

SUPPLEMENTARY MATERIALS

Table S1. Formula and exact mass (with abundance) of **IIb**, **IIc**, and the **IIb-GSH**, **IIb-NAC**, **IIc-GSH** and **IIc-NAC** adducts.*

Compound	Formula	Exact mass (a.m.u.)	Abundance (%)
IIb	C ₁₉ H ₁₈ O	262.1358	80.71
IIc	C ₁₉ H ₁₈ O ₂	278.1307	80.51
IIb-GSH	C ₂₉ H ₃₅ N ₃ O ₇ S	569.2196	66.81
IIb-NAC	C ₂₉ H ₃₅ N ₃ O ₈ S	585.2145	66.65
IIc-GSH	C ₂₄ H ₂₇ NO ₄ S	425.1661	71.71
IIc-NAC	C ₂₄ H ₂₇ NO ₅ S	441.1610	71.54

*Calculated by the Scientific Instrument Services (SIS) calculator
(<https://www.sisweb.com/referenc/tools/exactmass.htm>).

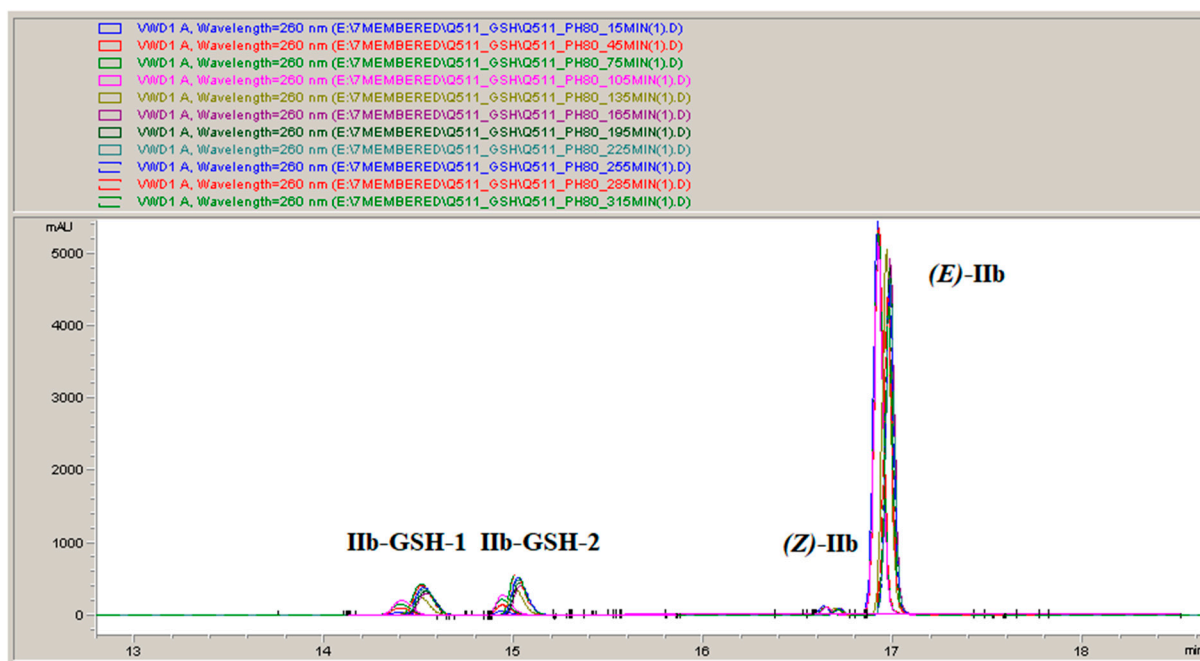


Figure S1. Overlaid HPLC-UV chromatograms of the 15, 45, 75, 105, 135, 165, 195, 225, 255, 285, and 315 min timepoint samples of the incubation mixture of **IIb** with GSH under pH 8.0/7.4 conditions.

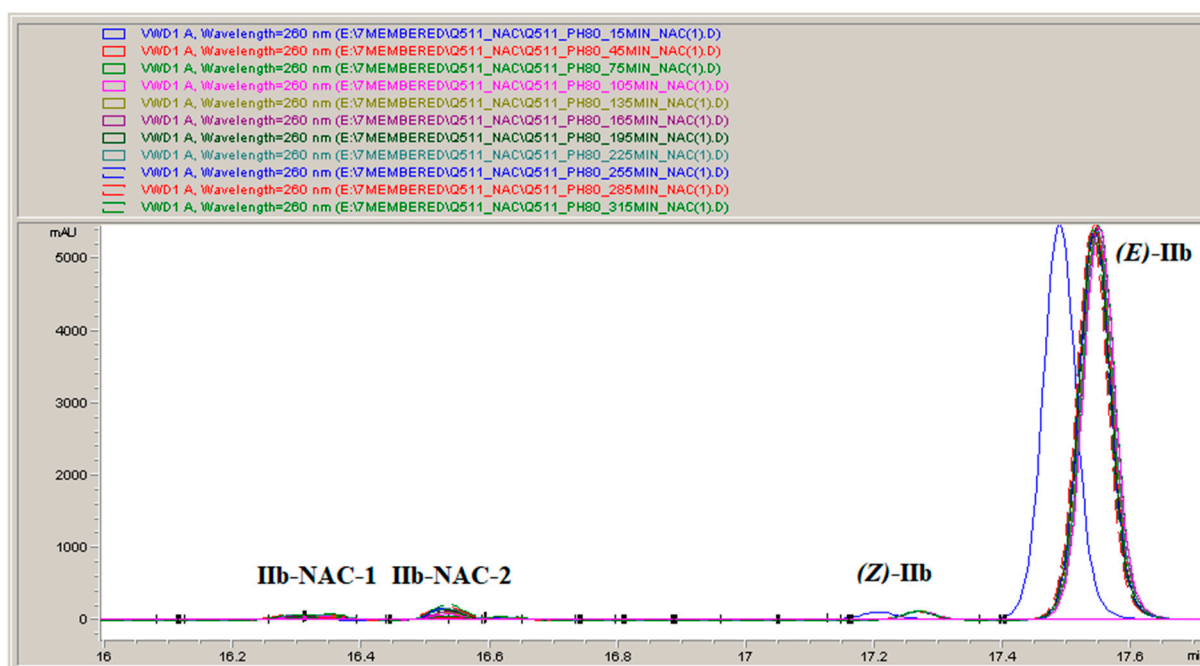


Figure S2. Overlaid HPLC-UV chromatograms of the 15, 45, 75, 105, 135, 165, 195, 225, 255, 285, and 315 min timepoint samples of the incubation mixture of **IIb** with NAC under pH 8.0/7.4 conditions. (The retention time of (Z)- and (E)-**IIb** in the 15 minute sample is shorter due to the improper conditioning of the HPLC column.)

