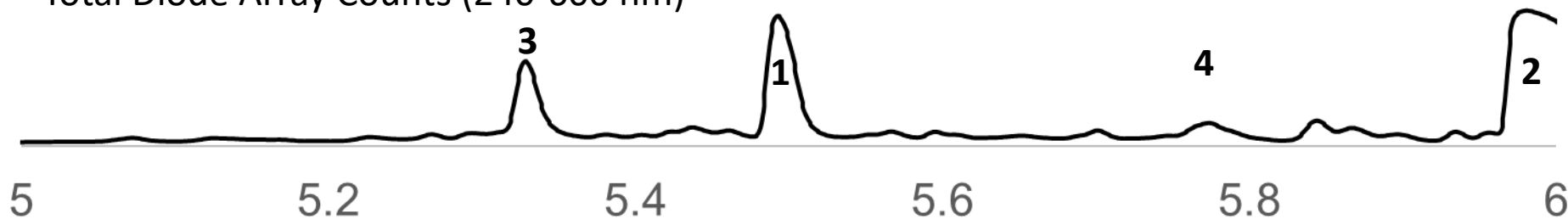
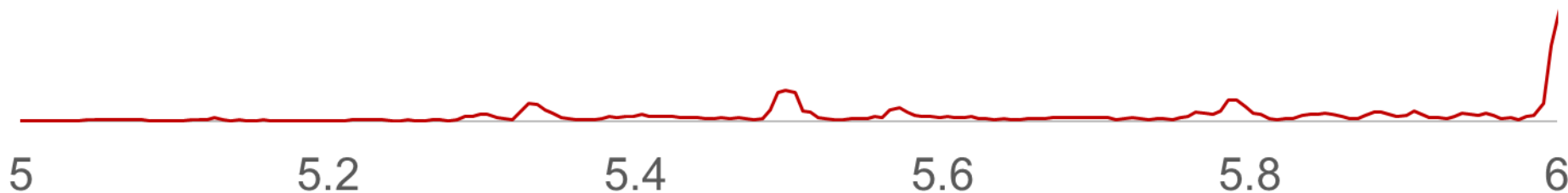


Supplementary Figure 1A: 1 minute retention time window components
Hops F6 (5-6 minutes)

Total Diode Array Counts (240-600 nm)



Total Ion Counts (ESI -ve, 150-1500 amu)

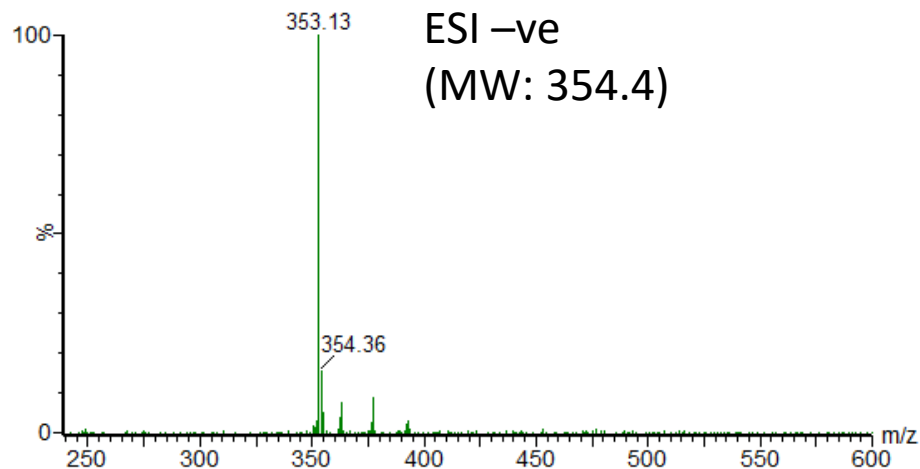


Supplementary Figure 1A: 1 minute retention time window components

Hops F6 (5-6 minutes) Major Components

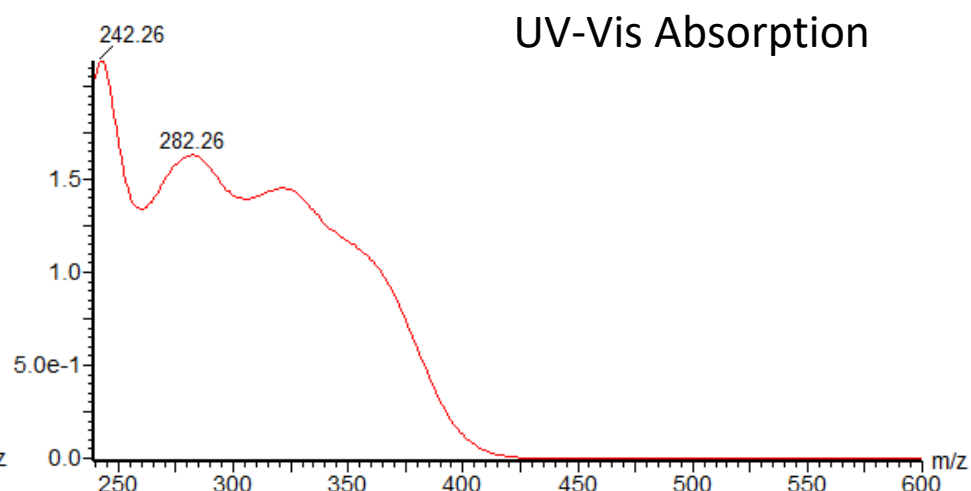
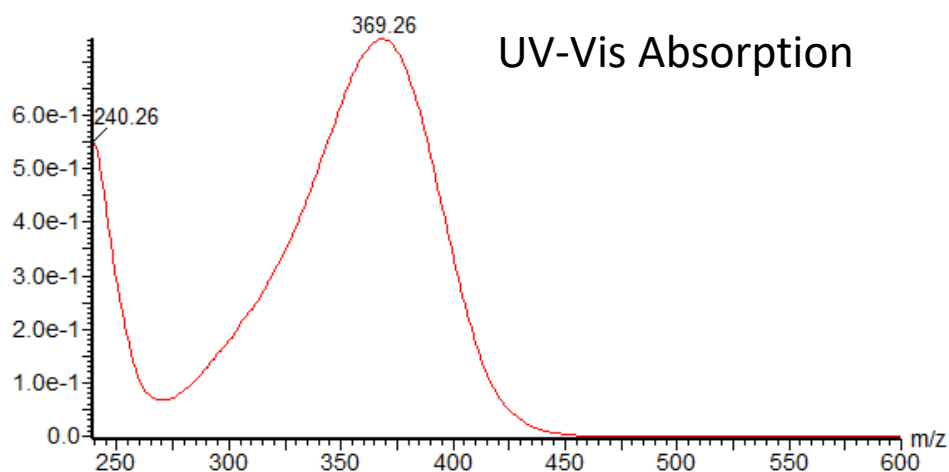
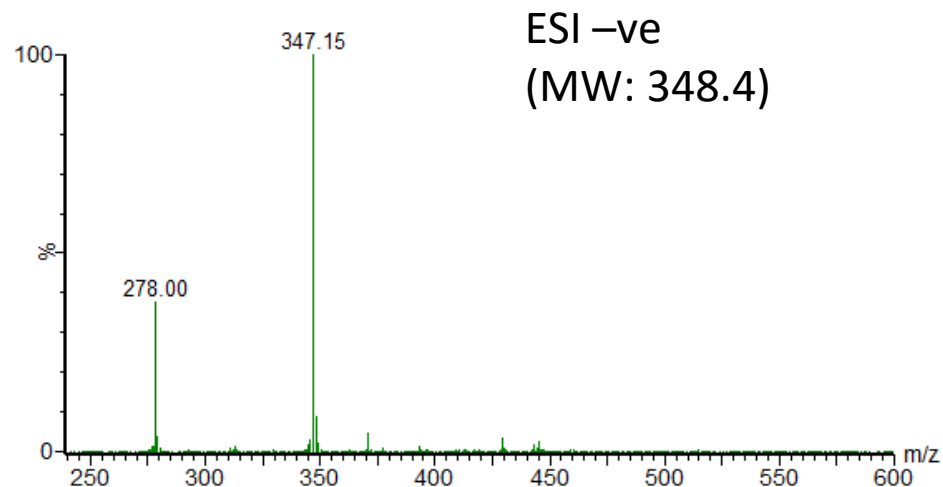
1 – xanthohumol

RT: 5.48 – 5.52 minutes



2 – cohumulone

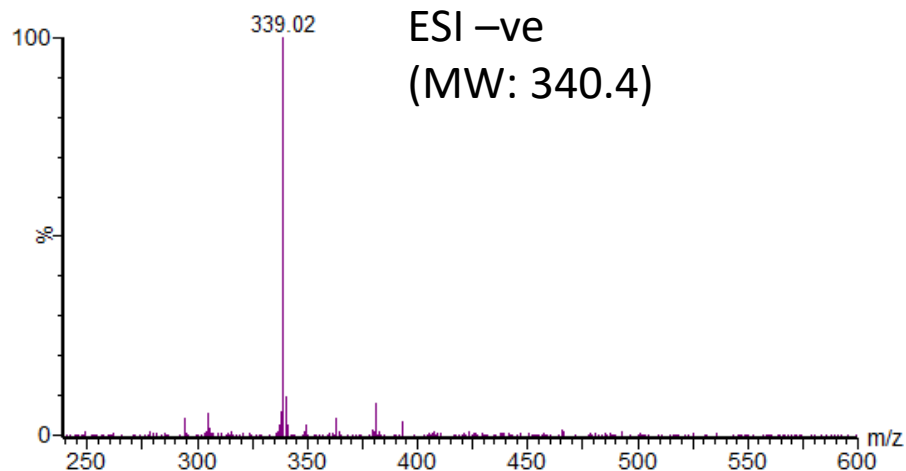
RT: 5.95-6.03 minutes



Supplementary Figure 1A: 1 minute retention time window components Hops F6 (5-6 minutes) Minor Components

