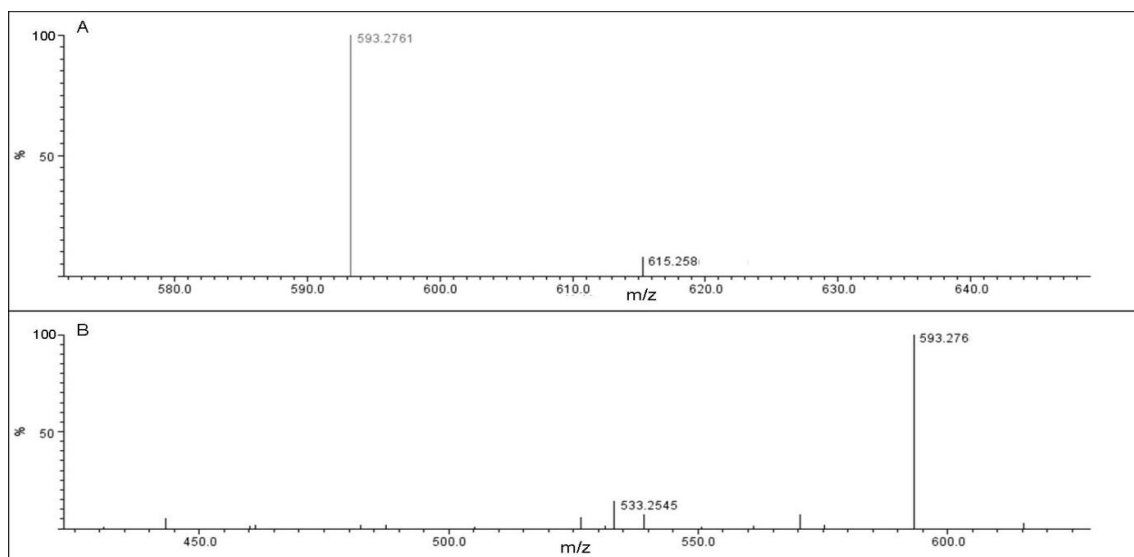
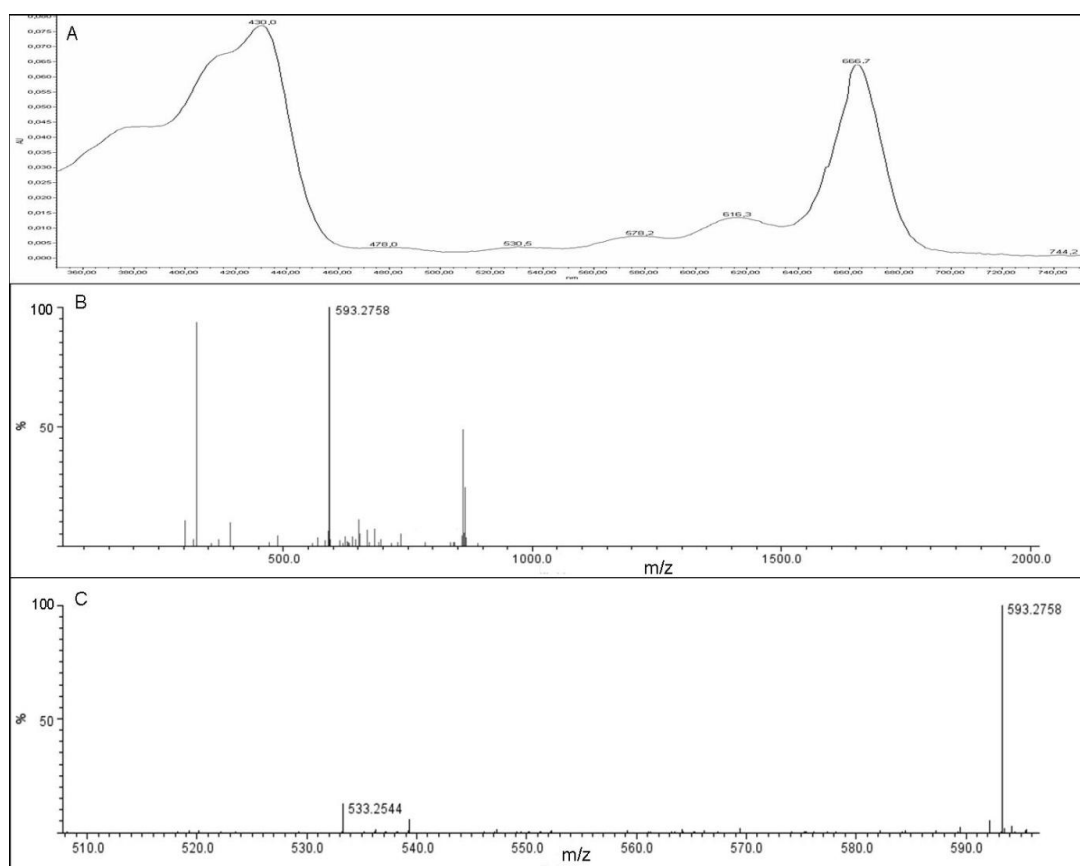


## Supplementary Materials

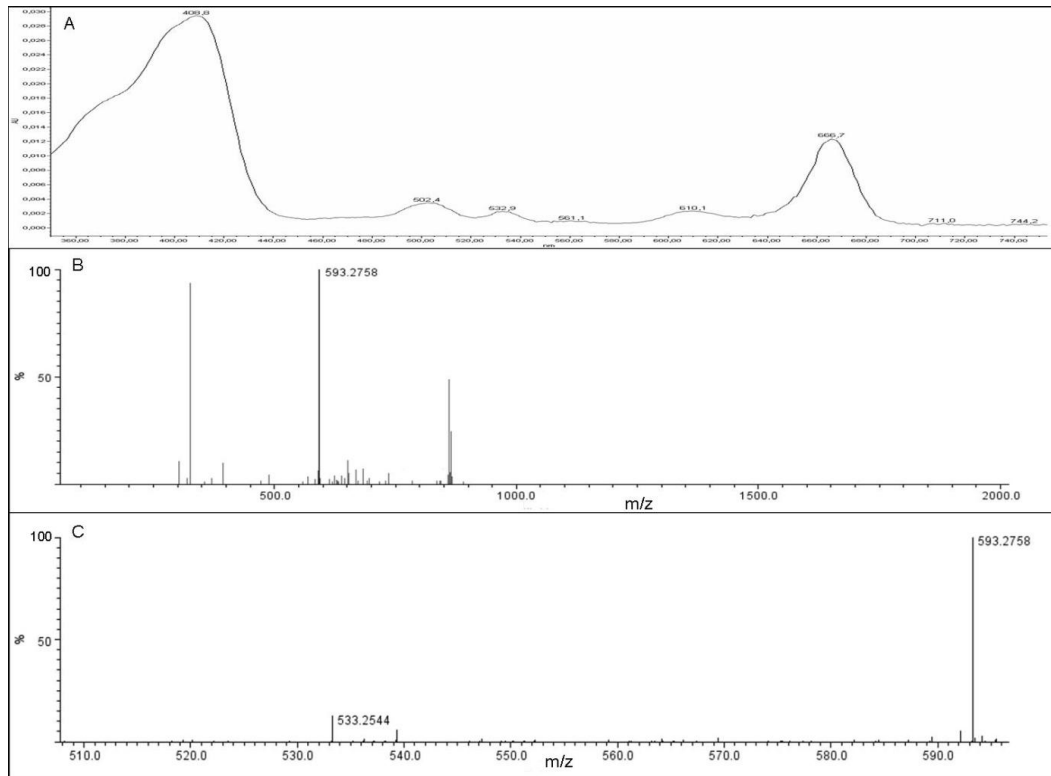
**Figure S1.** High resolution MS (A) and MSMS (B) spectra of standard chlorophyllide a.