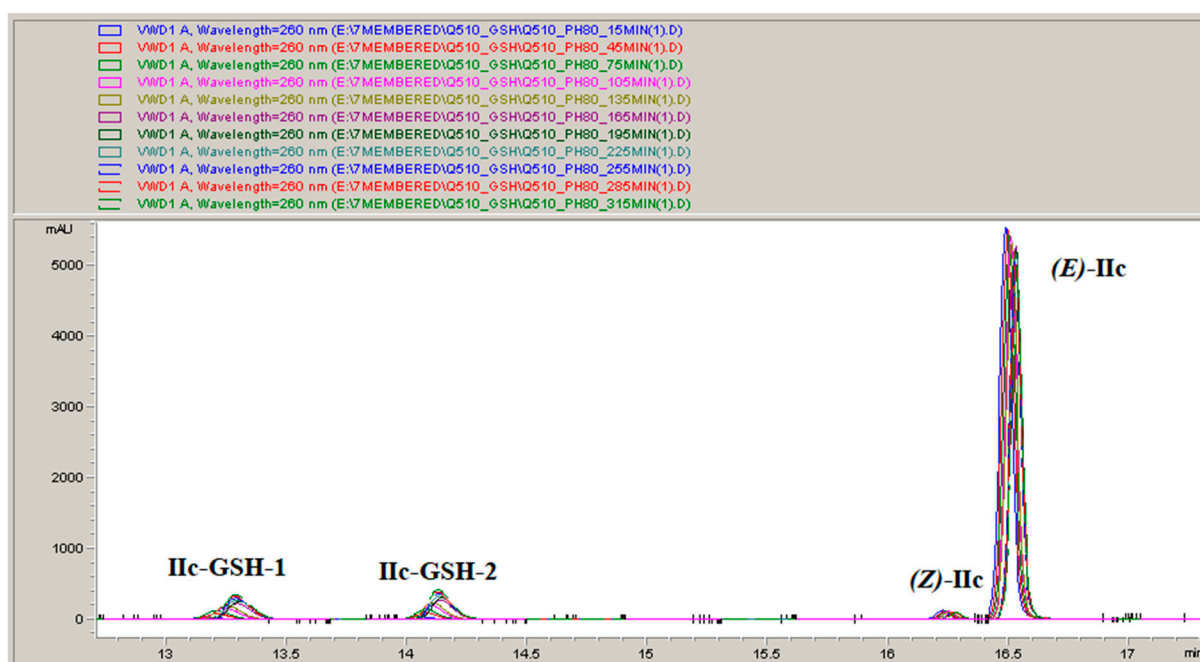


Figure S3. Overlaid HPLC-UV chromatograms of the 15, 45, 75, 105, 135, 165, 195, 225, 255, 285, and 315 min timepoint samples of the incubation mixture of **IIc** with GSH under pH 8.0/7.4 conditions.

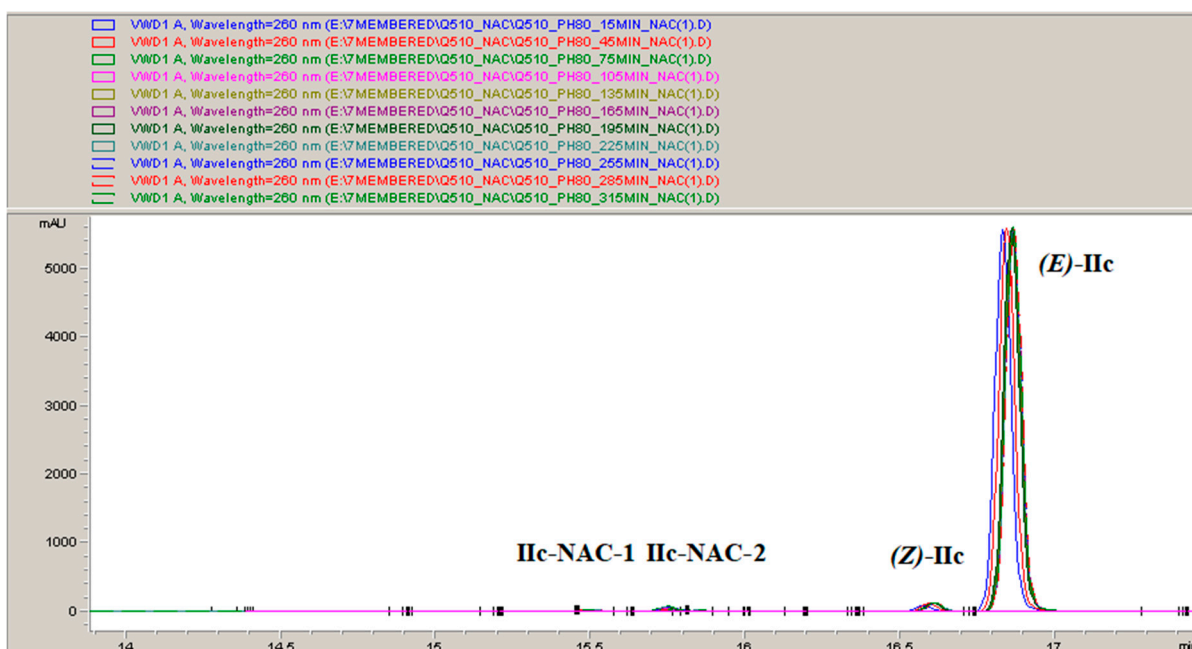


Figure S4. Overlaid HPLC-UV chromatograms of the 0, 15, 45, 75, 105, 135, 165, 195, 225, 255, 285, and 315 min timepoint samples of the incubation mixture of **IIc** with NAC under pH 8.0/7.4 conditions.

4c #2095 RT: 9.34 AV: 1 SB: 113 7.00-8.00 NL: 4.35E9
T: FTMS + c ESI Full ms [70.0000-700.0000]

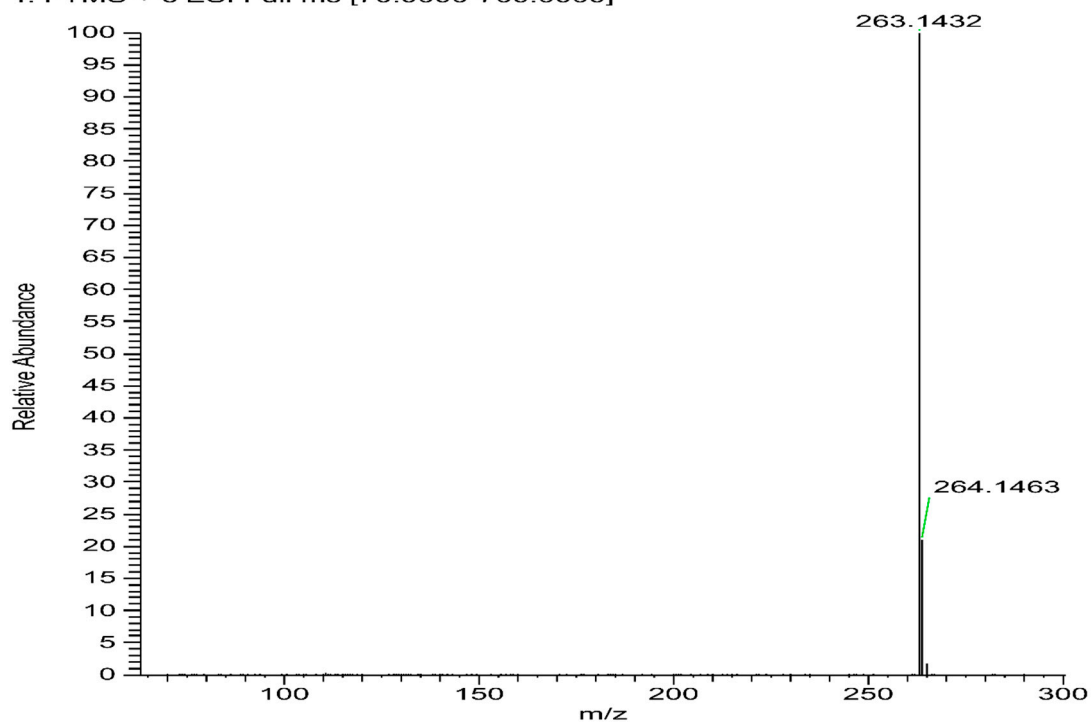


Figure S5. High-resolution, positive-mode HESI MS spectrum of **IIb**.

