism.

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Details



Abstract

Fungi produce a multitude of low-molecular-mass compounds known as secondary metabolites, which have roles in a range of cellular processes such as transcription, development and intercellular communication. In addition, many of these compounds now have important applications, for instance, as antibiotics or immunosuppressants. Genome mining efforts indicate that the capability of fungi to produce secondary metabolites has been substantially underestimated because many of the fungal secondary metabolite biosynthesis gene clusters are silent under standard cultivation conditions. In this Review, I describe our current understanding of the regulatory elements that modulate the transcription of genes involved in secondary metabolism. I also discuss how an improved knowledge of these regulatory elements will ultimately lead to a better understanding of the physiological and ecological functions of these important compounds and will pave the way for a novel avenue to drug discovery through targeted activation of silent gene clusters.

Beteiligte Forschungseinheiten

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