

Supporting Information

Stimuli Responsive hydrogel derived from Renewable Resource: Synthesis, Self-Assembly in water and application in drug delivery

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Table S1: Vegetable oil/Solvent used for gelation studies

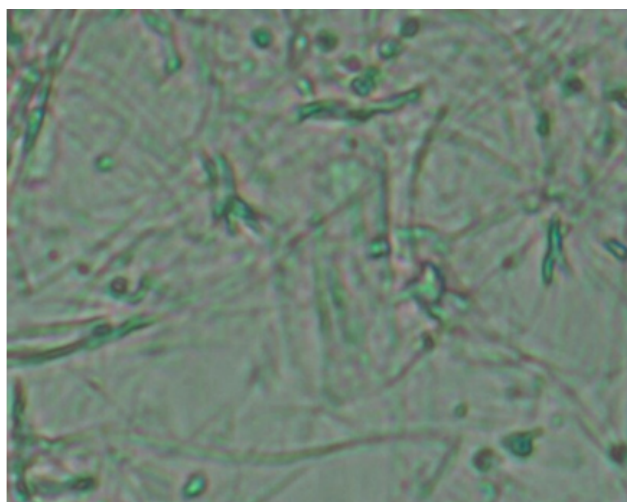
S.No	Oil/Solvent	4a	4b	4c
1	Hazelnut	P	P	P
2	Sesame	P	P	P
3	Jojoba	P	P	P
4	Olive	P	P	P
5	Soyabean	P	P	P
6	Linseed	P	S	S
7	Light paraffin	P	P	P
8	Heavy paraffin	P	PG	PG
9	Dodecanol	I	S	S
10	Ethanol	P	P	S
11	n-Butanol	P	S	S
12	Octanol	P	S	S
13	Toluene	I	I	I
14	Cyclohexane	I	I	I
15	n-heptane	I	I	I
16	Ethylene glycol	I	I	I
17	Ethanol+water	S	S	PG
18	DMSO	S	S	S
19	DMF	S	S	S
20	DMSO+water	S	PG	G
	DMF+water	S	S	S

S – Soluble; I – Insoluble; P – Precipitation; PG – Partial gel formation

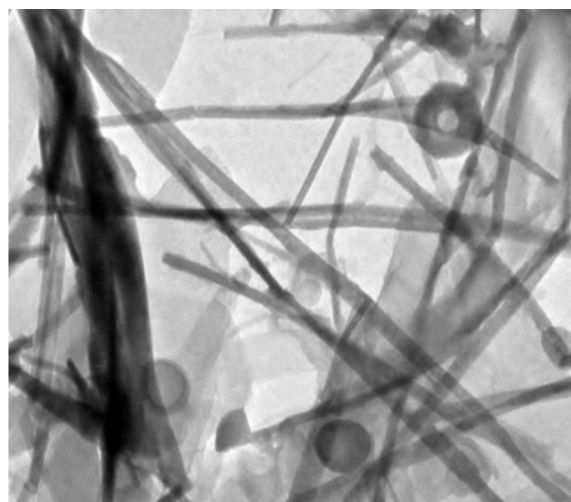
Calculated quantity of gelator was taken in a separate glass vial and about 20-30 μ L of DMSO was added. The vials were heated to dissolve the compounds and then distilled water was added drop wise. The formation of cloudy white solution was observed which was again heated to get clear homogeneous solution and cooled to room temperature to form hydrogel. Gel formation has been observed within 5-6 h. The thermoreversibility of these gels were confirmed by repeating heating and cooling experiments.



Figure S1 Photograph of the hybrid hydrogel formed from compound **4c**.



(a) Optical microscopy image of compound **4c** in acidic pH (pH = 4.0)



(b) HRTEM image of compound **4c** in acidic pH (pH = 4.0)

Figure S2. Morphology of self-assembled fibers formed from **4c** in acidic pH.

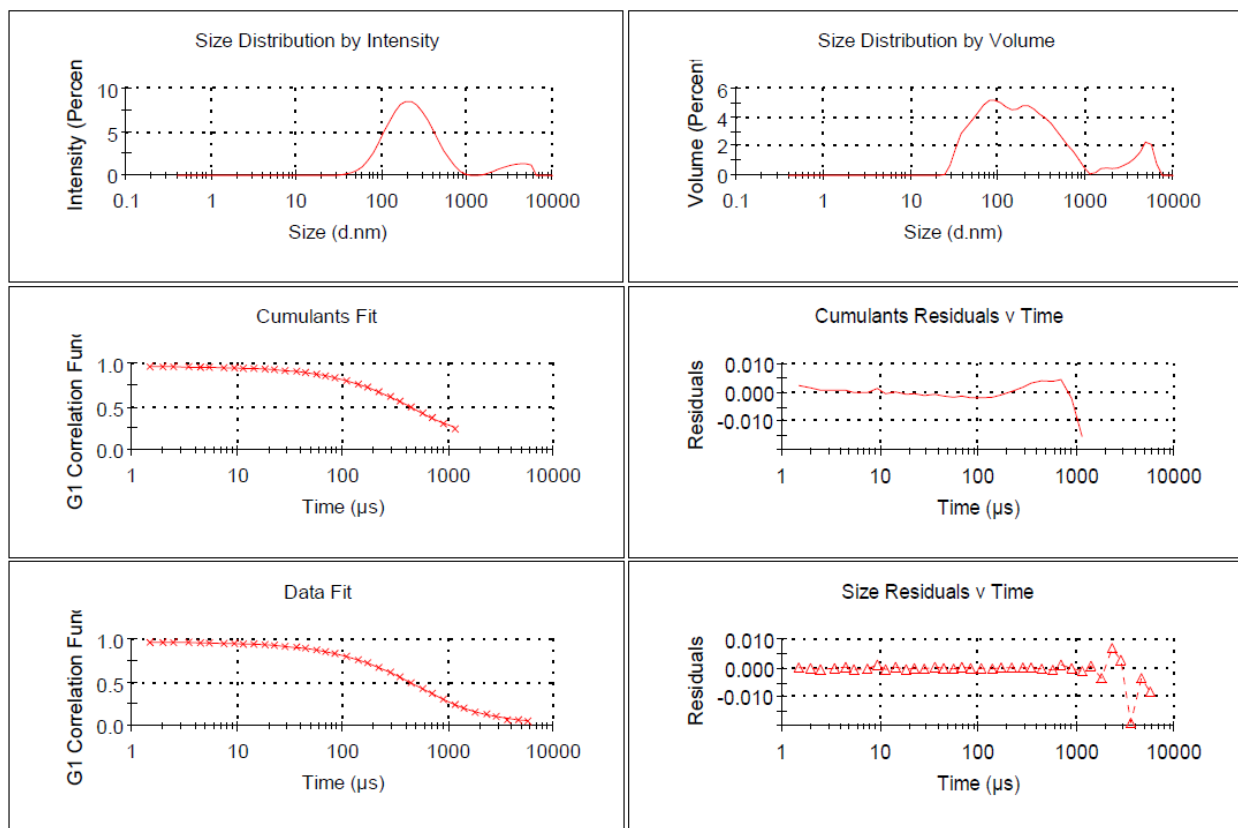


Figure S3 - Zetasizer report of **4c**, average diameter of micelles is 197nm

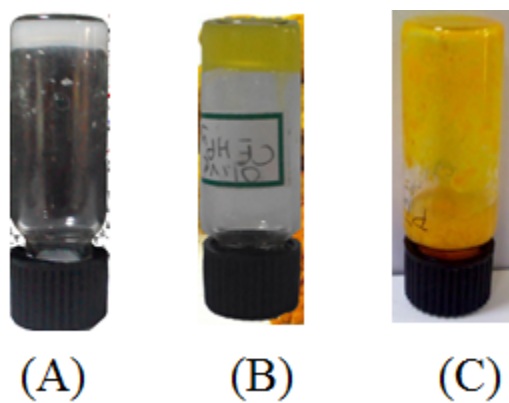


Figure S4. Photographs of the gel (a) without curcumin (B) with curcumin drug (C) curcumin loaded gel in acidic buffer pH 4

