

Supplementary Materials: *Mentha pulegium* L. (pennyroyal, Lamiaceae) extracts impose abortion or fetal-mediated toxicity in pregnant rats; evidenced by the modulation of pregnancy hormones, MiR-520, MiR-146a, TIMP-1 and MMP-9 protein expressions, inflammatory state, certain related signaling pathways, and metabolite profiling *via* UPLC-ESI-TOF-MS.

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Identification of caffeic acid derivatives

Spectrum from IDA-210526-SM0124-1.wiff (sample 1) - IDA-210526-SM0124-1, Experiment 11, -TOF MS² (50 - 1000) from 1.307 min
Precursor: 355.1 Da

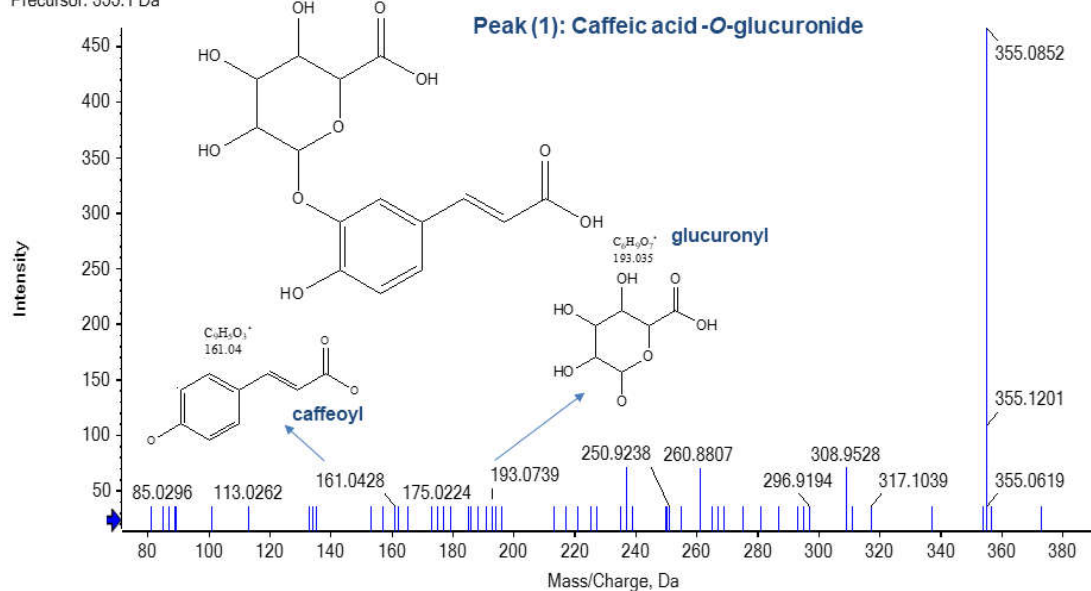


Figure S1: ESI-MS/MS Spectrum of peak (1) in the negative ion mode

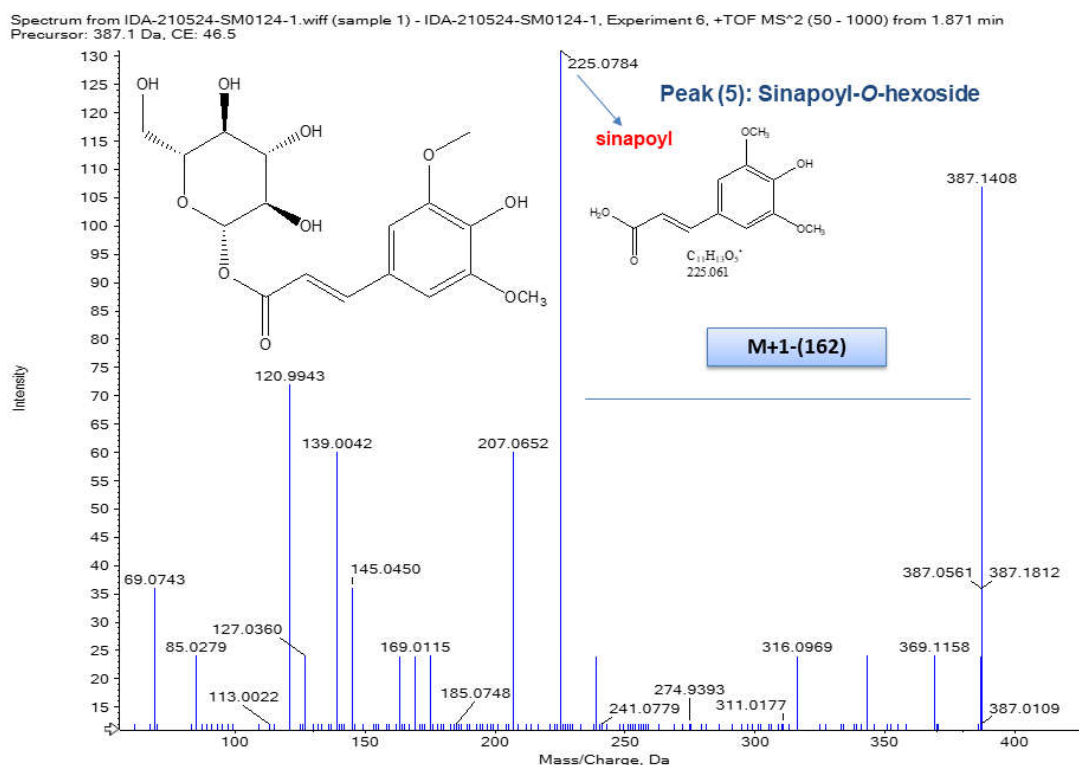


Figure S2: ESI-MS/MS Spectrum of peak (5) in the positive ion mode

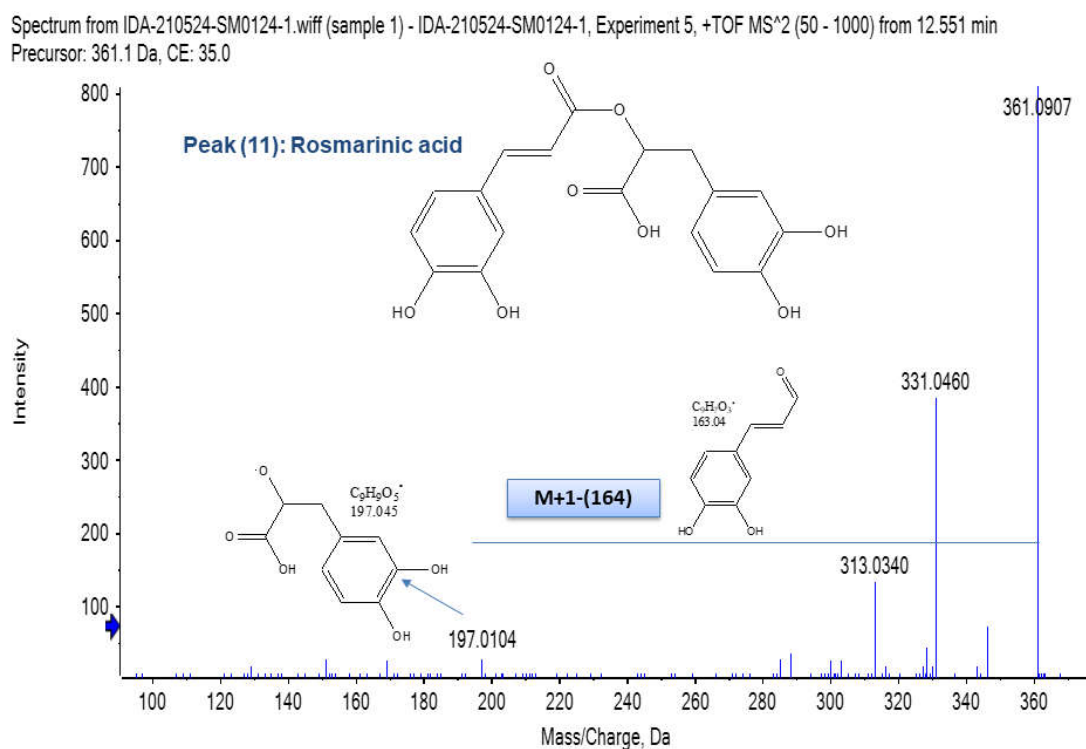
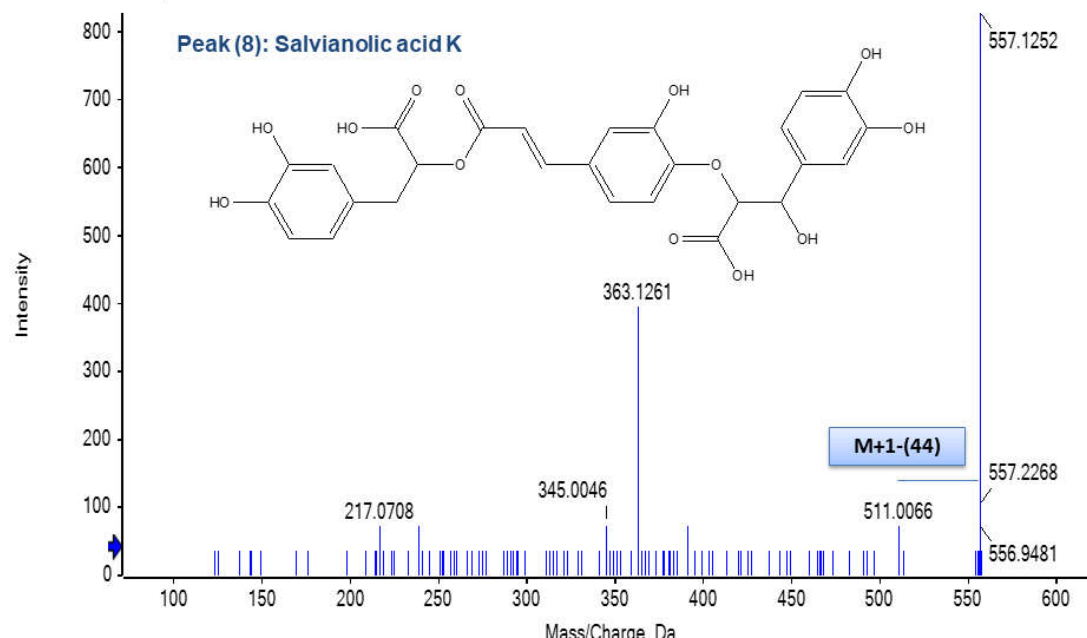


