

Superior Antioxidant Capacity of *Berberis iliensis*–HPLC-Q-TOF-MS Based Phytochemical Studies and Spectrophotometric Determinations

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Figure S1. An example of the antimicrobial assay performed by the microdilution method (MIC) and agar plate assay (MBC) (L – extract from leaves, F-extract from fruits of *Berberis iliensis*)

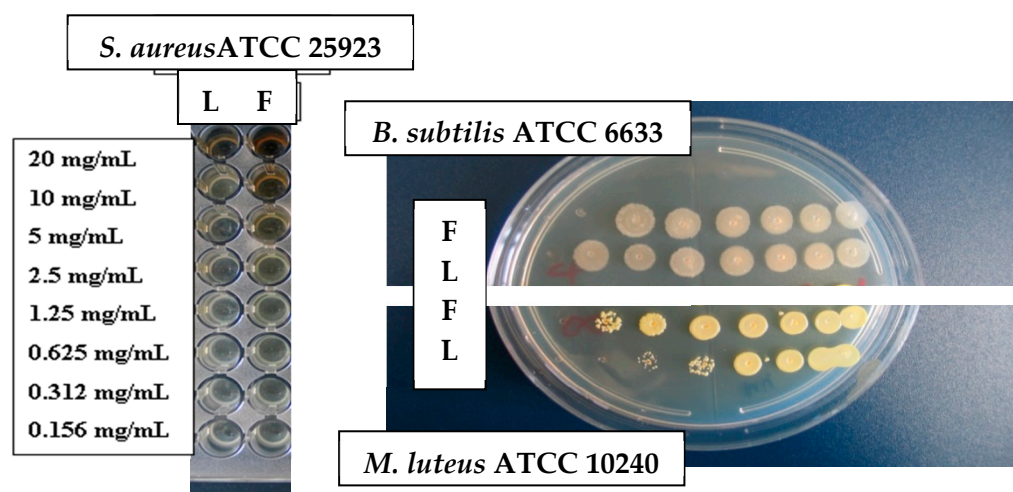
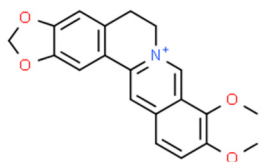


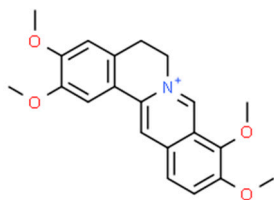
Figure S2. The structures of the metabolites present in the extracts

