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Validated UPLC-MS/MS Method for the Determination of Sunitinib in Rat Plasma

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***SUMMARY*. In this study, a simple, rapid and sensitive ultra performance liquid chromatography tandem mass spectrometry (UPLC-MS/MS) method is described for determination of sunitinib in rat plasma samples using diazepam as the internal standard (IS) from pharmacokinetic assays. Sample preparation was accomplished through a simple protein precipitation with acetonitrile, 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 0.40 mL/min. The linearity of this method was found to be within the concentration range of 0.2-400 ng/mL for sunitinib in rat plasma. Only 3.0 min was needed for an analytical run. The method was applied to a pharmacokinetic study of sunitinib in rats.**

RESUMEN. En este estudio se describe un método simple, rápido y sensible de cromatografía ultra líquida en tándem con espectrometría de masas (UPLC-MS/MS) para la determinación de sunitinib en muestras de plasma de rata usando diazepam como estándar interno (IS) a partir de ensayos farmacocinéticos. La preparación de la muestra se llevó a cabo mediante una simple precipitación de proteínas con acetonitrilo y la separación cromatográfica se realizó en una columna Acquity BEH C18 (2,1 × 50 mm, 1,7 μm) con perfil de gradiente a un caudal de 0,40 mL/min. Se encontró que la linealidad dele método era en el intervalo de concentración de 0,2 a 400 ng/mL para sunitinib en plasma de rata. Sólo se necesitam 3 min para una serie de análisis. El método se aplicó con éxito a un estudio farmacocinético de sunitinib en ratas.

KEY WORDS: sunitinib, UPLC-MS/MS, rat plasma, pharmacokinetics.

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