生物聚醣三仙膠陰離子特性之應用研究

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摘 要

三仙膠(xanthan gum)研究至今超過四十年，主要應用研究方向為食品、化妝品與製藥工業等。對於金屬離子吸附分離方面的應用研究則仍付之闕如，部分文獻探討關於水溶液中金屬離子分離程序使用之生物吸附材，亦鮮見以三仙膠作為生物吸附材之探討。本研究探討三仙膠對25℃水溶液中銅離子、鋅離子及鎘離子之生物吸附性能（biosorption），並計算單位重量三仙膠對這些金屬離子之平衡吸附量（uptake），再據以繪製等溫吸附平衡曲線（isotherm）。大部分生物吸附程序的等溫吸附平衡曲線近似氣體吸附之蘭格米奧型式（Langmuir）吸附平衡曲線的線型，故本實驗採用蘭格米奧數學式（Langmuir expression）以建立吸附平衡曲線模式。以迴歸方法取得各吸附平衡曲線之蘭格米奧數學式之常數qm與K值，加以比較討論。實驗證明三仙膠對水溶液中銅離子、鋅離子及鎘離子的生物吸附屬良性吸附，且發現三仙膠對銅離子的吸附量最高，而對鎘離子與鋅離子的吸附量雖較銅離子小，但兩者相去不遠。

關鍵詞 : 生物吸附 ; 生物聚醣 ; 三仙膠 ; 重金屬 ; 等溫吸附曲線

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