

OPTIMIZATION OF FOOD-GRADE MEDIUM COMPOSITION FOR MONACOLIN K PRODUCTION BY MONASCUS RUBER

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ABSTRACT

In this study, monacolin K was produced by *Monascus ruber* CCRC 31535 in flask culture. In preliminary study, the suitable effect of the different cooking oil in rice complex medium was investigated. The optimum cooking oil of the rice complex medium was vegetable oil. The initial pH and volume of the complex medium were set be 5.0 and 25mL, respectively. The culture condition 25 and 150 rpm in the shaker. The average yield of monacolin K was 0.100 mg/mL. In addition, response surface methodology was used to optimize the concentrations of the rice-vegetable oil complex compositions and to evaluate the effects of the composition concentrations on monacolin K productivity. The optimum composition for monacolin K production was found to be 37 g/L rice-particle, 5 g/L peptone, 43 mL/L g vegetable oil, 7.6 g/L glucose. With these compounds, the highest monacolin K production was 0.141 mg/mL after 10 days of cultivation. For this kind of complex medium, it would be good for monacolin K production by *M. ruber* CCRC 31535.

Keywords : *Monascus ruber* ; monacolin K ; rice complex medium ; response surface methodology

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