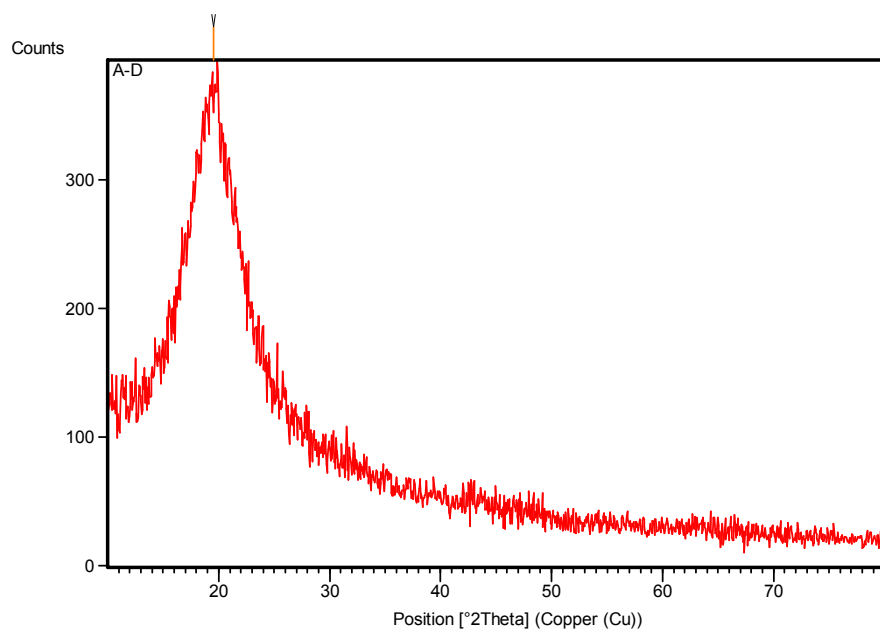


Figure S5. WAXD data for gel.

