



Determination of Meropenem in Human Plasma by HPLC: Validation and its Application to Pharmacokinetic Study

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SUMMARY. A specific, accurate, precise and reproducible high-performance liquid chromatography (HPLC) method was developed and validated for the determination of meropenem in human plasma using acetaminophen as an internal standard (IS). Meropenem and acetaminophen were separated on a C₁₈ reversed phase column after simple protein precipitation, eluted with mobile phase of acetonitrile-5 mM KH₂PO₄ (10:90, v/v), and detected by a UV detector at 298 nm. The calibration curve was linear ($r^2 > 0.99$, $n = 5$) over the concentration range of 0.5~50 $\mu\text{g/mL}$. The methods were validated and successfully applied in meropenem pharmacokinetic studies.

RESUMEN. Un método de cromatografía líquida de alta resolución (HPLC) específico, exacto, preciso y reproducible fue desarrollado y validado para la determinación de meropenem en plasma humano, usando acetaminofeno como estándar interno (IS). Meropenem y acetaminofeno se separaron en una columna de fase reversa C₁₈ después de una sencilla precipitación de proteínas, eluyendo con una fase móvil de acetonitrilo y KH₂PO₄ 5 mM (10:90, v/v), utilizando un detector de UV a 298 nm. La curva de calibración fue lineal ($r^2 > 0.99$, $n = 5$) en el rango de concentración de 0,5 ~ 50 $\mu\text{g/mL}$. Los métodos fueron validados y aplicados con éxito en estudios farmacocinéticos de meropenem.

KEY WORDS: HPLC, Meropenem, Pharmacokinetics.

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