

Spasmolytic Activity of *Gentiana lutea* L. Root Extracts on the Rat Ileum: Underlying Mechanisms of Action

Nemanja Kitic^{1,*}, Jelena Živković², Katarina Šavikin², Milica Randjelović³, Miloš Jovanović³, Dušanka Kitic^{3,*}, Bojana Miladinović³, Milica Milutinović³, Nenad Stojiljkovic⁴ and Suzana Branković⁴

¹ Faculty of Medicine, University of Niš, Research Centre for Biomedicine, Ave. Dr. Zorana Đindića 81, 18000, Niš, Serbia;

² Institute for Medicinal Plants Research "Dr. Josif Pančić", Tadeuša Košćuška 1, 11000 Belgrade, Serbia; nemanja.kitic@medfak.ni.ac.rs (J.Ž.); ksavikin@mocbilja.rs (K.Š.)

³ Faculty of Medicine, University of Niš, Department of Pharmacy, Ave. Dr. Zorana Đindića 81, 18000, Niš, Serbia; milica.randjelovic@medfak.ni.ac.rs (M.R.); milos.jovanovic@medfak.ni.ac.rs (M.J.); bojana.miladinovic@medfak.ni.ac.rs (B.M.); milica.milutinovic@medfak.ni.ac.rs (M.M.)

⁴ Faculty of Medicine, University of Niš, Department of Physiology, Ave. Dr. Zorana Đindića 81, 18000, Niš, Serbia; nenstojiljkovic@gmail.com (N.S.); brankovic.suzana@yahoo.com (S.B.)

* Correspondence: nemanja.kitic@medfak.ni.ac.rs (N.K.); dusanka.kitic@medfak.ni.ac.rs (D.K.)

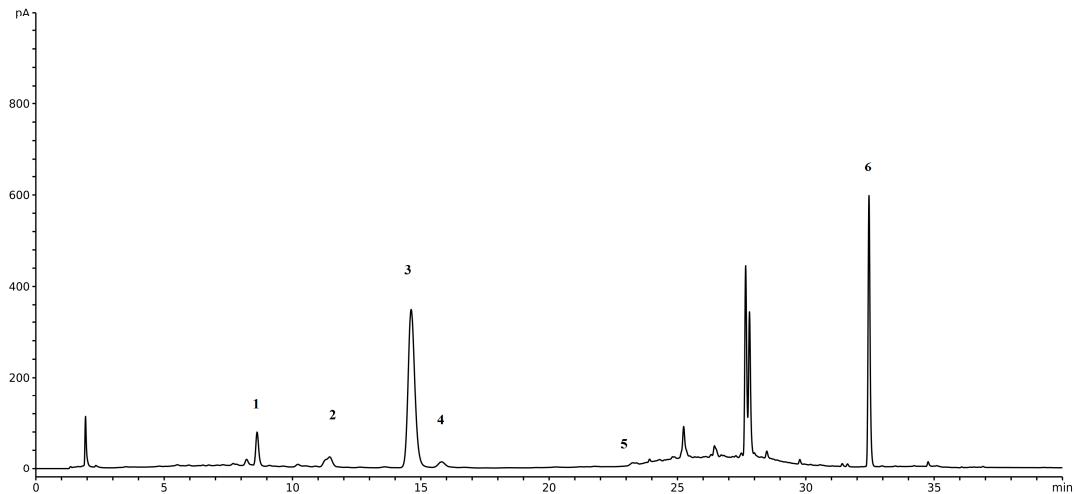


Figure S1. HPLC chromatogram of UAE recorded at 260 nm: 1 - loganic acid; 2 – swertiamarin; 3 – gentiopicroside; 4 – sweroside; 5 – isovitexin; 6 – isogentisine

