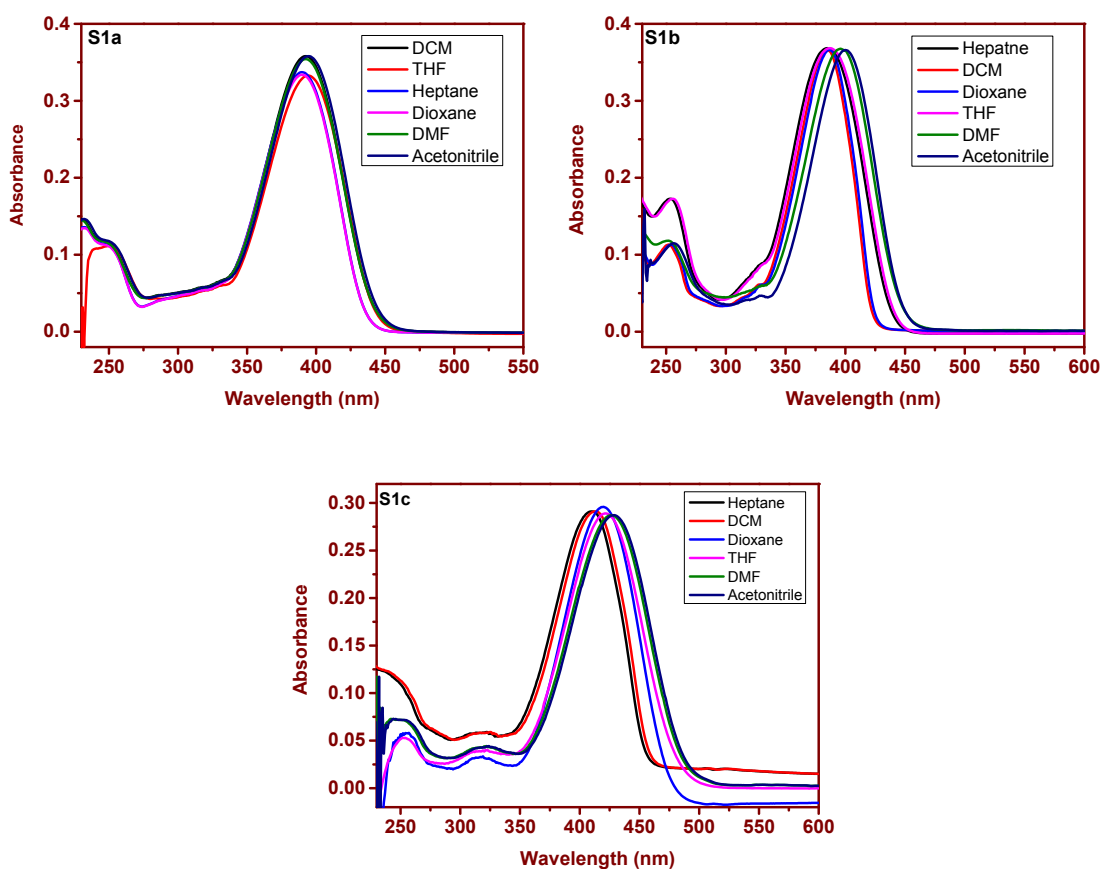


## Cholesterol-tethered AIEE Fluorogens: Formation of Self-Assembled Nanostructures.

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**Figure S1.** Absorption spectra of a) stilbene(1), b) stilbene-choelsterol(2) and c) diene(3) in homogeneous solvents

Table S1. Excitation data of (1) to (4) in organic solvents. The excitation data are uncorrected.

	Solvent	$\lambda_{ex}$ (nm)		Solvent	$\lambda_{ex}$ (nm)
<b>(1)</b>	Heptane	389	<b>(2)</b>	Heptane	384
	Dioxane	390		CH <sub>2</sub> Cl <sub>2</sub>	390
	THF	395		Dioxane	387
	CH <sub>3</sub> CN	392		CH <sub>3</sub> CN	385
	Water	399		Water	389
<b>(3)</b>	Heptane	420	<b>(4)</b>	Heptane	411
	Dioxane	417		Dioxane	419
	THF	421		THF	419
	CH <sub>3</sub> CN	413		CH <sub>3</sub> CN	423
	Water	421		Water	422

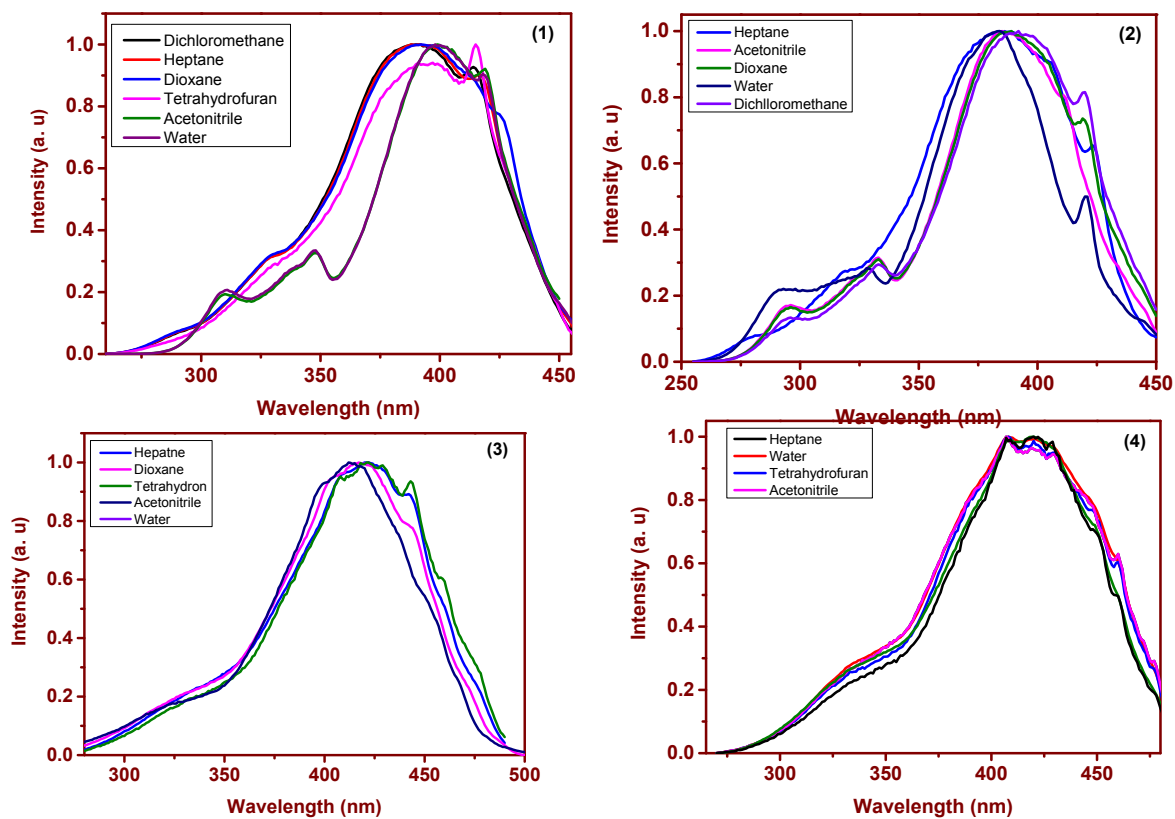
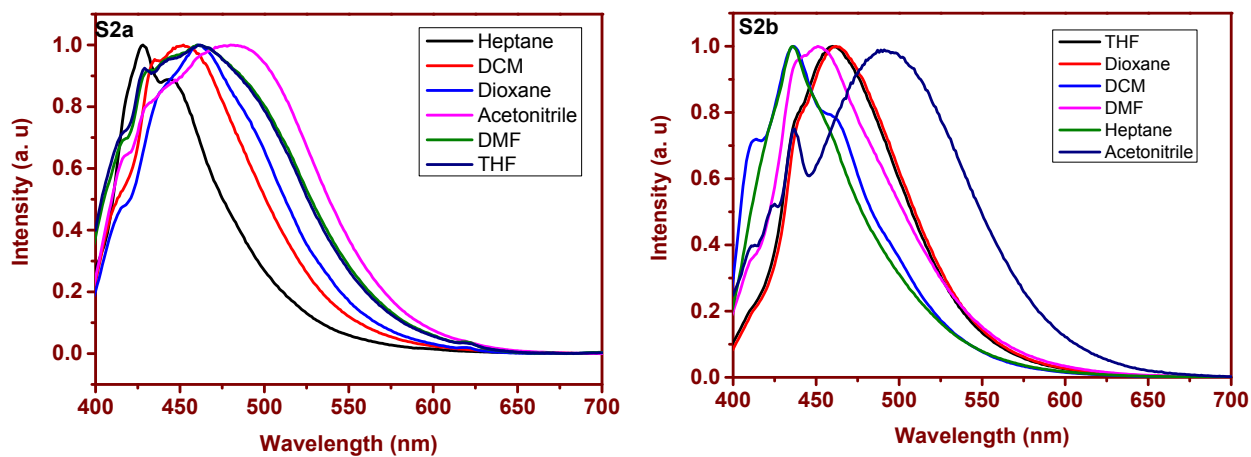
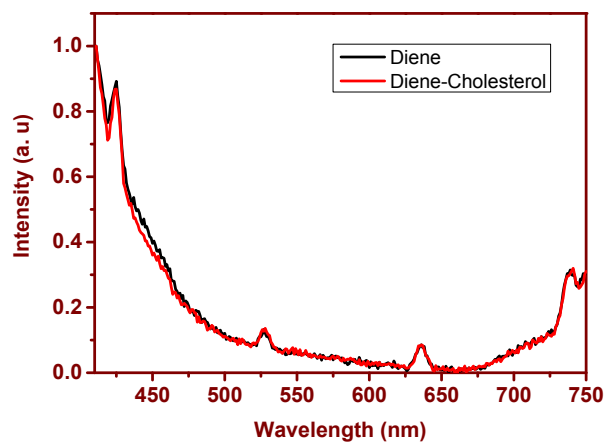