Figure S3: ESI-MS/MS Spectrum of peak (11) in the positive ion mode

Spectrum from IDA-210524-SM0124-1.wiff (sample 1) - IDA-210524-SM0124-1, Experiment 3, +TOF MS² (50 - 1000) from 7.256 min
Precursor: 557.3 Da, CE: 35.0

**Figure S4:** ESI-MS/MS Spectrum of peak (8) in the positive ion mode

Spectrum from IDA-210524-SM0124-1.wiff (sample 1) - IDA-210524-SM0124-1, Experiment 2, +TOF MS² (50 - 1000) from 8.986 min
Precursor: 315.1 Da, CE: 35.0

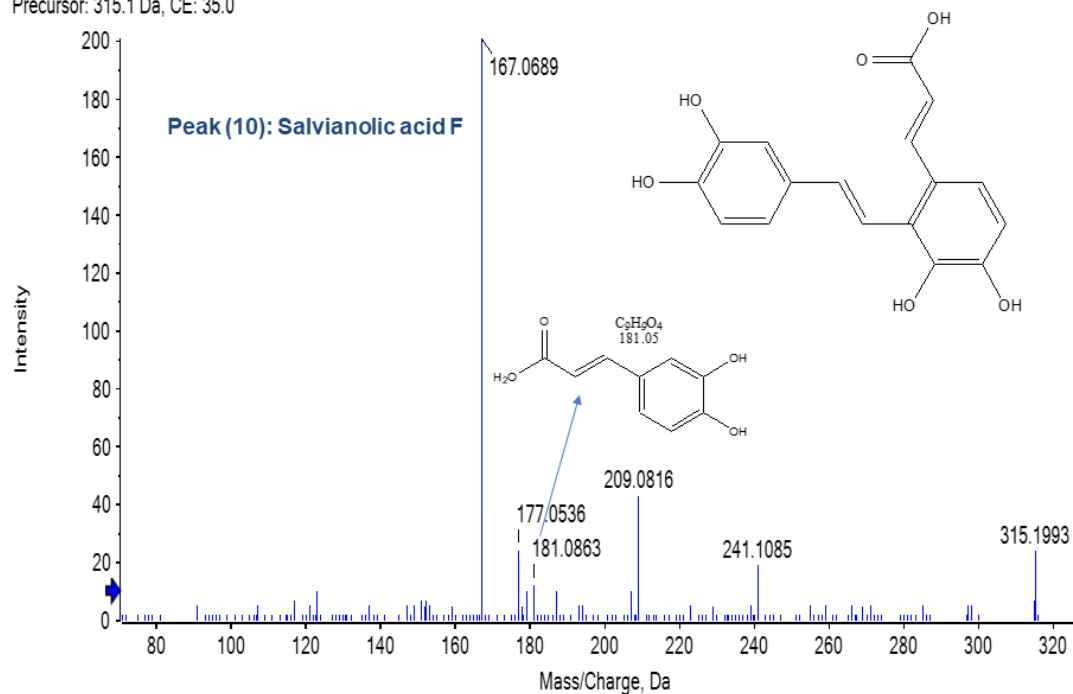
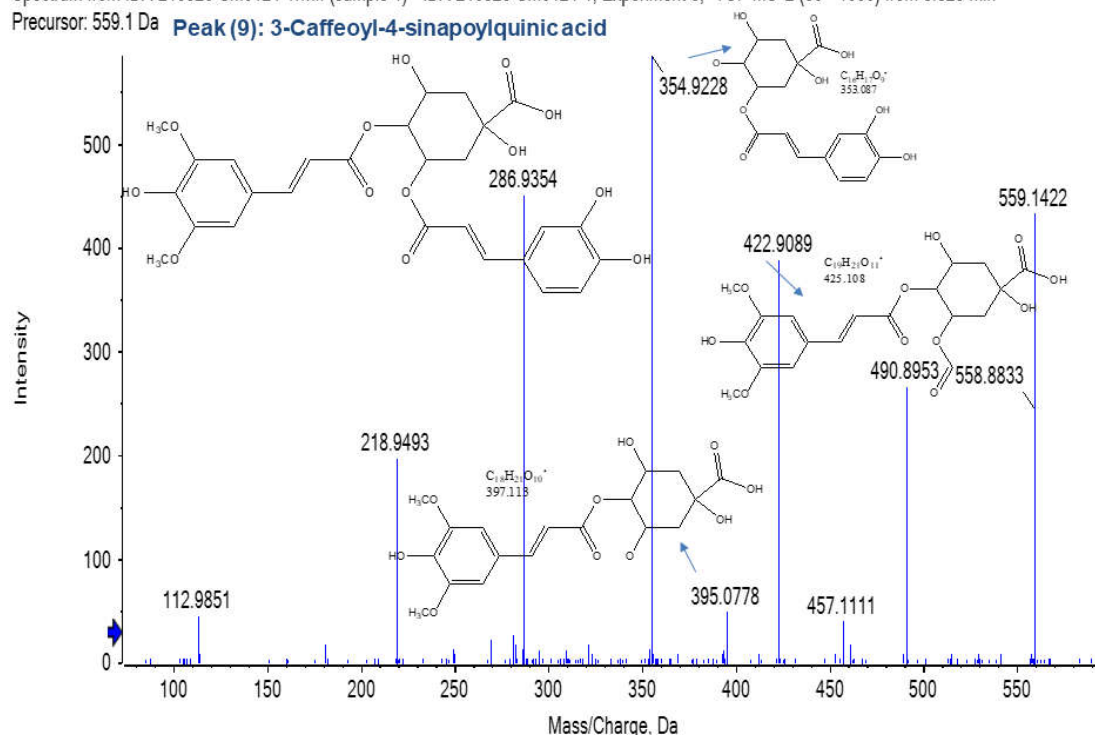


Figure S5: ESI-MS/MS Spectrum of peak (10) in the positive ion modeSpectrum from IDA-210526-SM0124-1.wiff (sample 1) - IDA-210526-SM0124-1, Experiment 3, -TOF MS² (50 - 1000) from 8.825 min

Precursor: 559.1 Da

Peak (9): 3-Caffeoyl-4-sinapoylquinic acid**Figure S6:** ESI-MS/MS Spectrum of peak (9) in the negative ion mode**Identification of Flavones and derivatives**

Spectrum from IDA-210526-SM0124-1.wiff (sample 1) - IDA-210526-SM0124-1, Experiment 6, -TOF MS² (50 - 1000) from 4.872 min
Precursor: 593.2 Da

