Supporting Information

Detection of SO₂ derivatives using a new chalco-coumarin derivative in a cationic micellar media. Application to real samples.

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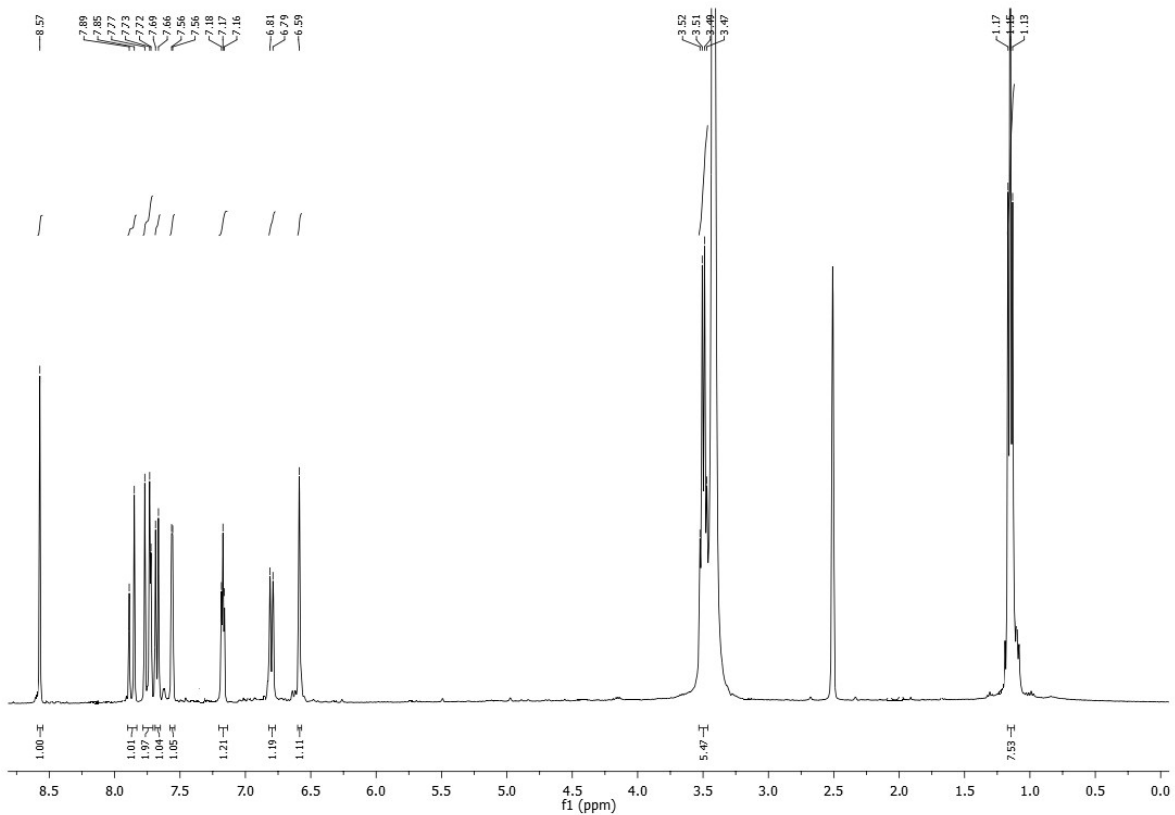
Figure S1. ^{1}H NMR (DMSO-d_6) spectrum of **ChC16**