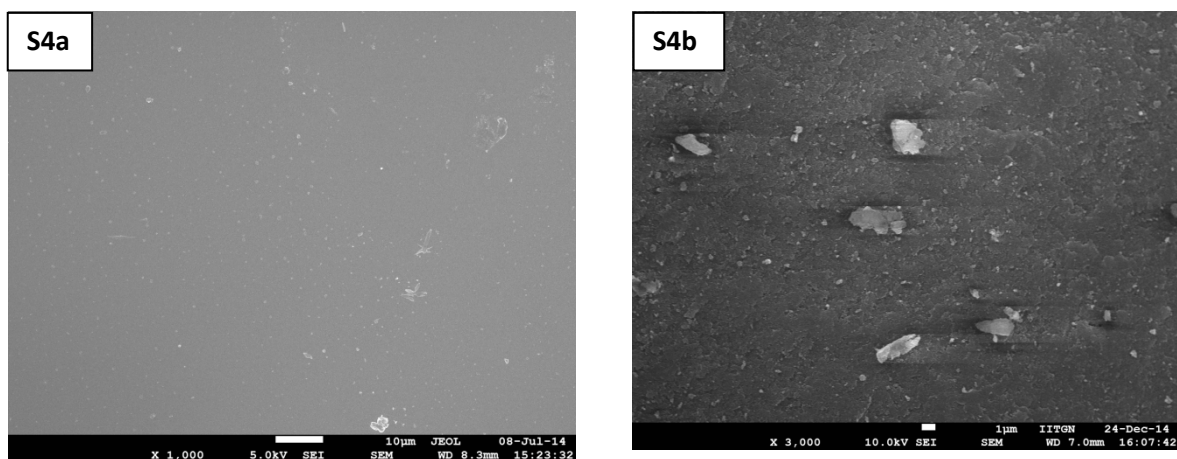
Fig S1a: Excitation Spectra of (1), (2), (3) and (4) in homogeneous solvents.



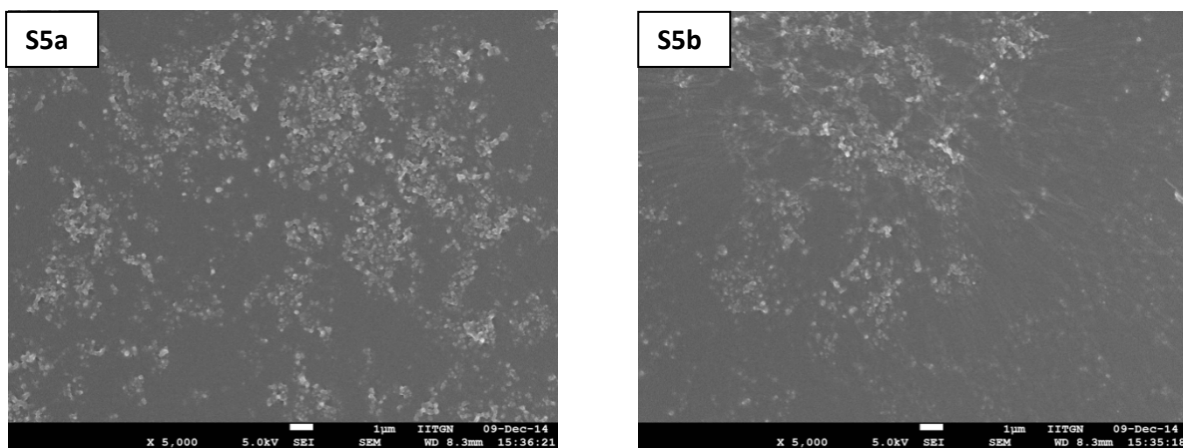
**Figure S2.** Emission spectra of a) stilbene (1), b) stilbene-cholesterol (2) in homogeneous solvents



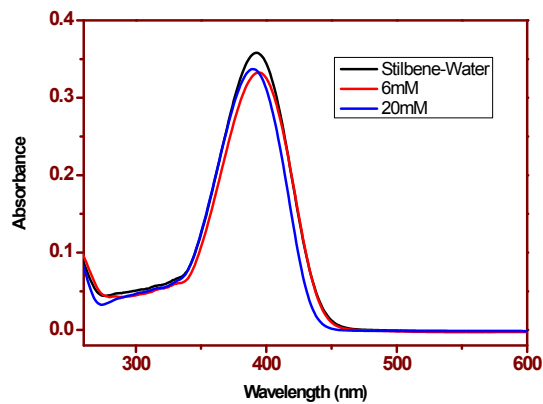
**Figure S3.** Emission spectra of diene (3) and diene-cholesterol (4) in solid state