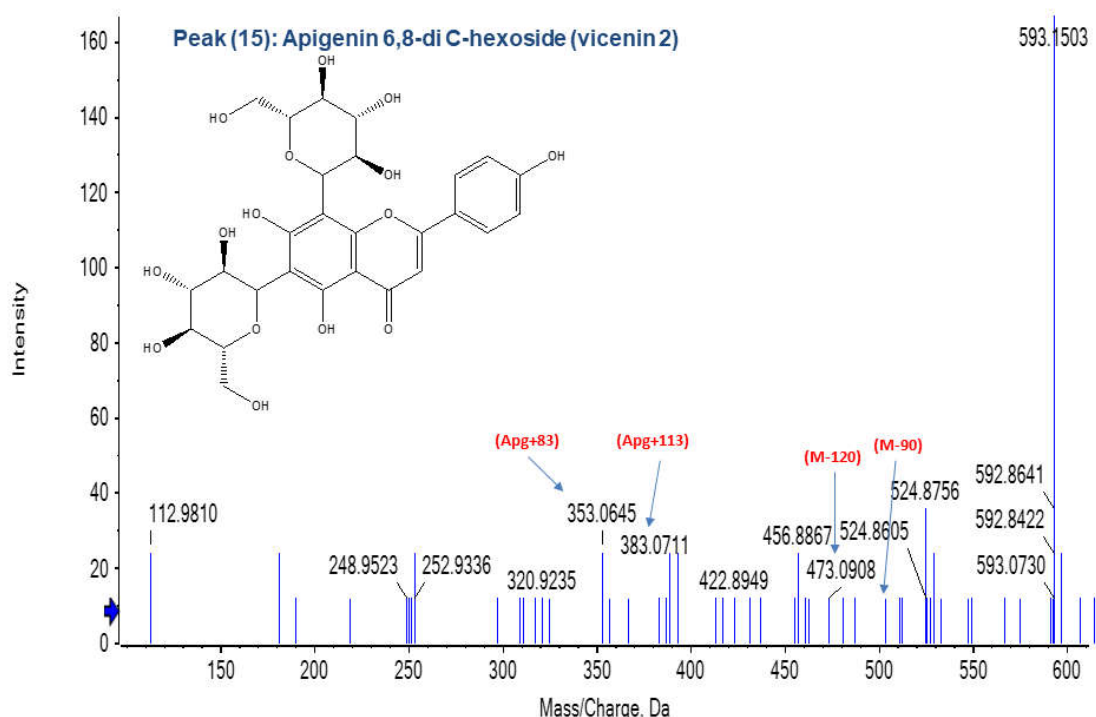


Figure S7: ESI-MS/MS Spectrum of peak (15) in the negative ion mode

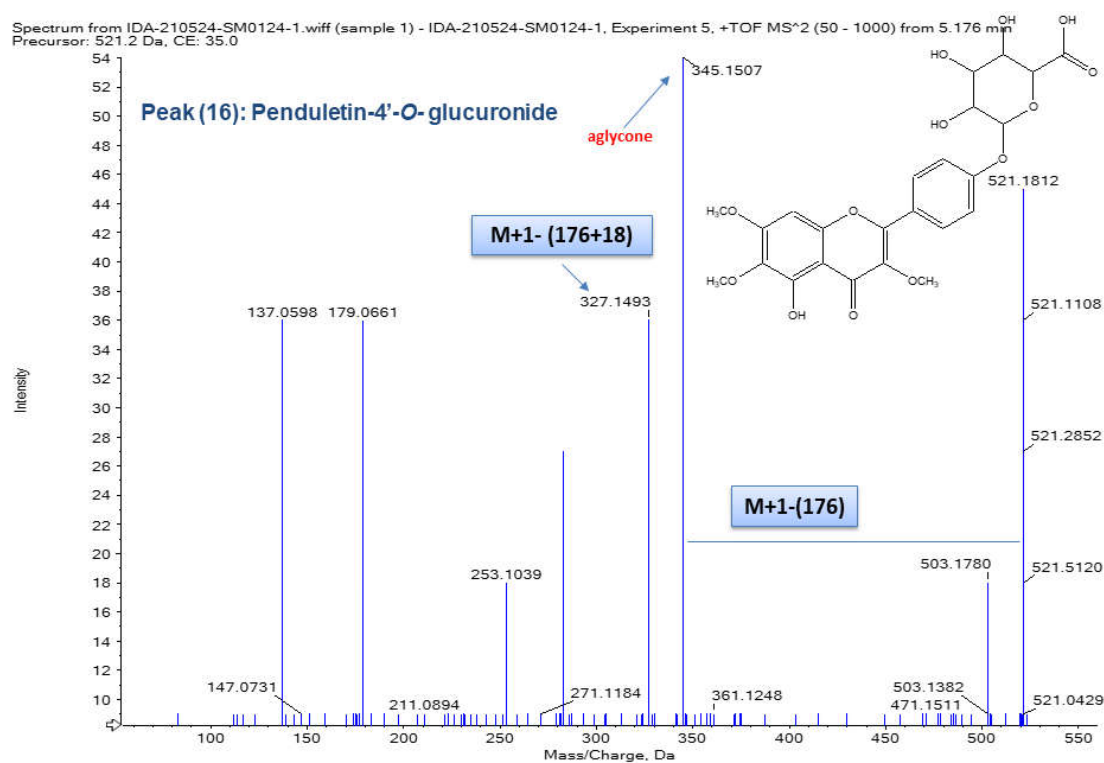
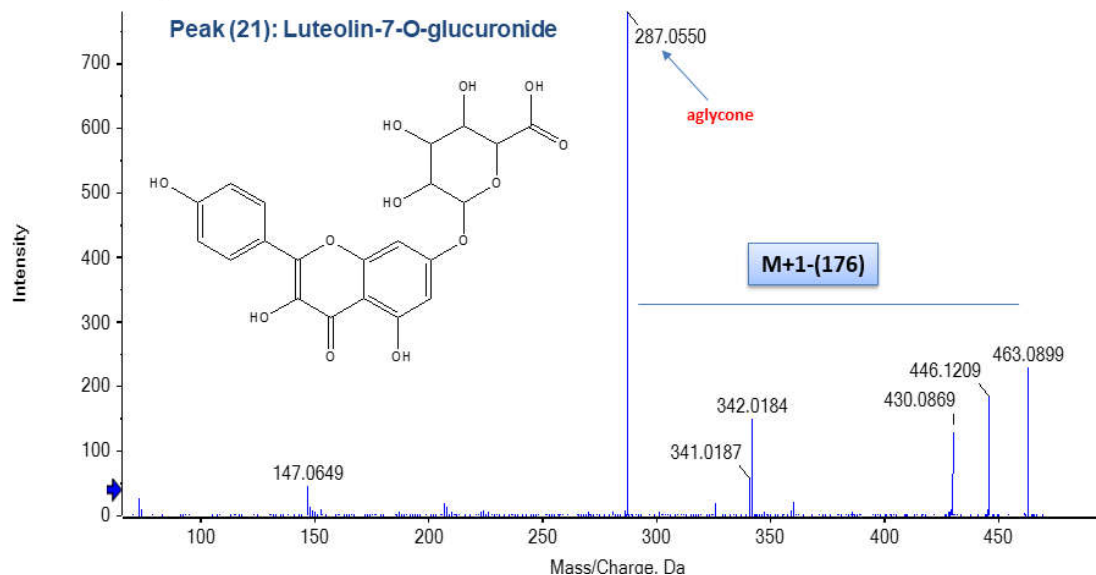
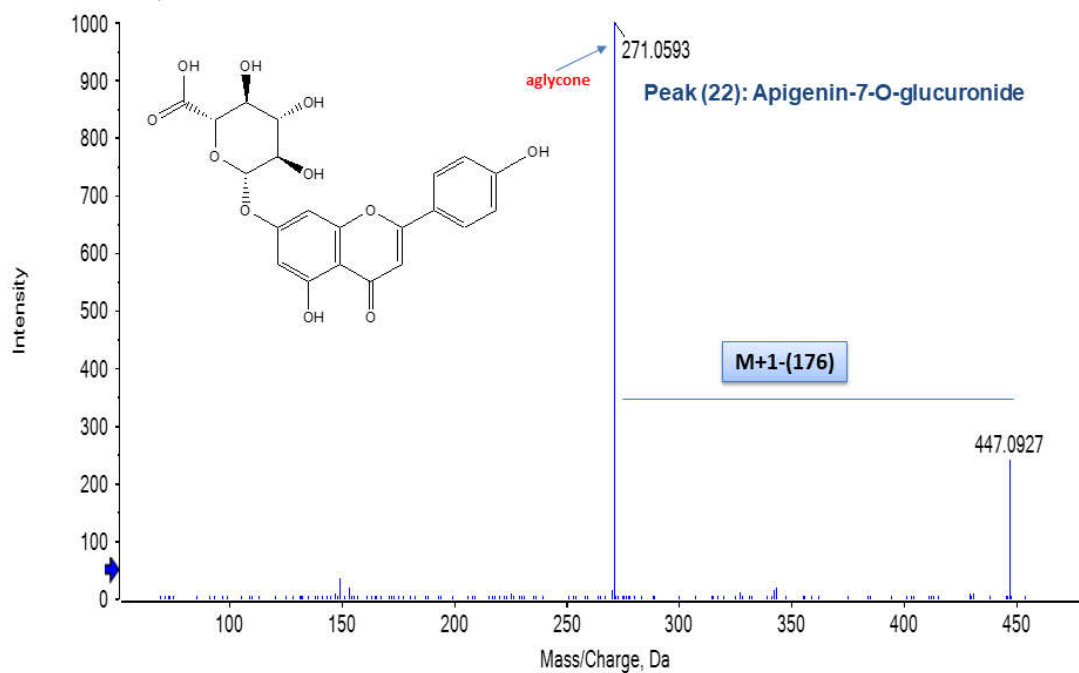


Figure S8: ESI-MS/MS Spectrum of peak (16) in the positive ion mode

Spectrum from IDA-210524-SM0124-1.wiff (sample 1) - IDA-210524-SM0124-1, Experiment 2, +TOF MS² (50 - 1000) from 7.846 min
Precursor: 463.1 Da, CE: 35.0

**Figure S9:** ESI-MS/MS Spectrum of peak (21) in the positive ion mode

Spectrum from IDA-210524-SM0124-1.wiff (sample 1) - IDA-210524-SM0124-1, Experiment 2, +TOF MS² (50 - 1000) from 8.520 min
Precursor: 447.1 Da, CE: 35.0