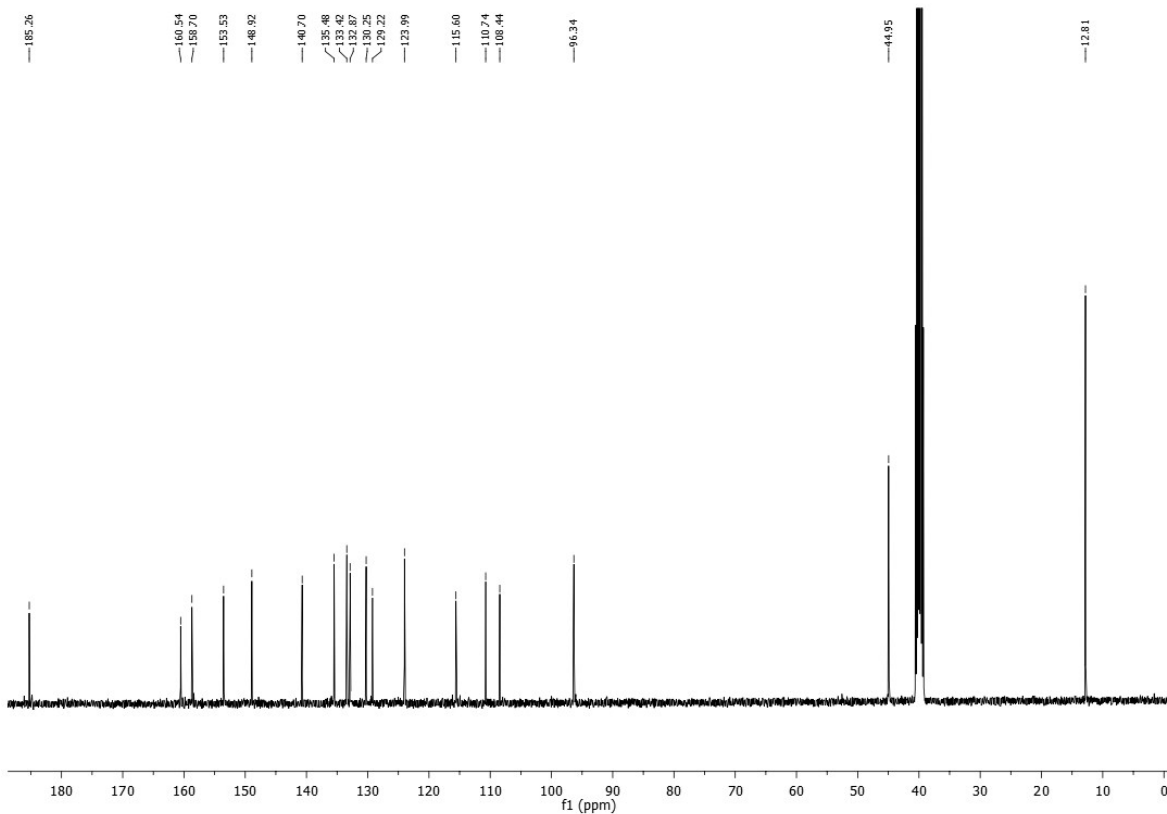**Figure S2**. ^{13}C NMR (DMSO-d_6) spectrum of **ChC16**.
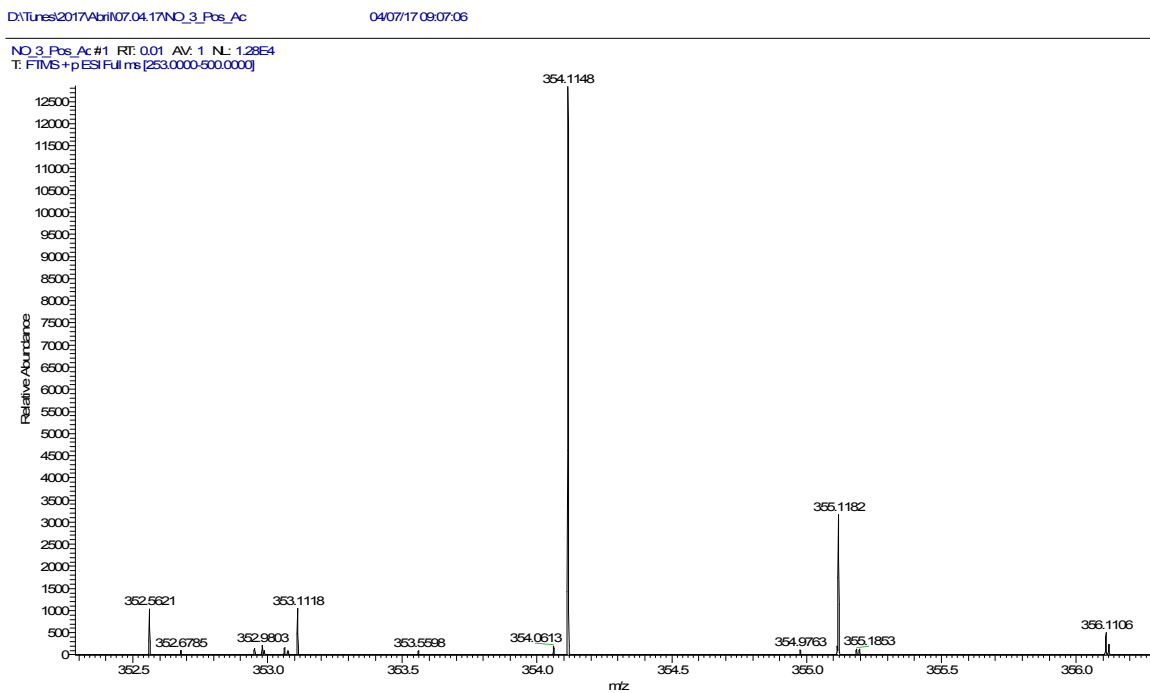