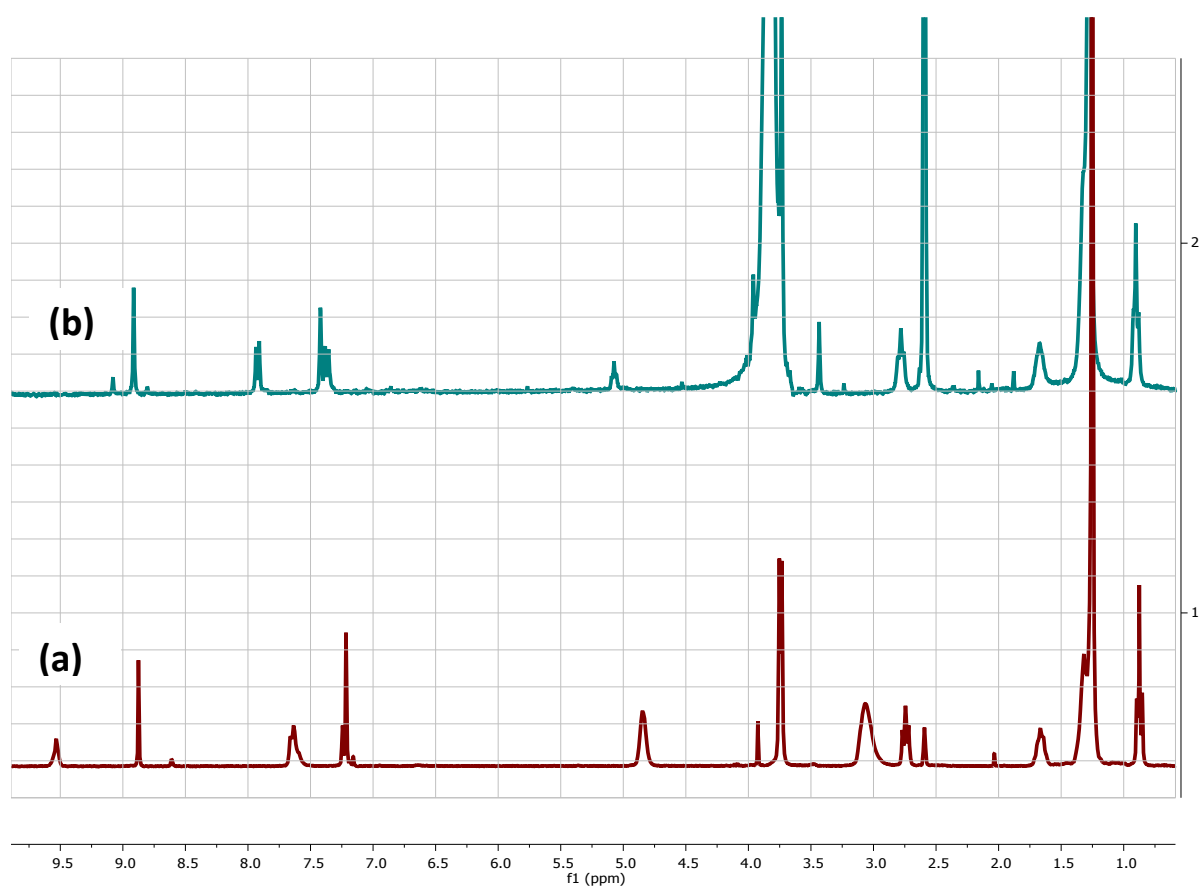
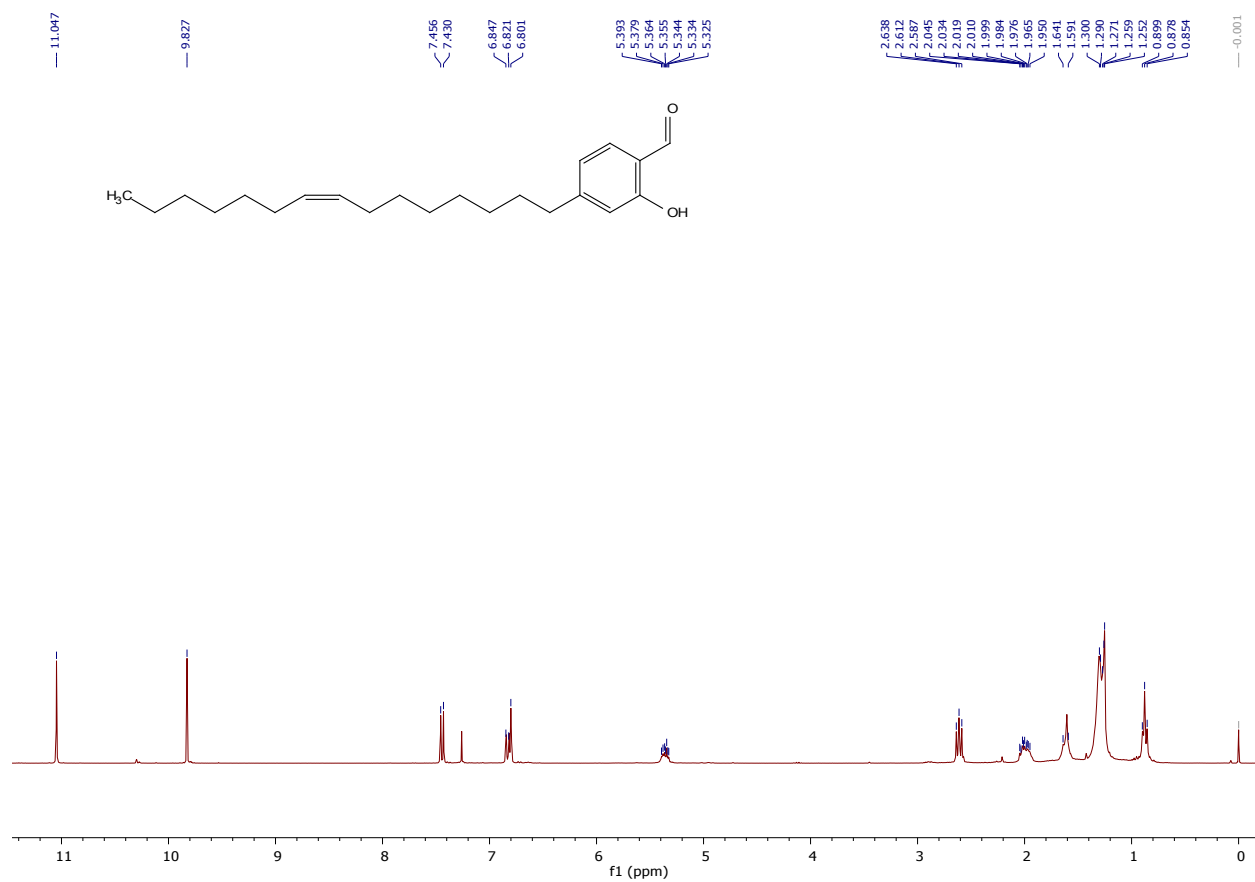
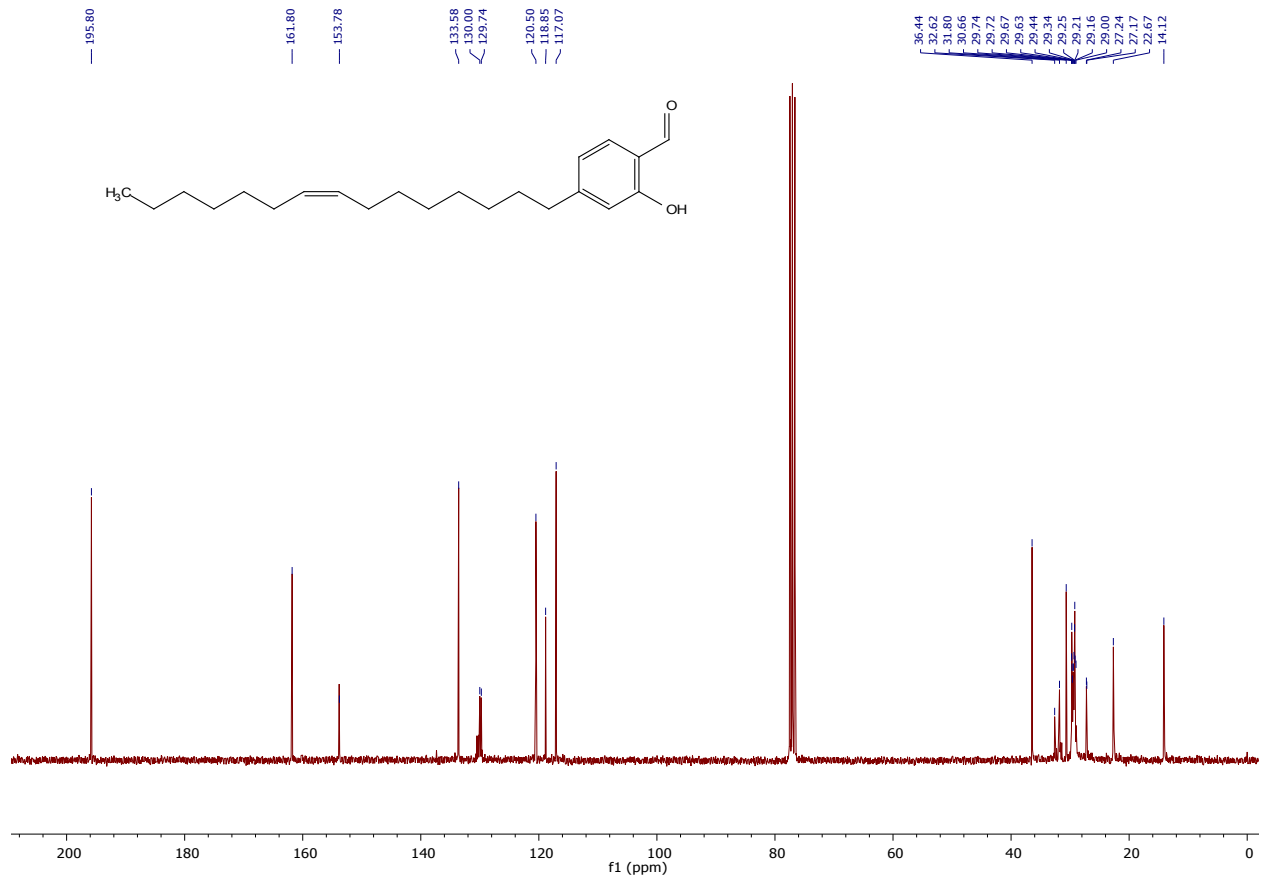
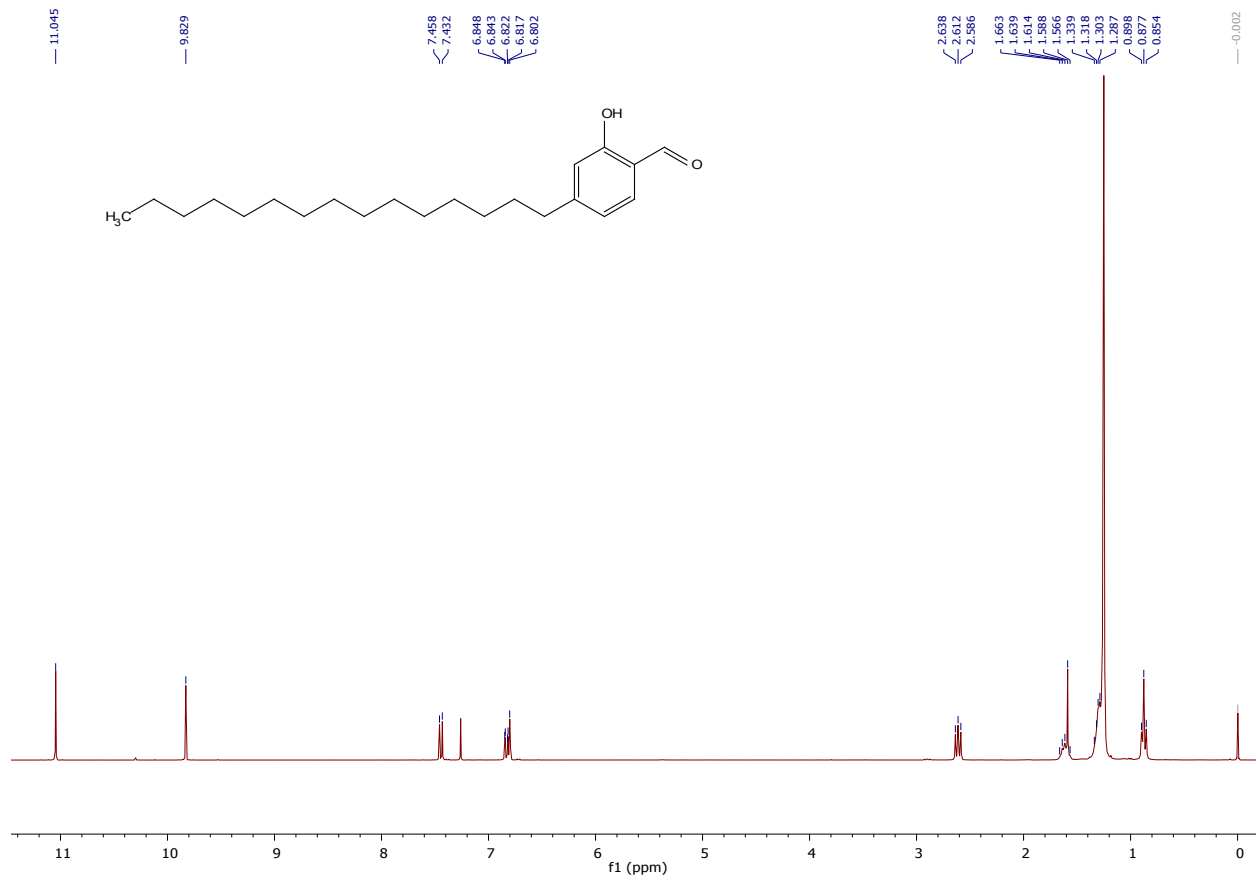