**Figure S10:** ESI-MS/MS Spectrum of peak (22) in the positive ion mode

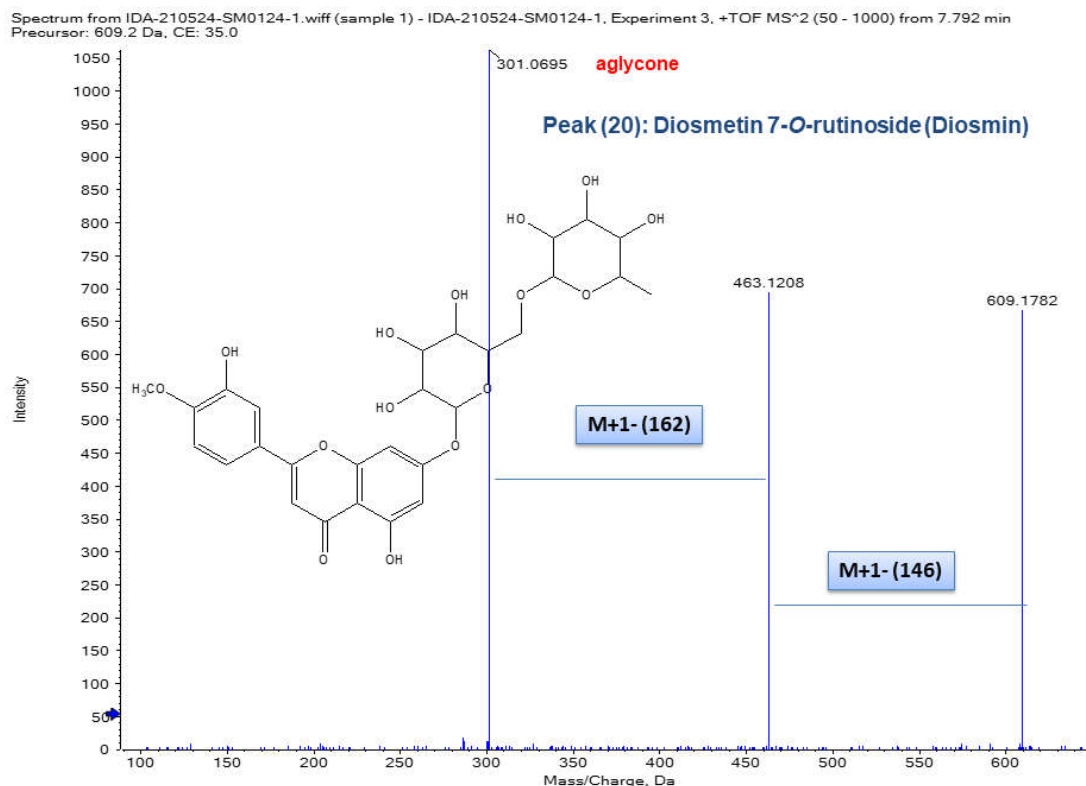


Figure S11: ESI-MS/MS Spectrum of peak (20) in the positive ion mode

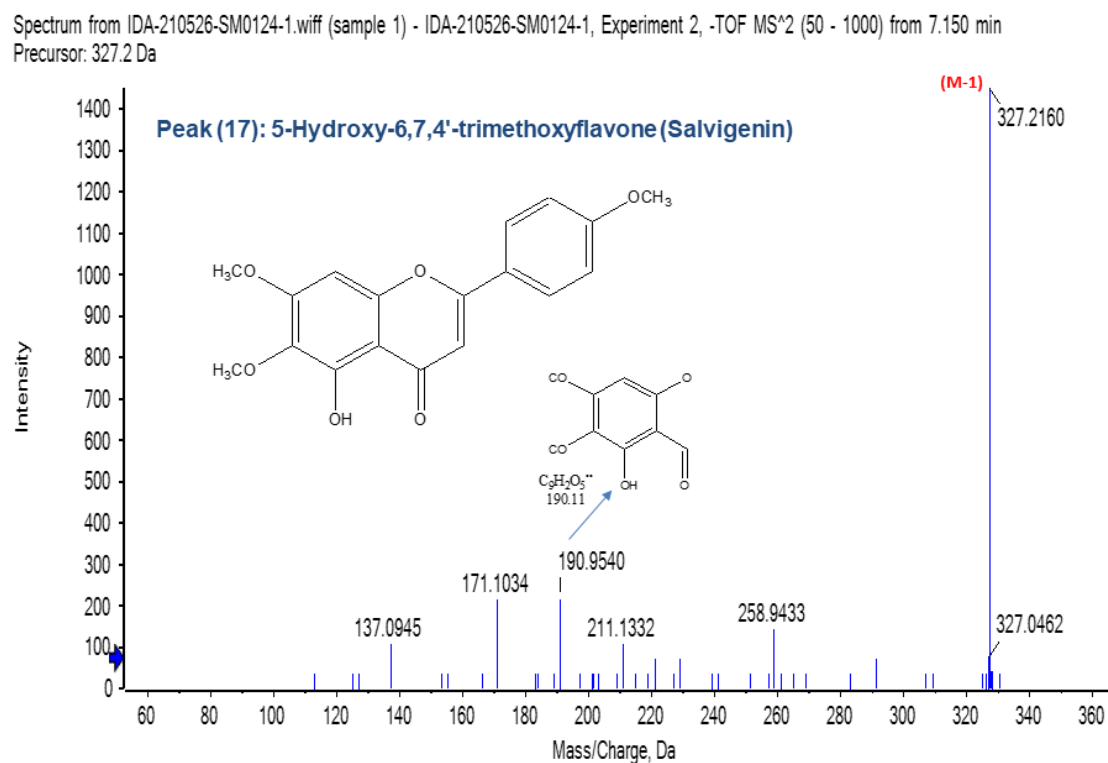
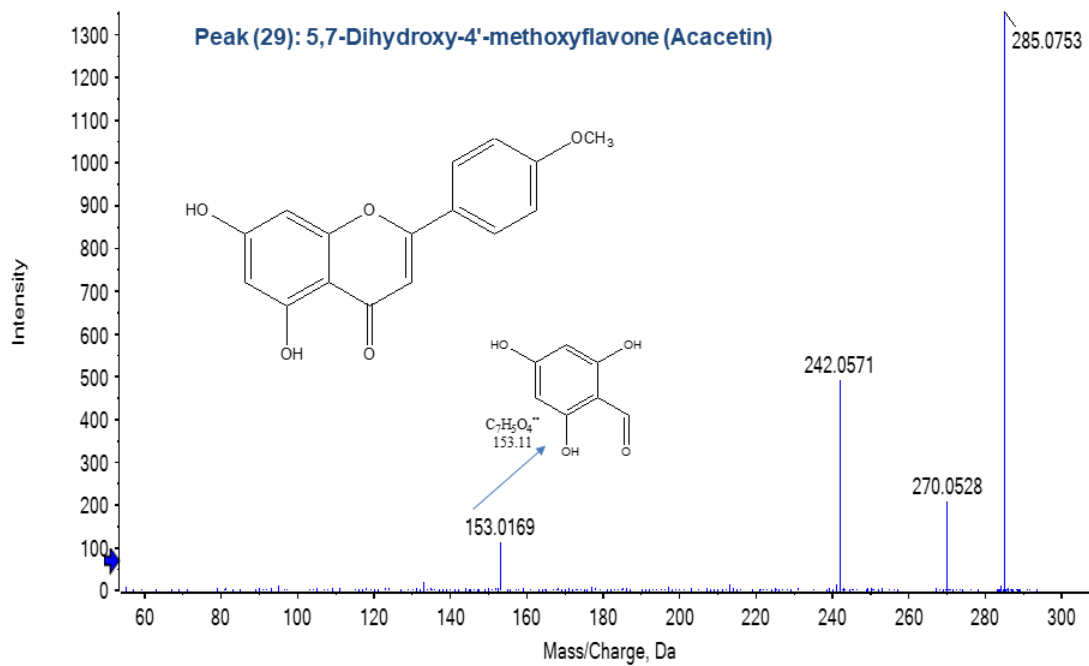


Figure S12: ESI-MS/MS Spectrum of peak (17) in the negative ion mode

Spectrum from IDA-210524-SM0124-1.wiff (sample 1) - IDA-210524-SM0124-1, Experiment 2, +TOF MS² (50 - 1000) from 14.233 min
Precursor: 285.1 Da, CE: 35.0

**Figure S13:** ESI-MS/MS Spectrum of peak (29) in the positive ion mode

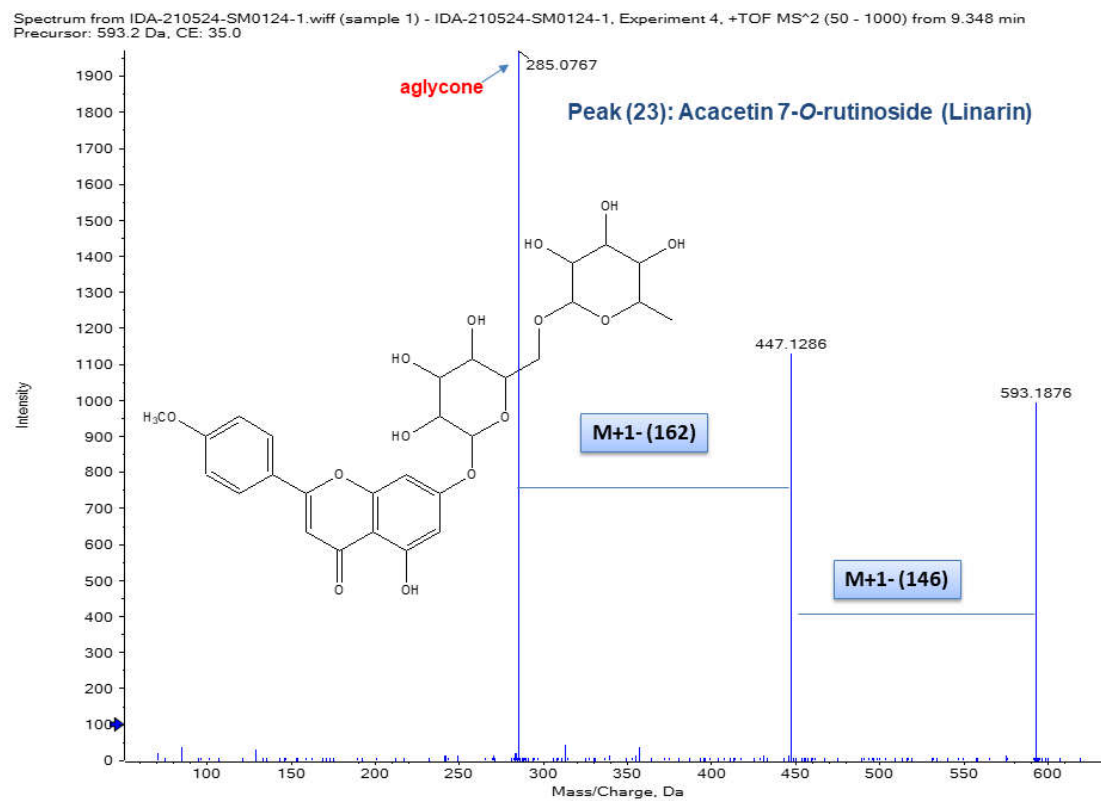


Figure S14: ESI-MS/MS Spectrum of peak (23) in the positive ion mode

Identification of Flavanone & Flavanol derivatives

Spectrum from IDA-210524-SM0124-1.wiff (sample 1) - IDA-210524-SM0124-1, Experiment 3, +TOF MS² (50 - 1000) from 5.067 min
Precursor: 449.1 Da, CE: 35.0

