# 以微生物發酵法製備幾丁質及其抗氧化特性

簡子婷(5140)

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## 大綱



## 摘要

幾丁質(chitin)為世界上含量最多的含氮多醣，主要儲存在甲殼動物(蝦、蟹等)、節肢動物外皮、昆蟲以及真菌和藻類細胞壁中，幾丁質和其衍生物幾丁聚醣，因其具有生物相容性、生物降解性和無毒性，所以常被用於食品、化妝品、農業、生醫以及廢水處理產業上。比較三種菌 *Pseudomonas aeruginosa*、*Serratia marcescens* 和 *Bacillus pumilus* 產生的蛋白酶，對蝦類廢棄物進行脫礦和脫蛋白的效率，用於萃取幾丁質，發現 *P. aeruginosa* 有較高的脫礦物質率(DM)和脫蛋白率(DP)能力。接著比較 6 種會產生蛋白酶的芽孢桿菌種發酵蟹殼廢棄物，用於製造幾丁質，並評估發酵時產生上清液的抗氧化活性，並發現在培養基中添加 5%葡萄糖會顯著提高 DM 率，DP 則是略微上升。若將 *Bacillus licheniformis* 和 *Gluconobacter oxydans* 兩株菌進行連續發酵，採用三種不同的共培養方式，及 B+G (同時培養)、B→G (先培養 *B.* 21886，接著再加入 *G.* 2003 共同培養)和 G→B (先培養 *G.* 2003，接著再加入 *B.* 21886 共同培養)，發現 B→G 的組別，具有最高的 DP(93.5%)和 DM(87%)。

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