不同來源的胜肽螯合鈣或鐵之能力分析

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摘要

胜肽螯合鈣可改善腸道吸收和生物利用度，通過較小分子或寡肽之途徑增強腸壁的吸收，同時具有更好的溶解性和熱穩定性，這些特性對於鈣通過食品加工和人體胃腸系統吸收鈣的持久性至關重要；螯合物還防止鈣離子在含有單寧、草酸鹽和植酸鹽的食物中沉澱來提高鈣的生物利用度。而胜肽螯合鐵也是透過較小的分子或寡肽改善鐵在十二指腸不易吸收的問題，維持亞鐵的型態並增加溶解度與生物利用度，常常應用在血紅蛋白或神經系統上。本篇目的探討為不同來源胜肽的純化及結合鈣或鐵的點位之物化能力分析。雞腳湯副產物之胜肽(chicken foot broth byproduct peptides, CFBP)使用 LC-MS/MS 對其進行分析，這些胜肽富含 Glu、Asp、Lys、Gly 和 Leu，還表現出多種生物活性，如抑制二肽基肽酶 IV 和血管緊張素轉換酶。綠豆蛋白水解物(mung bean protein hydrolysates, MBPHs)的胜肽合成了 LLLGI、AIVIL 和 HADAD 為最好的鈣結合劑，結果也顯示五肽比起七肽、八肽有更好的結合能力，疏水性胺基酸的種類與位置，是配製具有增強礦物質結合特性的功能性食品的潛在成分。不同分子量之芝麻胜肽(sesame meal peptide, SSMP)成分對鈣的螯合能力，以 SSMP-2 (5~8 kDa)對鈣的螯合率為 72.72 ± 0.17%，同時其 PDI 係數最低能更好地分散在水溶液中；還有 zeta 負電位最高，代表其表面負電荷較多可以與更多的鈣結合。綜合以上結果不同來源之胜肽的分子量大小、胺基酸排序與官能基變化，改善鈣在腸道吸收的方式及效果，進而提升胜肽螯合鈣的生物利用度。

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