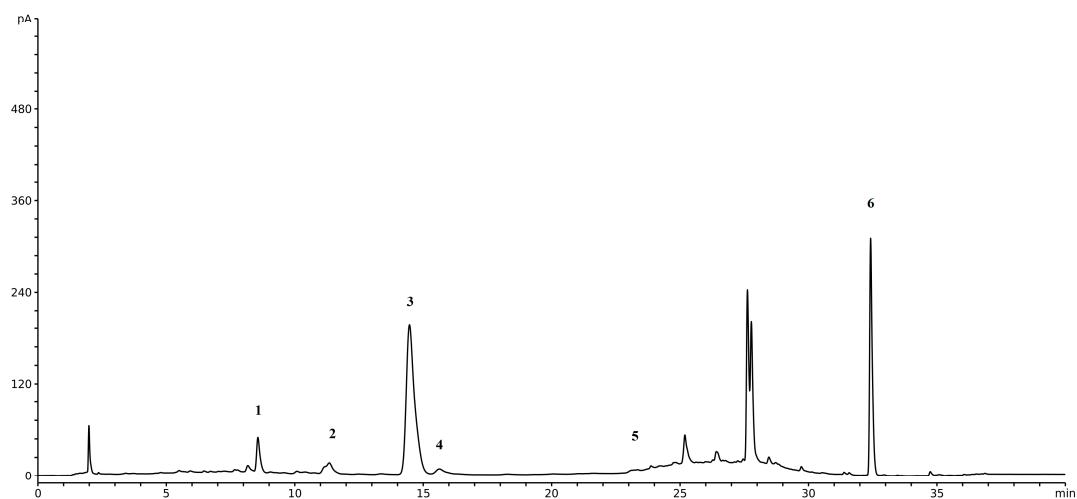


Figure S2. HPLC chromatogram of HAE recorded at 260 nm: 1 - loganic acid; 2 – swertiamarin; 3 – gentiopicroside; 4 – sweroside; 5 – isovitexin; 6 – isogentisin

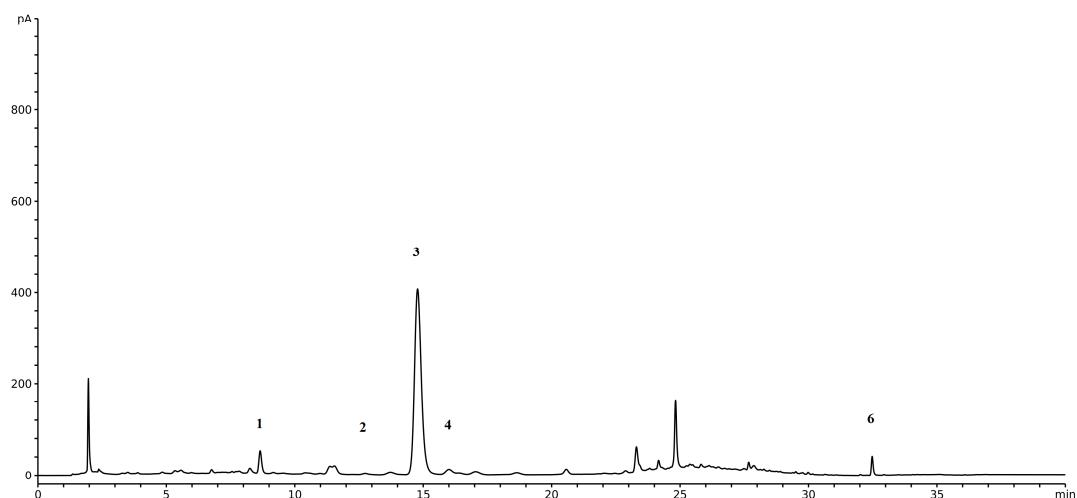


Figure S3. HPLC chromatogram of PE recorded at 260 nm: 1 - loganic acid; 2 – swertiamarin; 3 – gentiopicroside; 4 – sweroside; 5 – isovitexin; 6 – isogentisin

