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Biopharmaceutical *In Vitro* and *In Vivo* Characterization of Isopropylidene Shikimic Acid

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***SUMMARY*. Biopharmaceutical properties of isopropylidene shikimic acid (ISA) were investigated in rats after oral administration. Our results showed that 27.35% ISA was bioavailable after oral administration (AUC, 836.13 mg/L.min) in comparison with intravenous injection (AUC, 3057.02 mg/L.min). In addition, we demonstrated that ISA was stable in artificial intestinal solutions, and hardly degraded in liver, intestinal microsomes and hepatocytes. However, ISA was unstable in artificial gastric juice with about 20-50% degraded in 2 h. Following oral administration, 22.9, 31.66, and 0.19% intact ISA were excreted in urine, feces, and bile, respectively. These findings suggest that low oral bioavailability of ISA might result from overdose and poor stability in stomach acids.**

RESUMEN. Las propiedades biofarmacéuticas del ácido shikímico isopropilideno (ISA) fueron investigadas en ratas después de la administración oral. Nuestros resultados mostraron que el 27,35% de ISA era biodisponible después de la administración oral (AUC, 836,13 mg/L.min) en comparación con la inyección intravenosa (AUC, 3057.02 mg/L.min). Además, hemos demostrado que ISA era estable en solución intestinal artificial y casi no se degrada en hígado, los microsomas intestinales y hepatocitos. Sin embargo, ISA resultó inestable en el jugo gástrico artificial con aproximadamente 20-50% de degradación en 2 h. Tras la administración oral, 22.9, 31.66, y 0.19% a ISA intacta se excretan en la orina, las heces y la bilis, respectivamente. Estos hallazgos sugieren que la baja biodisponibilidad oral de ISA podría ser el resultado de la sobredosis y la poca estabilidad en los ácidos estomacales.

KEY WORDS: Bioavailability, Isopropylidene shikimic acid, Metabolism, Oral dosage, Pharmacokinetics.

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