Supplementary Information

Simultaneous, Simple and Rapid Determination of Five Bioactive Free Anthraquinones in Radix et Rhizoma Rhei by Quantitative ^{1}H NMR

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Table S1. LODs and LOQs for the quantitation of rhein, physcion, chrysophanol, aloe-emodin, and emodin by q-HNMR

	LOD / (μg mL^{-1})	LOQ / (μg mL^{-1})
Rhein	2.02	6.73
Physcion	1.80	6.00
Chrysophanol	1.60	5.33
Aloe-emodin	0.98	3.27
Emodin	1.95	6.50

LOD: limit of detection; LOQ: limit of quantitation.

Table S2. Regression equation and linear range for the quantitation of rhein, physcion, chrysophanol, aloe-emodin, and emodin by HPLC

	Regression equation	Linear range / μg
Rhein	A = 1378.3m – 22.245 (r^2 = 0.9997)	0.04-2.0
Physcion	A = 1632.9m – 37.554 (r^2 = 0.9999)	0.2-2.8
Chrysophanol	A = 6100.4m – 18.268 (r^2 = 0.9999)	0.2-3.6
Aloe-emodin	A = 4805.5m – 187.58 (r^2 = 0.9994)	0.2-2.4
Emodin	A = 2804.7m + 24.714 (r^2 = 0.9995)	0.02-2.0

A: area; m: mass; r^2: coefficient of determination.

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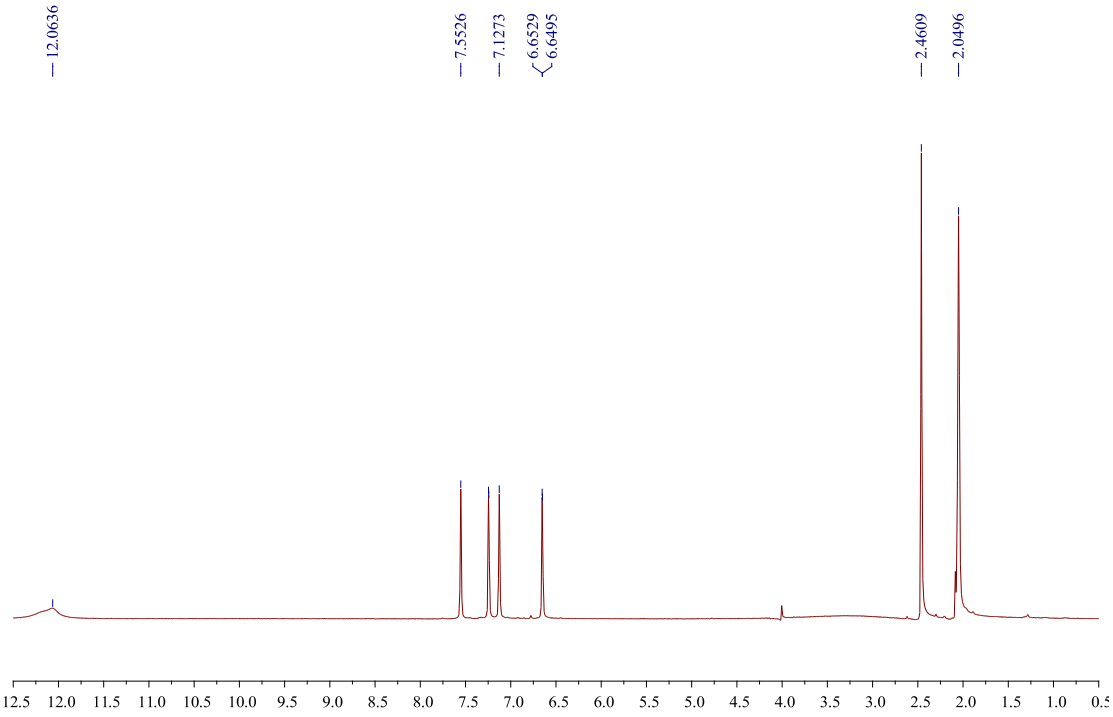

Figure S1. ^{1}H NMR spectrum (400 MHz, acetone-d_6) of emodin.

