

1 **Supplementary data**

2 **Figure S1.** MS<sup>1</sup>, MS<sup>2</sup> and structure of fucoxanthin in *S. cristaefolium*

3 **Figure S2.** MS<sup>1</sup>, MS<sup>2</sup> and structure of 2-monoolein in *S. cristaefolium*

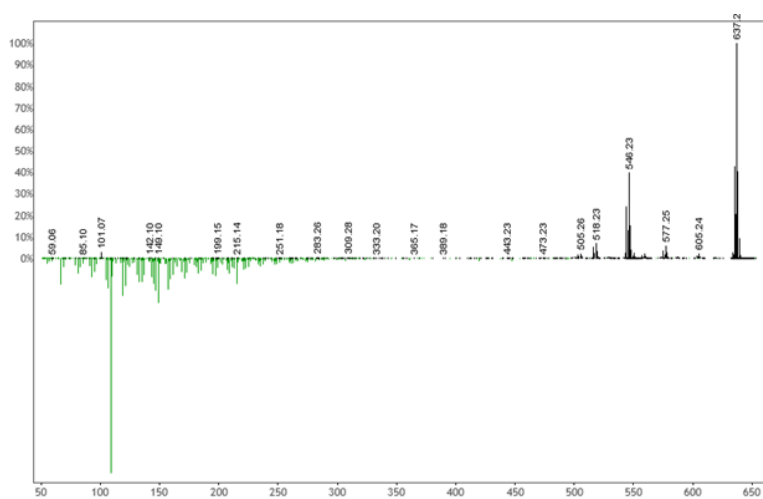
4 **Figure S3.** MS<sup>1</sup>, MS<sup>2</sup> and structure of 13-docosenamide in *S. cristaefolium*

5 **Figure S4.** Extracted chromatogram, MS<sup>1</sup> and MS<sup>2</sup> of Unidentified 1

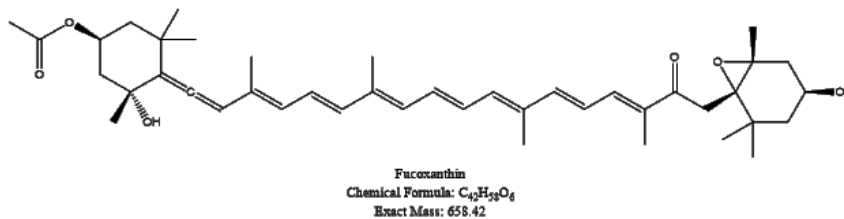
6 **Figure S5.** Extracted chromatogram, MS<sup>1</sup> and MS<sup>2</sup> of Unidentified 2

7 **Figure S6.** Extracted chromatogram, MS<sup>1</sup> and MS<sup>2</sup> of Unidentified 3

8 **Table S1.** Primer specifications



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18 (b)

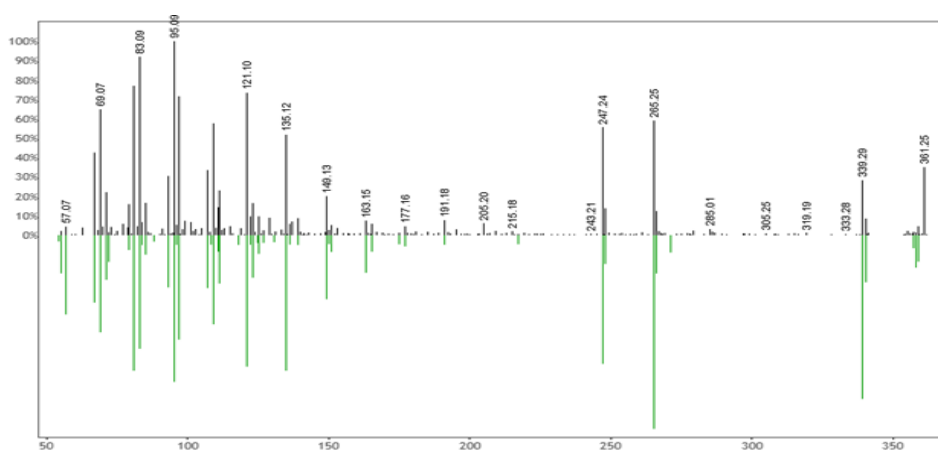
19 **Figure S1.** Identification of fucoxanthin from *Sargassum cristaefolium* with m/z 659.4306.

