# 不同超音波條件對甜菊醣苷萃取之影響

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## 摘要

甜菊葉含有超過 8 種不同類型的甜菊醣苷。賦予甜味的兩種主要糖苷是甜菊苷(Stevioside)和瑞鮑迪苷 A (Rebaudioside A, RA)。與葡萄糖相比，它們的甜度是 200-300 倍。之前的研究已開發不同萃取方法包括微波、熱水、浸漬等萃取法萃取甜菊醣苷。從甜菊葉中萃取甜菊醣苷需經過很多步驟，其中大部分需要大量消耗時間和獲得的產量可能不是很高。因此使用一種安全、綠色的溶劑來萃取甜菊醣苷，並探討最適合的萃取條件以生產高產率的甜菊醣苷至關重要。本研究選擇使用超音波輔助萃取法(ultrasound-assisted extraction, UAE)萃取並瞬時控制壓降(instant controlled pressure drop, DIC)的預處理萃取大量的甜菊醣苷。溶劑的使用、萃取溫度、適量的固溶比、植物顆粒的大小以及超音波功率都是被考量的因子。結果顯示，使用 DIC 作為預處理，瑞鮑迪苷 A 的萃取率達到 2.97% (g/100 g)。與水和乙醇相比，使用異丙醇作為溶劑獲得的瑞鮑迪苷 A 的產量最高，產量為 37.10 g/100 g，最佳應用功率和超音波處理時間分別為 480 W 和 18 分鐘。最後，超音波萃取法獲得甜菊糖產量的不同最佳條件是使用甘油為溶劑，固溶劑比為 1:30，植物粉末粒徑為 0.075 mm，超音波的功率、作用溫度和頻率分別爲 200 W, 70 °C 和 20 kHz。利用這些條件得出來的萃取率為 8.81 mg/g。因此，使用超音波作為萃取方法可以縮短萃取時間，從而減少耗時、降低能源成本並提高萃取率。同時使用甘油作為安全、綠色的溶劑萃取甜菊葉中的甜菊醣苷。

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