Alkaloids

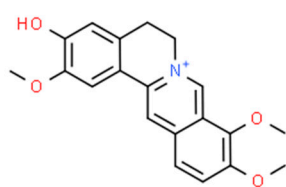
Berberine



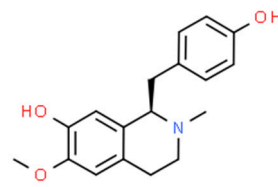
Palmatine



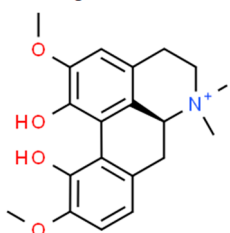
Jatrorhizine



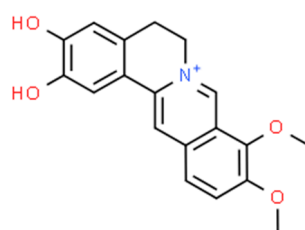
N-methylcoclaurine



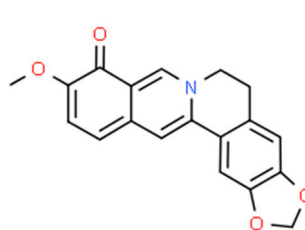
Magnoflorine



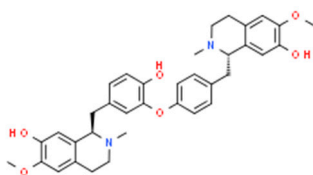
Demethyleneberberine



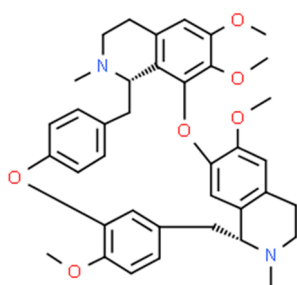
Berberrubine



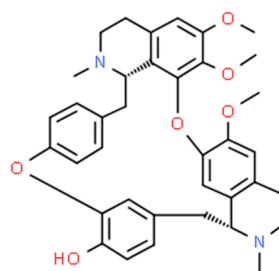
Berbamunine



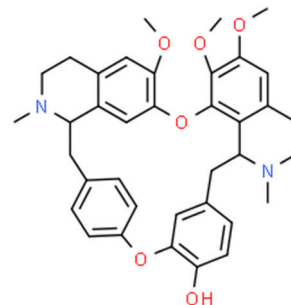
Obaberine



Oxyacanthine

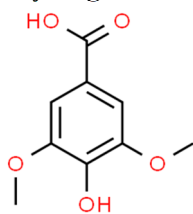


Berbamine

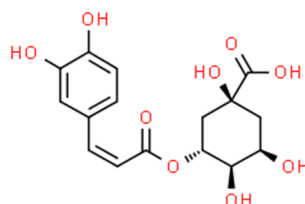


Phenolic compounds

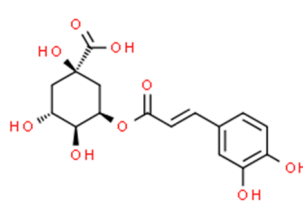
Syringic acid



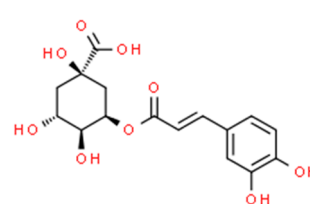
(Z)-chlorogenic acid



Neochlorogenic acid



Chlorogenic acid

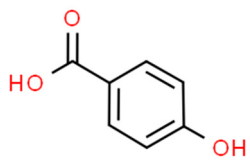


Hydroxybenzoic acid
isomers

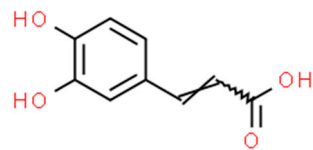
Caffeic acid

Coumaroyl-quinic acid
isomers

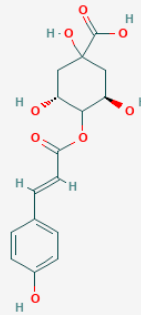
Rosmarinic acid



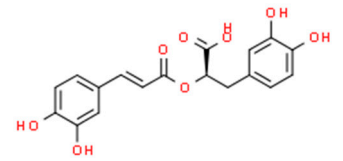
Galloyl-glucose



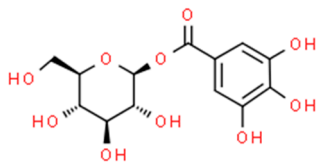
5-Caffeoylglucaric acid



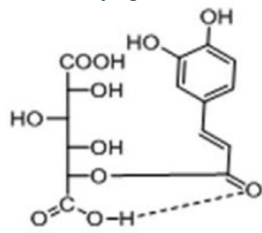
3-Caffeoylglucaric acid



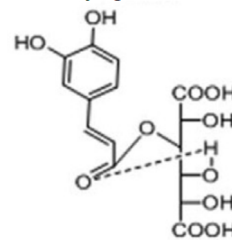
4-Caffeoylglucaric acid



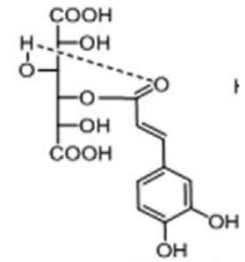
2-Caffeoylglucaric acid



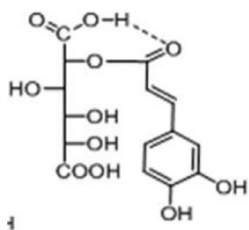
Syringaldehyde



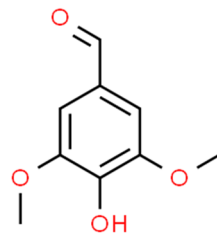
Rutin



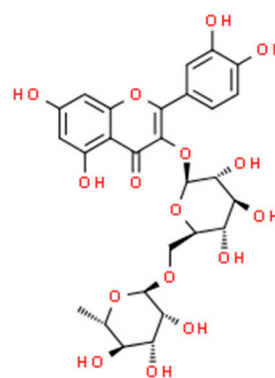
Quercetin



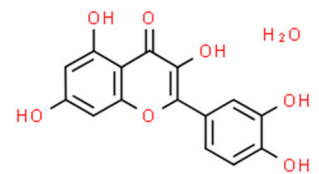
Isoquercetin



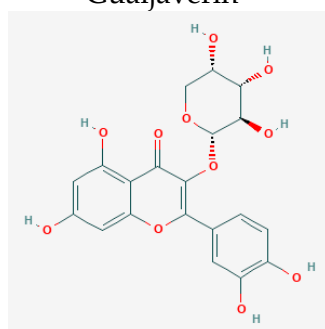
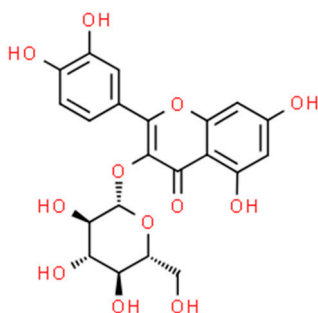
Guajaverin