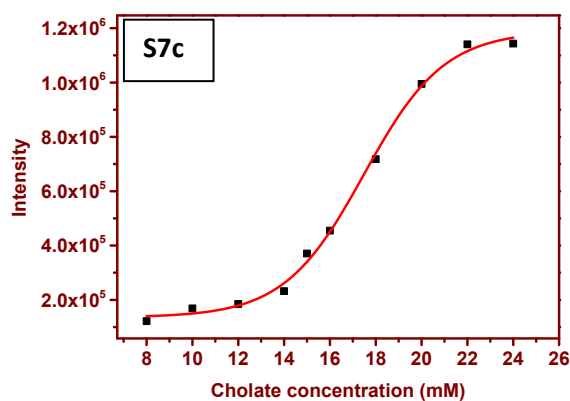
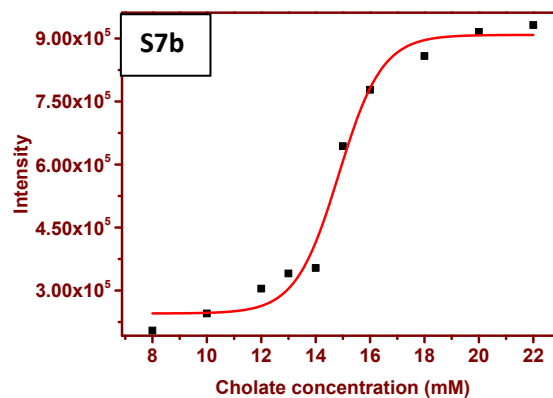
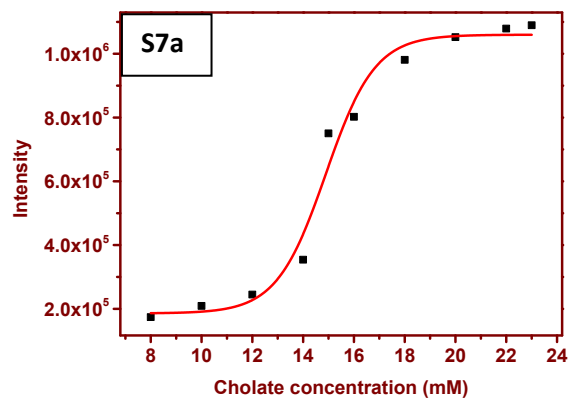
**Figure S4.** SEM images of a) stilbene (1) and b) stilbene cholesterol (2) in dioxane



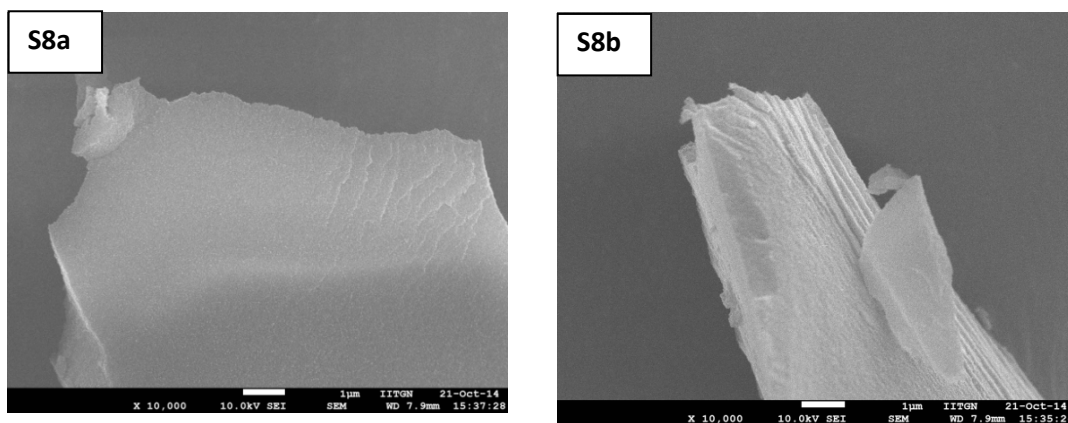
**Figure S5.** SEM images of a) diene and b) diene cholesterol in dioxane



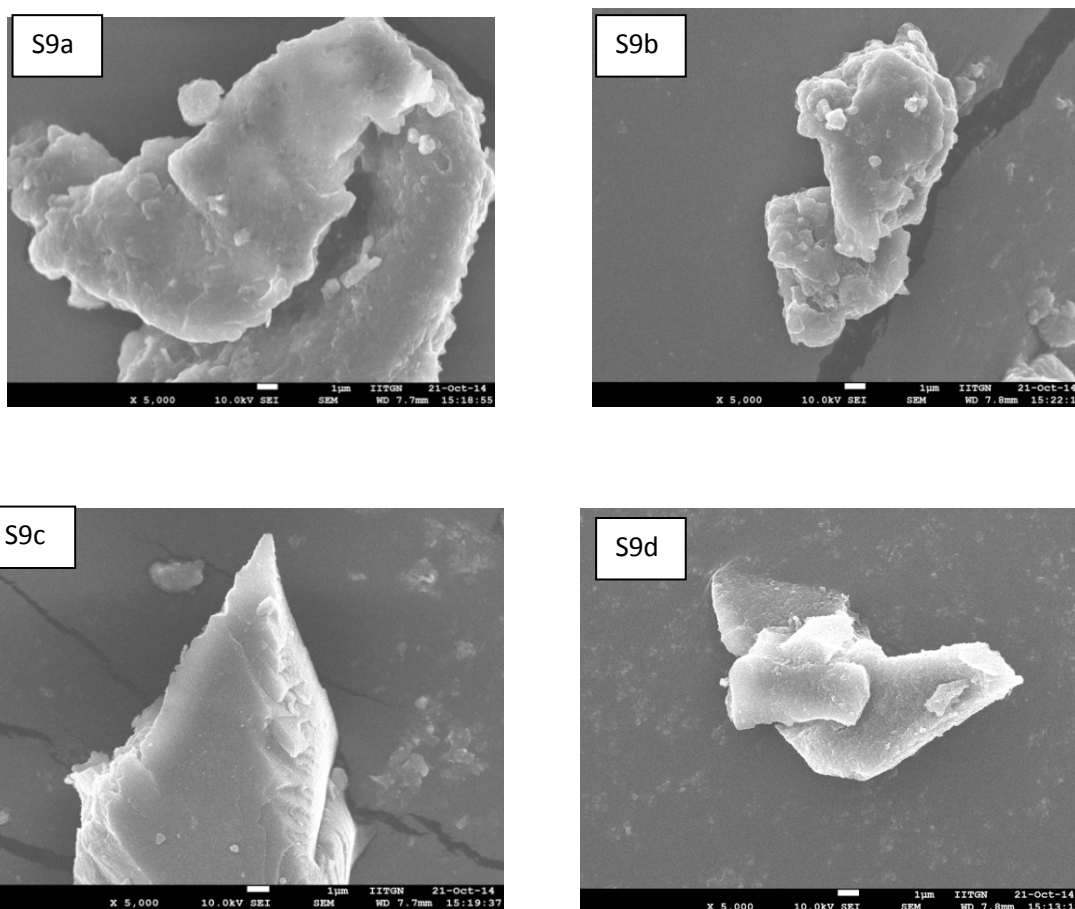
**Figure S6.** UV spectra of stilbene (1) in sodium cholate solutions