20 (a) Mirror match MS<sup>2</sup> data with MASST spectrum from GNPS library (green line) with

21 cosine score of 0.84. (b) fucoxanthin structure, formula, and exact mass.

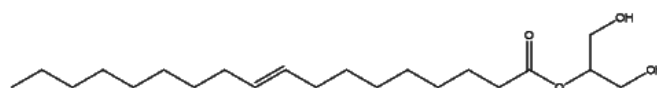
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(a)



2-Monoolein  
Chemical Formula:  $C_{27}H_{48}O_4$   
Exact Mass: 356.29

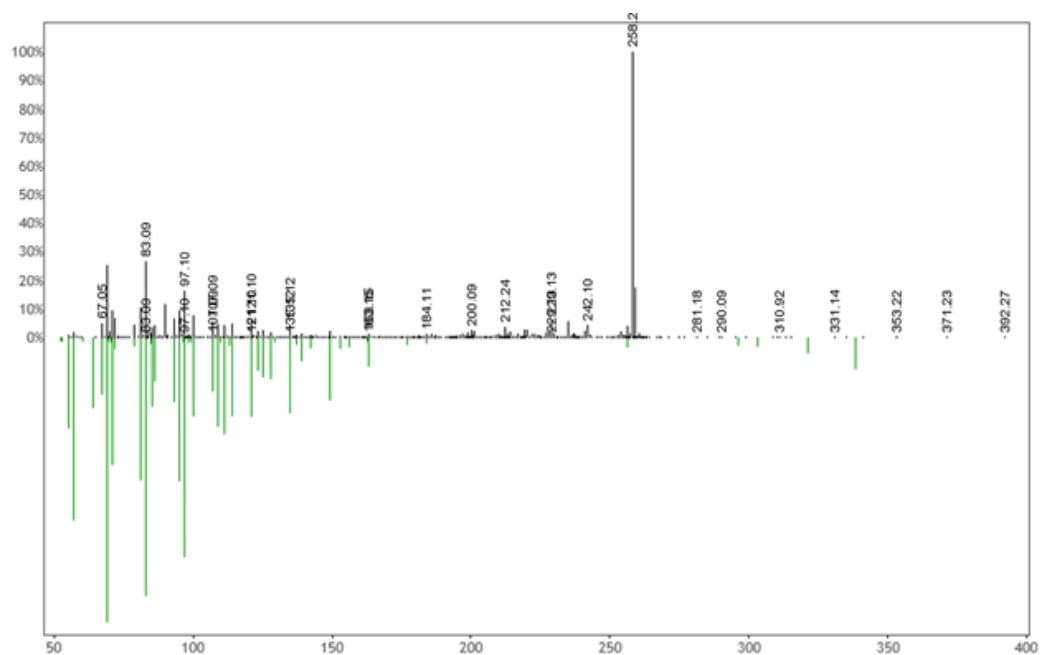
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(b)

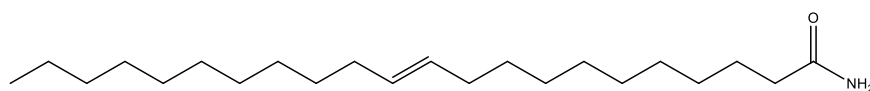
41 **Figure S2.** Identification of 2-monoolein from *Sargassum cristaefolium* with m/z 357.3001  
42 (a) Mirror match  $MS^2$  data with MASST spectrum from GNPS library (green line) with  
43 cosine score of 0.93. (b) 2-monoolein structure, formula, and exact mass.