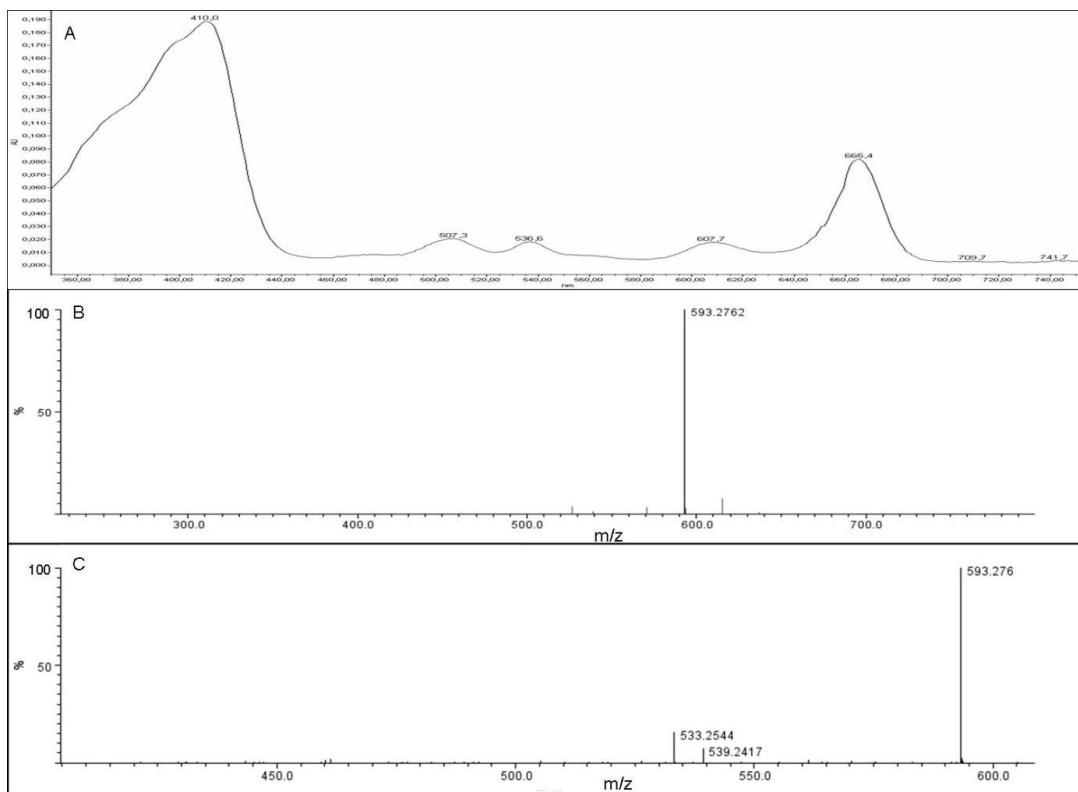
**Figure S2.** UV-vis (A), high resolution MS (B) and MSMS (C) spectra of Fraction 1 (chlorophyllide a).



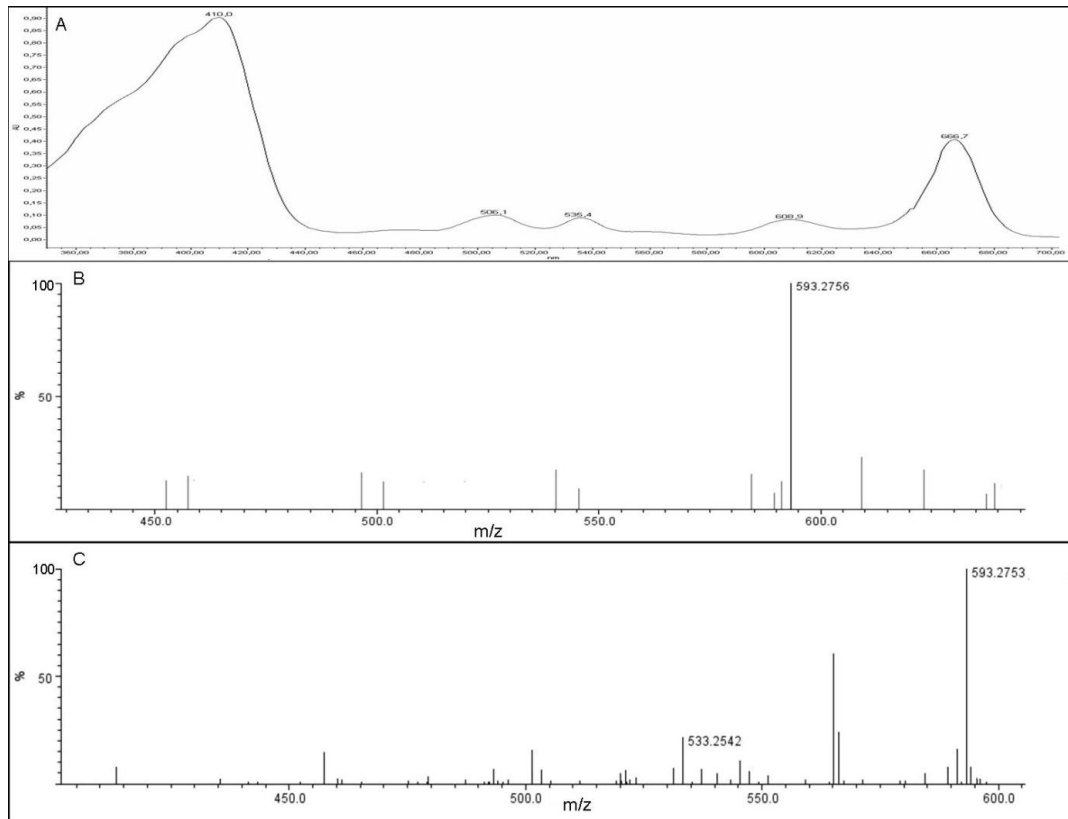
**Figure S3.** UV-vis (A), high resolution MS (B) and MSMS (C) spectra of Fraction 2 (chlorophyllone).



