

Liquid Chromatography Mass Spectrometry for the Determination of ZLJ-601 in Dog Plasma and its Application to Pharmacokinetic Study

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SUMMARY. (Z)-2-amino-1,5-dihydro-1-methyl-5-[4-(mesyl)benzylidene]-4H-imidazol-4-one mesilate (ZLJ-601) is a dual inhibitor of cyclooxygenase and 5-lipoxygenase. In this study a sensitive and specific liquid chromatography mass spectrometry (LC-MS) method was developed for the determination of ZLJ-601 in dog plasma. The plasma samples were treated by liquid-liquid extraction with ethyl acetate and analyzed using LC-MS with an electrospray ionization interface. The method was validated in the concentration range of 0.02~10 µg/mL and then successfully applied to the pharmacokinetic study in beagle dogs after intravenous injection of 1, 2, and 5 mg/kg of ZLJ-601.

RESUMEN. El (Z)-2-amino-1,5-dihidro-1-metil-5-[4-(mesilo)enciliden]4H-imidazol-4-ona mesilato (ZLJ-601) es un inhibidor dual de la ciclooxigenasa y de la 5-lipoxygenasa. En este estudio se desarrolló un método de cromatografía líquida con espectrometría de masas (LC-MS) sensible y específico para la determinación de ZLJ-601 en plasma de perro. Las muestras de plasma se trataron por extracción líquido-líquido con acetato de etilo y se analizaron mediante LC-MS con una interfaz de ionización por electrospray. El método fue validado en el intervalo de concentración de 0,02~10 mg/mL y luego aplicado con éxito para el estudio farmacocinético en perros después de la inyección intravenosa de 1, 2, y 5 mg/kg de ZLJ-601.

KEY WORDS: COX/5-LOX inhibitor, determination, LC-MS, pharmacokinetic, ZLJ-601.

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