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Determination and Pharmacokinetics of Delsoline in Rat Plasma by Ultra-Performance Liquid Chromatography-Tandem Mass Spectrometry

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***SUMMARY*. The aim of this study is to develop an ultra-performance liquid chromatography-tandem mass spectrometry (UPLC-MS/MS) method to assess the concentration of delsoline in rat plasma and its pharmacokinetics. Twelve rats were randomly divided into two groups. One group was given delsoline (10 mg/kg) by oral administration, and the other was given delsoline (2 mg/kg) by intravenous administration. The blood (100 μL) was obtained at 5 min, 0.25, 0.5, 1, 2, 4, 6, 8, 12, and 24 h after administration. After a simple protein precipitation procedure using methanol, the concentration of delsoline and the internal standard (diazepam) in rat plasma were detected by UPLC-MS/MS method. The precision, accuracy, recovery, matrix effect and the stability of the method were all in an acceptable range. The calibration plots were linear within the range of 1-2000 ng/mL, and the lower limit of quantification (LLOQ) of delsoline was 1 ng/mL. Pharmacokinetics of delsoline in rats after oral and intravenous administration were studied. The absolute bioavailability of delsoline was 5.2% in rats.**

RESUMEN. El objetivo de este estudio es desarrollar un método de espectrometría de masas en tándem con cromatografía líquida de ultra rendimiento (UPLC-MS/MS) para evaluar la concentración de delsolina en plasma de rata y su farmacocinética. Se dividieron al azar doce ratas en dos grupos. A un grupo se le administró delsolina (10 mg/kg) por vía oral y al otro grupo se le administró delsolina (2 mg/kg) por vía intravenosa. La sangre (100 μL) se obtuvo a los 5 min, 0,25, 0,5, 1, 2, 4, 6, 8, 12 y 24 h después de la administración. Después de un procedimiento simple de precipitación de proteínas usando metanol, la concentración de delsolina y el estándar interno (diazepam) en plasma de rata se detectaron mediante el método UPLC-MS/MS. La precisión, exactitud, recuperación, efecto matriz y la estabilidad del método estaban todos en un rango aceptable. Las gráficas de calibración fueron lineales dentro del rango de 1-2000 ng/mL, y el límite inferior de cuantificación (LLOQ) de delsoline fue 1 ng/mL. Se estudió la farmacocinética de la delsolina en ratas después de la administración oral e intravenosa. La biodisponibilidad absoluta de la delsoline fue del 5,2% en ratas,.

KEY WORDS: bioavailability, delsoline, pharmacokinetics, rat, UPLC-MS/MS.

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