4d #1929 RT: 8.60 AV: 1 SB: 113 7.00-8.00 NL: 2.31E9
T: FTMS + c ESI Full ms [70.0000-700.0000]

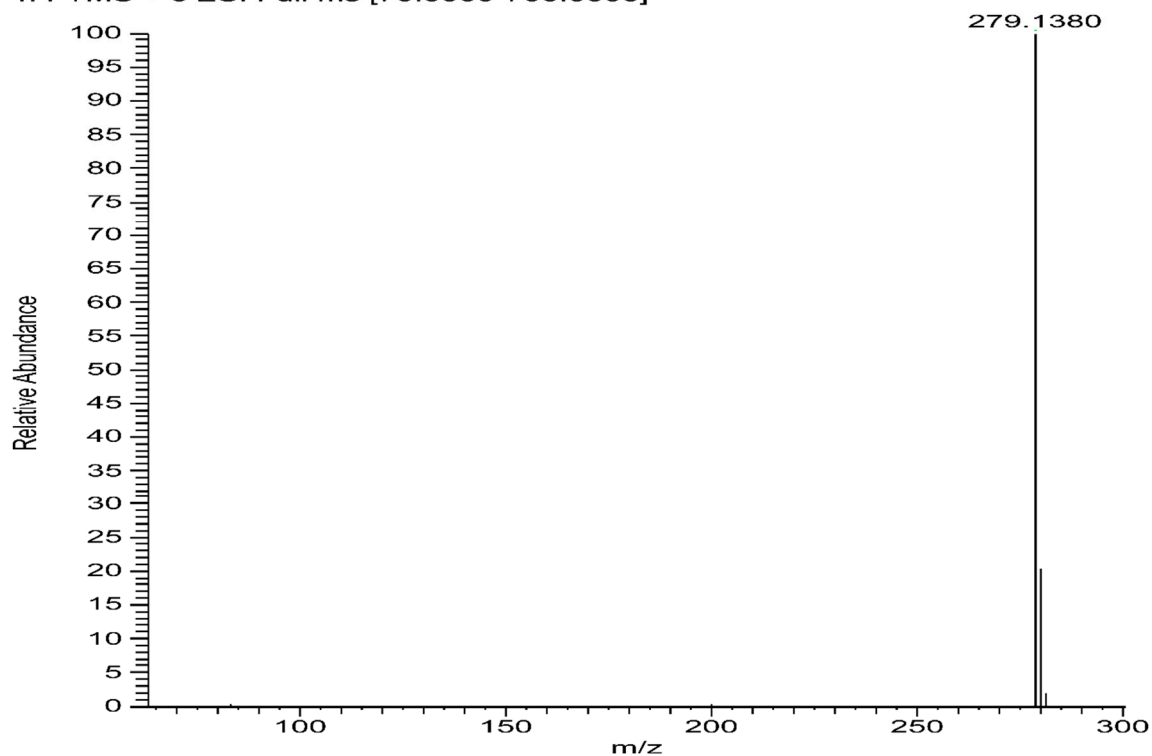


Figure S6. High-resolution, positive-mode HESI MS spectrum of **IIc**.

k5 #1467 RT: 11.14 AV: 1 SB: 67 9.00-10.00 NL: 7.86E7
T: FTMS + c ESI Full ms [70.0000-1000.0000]

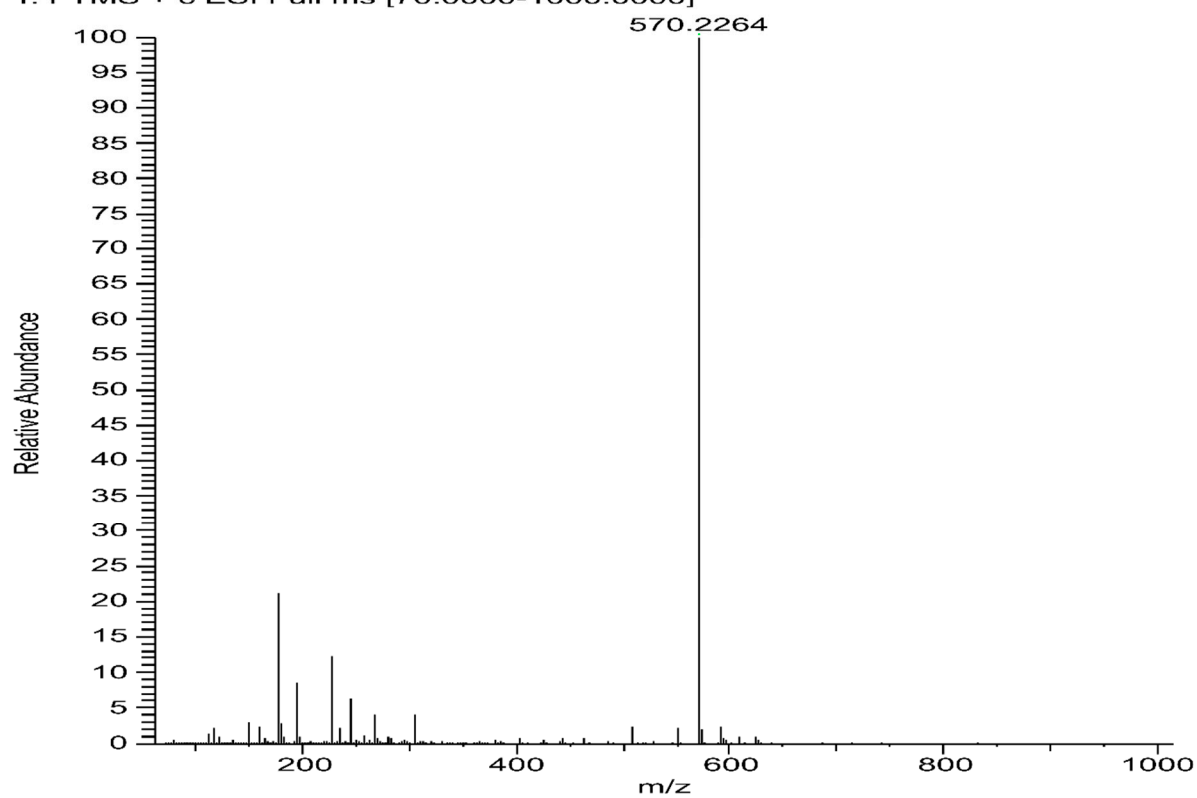


Figure S7. High-resolution, positive-mode HESI MS spectrum of **IIb-GSH** conjugate.