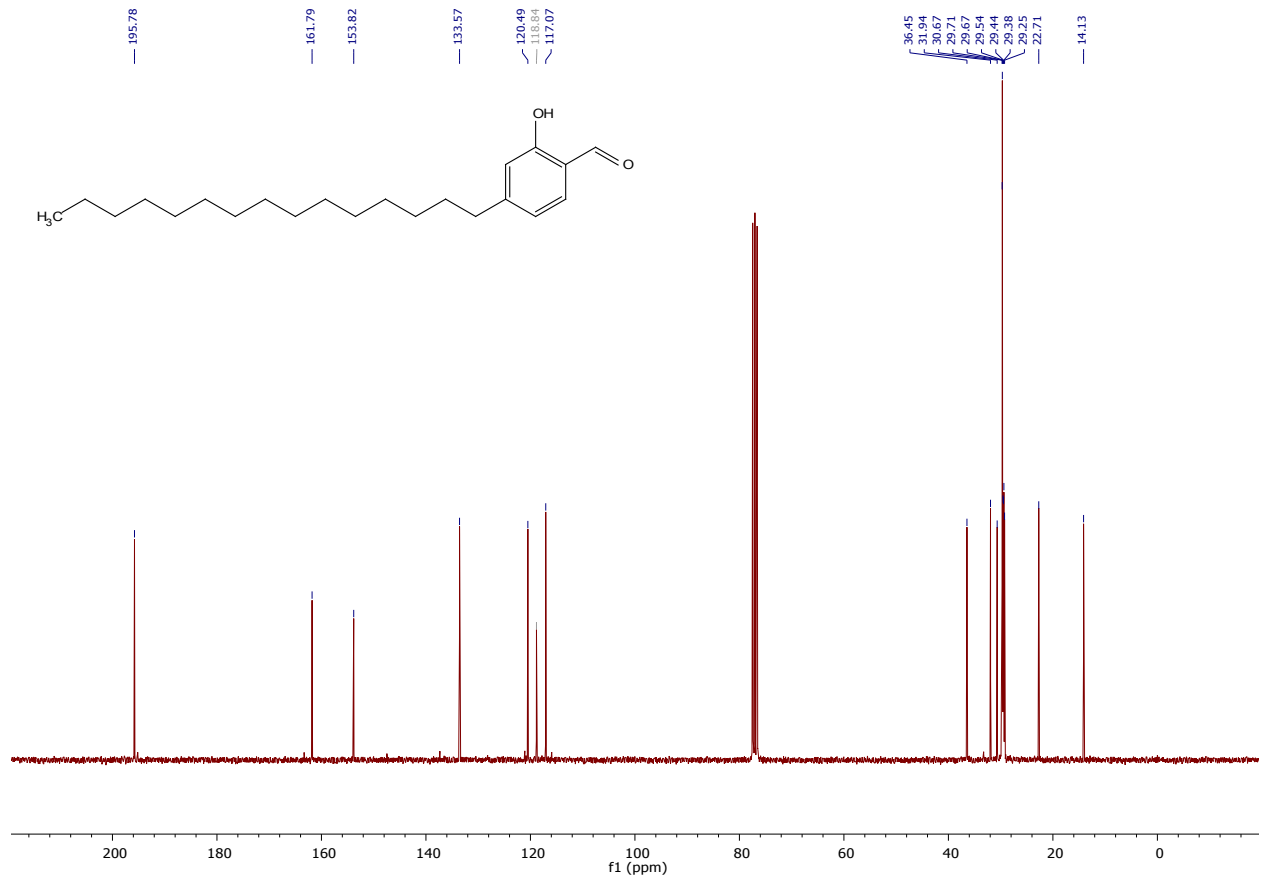
Figure S6. ¹H NMR spectra of (a) gelator, **4c** in DMSO-*d*₆ and (b) gel formed by **4c** in DMSO-*d*₆-D₂O (1:2 ratio).