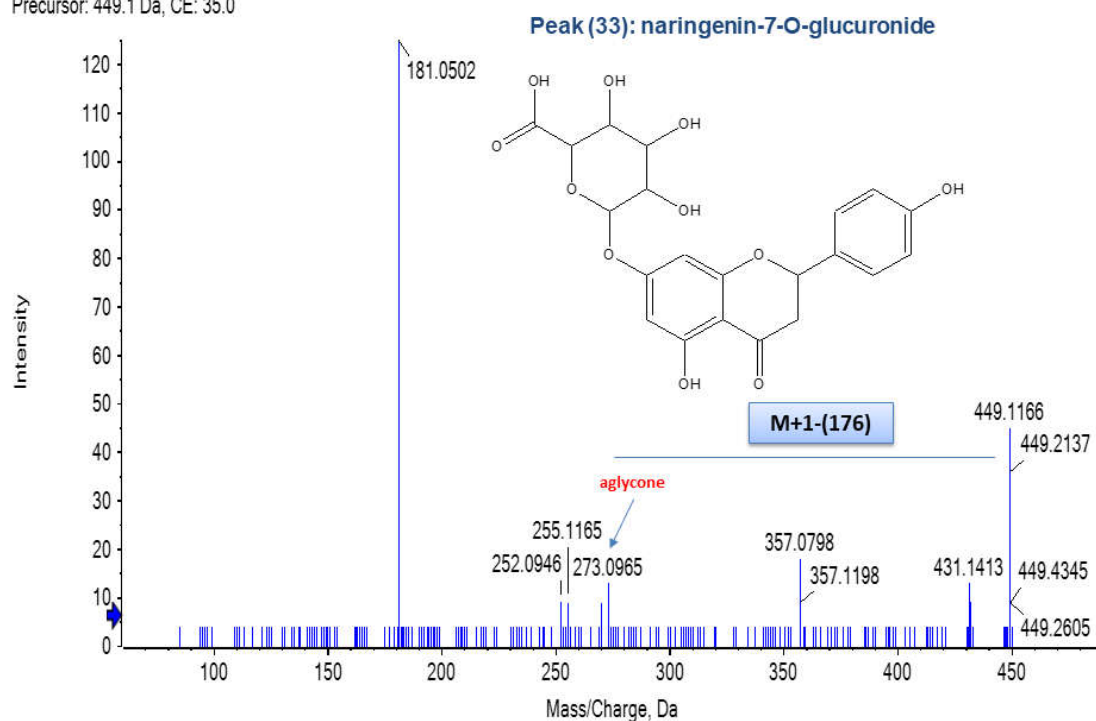


Figure S15: ESI-MS/MS Spectrum of peak (33) in the positive ion mode

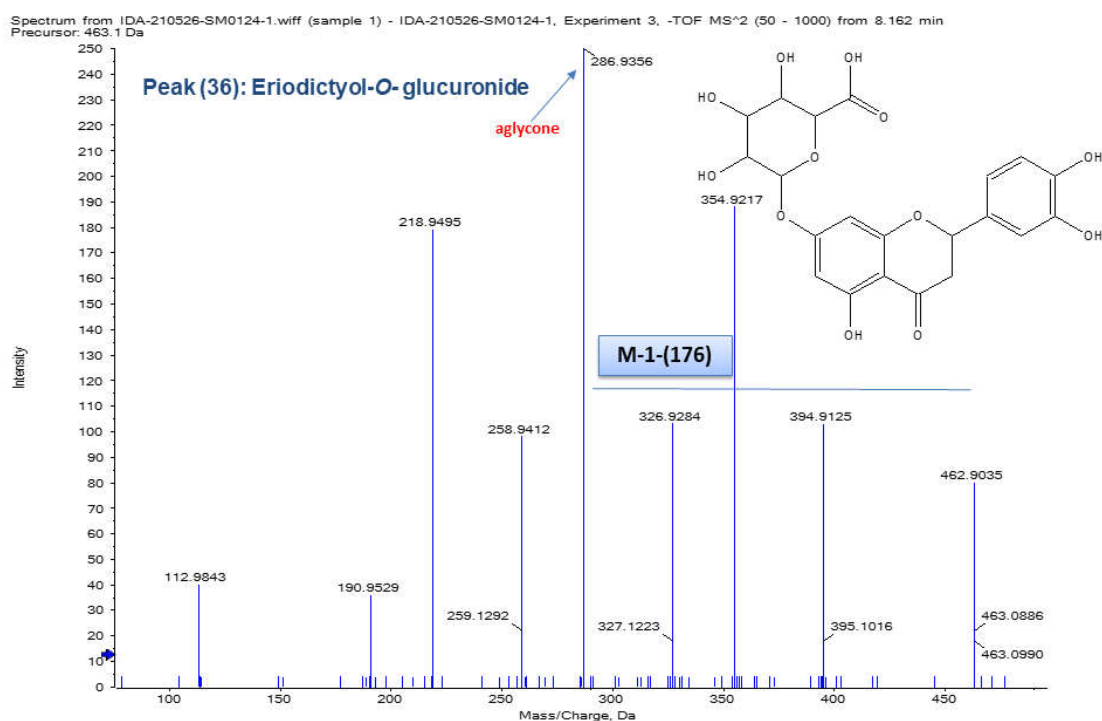
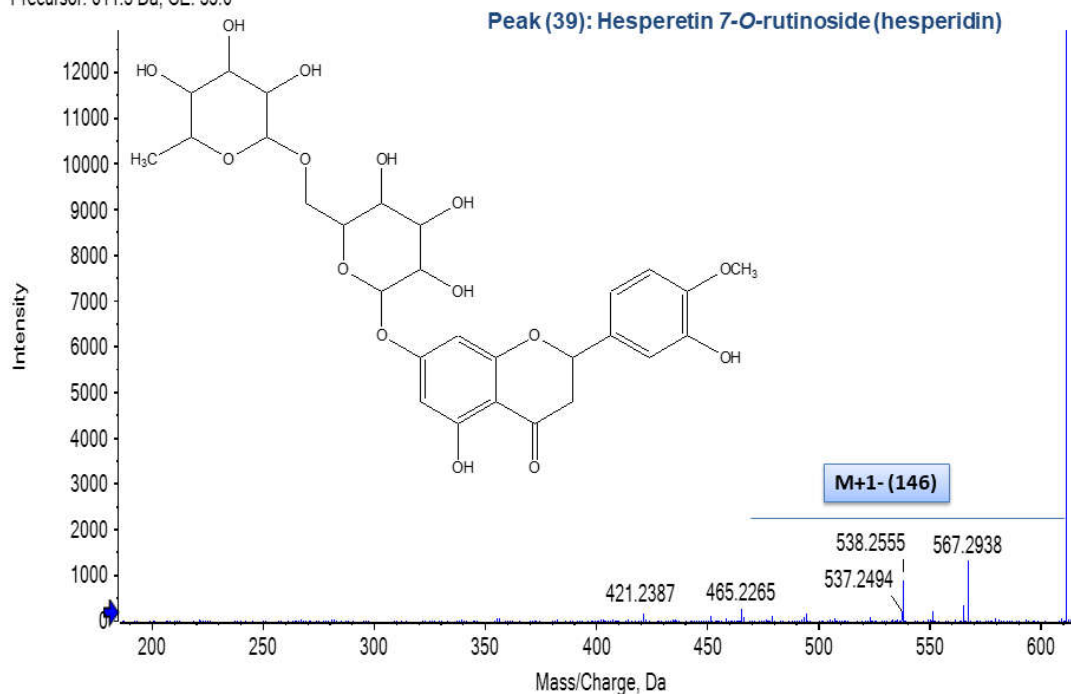


Figure S16: ESI-MS/MS Spectrum of peak (36) in the negative ion mode

Spectrum from IDA-210524-SM0124-1.wiff (sample 1) - IDA-210524-SM0124-1, Experiment 4, +TOF MS² (50 - 1000) from 21.512 min
Precursor: 611.3 Da, CE: 35.0

**Figure S17:** ESI-MS/MS Spectrum of peak (39) in the positive ion mode**Identification of prenyl flavones**

Spectrum from IDA-210526-SM0124-1.wiff (sample 1) - IDA-210526-SM0124-1, Experiment 2, -TOF MS² (50 - 1000) from 7.238 min
Precursor: 353.2 Da

