Terpenoid biosynthesis off the beaten track: unconventional cyclases and their impact on biomimetic synthesis.

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Abstract

Terpene and terpenoid cyclizations are counted among the most complex chemical reactions occurring in nature and contribute crucially to the tremendous structural diversity of this largest family of natural products. Many studies were conducted at the chemical, genetic, and biochemical levels to gain mechanistic insights into these intriguing reactions that are catalyzed by terpene and terpenoid cyclases. A myriad of these enzymes have been characterized. Classical textbook knowledge divides terpene/terpenoid cyclases into two major classes according to their structure and reaction mechanism. However, recent discoveries of novel types of terpenoid cyclases illustrate that nature's enzymatic repertoire is far more diverse than initially thought. This Review outlines novel terpenoid cyclases that are out of the ordinary.

Beteiligte Forschungseinheiten

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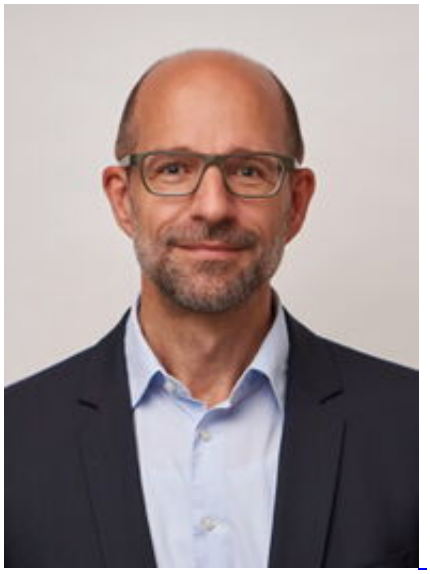
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