

SUPPLEMENTARY FILE

Optimized centrifugal partition chromatography (CPC) protocol for the isolation of urease inhibitors: magnoflorine and berberine from *Berberis vulgaris* extracts

Sylwia Nakonieczna¹, Katarzyna Susniak², Anna Bozhadze³, Aneta Grabarska⁴, Anna Głowniak-Lipa⁵, Kazimierz Głowniak⁵ and Wirginia Kukula-Koch^{1,*}

¹ Department of Pharmacognosy with Medicinal Plants Garden, Medical University of Lublin, 1, Chodzki str., 20-093 Lublin, Poland; sylwia.nakonieczna2@gmail.com (S.N.)

² Department of Pharmaceutical Microbiology, Medical University of Lublin, 1 Chodźki Str., 20-093 Lublin, Poland (katarzyna.susniak@umlub.pl)

³ Department of Pharmacognosy, Tbilisi State Medical University, 33, Vazha-Pshavela Ave. Tbilisi, Georgia, 0186; a.bozhadze@tsmu.edu (A.B.)

⁴ Department of Biochemistry and Molecular Biology, Medical University of Lublin, 1, Chodzki str., 20-093 Lublin, Poland; anetagrabska@umlub.pl (A.G.)

⁵ Department of Cosmetology, University of Information Technology and Management in Rzeszów, Sucharskiego 2, 35-225 Rzeszów, Poland, kglowniak@wsiz.edu.pl (K.G.), aglowniak@wsiz.edu.pl (A.G.-L.)

* Correspondence: virginia.kukula@gmail.com (W.K.-K.)

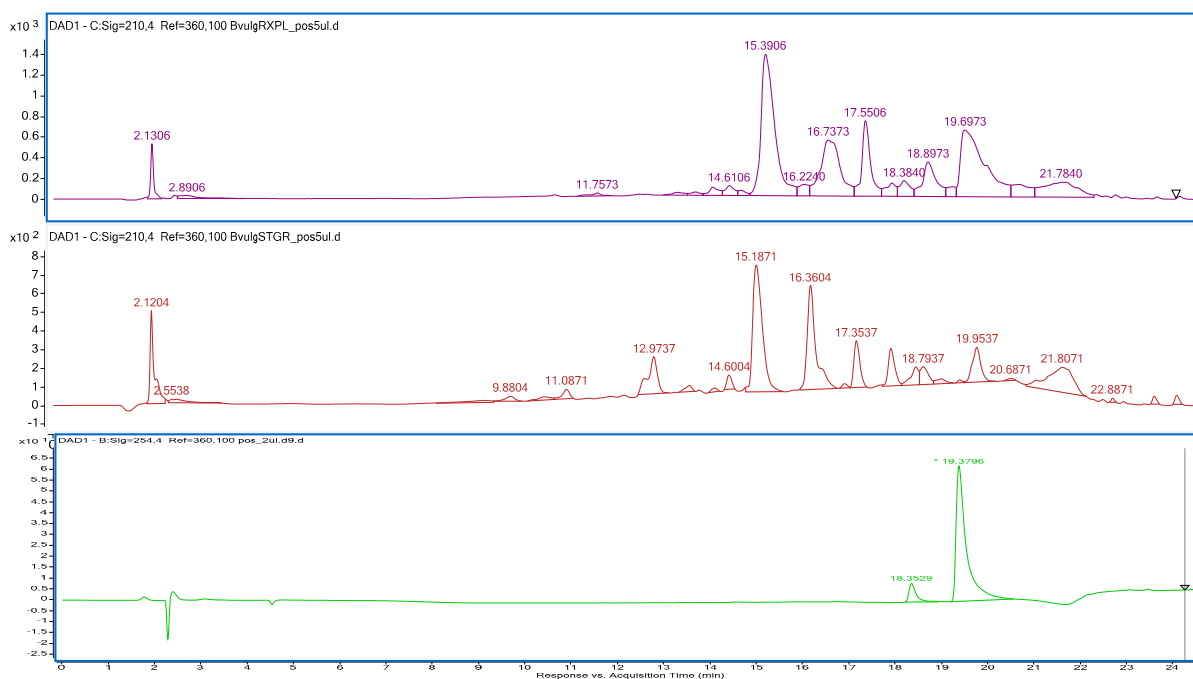


Figure S1. The HPLC-DAD chromatograms of the total extract from the roots (above) and the stems (middle) of *Berberis vulgaris* and the fraction enriched in berberine (below)

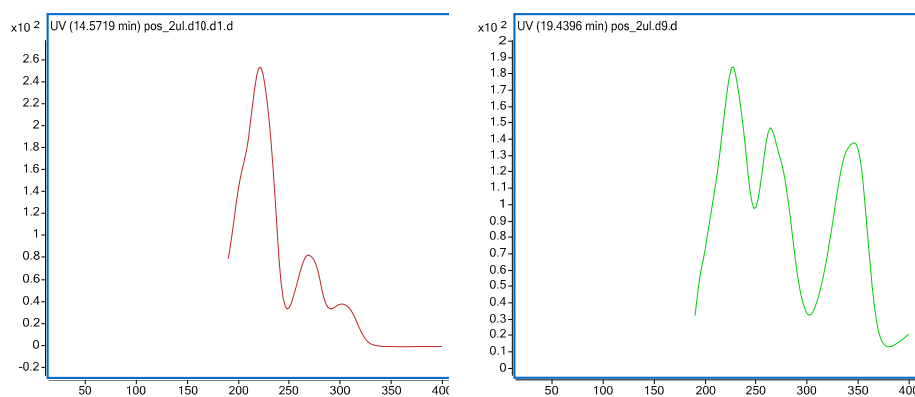


Figure S2. UV spectra of magnoflorine (left) and berberine (right)

Name of the reference compound	Recorded spectra
Magnoflorine	<p>Mass spectrum of Magnoflorine. The x-axis is 'Counts vs. Mass-to-Charge (m/z)' ranging from 240 to 365. The y-axis is relative intensity ranging from 0 to 1.3. The base peak is at m/z 297.0304. Other labeled peaks include 255.0079, 251.0089, 253.0096, 279.0270, 282.0188, 284.0239, 288.0345, 300.0366, 311.0448, 342.0815, and 343.0870.</p>
Palmatine	<p>Mass spectrum of Palmatine. The x-axis is 'Counts vs. Mass-to-Charge (m/z)' ranging from 240 to 365. The y-axis is relative intensity ranging from 0 to 1.6. The base peak is at m/z 352.0835. Other labeled peaks include 294.0398, 308.0438, 320.0471, 322.0218, 336.0590, 337.0415, 338.0659, and 351.0671.</p>
Berberine	<p>Mass spectrum of Berberine. The x-axis is 'Counts vs. Mass-to-Charge (m/z)' ranging from 240 to 365. The y-axis is relative intensity ranging from 0 to 1.4. The base peak is at m/z 336.0543. Other labeled peaks include 275.0141, 278.0030, 292.0149, 294.0134, 305.0333, 320.0359, 321.0128, 327.0167, and 337.0367.</p>
Jatrorrhizine	<p>Mass spectrum of Jatrorrhizine. The x-axis is 'Counts vs. Mass-to-Charge (m/z)' ranging from 240 to 365. The y-axis is relative intensity ranging from 0 to 8. The base peak is at m/z 338.0498. Other labeled peaks include 277.0291, 279.0091, 294.0304, 306.0287, 308.0076, 322.0213, 323.0250, 324.0253, and 339.0535.</p>

Figure S3. The mass spectra of the authentic standards used for the identification purposes.