



Pharmacokinetic Study of Remifentanil in Rat Plasma by LC-MS/MS

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SUMMARY. In this study, a simple, rapid and sensitive liquid chromatography tandem mass spectrometry (LC-MS/MS) method is described for determination of remifentanil in rat plasma samples using carbamazepine as the internal standard from pharmacokinetic assays. Sample preparation was accomplished through liquid-liquid extraction with ethyl acetate, and chromatographic separation was performed on an Acquity BEH C18 column (2.1 mm × 50 mm, 1.7 μm) with gradient profile at a flow of 0.4 mL/min. The linearity of this method was found to be within the concentration range of 2-1000 ng/mL for remifentanil in rat plasma. Only 3.0 min was needed for an analytical run. The method was applied to a pharmacokinetic study of remifentanil in rats.

RESUMEN. En este estudio, un método de espectrometría de masas en tándem con cromatografía líquida (LC-MS / MS) simple, rápido y sensible se describe para la determinación de remifentanilo en muestras de plasma de rata en ensayos farmacocinéticos, usando carbamazepina como estándar interno. La preparación de la muestra se llevó a cabo a través de la extracción líquido-líquido con acetato de etilo, y la separación cromatográfica se realizó en una columna Acquity BEH C18 (2,1 mm × 50 mm, 1,7 μm) con perfil de gradiente a un caudal de 0,4 mL/min. La linealidad de este método está dentro del intervalo de concentración de 2-1000 ng mL para el remifentanil en plasma de rata. Se necesitan sólo 3,0 min para una serie de análisis. El método se aplicó a un estudio farmacocinético de remifentanilo en ratas.

KEY WORDS: pharmacokinetic, rat plasma, remifentanil, LC-MS/MS.

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