Pharmacokinetics of Chlorogenic Acid and Corydaline in DA-9701, a New Botanical Gastroprokinetic Agent in Rats
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Purpose
A new prokinetic botanical agent, DA-9701, has been formulated with Pharbitidis semen and Corydalis tuber. The aim of present study is to evaluate the pharmacokinetic properties of marker compounds of DA-9701, chlorogenic acid (CA) and corydaline (CRD).

Methods
The pharmacokinetics of CA and CRD were evaluated after intravenous and oral administration of pure CA (1–8 mg/kg) or CRD (1.1–4.5 mg/kg) and their equivalent dose of DA-9701 to rats.

Results
Dose-proportional AUC and dose-independent clearance of CA were observed following its administration. Oral administration of CA as extracts of DA-9701 did not influence the oral pharmacokinetic parameters of CA. Incomplete absorption of CA, its decomposition in the gastrointestinal tract, and/or pre-systemic metabolism resulted in extremely low oral bioavailability (F) of CA (0.478–0.899%). CRD showed greater dose-normalized AUC in the higher dose group than that in lower dose group(s) after its administration due to saturation of its metabolism via decreased non-renal clearance and first-pass extraction. However, oral administration of CRD as extracts of DA-9701 showed linear pharmacokinetics as a result of increased F in lower-dose groups compared to those of pure CRD.

Conclusion
CA showed linear pharmacokinetics, but had extremely low F. CRD showed non-linear pharmacokinetic characteristics due to saturation of its metabolism.