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SUPPORTING INFORMATION

Synthesis, characterization and gelation studies of a novel class of rhodamine based *N*-glycosylamines

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Experimental section

D-Glucose, rhodamine-B and rhodamine-6G were purchased from Sd-fine, India. 1,2-Diaminoethane and 1,3-diaminopropane were purchased from Sigma Aldrich chemicals Pvt. Ltd, USA and were of high purity. Paraldehyde, butyraldehyde, and benzaldehyde dimethyl acetal were purchased from SRL, India. Chloroform and methanol were used after distillation. Column chromatography was performed on silica gel (100-200 mesh). NMR spectra were recorded on a Bruker DRX 300 MHz, spectrometer. Elemental analysis was performed by using Perkin-Elmer 2400 series CHN analyser. The gels were imaged with a HITACHI-S-3400W Scanning Electron Microscope and optical rotation was performed using a Rudolph-Autopol II digital polarimeter. All absorption spectra were obtained with a UV-1600 UV/vis spectrometer (Shimadzu). All fluorescence spectra were obtained with an F4500 fluorescence spectrometer (Hitachi). Thermal transitions for gelators and gels were determined on a NETZSCH DSC 204 instrument. Rheological studies were recorded in Gemini 2000 using pp40. X-ray diffractograms of the dried films were recorded on XRD RINT 2500 diffractometer using Ni filtered Cu Kα radiation.

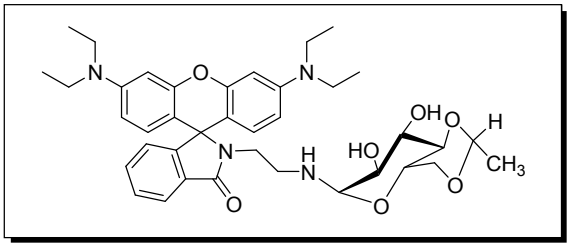
Preparation of gels

Rhodamine based *N*-glycosylamines **8-19** (1 mg) was placed in a glass vial and 1 ml of organic solvent was added. The gelator in the organic solvent was heated. The solution was then allowed to cool to room temperature whereby the gel formed.

General procedure for the synthesis of rhodamine based *N*-glycosylamines (8-19)

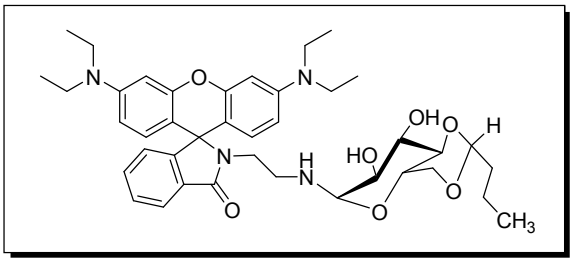
To a solution of rhodamine based amine derivatives (**1-4**) (1 mmol) in dry MeOH and 4,6-*O*-protected-D-glucopyranose (**5-7**) (1 mmol) were added. After stirring at reflux temperature for given period of time, the reaction mixture was evaporated under reduced pressure. The crude product was slurried with silica gel and purified by column chromatography. For details (reaction time and yields of products) see Table 1.

Physicochemical and spectral data for 4,6-*O*-ethylidine-*N*-(((rhodamine-B)-lactam)-ethyl)-β-D-glucopyranosylamine (8)



Compound **8** was obtained by the reaction of rhodamine B based ethylenediamine (**1**, 1 mmol, 0.48 g), and 4,6-*O*-ethylidine-β-D-glucopyranose (**5**, 1 mmol, 0.20 g) as a pale pink solid. Yield: 0.48 g (71%); mp 172-174 °C; $[\alpha]_D^{23}$-31.4 (*c* 1.0 in $CHCl_3$); ^{1}H NMR (300 MHz, $CDCl_3$+DMSO-d_6): δ 1.67 (t, 12H, *J* = 6.9 Hz, -CH_3), 1.35 (t, 3H, *J* = 4.8 Hz, -CH_3), 3.25-3.34 (m, 4H, -CH_2), 3.44-3.61 (m, 1H, Sac-H), 3.86 (d, 1H, *J* = 9.9 Hz, Ano-H), 4.02-4.11 (m, 2H, Sac-H), 4.36 (t, 2H, *J* = 3.3 Hz, Sac-H), 4.51-4.75 (m, 8H, -CH_2), 4.76 (s, 2H, Sac-OH), 5.16 (s, 1H, -NH), 6.27 (d, 1H, *J* = 7.2 Hz, Ar-H), 6.30 (d, 1H, *J* = 7.2 Hz, Ar-H), 6.37 (d, 2H, *J* = 7.2 Hz, Ar-H), 6.44 (d, 2H, *J* = 8.7 Hz, Ar-H), 7.05 (q, 1H, *J* = 7.2 Hz, Ar-H), 7.43-7.46 (m, 2H, Ar-H), 7.86 (q, 1H, *J* = 5.7 Hz, Ar-H). ^{13}C NMR (75 MHz, $CDCl_3$+DMSO-d_6): δ 17.3, 25.1, 48.3, 49.0, 65.6, 66.8, 70.1, 71.1, 73.0, 73.3, 75.4, 78.1, 80.8, 85.1, 85.7, 97.8, 102.3, 102.5, 104.1, 109.6, 112.8, 127.3, 128.5, 132.8, 133.1, 135.2, 137.3, 153.5, 157.9, 158.5, 173.9 (C=O). Anal. Calcd for $C_{38}H_{48}N_4O_7$: C, 67.84; H, 7.19; N, 8.33. Found: C, 67.87; H, 7.16; N, 8.37.

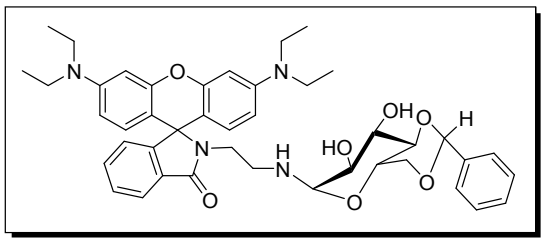
Physicochemical and spectral data for 4,6-*O*-butylidine-*N*-(((rhodamine-B)-lactam)-ethyl)-β-D-glucopyranosylamine (9)



Compound **9** was obtained by the reaction of rhodamine B based ethylenediamine (**1**, 1 mmol, 0.48 g), and 4,6-*O*-butylidine-β-D-glucopyranose (**6**, 1 mmol, 0.23 g) as a pale pink solid. Yield: 0.46 g (65%); mp 166-168 °C; $[\alpha]_D^{23}$-48.2 (*c* 1.0 in $CHCl_3$); ^{1}H NMR (300 MHz, $CDCl_3$+DMSO-d_6): δ 0.89 (t, 3H, *J* = 7.2 Hz, -CH_3), 1.15 (t, 12H, *J* = 6.9 Hz, -CH_3), 1.37-1.45 (m, 2H, -CH_2), 1.58-1.61 (m, 2H, -CH_2), 3.22 (q, 5H, *J* = 5.2 Hz, Sac-H), 3.30-3.37 (m, 8H, -CH_2), 3.41-3.81 (m, 2H, Sac-H), 4.00-4.05 (m, 4H,-CH_2), 4.38 (s, 2H, Sac-OH), 4.53 (d, 1H, *J* = 7.2 Hz, Ano-H), 5.11 (s, 1H, -NH), 6.27 (dd, 2H, *J* = 8.7 Hz, Ar-H), 6.35 (d, 2H, *J* = 7.1 Hz, Ar-H), 6.41 (d, 2H, *J* = 9.0 Hz, Ar-H), 7.03 (q, 1H, *J* = 6.9 Hz, Ar-H), 7.44 (q, 2H, *J* = 7.2 Hz, Ar-H), 7.83 (q, 1H, *J* = 7.2 Hz, Ar-H). ^{13}C NMR (75 MHz, $CDCl_3$+DMSO-d_6): δ 17.2, 22.1, 25.2, 41.0, 48.0, 49.0, 65.2, 67.0, 69.9, 71.3, 73.4, 75.4, 78.2, 85.9, 97.9, 102.5, 106.9, 109.7, 112.8,

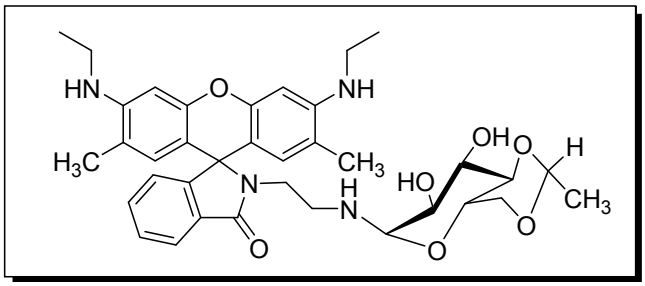
127.3, 128.5, 132.8, 133.2, 135.3, 137.3, 153.5, 157.9, 158.5, 173.5 (C=O). HRMS (ES+): m/z Calcd for for $C_{40}H_{52}N_4O_7$: 700.3858. Found: 700.3845 $(M+H)^+$; elemental analysis: anal. calcd for $C_{40}H_{52}N_4O_7$: C, 68.55; H, 7.48; N, 7.99. Found: C, 68.57; H, 7.45; N, 7.96.

Physicochemical and spectral data for 4,6-*O*-benzylidine-*N*-(((rhodamine-B)-lactam)-ethyl)-β-D-glucopyranosylamine (10)



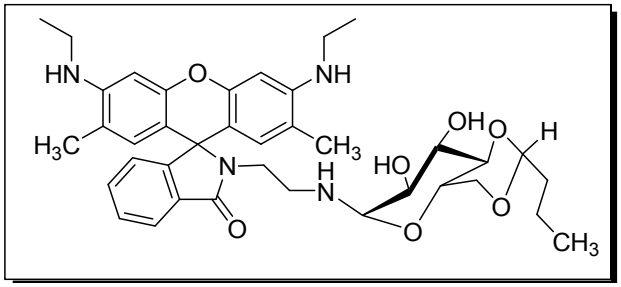
Compound **10** was obtained by the reaction of rhodamine B based ethylenediamine (**1**, 1 mmol, 0.48 g), and 4,6-*O*-benzylidine-β-D-glucopyranose (**7**, 1 mmol, 0.26 g) as a pale pink solid. Yield: 0.51 g (69%); mp 179-181 °C; $[\alpha]_D^{23}$ – 76.8 (*c* 1.0 in $CHCl_3$); ^{1}H NMR (300 MHz, $CDCl_3$+DMSO-d_6): δ 1.15 (t, 12H, *J* = 6.9 Hz, -CH_3), 3.09 (d, 2H, *J* = 4.2 Hz, Sac-H), 3.25-3.41 (m, 8H, -CH_2), 3.44-3.78 (m, 5H, Sac-H), 3.91 (d, 1H, *J* = 9.3 Hz, Ano-H), 3.98-4.07 (m, 1H, Sac-H), 4.18-4.36 (m, 3H, Sac-H), 4.85 (s, 1H, Sac-OH), 5.19 (s, 1H, Sac-OH), 5.51 (s, 1H, -NH), 6.27 (dd, 2H, *J* = 9.0 Hz, Ar-H), 6.36 (d, 2H, *J* = 7.2 Hz, Ar-H), 6.43 (d, 2H, *J* = 8.7 Hz, Ar-H), 7.04 (q, 2H, *J* = 7.2 Hz, Ar-H), 7.32 (t, 3H, *J* = 7.8 Hz, Ar-H), 7.43-7.49 (m, 3H, Ar-H), 7.84 (q, 1H, *J* = 6.9 Hz, Ar-H). ^{13}C NMR (75 MHz, $CDCl_3$+DMSO-d_6): δ 17.3, 48.3, 49.0, 65.6, 66.9, 70.1, 71.1, 73.5, 73.9, 75.3, 78.1, 80.8, 85.8, 86.4, 97.9, 102.4, 102.5, 106.4, 109.6, 112.8, 127.3, 128.5, 131.2, 132.8, 133.1, 133.7, 135.2, 137.3, 153.5, 157.9, 158.5, 173.8 (C=O). HRMS (ES+): m/z Calcd for for $C_{43}H_{50}N_4O_7$: 734.3767. Found: 734.3754 $(M+H)^+$; elemental analysis: anal. calcd for $C_{43}H_{50}N_4O_7$: C, 70.28; H, 6.86; N, 7.62. Found: C, 70.25; H, 6.84; N, 7.64.

