Functional Reconstitution of a Fungal Natural Product Gene Cluster by Advanced Genome Editing.

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Details

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Abstract

Filamentous fungi produce varieties of natural products even in a strain dependent manner. However, the genetic basis of chemical speciation between strains is still widely unknown. One example is trypacidin, a natural product of the opportunistic human pathogen *Aspergillus fumigatus*, which is not produced among different isolates. Combining computational analysis with targeted gene editing, we could link a single nucleotide insertion in the polyketide synthase of the trypacidin biosynthetic pathway and reconstitute its production in a nonproducing strain. Thus, we present a CRISPR/Cas9-based tool for advanced molecular genetic studies in filamentous fungi, exploiting selectable markers separated from the edited locus.

Involved units

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