i4 #1562 RT: 12.44 AV: 1 SB: 66 11.00-12.00 NL: 1.13E8
T: FTMS - c ESI Full ms [100.0000-1000.0000]

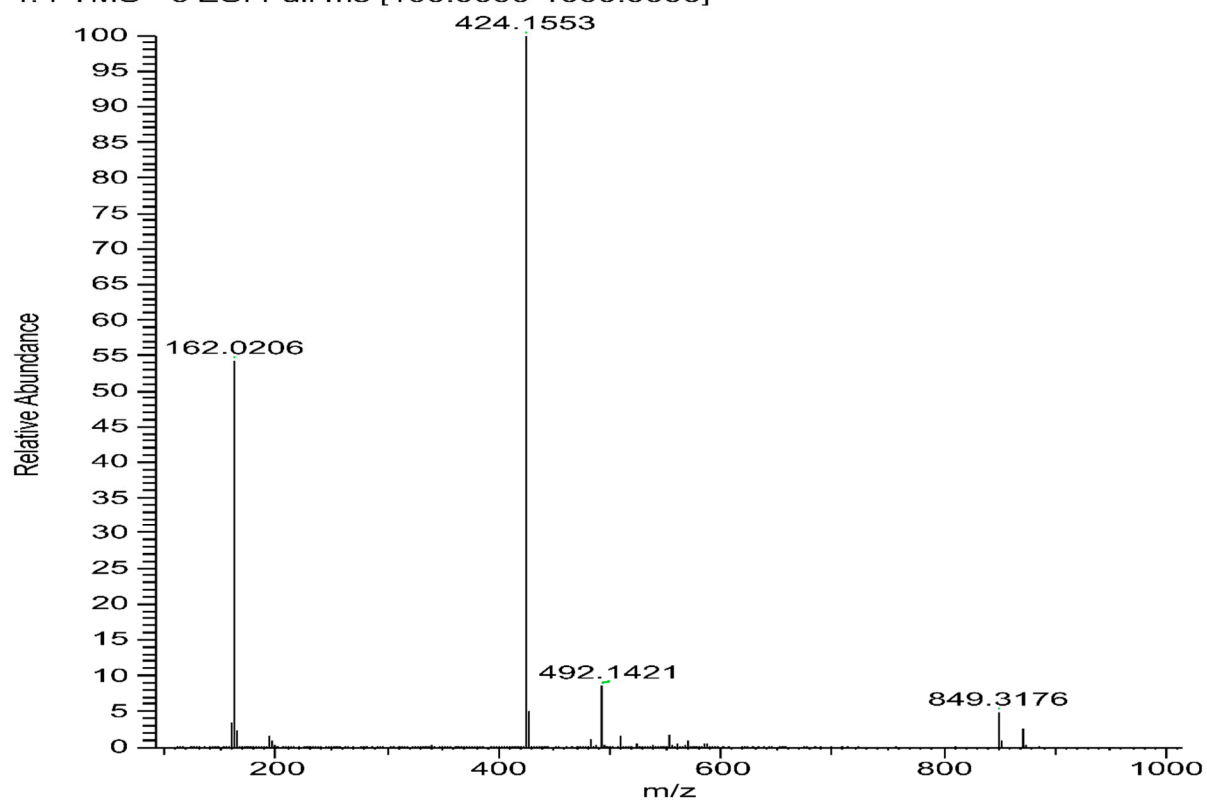


Figure S8. High-resolution, negative-mode HESI MS spectrum of **IIb**-NAC conjugate.

k4 #1435 RT: 10.89 AV: 1 SB: 66 9.00-10.00 NL: 5.23E7
T: FTMS + c ESI Full ms [70.0000-1000.0000]

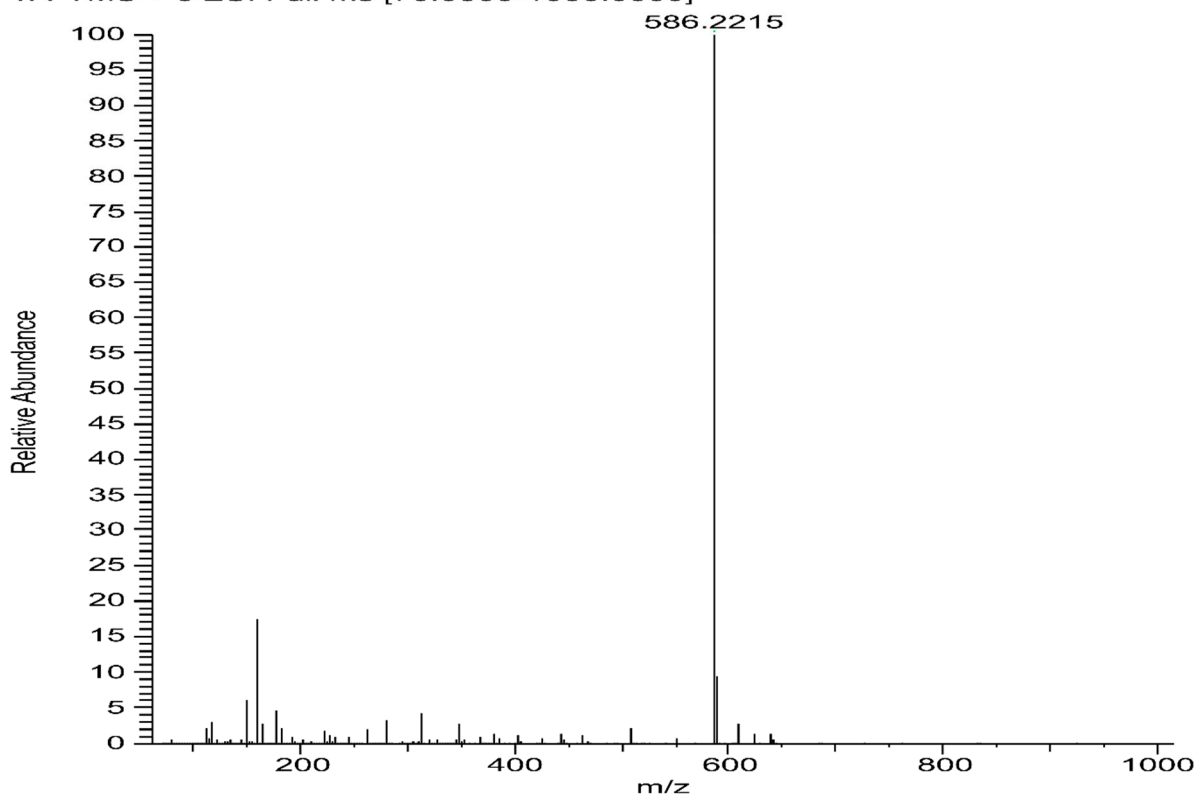


Figure S9. High-resolution, positive-mode HESI MS spectrum of **IIc**-GSH conjugate.

i7 #1472 RT: 11.75 AV: 1 SB: 66 10.00-11.00 NL: 1.33E8
T: FTMS - c ESI Full ms [100.0000-1000.0000]

