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论文

5-氟尿嘧啶在Caco-2细胞模型中的吸收特性

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摘要:

为研究5-氟尿嘧啶(5-FU)在Caco-2细胞模型中的吸收特性,用Caco-2细胞模型,分别测定了在各种条件下对5-FU的吸收。结果显示:吸收在pH6的介质中为佳;吸收的初速随浓度的增加趋于一个饱和值,Michaelis常数 K_m =24mmol·L^{-1};吸收可被氰化钠、哇巴因、双嘧达莫等代谢抑制剂抑制,也被同类结构的化合物尿嘧啶、胸腺嘧啶、尿核苷等抑制。由此可知,5-FU的吸收可由尿嘧啶载体转运。

关键词: 5-氟尿嘧啶 Caco-2细胞

THE UPTAKE CHARACTERISTICS OF 5-FLUOROURACIL IN THE CACO-2 MODEL SYSTEM

Chen Jiyue; Xu Ziyou and Li Yiqi

Abstract:

The uptake characteristics of 5-fluorouracil in the Caco-2 model system were studied. The uptake of 5-fluorouracil was determined at different pH and concentrations, and in the presence of various inhibitors. The results indicated that the uptake of 5-fluorouracil was the best at pH 6.0. The rate of uptake was saturable with a K_{m-1}, and a V_{max} of 20.9 nmol·min^{-1}·mg^{-1} protein. The uptake was inhibited by noncompetitive inhibitors such as NaCN, ouabain, and dipyridamole. The uptake was also inhibited competitively by analogous compounds such as uracil, thymine, and uridine (but not by hypoxanthine). In conclusion, the evidence suggests that 5-fluorouracil was transported by uracil carrier in Caco-2 cells.

Keywords: Caco-2 cells 5-Fluorouracil (5-FU)

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