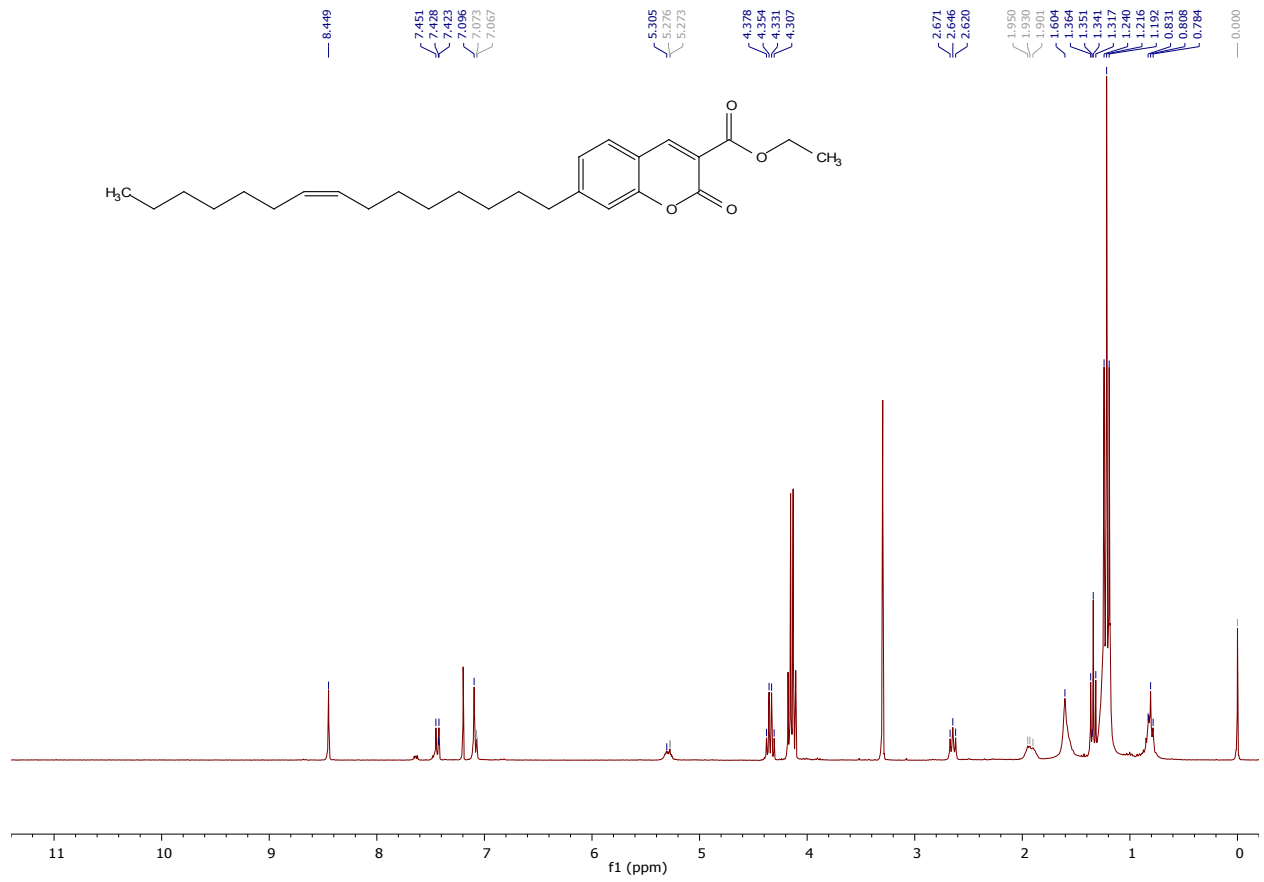
Copies of ^1H and ^{13}C spectra

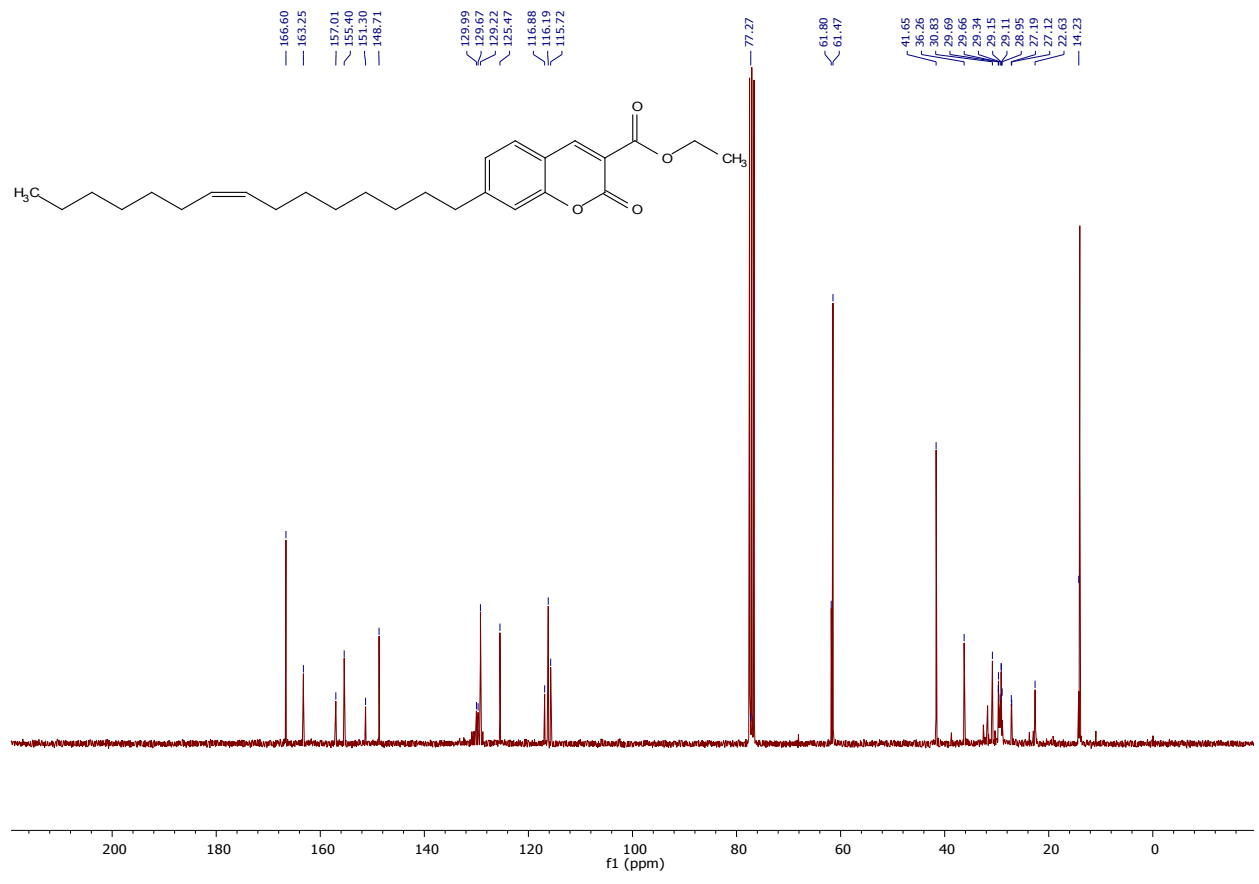