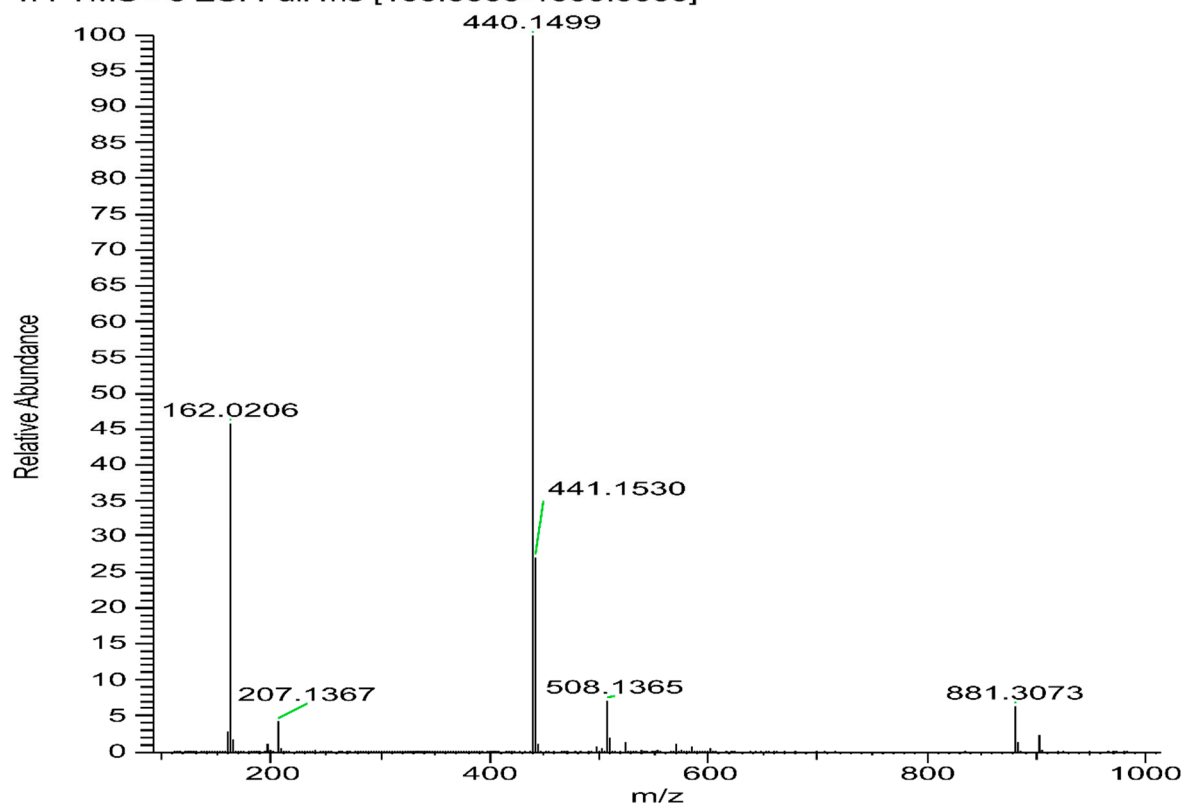


Figure S10. High-resolution, negative-mode HESI MS spectrum of **IIc**-NAC conjugate.

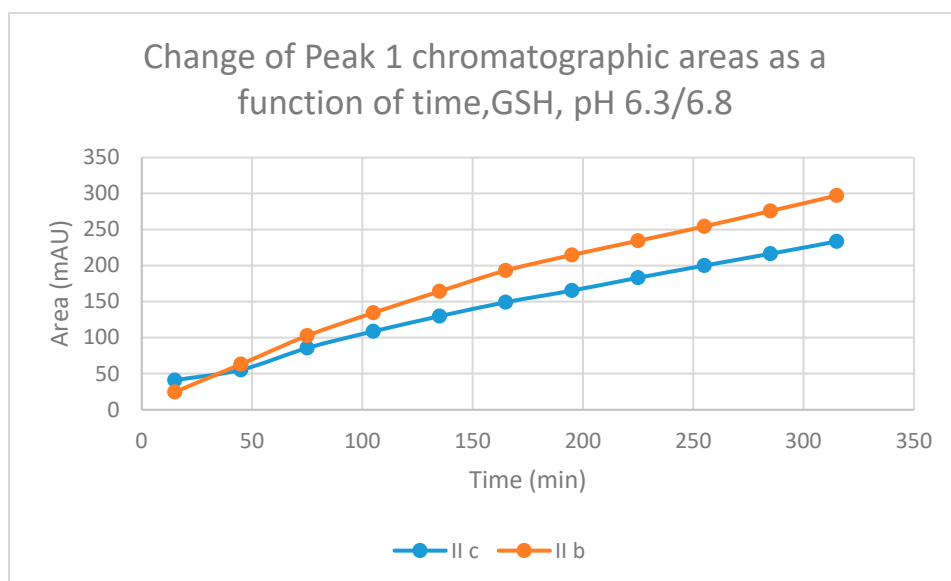


Figure S11. Change in the chromatographic peak area of adduct 1 of **II b** and **II c** in the chalcone–GSH incubations at pH 6.3/6.8.

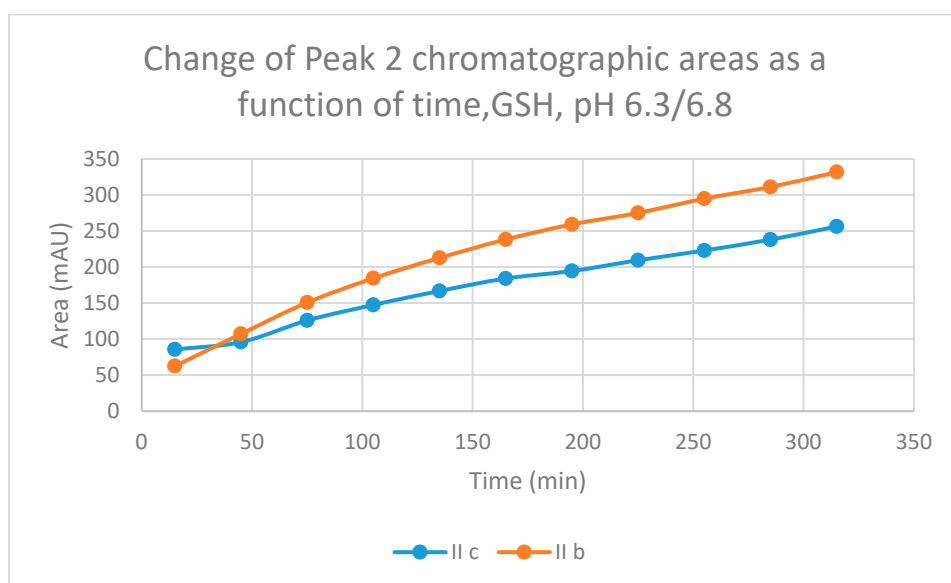


Figure S12. Change in the chromatographic peak area of adduct 2 of **II b** and **II c** in the chalcone–GSH incubations at pH 6.3/6.8.