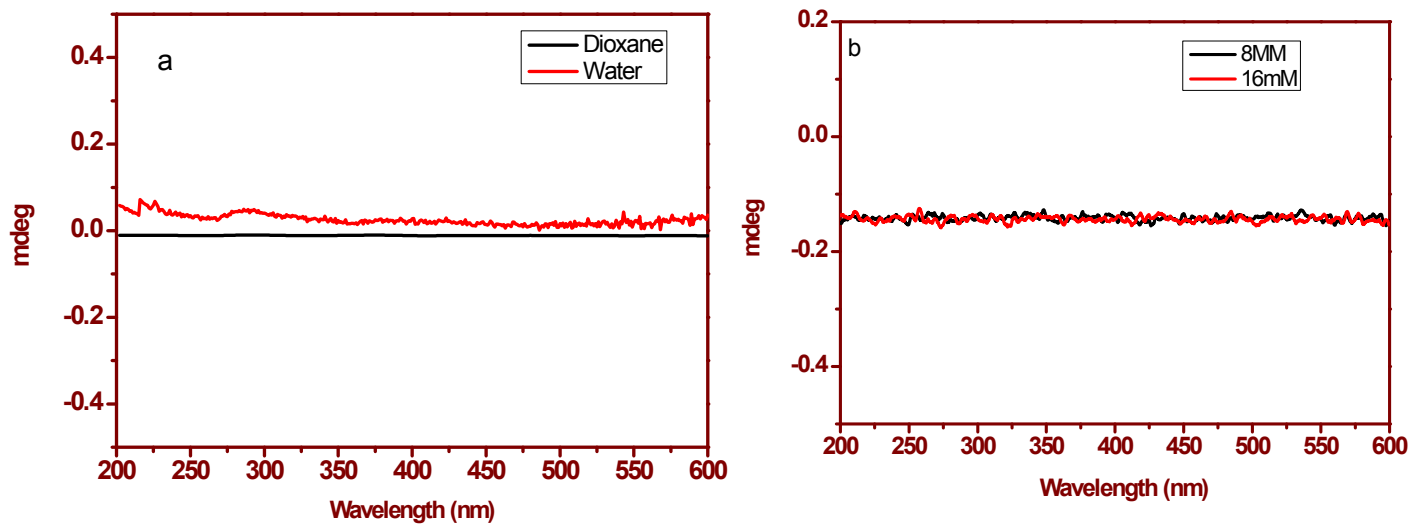
**Figure S7.** Sigmoid plots of cholate concentration vs emission intensity at  $\sim 467$  nm of a) stilbene (1) [CMC is 14.6 mM], b) stilbene cholesterol (2) [CMC is 14.7 mM] and c) diene (3) [CMC is 16.5 mM] as the probes d) Colors changes of aqueous sodium-cholate solution at 8mM and 16mM respectively in presence of dyes (stilbene (1), stilbene-cholesterol (2), diene (3)) under UV lighting conditions



**Figure S8.** SEM images of sodium cholate at a) lower (8 mM) and b) higher concentrations (16 M) in Millipore water



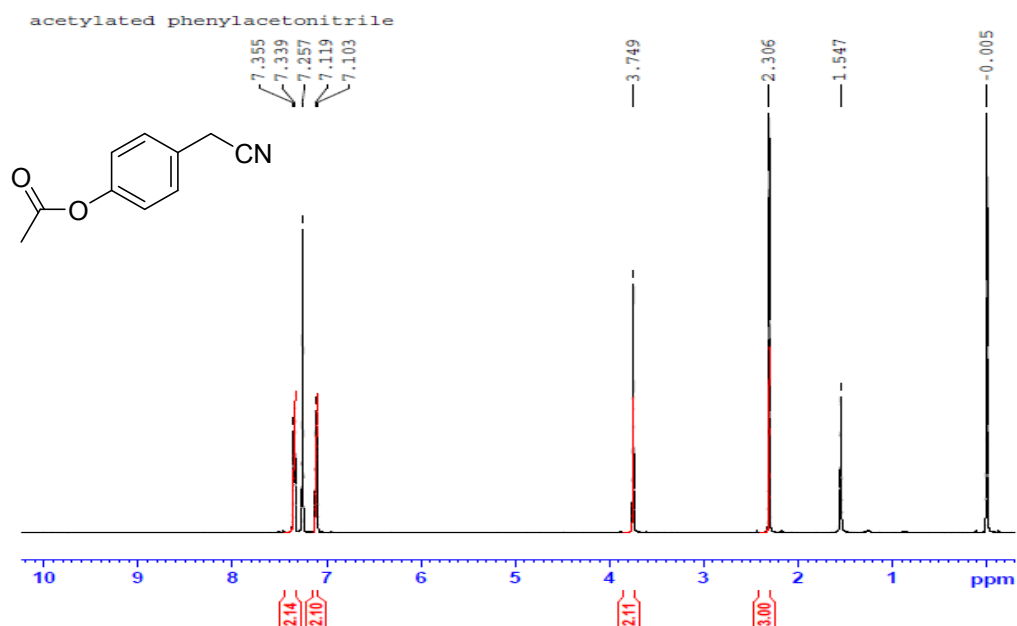
**Figure S9.** SEM images of diene (**3**) and diene cholesterol (**4**) at different concentration of cholate. a) 8mM and at b) 16mM for (**1**); (c) 8mM; d) 16mM for (**2**). Inset shows the SEM at lower magnification.



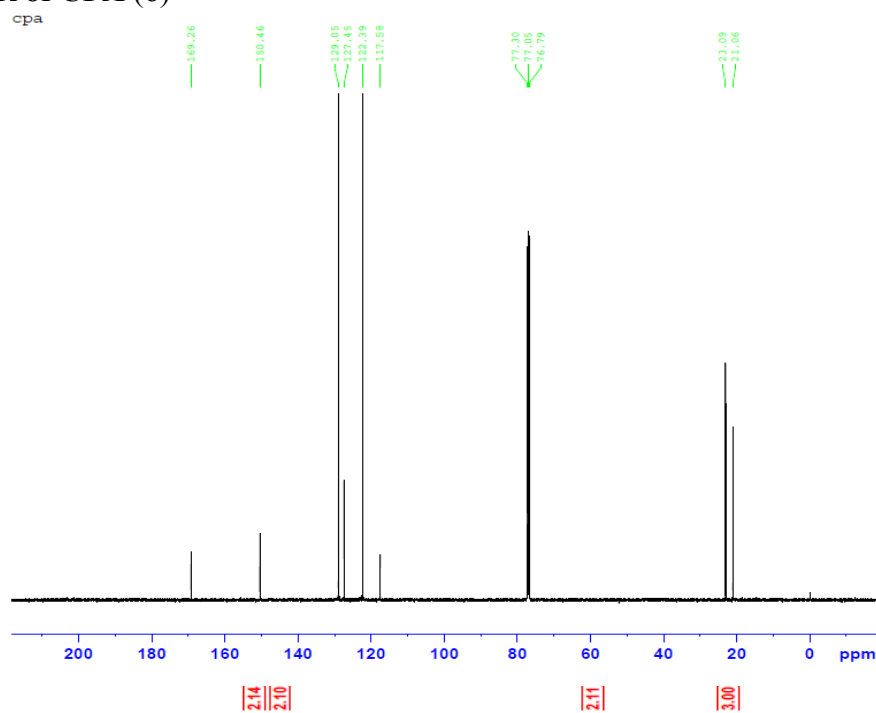
**Figure S10a.** CD Spectra of stilbene in dioxane and water; **b)** CD spectra of sodium cholate at 8mM and 16mM.

