

以不同方法萃取蝦蟹殼中類胡蘿蔔素蛋白質

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大綱

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二、利用木瓜蛋白酶萃取蝦殼中類胡蘿蔔素蛋白質

三、利用長鰭鮪脾臟胰蛋白酶萃取蝦殼中類胡蘿蔔素蛋白質

四、利用新型高選擇性方法萃取蟹殼中類胡蘿蔔素蛋白質

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摘要

類胡蘿蔔素蛋白質(Carotenoprotein)比類胡蘿蔔素穩定，目前已經有溶劑萃取、超臨界流體萃取等不同技術萃取類胡蘿蔔素蛋白質的研究。然而，這些方法存在蛋白質含量低、灰分和幾丁質含量高以及類胡蘿蔔素蛋白質穩定性低等諸多缺點。為了提高萃取效率，已經實施了蛋白酶為媒介的水解過程。本篇目的為使用不同蛋白酶(木瓜蛋白酶、長鰭鮪脾臟胰蛋白酶)，通過酵素性水解蝦殼及開發以青蟹內臟鹼性蛋白酶輔助的新型萃取方法，萃取青蟹蟹殼中類胡蘿蔔素蛋白質並探討所得的類胡蘿蔔素蛋白質之特性。類胡蘿蔔素蛋白質可以使用木瓜蛋白酶通過酵素性水解有效萃取，可以作為有效的抗氧化劑，也是必需胺基酸和類胡蘿蔔素的豐富來源。長鰭鮪脾臟胰蛋白酶顯示從南美白蝦殼中有效水解和回收類胡蘿蔔素蛋白質的能力，用酶萃取的類胡蘿蔔素蛋白質具有較高的蛋白質、脂肪、色素和必需胺基酸含量。因此，長鰭鮪脾臟胰蛋白酶可能是一種從蝦殼中萃取類胡蘿蔔素蛋白質的潛在新型酶，且萃取的類胡蘿蔔素蛋白質可作為增值營養食品成分或動物飼料，以生產具有成本效益且富含抗氧化劑的飲食，以提高養殖物種的免疫力和存活率。為了提高萃取效率，測試了不同的方法(酶法、浸漬法、索氏法等)和溶劑，發現和青蟹內臟鹼性蛋白酶預處理相結合時，使用二元系統己烷/異丙醇進行浸漬法是最有效及選擇性的萃取方式，產生的類胡蘿蔔素蛋白質含更高類胡蘿蔔素含量、更低總多酚含量和可溶性蛋白質含量。

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