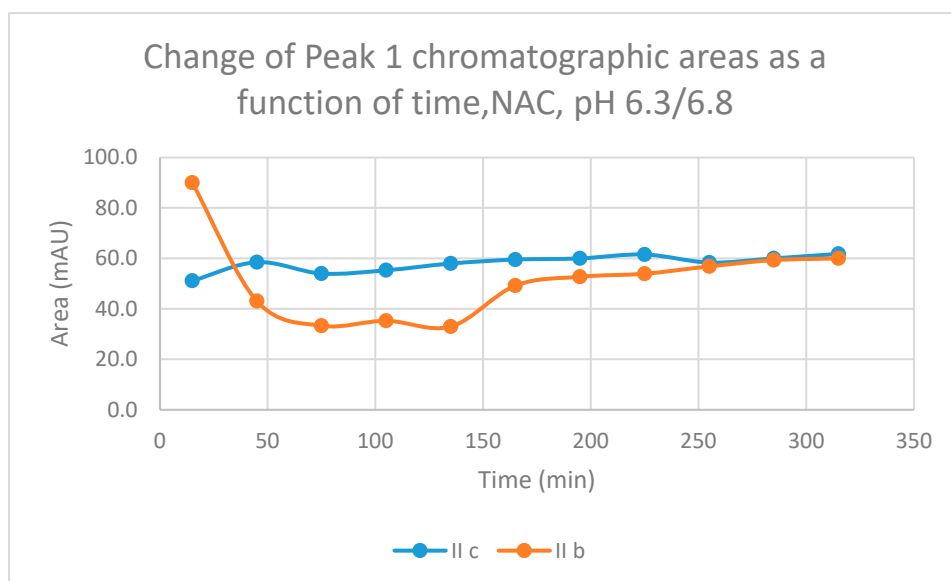


Figure S13. Change in the chromatographic peak area of adduct 1 of **IIb** and **IIc** in the chalcone–NAC incubations at pH 6.3/6.8.

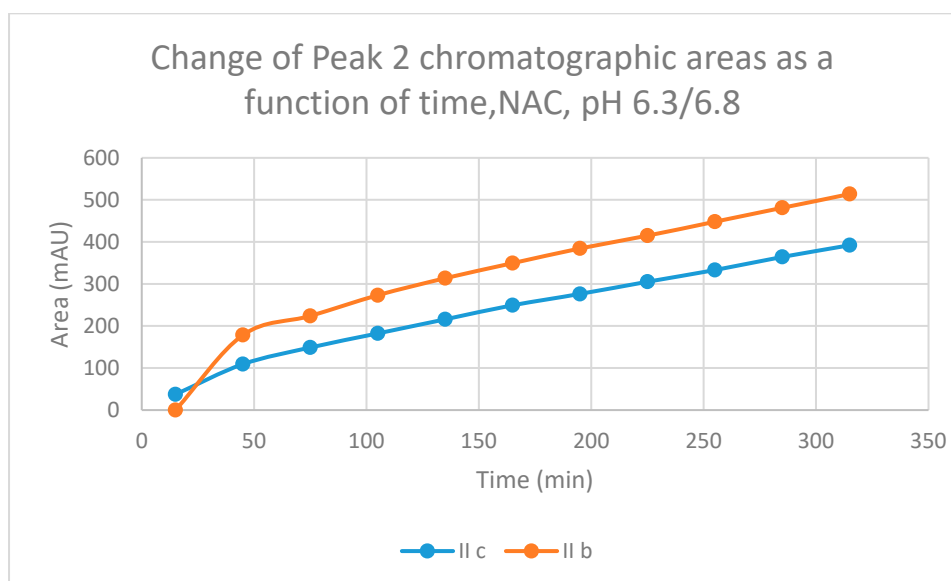


Figure S14. Change in the chromatographic peak area of adduct 2 of **IIb** and **IIc** in the chalcone–NAC incubations at pH 6.3/6.8.

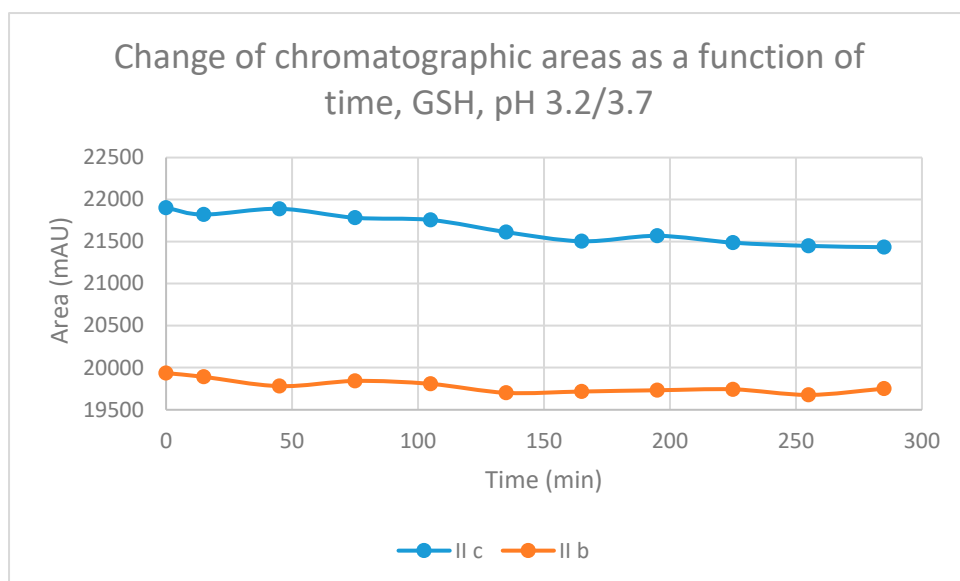


Figure S15. Change in the chromatographic peak area of **IIb** and **IIc** in the chalcone–GSH incubations at pH 3.2/3.7.

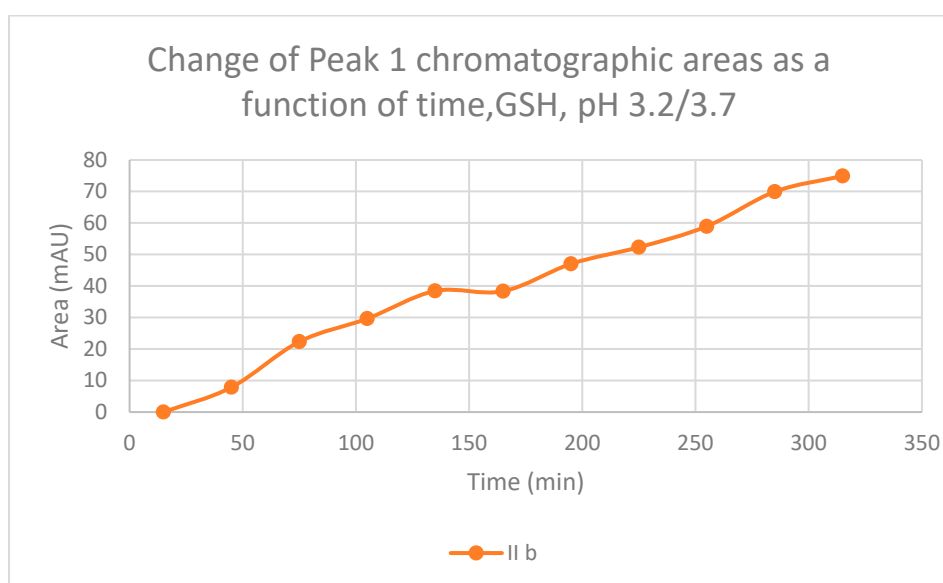


Figure S16. Change in the chromatographic peak area of adduct 1 of **IIb** in the chalcone–GSH incubations at pH 3.2/3.7.