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(a)



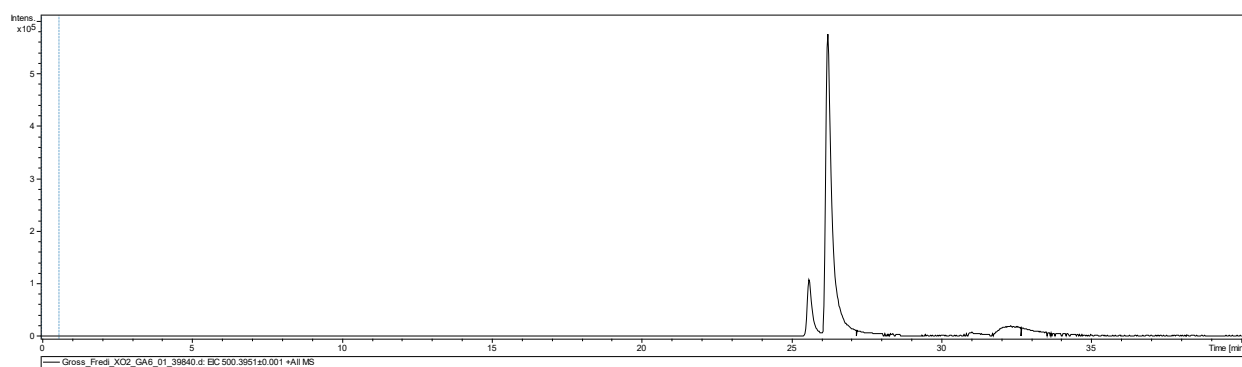
13-docosenamide  
Chemical Formula:  $C_{22}H_{43}NO$   
Exact Mass: 337.33

(b)

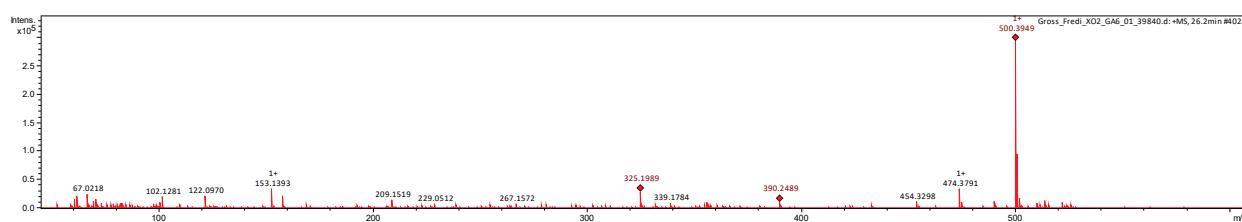
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**Figure S3.** Identification of 13-docosenamide from *Sargassum cristaefolium* with  $m/z$  338.3417. (a) Mirror match  $MS^2$  data with MASST spectrum from GNPS library (green line) with cosine score of 0.79. (b) 13-docosenamide structure, formula, and exact mass.

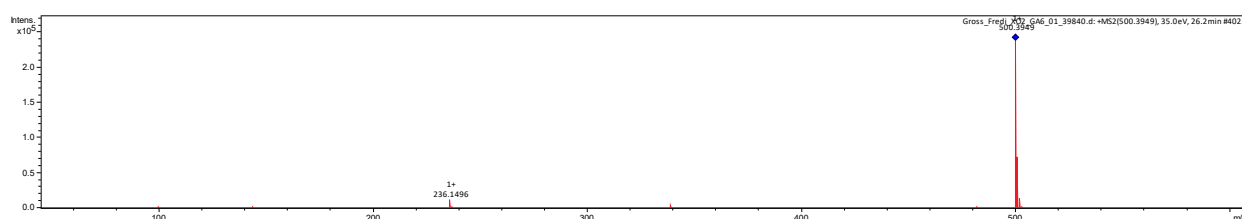
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90 **Figure S4.** From up to down extracted chromatogram, MS<sup>1</sup> and MS<sup>2</sup>, respectively, of  
91 unknown compound with m/z 500.3951