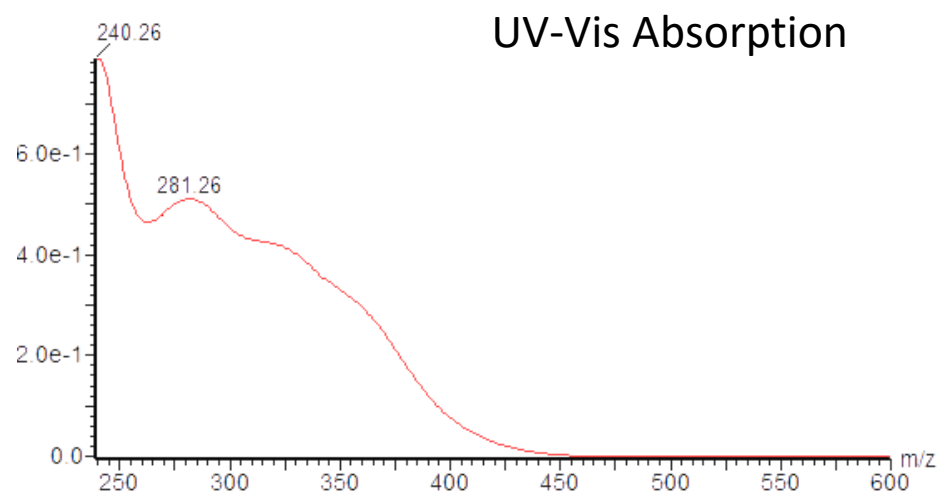
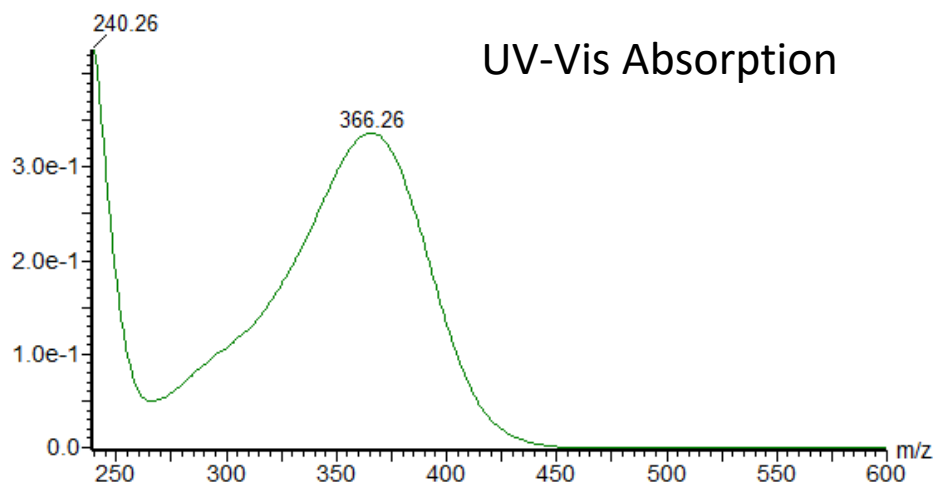
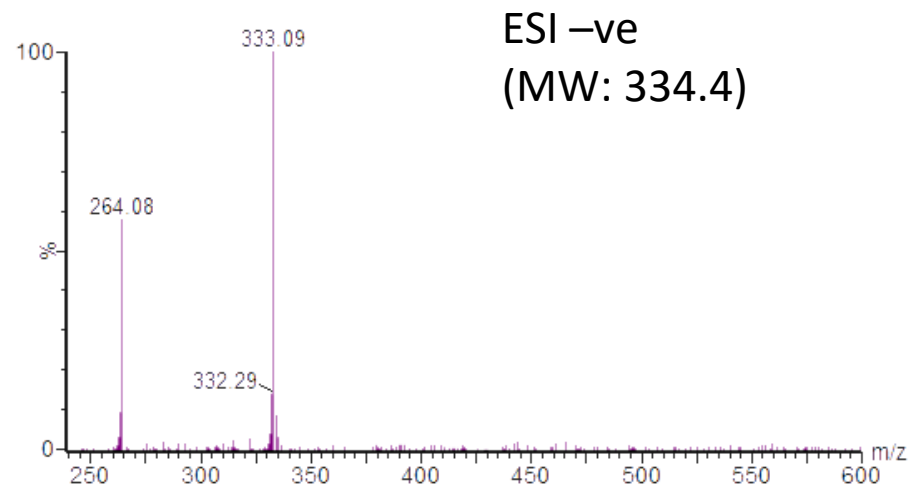
3 – desmethylxanthohumol

RT: 5.315 – 5.35 min



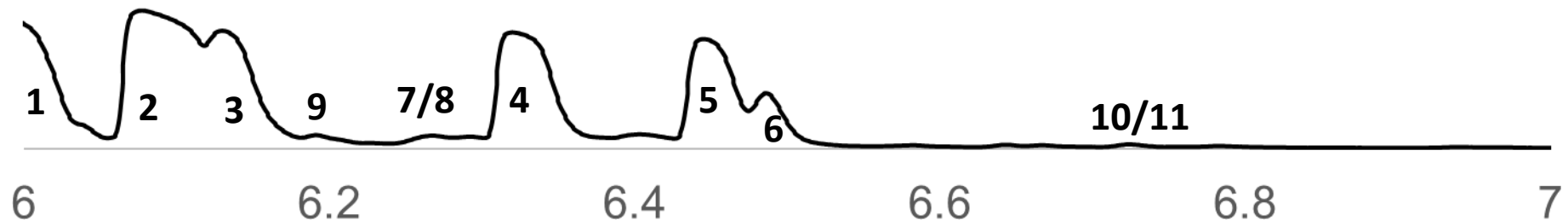
4 – post lupulone

RT: 5.83 – 5.87 min

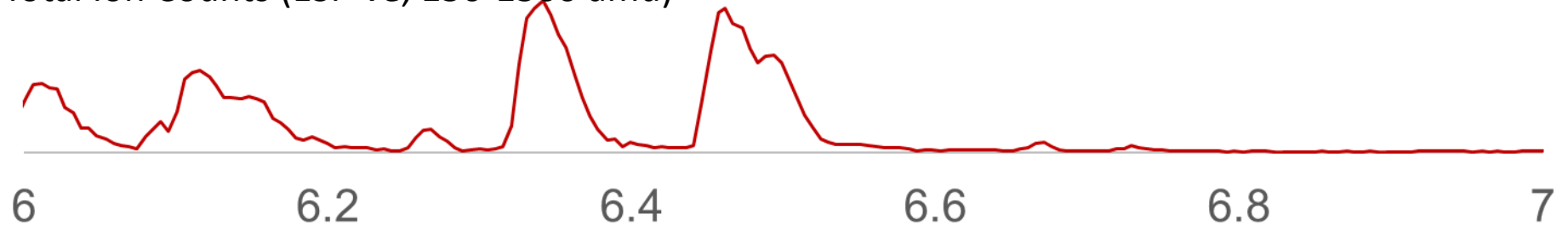


Supplementary Figure 1B: 1 minute retention time window components Hops F7 (6-7 minutes)

Total Diode Array Counts (240-600 nm)



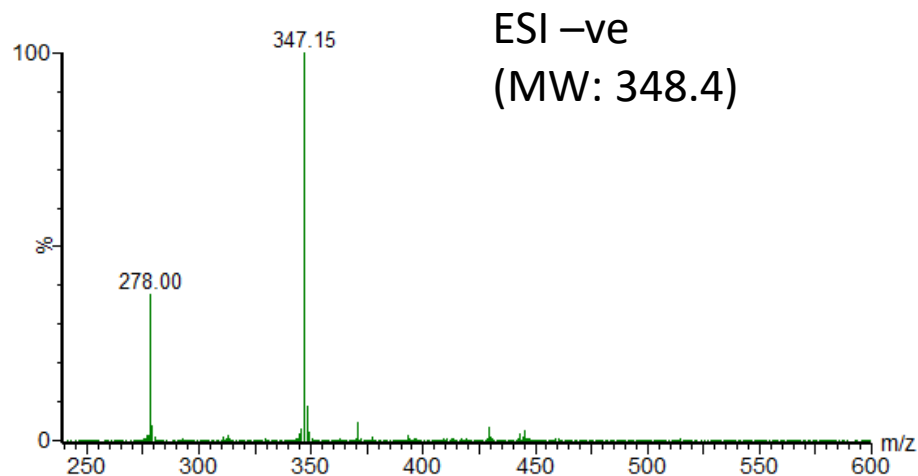
Total Ion Counts (ESI -ve, 150-1500 amu)



Supplementary Figure 1B: 1 minute retention time window components Hops F7 (6-7 minutes) Major Components

