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论文

RP-HPLC法研究白藜芦醇衍生物(BTM-0512)在大鼠血浆与组织中的分布

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摘要:

建立大鼠血浆与组织中白藜芦醇衍生物(BTM-0512)高效液相色谱测定方法,用于研究BTM-0512在大鼠体内的分 布。色谱柱: BDS Hypersil C₁₈(250 mm×4.6 mm ID,5 μm),流动相: 乙腈-水(55:45),流速: 1 mL·min⁻ ¹,检测波长:319 nm,己烯雌酚作内标。含药血浆与组织匀浆液用乙腈直接沉淀蛋白后,进样分析。本法线性范 围为血浆: $0.01\sim10.0~\mu g\cdot mL^{-1}$,组织样品: $0.04\sim40~\mu g\cdot g^{-1}$, r^2 均大于0.996(n=7),方法的准确度平均值在 95.3%~100.1%;提取回收率在95.9%~100.9%;日内、日间RSD<5.1%。BTM-0512在血浆中含量较低,在 肝脏中分布最多,在脂肪中有蓄积现象。本法灵敏度高,操作简便、准确,可用于大鼠血浆及组织中BTM-0512的 测定及分布研究。

关键词: (E)-3,5,4'-三甲氧基-1,2-二苯乙烯 高效液相色谱法 白藜芦醇

RP-HPLC study of resveratrol derivative (BTM-0512) in rat plasma and tissue distribution

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Abstract:

This paper described a rapid and sensitive HPLC method to analyze (E)-3,5,4'-trimethoxystilbene (BTM-0512) in rat plasma and tissues. The analysis used a BDS Hypersil C_{18} analytical column (250 mmimes4.6mm ID, 5 μm) and acetonitrile / water as the mobile phase. The UV detection wavelength was 319 nm. Proteins were precipitated with acetonitrile and diethylstilbestrol as internal standard. The method was validated according to State Food and Drug Administration of China and ICH of Technical Requirements for Registration of Pharmaceuticals for Human Use Guidelines. The limit of detection (S/N: 3/1) for BTM-0512 was 0.005 μg·mL⁻¹ for plasma. The method performances were shown to be selective for BTM-0512 and the linearity of the assay method was up to 10.0 $\mu g \cdot mL^{-1}$ and 40.0 $\mu g \cdot g^{-1}$ for plasma and tissues, respectively. At 0.1, 1 and 5 $\mu g \cdot mL^{-1}$ (n=5), intraday and interday precision values (%RSD) were in the range of 2.6%-5.1% and 2.4%-4.8%, respectively. Mean accuracy and absolute recoveries of BTM-0512 ranged from 95.3%-100.1% and 95.9%-100.9% for plasma and tissues, respectively. This method can be quite useful for BTM-0512 pharmacokinetic and tissue distribution studies, for purpose which multiple plasma and tissue samples can be analyzed quickly with high reproducibility.

Keywords: HPLC resveratrol (E)-3,5,4'-trimethoxystilbene

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