Physicochemical and spectral data for 4,6-*O*-ethylidine-*N*-(((rhodamine-6G)-lactam)-ethyl)-β-D-glucopyranosylamine (11)



Compound **11** was obtained by the reaction of rhodamine 6G based ethylenediamine (**2**, 1 mmol, 0.45 g), and 4,6-*O*-ethylidine-β-D-glucopyranose (**5**, 1 mmol, 0.20 g) as a pale pink solid. Yield: 0.41 g (64%); mp 168-170 °C; $[\alpha]_D^{23}$ – 87.5 (*c* 1.0 in $CHCl_3$); ^1H NMR (300 MHz, $CDCl_3$+DMSO-d_6): δ 1.35 (t, 9H, *J* = 5.4 Hz, -CH_3), 1.92 (s, 6H, -CH_3), 3.23 (m, 4H, -CH_2), 3.48 (t, 3H, *J* = 10.2 Hz, Sac-H), 3.62 (s, 2H, Sac-OH), 3.79-3.88 (m, 4H, -CH_2), 3.98-4.06 (m, 3H, Sac-H), 4.43 (s, 2H, -NH), 4.60 (q, 1H, *J* = 6.2 Hz, Sac-H), 4.72 (d, 1H, *J* = 9.9 Hz, Ano-H), 5.16 (t, 1H, *J* = 3.6 Hz, Sac-H), 6.18 (d, 2H, *J* = 7.8 Hz, Ar-H), 6.36 (s, 2H, Ar-H), 7.03 (q, 1H, *J* = 7.4 Hz, Ar-H), 7.46 (q, 2H, *J* = 8.0 Hz, Ar-H), 7.91 (q, 1H, *J* = 6.9 Hz, Ar-H). ^{13}C NMR (75 MHz, $CDCl_3$+DMSO-d_6): δ 17.9, 22.6, 25.2, 42.9, 66.8, 70.7, 71.1, 72.9, 73.3, 75.3, 78.1, 80.8, 85.1, 85.8, 97.9, 101.4, 102.3, 104.0, 109.4, 122.8, 127.5, 128.4, 132.1, 132.9, 134.4, 137.3, 152.3, 156.5, 156.8, 170.7 (C=O). HRMS (ES+): m/z Calcd for for $C_{36}H_{44}N_4O_7$+H: 644.3263. Found: 644.3254 $(M+H)^+$; elemental analysis: anal. calcd for $C_{36}H_{44}N_4O_7$: C, 67.06; H, 6.88; N, 8.69. Found: C, 67.08; H, 6.86; N, 8.66.

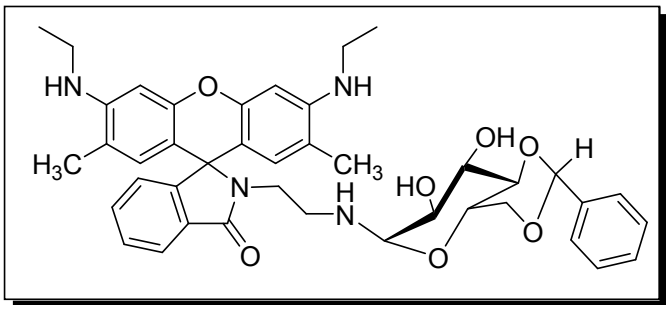
Physicochemical and spectral data for 4,6-*O*-butylidine-*N*-(((rhodamine-6G)-lactam)-ethyl)-β-D-glucopyranosylamine (12)



Compound **12** was obtained by the reaction of rhodamine 6G based ethylenediamine (**2**, 1 mmol, 0.45 g), and 4,6-*O*-butylidine-β-D-glucopyranose (**6**, 1 mmol, 0.23 g) as a pale pink solid. Yield: 0.38 g (57%); mp 161-163 °C; $[\alpha]_D^{23}$– 60.4 (*c* 1.0 in $CHCl_3$); ^1H NMR (300 MHz, $CDCl_3$+DMSO-d_6): δ 0.85 (t, 3H, *J* = 7.2 Hz, -CH_3), 1.27 (t, 6H, *J* = 6.9 Hz, -CH_3), 1.34-1.41 (m, 2H, -CH_2), 1.55-1.58 (m, 2H, -CH_2), 1.87 (s, 6H, -CH_3), 3.13-3.17 (m, 4H, -CH_2), 3.41 (t, 2H, *J* = 6.2 Hz, Sac-H), 3.58 (s, 2H, Sac-OH), 3.78 (s, 4H, -CH_2), 3.93-4.02 (m, 3H, Sac-H), 4.35 (s, 2H, -NH), 4.49 (t, 3H, *J* = 4.8 Hz, Sac-H), 5.09 (d, 1H, *J* = 7.3 Hz, Ano-H), 6.15 (d, 2H, *J* = 7.2 Hz, Ar-H), 6.31 (s, 2H, Ar-H), 6.98 (q, 1H, *J* = 6.9 Hz, Ar-H), 7.41 (q, 2H, *J* = 7.8 Hz,

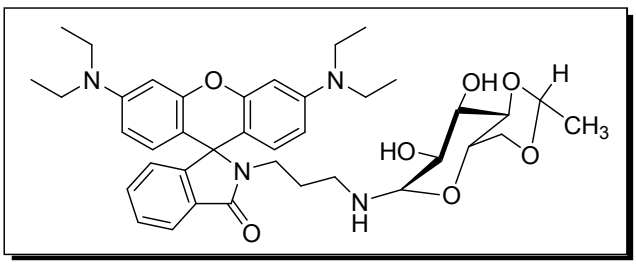
Ar-H), 7.85 (q, 1H, *J* = 7.8 Hz, Ar-H). ^{13}C NMR (75 MHz, $CDCl_3$+DMSO-d_6): δ 18.7, 19.4, 21.6, 22.1, 41.0, 42.9, 67.0, 70.7, 73.4, 75.5, 78.2, 85.8, 97.8, 101.4, 106.9, 122.7, 128.4, 132.1, 132.8, 134.4, 137.3, 152.3, 156.5, 156.8, 170.7 (C=O). HRMS (ES+): m/z Calcd for for $C_{38}H_{48}N_4O_7$+H: 672.3553. Found: 672.3542 $(M+H)^+$; elemental analysis: anal. calcd for $C_{38}H_{48}N_4O_7$: C, 67.84; H, 7.19; N, 8.33. Found: C, 67.87; H, 7.16; N, 8.36.

Physicochemical and spectral data for 4,6-*O*-benzylidine-*N*-(((rhodamine-6G)-lactam)-ethyl)-β-D-glucopyranosylamine (13)



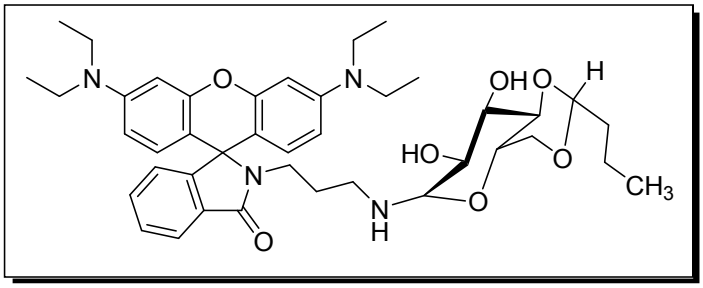
Compound **13** was obtained by the reaction of rhodamine 6G based ethylenediamine (**2**, 1 mmol, 0.45 g), and 4,6-*O*-benzylidine-β-D-glucopyranose (**7**, 1 mmol, 0.26 g) as a pale pink solid. Yield: 0.42 g (60%); mp 146-148 °C; $[\alpha]_D^{23}$ – 75.2 (*c* 1.0 in $CHCl_3$); ^{1}H NMR (300 MHz, $CDCl_3$+DMSO-d_6): δ 1.29 (t, 6H, *J* = 6.9 Hz, -CH_3), 1.89 (s, 6H, -CH_3), 3.15-3.29 (m, 4H, -CH_2), 3.38-3.50 (m, 3H, Sac-H), 3.61-3.75 (m, 3H, Sac-H), 3.87 (d, 1H, *J* = 9.0 Hz, Ano-H), 3.95-4.03 (m, 1H, Sac-H), 4.15-4.26 (m, 1H, Sac-H), 4.58-4.68 (m, 4H, -CH_2), 4.82 (s, 1H, Sac-OH), 5.15 (s, 1H, Sac-OH), 5.49 (s, 2H, -NH), 6.18 (s, 2H, Ar-H), 6.33 (s, 2H, Ar-H), 6.99 (q, 1H, *J* = 6.7 Hz, Ar-H), 7.30 (t, 3H, *J* = 8.2 Hz, Ar-H), 7.42-7.48 (m, 4H, Ar-H), 7.86 (q, 1H, *J* = 7.2 Hz, Ar-H). ^{13}C NMR (75 MHz, $CDCl_3$+DMSO-d_6): δ 19.4, 21.6, 42.9, 66.9, 70.7, 71.8, 75.3, 78.1, 80.8, 85.8, 86.5, 98.0, 101.4, 102.5, 106.3, 106.4, 109.5, 122.7, 128.4, 131.2, 131.3, 132.1, 132.8, 133.7, 134.5, 137.2, 152.3, 156.5, 156.8, 170.7 (C=O). Anal. Calcd for $C_{41}H_{46}N_4O_7$: C, 69.67; H, 6.56; N, 7.93. Found: C, 69.65; H, 6.58; N, 7.95.

Physicochemical and spectral data for 4,6-*O*-ethylidine-*N*-(((rhodamine-B)-lactam)-propyl)-β-D-glucopyranosylamine (14)



Compound **14** was obtained by the reaction of rhodamine B based 1,3-propylenediamine (**3**, 1 mmol, 0.49 g), and 4,6-*O*-ethylidine-β-D-glucopyranose (**5**, 1 mmol, 0.20 g) as a pale pink solid. Yield: 0.42 g (62%); mp 150-152 °C; $[\alpha]_D^{23}$- 72.6 (*c* 1.0 in $CHCl_3$); ^1H NMR (300 MHz, $CDCl_3$+DMSO-d_6): δ 1.16 (t, 12H, *J* = 6.9 Hz, -CH_3), 1.34 (t, 3H, *J* = 4.2 Hz, -CH_3), 3.31-3.37 (m, 8H, -CH_2), 3.49 (d, 2H, *J* = 9.9 Hz, Sac-H), 3.62 (d, 1H, *J* = 6.6 Hz, Sac-H), 3.78-3.88 (m, 2H, Sac-H), 4.02-4.09 (m, 2H, Sac-H), 4.52 (s, 2H, Sac-OH), 4.60 (d, 1H, *J* = 7.5 Hz, Ano-H), 4.70-4.73 (m, 6H,-CH_2), 5.17 (s, 1H, -NH), 6.26 (q, 2H, *J* = 6.9 Hz, Ar-H), 6.37 (q, 4H, *J* = 7.2 Hz, Ar-H), 7.05-7.10 (m, 1H, Ar-H), 7.45 (q, 2H, *J* = 9.6 Hz, Ar-H), 7.86 (q, 1H, *J* = 7.2 Hz, Ar-H). ^{13}C NMR (75 MHz, $CDCl_3$+DMSO-d_6): δ 12.4, 20.2, 28.5, 37.3, 44.1, 62.0, 66.2, 67.2, 68.1, 68.5, 70.5, 73.1, 74.6, 75.9, 80.1, 80.3, 80.7, 91.1, 92.9, 97.3, 97.5, 99.2, 107.9, 122.4, 123.6, 127.9, 128.5, 132.2, 148.6, 153.1, 168.1 (C=O). Anal. Calcd for $C_{39}H_{50}N_4O_7$: C, 68.20; H, 7.34; N, 8.16. Found: C, 68.23; H, 7.37; N, 8.13.

