

Characterization of the *Suillus grevillei* quinone synthetase GreA supports a nonribosomal code for aromatic α -keto acids.

Wackler B, Lackner G, Chooi YH, Hoffmeister D (2012) Characterization of the *Suillus grevillei* quinone synthetase GreA supports a nonribosomal code for aromatic α -keto acids. *Chembiochem* 13, 1798-1804.

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Abstract

The gene *greA* was cloned from the genome of the basidiomycete *Suillus grevillei*. It encodes a monomodular natural product biosynthesis protein composed of three domains for adenylation, thiolation, and thioesterase and, hence, is reminiscent of a nonribosomal peptide synthetase (NRPS). GreA was biochemically characterized in vitro. It was identified as atromentin synthetase and therefore represents one of only a limited number of biochemically characterized NRPS-like enzymes which accept an aromatic α -keto acid. Specificity-conferring amino acid residues--collectively referred to as the nonribosomal code--were predicted for the primary sequence of the GreA adenylation domain and were an unprecedented combination for aromatic α -keto acids. Plausible support for this new code came from in silico simulation of the adenylation domain structure. According to the model, the predicted residues line the active site and, therefore, very likely contribute to substrate specificity.

Involved units

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