



## Determination and Pharmacokinetic Study of Gefitinib in Rat Plasma by a Simple UPLC-MS/MS Method

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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 gefitinib in rat plasma samples using pirfenidone 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 0.4 mL/min. The linearity of this method was found to be within the concentration range of 10-2000 ng/mL for gefitinib in rat plasma. Only 3.0 min was needed for an analytical run. The method was applied to a pharmacokinetic study after oral administration of 25 mg/kg gefitinib in rats.

**RESUMEN.** En este estudio se describe un método simple, rápido y sensible de espectrometría de masas en tándem con cromatografía líquida de ultra desempeño (UPLC-MS/MS) para la determinación de gefitinib en muestras de plasma de rata usando pirfenidona como el estándar interno (IS) a partir de ensayos farmacocinéticos. La preparación de la muestra se llevó a cabo a través de una sencilla precipitación de proteínas con acetonitrilo 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 del método está dentro del intervalo de concentración de 10-2000 ng/mL para gefitinib en plasma de rata. Sólo se necesitan 3,0 min para una serie de análisis. El método se aplicó exitosamente a un estudio farmacocinético después de la administración oral de 25 mg/kg de gefitinib en ratas.

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**KEY WORDS:** gefitinib, pharmacokinetic, rat plasma, UPLC-MS/MS.

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