Figure S3. HRMS (ESI) of **ChC16** (Positive mode [M+1]=354.1148 at 140000 resolution).
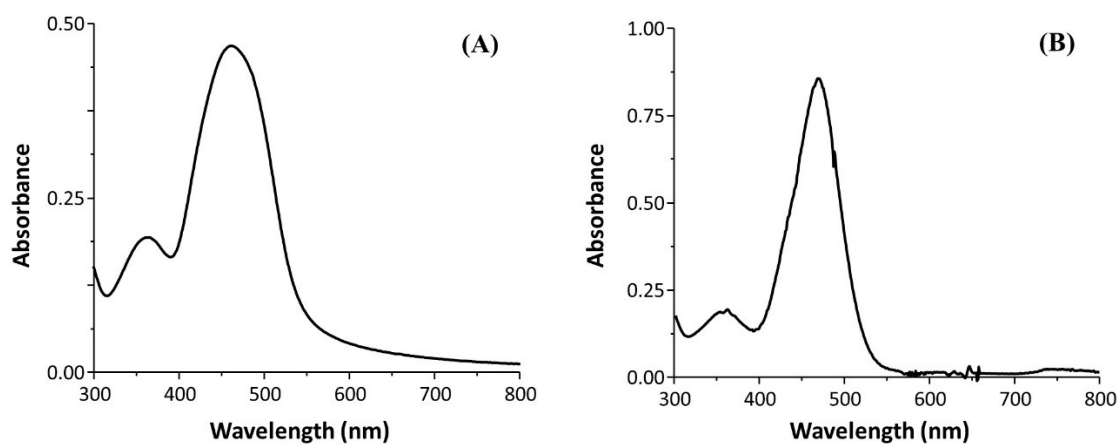
Figure S4. (A) UV-vis spectrum of **ChC16** and **(B)** UV-vis spectrum of **ChC16** in presence of CPB (1.5 mM).
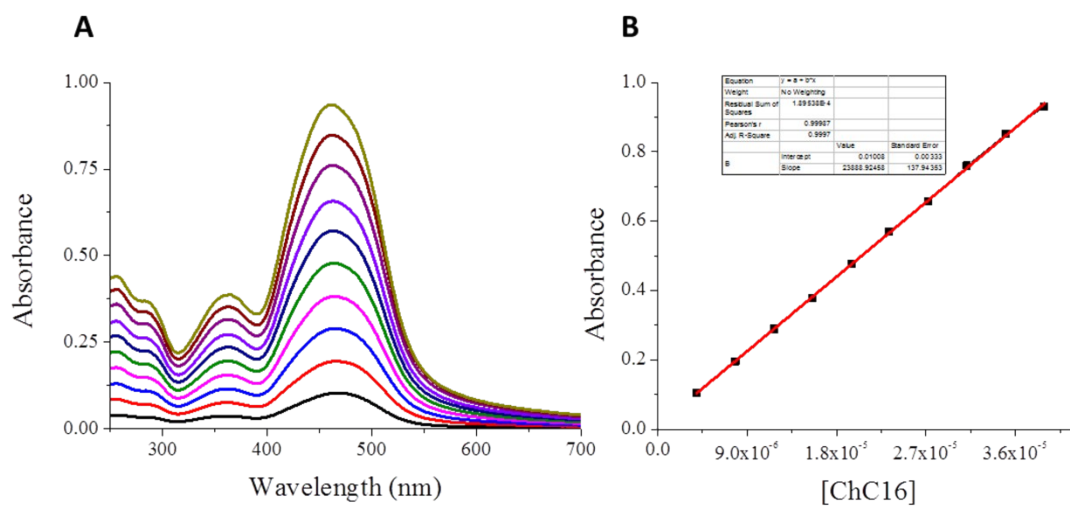