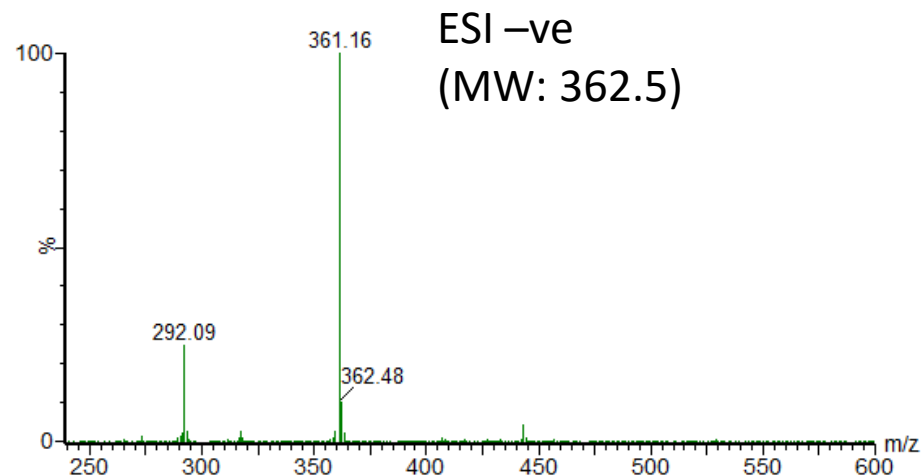
1 – cohumulone

RT: 5.95-6.03 minutes

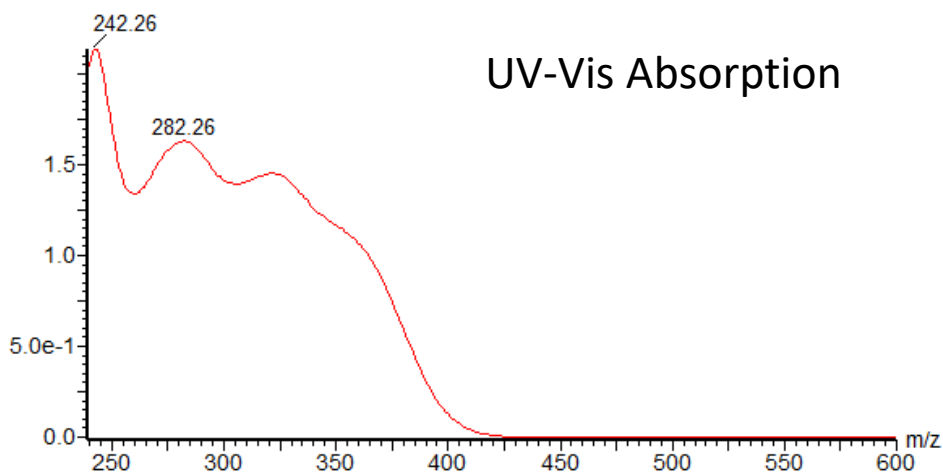


2 – humulone

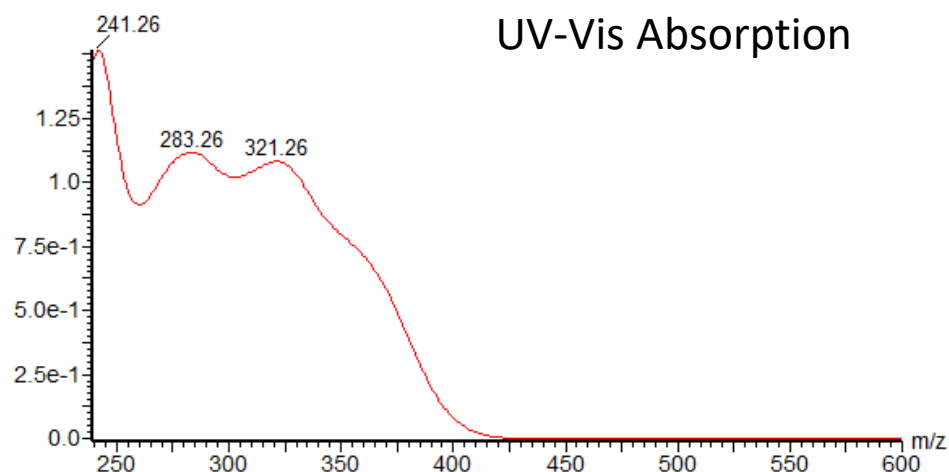
RT: 6.06-6.13 minutes



UV-Vis Absorption



UV-Vis Absorption

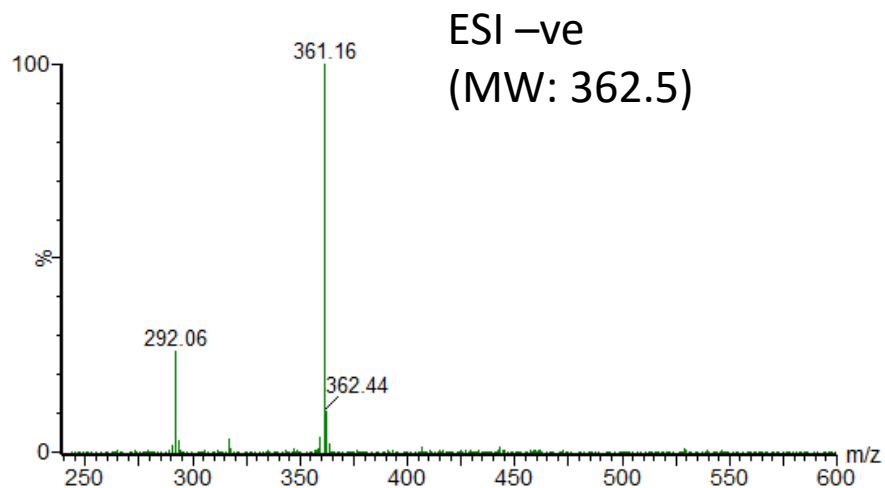


Supplementary Figure 1B: 1 minute retention time window components

Hops F7 (6-7 minutes) Major Components

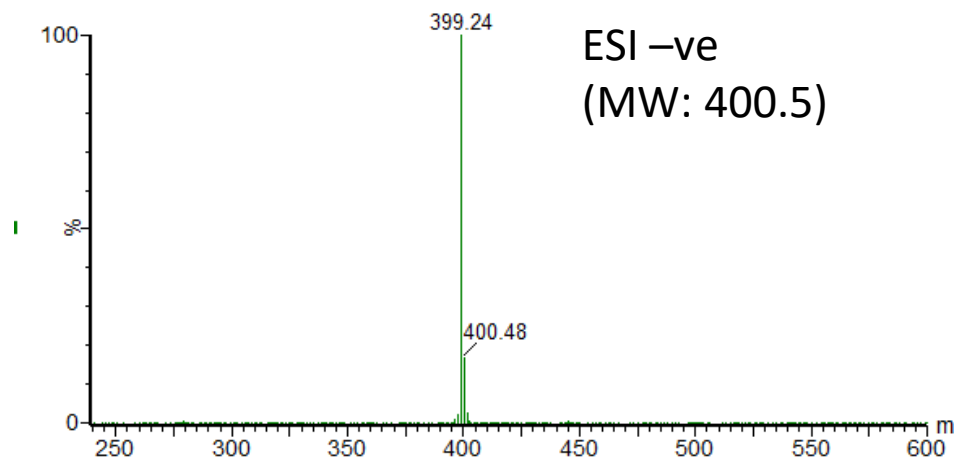
3 – adhumulone

RT: 6.11-6.17 minutes

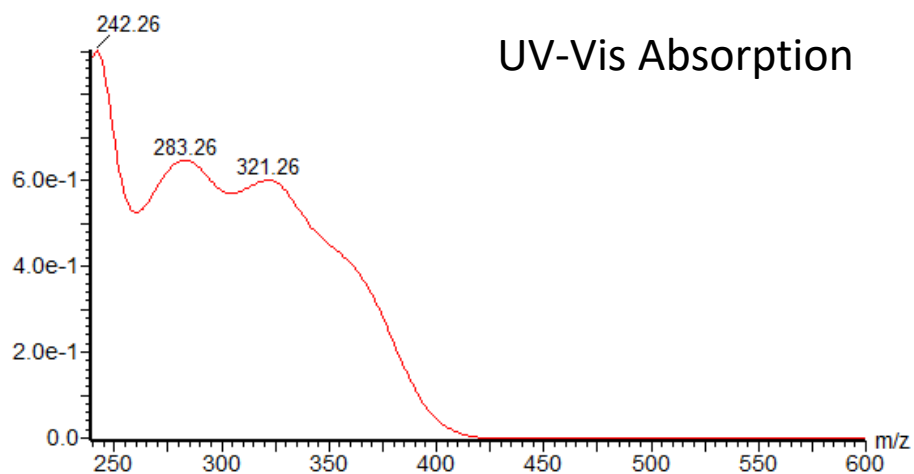


4 – colupulone

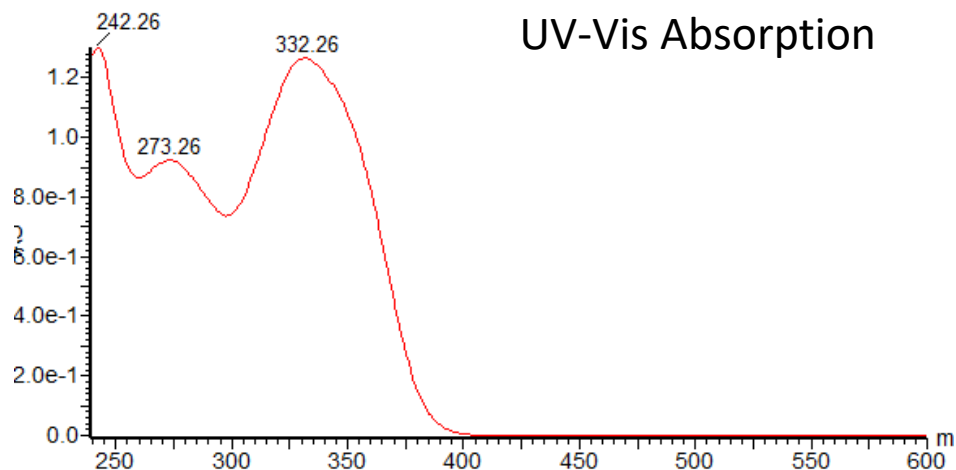
RT: 6.31-6.36 minutes



UV-Vis Absorption



UV-Vis Absorption



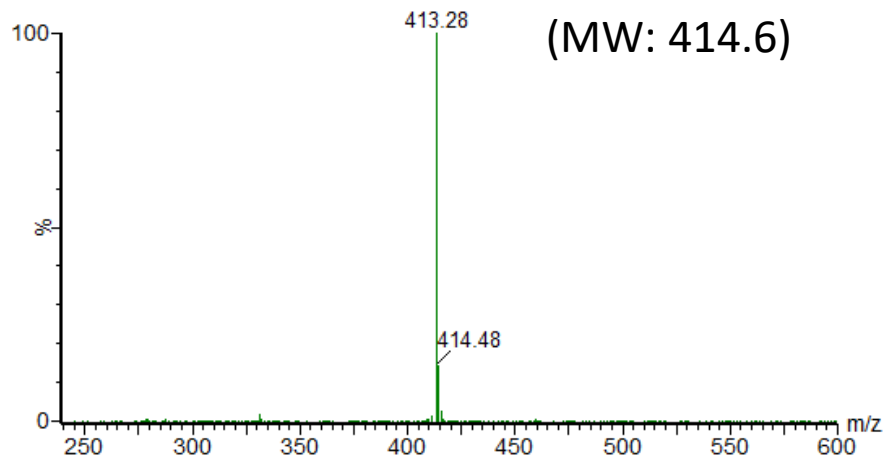
Supplementary Figure 1B: 1 minute retention time window components

Hops F7 (6-7 minutes) Major Components

5 – lupulone

RT: 6.43-6.47 minutes

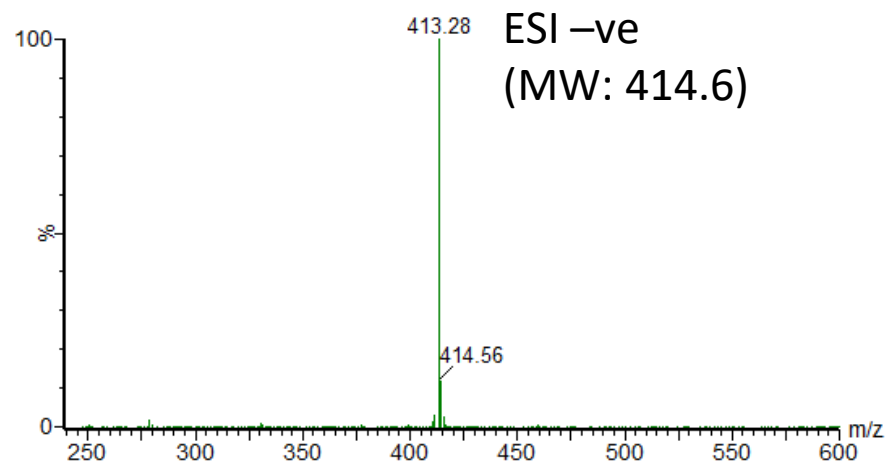
ESI –ve
(MW: 414.6)



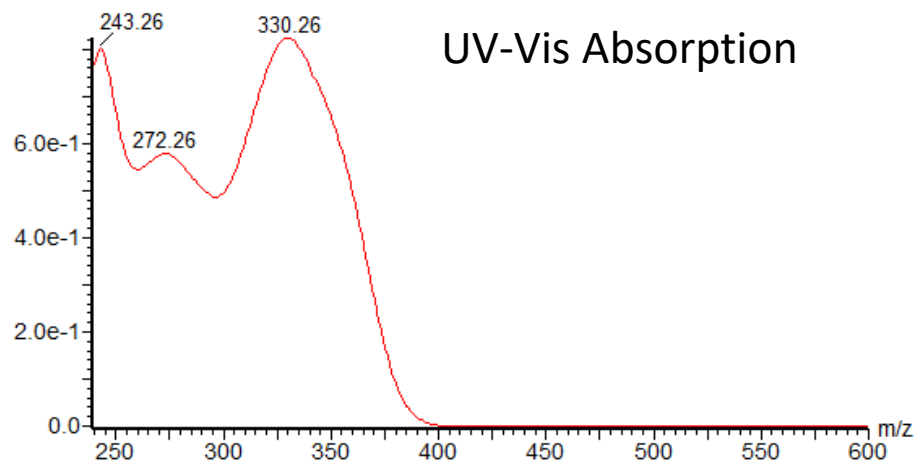
6 – adlupulone

RT: 6.47-6.52 minutes

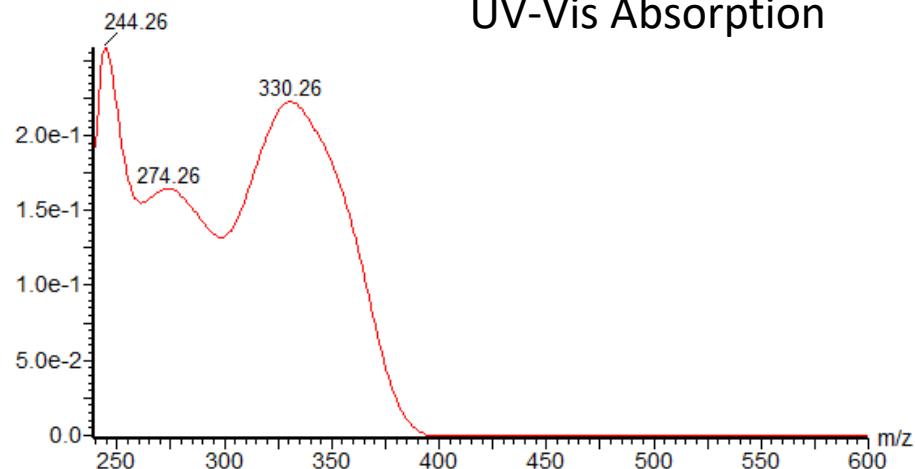
ESI –ve
(MW: 414.6)



