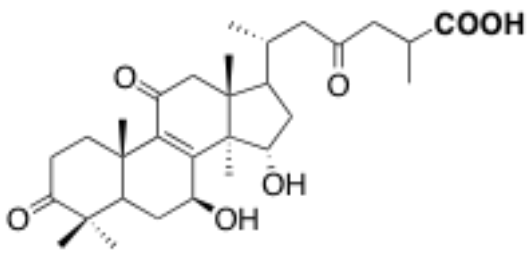
**Ganoderic Acid A**




Ganoderic acid A

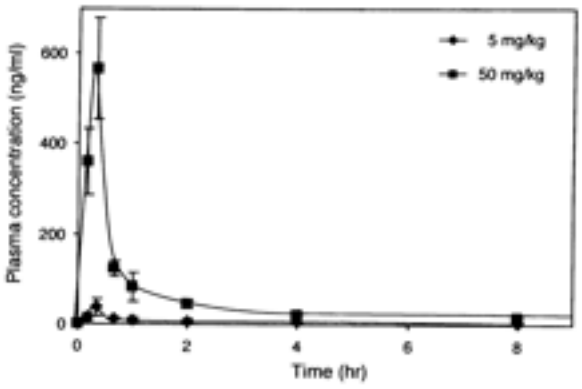



Fig. 1. Plasma concentration-time curve of ganoderic acid A (GAA) after intravenous administration at doses of 5 and 25 mg/kg to rats

The GAA concentrations were determined by enzyme immuno assay [Gao *et al.*, *J. Trad. Med*., **18**, 154-160 (2001)].

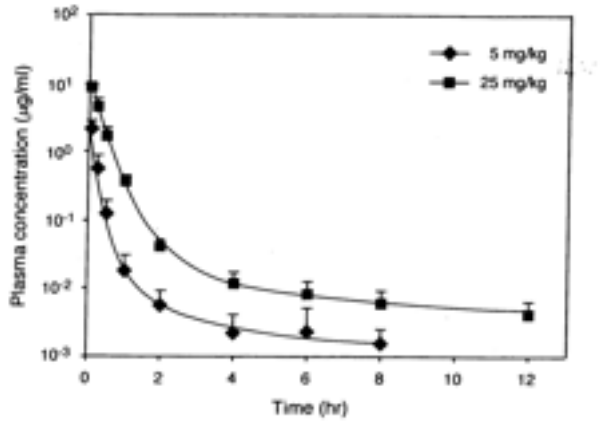



Fig. 2. Plasma concentration-time curve of ganoderic acid A (GAA) after oral administration at doses of 5 and 50 mg/kg to Rat

The GAA concentrations were determined by enzyme immuno assay [Gao *et al.*, *J. Trad. Med.*, **18**, 154-160 (2001)].

Male Wistar rats (6 weeks old, SLC Co., Hamamatsu) were used. Animals were fed standard laboratory chow with water *ad libitum*, maintained for one week, and were fasted overnight before the experiments. For intravenous administration, GAA dissolved in 5% DMSO-saline was injected into a tail vein of four rats at doses of 5 and 25 mg/kg, respectively. Blood samples were taken from another tail vein using a heparinized capillary micro-tube at 5, 15, 30 min, 1, 2, 4, 6, and 8 hr after the injection, and immediately separated by centrifugation. The serum sample obtained was kept at –20 C° until use for measuring the concentration of GAA by enzyme immuno assay.

For oral administration, GAA dissolved in 5% DMSO-$H_2O$ was given to rats ($n$= 4 at each point) at doses of 5 and 50 mg/kg, respectively. Blood samples were obtained from a tail vein at 10, 20, 40 min, 1, 2, 4 and 8 hr.

Table 1. Pharmacokinetic parameters after intravenous administration of ganoderic acid A (GAA) at doses of 5 and 25 mg/kg

| Parameter | Dose (mg/kg) | |
|---|---|---|
| | 5 | 25 |
| $A$ ($m$g/ml) | 1.81 ± 0.45 | 8.72 ± 2.49 |
| $a$ ($min^{-1}$) | 3.34 ± 0.38 | 2.97 ± 0.24 |
| $B$ ($m$g/ml) | 0.0065 ± 0.0015 | 0.0175 ± 0.0072 |
| $b$ ($min^{-1}$) | 0.092 ± 0.002 | 0.123 ± 0.028 |
| $t_{1/2a}$ (min) | 12.4 ± 1.6 | 14.0 ± 1.1 |
| $t_{1/2b}$ (min) | 451.0 ± 98.2 | 337.5 ± 87.6 |
| $V_C$ (l/kg) | 2.75 ± 0.69 | 2.86 ± 0.86 |
| $V_{dss}$ (l/kg) | 12.37 ± 2.21 | 5.64 ± 1.82 |
| $CL_{tot}$ (ml/min kg) | 152.43 ± 23.07 | 124.07 ± 25.08 |
| $AUC_{0\text{-}480}$ ($m$g min/ml) | 32.8 ± 9.8 | 201.5 ± 8.7 |

Each value represents mean ± S.D. ($n$=4)

Table 2. Pharmacokinetic parameters after oral administration of ganoderic acid A (GAA) at doses of 5 and 50 mg/kg

| Parameter | Dose (mg/kg) | |
|---|---|---|
| | 5 | 50 |
| $C_{max}$ (*m*g/ml) | 0.037 ± 0.008 | 0.595 ± 0.125 |
| $t_{max}$ (min) | 18.1 ± 2.5 | 18.0 ± 0.6 |
| $AUC_{0\text{-}480}$ (*m*g min/ml) | 3.29 ± 0.98 | 27.76 ± 0.13 |

Each value represents mean ± S.D. (*n*=4)

参考文献

1) Gao J. J., Min B. S., Akao T., Meselhy M. R., and Hattori M.: Enzyme immunoassay for the quantitative determination of ganoderic acid A from *Ganoderma lucidum*. *J. Trad. Med*., **18**, 154-160 (2001).