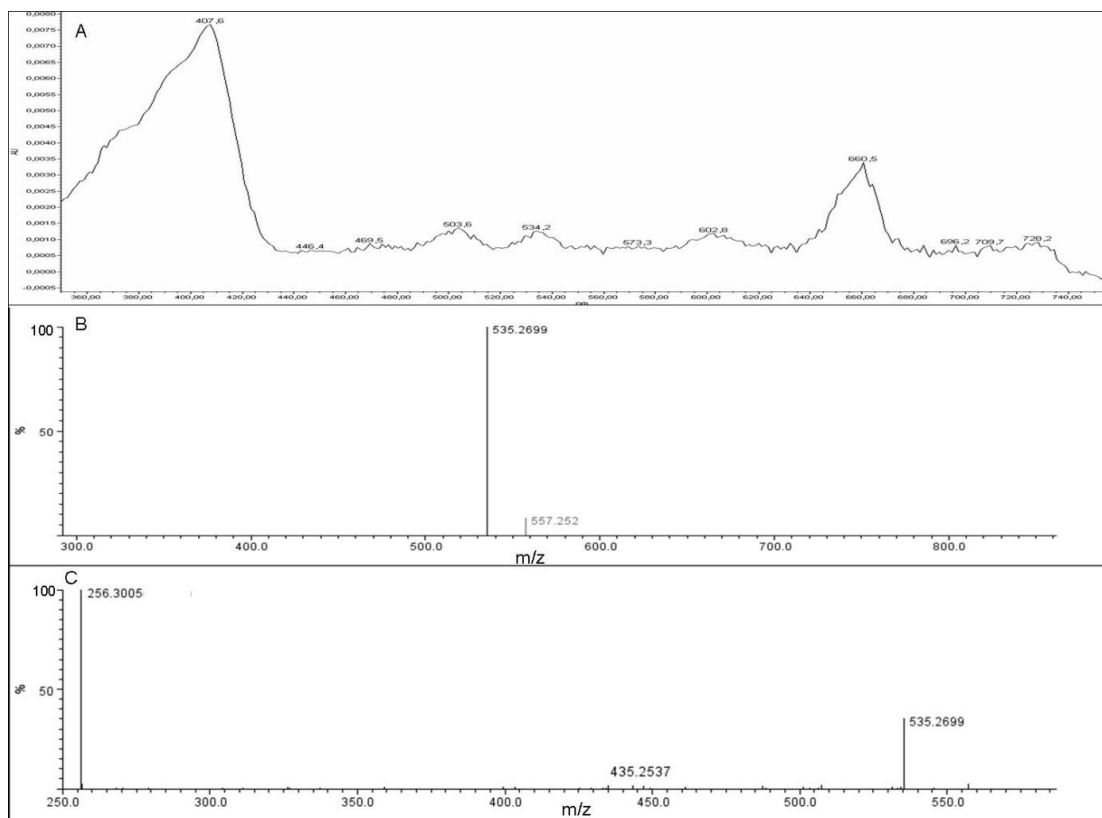
**Figure S4.** UV-vis (A), high resolution MS (B) and MSMS (C) spectra of standard pheophorbide a.

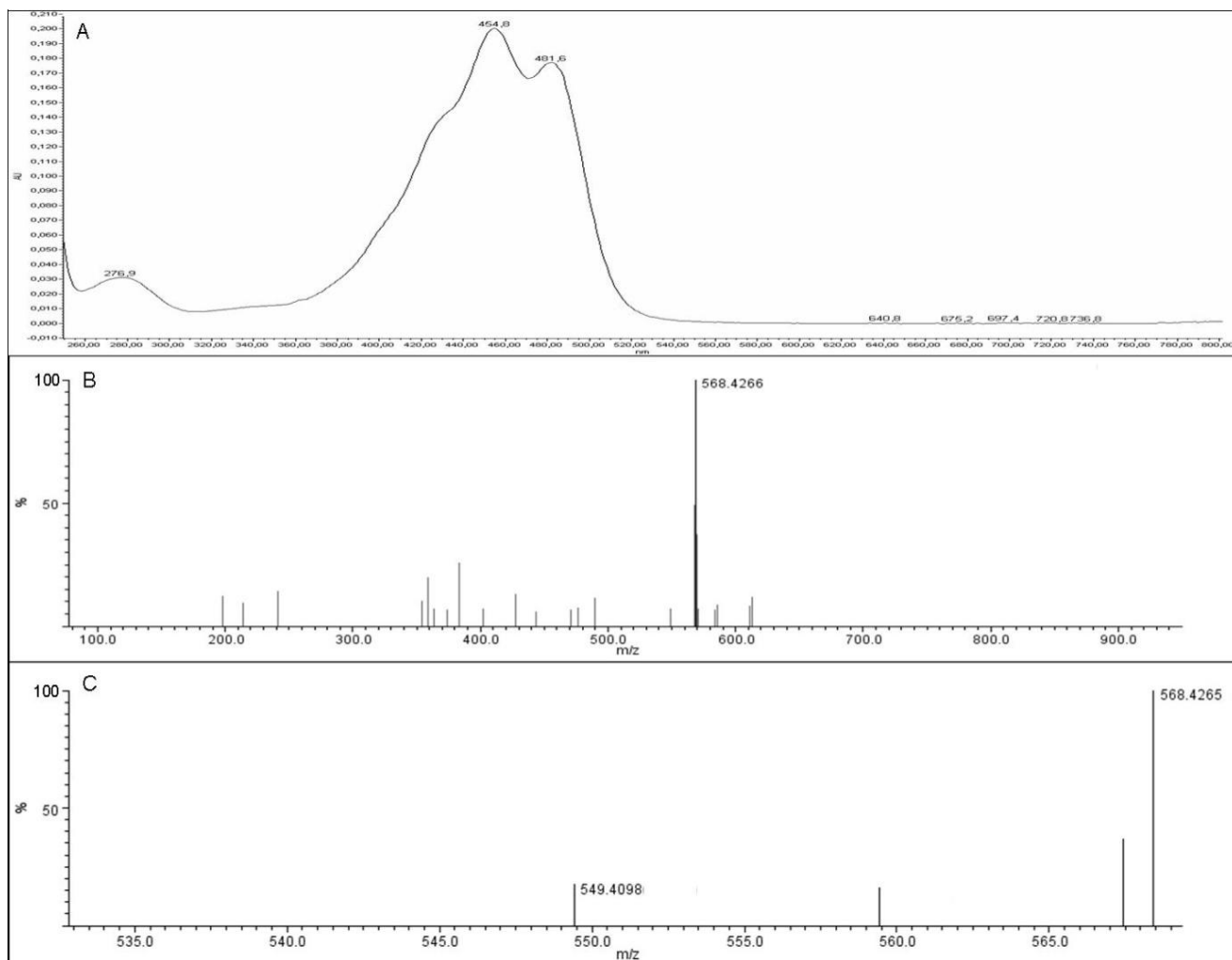


**Figure S5.** UV-vis (A), high resolution MS (B) and MSMS (C) spectra of Fraction 3 (pheophorbide a).



**Figure S6.** UV-vis (A), high resolution MS (B) and MSMS (C) spectra of standard pyropheophorbide a.



**Figure S7.** UV-vis (A), high resolution MS (B) and MSMS (C) spectra of standard zeaxanthin.

**Figure S8.** UV-vis (A and D), high resolution MS (B and E) and MSMS (C and F) spectra of Fraction 4. The A, B and C spectra correspond to pyropheophorbide a. The D, E and F spectra correspond to zeaxanthin.

