

BIOTECHNOLOGY & BIOENGINEERING

氮源对利迪链菌素生产及相关次级代谢物分布的影响

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摘要 The effects of nitrogen sources on streptolydigin production and distribution of secondary metabolites were investigated for flask cultured *S. lydicus* AS 4.2501. When peptone, asparamide, and glutamic acid were examined as the nitrogen source, respectively, liquid chromatography-mass spectrometry (LC-MS) and photodiode array (PDA) analyses revealed the formation of two analogues of streptolydigin in the fermentation broth. When soybean meal was used as the source of nitrogen, three analogues of streptolydigin were detected. The use of ammonium sulfate as a source of nitrogen resulted in a lower pH value of the fermentation system, thus inhibiting streptolydigin biosynthesis and changing the metabolic profiling. Among the nitrogen sources that were made use of, glutamic acid was most favorable to the formation of streptolydigin. Simultaneously, this study also showed that the changing nitrogen sources resulted in altering the production and relative ratios of streptolydigin and its analogues.

关键词 [Streptomyces lydicus](#) [nitrogen source](#) [analogue](#) [secondary metabolite](#) [streptolydigin](#)

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Nitrogen sources affect streptolydigin production and related secondary metabolites distribution of *Streptomyces lydicus* AS 4.2501

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Abstract The effects of nitrogen sources on streptolydigin production and distribution of secondary metabolites were investigated for flask cultured *S. lydicus* AS 4.2501. When peptone, asparamide, and glutamic acid were examined as the nitrogen source, respectively, liquid chromatography-mass spectrometry (LC-MS) and photodiode array (PDA) analyses revealed the formation of two analogues of streptolydigin in the fermentation broth. When soybean meal was used as the source of nitrogen, three analogues of streptolydigin were detected. The use of ammonium sulfate as a source of nitrogen resulted in a lower pH value of the fermentation system, thus inhibiting streptolydigin biosynthesis and changing the metabolic profiling. Among the nitrogen sources that were made use of, glutamic acid was most favorable to the formation of streptolydigin. Simultaneously, this study also showed that the changing nitrogen sources resulted in altering the production and relative ratios of streptolydigin and its analogues.

Key words [Streptomyces lydicus](#); [nitrogen source](#); [analogue](#); [secondary metabolite](#); [streptolydigin](#)

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