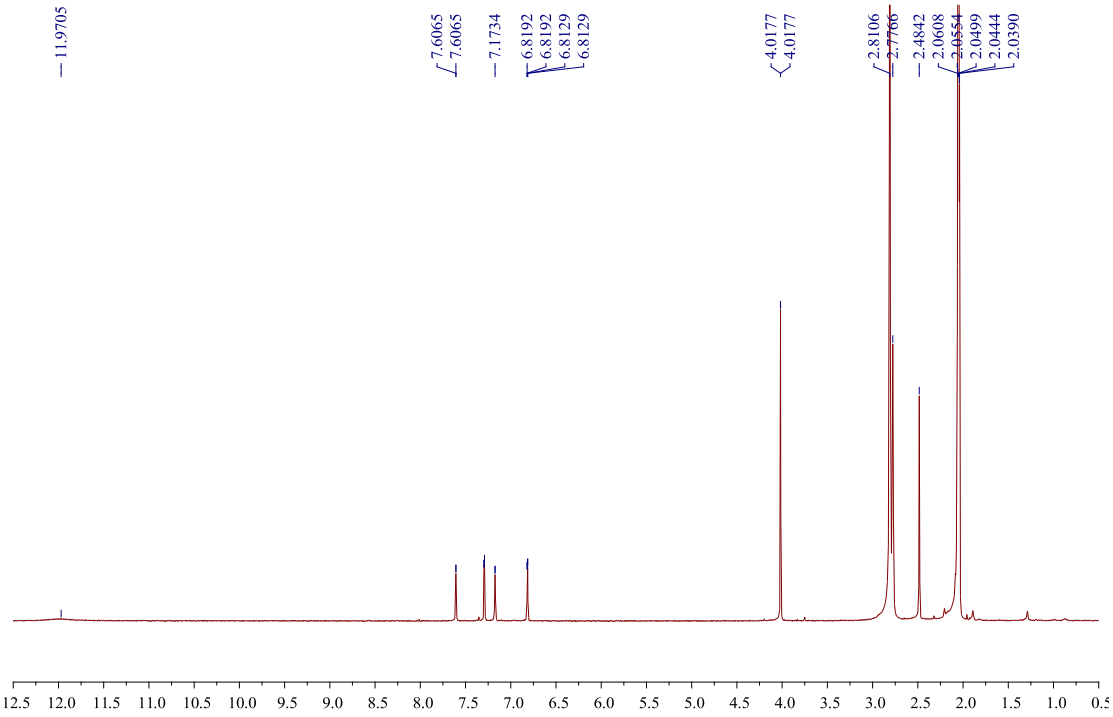

Figure S2. ^{1}H NMR spectrum (400 MHz, acetone-d_6) of physion.

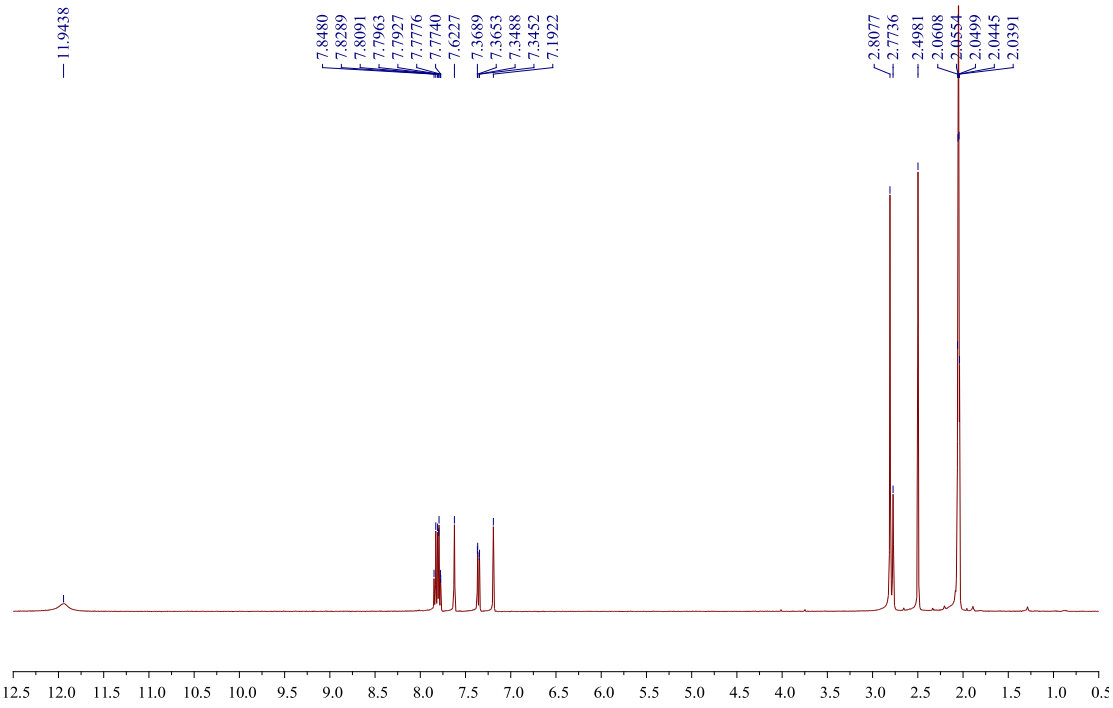

Figure S3. ^{1}H NMR spectrum (400 MHz, acetone-d_6) of chrysophanol.