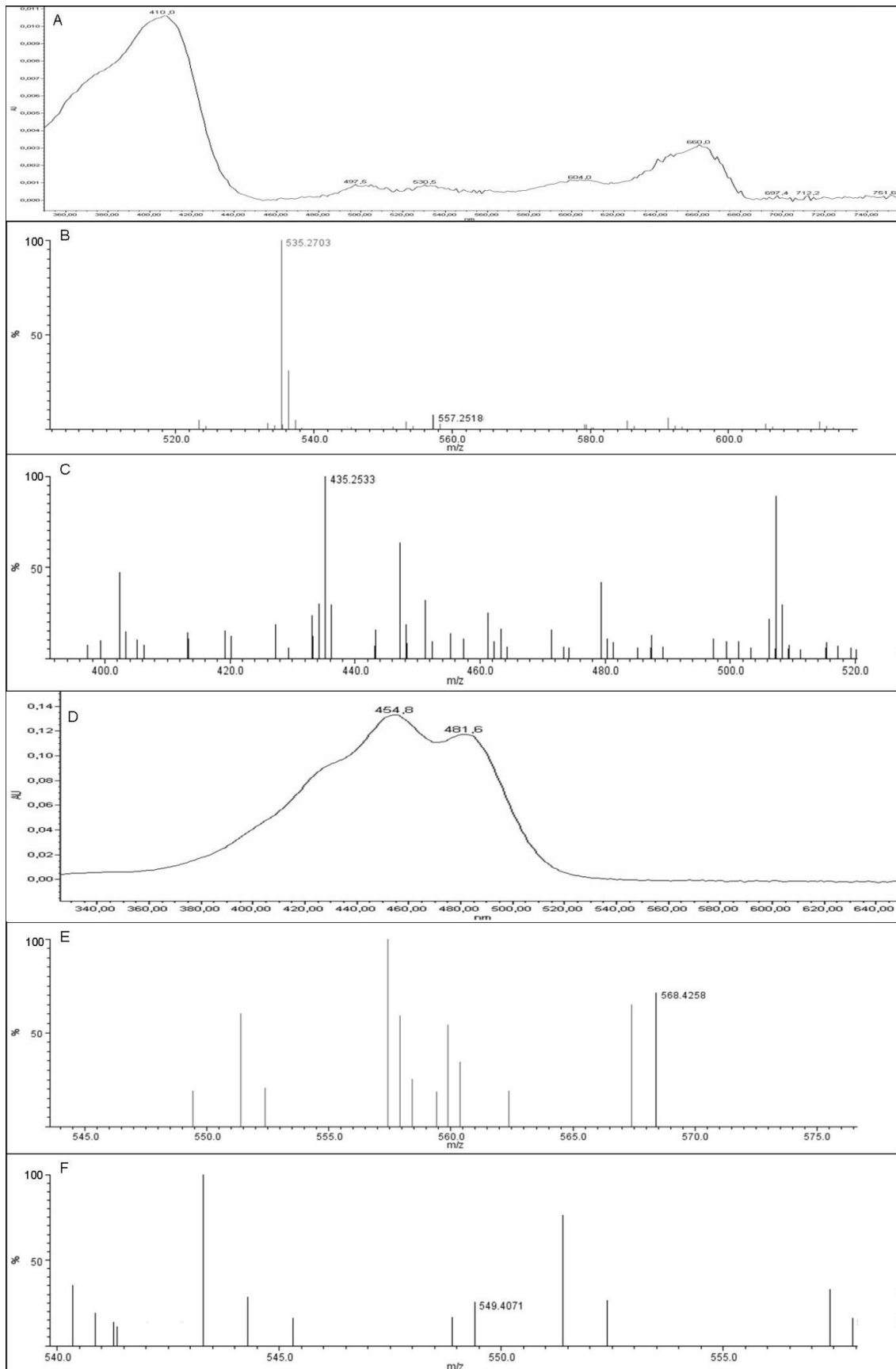


Figure S9. UV-vis (A), high resolution MS (B) and MSMS (C) spectra of standard  $\beta$ -cryptoxanthin.

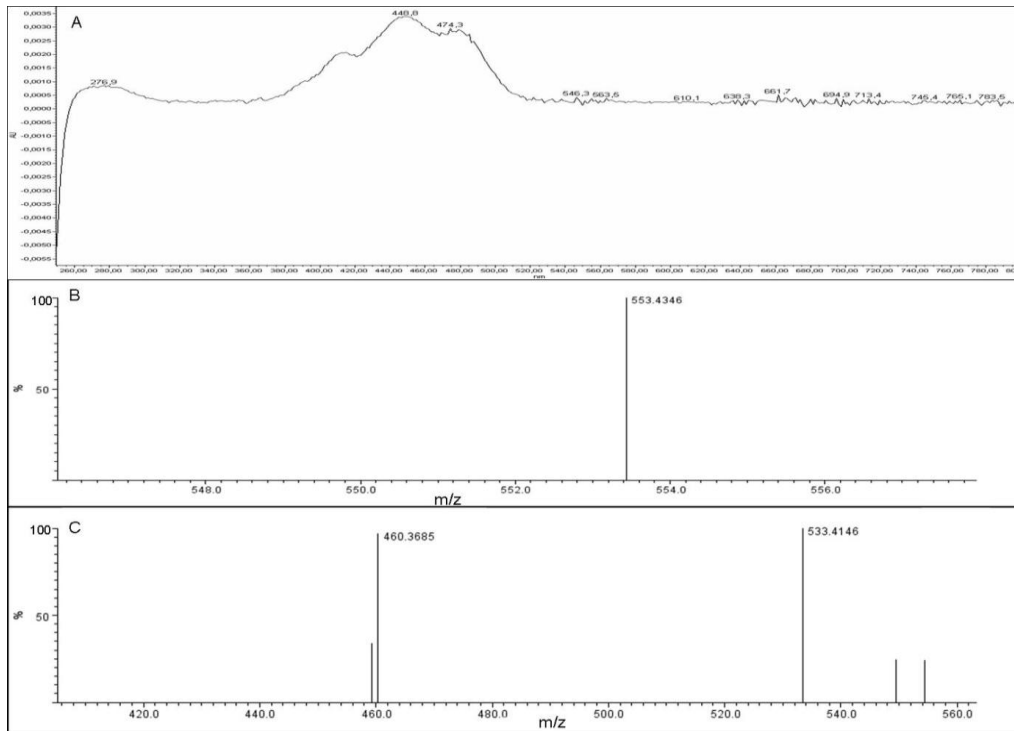
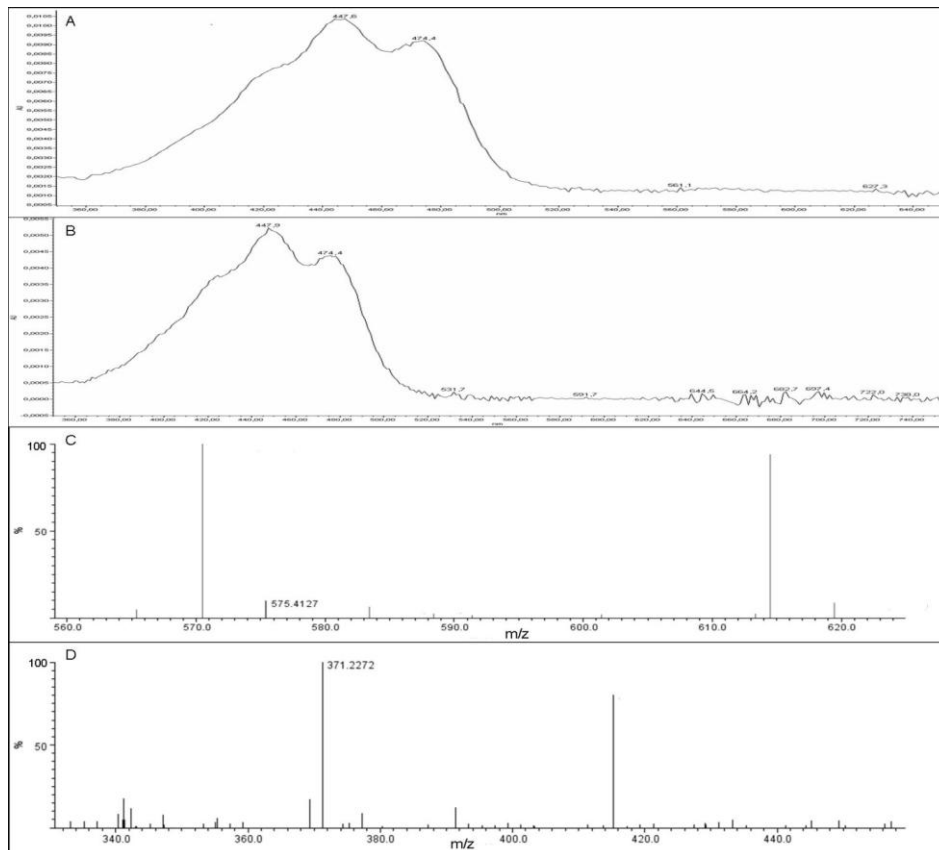
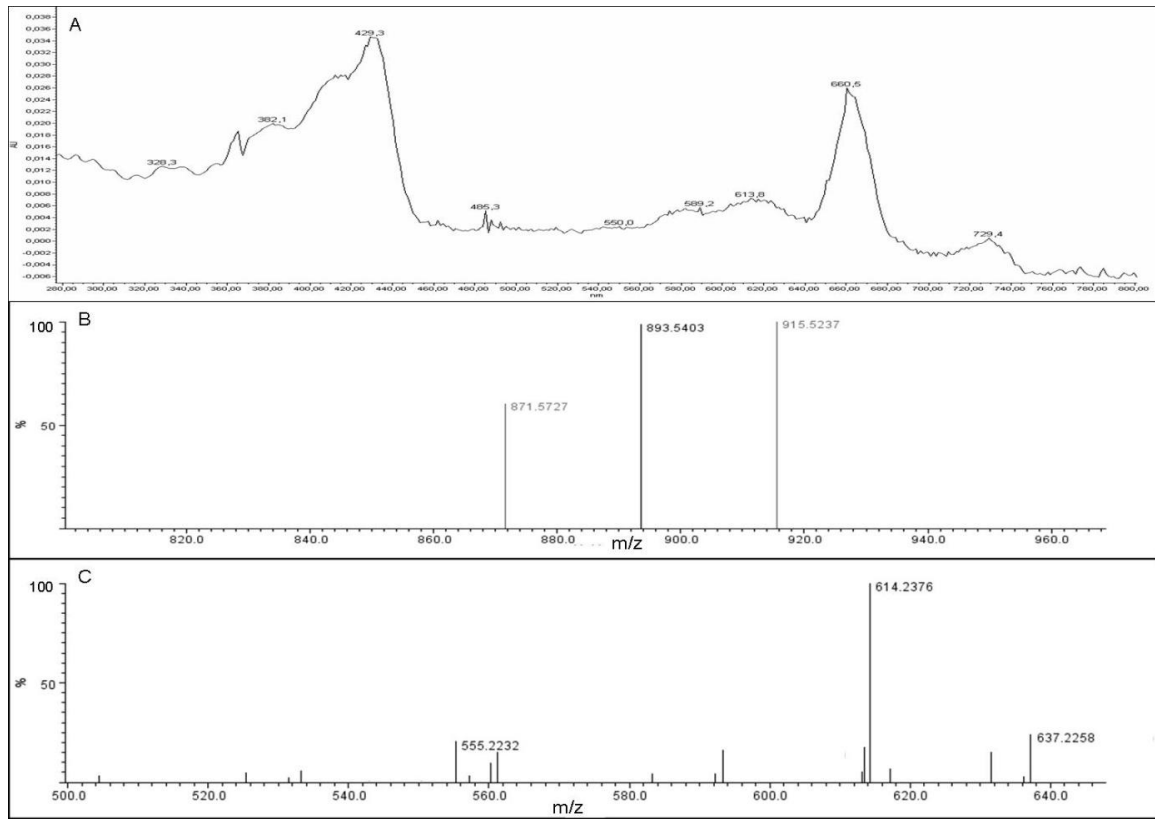


