利用基因工程乳酸菌產製外源性胞外超氧歧化?

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摘 要

活性氧物質，如超氧陰離子，與許多疾病之生成有關。胞外超氧歧化?為胞外基質中唯一可清除超氧陰離子之酵素，能夠降低超氧陰離子對細胞或組織所引發的一連串傷害，如心血管疾病、肺部疾病、神經失調與發炎。有鑑於此，本研究旨在探討運用利用基因工程方式於乳酸桿菌中產制人類胞外超氧歧化?之可行性。首先，人類胞外超氧歧化?基因片段以聚合?鏈連鎖反應擴增後，選殖至乳酸菌表現型載體pLP3537，並且利用電穿孔方式轉型至乳酸桿菌中，經過紅黴素的篩選過程，選取具有高套數目標基因的轉型菌株為實驗材料。進而以肝素親和性管柱配合快速蛋白質液相層析系統自乳酸桿菌轉型株中初步純化出人類胞外超氧歧化?，由硫酸十二酯鈉膠體電泳與西方吸漬法分析結果顯示，粗純化酵素之分子量約為38與50 kDa，分別為人類胞外超氧歧化?單元體與二元體形式，經超氧歧化?活性分析試劑套組之分析試驗結果顯示，重組乳酸菌株所表現之外源性胞外超氧歧化?具有抗氧化活性。

關鍵詞 : 胞外超氧化物歧化? ; 乳酸桿菌 ; 抗氧化活性

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