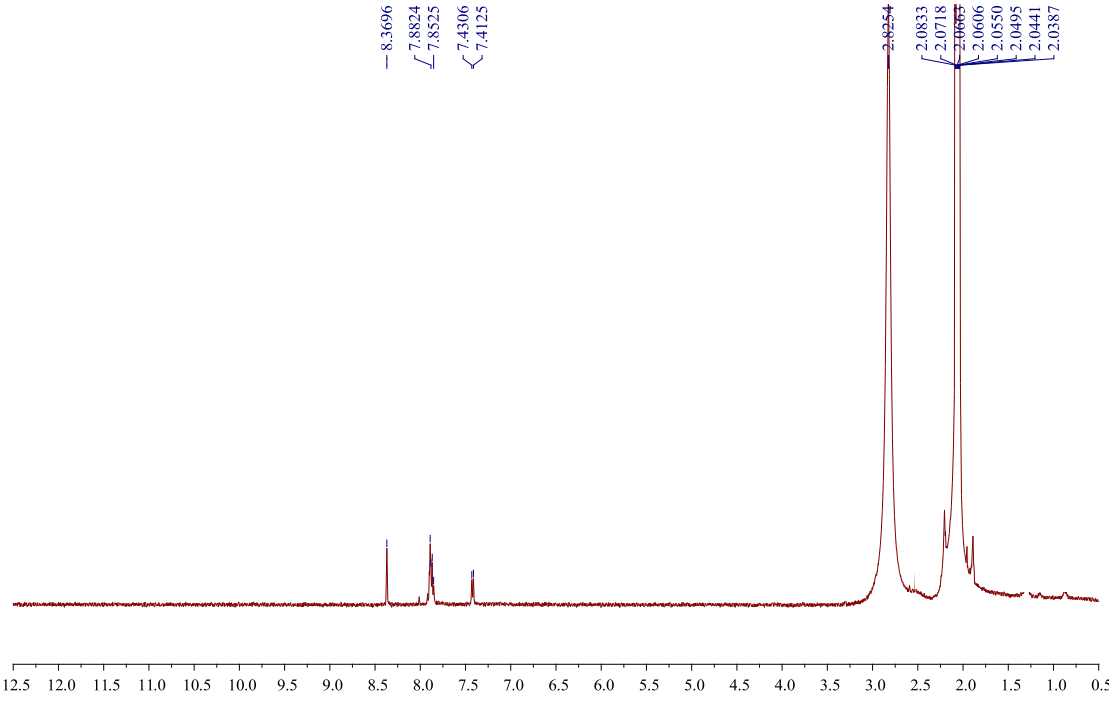

Figure S4. ^{1}H NMR spectrum (400 MHz, acetone-d_6) of rhein.

