

Molecular mechanisms governing different pharmacokinetics of ginsenosides and potential for ginsenoside-perpetrated herb-drug interactions on OATP1B3

Rongrong Jiang, Jiajia Dong, Xiuxue Li, Feifei Du, Weiwei Jia, Fang Xu, Fengqing Wang, Junling Yang, Wei Niu, Chuan Li
British Journal of Pharmacology (DOI:10.1111/bph.12971)

- Supporting Information Appendix S6 - Content levels of ginsenosides in herbal injections

Experimental

Freeze-dried XueShuanTong for injection was a ginsenoside extract of *Panax notoginseng* roots (Sanqi) in the form of dried powder (to be made into solution when ready to use) and was available as a sterile, nonpyrogenic parenteral dosage form for intravenous injection. The freeze-dried XueShuanTong for injection was manufactured by Guangxi Wuzhou Pharmaceutical (Group) Co., Ltd. (Wuzhou, China) with a China Food and Drug Administration ratification no. (GuoYaoZhunZi) Z20025652. **ShenMai injection** was a solution of extract of steamed *Panax notoginseng* roots (red ginseng) and *Ophiopogon japonicus* roots (Maidong) available as a sterile, nonpyrogenic parenteral dosage form for intravenous injection, which was manufactured by Shineway Pharmaceutical Co., Ltd. (Shijiazhuang, China) with a China Food and Drug Administration ratification no. (GuoYaoZhunZi) Z13020887. **ShengMai injection** was a solution of extract of steamed *Panax notoginseng* roots (red ginseng), *Ophiopogon japonicus* roots (Maidong) and *Schisandra chinensis* fruits (Wuweizi) available as a sterile, nonpyrogenic parenteral dosage form for intravenous injection, which was manufactured by Shanghai Hutchison Pharmaceutical Co., Ltd. (Shanghai, China) with a China Food and Drug Administration ratification no. (GuoYaoZhunZi) Z31020219. **Shenfu injection** was a solution of extract of steamed *Panax notoginseng* roots (red ginseng) and processed *Aconitum carmichaeli* daughter roots (Fuzi) available as a sterile, nonpyrogenic parenteral dosage form for intravenous injection, which was manufactured by Ya'an Sanjiu Pharmaceutical Co., Ltd. (Ya'an, China) with a China Food and Drug Administration ratification no. (GuoYaoZhunZi) Z20043117.

Results

The content levels of ginsenosides in herbal injections are shown in [Table 1](#).

Table 1

Content levels of ginsenosides in herbal injections.

Compound	Freeze-dried XueShuanTong for injection ($\mu\text{mol}\cdot\text{day}^{-1}$ per person)	ShenMai injection	ShengMai injection	ShengFu injection
<i>Ppt-type ginsenoside</i>				
Ginsenoside Rg ₁	364 ± 7	6.96 ± 0.25	20.6 ± 0.5	23.5 ± 1.7
Ginsenoside Re	44.2 ± 2.1	2.48 ± 0.02	6.31 ± 0.01	10.4 ± 0.1
Notoginsenoside R ₁	75.0 ± 0.5	—	0.94 ± 0.01	0.93 ± 0.05
<i>Ppd-type ginsenoside</i>				
Ginsenoside Rb ₁	159 ± 1	37.6 ± 0.9	20.7 ± 0.1	19.1 ± 0.2
Ginsenoside Rc	0.0387 ± 0.0027	12.7 ± 0.1	6.46 ± 0.14	7.79 ± 0.13
Ginsenoside Rd	7.78 ± 0.13	9.20 ± 0.07	4.73 ± 0.05	6.33 ± 0.21