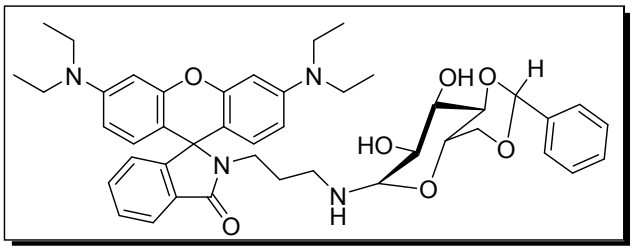
Physicochemical and spectral data for 4,6-*O*-butylidine-*N*-(((rhodamine-B)-lactam)-propyl)-β-D-glucopyranosylamine (15)



Compound **15** was obtained by the reaction of rhodamine B based 1,3-propylenediamine (**3**, 1 mmol, 0.49 g), and 4,6-*O*-butylidine-β-D-glucopyranose (**6**, 1 mmol, 0.23 g) as a pale pink solid. Yield: 0.44 g (62%); mp 144-147 °C; $[\alpha]_D^{23}$ - 77.5 (*c* 1.0 in $CHCl_3$); ^1H NMR (300 MHz, $CDCl_3$+DMSO-d_6): δ 0.87 (t, 3H, *J* = 7.5 Hz, -CH_3), 1.13 (t, 12H, *J* = 6.9 Hz, -CH_3), 1.34-1.42 (m, 2H, -CH_2), 1.54-1.60 (m, 2H, -CH_2), 3.11-3.13 (m, 4H, Sac-H), 3.14 (s, 2H, Sac-OH), 3.16-3.18 (m, 2H, Sac-H), 3.56 (d, 1H, *J* = 8.1 Hz, Ano-H), 3.73-4.10 (m, 8H, -CH_2), 4.49-4.56 (m, 6H, -CH_2), 5.05 (s, 1H, -NH), 5.12 (d, 1H, *J* = 3.6 Hz, Sac-H), 6.23 (q, 2H, *J* = 9.0 Hz, Ar-H), 6.34 (q, 4H, *J* = 7.2 Hz, Ar-H), 7.02 (q, 1H, *J* = 6.9 Hz, Ar-H), 7.42 (t, 2H, *J* = 7.2 Hz, Ar-H), 7.82 (q, 1H, *J* = 7.5 Hz, Ar-H). ^{13}C NMR (75 MHz, $CDCl_3$+DMSO-d_6): δ 17.3, 18.7, 22.1, 40.9, 41.0, 49.0, 67.0, 71.2, 73.0, 73.4, 75.3, 78.0, 80.7, 85.1, 85.7, 96.0, 97.8, 102.2, 102.4, 106.9,

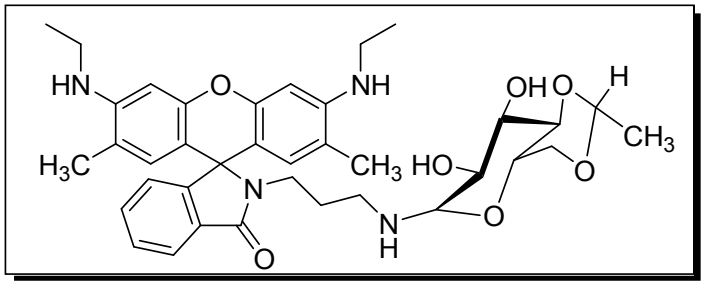
110.1, 112.7, 127.3, 128.4, 132.8, 133.4, 153.5, 158.0, 172.8 (C=O). Anal. Calcd for $C_{41}H_{54}N_4O_7$: C, 68.88; H, 7.61; N, 7.84. Found: C, 68.85; H, 7.63; N, 7.86.

Physicochemical and spectral data for 4,6-*O*-benzylidine-*N*-(((rhodamine-B)-lactam)-propyl)-β-D-glucopyranosylamine (16)



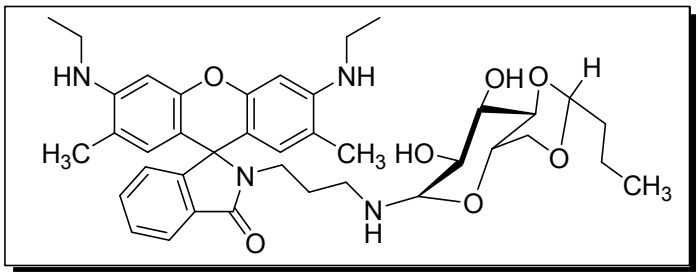
Compound **16** was obtained by the reaction of rhodamine B based 1,3-propylenediamine (**3**, 1 mmol, 0.49 g), and 4,6-*O*-benzylidine-β-D-glucopyranose (**7**, 1 mmol, 0.26 g) as a pale pink solid. Yield: 0.52 g (70%); mp 162-164 °C; $[\alpha]_D^{23}$ - 97.4 (*c* 1.0 in $CHCl_3$); ^{1}H NMR (300 MHz, $CDCl_3$+DMSO-d_6): δ 1.15 (t, 12H, *J* = 6.9 Hz, -CH_3), 3.11-3.18 (m, 4H, Sac-H), 3.29-3.34 (m, 8H, -CH_2), 3.43 (t, 1H, *J* = 9.3 Hz, Sac-H), 3.59-3.71 (m, 6H, -CH_2), 3.84 (d, 1H, *J* = 8.4 Hz, Sac-H), 4.19 (q, 1H, *J* = 7.2 Hz, Sac-H), 4.68 (s, 2H, Sac-OH), 5.26 (s, 1H, -NH), 5.49 (d, 1H, *J* = 8.7 Hz, Ano-H), 6.25 (q, 2H, *J* = 8.7 Hz, Ar-H), 6.33-6.39 (m, 4H, Ar-H), 7.05 (q, 1H, *J* = 7.8 Hz, Ar-H), 7.31 (t, 3H, *J* = 8.8 Hz, Ar-H), 7.41-7.48 (m, 4H, Ar-H), 7.85 (q, 1H, *J* = 8.2 Hz, Ar-H). ^{13}C NMR (75 MHz, $CDCl_3$+DMSO-d_6): δ 17.3, 33.5, 42.2, 49.0, 69.8, 72.1, 73.6, 78.6, 79.4, 85.9, 96.1, 102.4, 106.3, 110.3, 112.7, 127.3, 128.4, 131.1, 132.8, 133.4, 133.6, 135.9, 137.1, 142.2, 153.5, 158.0, 158.2, 172.8 (C=O). Anal. Calcd for $C_{44}H_{52}N_4O_7$: C, 70.57; H, 7.00; N, 7.48. Found: C, 70.59; H, 7.03; N, 7.45.

Physicochemical and spectral data for 4,6-*O*-ethylidine-*N*-(((rhodamine-6G)-lactam)-propyl)-β-D-glucopyranosylamine (17)



Compound **17** was obtained by the reaction of rhodamine 6G based 1,3-propylenediamine (**4**, 1 mmol, 0.47 g), and 4,6-*O*-ethylidine-β-D-glucopyranose (**5**, 1 mmol, 0.20 g) as a pale pink solid. Yield: 0.48 g (74%); mp 142-144 °C; $[\alpha]_D^{23}$- 32.2 (*c* 1.0 in $CHCl_3$); ^1H NMR (300 MHz, $CDCl_3$+DMSO-d_6): δ 1.13 (t, 9H, *J* = 6.9 Hz, -CH_3), 1.90 (s, 6H, -CH_3), 3.15-3.25 (m, 6H, -CH_2), 3.31 (d, 1H, *J* = 8.4 Hz, Sac-H), 3.42-3.54 (m, 2H, Sac-H), 3.65 (q, 3H, *J* = 6.7 Hz, Sac-H), 3.75 (d, 1H, *J* = 8.4 Hz, Sac-H), 3.84-3.90 (m, 2H, Sac-H), 4.02 (s, 2H, Sac-OH), 4.60 (d, 1H, *J* = 7.8 Hz, Ano-H), 4.69-4.75 (m, 4H, -CH_2), 5.17 (s, 1H, -NH), 6.16 (d, 2H, *J* = 7.2 Hz, Ar-H), 6.33 (s, 2H, Ar-H), 7.03 (t, 1H, *J* = 7.2 Hz, Ar-H), 7.46 (q, 2H, *J* = 7.8 Hz, Ar-H), 7.85 (q, 1H, *J* = 7.8 Hz, Ar-H).^{13}C NMR (75 MHz, $CDCl_3$+DMSO-d_6): δ 17.8, 19.8, 20.0, 23.5, 23.6, 23.8, 41.5, 65.4, 68.4, 69.6, 71.5, 71.7, 71.9, 73.9, 76.5, 76.6, 81.3, 83.5, 84.2, 96.3, 99.7, 100.7, 102.6, 104.5, 105.9, 108.9, 121.1, 125.8, 126.9, 131.4, 131.5, 135.6, 150.7, 154.9, 171.2 (C=O). Anal. Calcd for $C_{37}H_{46}N_4O_7$: C, 67.46; H, 7.04; N, 8.50. Found: C, 67.49; H, 7.07; N, 8.52.

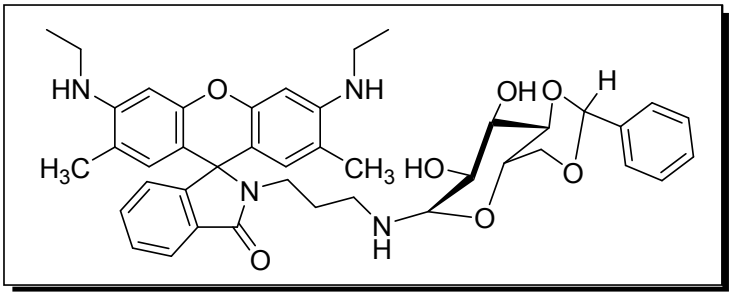
Physicochemical and spectral data for 4,6-*O*-butylidine-*N*-(((rhodamine-6G)-lactam)-propyl)-β-D-glucopyranosylamine (18)



Compound **18** was obtained by the reaction of rhodamine 6G based 1,3-propylenediamine (**4**, 1 mmol, 0.47 g), and 4,6-*O*-butylidine-β-D-glucopyranose (**6**, 1 mmol, 0.23 g) as a pale pink solid. Yield: 0.53 g (64%); mp 156-159 °C; $[\alpha]_D^{23}$ - 67.6 (*c* 1.0 in $CHCl_3$); ^1H NMR (300 MHz, $CDCl_3$+DMSO-d_6): δ 0.88 (t, 6H, *J* = 7.2 Hz, -CH_3), 1.29 (t, 3H, *J* = 6.6 Hz, -CH_3), 1.36-1.43 (m, 2H, -CH_2), 1.57-1.61 (m, 2H, -CH_2), 1.88 (s, 6H, -CH_3), 3.42-3.54 (m, 6H, -CH_2), 3.75-3.85 (m, 4H, Sac-H), 3.91 (s, 2H, Sac-OH), 3.98-4.05 (m, 5H, Sac-H), 4.07 (d, 1H, *J* = 7.5 Hz, Ano-H), 4.50-4.52 (m, 4H, -CH_2), 5.10 (s, 1H, -NH), 6.12 (s, 2H, Ar-H), 6.29 (s, 2H, Ar-H), 6.99 (s, 1H, Ar-H), 7.45 (s, 2H, Ar-H), 7.84 (s, 1H, Ar-H). ^{13}C NMR (75 MHz, $CDCl_3$+DMSO-d_6): δ 21.6, 25.2, 25.3, 42.9, 66.8, 71.1, 72.9, 73.3, 75.2, 78.1, 80.8, 85.2, 85.8, 97.9, 101.4, 102.4, 103.4, 104.0, 110.4, 122.9, 127.2, 128.5, 132.9, 137.2, 152.3, 156.4, 172.6 (C=O). Anal. Calcd

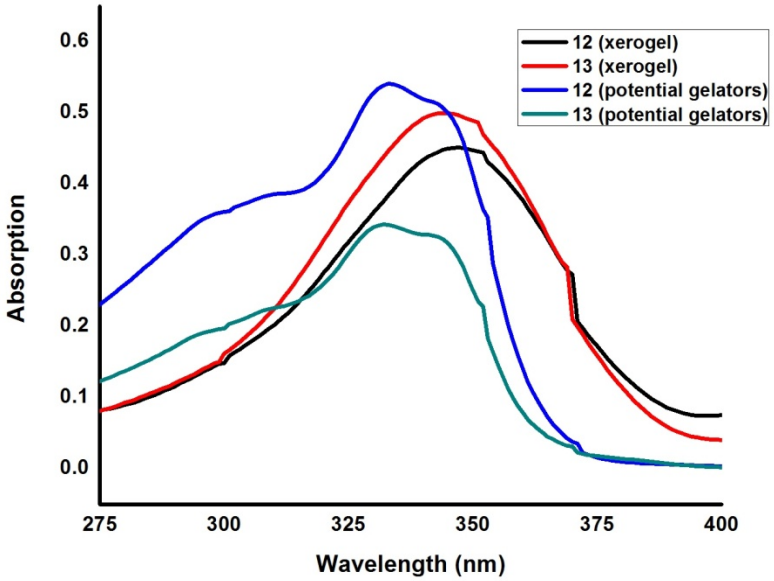
for $C_{39}H_{50}N_4O_7$: C, 68.20; H, 7.34; N, 8.16. Found: C, 68.22; H, 7.37; N, 8.18.

