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研究报告

^{125}I标记重组人血小板生成素的分布和代谢特征

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摘要 摘要：目的: 建立125I标记重组人血小板生成素（rhTPO）的分析方法并研究小鼠尾静脉注射125I- rhTPO后的体内分布及药动学特征。方法: Iodogen法制备125I- rhTPO，经Sephadex-G25凝胶柱分离纯化，纸层析法检测放化纯度。按1m g.kg-1剂量经尾静脉给药，于不同时间检测血浆中的放射性变化，并计算相应的血药浓度及药动学参数。同时于各时间点观察125I- rhTPO在各组织器官的分布情况。结果和结论: 制备的125I- rhTPO标记率为96.25%，放化纯度95.85%。尾静脉注射125I- rhTPO 1m g.kg-1在小鼠体内可以二室模型拟合血药浓度的动态变化，T1/2a 为0.30h，T1/2b 为6.20h。125I- rhTPO在小鼠体内主要经肾脏排泄，部分可经肝胆系统代谢。在各骨组织中以富含骨髓细胞的胸骨放射性计数最高，股骨次之，而乏骨髓的胫骨放射性计数最低，提示骨髓是TPO作用的靶组织。

关键词 血小板生成素 代谢 分布 药物动力学

分类号

Study on distribution and metabolism of 125I-recombinant human thrombopoietin in mice

Abstract Abstract: AIM: To establish the method and investigate the pharmacokinetics and distribution of 125I-rhTPO in mice receiving caudal vein injection. MEHTODS: 125I-rhTPO was radio-iodinated by Iodogen solid labeling method, and was isolated and purified by Sephadex-G25 agarose. The radiochemical purity of labeled protein was analyzed by paper chromatography. After caudal vein injection with 125I-rhTPO, the plasma samples were collected at different time and the drug concentration was determined according to the radioactivity. Then the pharmacokinetic parameters were calculated. The distribution of 125I-rhTPO in mice was measured at different times after caudal vein injection with 125I-rhTPO. RESULT AND CONCLUTION: It is shown that the labeling rate of 125I-rhTPO was 96.25%, radiochemical purity is 95.85%. The pharmacokinetics of 125I-rhTPO following i.v. with 1m g.kg-1 in mice was fit to two-compartment model, T1/2a was 0.30h，T1/2b was 6.20h. The distribution of 125I-rhTPO in different tissues showed that most of the 125I-rhTPO was metabolized by the kidney, a little of the 125I-rhTPO was metabolized by the liver and gall system. The radioactivity level in breastbone was higher than in thighbone and shinbone, the radioactivity level in shinbone was the lowest. It is suggest that the bone marrow was the target of the rhTPO.

Key words Thrombopoietin Metabolism Distribution Pharmacokinetics

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