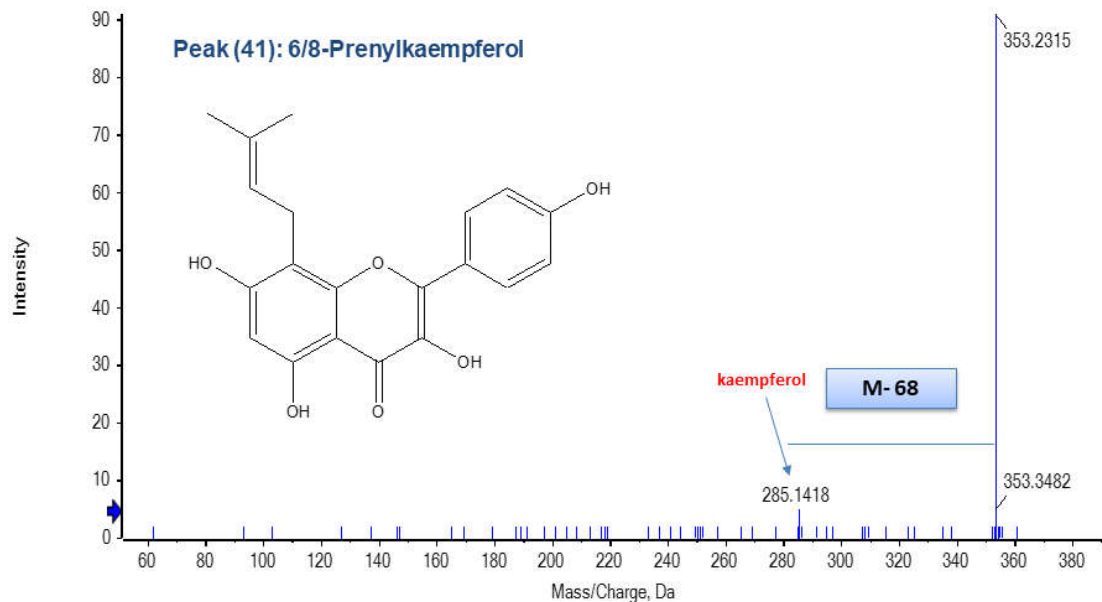
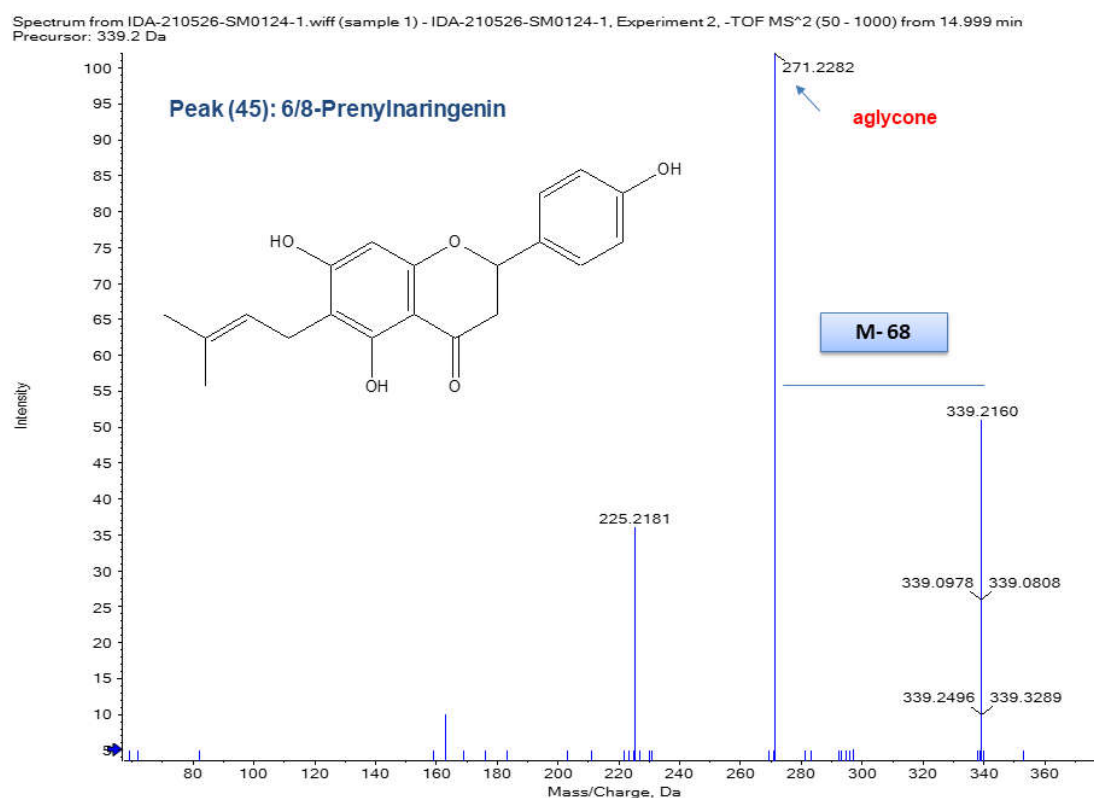


Figure S18: ESI-MS/MS Spectrum of peak (41) in the negative ion mode**Figure S19:** ESI-MS/MS Spectrum of peak (45) in the negative ion mode**Identification of bioflavonoids**

Spectrum from IDA-210524-SM0124-1.wiff (sample 1) - IDA-210524-SM0124-1, Experiment 3, +TOF MS² (50 - 1000) from 18.879 min
Precursor: 567.1 Da, CE: 35.0

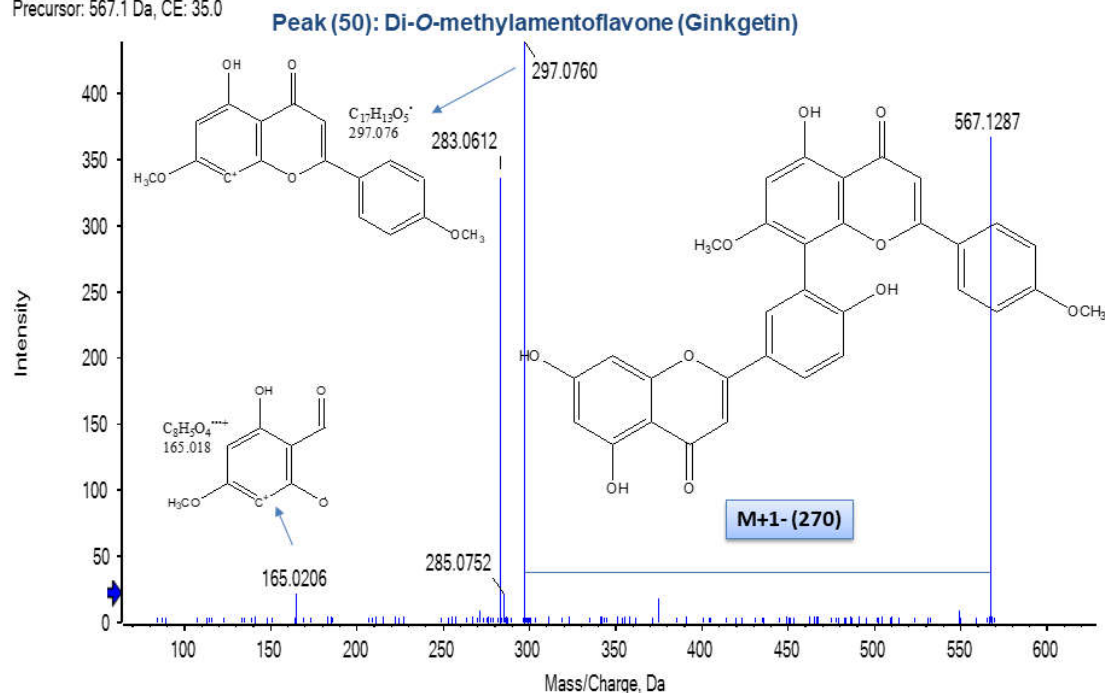


Figure S20: ESI-MS/MS Spectrum of peak (50) in the positive ion mode

Spectrum from IDA-210524-SM0124-1.wiff (sample 1) - IDA-210524-SM0124-1, Experiment 3, +TOF MS² (50 - 1000) from 21.585 min
Precursor: 581.1 Da, CE: 35.0

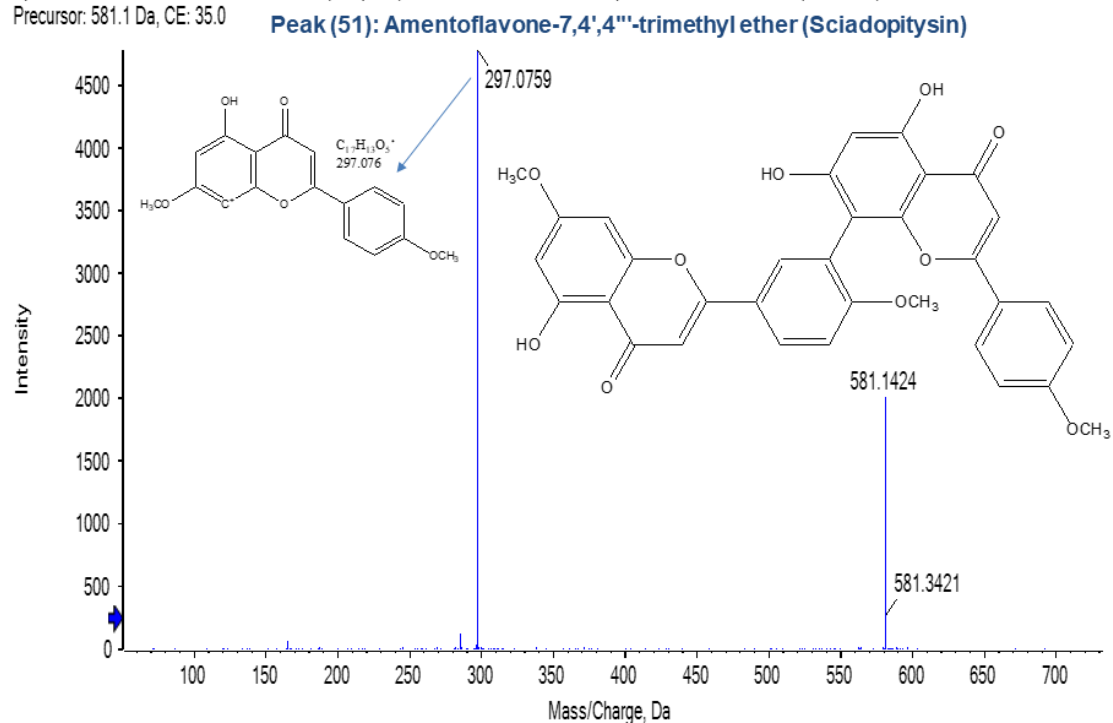


Figure S21: ESI-MS/MS Spectrum of peak (51) in the positive ion mode

Identification of diterpenes

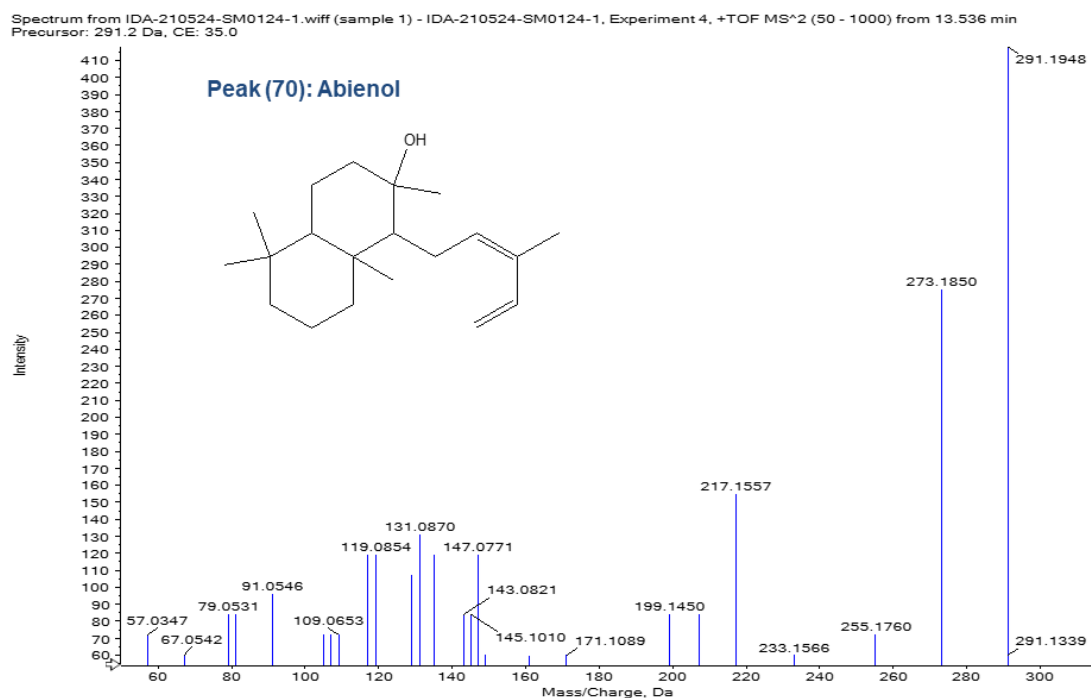


Figure S22: ESI-MS/MS Spectrum of peak (70) in the positive ion mode

Spectrum from IDA-210526-SM0124-1.wiff (sample 1) - IDA-210526-SM0124-1, Experiment 6, -TOF MS² (50 - 1000) from 18.934 min
Precursor: 409.3 Da