Physicochemical and spectral data for 4,6-*O*-benzylidine-*N*-(((rhodamine-6G)-lactam)-propyl)-β-D-glucopyranosylamine (19)

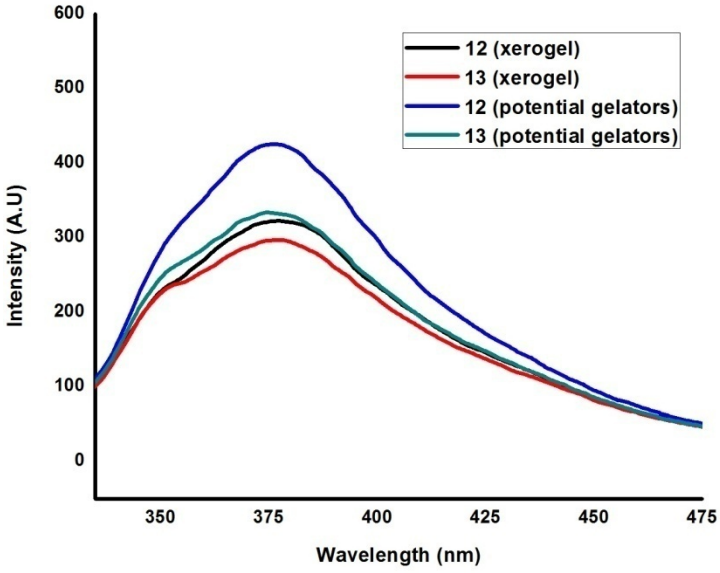


Compound **19** was obtained by the reaction of rhodamine 6G based 1,3-propylenediamine (**4**, 1 mmol, 0.47 g), and 4,6-*O*-benzylidine-β-D-glucopyranose (**7**, 1 mmol, 0.26 g) as a pale pink solid. Yield: 0.44 g (61%); mp 172-174 °C; $[\alpha]_D^{23}$ - 87.4 (*c* 1.0 in $CHCl_3$); ^{1}H NMR (300 MHz, $CDCl_3$+DMSO-d_6): δ 1.33 (t, 6H, *J* = 6.9 Hz, -CH_3), 1.92 (s, 6H, -CH_3), 3.20-3.48 (m, 6H, -CH_2), 3.50-3.58 (m, 4H, Sac-H), 3.66-3.78 (m, 4H, -CH_2), 3.81-4.33 (m, 3H, Sac-H), 4.67 (d, 1H, *J* = 7.8 Hz, Ano-H), 5.23 (d, 2H, *J* = 3.6 Hz, Sac-H), 5.51 (s, 2H, Sac-OH), 5.23 (s, 1H, -NH), 6.19 (d, 2H, *J* = 7.2 Hz, Ar-H), 6.36 (s, 2H, Ar-H), 7.05 (d, 1H, *J* = 7.4 Hz, Ar-H), 7.35 (t, 4H, *J* = 7.2 Hz, Ar-H), 7.48-7.51 (m, 3H, Ar-H), 7.91 (q, 1H, *J* = 7.0 Hz, Ar-H). ^{13}C NMR (75 MHz, $CDCl_3$+DMSO-d_6): δ 19.3, 21.2, 21.5, 43.0, 66.9, 71.1, 73.5, 73.9, 75.4, 78.0, 80.7, 81.9, 85.7, 86.3, 97.9, 101.2, 102.3, 106.4, 122.7, 128.4, 130.8, 130.9, 131.1, 131.2, 131.3, 132.8, 133.0, 133.7, 142.2, 142.3, 142.6, 152.3, 156.3, 172.8 (C=O). Anal. Calcd for $C_{42}H_{48}N_4O_7$: C, 69.98; H, 6.71; N, 7.77. Found: C, 69.95; H, 6.71; N, 7.75.

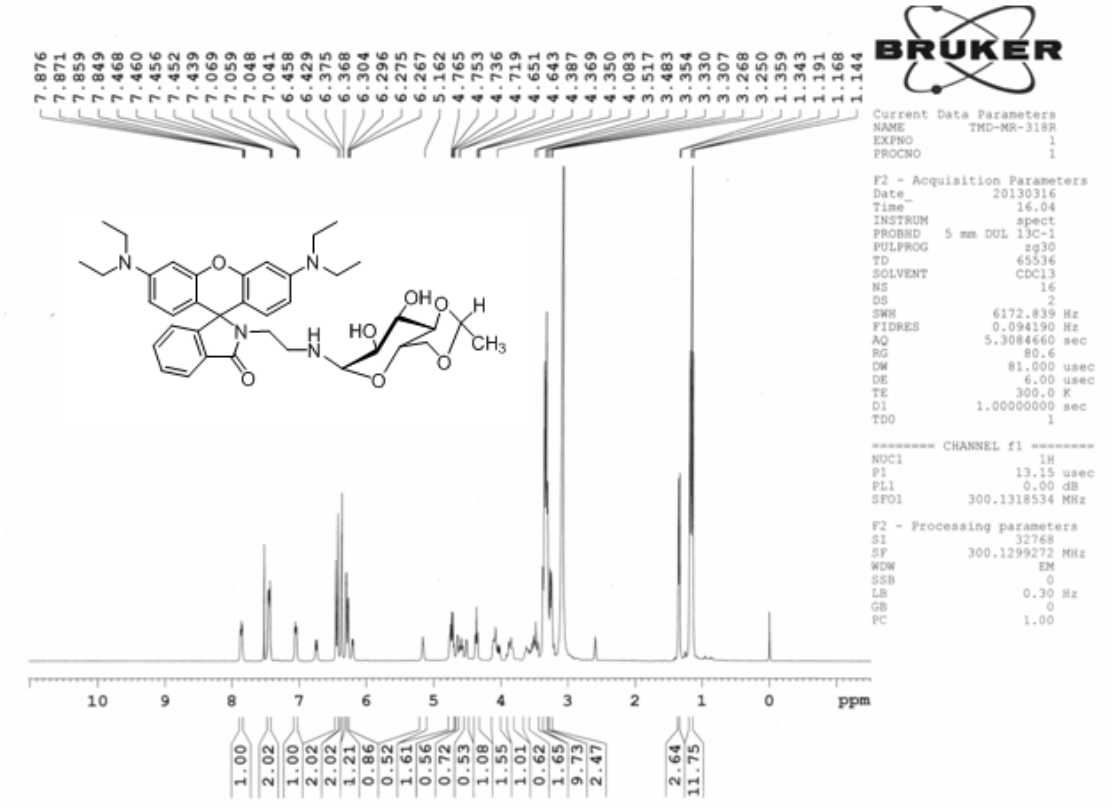
Absorption spectra of potential gelators and xerogels



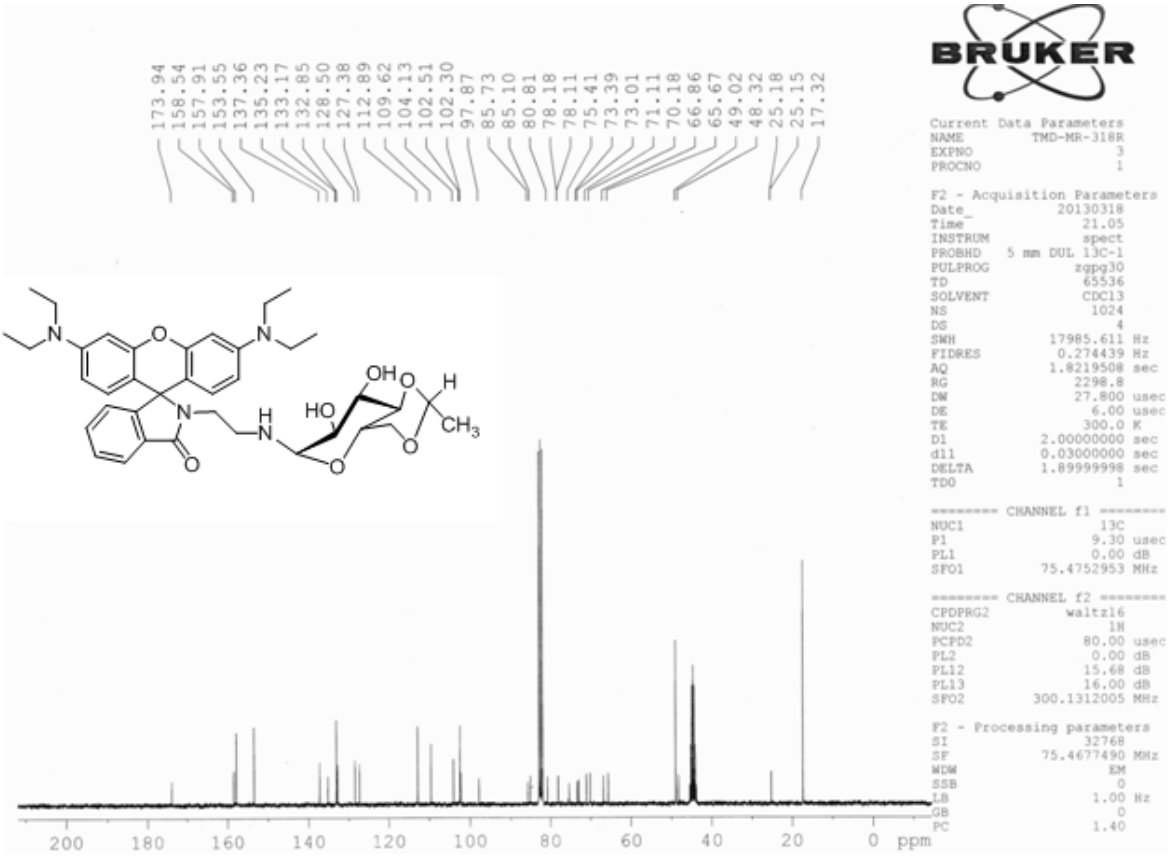
Emission spectra of potential gelators and xerogels



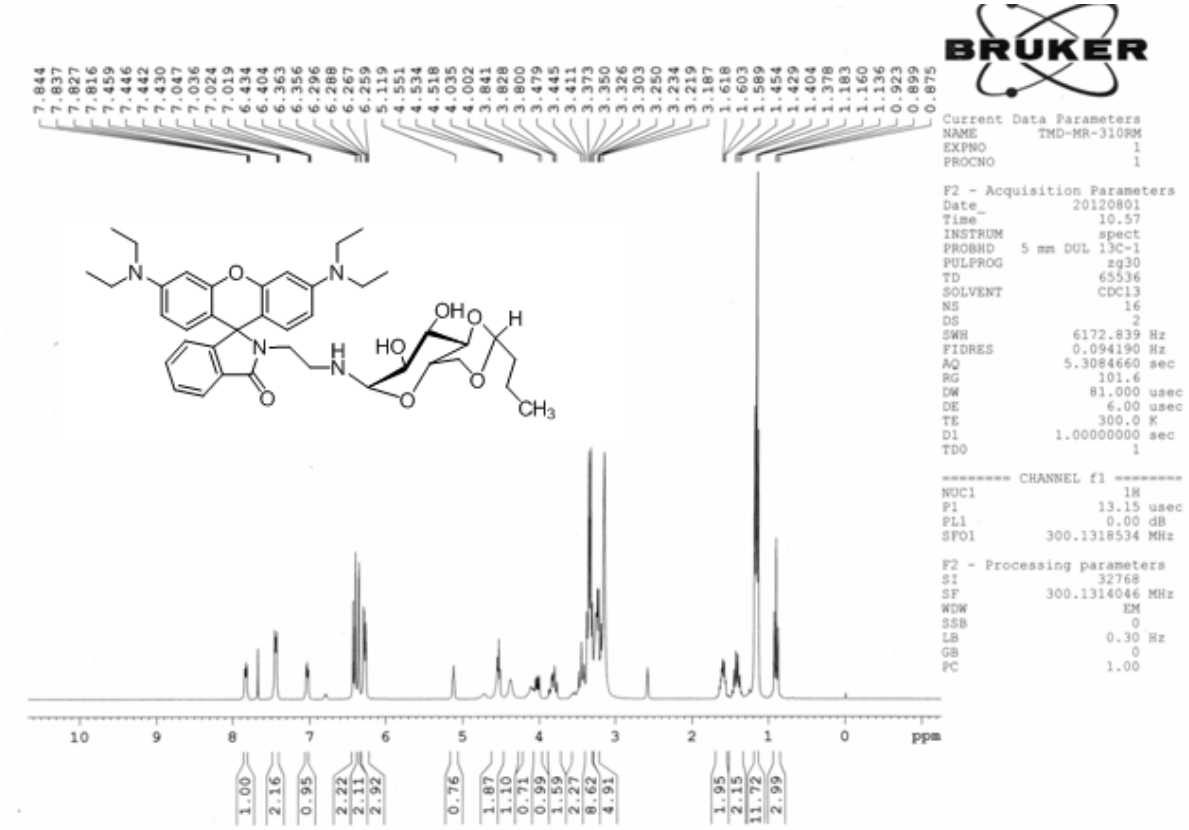
S1. ^{1}H NMR spectrum of compound **8**