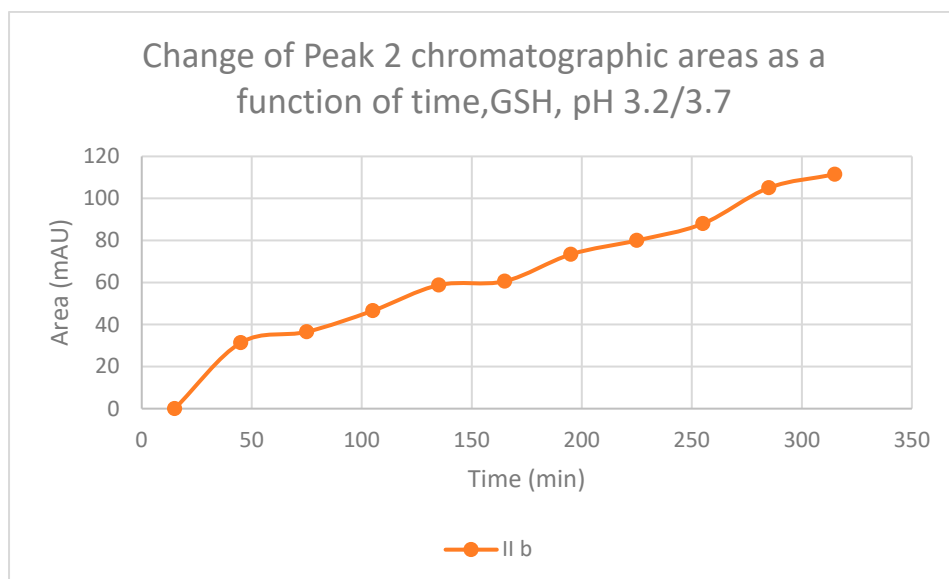


Figure S17. Change in the chromatographic peak area of adduct 2 of **IIb** in the chalcone–GSH incubations at pH 3.2/3.7.

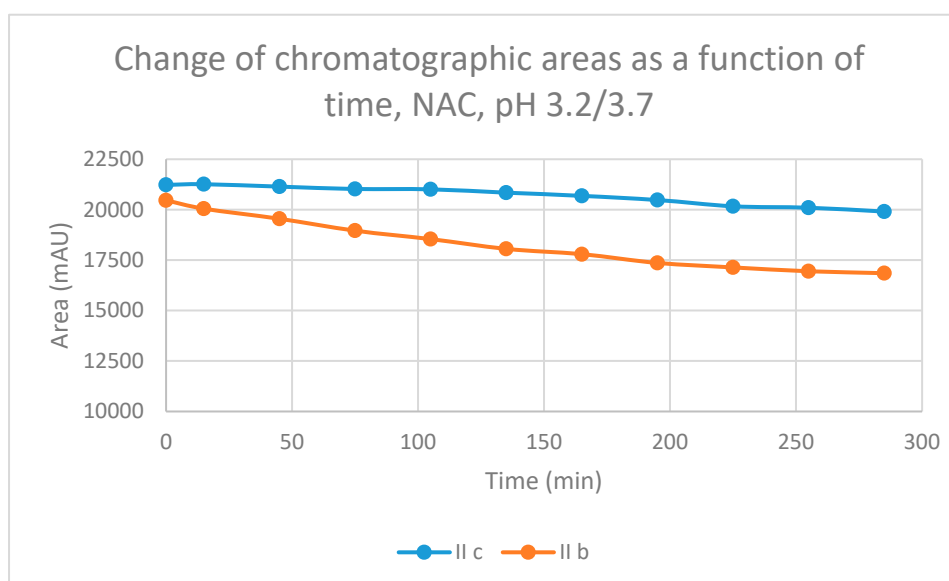


Figure S18. Change in the chromatographic peak area of **IIb** and **IIc** in the chalcone–NAC incubations at pH 3.2/3.7.

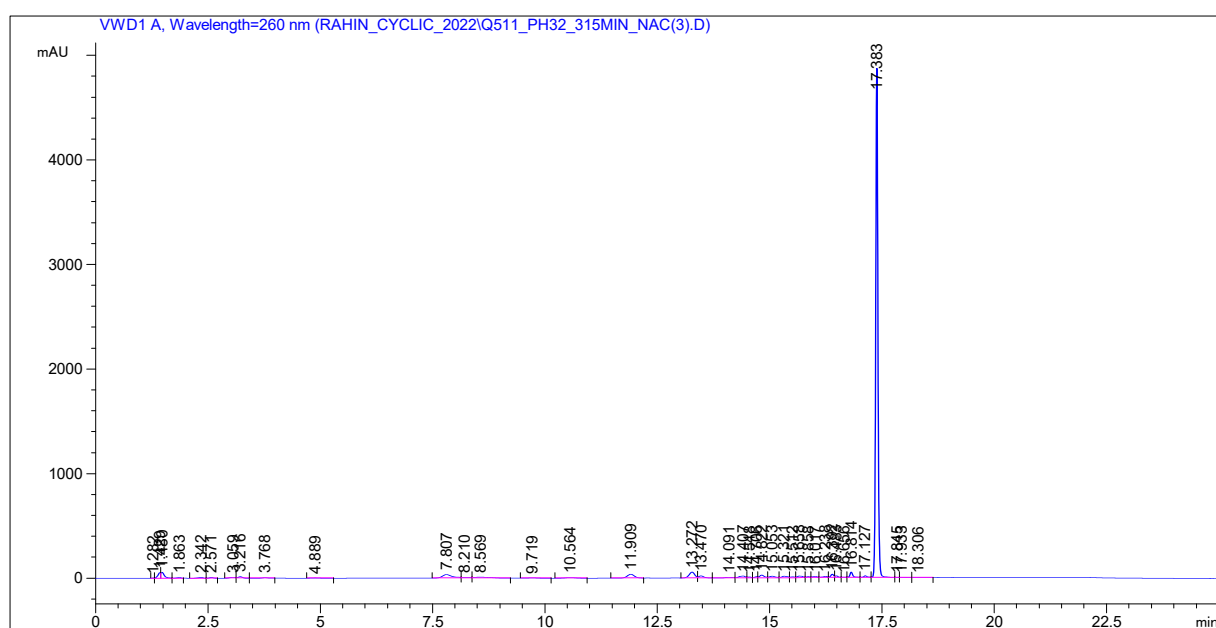
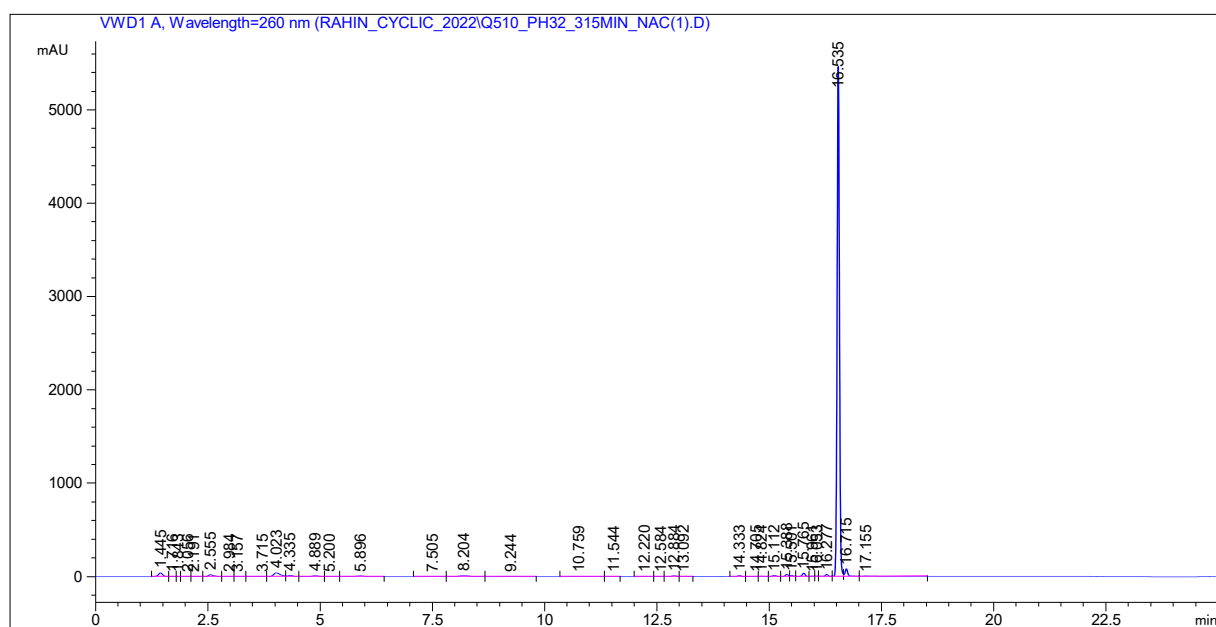