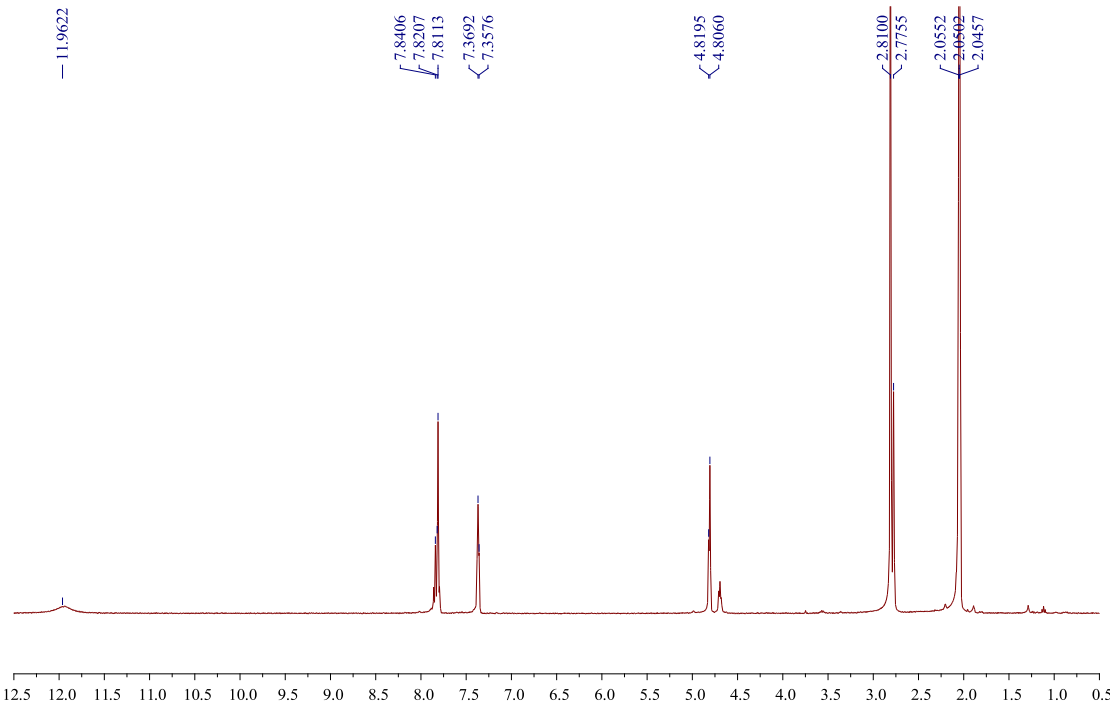

Figure S5. ^{1}H NMR spectrum (400 MHz, acetone-d_6) of aloe-emodin.

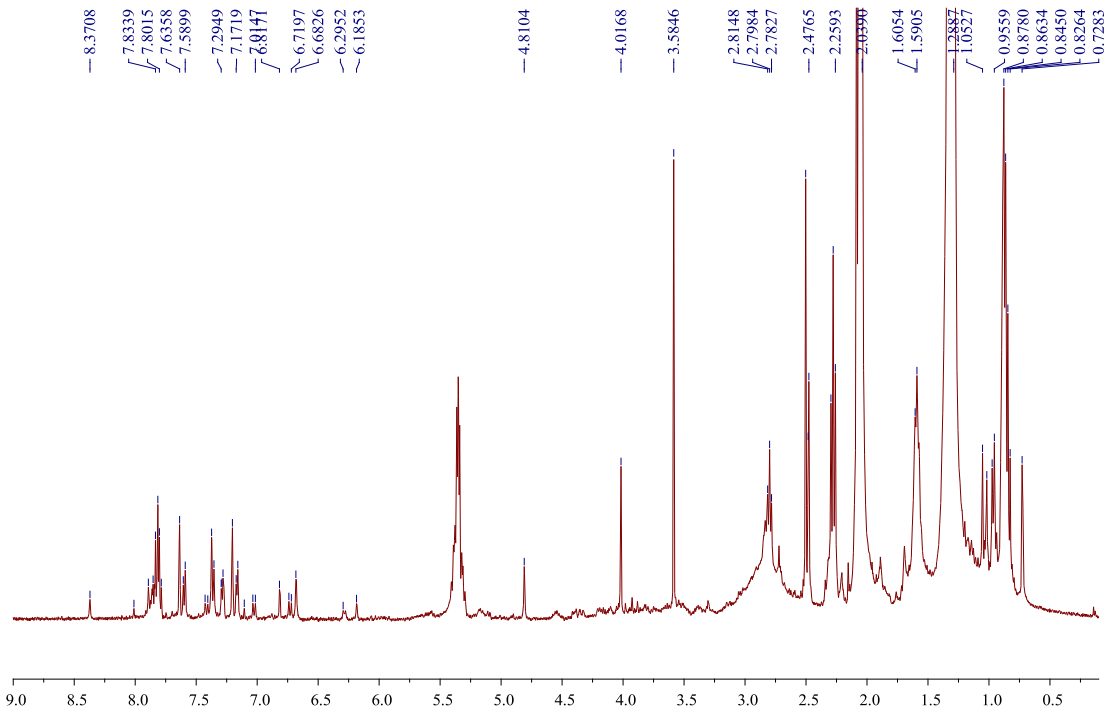

Figure S6. ^{1}H NMR spectrum (400 MHz, acetone-d_6) of *R. palmatum* extract.