Figure S10. UV-vis (A and B), high resolution MS (C) and MSMS (D) spectra of Fraction 5. The A spectrum corresponds to 5,6-epoxy- $\beta$ -cryptoxanthin. The B, C and D spectra correspond to  $\beta$ -cryptoxanthin.



**Figure S11.** UV-vis (A), high resolution MS (B) and MSMS (C) spectra of standard chlorophyll a.



**Figure S12.** UV-vis (A, D and G), high resolution MS (B and E) and MSMS (C and F) spectra of Fraction 6. The A, B and C spectra correspond to chlorophyll a. The D, E and F spectra correspond to pheophytin a. The G spectrum corresponds to the unidentified carotenoid.

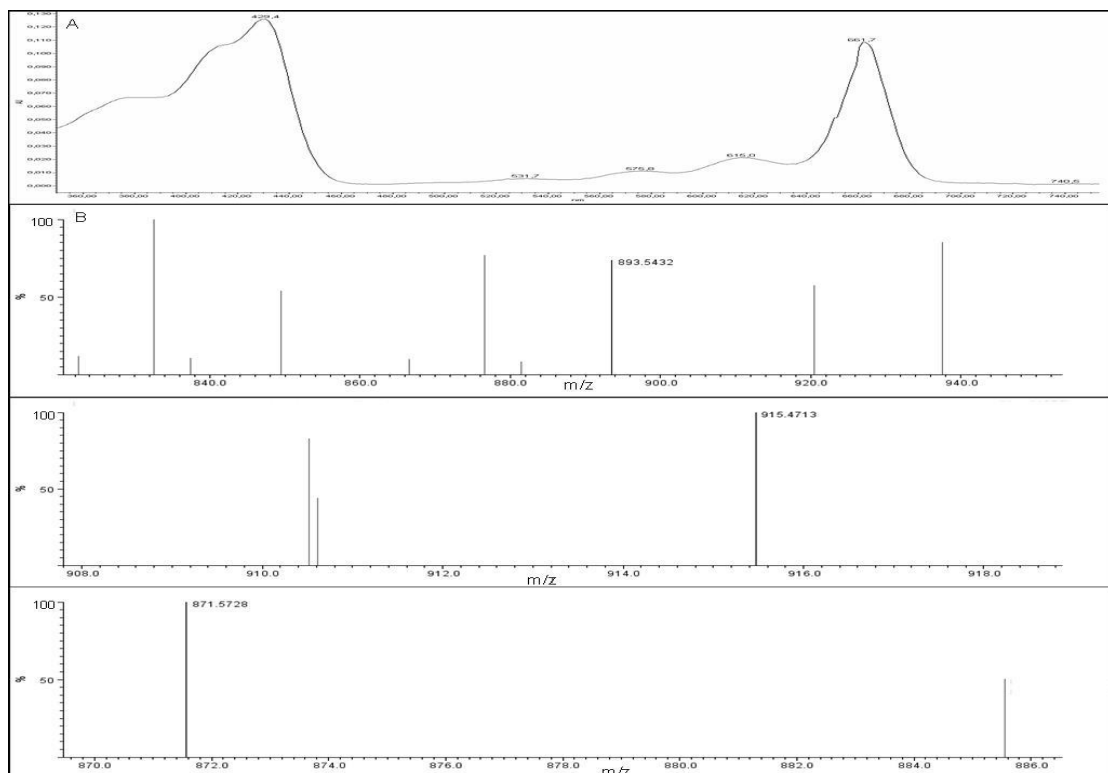
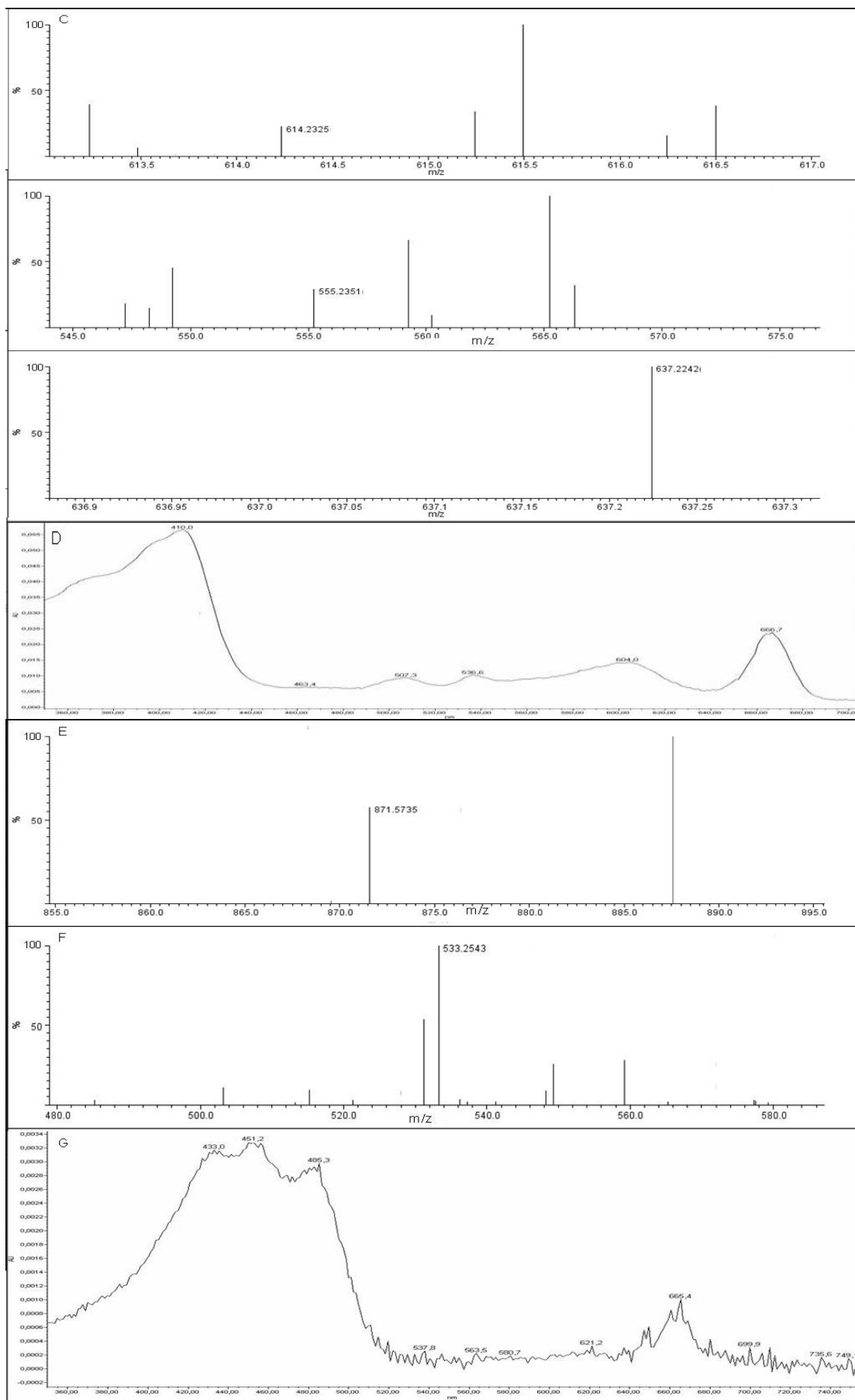