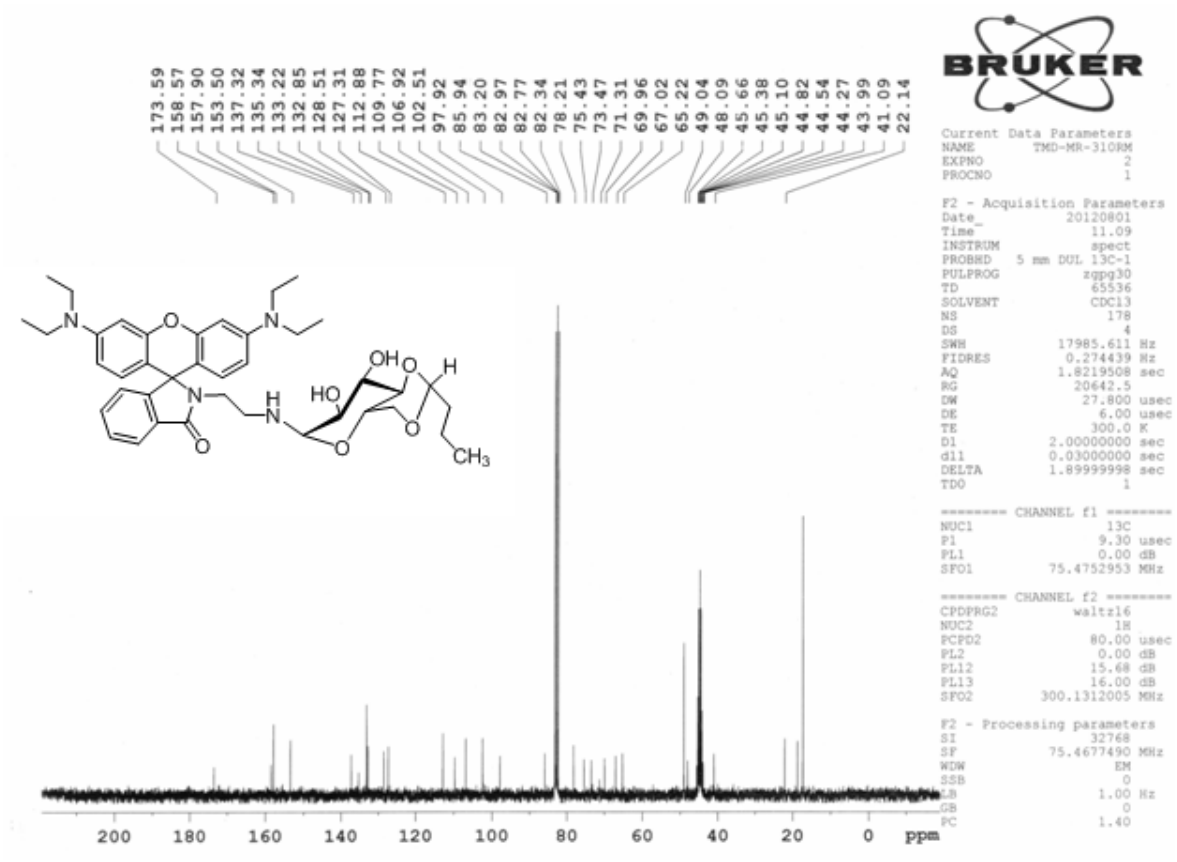
S2. ^{13}C NMR spectrum of compound **8**



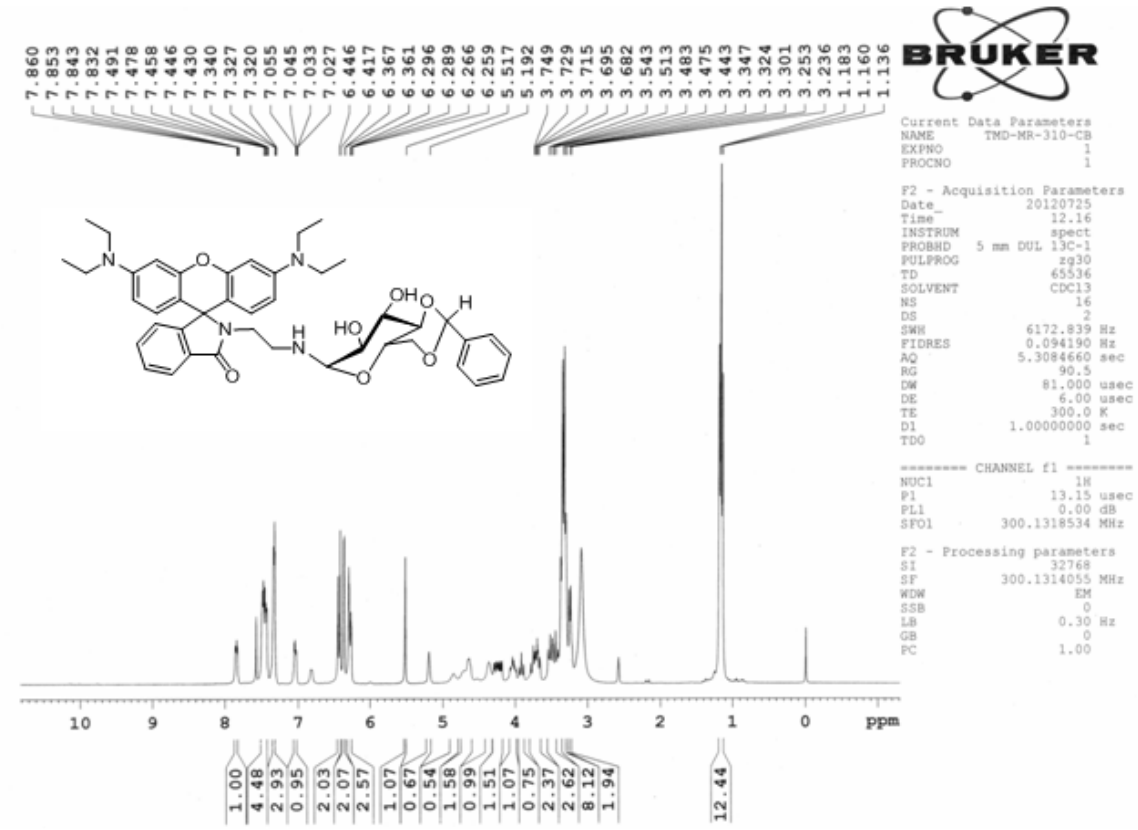
S3. ^{1}H NMR spectrum of compound **9**



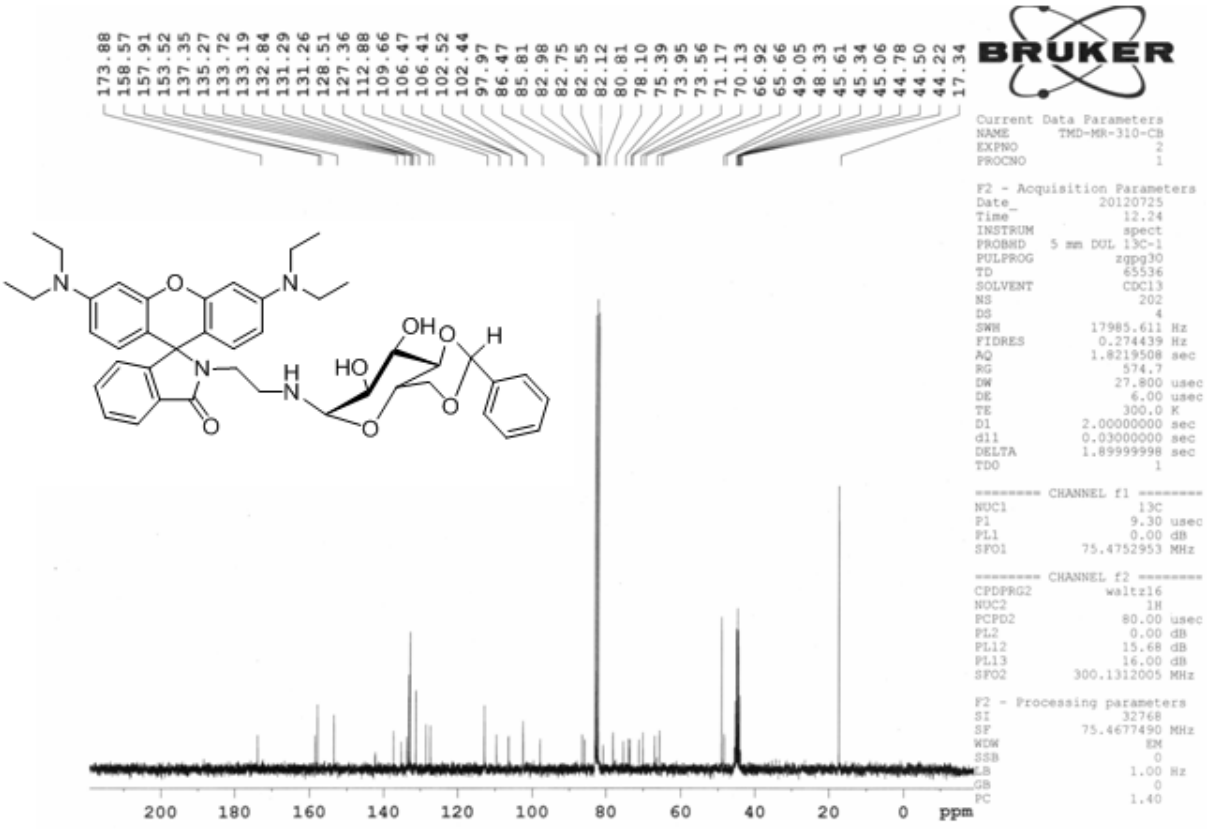
S4. ^{13}C NMR spectrum of compound **9**



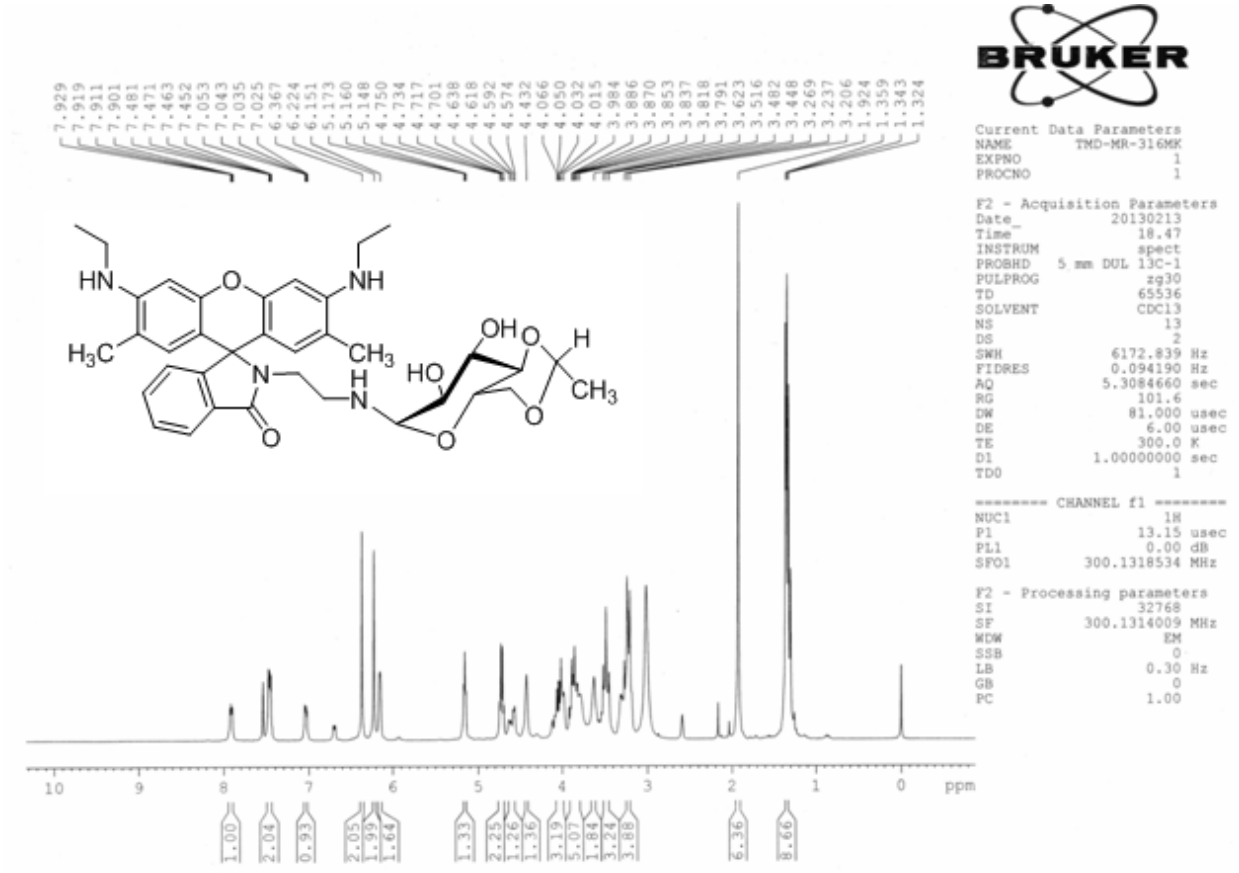
S5. ^{1}H NMR spectrum of compound **10**