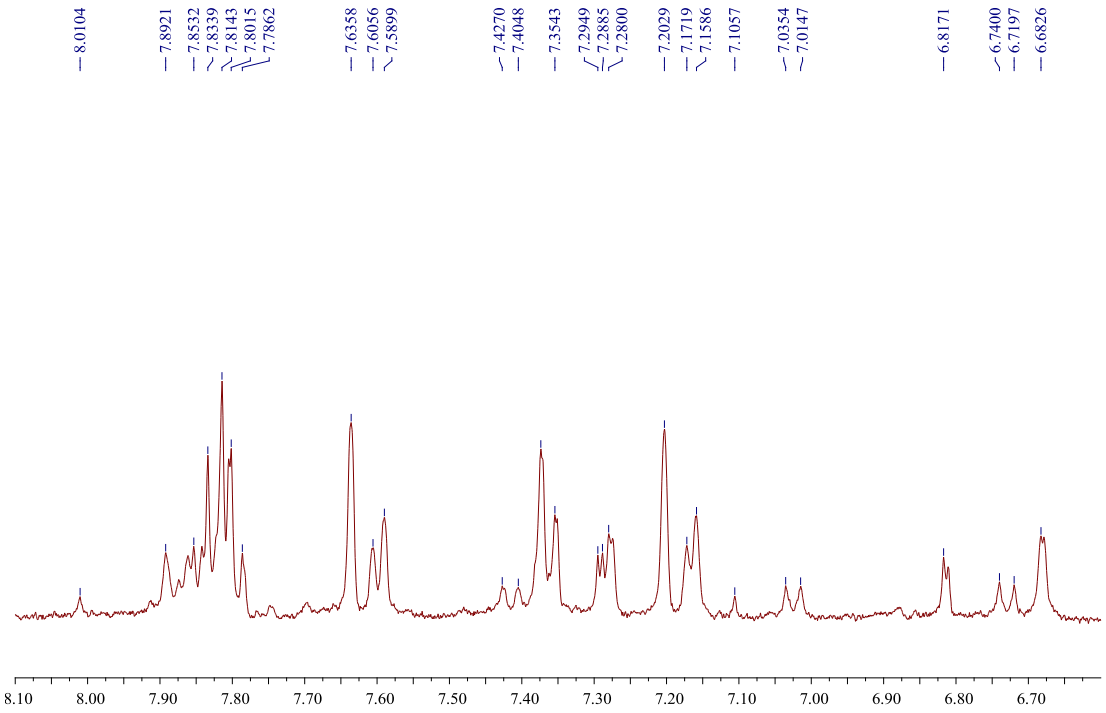

Figure S7. Detailed ^{1}H NMR spectrum (400 MHz, acetone-d_6) of *R. palmatum* extract.

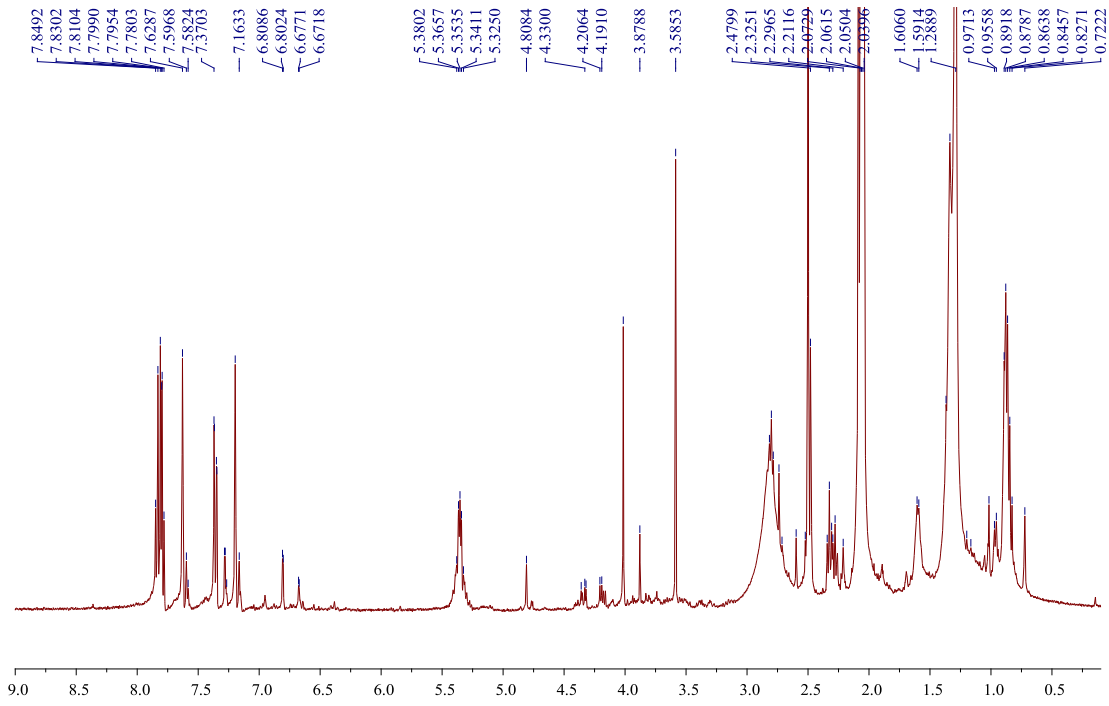

Figure S8. ^{1}H NMR spectrum (400 MHz, acetone-d_6) of *Rheum officinale* extract.