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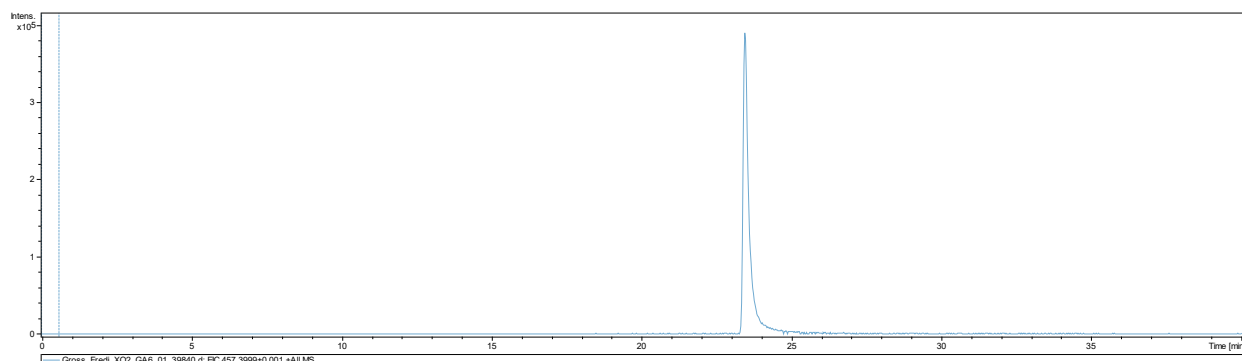
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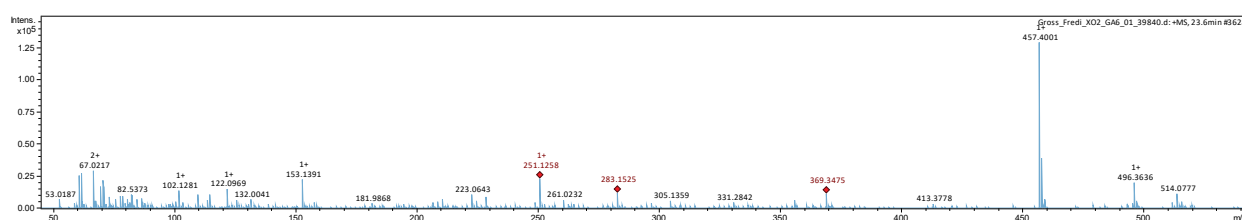
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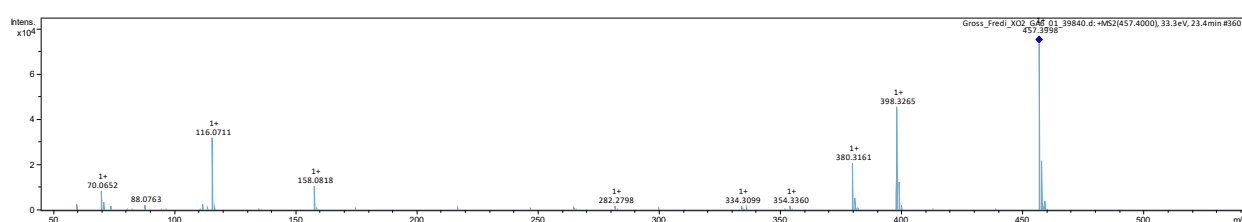
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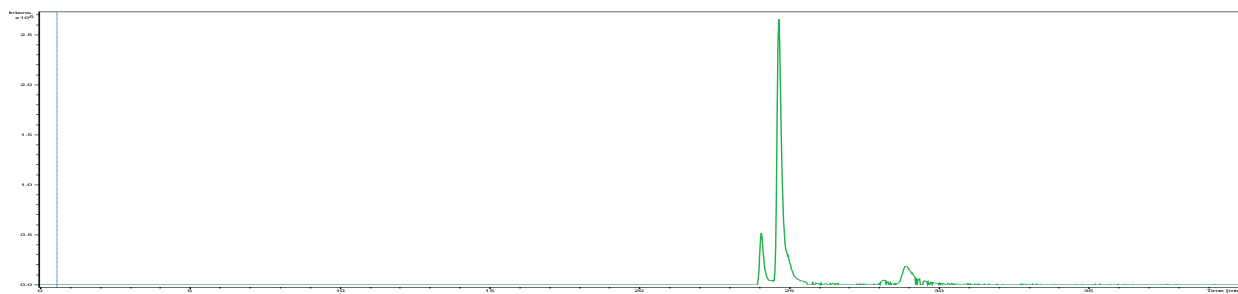