UV-Vis Absorption



UV-Vis Absorption

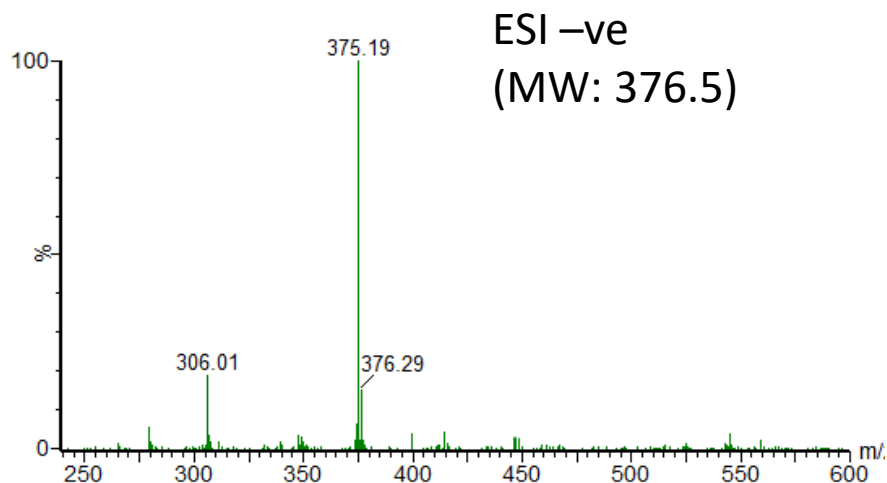


Supplementary Figure 1B: 1 minute retention time window components

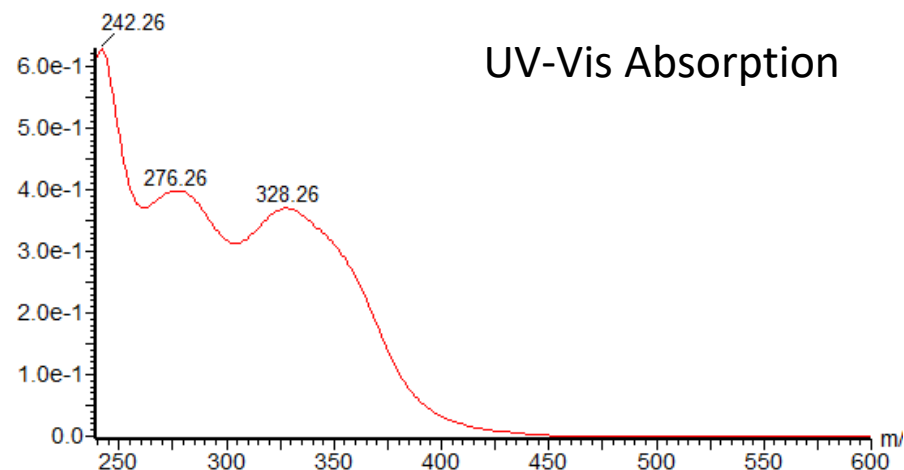
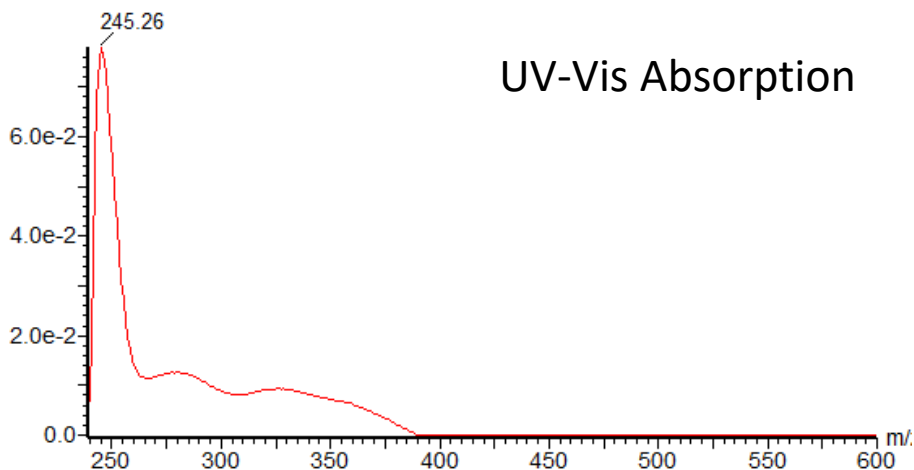
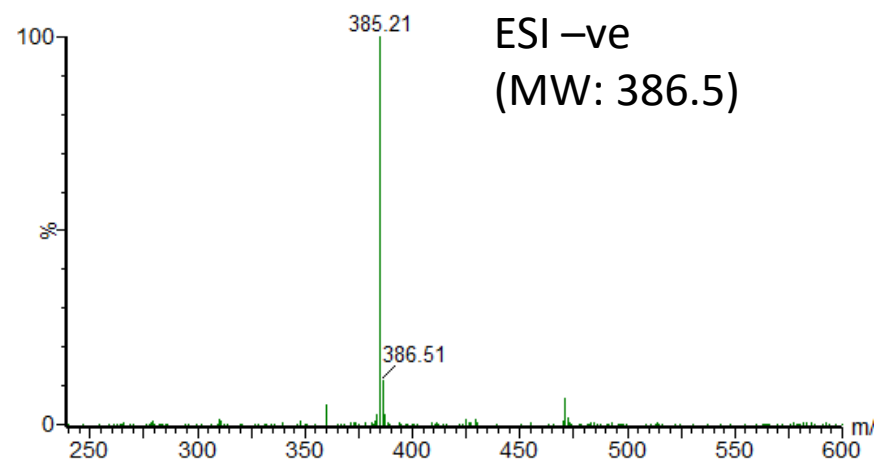
Hops F7 (6-7 minutes) Minor Components

7/8 – prehumulone &
adprehumulone

RT: 6.28-6.32 minutes



9 – postlupulone
RT: 6.17-6.22 minutes

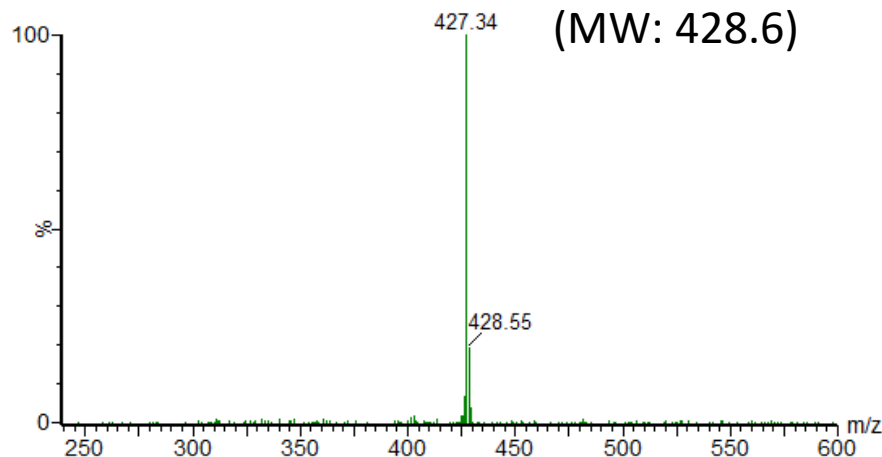


Supplementary Figure 1B: 1 minute retention time window components Hops F7 (6-7 minutes) Minor Components

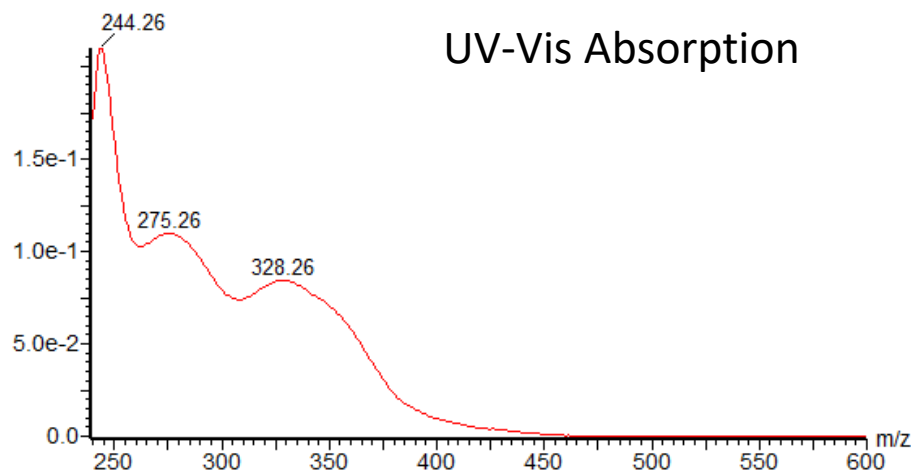
10/11 – prelupulone &
adprelupulone

RT: 6.62-6.68 minutes

ESI -ve
(MW: 428.6)



UV-Vis Absorption

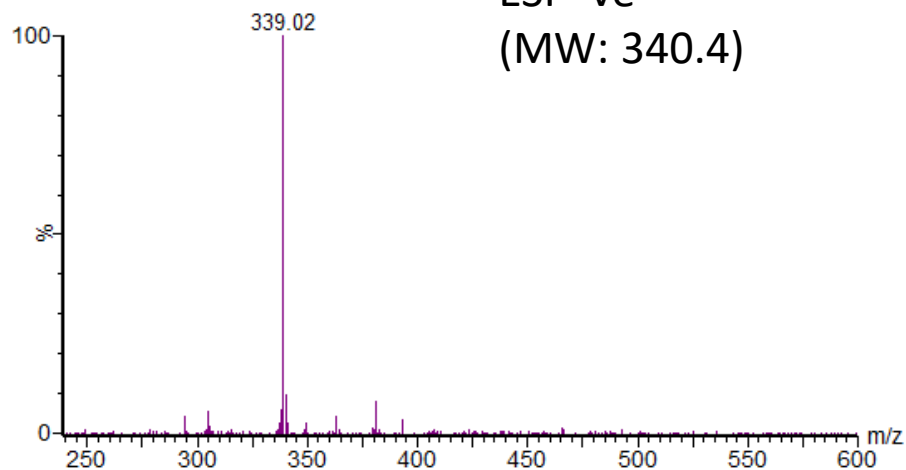


Supplementary Figure 2A: 10 second retention time window components

desmethyloxanthohumol

RT: 1.20-1.66 minutes

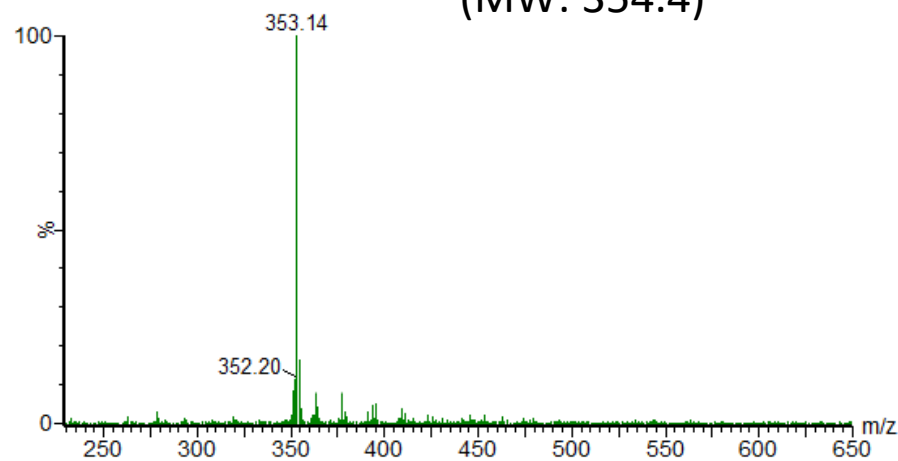
ESI -ve
(MW: 340.4)



