

Enzymatic Carbon-Sulfur Bond Formation in Natural Product Biosynthesis.

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Abstract

Sulfur plays a critical role for the development and maintenance of life on earth, which is reflected by the wealth of primary metabolites, macromolecules, and cofactors bearing this element. Whereas a large body of knowledge has existed for sulfur trafficking in primary metabolism, the secondary metabolism involving sulfur has long been neglected. Yet, diverse sulfur functionalities have a major impact on the biological activities of natural products. Recent research at the genetic, biochemical, and chemical levels has unearthed a broad range of enzymes, sulfur shuttles, and chemical mechanisms for generating carbon-sulfur bonds. This Review will give the first systematic overview on enzymes catalyzing the formation of organosulfur natural products.

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