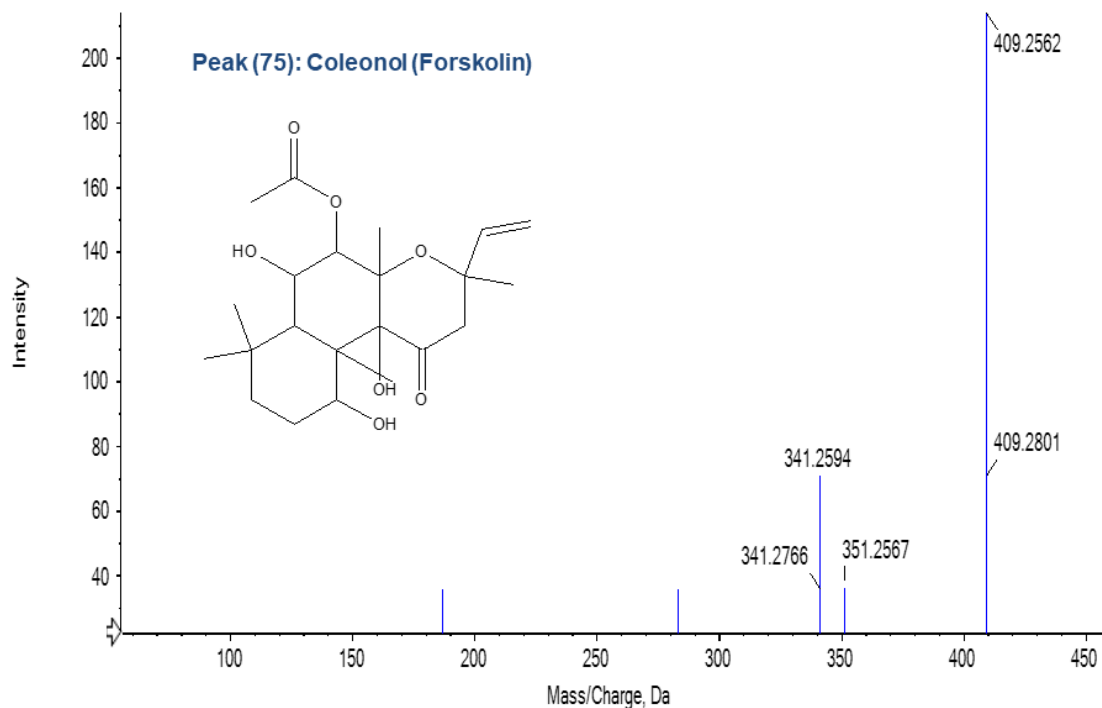
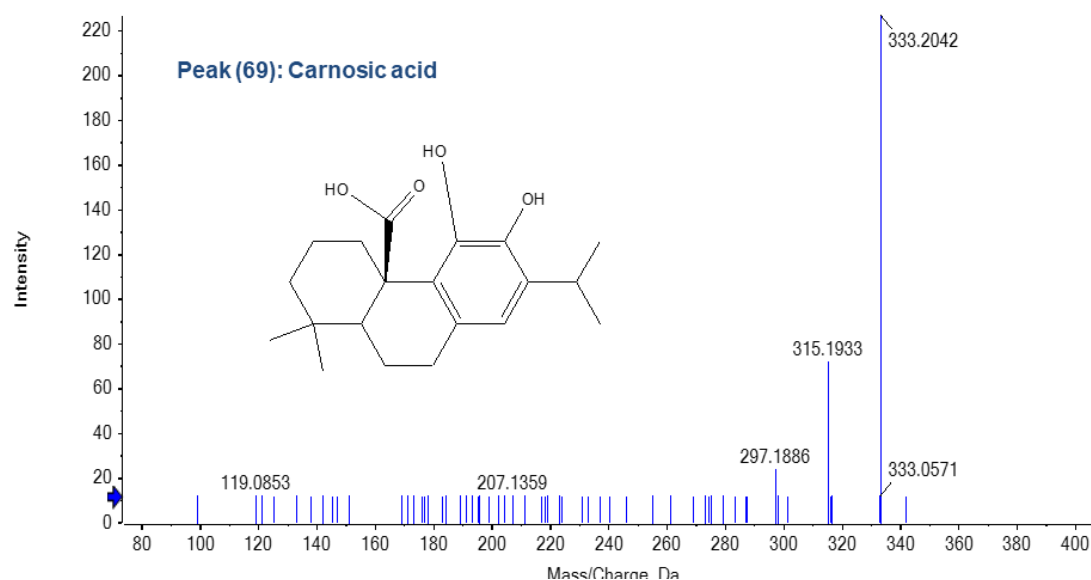
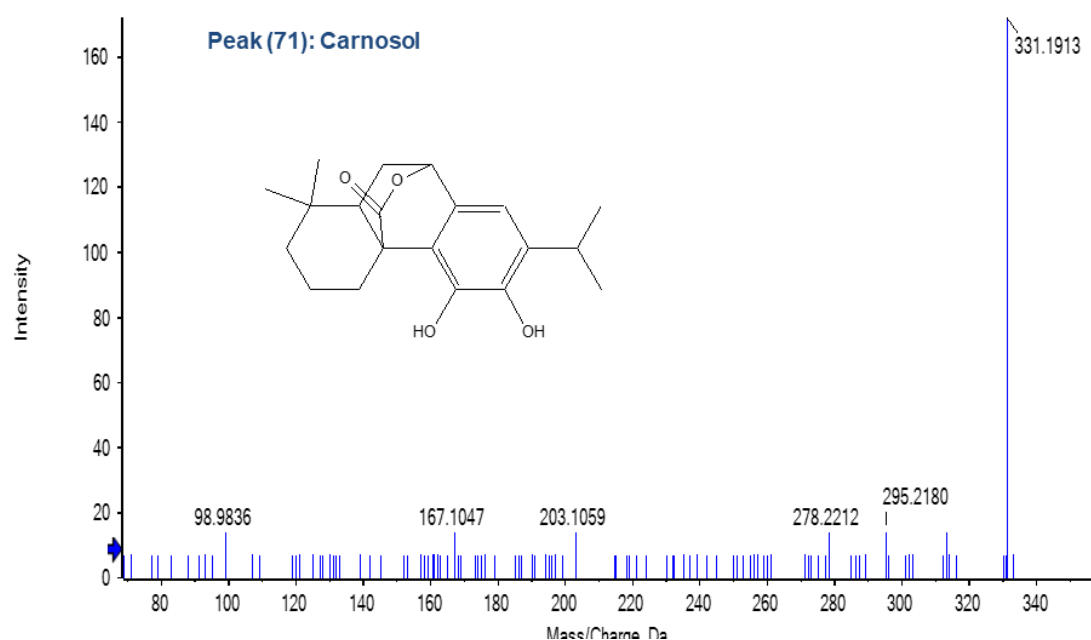


Figure S23: ESI-MS/MS Spectrum of peak (75) in the negative ion mode

Spectrum from IDA-210524-SM0124-1.wiff (sample 1) - IDA-210524-SM0124-1, Experiment 6, +TOF MS² (50 - 1000) from 13.332 min
Precursor: 333.2 Da, CE: 46.5

**Figure S24:** ESI-MS/MS Spectrum of peak (69) in the positive ion mode

Spectrum from IDA-210524-SM0124-1.wiff (sample 1) - IDA-210524-SM0124-1, Experiment 3, +TOF MS² (50 - 1000) from 13.876 min
Precursor: 331.2 Da, CE: 35.0

**Figure S25:** ESI-MS/MS Spectrum of peak (71) in the positive ion mode

Spectrum from IDA-210524-SM0124-1.wiff (sample 1) - IDA-210524-SM0124-1, Experiment 2, +TOF MS² (50 - 1000) from 19.006 min
Precursor: 317.2 Da, CE: 35.0