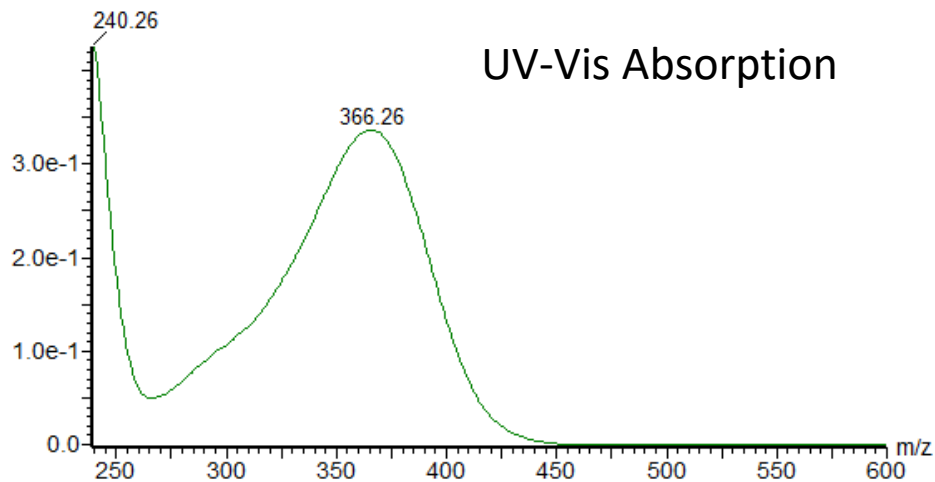
xanthohumol

RT: 1.80-2.15 minutes

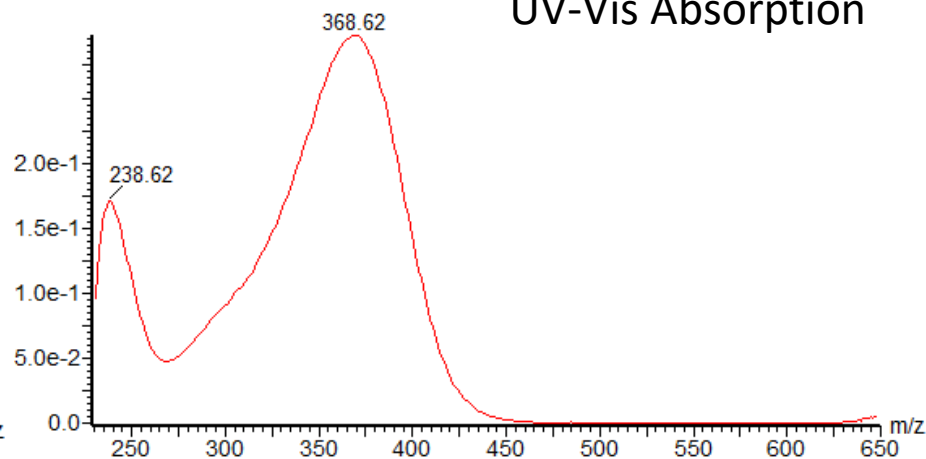
ESI -ve
(MW: 354.4)



UV-Vis Absorption



UV-Vis Absorption



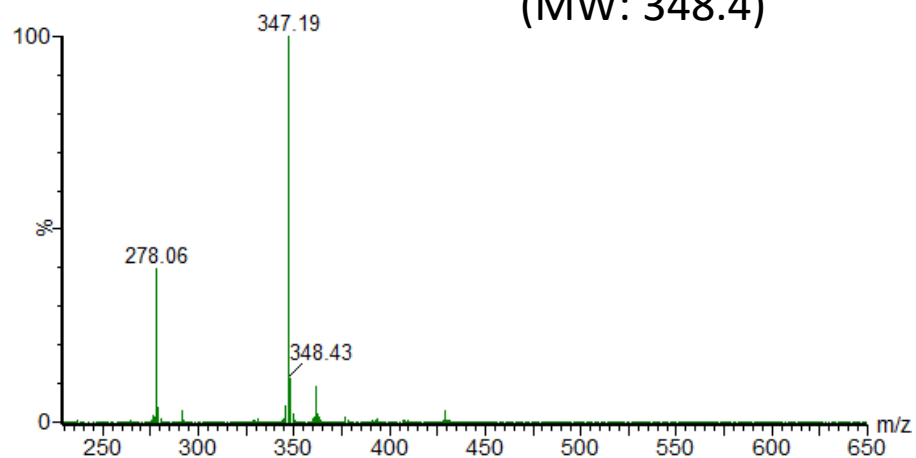
Supplementary Figure 2A: 10 second retention time window components

cohumulone

RT: 3.40 – 3.63 minutes

ESI –ve

(MW: 348.4)

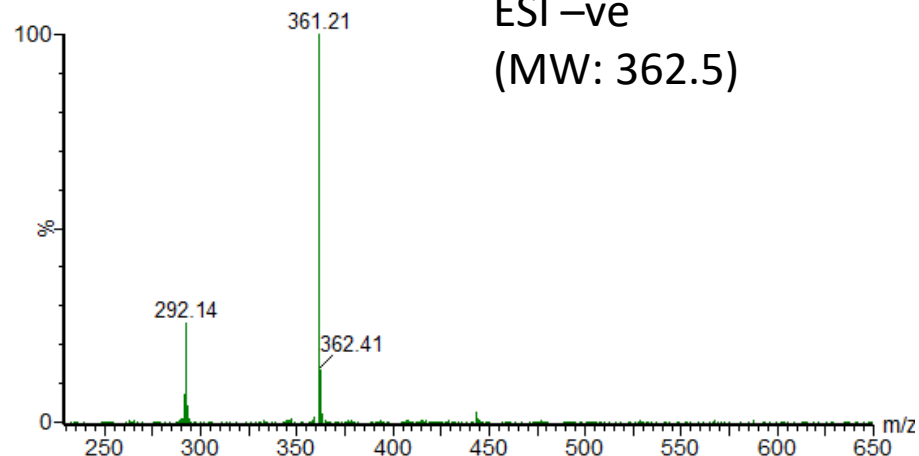


humulone

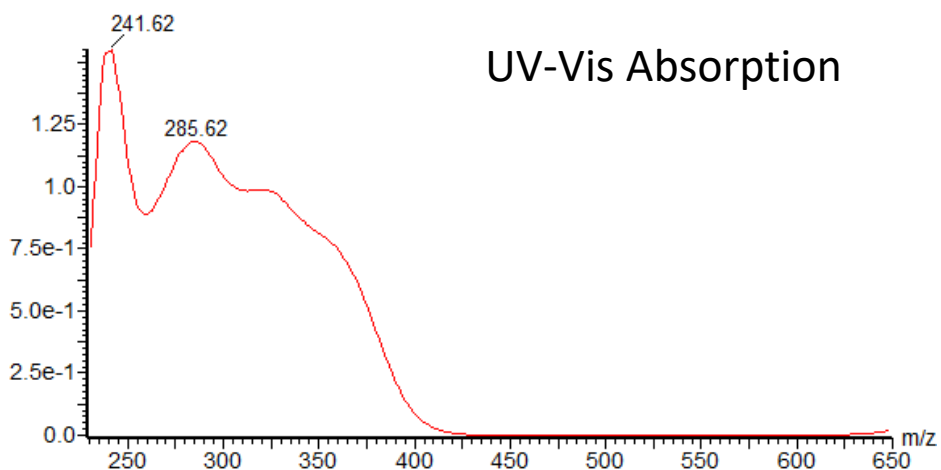
RT: 3.75-3.94 minutes

ESI –ve

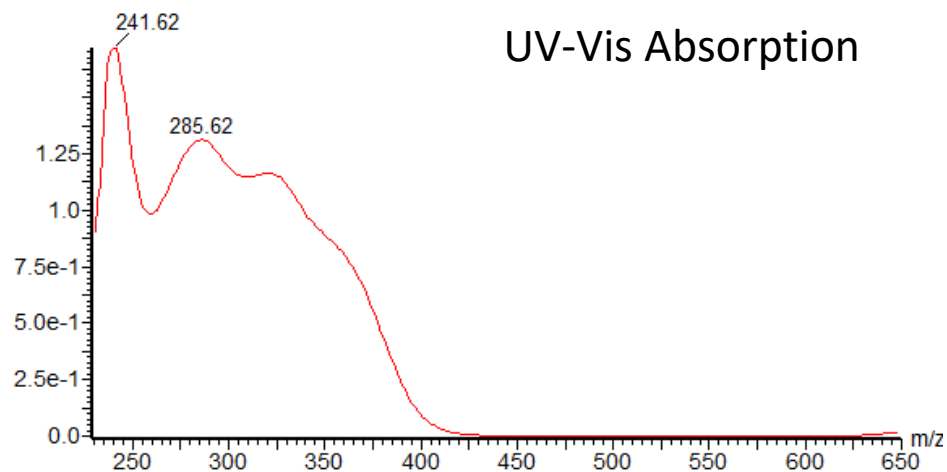
(MW: 362.5)