Figure S12. Cont.





**Figure S13.** UV-vis (A, D, G, H, I and J), high resolution MS (B and E) and MSMS (C and F) spectra of Fraction 7. The A, B and C spectra correspond to chlorophyll a epimer. The D, E and F spectra correspond to pheophytin a. The G spectrum corresponds to DV-pheophytin a. The H spectrum corresponds to MV-pheophytin a. The I spectrum corresponds to mutatochrome. The J spectrum corresponds to purpurin-7-phytyl ester.

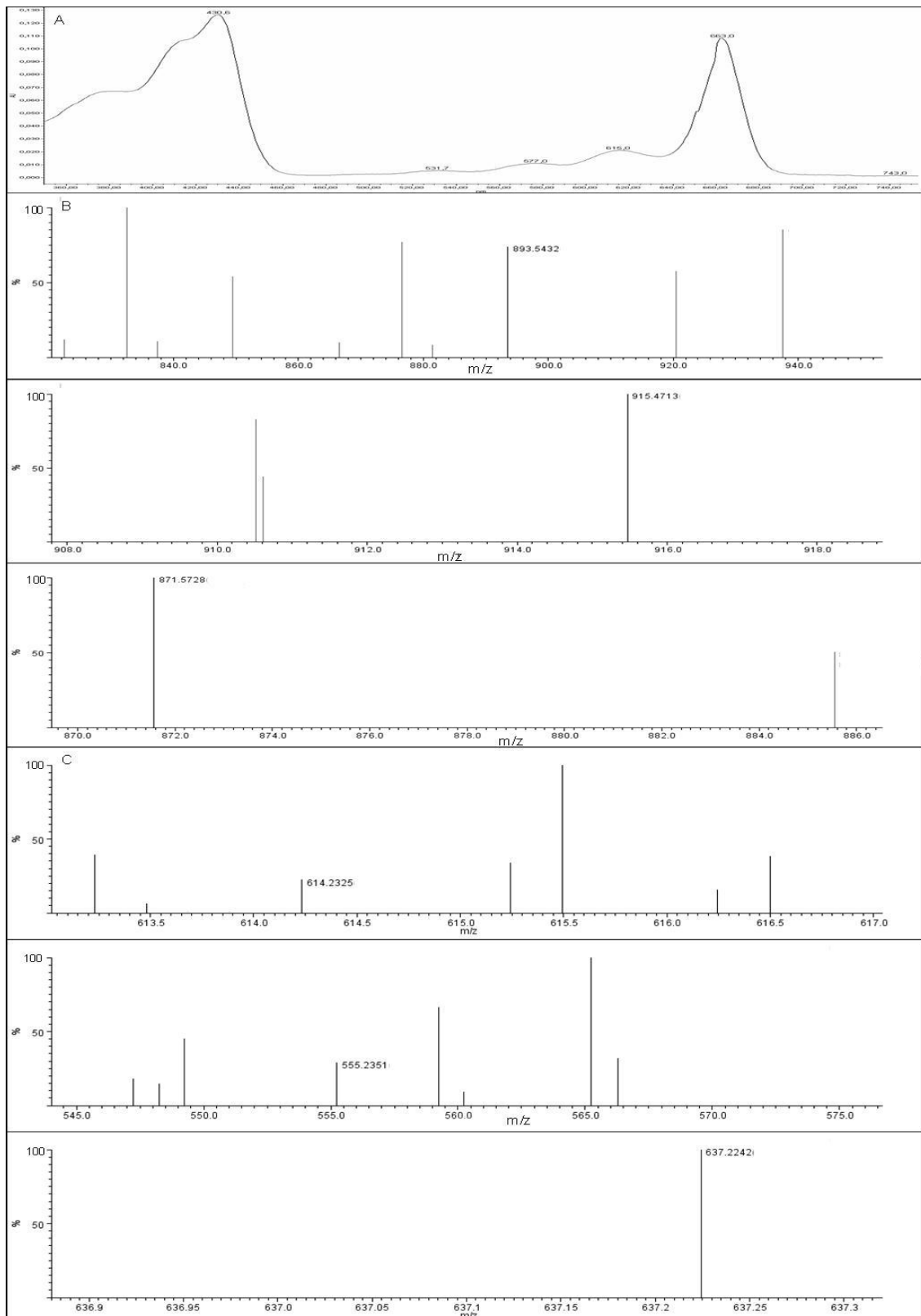


Figure S13. Cont.