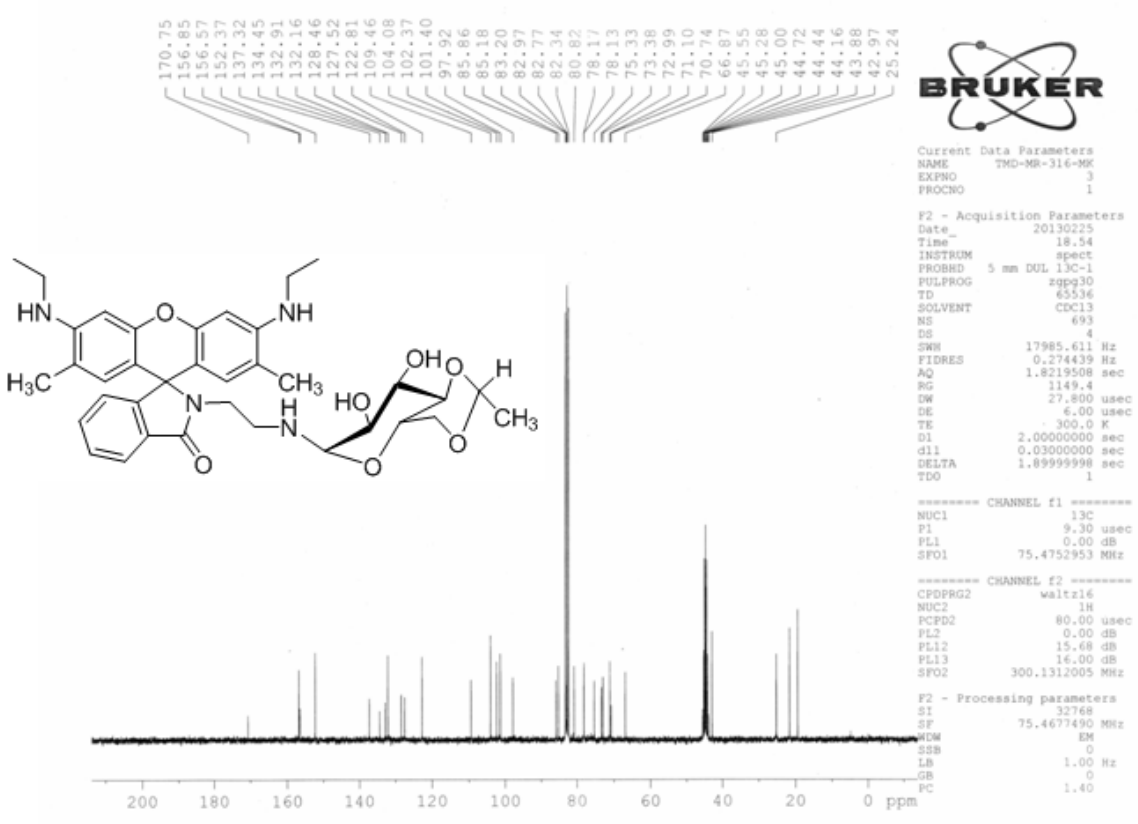
S6. ^{13}C NMR spectrum of compound **10**



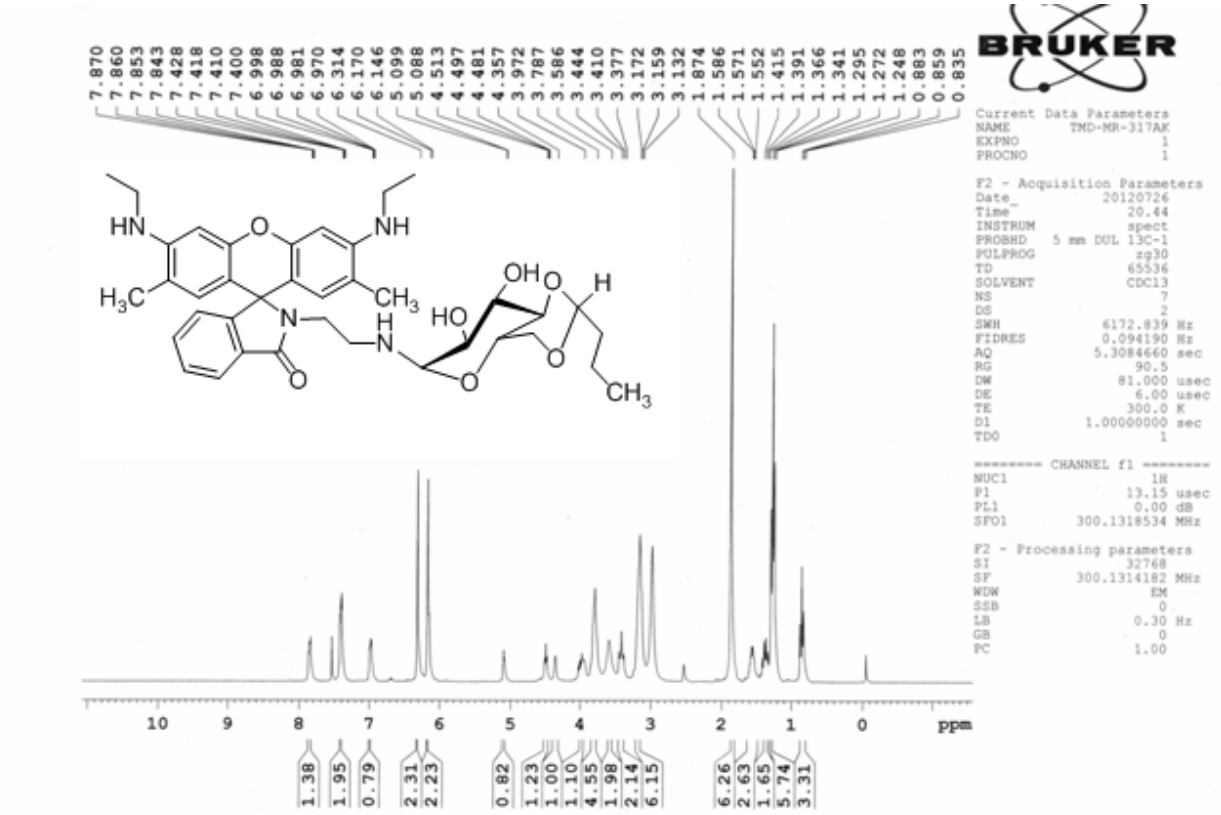
S7. ^{1}H NMR spectrum of compound **11**



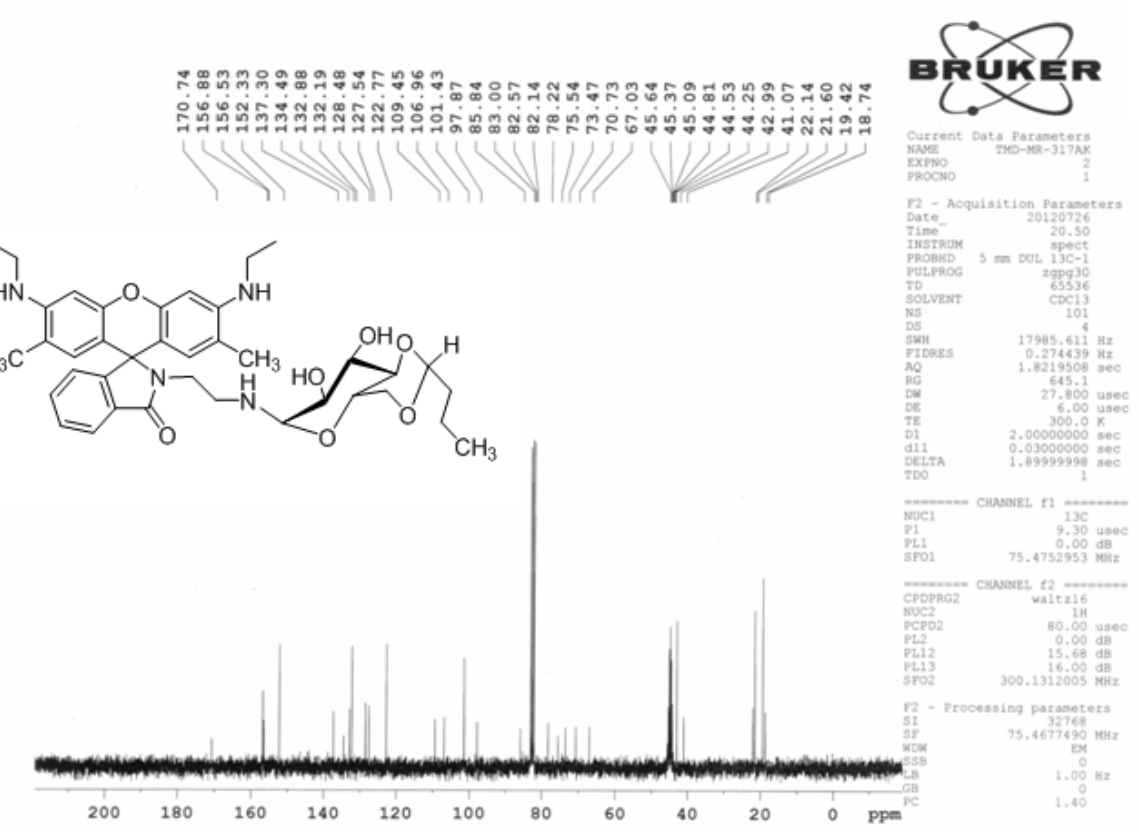
S8. ^{13}C NMR spectrum of compound **11**



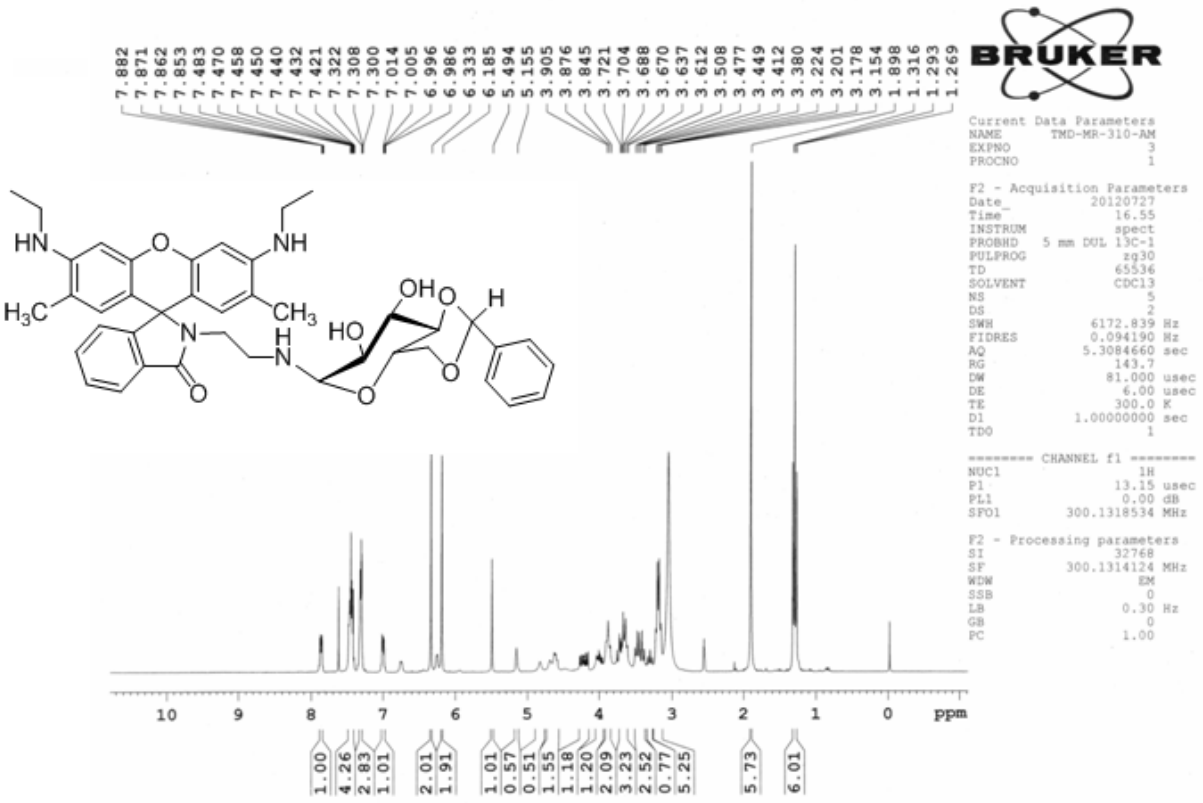
S9. ^{1}H NMR spectrum of compound **12**