UV-Vis Absorption

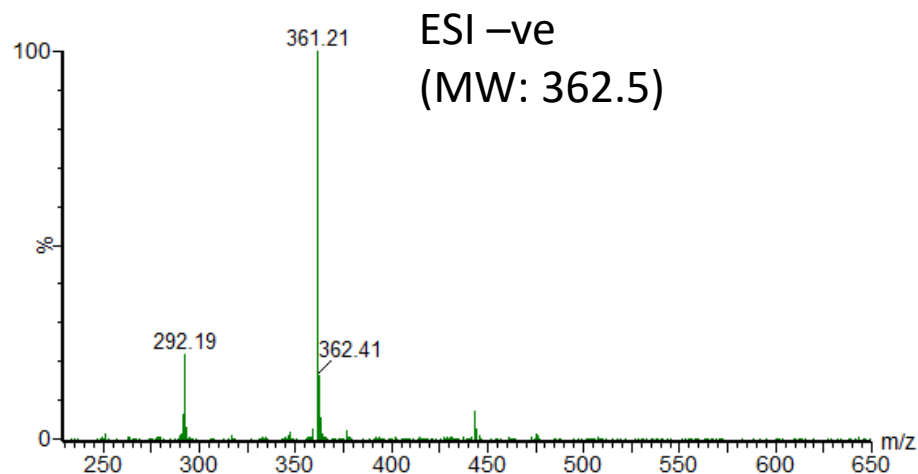


UV-Vis Absorption

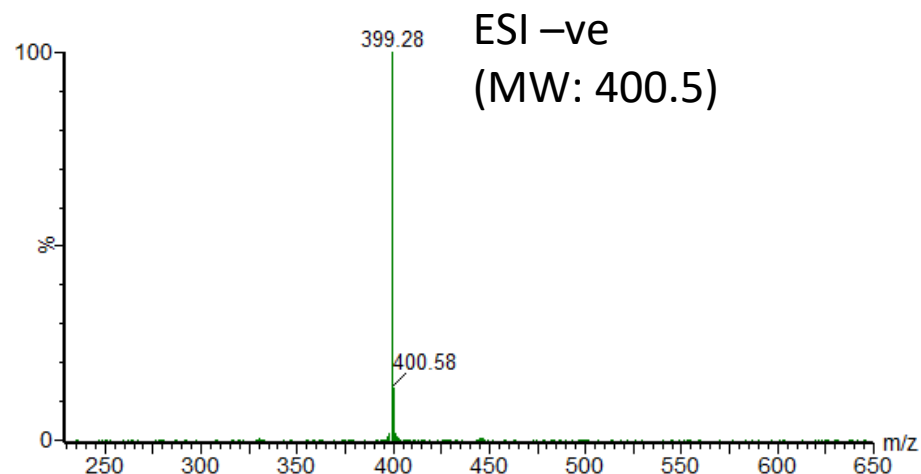


Supplementary Figure 2A: 10 second retention time window components

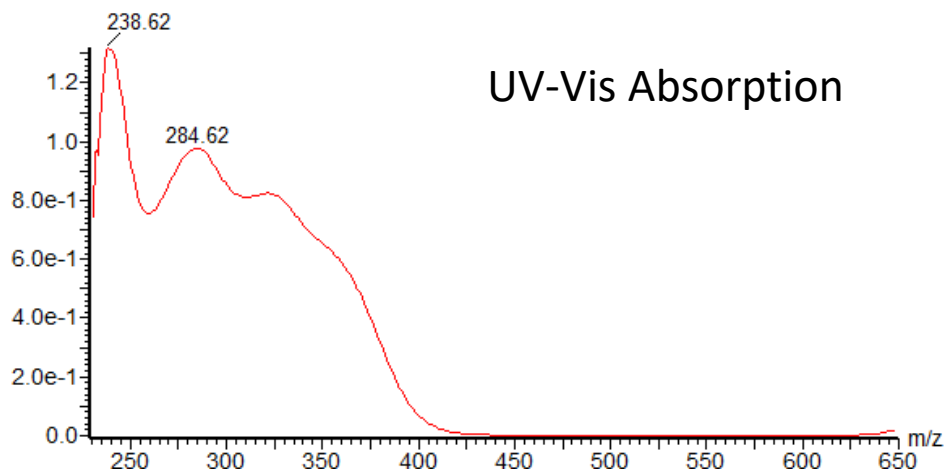
adhumulone
RT: 3.92– 4.05 minutes



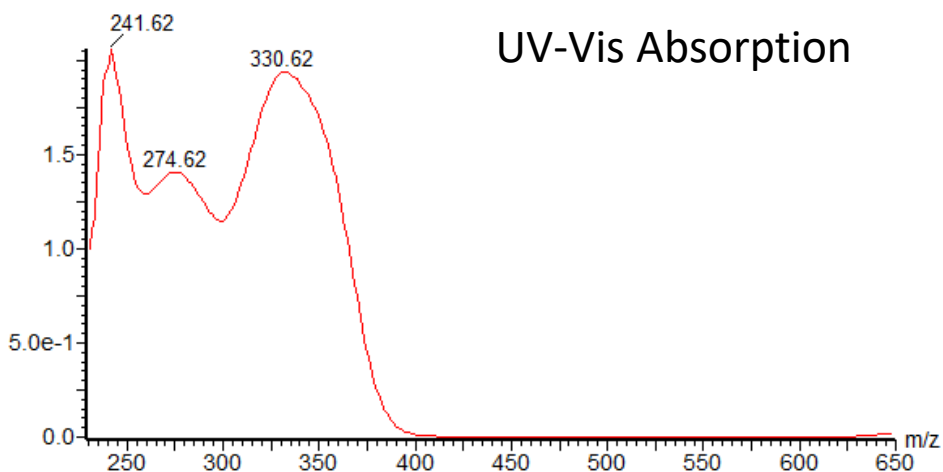
colupulone
RT: 4.61-4.77 minutes



UV-Vis Absorption



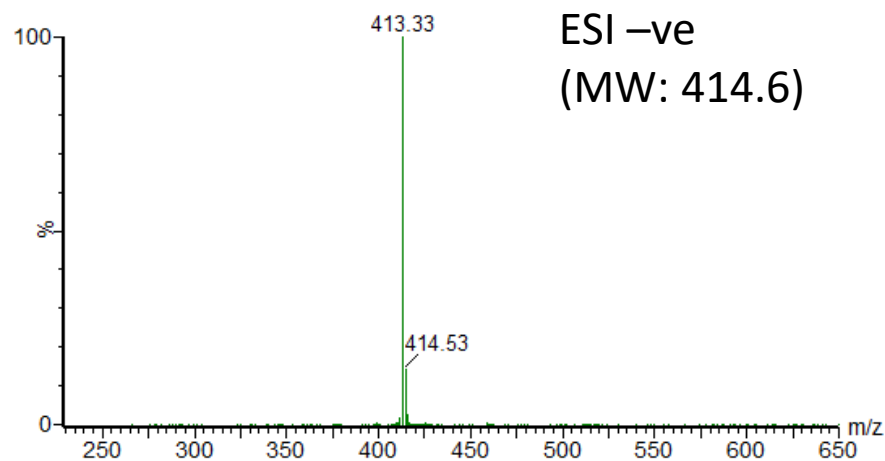
UV-Vis Absorption



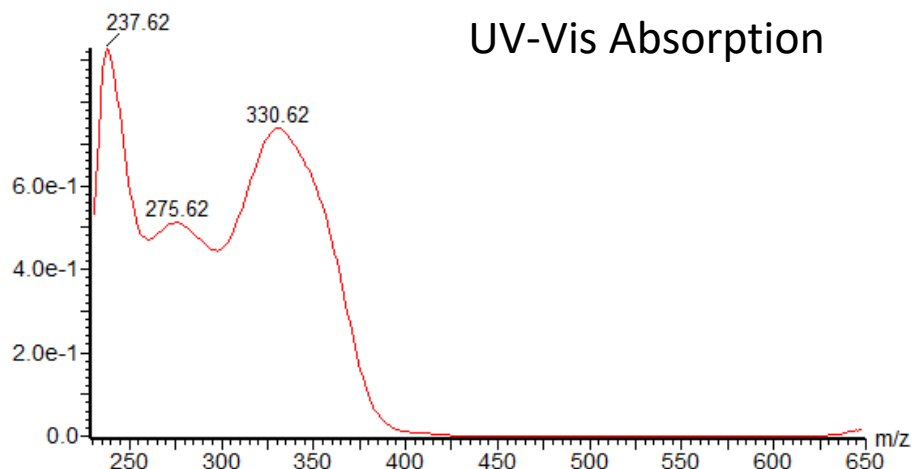
Supplementary Figure 2A: 10 second retention time window components

lupulone
RT: 4.90-5.09 minutes

ESI -ve
(MW: 414.6)

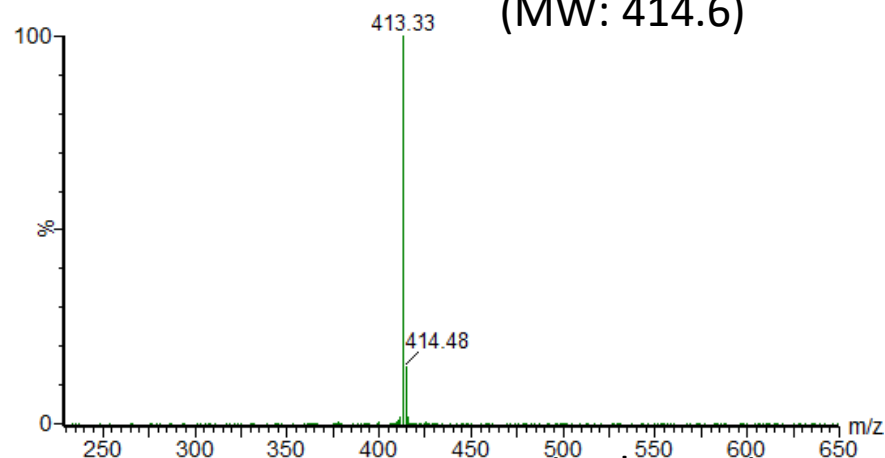


UV-Vis Absorption

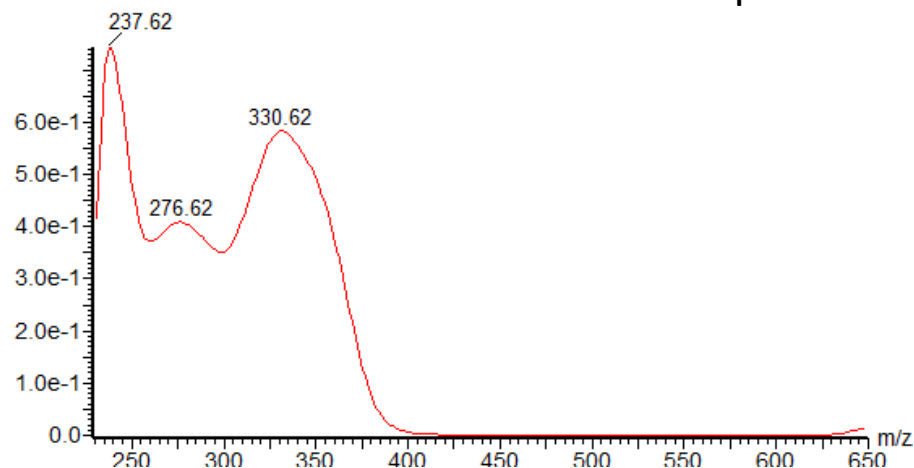


adlupulone
RT: 5.07-5.15 minutes

ESI -ve
(MW: 414.6)



UV-Vis Absorption

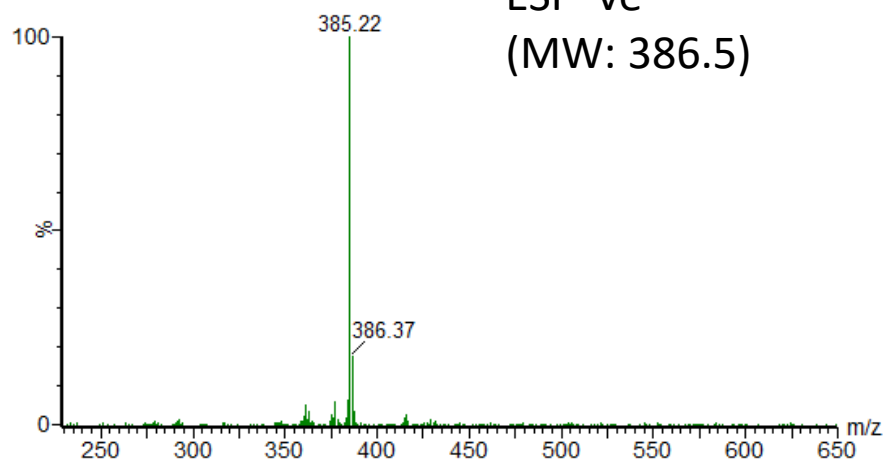


Supplementary Figure 2A: 10 second retention time window components

postlupulone

RT: 4.27-4.35 minutes

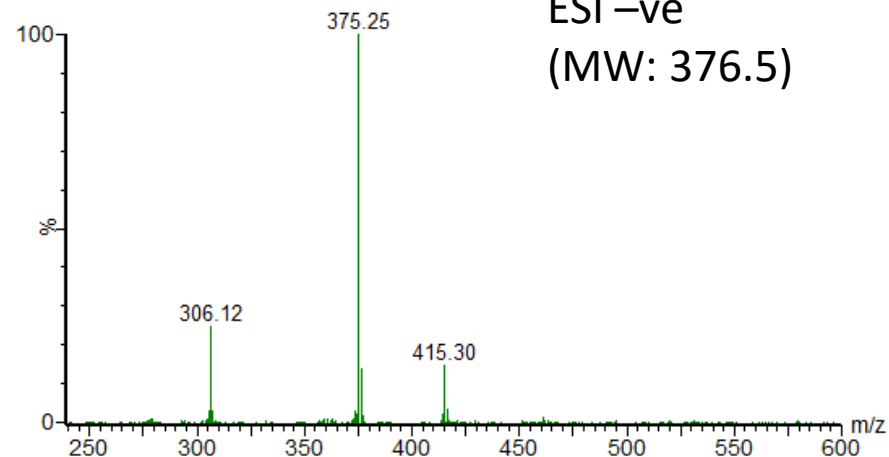
ESI -ve
(MW: 386.5)



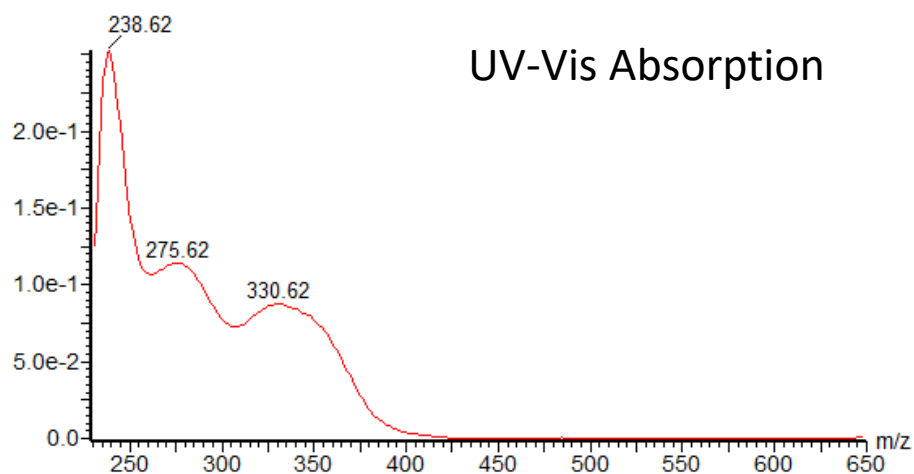
prehumulone & adprehumulone

RT: 4.43-4.58 minutes

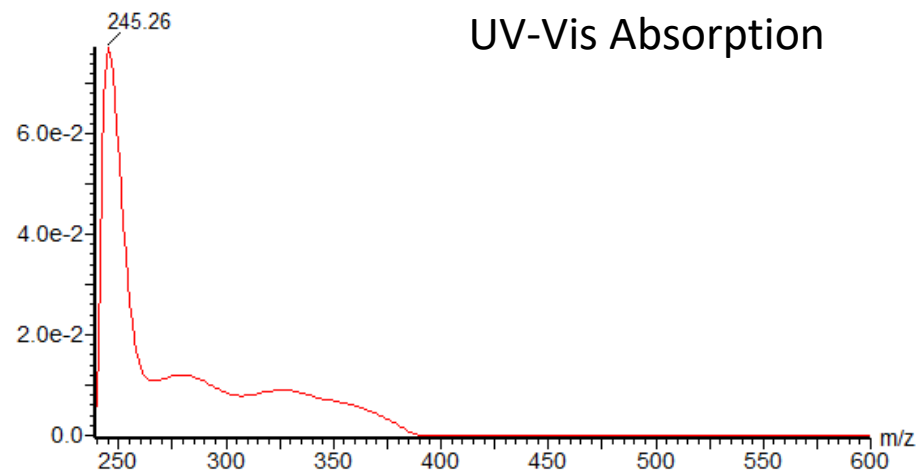
ESI -ve
(MW: 376.5)



