CRISPR/Cas-based genome engineering in natural product discovery

This review briefly introduces and summarizes current knowledge about the Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR)/CRISPR-associated (Cas) – CRISPR/Cas system and how it was engineered to become one of the most important and versatile genome editing techniques that are currently revolutionizing the whole field of molecular biology. It aims to highlight and discuss the applications and remaining challenges of CRISPR/Cas (mainly focusing on CRISPR/SpCas9)-based genome editing in natural product discovery. The organisms covered include bacteria such as *Streptomyces*, *Corynebacteria*, and *Myxobacteria*; filamentous fungi such as *Aspergillus*, *Beauveria*, and *Ganoderma*; microalgae; and some plants. As closing remarks, the prospects of using CRISPR/Cas in natural product discovery will be discussed.

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