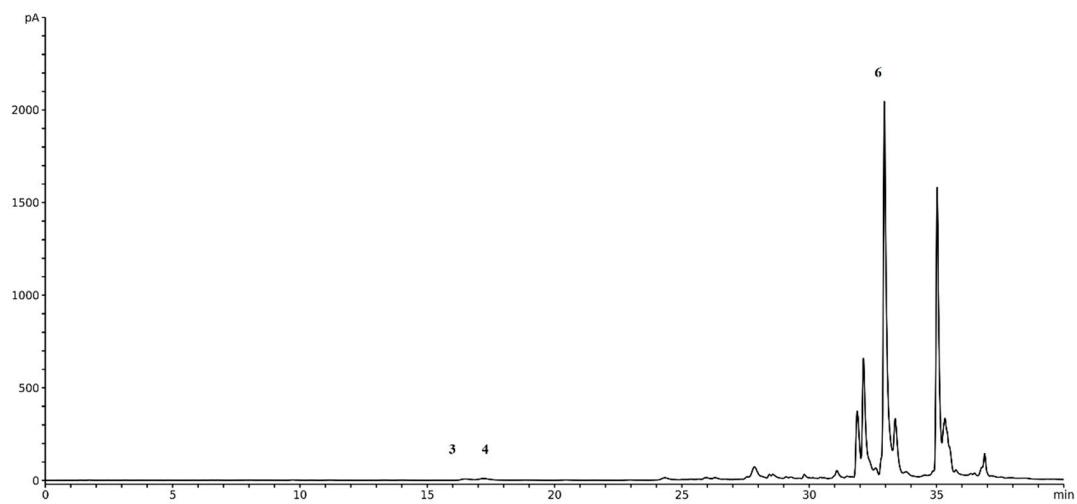


Figure S4. HPLC chromatogram of petroleum ether fraction recorded at 260 nm: 1 - loganic acid; 2 – swertiamarin; 3 – gentiopicroside; 4 – sweroside; 5 – isovitexin; 6 – isogentisin

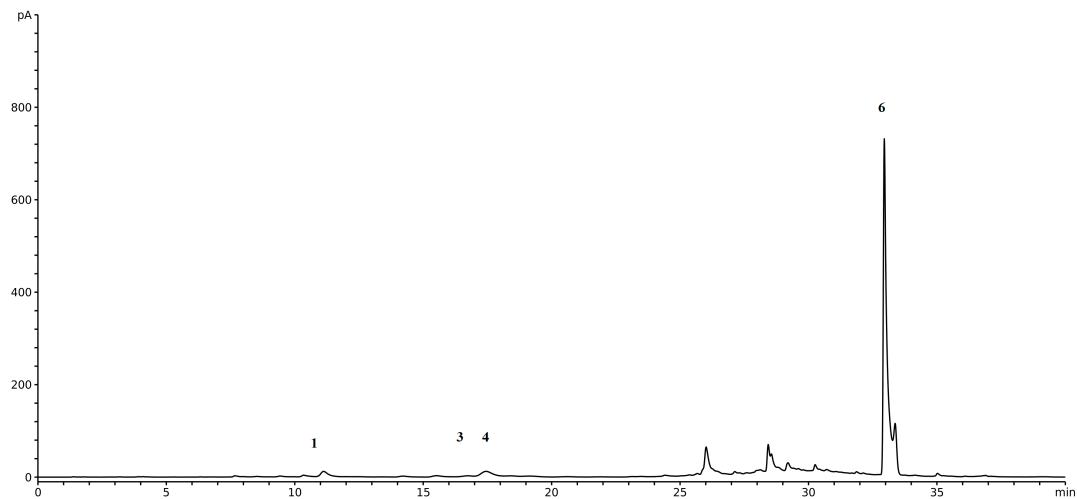


Figure S5. HPLC chromatogram of ethyl fraction recorded at 260 nm: 1 - loganic acid; 2 – swertiamarin; 3 – gentiopicroside; 4 – sweroside; 5 – isovitexin; 6 – isogentisin

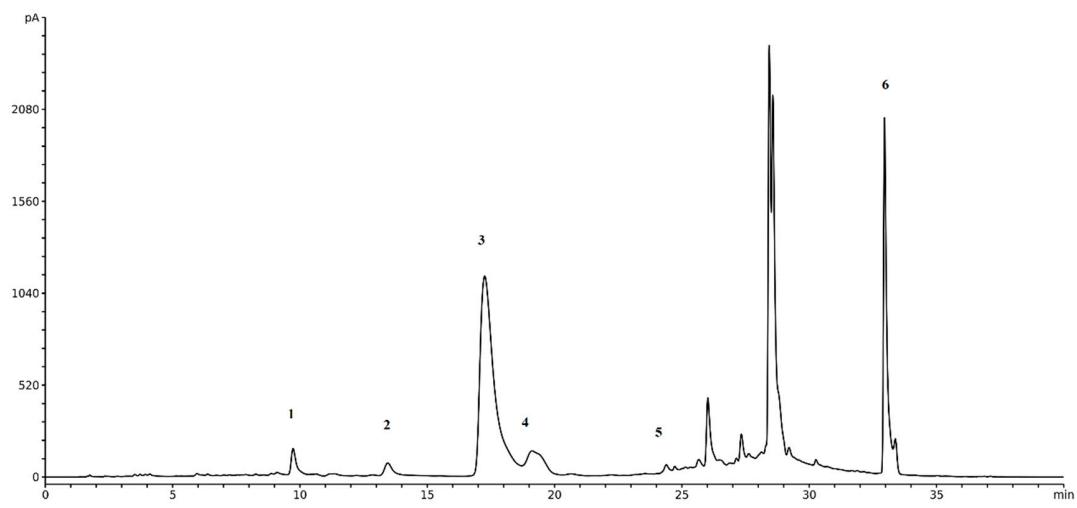


Figure S6. HPLC chromatogram of *n* - butanol recorded at 260 nm: 1 - loganic acid; 2 – swertiamarin; 3 – gentiopicroside; 4 – sweroside; 5 – isovitexin; 6 – isogentisin

