

Cultivation of *Thraustochytrium* sp. to Produce Docosahexaenoic Acid

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ABSTRACT

In the last few years, everyone started paying attention to personal health, and disease prevention due to the improvement of the society. Docosahexaenoic acid (DHA) has physiological effects in heart and circulatory system, inflammatory and dermatitis disease. The study was investigated on batch production of DHA by *Thraustochytrium* sp. using 20 L fermentor. During the batch cultivation, temperature and pH were controlled at 25 °C and 6.5. Agitation and airflow were adjusted to keep the dissolved oxygen above 30 % of Saturation. Samples were taken for measurements of biomass, lipid and DHA contents. The medium contained per liter: 20.0 g glucose, 1.0 g ammonium sulfate. The results of experiment show that after 30 hrs, the nitrogenous source was exhausted, but there was still 11.54 g/L of carbonic source in the broth. However, the biomass and lipid were keeping raising. After 33 hrs, the biomass and lipid increased greatly. Until glucose was exhausted, biomass and lipid was decreasing. Under no carbonic source, microbe would consume the lipid which made by itself so that lipid was just decreasing. At 37 hrs, biomass was 3.48 g/L and lipid was 1.58 g/L. It was close to the stationary phase of microbial growth and lipid. At this time, docosahexaenoic acid was 251.07 mg/L. The lipid was 48 % of biomass and the docosahexaenoic acid was 7.61 % of biomass, respectively. Key Words : *Thraustochytrium* sp. docosahexaenoic acid (DHA)

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Table of Contents

封面內頁 簽名頁 授權書iii 中文摘要iv 英文摘要vi 誌謝vii 目錄viii 圖目錄xi 表目錄xii 1. 緒言1 2. 文獻回顧3 2.1 脂肪酸3 2.2 多元不飽和脂肪酸(PUFAs)3 2.2.1 何謂多元不飽和脂肪酸3 2.2.2 PUFAs的生理功能5 2.2.3 PUFAs之生物合成途徑7 2.2.4 DHA的生理作用9 2.2.5 PUFAs之應用13 2.3 -3係多元不飽和脂肪酸之市場需求及生產方式13 2.3.1 -3係PUFAs之市場需求13 2.3.2 -3係PUFAs之生產方式16 3. 材料與方法20 3.1 實驗材料20 3.1.1 菌株20 3.1.2 藥品20 3.1.3 儀器設備21 3.2 菌株培養24 3.2.1 平板培養24 3.2.2 種培養24 3.2.3 預培養27 3.2.4 20L批次發酵培養27 3.3 分析方法29 3.3.1 分析樣品處理流程圖29 3.3.2 生質量之測定29 3.3.3 脂質萃取29 3.3.4 脂肪酸甲酯之製備31 3.3.5 脂肪酸鑑定方法31 3.3.6 碳源測定32 3.3.7 氮源測定33 4. 結果與討論35 4.1 *Thraustochytrium* sp.菌相35 4.2 培養基中碳和氮可利用量對生質量、脂質累積和DHA生成量之影響35 4.3 溶氧量對生質量、脂質和DHA生成量之影響41 4.4 批次發酵之菌體生產速率47 4.5 批次發酵之脂質生產速率51 4.6 每克葡萄糖轉化為脂質的量55 4.7 DHA產量55 5. 結論58 5.1 結論58 5.2 未來展望58 參考文獻59 附錄62 圖目錄 圖2.1 脂肪酸的分類4 圖2.2 典型PUFAs之分子結構式6 圖2.3 PUFAs之生物合成途徑8 圖3.1 實驗架構圖22 圖3.2 樣品分析流程圖30 圖4.1 發酵槽培養*Thraustochytrium* sp.生產DHA38 圖4.2 *Thraustochytrium* sp.搖瓶培養39 圖4.3 光學顯微鏡下觀察*Thraustochytrium* sp.40 圖4.4 轉速及通氣量對生質量之變化42 圖4.5 溶氧量對生質量之變化43 圖4.6 殘碳、氮量對生質量之變化44 圖4.7 殘碳、氮量對脂質及DHA之變化45 圖4.8 溶氧量對脂質及DHA之變化46 圖4.9 培養時間對生質量之平均生產速率之變化49 圖4.10 培養時間對生質量之平均比生長速率之變化50 圖4.11 培養時間對脂質之平均生產速率之變化53 圖4.12 培養時間對脂質之平均比生產速率之變化54 圖4.13 殘碳量對脂質轉化率之變化57 表目錄 表2.1 含PUFAs之脂質的商品在生物醫學及藥物食品上的應用14 表2.2 市場上多元不飽和脂肪酸的商品15 表2.3 多元不飽和脂肪酸之來源17 表2.4 DHA的來源18 表3.1 *Thraustochytrium* sp.的生物學分類20 表3.2 無機鹽類之組成25 表3.3 微量金屬溶液之組成26 表4.1 培養時數對生質量、脂質及DHA生成之影響36 表4.2 培養時數之殘糖、殘氮量對生質量和脂質累積影響37 表4.3 培養時間對生質量之平均生產速率之變化48 表4.4 培養時間對脂質之平均生產速率之變化52 表4.5 碳量對脂質轉化率之變化56

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