Figure S19. HPLC-UV chromatogram of pH 3.2/3.7 incubation (315 min time point) of **IIb** and NAC.



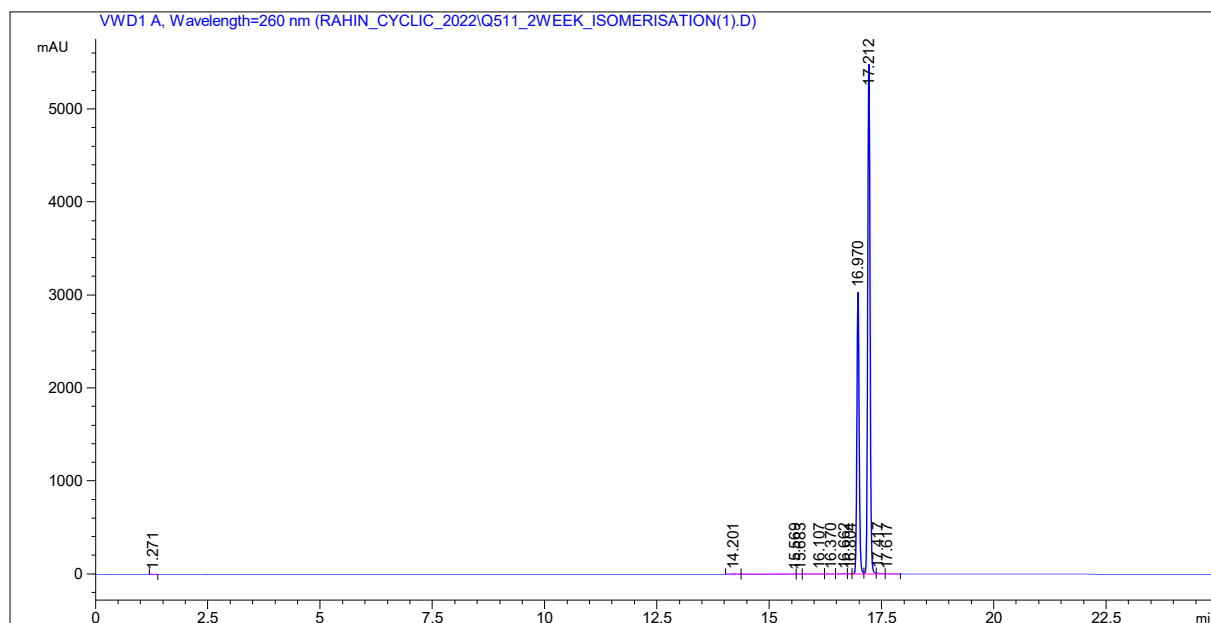


Figure S21. HPLC-UV spectrum of (*E*)(t_R 17.21 min)/(*Z*)(t_R 16.97 min) isomeric mixture of **IIb**.

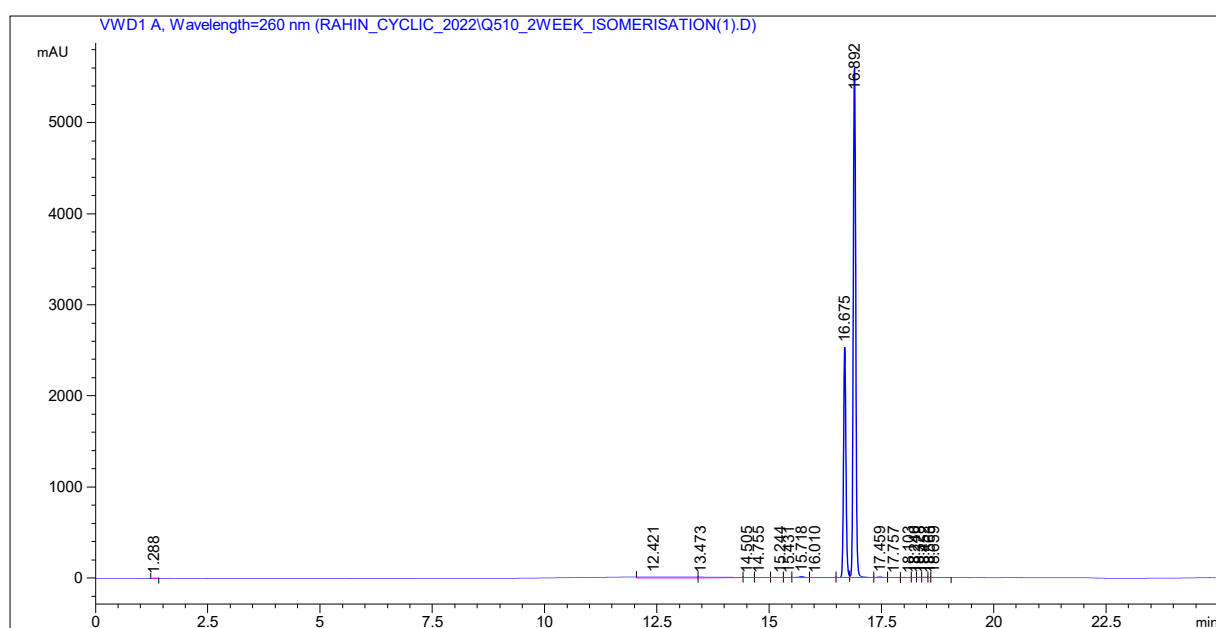


Figure S22. HPLC-UV-VIS spectrum of (*E*)(t_R 16.89 min)/(*Z*)(t_R 16.675 min) isomeric mixture of **IIc**.