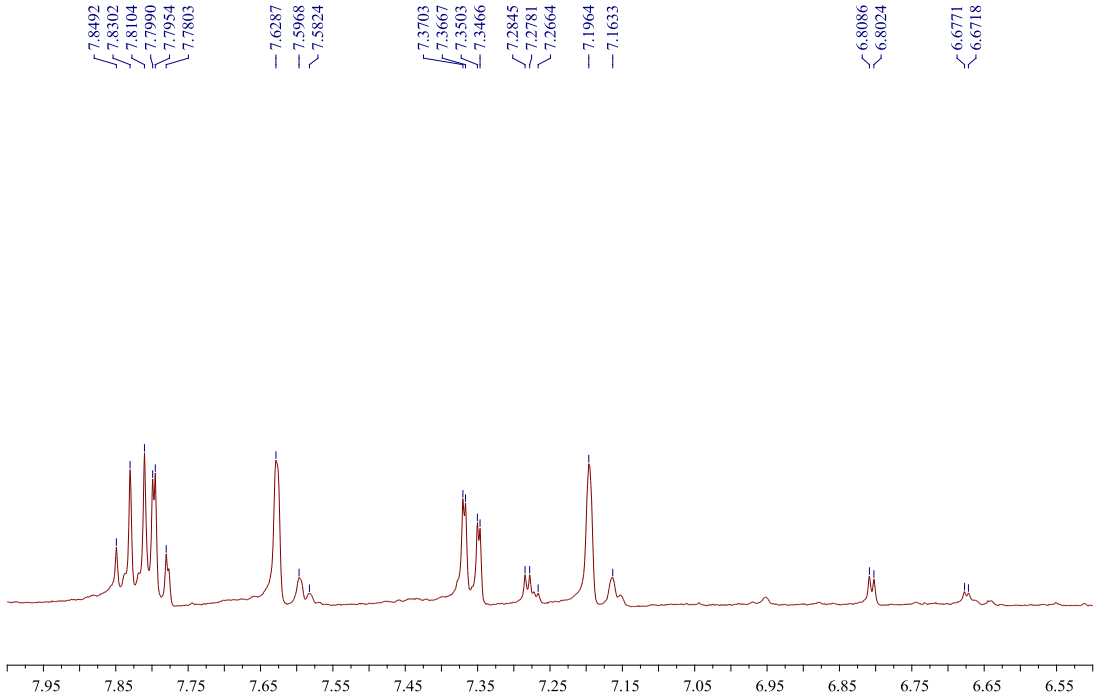

Figure S9. Detailed ^{1}H NMR spectrum (400 MHz, acetone-d_6) of *Rheum officinale* extract.

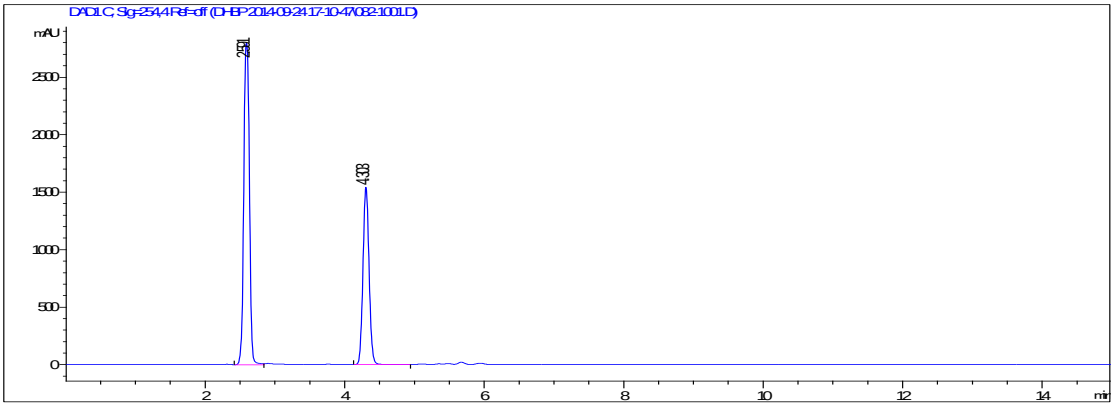

Figure S10. HPLC chromatogram of aloe-emodin (t_R 2.59 min is signal of solvents).

