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化学

碘标白藜芦醇及其小鼠体内分布

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摘要 通过碘^{131}标记白藜芦醇探讨白藜芦醇在小鼠体内的分布代谢。采用过氧化物酶法对白藜芦醇进行^{131}I标记；经乙酸乙酯萃取纯化，以聚酰胺薄膜为支持介质，*V*(三氯甲烷)∶*V*(丙酮)∶*V*(乙醇)∶*V*(水) =4∶4∶0.5∶0.4为展开剂，测定标记物的标记率和放化纯；KM小鼠尾静脉注射^{131}I白藜芦醇（每只 0.185 MBq，*n*=5）。^{131}I白藜芦醇标记率达69.3%，萃取分离后其放化纯为95 9%，3、7和15 d后分别为92.0%、90.4%、90.1%；动物实验显示，^{131}I白藜芦醇在小鼠体内广泛分布，主要经肝和肾进行代谢，5 min时每克组织百分注射剂量率(%ID•g^{-1})分别为16.35、13.05，在肠中也有较高分布，10 min时%ID•g^{-1}为11.70；甲状腺的摄取率随时间的延长而增加。碘标白藜芦醇标记物较稳定，可用于进一步的微量示踪研究。

关键词 白藜芦醇；放射性碘标记；体内分布

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Radioiodine Labeling of Resveratrol and Its Biodistributio n in Mice

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Abstract In order to investigate the preparation of radioiodinated resveratrol and its biodistributi on in mice, resveratrol was labeled with ^{131}I using lactoperoxidase methods and purified by ethy l acetate. The radiolabeled compound was characterized by polyamide TLC, in which the substra tum of $V_{trichoromethane}$: Vacetone∶Vethanol∶VAdam's ale=4∶4∶0.5∶0.4 was used as th e developing agent. Biodistribution studies were accomplished on KM mice. At different time afte r radiopharmaceutical i.v. administration (0 185 MBq ^{131}I tetrahydropalmatine/mouse), th e animals were sacrificed (*n*=5 animals for each time). Blood and the interested tissues were colle cted, washed, weighted and counted. The percent injected dose per gram (%ID•g^{-1}) was calc ulated for each sample. The labeling yield of ^{131}I resveratrol is 69.3% and its RCPs are 9 5.9%, 92.0%, 90.4%, and 90.1% after 1, 3, 7 and 15 d, respectively. Biodistribution in mice de monstrates that ^{131}I resveratrol is distributed into broad organs and tissues. However, it reve als higher levels in liver, kidney and intestine than in other tissues. In liver and kidney, the %ID•g^{-1}are 16.35% and 13.05% at 5 min, respectively. ^{131}I resveratrol is metabolized mainly through l iver and kidney. Simultaneously, its high distribution is also found in intestine. The %ID•g^{-1} of ^{131}I resveratrol is 11.70% at 10 min; the activity in thyroid increases with time. Therefore, the ^{131}I resveratrol is worthy of further investigation to trace the compound in vivo and ex vivo.

Key words resveratrol _ radioiodine labeling _ biodistribution

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