UV-Vis Absorption



UV-Vis Absorption

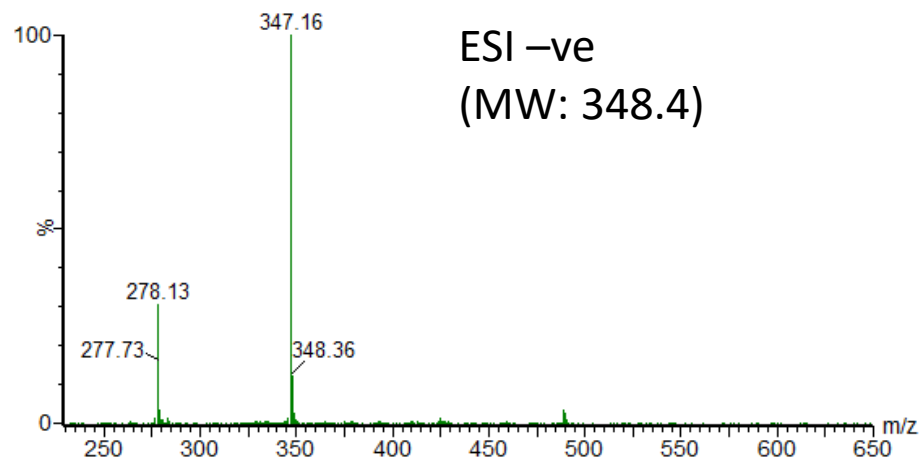


Supplementary Figure 1C: 5 second retention time window components alpha acid enriched extract

cohumulone

RT: 3.01- 3.30 minutes (wells E6-E8 Plate 1)

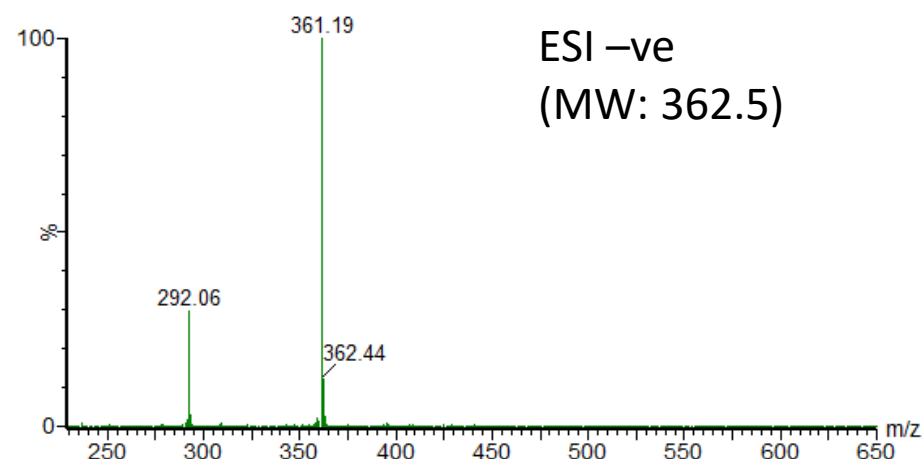
ESI -ve
(MW: 348.4)



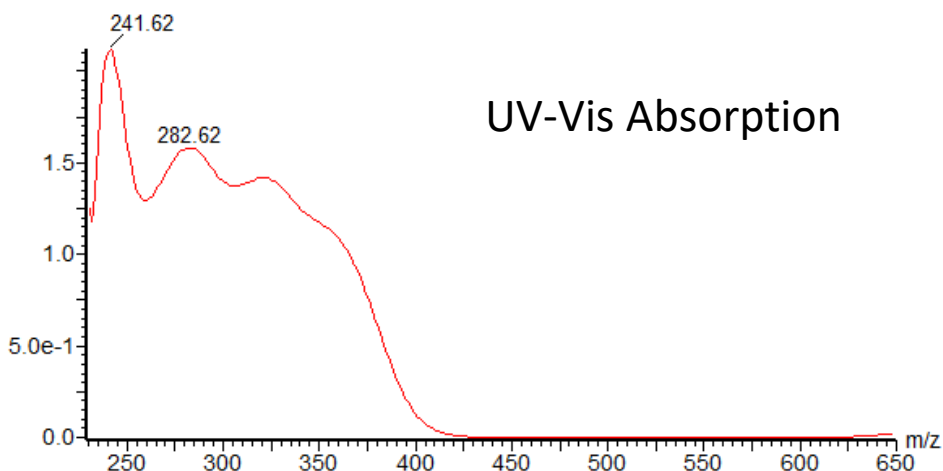
humulone

RT: 3.58- 3.82 minutes (wells F5-F3 Plate 1)

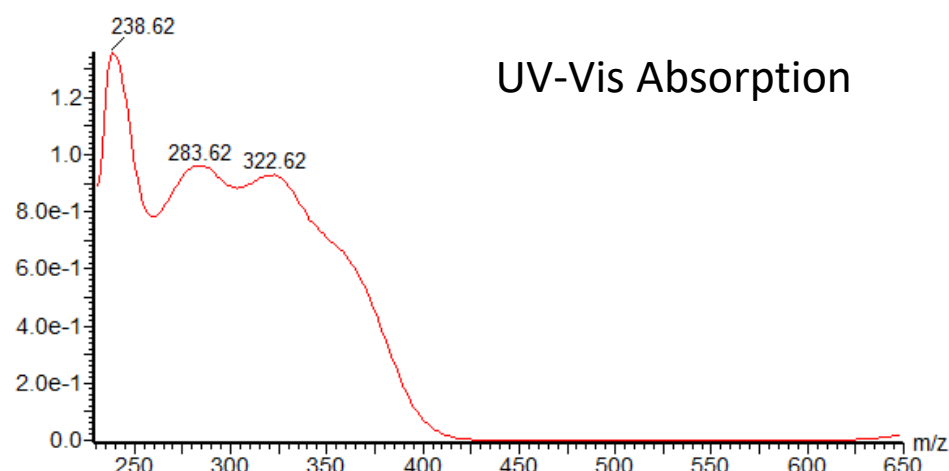
ESI -ve
(MW: 362.5)



UV-Vis Absorption



UV-Vis Absorption

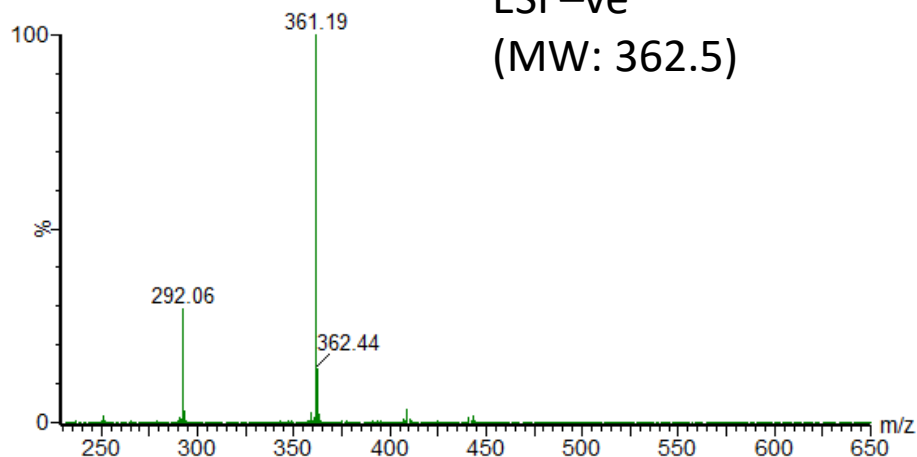


Supplementary Figure 1C: 5 second retention time window components alpha acid enriched extract

adhumulone

RT: 3.81- 4.05 minutes (wells F2-F1 Plate 1)

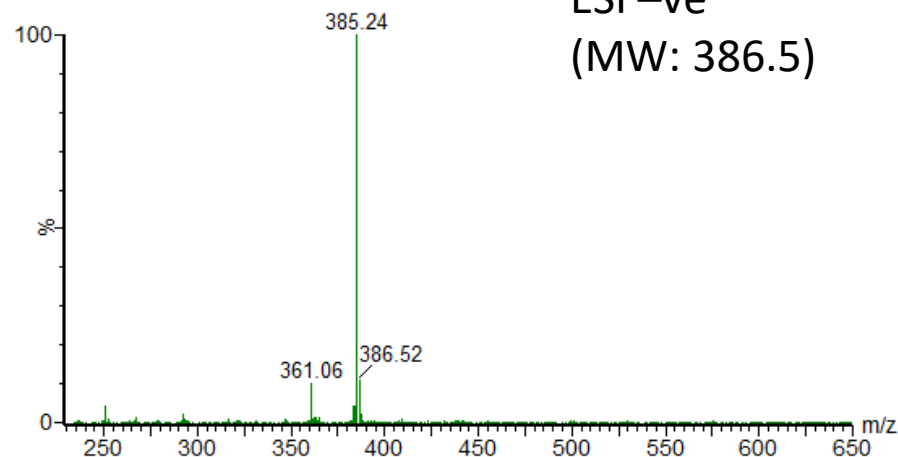
ESI -ve
(MW: 362.5)



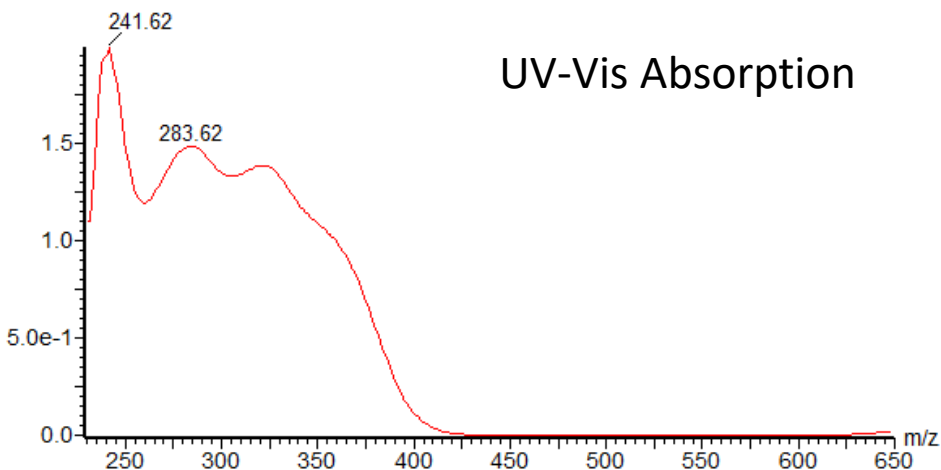
postlupulone

RT: 4.45- 4.52 minutes (well A7 Plate 2)