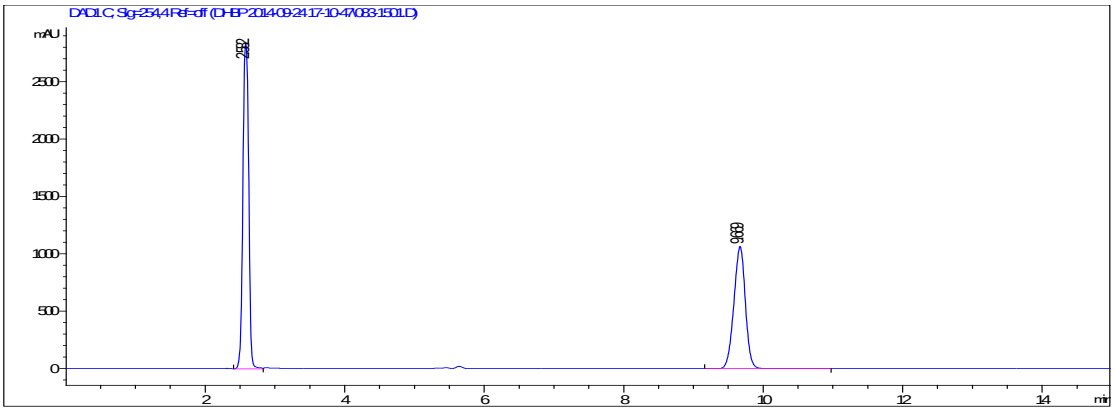

Figure S11. HPLC chromatogram of chrysophanol (t_R 2.58 min is signal of solvents).

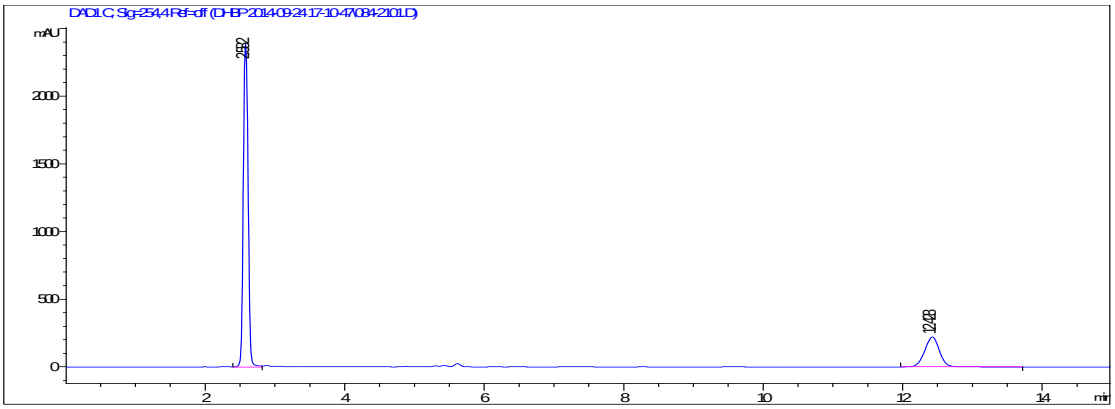

Figure S12. HPLC chromatogram of physcion (t_R 2.58 min is signal of solvents).

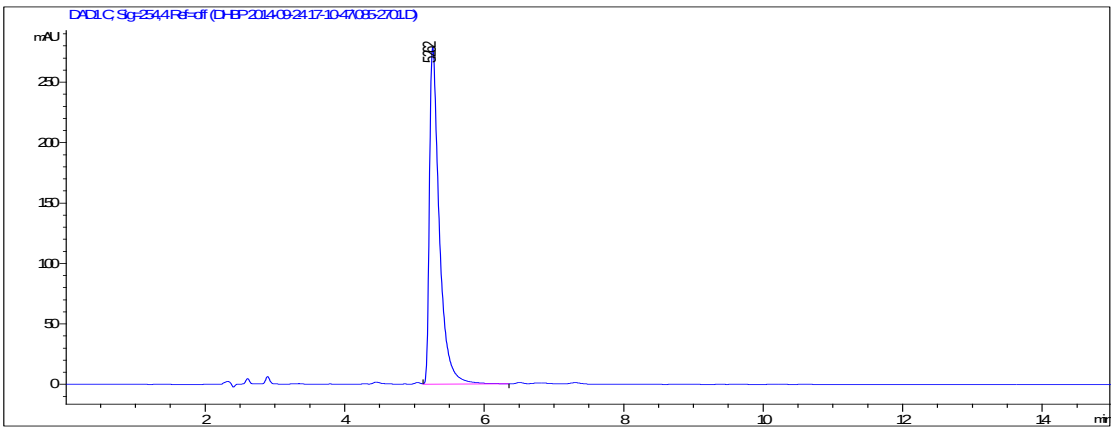

Figure S13. HPLC chromatogram of rhein.