## Spectral data

### <sup>1</sup>H NMR of CPA (6)



### <sup>13</sup>C NMR of CPA (6)



```

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PROCNO   1

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FIDRES   0.454131 Hz
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RG       200.08
DW       16.800 usec
DE       6.50 usec
TE       301.0 K
D1       2.0000000 sec
D11      0.0300000 sec
TDO      1

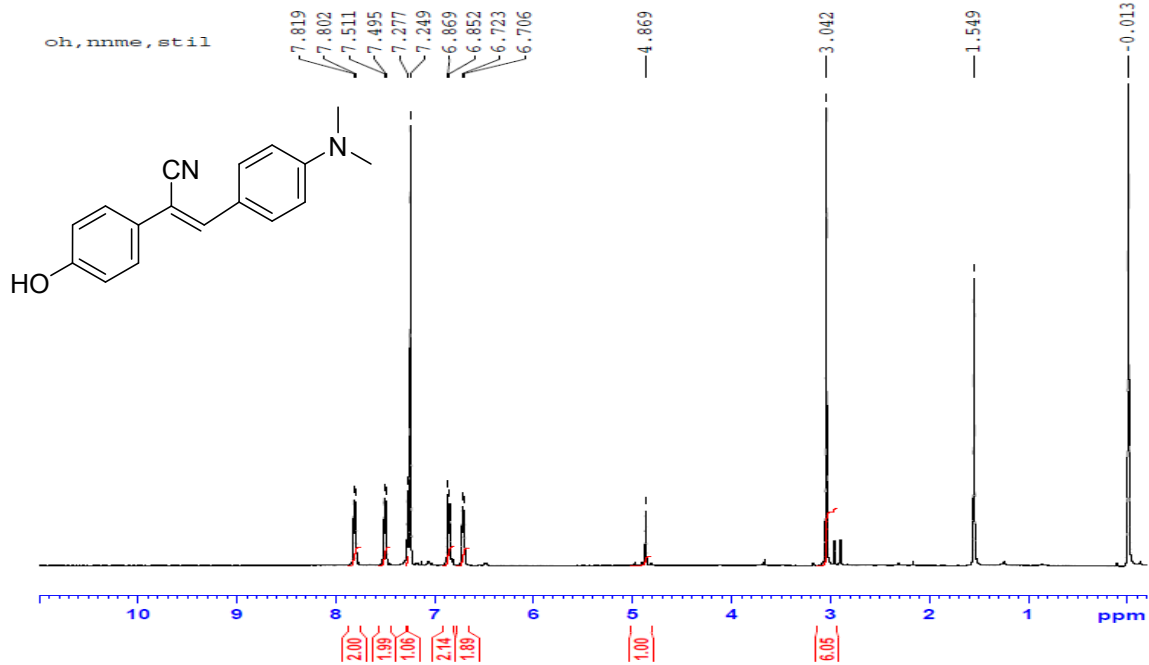
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P1      8.90 usec
PLW1    29.00000000 W

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NUC2    1H
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PCPD2   80.00 usec
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PLW12   0.52061999 W
PLW13   0.33320001 W

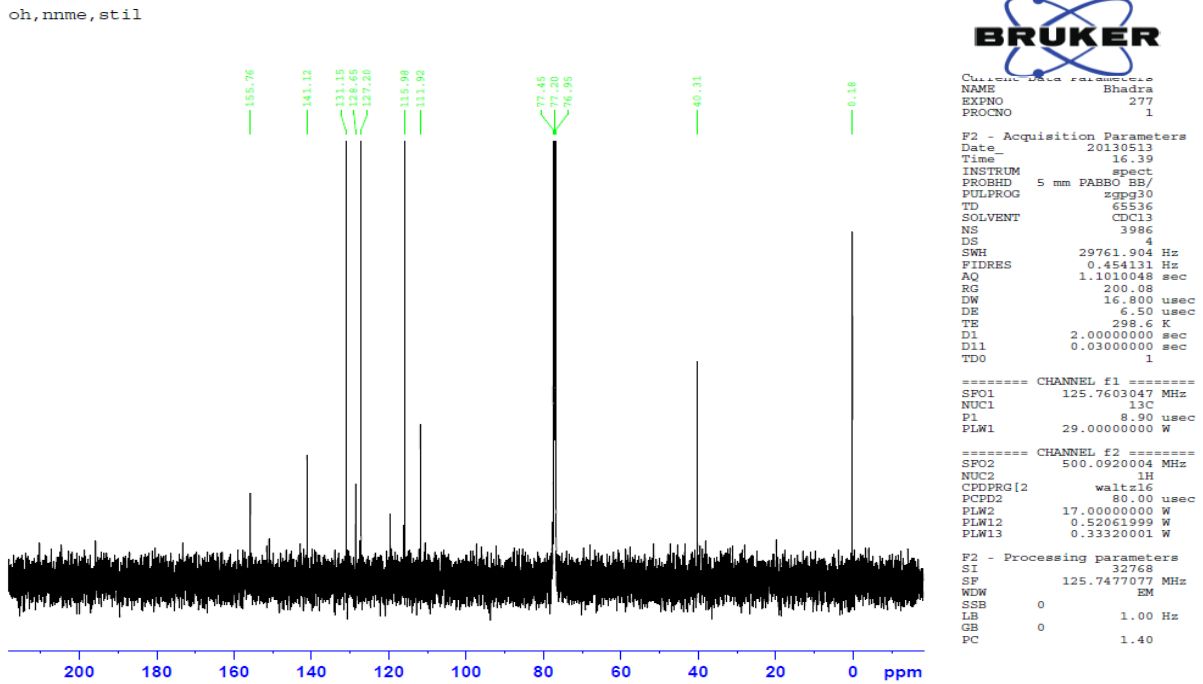
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SSB     0
LB      1.00 Hz
GB      0
PC      1.40
    
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**<sup>1</sup>H NMR (Z)-3-(4-(dimethylamino)phenyl)-2-(4-hydroxyphenyl)acrylonitrile (1)**