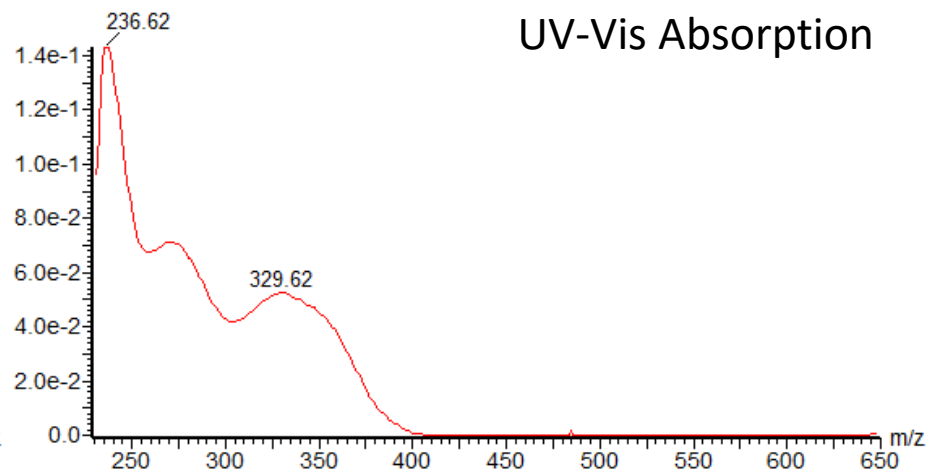
ESI -ve
(MW: 386.5)



UV-Vis Absorption



UV-Vis Absorption



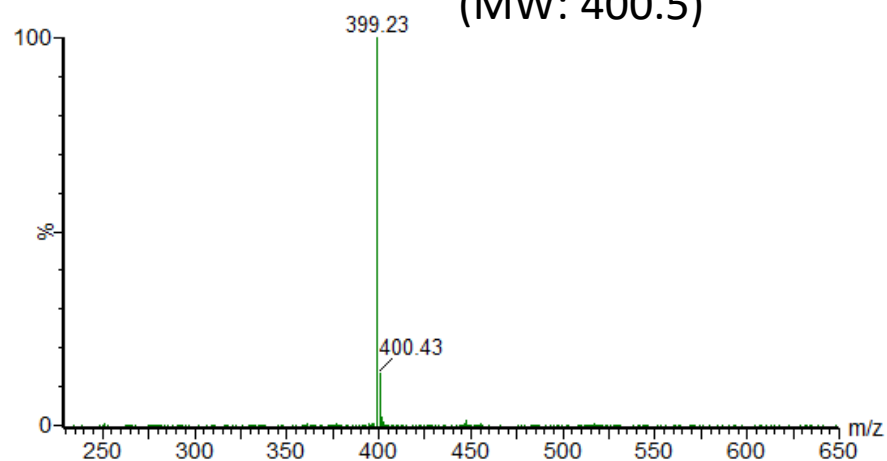
Supplementary Figure 1C: 5 second retention time window components alpha acid enriched extract

colupulone

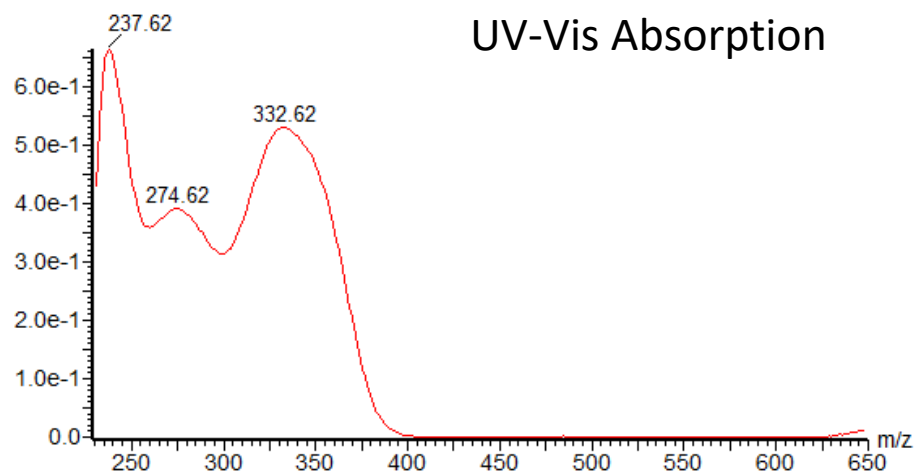
RT: 5.12- 5.22 minutes (well B2 Plate 2)

ESI -ve

(MW: 400.5)



UV-Vis Absorption



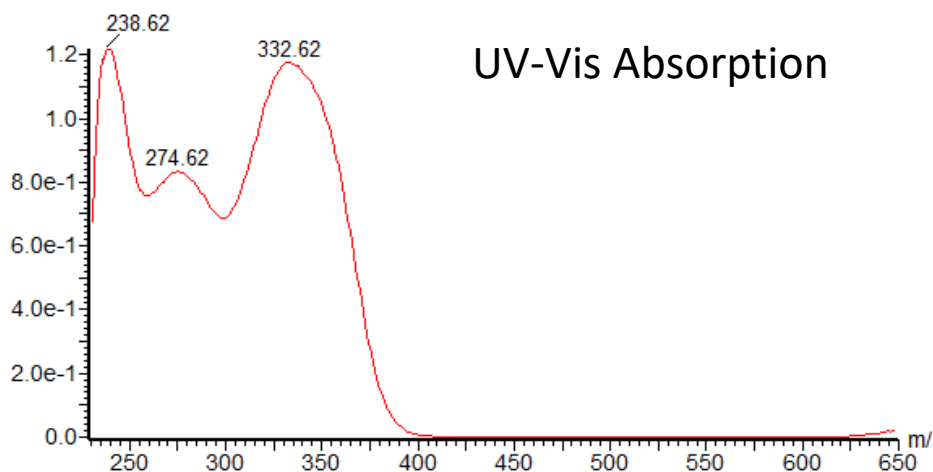
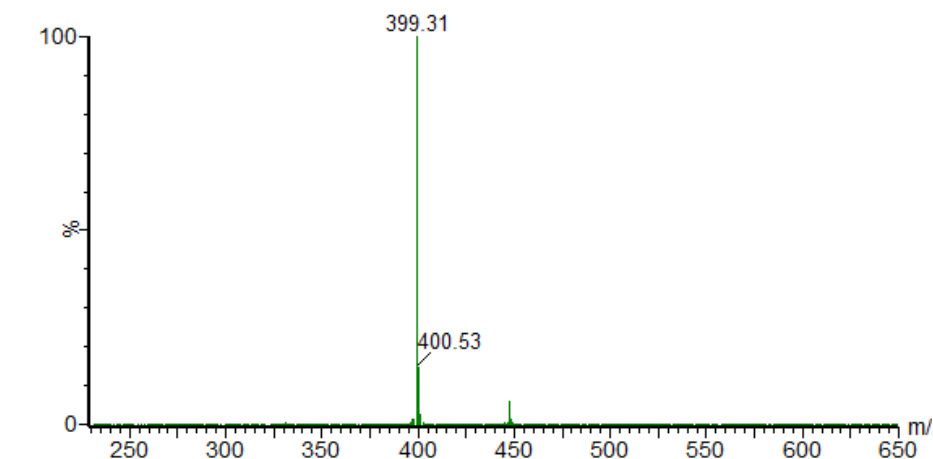
Supplementary Figure 1D: 5 second retention time window components beta acid enriched extract

colupulone

RT: 3.52 – 3.79 minutes (wells F6-F4 Plate 1)

ESI –ve

(MW: 400.5)

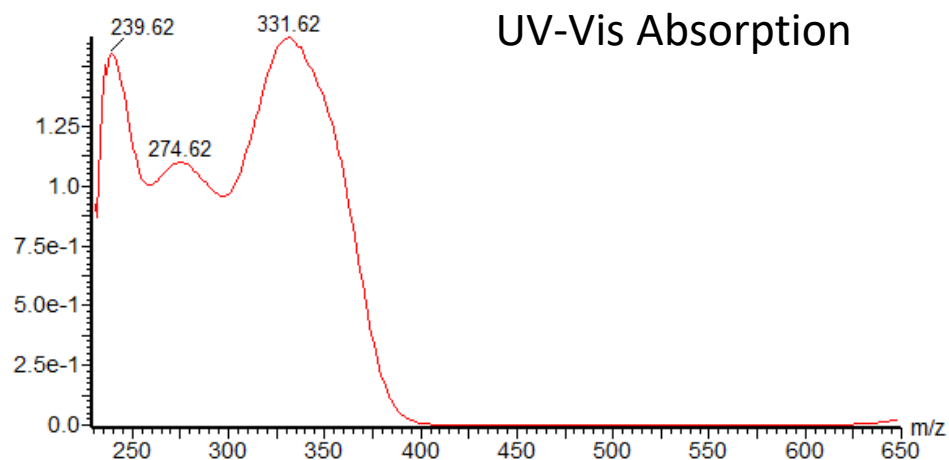
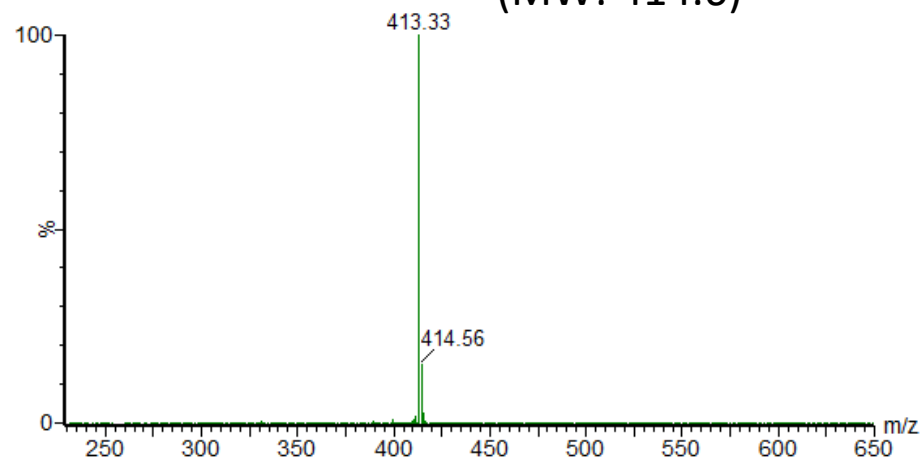


lupulone

RT: 4.19 – 4.37 minutes (wells A3-A4 Plate 2)

ESI –ve

(MW: 414.6)



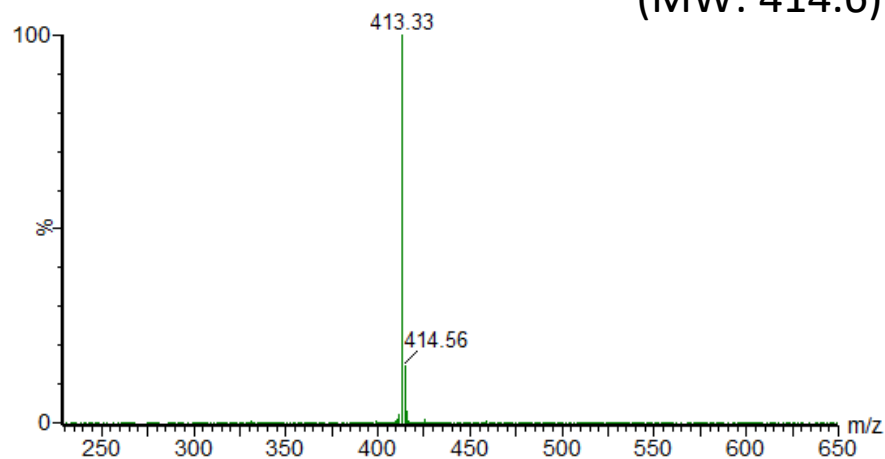
Supplementary Figure 1D: 5 second retention time window components beta acid enriched extract

adlupulone

RT: 4.37 – 4.53 minutes (wells A5-A6 Plate 2)

ESI –ve

(MW: 414.6)



UV-Vis Absorption