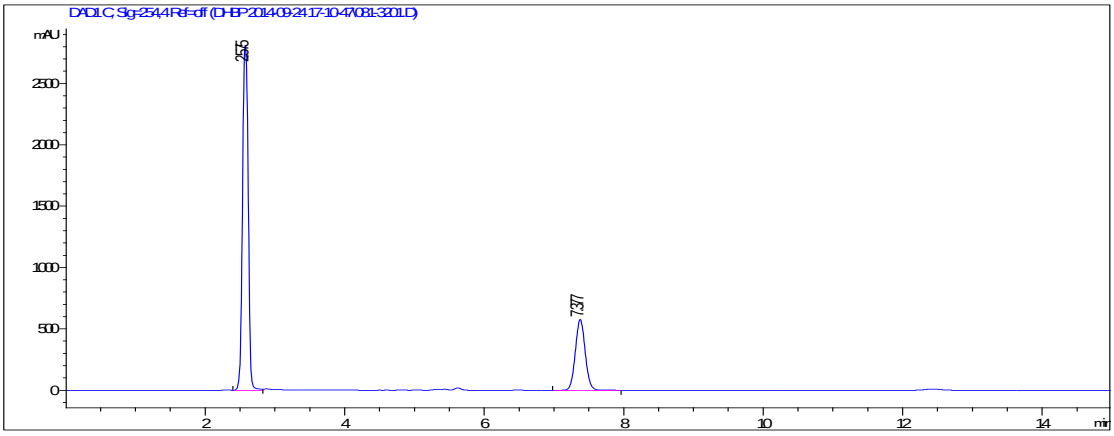

Figure S14. HPLC chromatogram of emodin (t_R 2.58 min is signal of solvents).

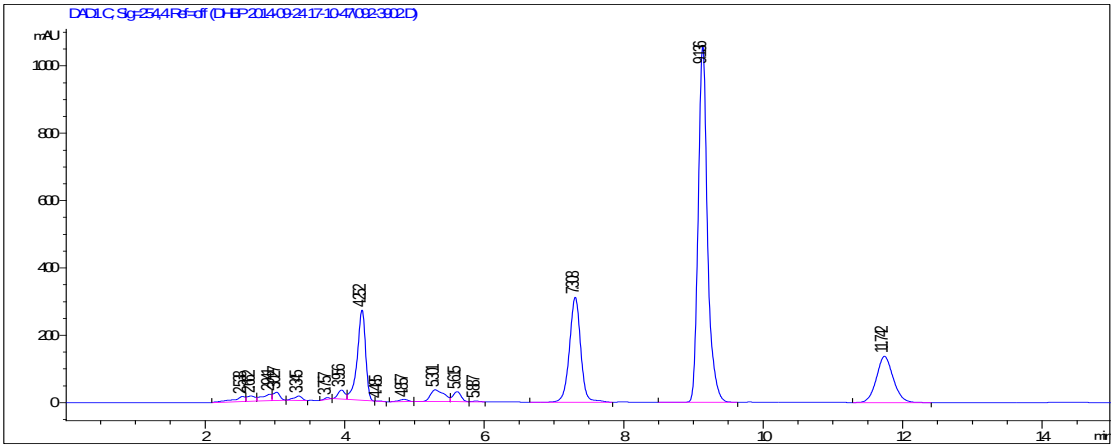

Figure S15. HPLC chromatogram of extract of *Rheum palmatum*.

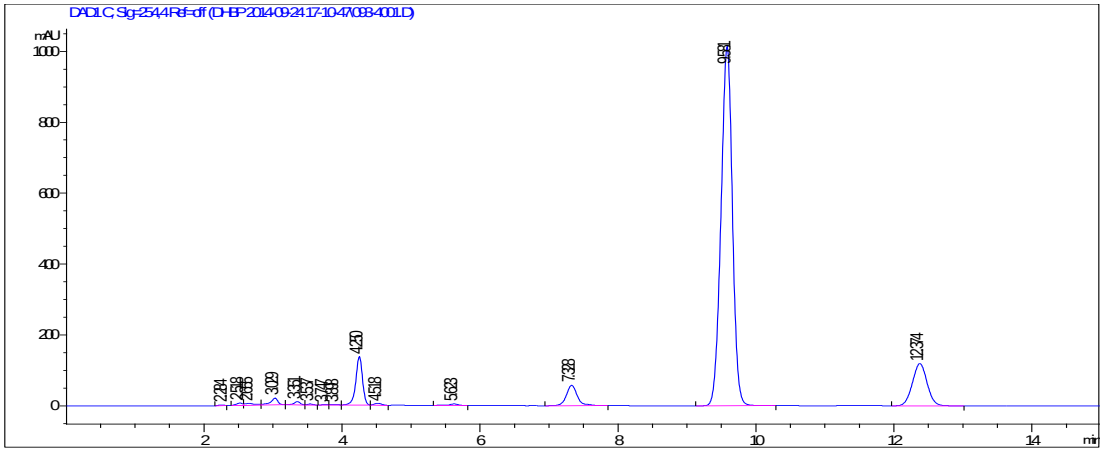

Figure S16. HPLC chromatogram of extract of *Rheum officinale*.