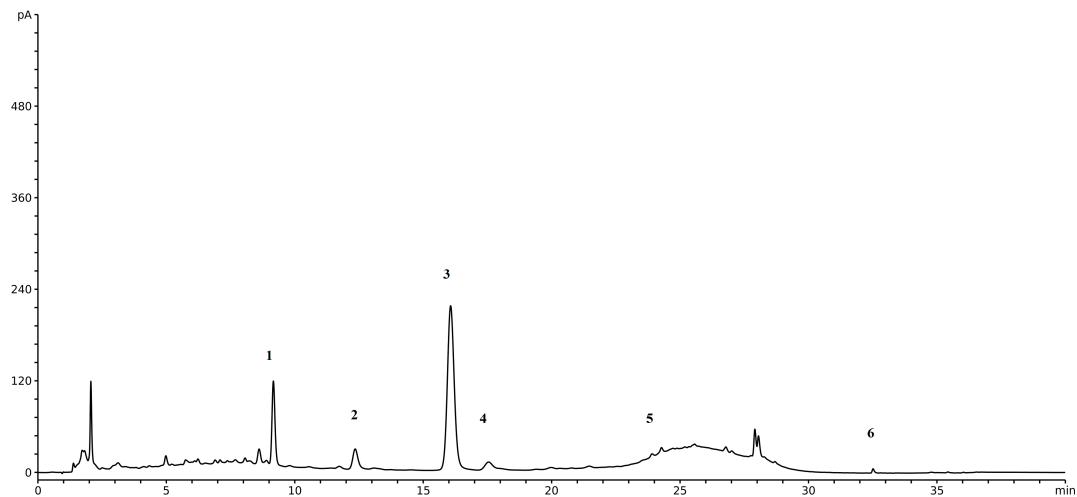
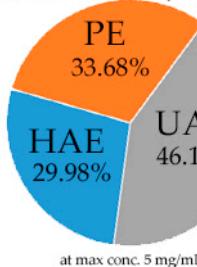


Figure S7. HPLC chromatogram of water fraction recorded at 260 nm: 1 - loganic acid; 2 – swertiamarin; 3 – gentiopicroside; 4 – sweroside; 5 – isovitexin; 6 – isogentisin

Gentiana lutea L. spasmolytic effect

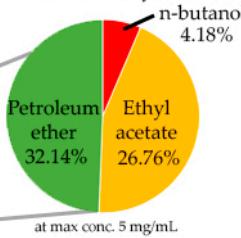
Inhibition (%) of spontaneous ileal contractions by extracts



UAE - ultrasound-assisted extraction
HAE - heat-assisted extraction
PE - percolation extract
conc. = concentration

UAE at max conc. 5 mg/mL
Substances at their own max concentrations

Inhibition (%) of spontaneous ileal contractions by fractions



UAE reduction of 100% control contraction to %

UAE as a control (100%) being affected by various substances

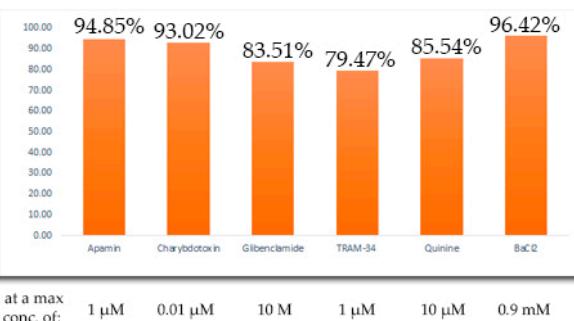
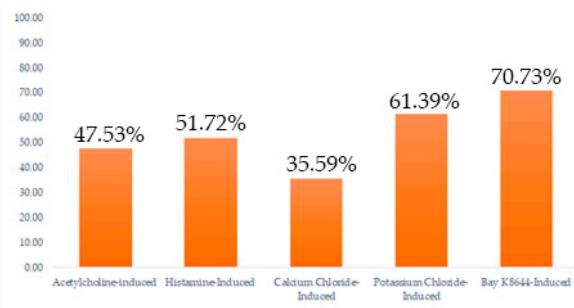


Figure S8. A graphical representation of the tested spasmolytic effects of *Gentiana lutea* L. root extracts