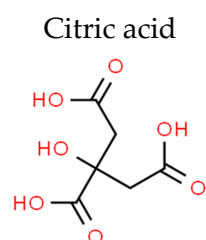
Hesperetin



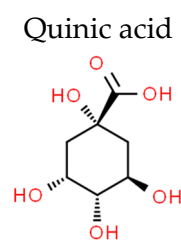
Mandelic acid



Others



Citric acid



Quinic acid

Table S1. Averaged percentage content of phenolic compounds in the studied extracts

| | FR _{EtOH} | FR _{70EtOH} | FR _{50EtOH} | FR _{H₂O} | LF _{EtOH} | LF _{70EtOH} | LF _{50EtOH} | LF _{H₂O} | RX _{EtOH} | RX _{70EtOH} | RX _{50EtOH} | RX _{H₂O} |
|-------------------------|--------------------|----------------------|----------------------|------------------------------|--------------------|----------------------|----------------------|------------------------------|--------------------|----------------------|----------------------|------------------------------|
| Chlorogenic acid | 0.028 | 0.023 | 0.041 | 0.023 | 0.012 | 0.017 | 0.21 | 0.15 | 0 | 0 | 0 | 0 |
| Neochlorogenic acid | 0.011 | 0.0089 | 0.028 | 0.029 | 0.0098 | 0.096 | 0.086 | 0.093 | 0 | 0 | 0 | 0 |
| Quercetin glucuronide | 0.0018 | 0.0015 | 0.0014 | 0.0018 | 0.0019 | 0.0018 | 0.051 | 0.071 | 0 | 0 | 0 | 0 |
| Isoquercetin | 0.0098 | 0.0075 | 0.0069 | 0.0083 | 0.021 | 0.015 | 0.017 | 0.028 | 0.0011 | 0.0014 | 0.0045 | 0.00019 |
| Kaempferol glucoside | 0.0015 | 0.0072 | 0.0081 | 0.0055 | 0.0081 | 0.0092 | 0.089 | 0.11 | 0 | 0 | 0 | 0 |
| Quercetin | 0.012 | 0.0077 | 0.02 | 0.00088 | 0.016 | 0.012 | 0.015 | 0.0085 | 0.00085 | 0.0012 | 0.00069 | 0.00057 |
| Kaempferol | 0.0086 | 0.0044 | 0.011 | 0 | 0.022 | 0.016 | 0.013 | 0.0072 | 0.00099 | 0.0068 | 0.0047 | 0.0024 |
| 3-caffeoylglucaric acid | 0.00067 | 0.0016 | 0.0076 | 0.0087 | 0.018 | 0.025 | 0.1 | 0.074 | 0 | 0 | 0 | 0 |
| 4-caffeoylglucaric acid | 0.0015 | 0.00086 | 0.0055 | 0.0054 | 0.026 | 0.035 | 0.096 | 0.13 | 0 | 0 | 0 | 0 |
| 2-caffeoylglucaric acid | 0.00012 | 0.0036 | 0.0067 | 0.0063 | 0.031 | 0.038 | 0.14 | 0.16 | 0 | 0 | 0 | 0 |
| 5-caffeoylglucaric acid | 0.00061 | 0.0037 | 0.004 | 0.0055 | 0.014 | 0.012 | 0.078 | 0.082 | 0.001 | 0.001 | 0.0068 | 0.0082 |

Table S2. Averaged percentage content of the selected alkaloids in the obtained extracts

| | FR _{EtOH} | FR _{70EtOH} | FR _{50EtOH} | FR _{H₂O} | LF _{EtOH} | LF _{70EtOH} | LF _{50EtOH} | LF _{H₂O} | RX _{EtOH} | RX _{70EtOH} | RX _{50EtOH} | RX _{H₂O} |
|--------------|--------------------|----------------------|----------------------|------------------------------|--------------------|----------------------|----------------------|------------------------------|--------------------|----------------------|----------------------|------------------------------|
| Berberine | 0.4322 | 0.2656 | 0.1623 | 0.1456 | 0.6719 | 0.5724 | 0.5048 | 0.3746 | 3.332 | 2.518 | 2.1044 | 1.8018 |
| Palmitine | 0.0681 | 0.0573 | 0.0537 | 0.0479 | 0.1843 | 0.1595 | 0.1138 | 0.0811 | 0.7477 | 0.6674 | 0.7095 | 0.6779 |
| Jatrorhizine | 0.1779 | 0.2228 | 0.174 | 0.1669 | 0.7624 | 0.6365 | 0.4343 | 0.3642 | 1.5985 | 1.3983 | 1.3898 | 1.3625 |
| Magnoflorine | 0.1356 | 0.2109 | 0.223 | 0.3258 | 0.6361 | 0.8575 | 0.9296 | 1.3379 | 0.3088 | 0.4962 | 0.5208 | 0.6455 |