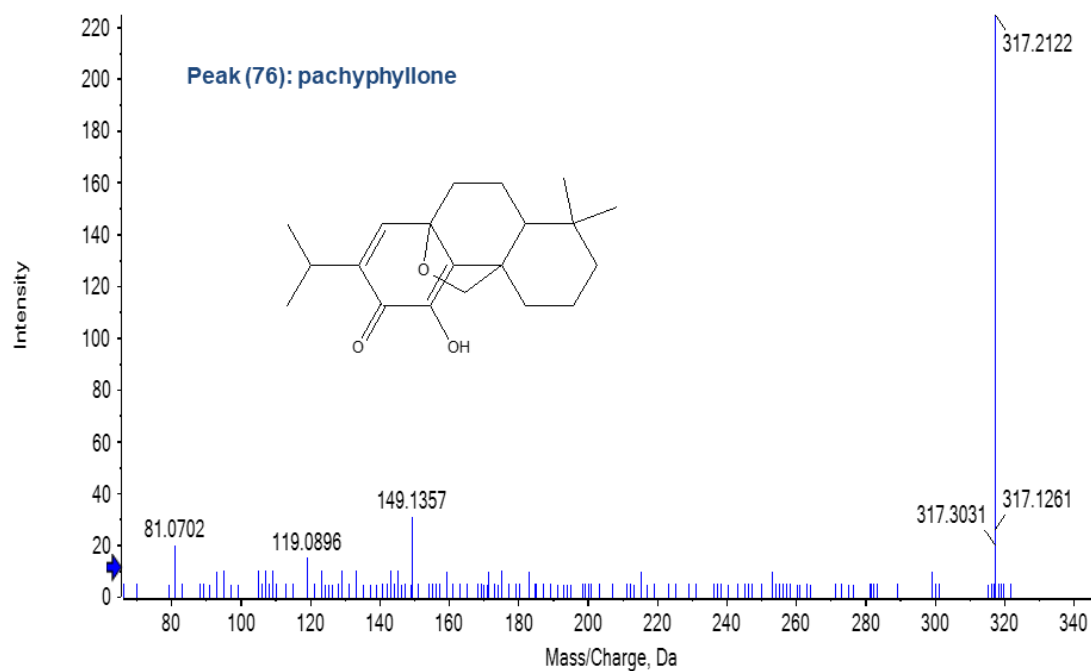


Figure S26: ESI-MS/MS Spectrum of peak (76) in the positive ion mode

Spectrum from IDA-210524-SM0124-1.wiff (sample 1) - IDA-210524-SM0124-1, Experiment 4, +TOF MS² (50 - 1000) from 24.914 min
Precursor: 279.2 Da, CE: 35.0

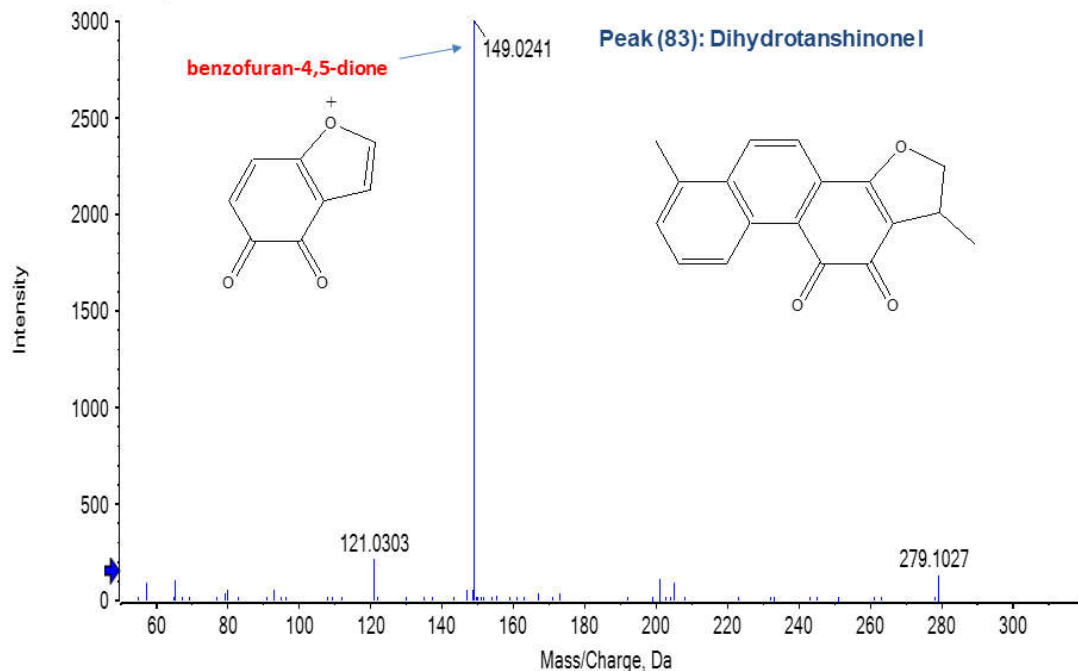


Figure S27: ESI-MS/MS Spectrum of peak (83) in the positive ion mode

Identification of triterpenes

Spectrum from IDA-210524-SM0124-1.wiff (sample 1) - IDA-210524-SM0124-1, Experiment 5, +TOF MS² (50 - 1000) from 17.224 min
Precursor: 489.4 Da, CE: 35.0

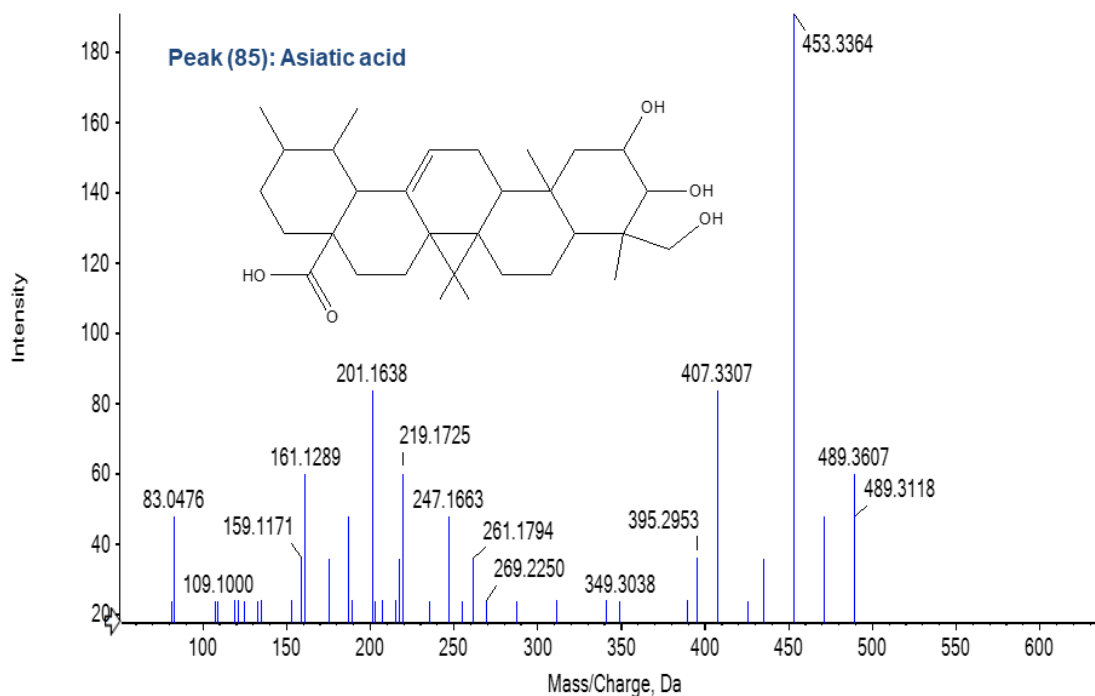


Figure S28: ESI-MS/MS Spectrum of peak (85) in the positive ion mode

Spectrum from IDA-210524-SM0124-1.wiff (sample 1) - IDA-210524-SM0124-1, Experiment 4, +TOF MS² (50 - 1000) from 23.248 min
Precursor: 457.4 Da, CE: 35.0

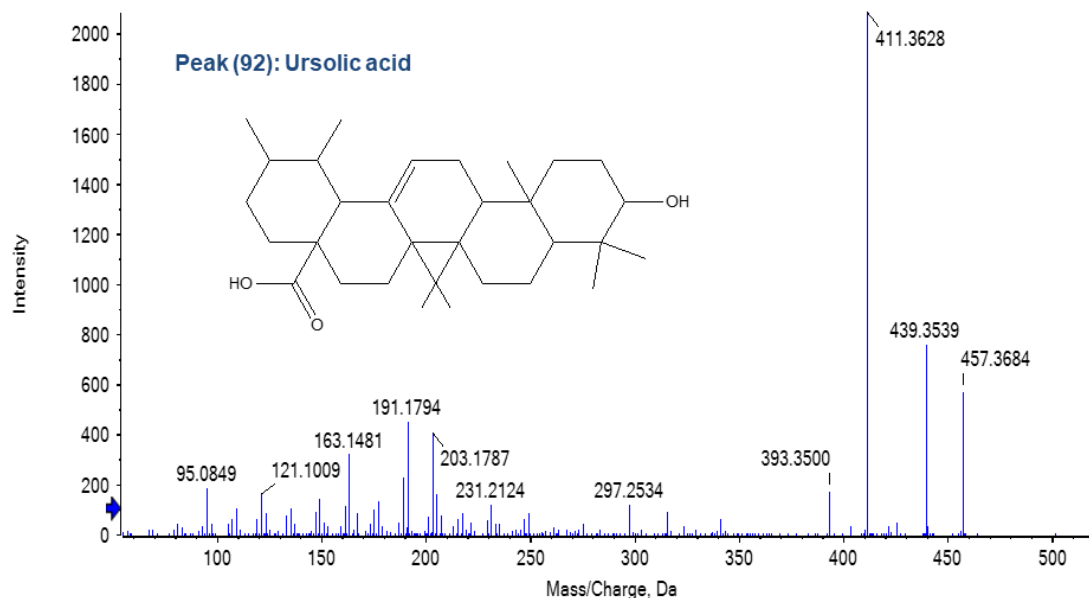


Figure S29: ESI-MS/MS Spectrum of peak (92) in the positive ion mode.

Table S1. The PCR primers used for quantitative PCR analysis.

MiR -520	F: GGCACAAAGTGCTTCCTTTTA R: TATGGTTTTGACGACTGTGTGAT
MiR -146a	F: 5'- CTGAGAACTGAATTCCA -3' R: 5'- GAG CAG GCT GGA GAA -3'
U6	F: ATTGGAACGATACAGAGAAGATT R: GGAACGCTTCACGAATTG