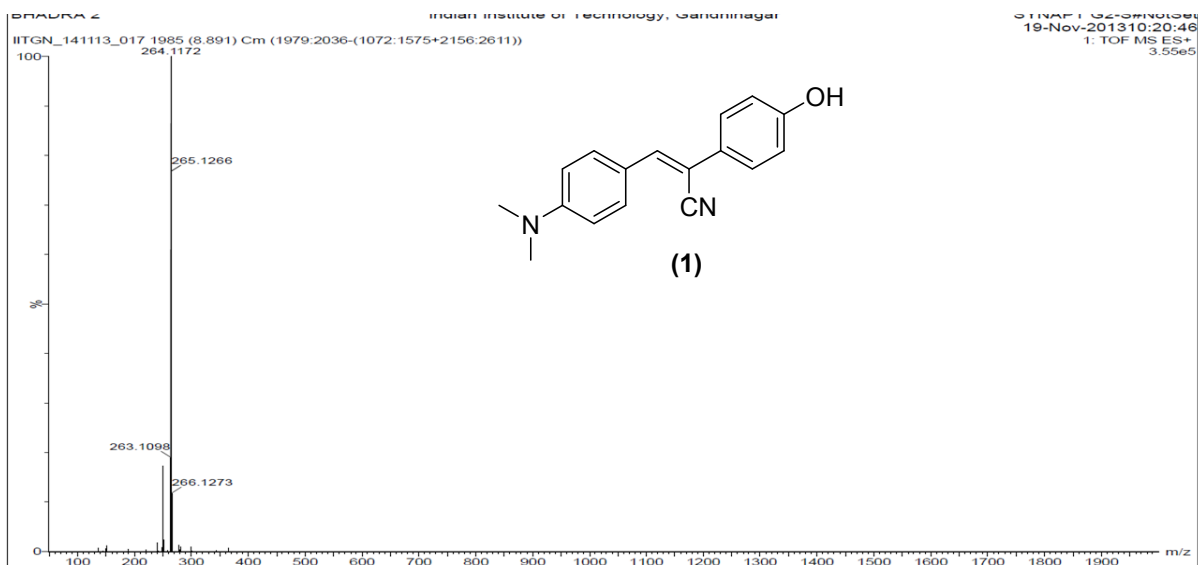
**<sup>13</sup>C NMR (Z)-3-(4-(dimethylamino)phenyl)-2-(4-hydroxyphenyl)acrylonitrile (1)**



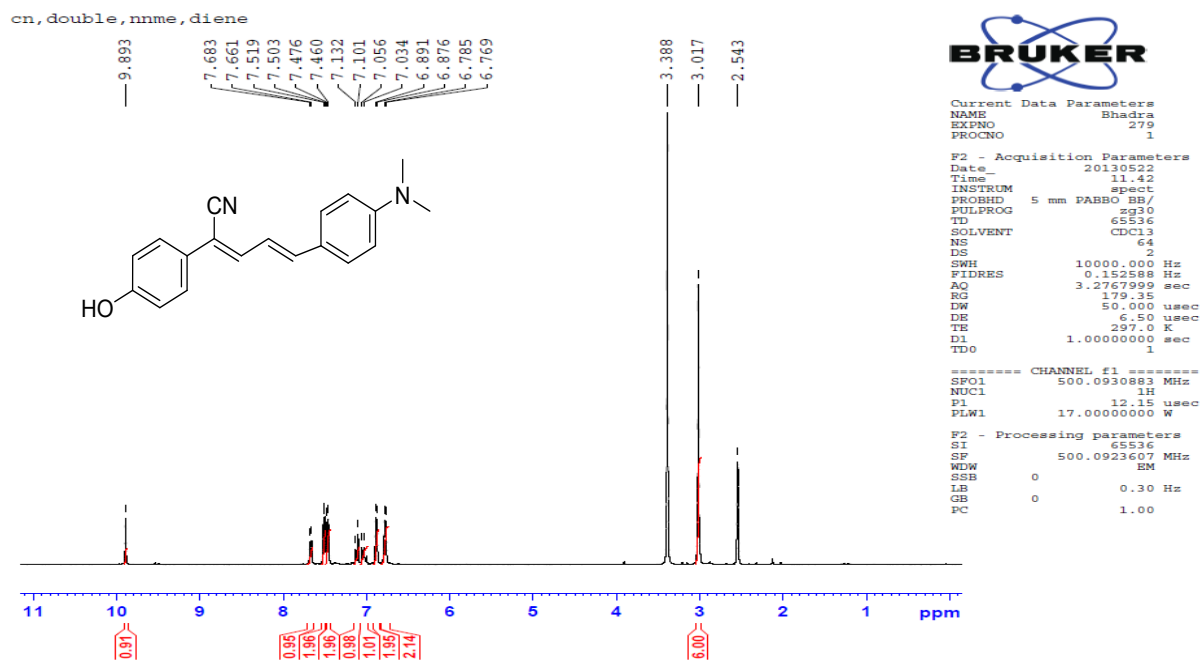
### Mass spectrum of (Z)-3-(4-(dimethylamino)phenyl)-2-(4-hydroxyphenyl)acrylonitrile (1)

Exact mass 264.13

Mass obtained in positive mode 265.1266 (M+1)

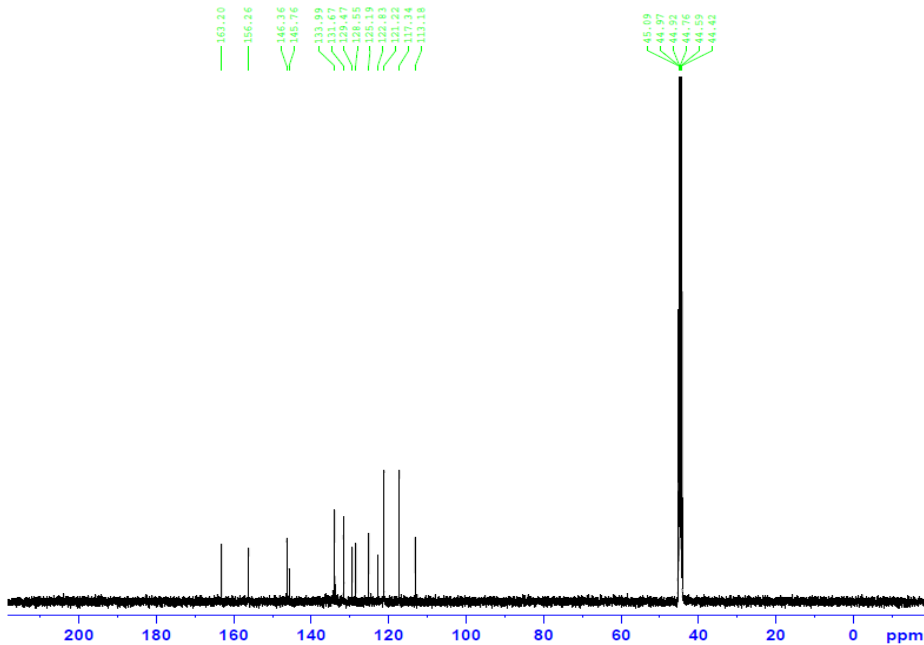


### <sup>1</sup>H NMR of (2Z,4E)-5-(4-(dimethylamino)cyclohexa-2,4-dien-1-yl)-2-(4-hydroxyphenyl)penta-2,4-dienitrile (3)



<sup>13</sup>C NMR of (2Z,4E)-5-(4-(dimethylamino)cyclohexa-2,4-dien-1-yl)-2-(4-hydroxyphenyl)penta-2,4-dienitrile (3)

cn, double, nmme, diene



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PROCNO        1

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DS            4
SWH           29761.904 Hz
FIDRES        0.454131 Hz
AQ            1.1010048 sec
RG            200.08
DW            16.800 usec
DE            6.50 usec
TE            299.3 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0           1

===== CHANNEL f1 =====