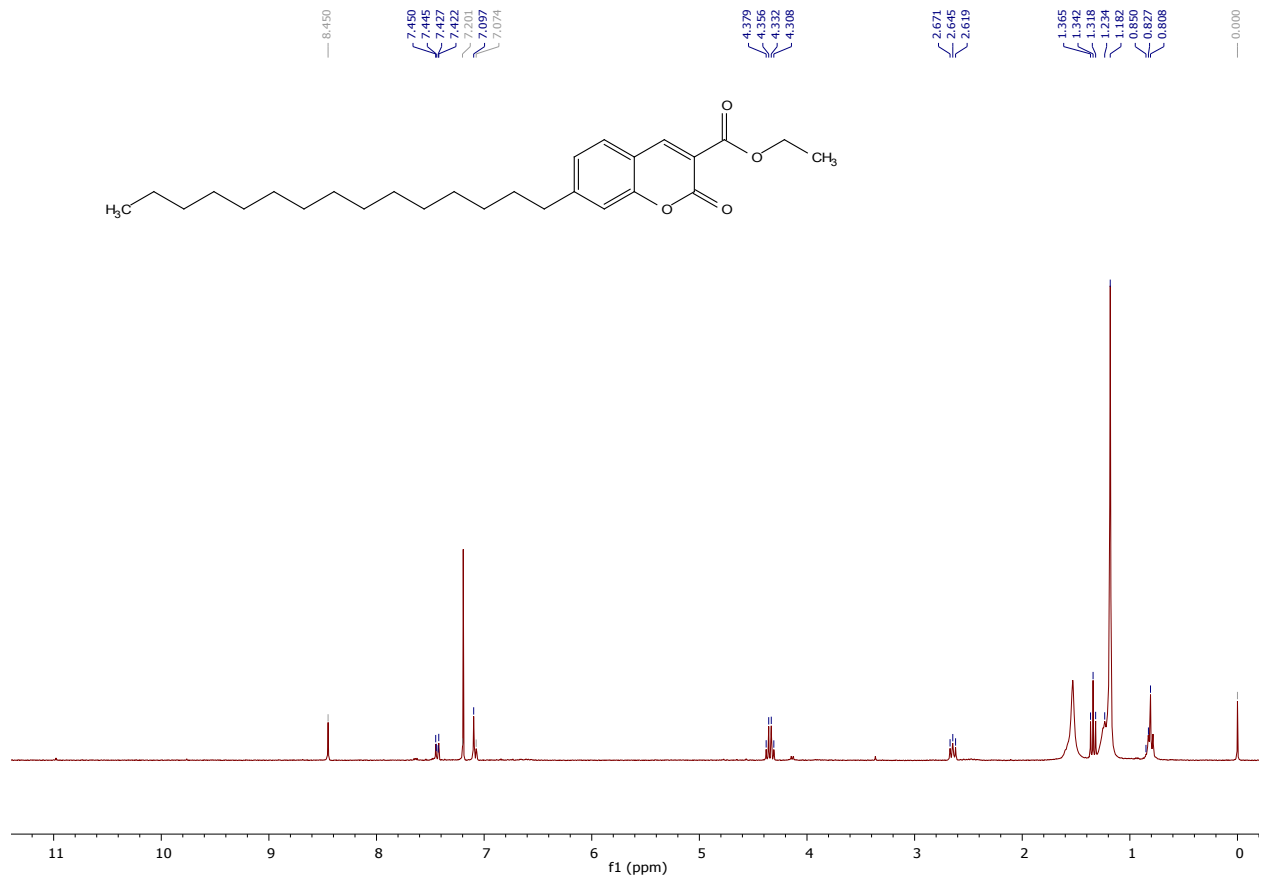


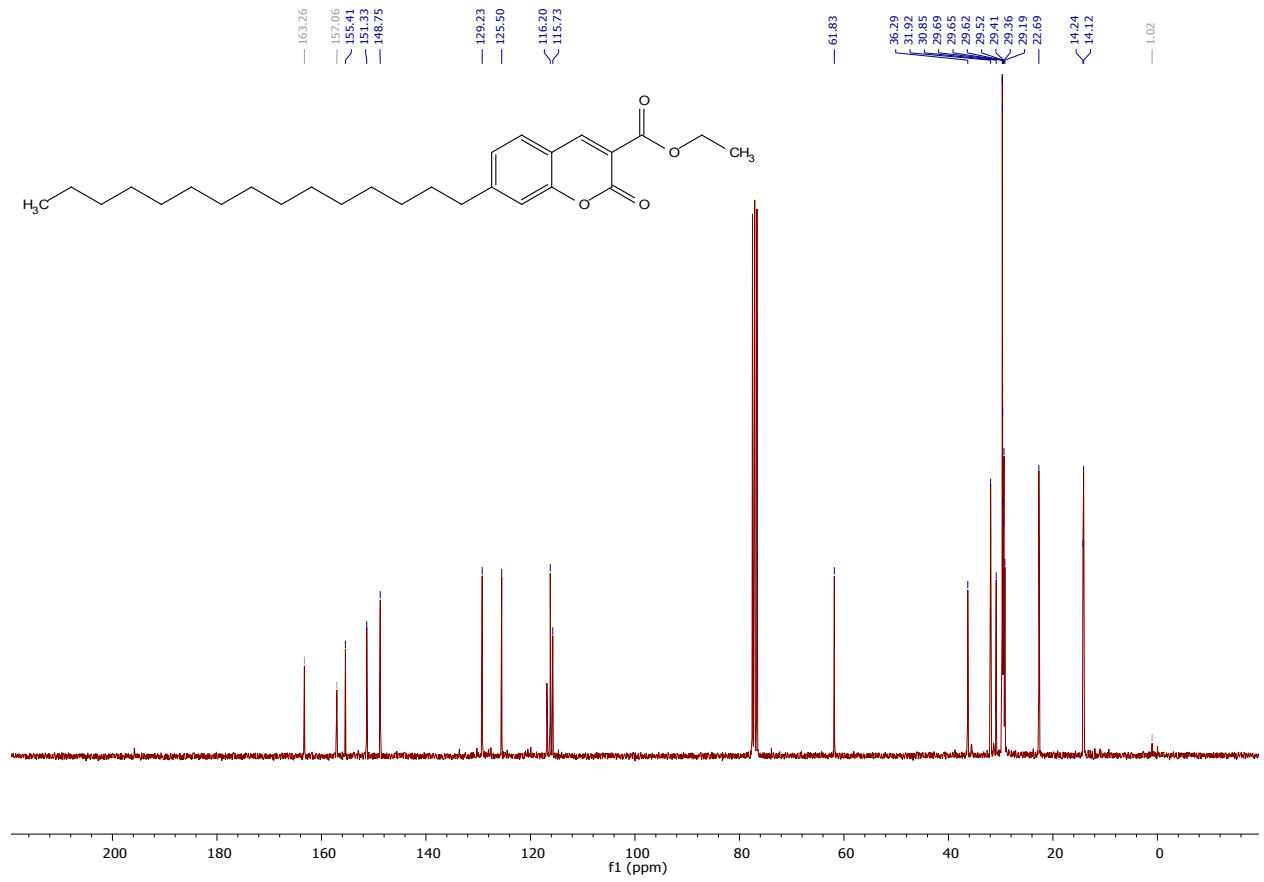


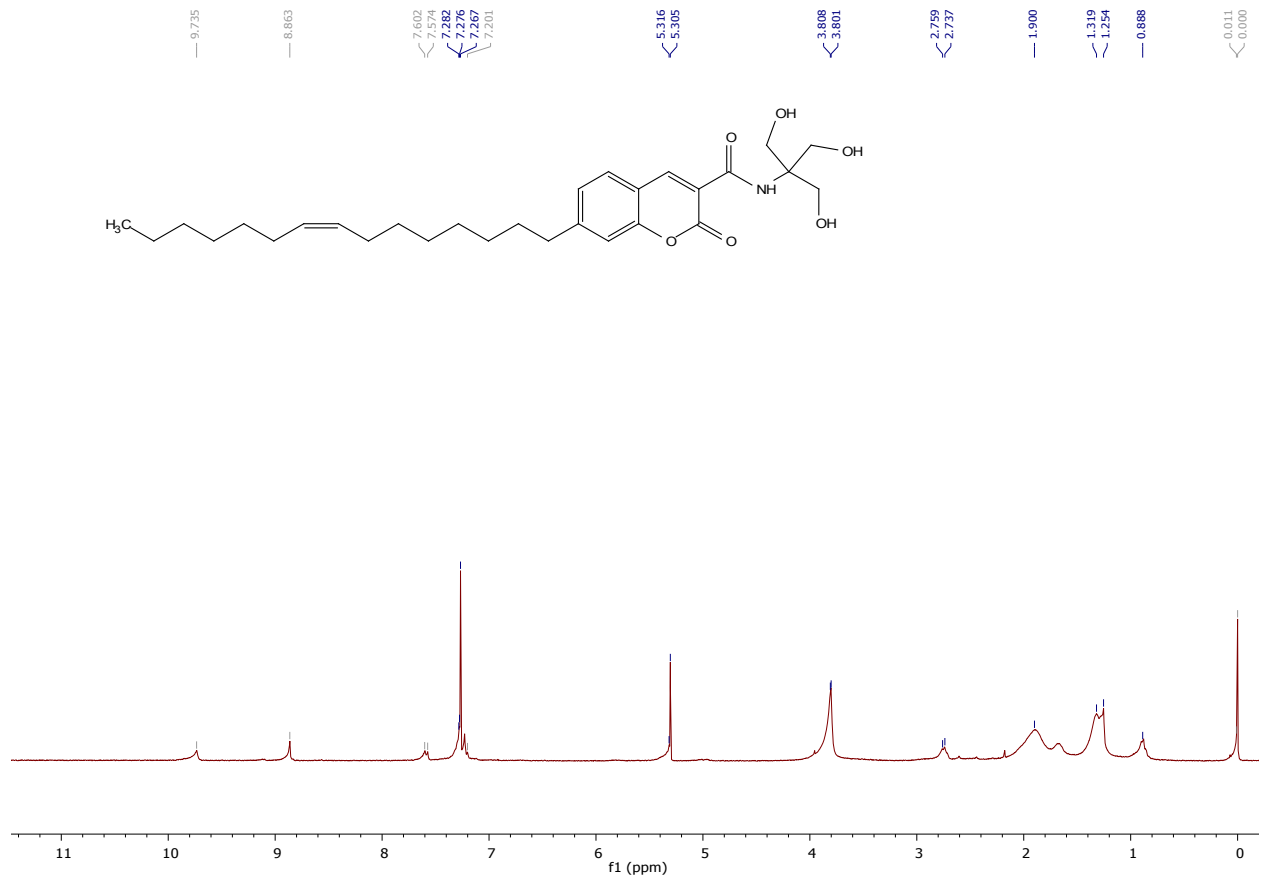


