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• 中文摘要	本研究目的爲修飾微晶纖維素的物理性質。方法爲利用.beta.-環糊精以 10-50% w/w 的乾燥固體百分比與微晶纖維素的半成品溼塊混合,並以水造粒後於 60.degree.C 下乾燥 12 小時,得到的顆粒加以粉碎並選取顆粒大小爲 61-150.mu.m 的部分。此微晶纖維素與.beta.-環糊精的共同乾燥產物分別與未添加.beta.-環糊精的相對微晶纖維素、市面上幾種商品等級的微晶纖維素、微晶纖維素與.beta.-環糊精之物理混合等,比較其粉末特性及壓錠的性

質。實驗結果顯示微晶纖維素與.beta.-環糊精共同乾燥的產物,其粉末流動性明顯增加;由電子顯微鏡上可見由於共同乾燥的步驟形成較具圓形的粉末顆粒,此可能是粉末流動性增加的原因。此外,該共同乾燥產品的壓錠性及崩散性皆優於相對未添加.beta.-環糊精的微晶纖維素、幾種商品等級的微晶纖維素、微晶纖維素與.beta.-環糊精之物理混合。使用微晶纖維素的半成品溼塊與.beta.-環糊精共製所得到的修飾效果,大於使用現有的微晶纖維素成品。此可能是因爲半成品溼塊的水分,可促進具水溶解度的.beta.-環糊精在造粒過程中,與微晶纖維素的交互作用。本報告的結論爲微晶纖維素與.beta.-環糊精共同乾燥的產品,可作爲應用在直接打錠的賦形劑。

• 英文摘要

In an attempt to modify the physical properties of microcrystalline cellulose (MCC), the slurry form of this material was co-dried with .beta.-Cyclodextrin (.beta.-CD). MCC slurry was blended with .beta.-CD at concentrations of 10% to 50% w/w as a dried mass relative to MCC. The mixtures were then granulated with water and co-dried at 60.degree.C for 12 hours or until a constant weight was reached. Co-dried granules were pulverized and the fraction between 61 and 150.mu.m in size was reserved. The powder and tableting properties of the co-dried products were compared to various grades of MCC and these corresponding components and physical mixtures. The results showed that the products of MCC co-dried with .beta.-CD significantly improved the flowability of MCC powder. It is probable that the improved flowability was due to the more rounded shape of particles formed with this co-dried process, which was confirmed by SEM photographs. Moreover, the compactibility and disintegration properties of tablets produced from the co-dried products were even better than those using MCC alone, physical mixtures or various grades of MCC. MCC in a slurry form was more efficient than the existing MCC products in achieving these results which is postulated to be due to the greater amount of water required and the higher solubility of .beta.-CD in water promoting the interaction between .beta.-CD and MCC during granulation. In conclusion, MCC co-dried with .beta.-CD provides a useful excipient for direct compression.