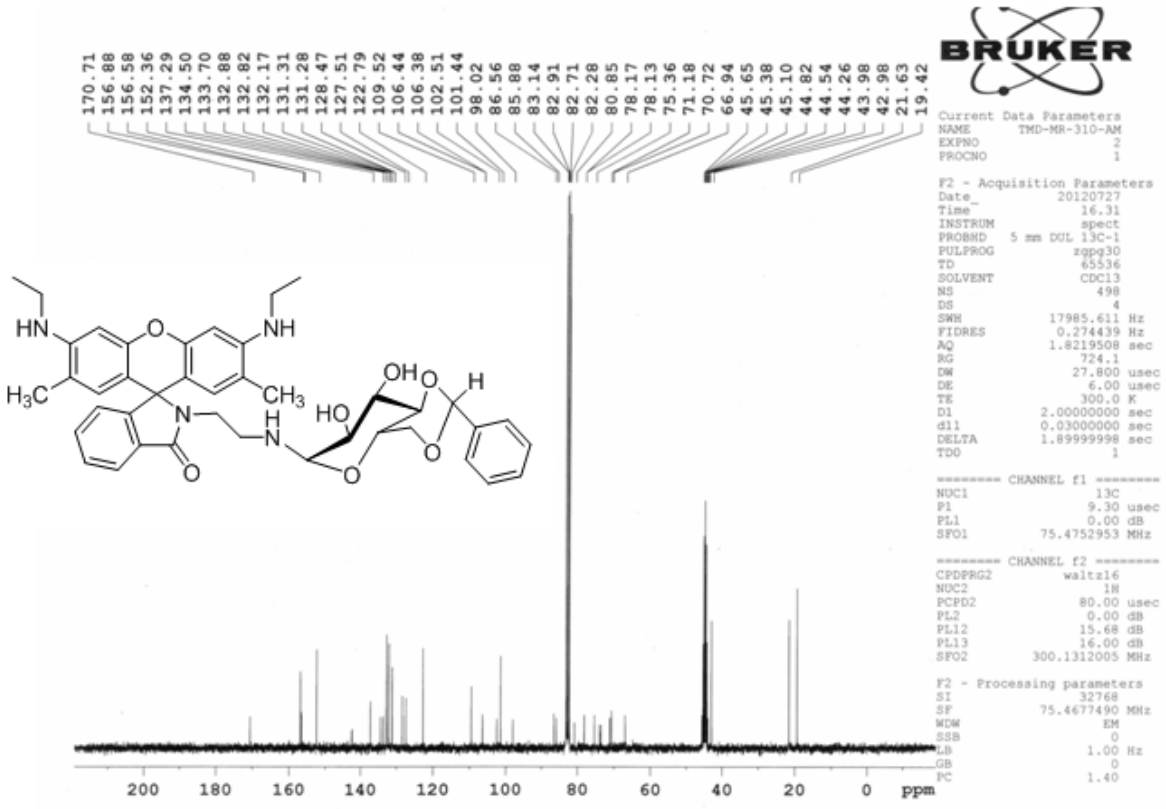
S10. ^{13}C NMR spectrum of compound **12**



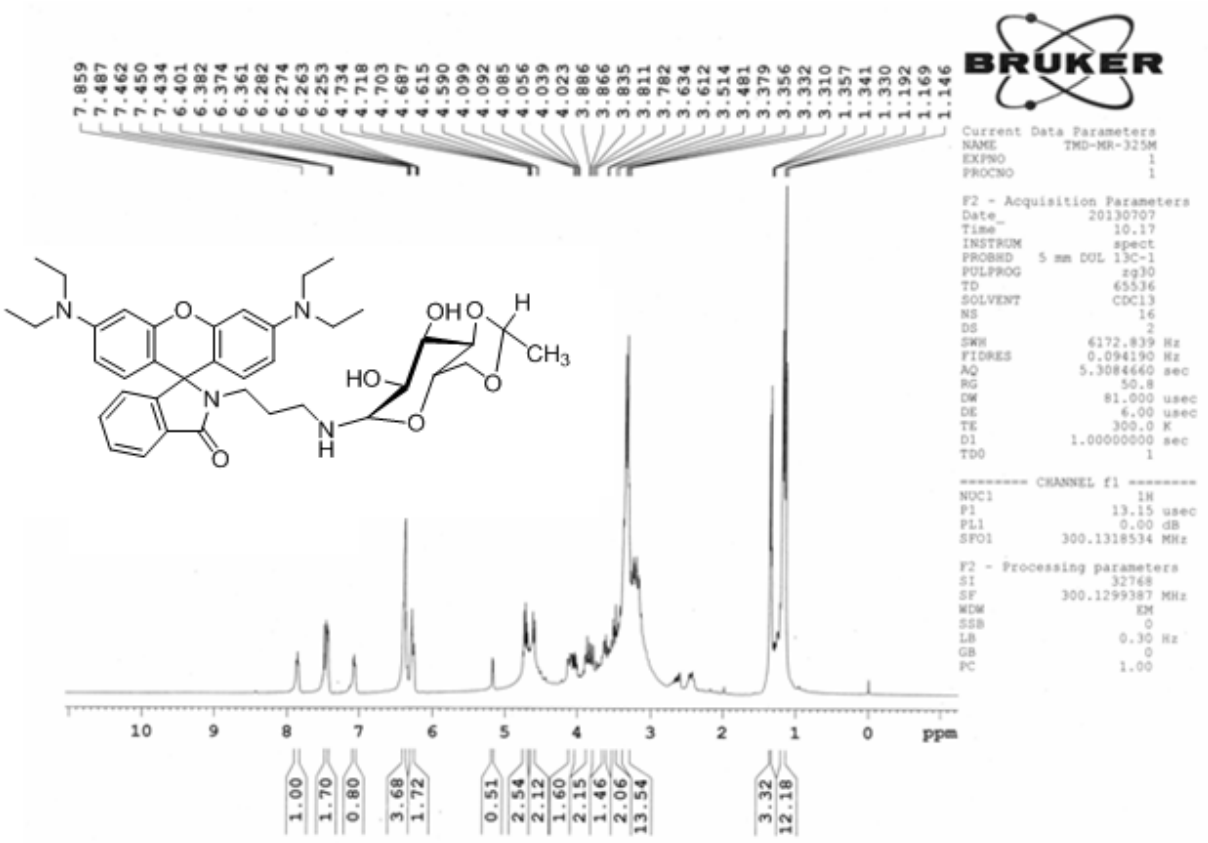
S11. ^{1}H NMR spectrum of compound **13**



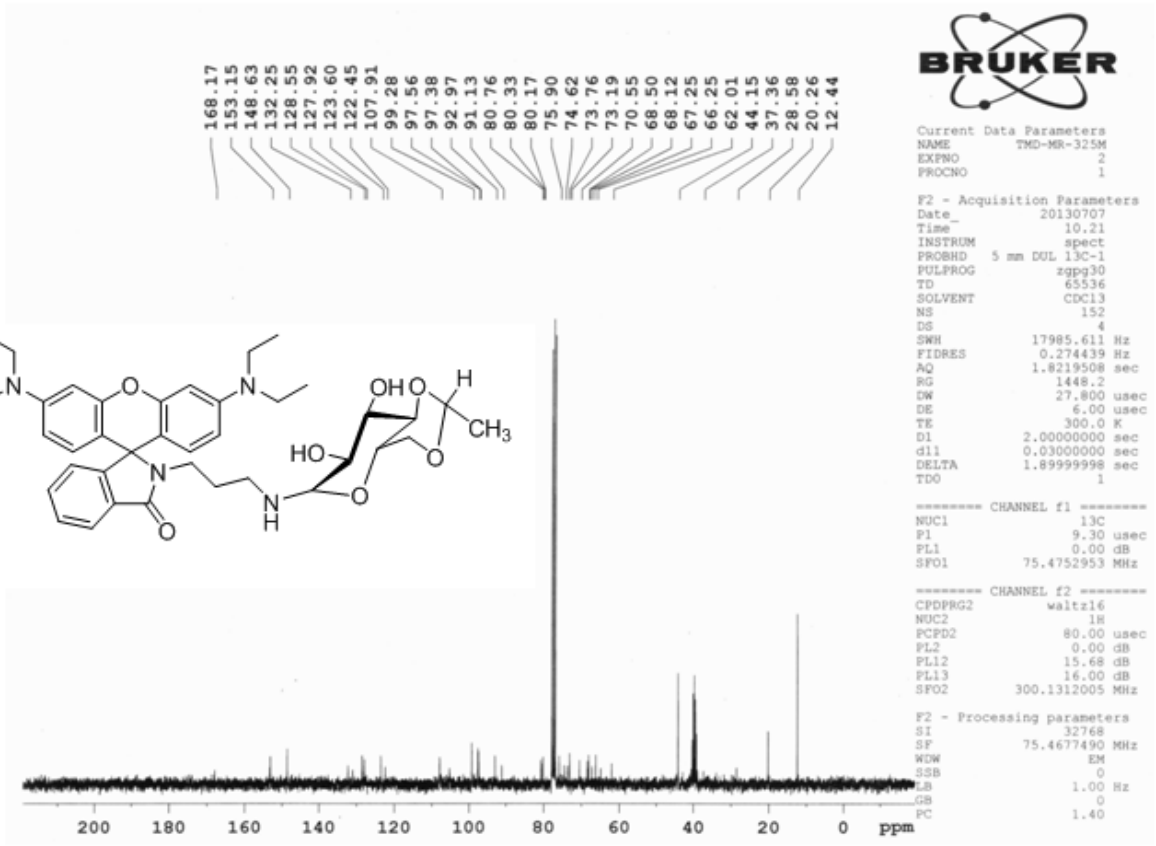
S12. ^{13}C NMR spectrum of compound **13**



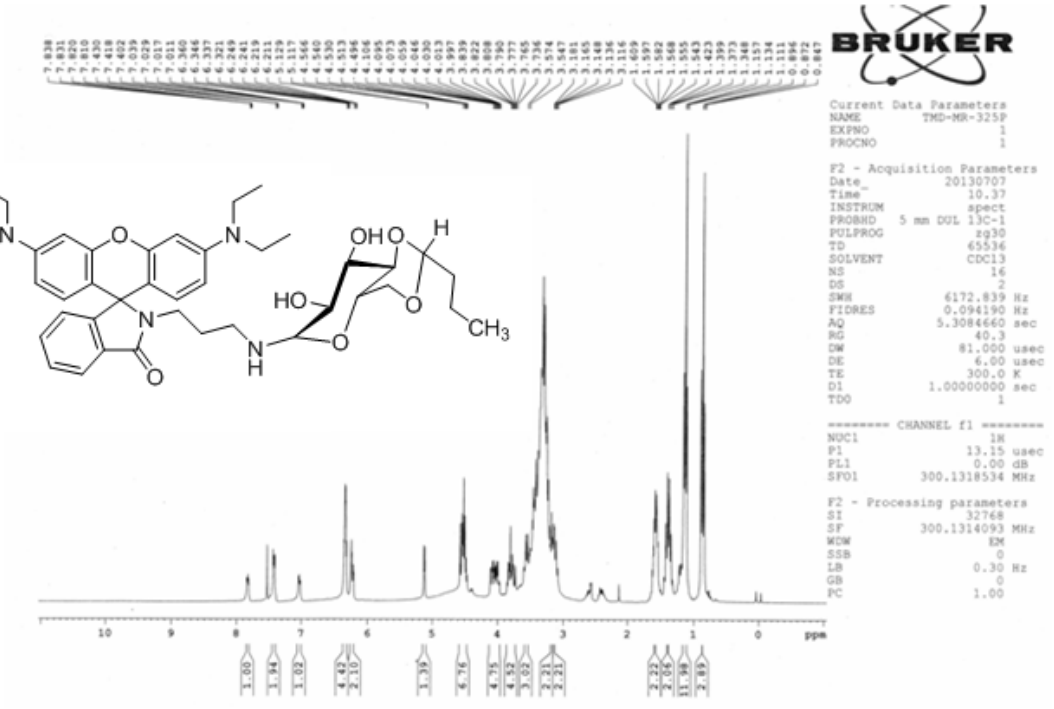
S13. ^{1}H NMR spectrum of compound **14**