Figure S5. (A) UV-Vis spectra of **ChC16** at different concentration; **(B)** Plot of absorbance of probe **ChC16** against its concentration from 1 to 4.5 μM.
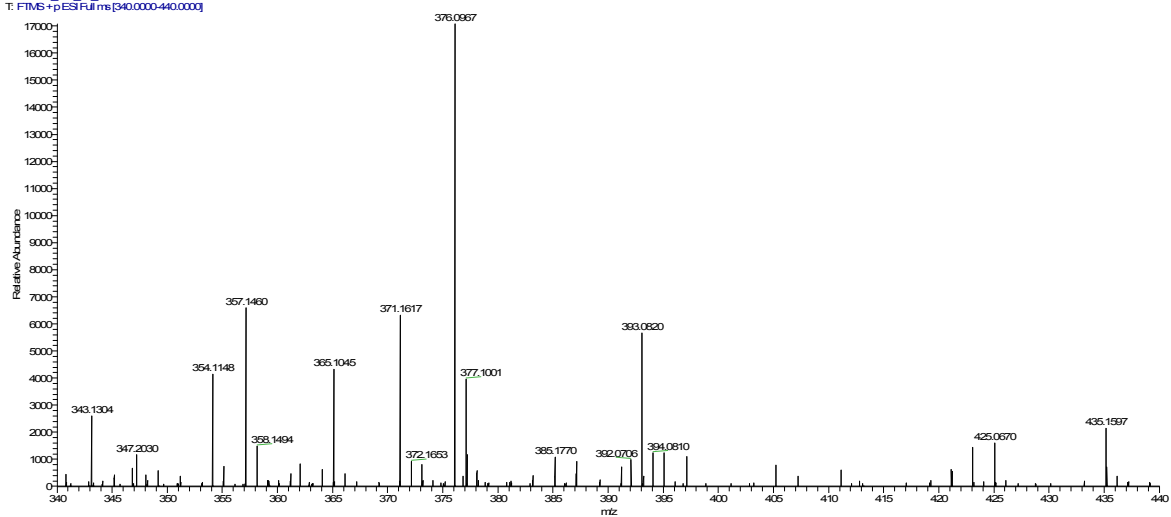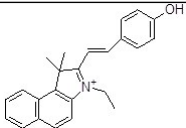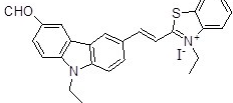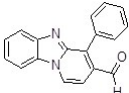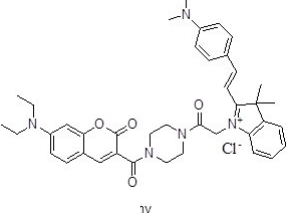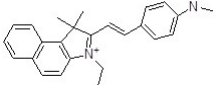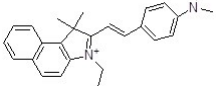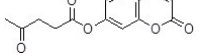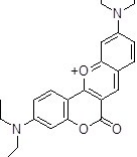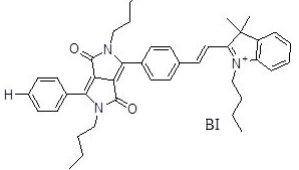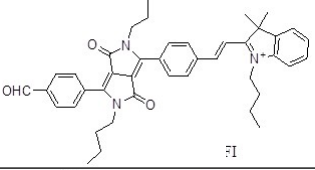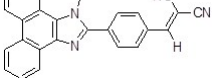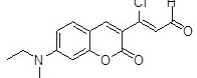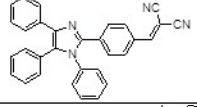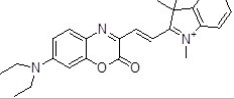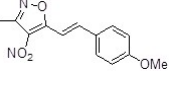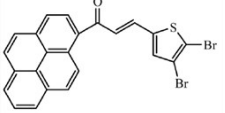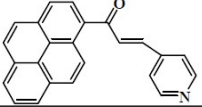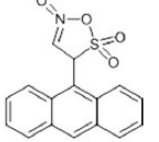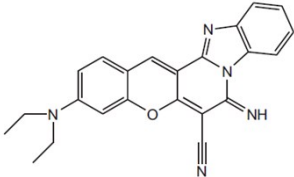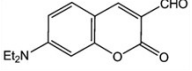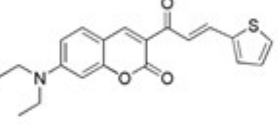
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T: FTMS + p ESI Full ms [340.0000-440.0000]

Figure S6. HRMS (ESI) of **ChC16**-SO$_3$H (Positive mode [M+1]=435.1597 at 140000 resolution).

Table S1. Comparative summary of different probes reported by SO$_2$-derivatives.

Probe	Molecule	Detection Limit	Response Time	Applications	References
1		1.39 nM	30 min	Living cell Bioimaging	1
2		28 nM	140 s	Living cell and environment	2
3		10.6 nM	10 s	Dry white wine	3
4		12.85 nM	180 s	Living cell imaging	4
5		25 nM	60 s	Living cell imaging	5
6		58.6 nM	90 s	Living cell imaging	6
7		85 nM	30 s	Living cell imaging	7
8		390 nM	<5 s	Living cell imagining, Brain Tissues and Zebrafishes	8
9		1730 nM	4 min	Cancer cell	9
10		2340 nM	4 min	Cancer cell	9
11		3.5 nM	30 min	Cell and in vivo	10

12		8.8 nM	4 min	Bioimaging	[11]
13		7.4 nM	15 s	Food Sample and Living systems	[12]
14		87 nM	30s	Food and living cell	[13]
15		28.2 µM	30 min/30 min	Wine/Bioimaging	[14]
16		0.77 µM	2 min	Living cell imaging	[15]
17		1.9 nM	5 min	Living cell imaging	[16]
18		6.3 µM	30 min	Sugar	[17]
19		1.76 µM	2 min	Sugar	[18]
20		0.187 µM	2 min	Water Sugar	[19]
16		240 nM	15 min	Wine/ Bioimaging	This work

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