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P1            8.90 usec
PLW1          29.00000000 W

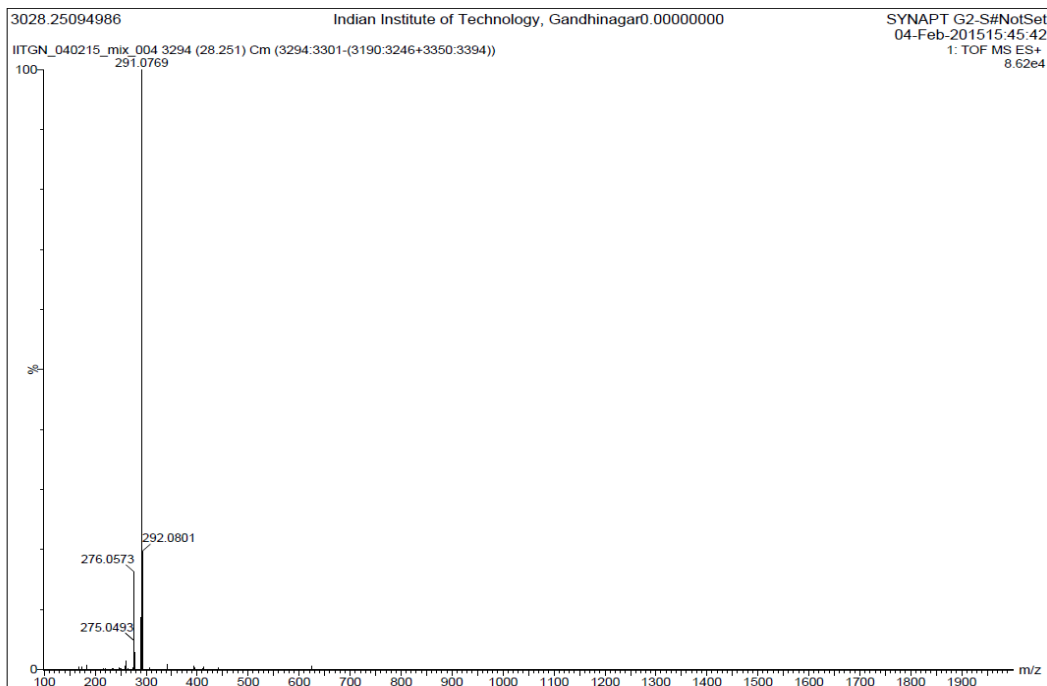
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F2 - Processing parameters
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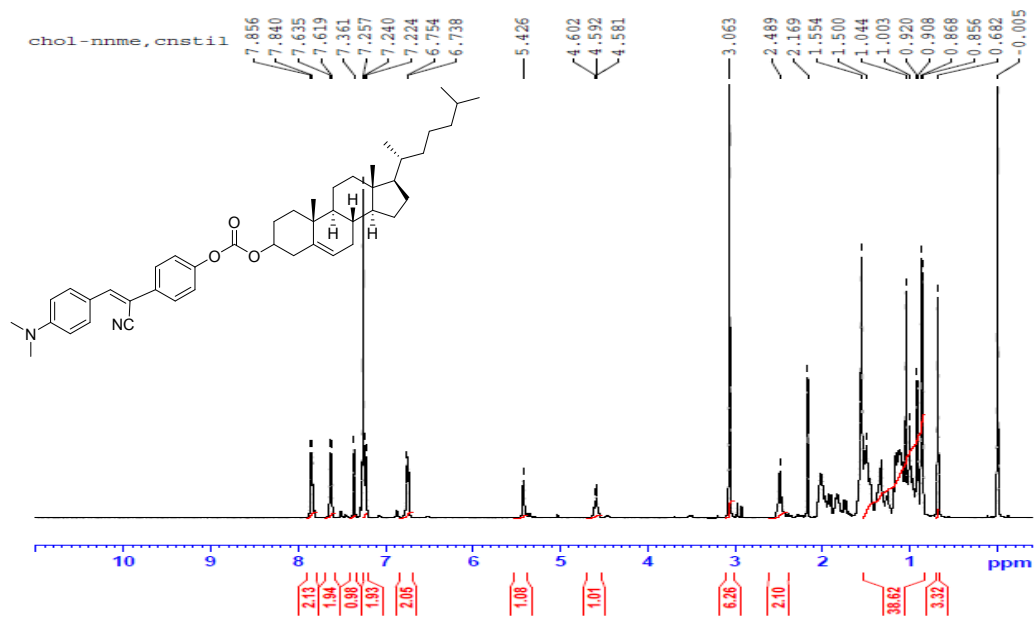
**Mass spectra of (2Z,4E)-5-(4-(dimethylamino)cyclohexa-2,4-dien-1-yl)-2-(4-hydroxyphenyl)penta-2,4-dienitrile (3)**

Exact mass 290.142

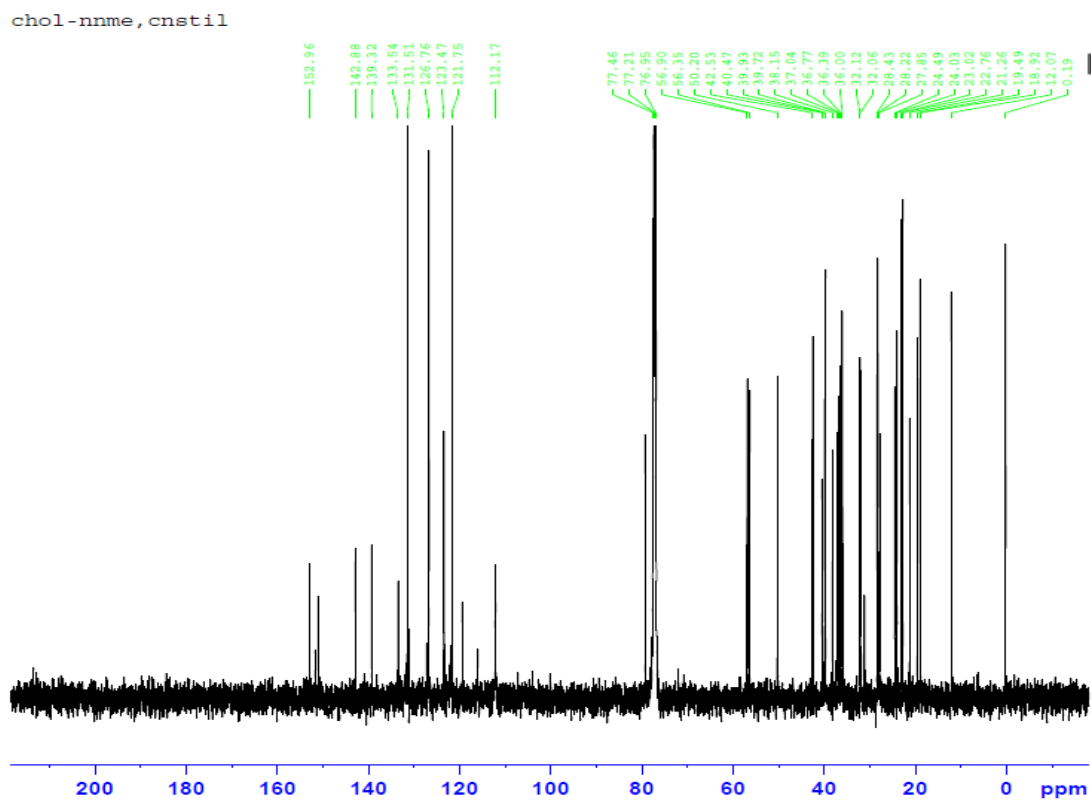
Mass obtained in positive mode 291.0769 (M+1)



**<sup>1</sup>H NMR of stilbene-cholesterol (2)**



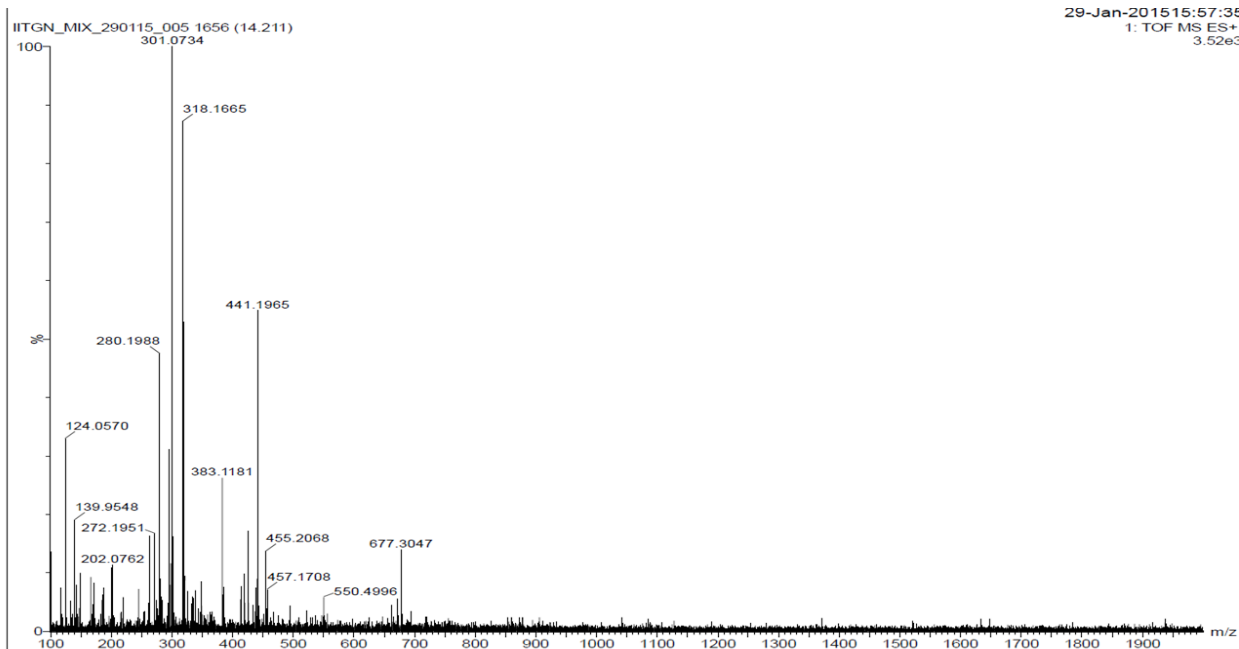
# <sup>13</sup>C-NMR of stilbene-cholesterol (2)



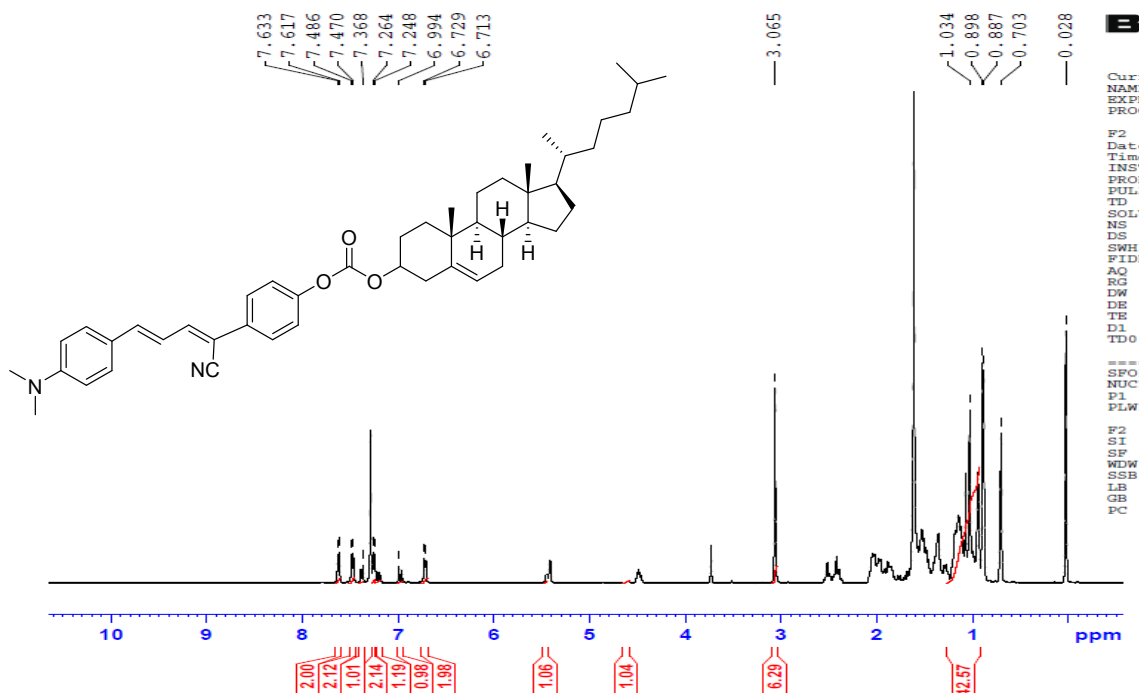
## Mass spectra of stilbene cholesterol (2)

Exact mass 676.46

Mass obtained in positive mode 677.3047(M+1)

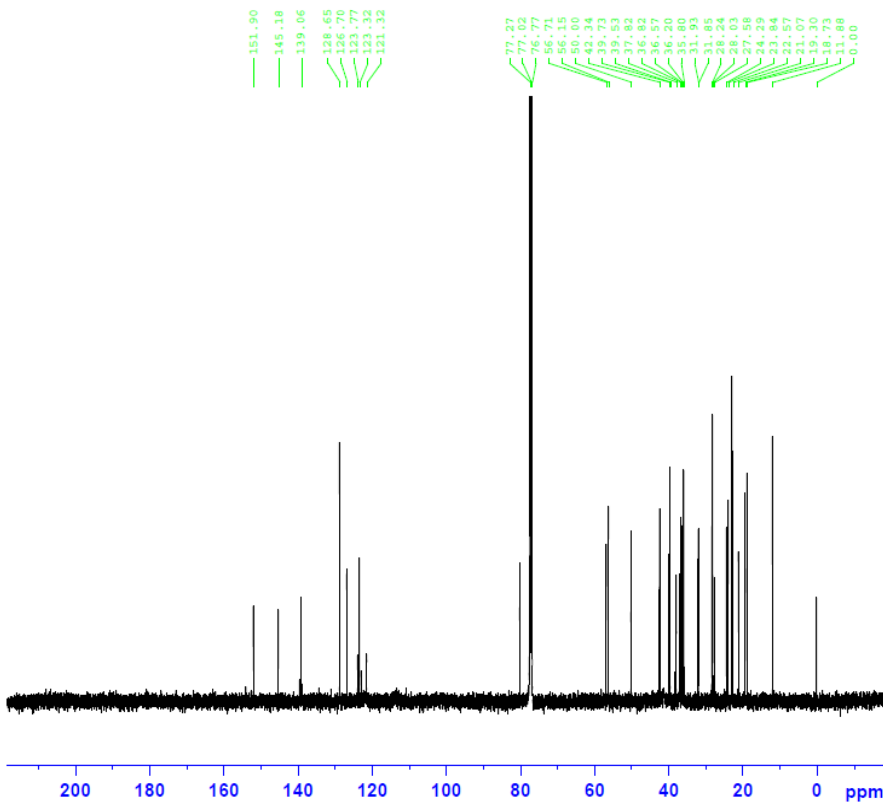


## <sup>1</sup>H NMR of diene-cholesterol (4)



# <sup>13</sup>C NMR of diene-cholesterol (4)

diene-choL, NNME, CN



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PROCNO        1

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SOLVENT       CDCl3
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DS            4
SWH           29761.904 Hz
FIDRES        0.454131 Hz
AQ            1.1010048 sec
RG            200.08
DW            16.800 usec
DE            6.50 usec
TE            298.2 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0           1

===== CHANNEL f1 =====
SFO1          125.7603047 MHz
NUC1           13C
P1            8.90 usec
PLW1          29.00000000 W

===== CHANNEL f2 =====
SFO2          500.0920004 MHz
NUC2           1H
CQDPRG[2]     waltz16
PCPD2         80.00 usec
PLW2          17.00000000 W
PLW12         0.52061999 W
PLW13         0.33320001 W

F2 - Processing parameters
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SF            125.7477100 MHz
WDW           EM
SSB           0
LB            1.00 Hz
GB            0
PC            1.40
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## Mass spectra of diene cholesterol (4)

Mass obtained in positive mode 702.7087 (M+1)

