

# 利用氣舉式發酵培養白殭菌生產白殭菌素之研究

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## 摘要

本研究先行利用搖瓶培養方式進行苯丙胺酸-異戊酸添加之交叉試驗，探討其對本土白殭菌(*Beauveria bassiana* A1)生合成白殭菌素(beauvericin; BEA)產量影響，由實驗結果得知，單獨添加0.1 g/L異戊酸於起始酸鹼值為pH 5.7的主要培養基質(25.0 g/L 葡萄糖、10.0 g/L NZM broth、5.0 mL/L 玉米萃取液及2.0 g/L磷酸氫二鉀)時，在26 溫度下，以150 rpm振盪培養至第6天時，其BEA產量提高至5.02 mg/L，較無添加任何苯丙胺酸或異戊酸者(1.34 mg BEA/L)為高。若以此僅添加0.1 g/L異戊酸之主要培養基質進行5公升攪拌式發酵條件之探討，其最佳發酵條件為0.6 vvm通氣量，150 rpm攪拌速率，基質酸鹼值控制在pH 5.7 ± 0.1，培養至第6天時，其BEA產量可達到最高值6.60 mg/L。若探討8公升氣舉式發酵條件時，其最佳發酵通氣量則為0.9 vvm，基質酸鹼值亦控制在pH 5.7 ± 0.1，培養至第6天時，其BEA最高產量為8.60 mg/L，由此可知，氣舉式發酵及高通氣量有利於本土白殭菌生合成BEA。

關鍵詞：白殭菌素、氣舉式發酵槽、白殭菌、攪拌式發酵槽

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