

Metabolism of Oleracone K from *Portulaca oleracea* L. in Rat Plasma by Ultra-high-performance Liquid Chromatography/ Electrospray Ionization Quadrupole Time-of-flight Tandem Mass Spectrometry

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SUMMARY. Oleracone K is a typical homoisoflavone isolated from the medicinal herb *Portulaca oleracea* L. which was widely used in which the compound had been found to possess various activities such as antioxidant, analgesic, antitumor, and anti-aging. However, few studies have been carried out on its *in vivo*. In this study, the pharmacokinetic study of the oleracone K in rats was initially performed using ultra-high-performance liquid chromatography (UHPLC), which showed significant and uncommon metabolic phenomena in the assay. Therefore, the identification of metabolites of oleracone K in rat plasma after a single intravenous dose (2.2 mg/kg) was further investigated by a rapid, sensitive, and specific ultra-high-performance liquid chromatography/electrospray ionization quadrupole time-of-flight tandem mass spectrometry (UHPLC-ESI-Q-TOF/MS) method, and seven metabolites were identified and the possible metabolic pathways were hypothesized to be oxidation, hydroxylation, methylation, glucuronidation, and sulfation.

RESUMEN. La oleracona K es una homoisoflavona típica aislada de la hierba medicinal *Portulaca oleracea* L. que se usaba ampliamente y se había descubierto que el compuesto poseía diversas actividades como antioxidante, analgésico, antitumoral y antienvjecimiento. Sin embargo, se han realizado pocos estudios sobre su *in vivo*. En este estudio, el estudio farmacocinético de la oleracona K en ratas se realizó inicialmente mediante cromatografía líquida de ultra alta resolución (UHPLC), que mostró fenómenos metabólicos significativos y poco comunes en el ensayo. Por lo tanto, la identificación de metabolitos de oleracona K en plasma de rata después de una dosis intravenosa única (2,2 mg/kg) se investigó más a fondo mediante una cromatografía líquida de rendimiento ultraalto rápida, sensible y específica/ionización por electropulverización cuadrupolo de tiempo de vuelo por espectrometría de masas en tandem (UHPLC-ESI-Q-TOF/MS), se identificaron siete metabolitos y se planteó la hipótesis de que las posibles vías metabólicas eran oxidación, hidroxilación, metilación, glucuronidación y sulfatación.

KEY WORDS: *Portulaca oleracea* L., oleracone K, homoisoflavone, metabolism, ultra-high-performance liquid chromatography/electrospray ionization quadrupole time-of-flight tandem mass spectrometry.

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