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The Pharmacokinetics and Tissue Distribution of Methyl Rosmarinate in Rats

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***SUMMARY*. Methyl rosmarinate (MR) exhibits a broad range of pharmacological properties and it may be a potential candidate in the future research and development. However, to the best of our knowledge, little is known about the pharmacokinetic and tissue distribution of MR. A simple, rapid high performance liquid chromatography (HPLC) method was established and fully validated to detect MR in rat plasma and tissues in this paper. And the pharmacokinetic differences were investigated after the intravenous injection of different doses of MR. The results showed that MR could be cleared quickly from the rat plasma and distribute widely *in vivo*. Spleen, intestine and liver were the major distribution tissues of MR in rats, and MR could permeate the blood-brain barrier and blood-testis barrier. This research is very useful for gaining the knowledge of pharmacokinetic process and tissue distribution of MR.**

RESUMEN. El metil rosmarinato (MR) exhibe una amplia gama de propiedades farmacológicas y puede ser un candidato potencial para futura investigación y desarrollo. Sin embargo, hasta ahora poco se sabe sobre la distribución farmacocinética y tisular del MR. En este trabajo se estableció un método simple y rápido de cromatografía líquida de alto rendimiento (HPLC) y se validó completamente para detectar MR en plasma y tejidos de rata. Las diferencias farmacocinéticas se investigaron después de la inyección intravenosa de diferentes dosis de MR. Los resultados mostraron que la RM podía eliminarse rápidamente del plasma de rata y distribuirse ampliamente *in vivo*. El bazo, el intestino y el hígado fueron los principales tejidos de distribución de MR en ratas, y podría impregnar las barreras hematoencefálica y hematotesticular. Esta investigación es muy útil para obtener el conocimiento del proceso farmacocinético y la distribución tisular del MR.

KEY WORDS: high performance liquid chromatography, methyl rosmarinate, pharmacokinetic, tissue distribution.

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