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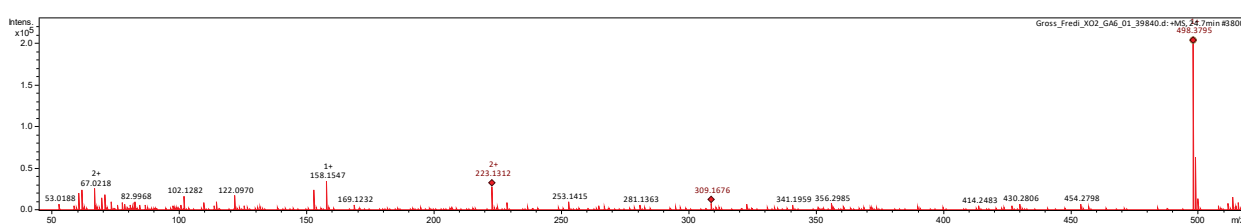
111 **Figure S5.** From up to down extracted chromatogram, MS1 and MS2, respectively, of  
112 unknown compound with m/z 457.3998

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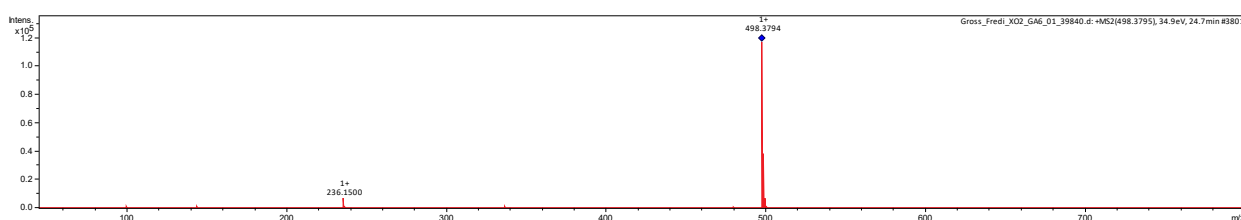
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134 **Figure S6.** From up to down extracted chromatogram, MS1 and MS2, respectively, of  
135 unknown compound with m/z 498.3794.

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154**Table S1. Primer Specifications**

<b>Primer</b>	<b>Sequence</b>	<b>Product size</b>
TNF- $\alpha$ F	AGCCCCCAGTCTGTATCCTT	212 bp
TNF- $\alpha$ R	CTCCCTTTGCAGAACTCAGG	
IL-6 F	GAGCCCACCAAGAACGATAG	229 bp
IL-6 R	TCCACGATTTCCCAGAGAAC	
IL-10 F	CCAGGGAGATCCTTTGATGA	173 bp
IL-10 R	CATTCCCAGAGGAATTGCAT	
Gapdh	AACTTTGGCATTGTGGAAGG	223 bp
Gapdh	ACACATTGGGGGTAGGAACA	

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