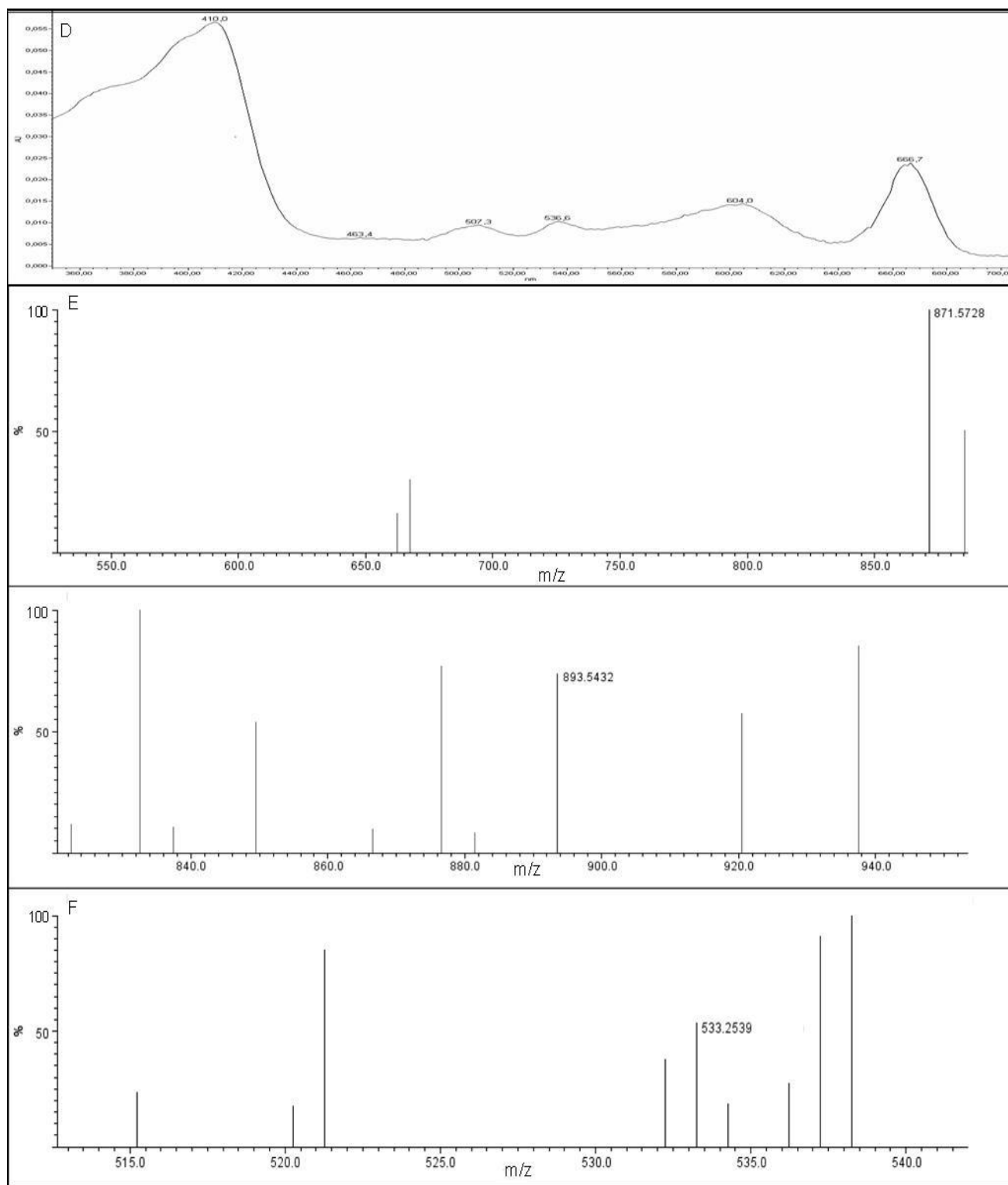
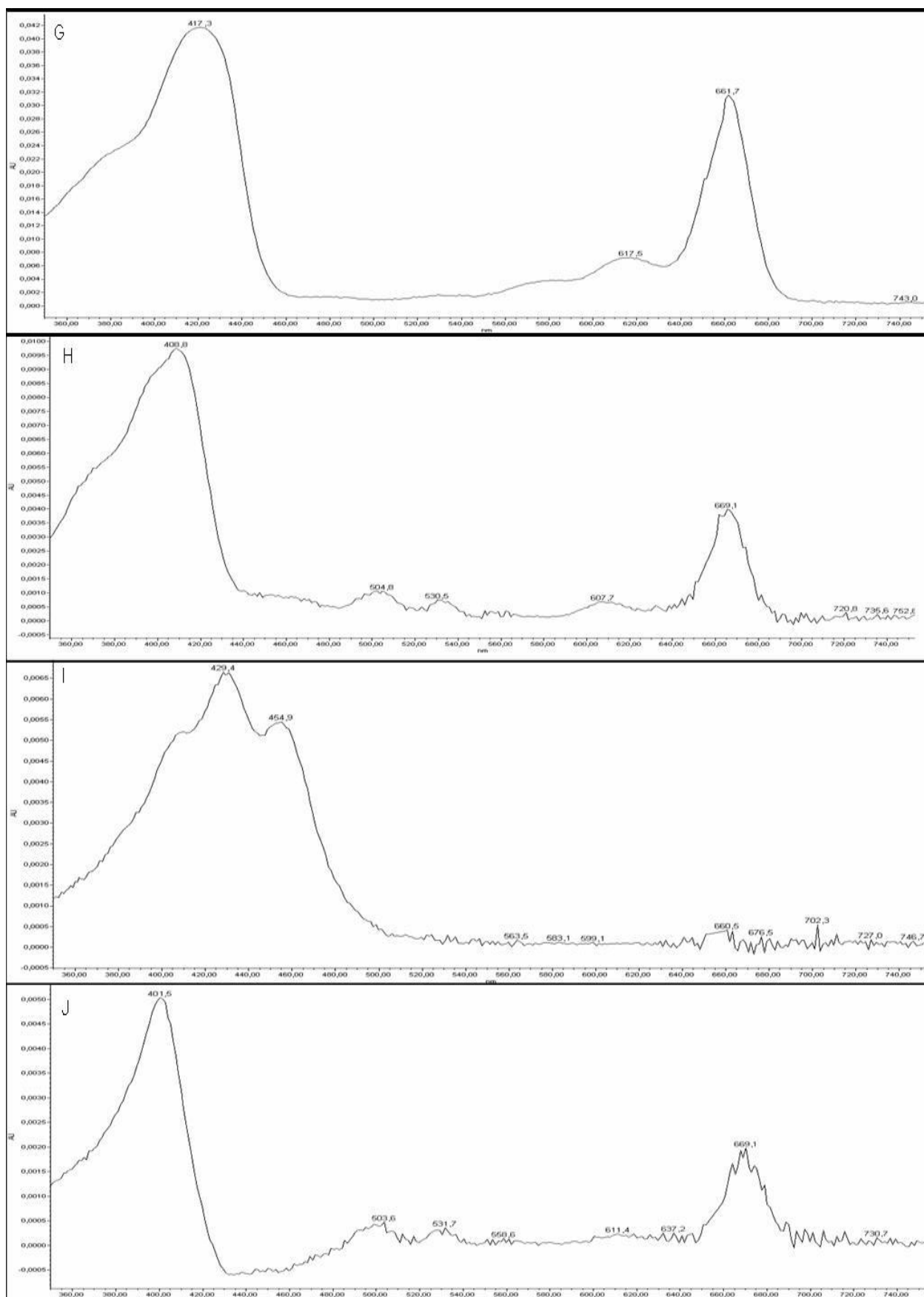
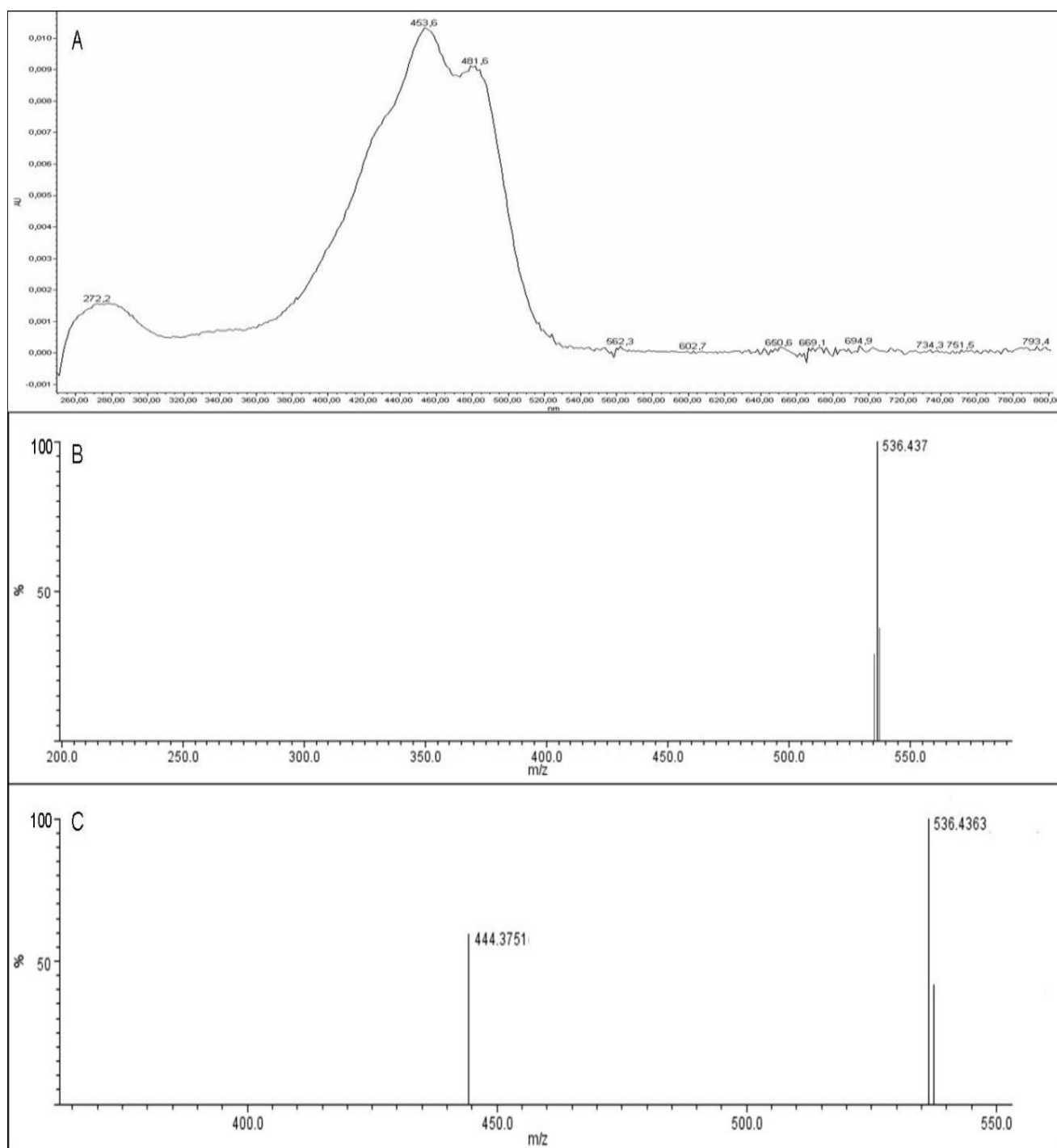
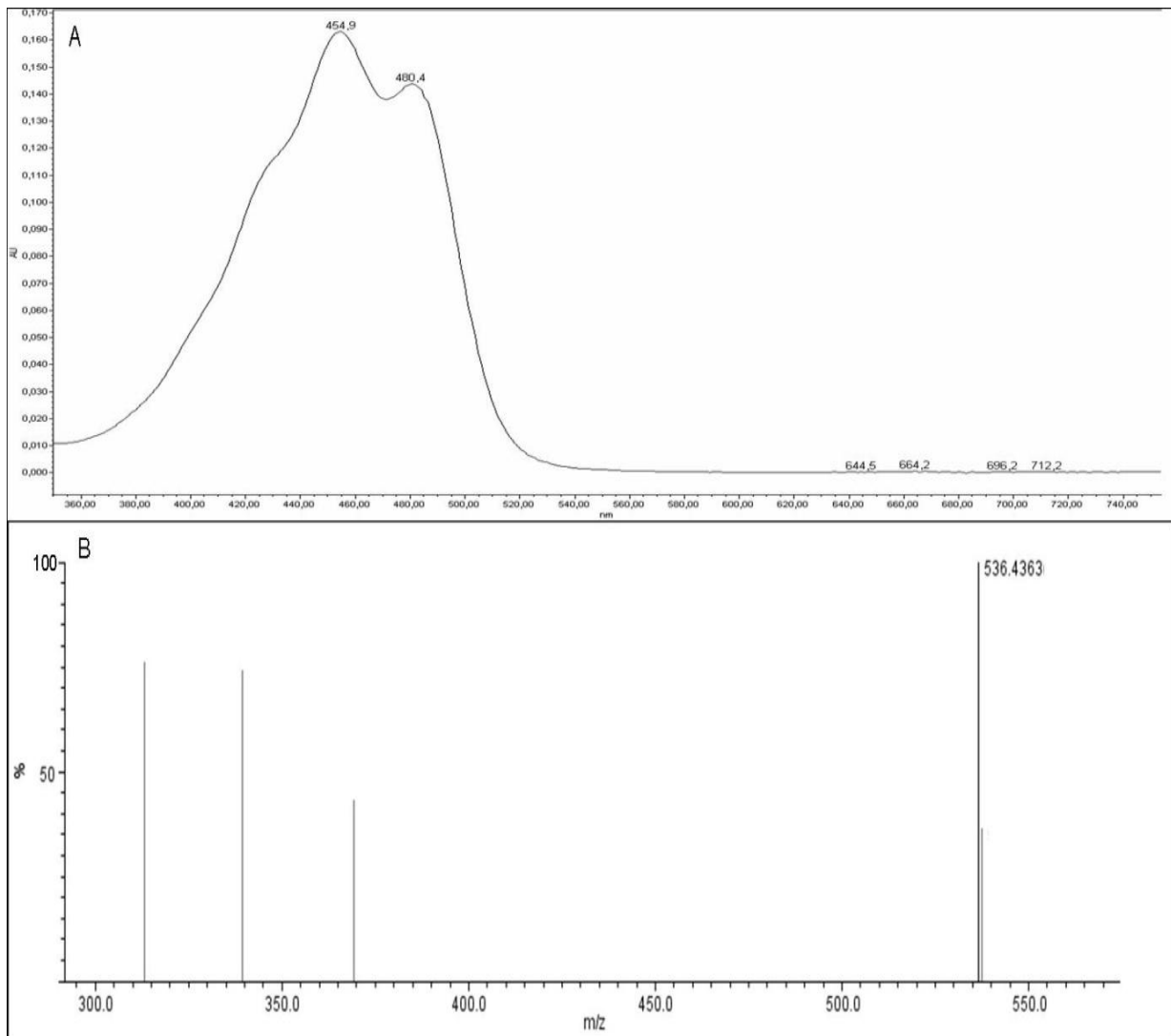


Figure S13. Cont.



**Figure S14.** UV-vis (A), high resolution MS (B) and MSMS (C) spectra of standard  $\beta$ -Carotene.

**Figure S15.** UV-vis (A) and high resolution MS (B) spectra of Fraction 8 ( $\beta$ -carotene).

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