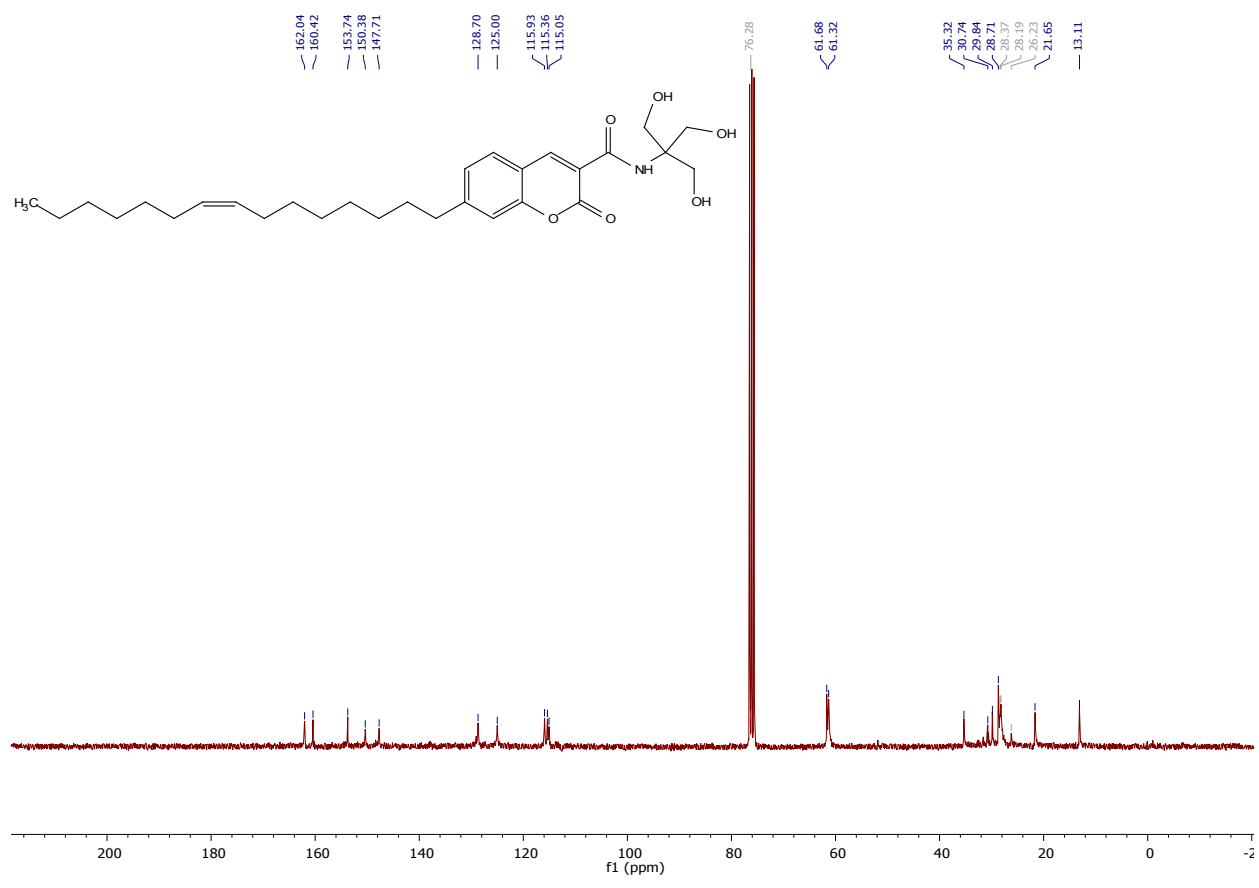


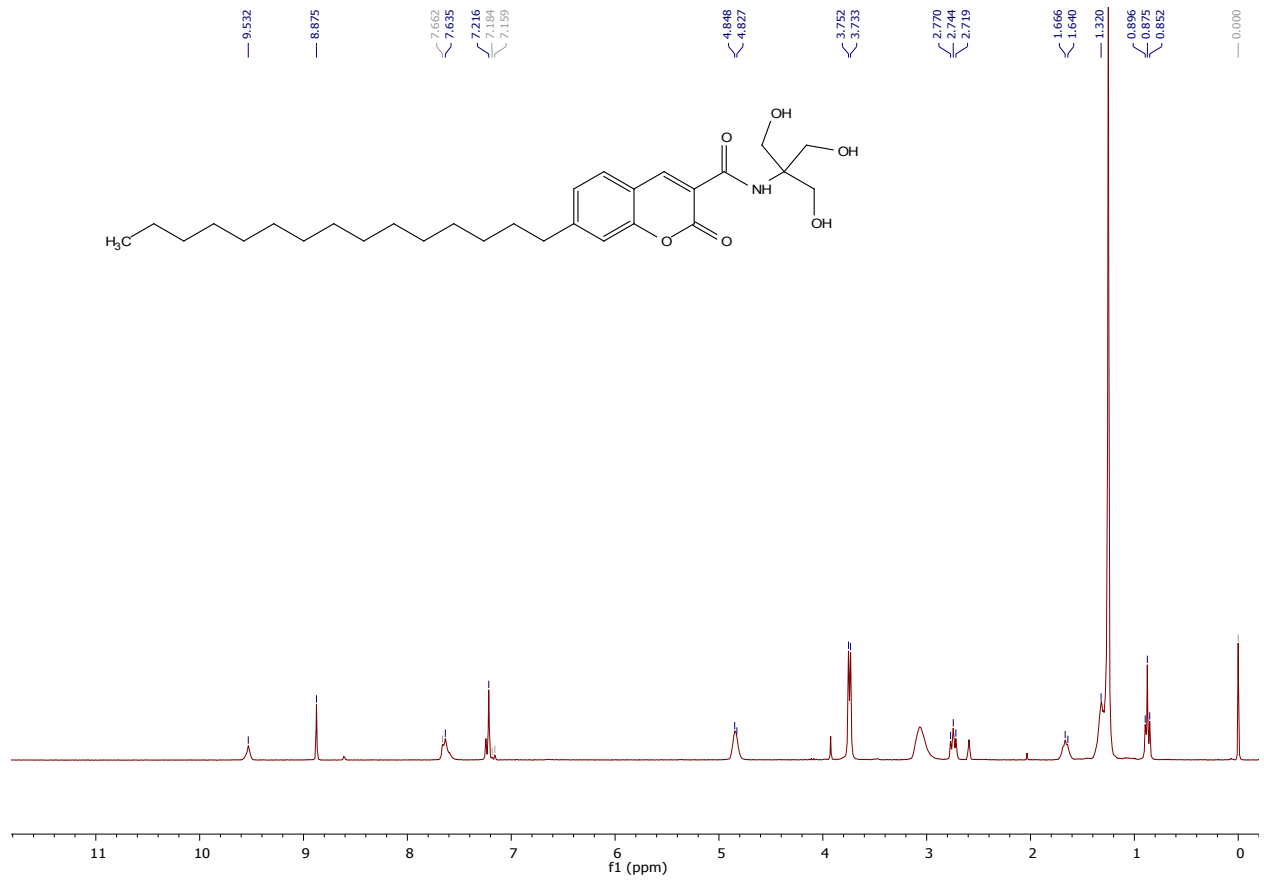


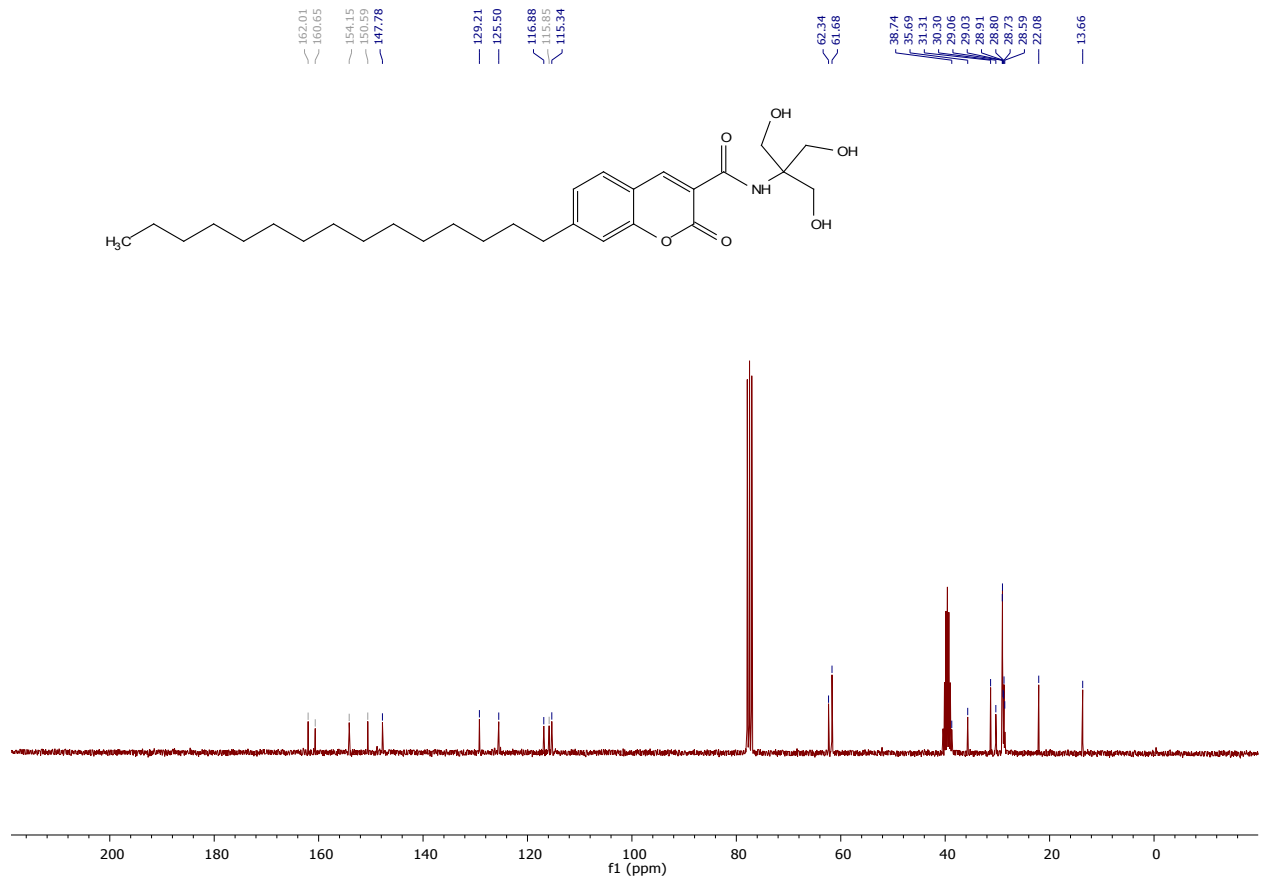


