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Glycyrrhizic Acid-Phospholipid Complex: Preparation Process Optimization and Therapeutic and Pharmacokinetic Evaluation in Rats

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***SUMMARY*. The purpose of the present study was to prepare glycyrrhizic acid-phospholipid complex (GL-PLC) as to improve the oral bioavailability of glycyrrhizic acid (GL), enhance the drug efficacy and reduce the side effects. The uniform experimental design approach was utilized for the process optimization in order to obtain the satisfactory complex. The results of comparison between GL-PLC and free GL indicated that the anti-inflammatory activity of the phospholipid complex was significantly higher than that of free GL at the same dose. The results of pharmacokinetic study displayed that the plasma concentration of glycyrrhetic acid, the metabolite of GL *in vivo,* increased after oral administration of GL-PLC. The C_{max} of GL-PLC was 2.14 times higher than that of free glycyrrhizic acid, while the AUC of GL-PLC was 1.74 times higher than that of free GL. The results proved that GL-PLC improved the lipophilic property of GL, increased the bioavailability and anti-inflammatory activity.**

KEY WORDS: Anti-inflammatory activity, Glycyrrhizic acid-phospholipid complex, Oral bioavailability, Pharmacokinetics.

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