

The novel serine/threonine protein kinase of Streptomyces coelicolor A3(2) regulates SAM induced-antibiotics production.

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Abstract

Streptomyces coelicolor A3(2) is a good model system to investigate the regulation of antibiotics production. S-adenosylmethionine (SAM) is known to regulate antibiotics production from *Streptomyces coelicolor* A3(2). Using proteomics approach, we studied the molecular mechanism of the antibiotics production induced by 1 mM SAM from the plasma membrane of *Streptomyces coelicolor* A3(2). Interestingly, the putative serine/threonine kinase (gi:32141327) was induced when the cell was treated with SAM and the putative kinase has very high sequence homology with AfsK family. It suggested that the antibiotics induction by SAM was regulated by a kinase of AfsK family. To further characterize the role of AfsK family in SAM-induced antibiotics production, we cloned and expressed 12 putative AfsK family kinases from *Streptomyces coelicolor* A3(2) based on their expected sequence homology with AfsK.

Reference

1. Bentley, S.D., Chater, K.F., et al., Complete genome sequence of the model actinomycete *Streptomyces coelicolor* A3(2). *Nature* 417 (6885), 141-147 (2002).