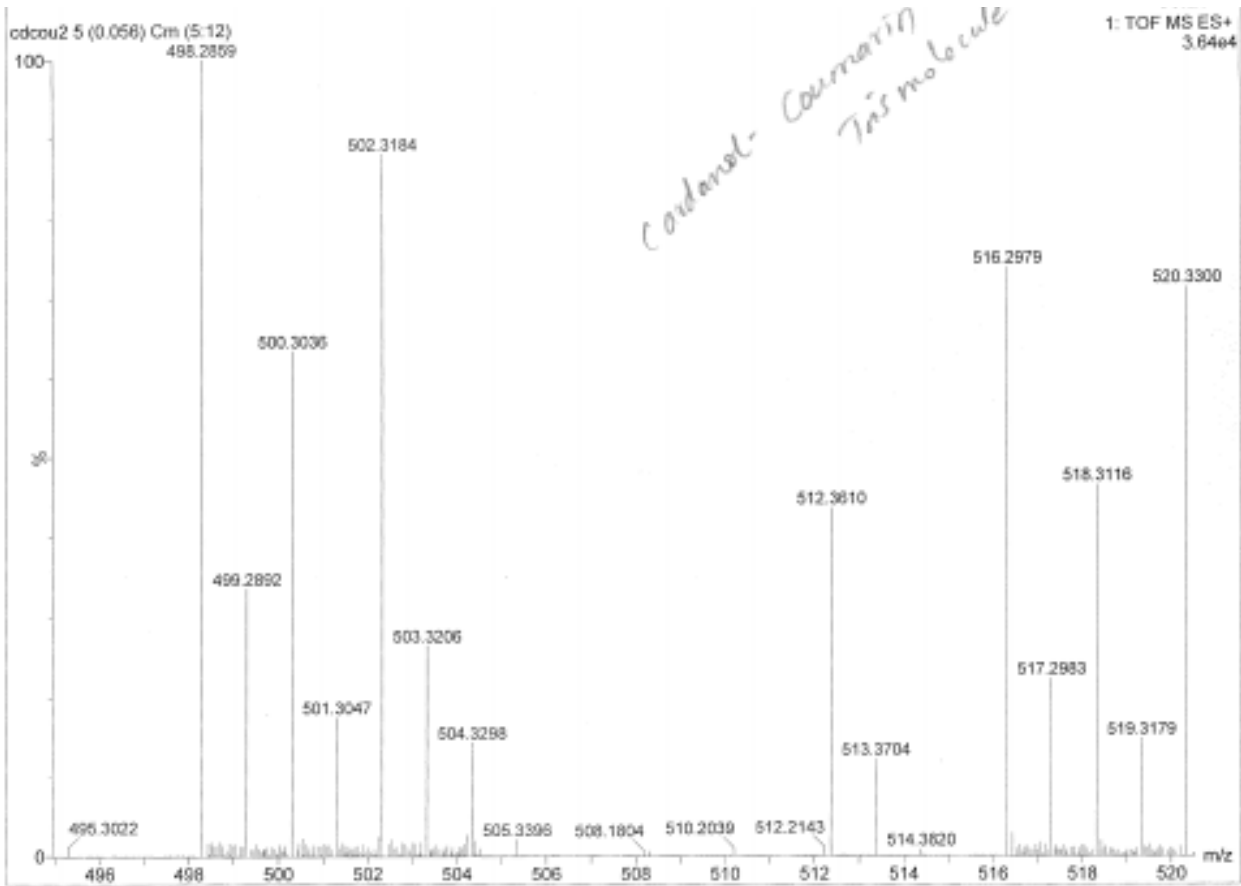




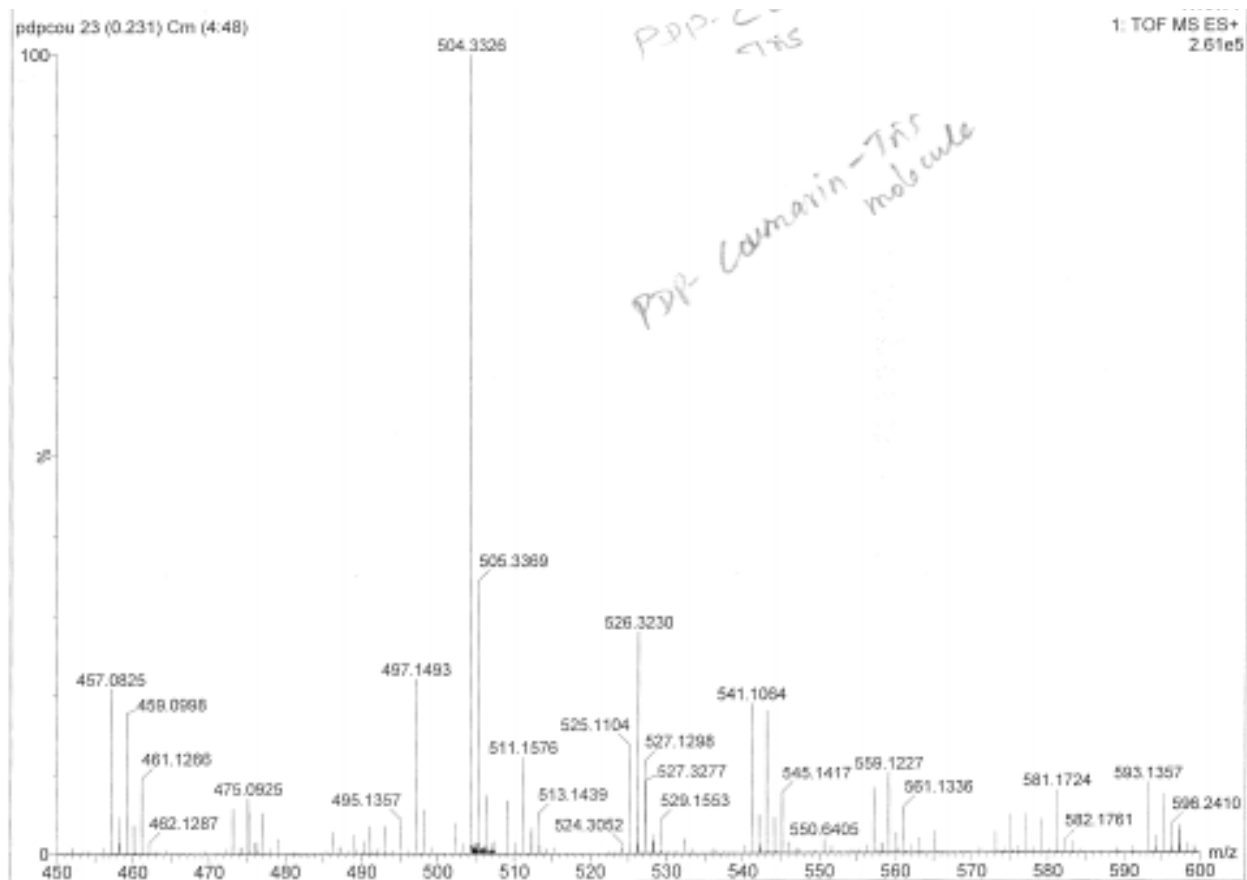








Mass spectra of compound 4b



Mass spectra of Compound 4c