奈米幾丁聚醣粒子於口腔黏膜細胞穿透之研究

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摘 要

本研究首先配製濃度5 mg/mL幾丁聚醣鹽酸鹽溶液，依序加入不同量的架橋(genipin)，架橋劑濃度分別為0、0.25、0.5、0.75、及1 mg/mL，再進行噴霧乾燥法製備出幾丁聚醣鹽酸鹽奈米粒子，產物分別標示為A、B、C、D、及E對樣本作物性分析。使用場發射電子顯微鏡觀察，其各產物平均粒徑介於223至264 nm之間。隨著架橋劑濃度增加，粒徑有變小的趨勢，且粒子表面皺摺也越趨明顯。人類口腔鱗狀癌上皮細胞KOSC-3，在細胞培養中觀察到細胞型態為鱗狀上皮細胞，其生長曲線在第2~4天為對數成長期，將分別與KOSC-3進行MTT細胞毒性評估，發現經架橋劑處理的粒子在濃度100 μg/mL以下對KOSC-3細胞無明顯毒性。經過細胞切片證實KOSC-3為複層鱗狀上皮細胞，雖有細胞堆疊情形但此型態並不穩定易造成細胞死亡。經 TEER試驗得知各樣本能有效促進細胞間隙的打開，並經trypan blue染色後發現對細胞經TEER試驗後均無死亡現象，可證明此五種幾丁聚醣鹽酸鹽奈米粒子能增加細胞間隙開合的效果。

關鍵詞 : 幾丁聚醣鹽酸鹽、KOSC-3、細胞切片、細胞毒性、穿透試驗

目錄

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