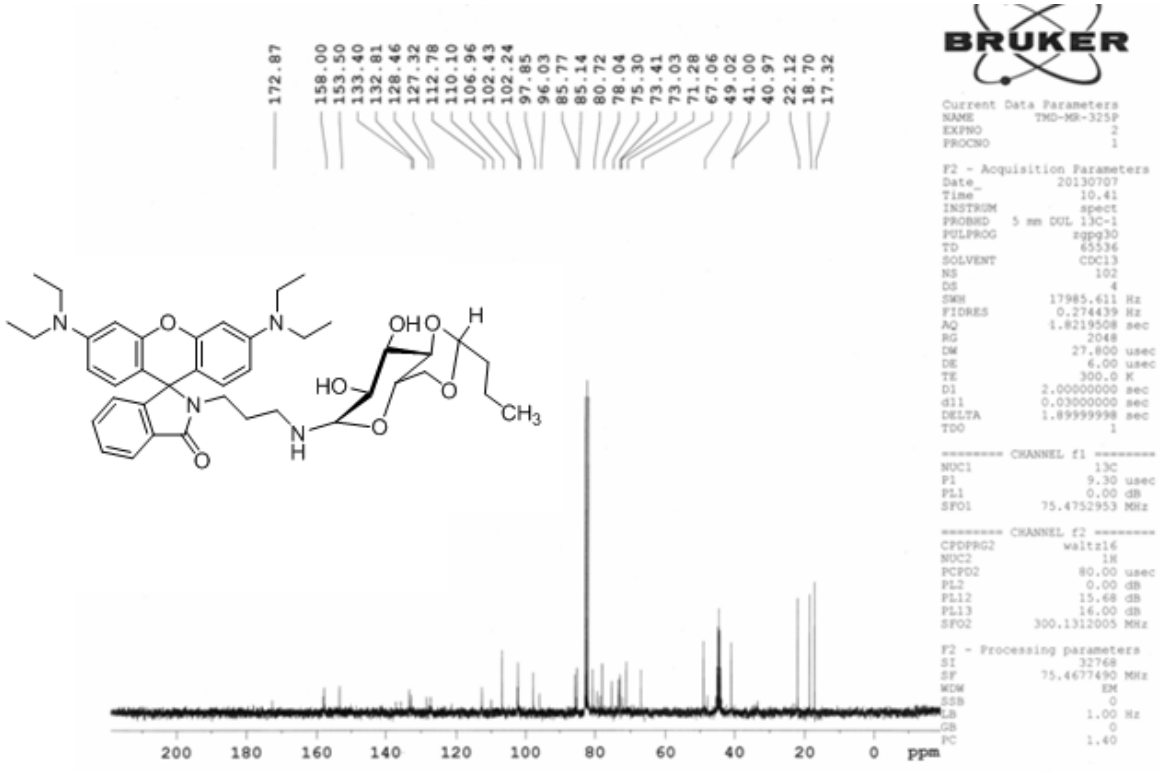
S14. ^{13}C NMR spectrum of compound **14**



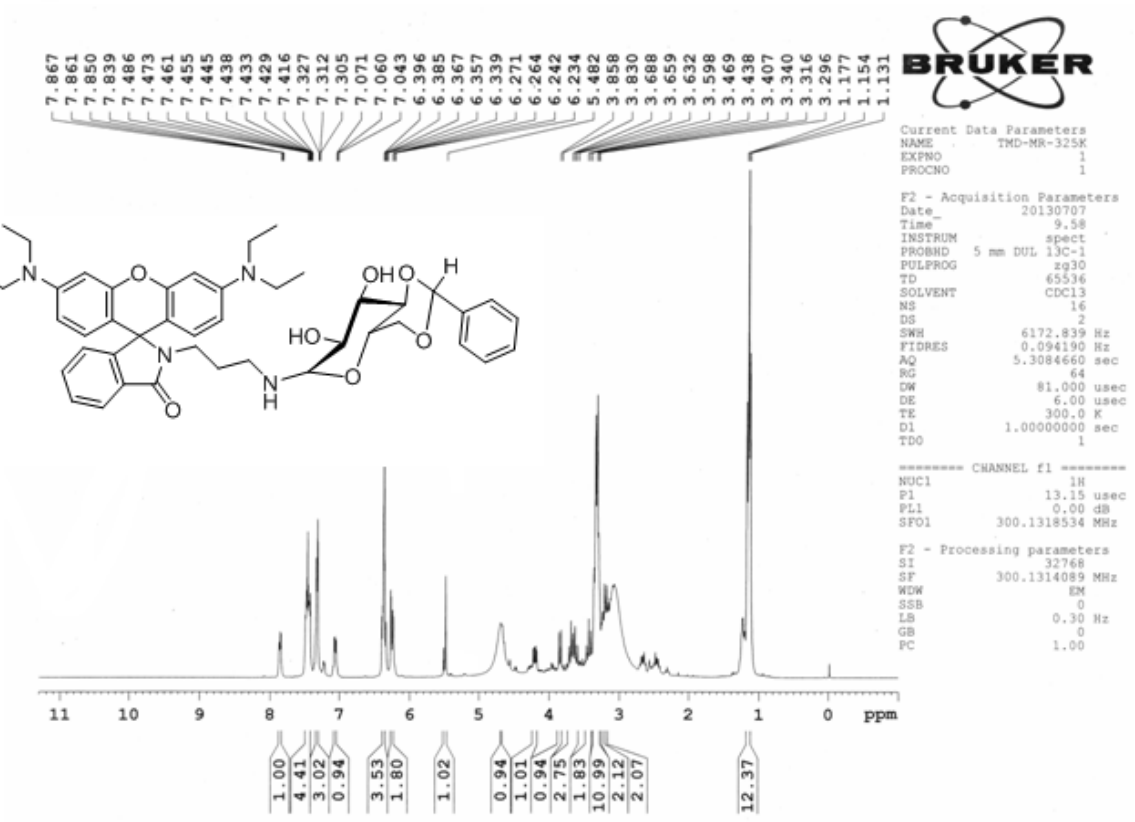
S15. ^{1}H NMR spectrum of compound **15**



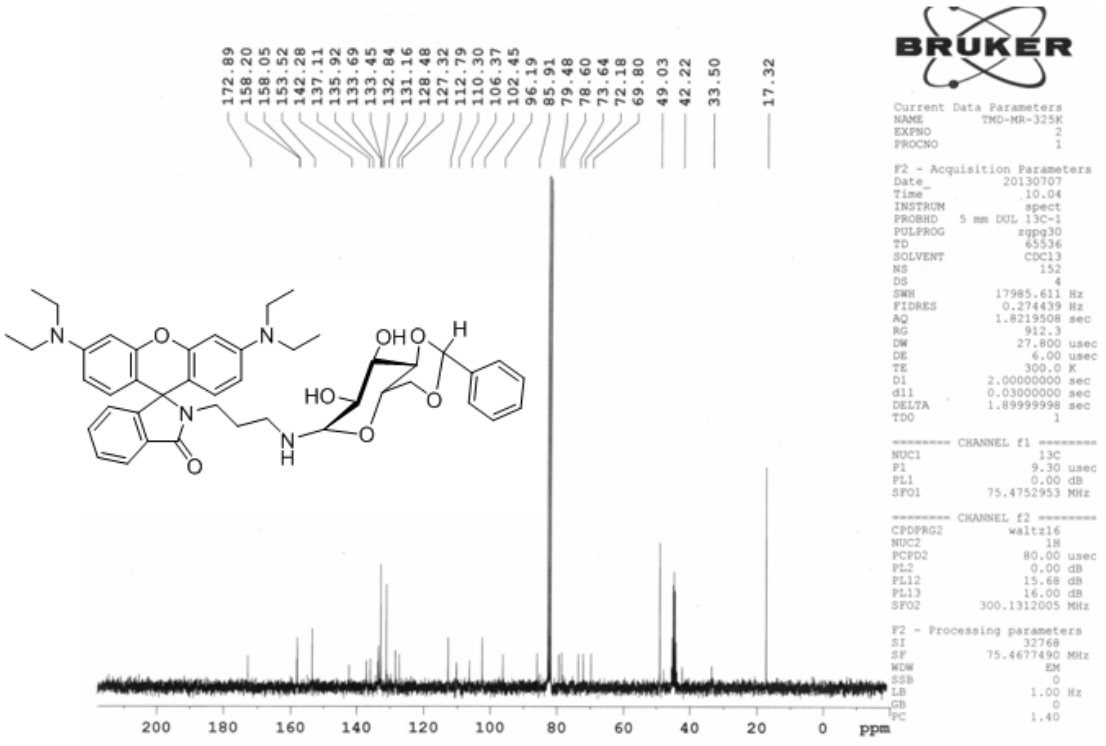
S16. ^{13}C NMR spectrum of compound **15**



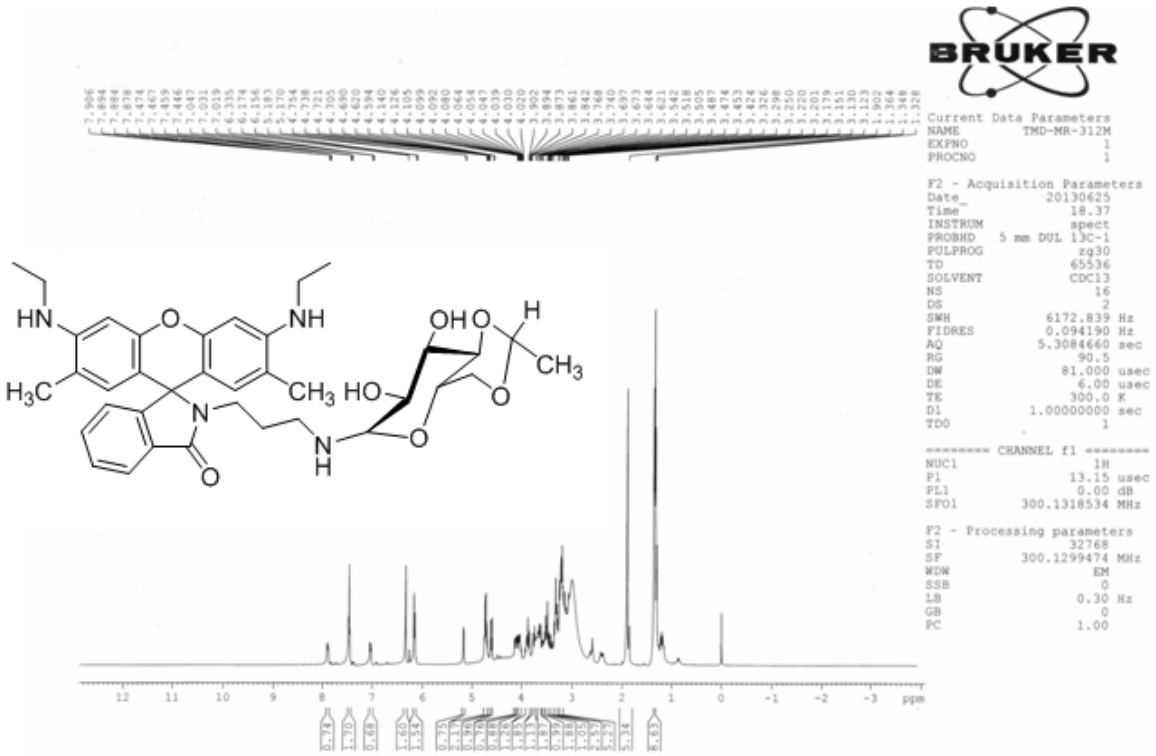
S17. ^{1}H NMR spectrum of compound **16**



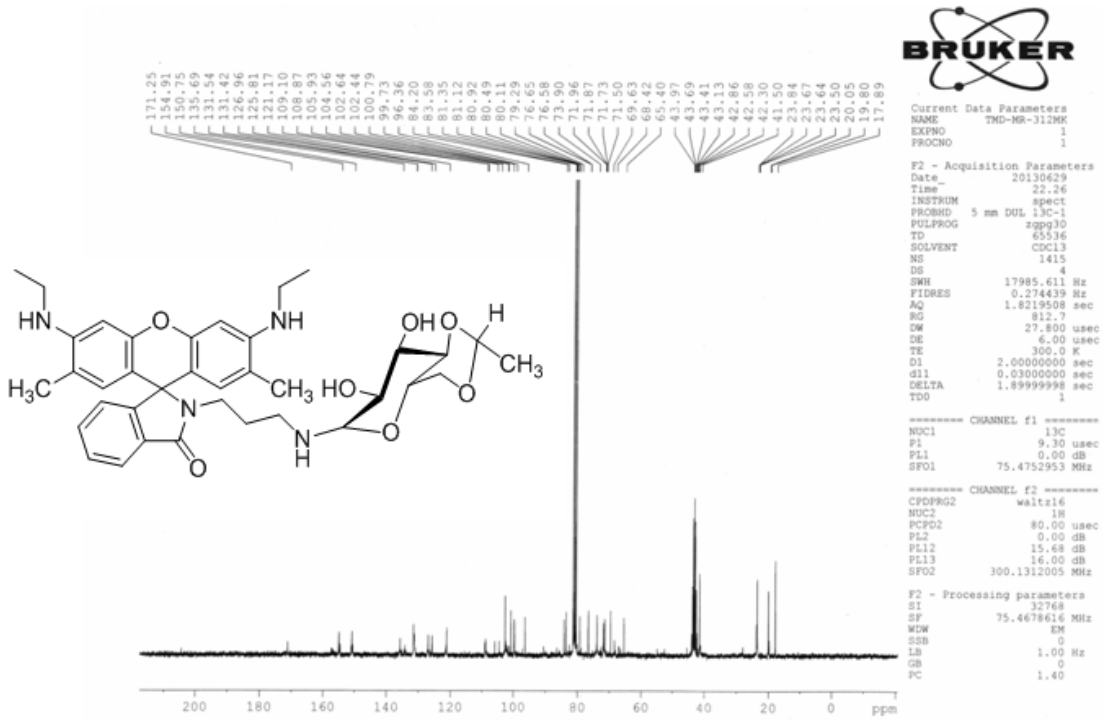
S18. ^{13}C NMR spectrum of compound **16**



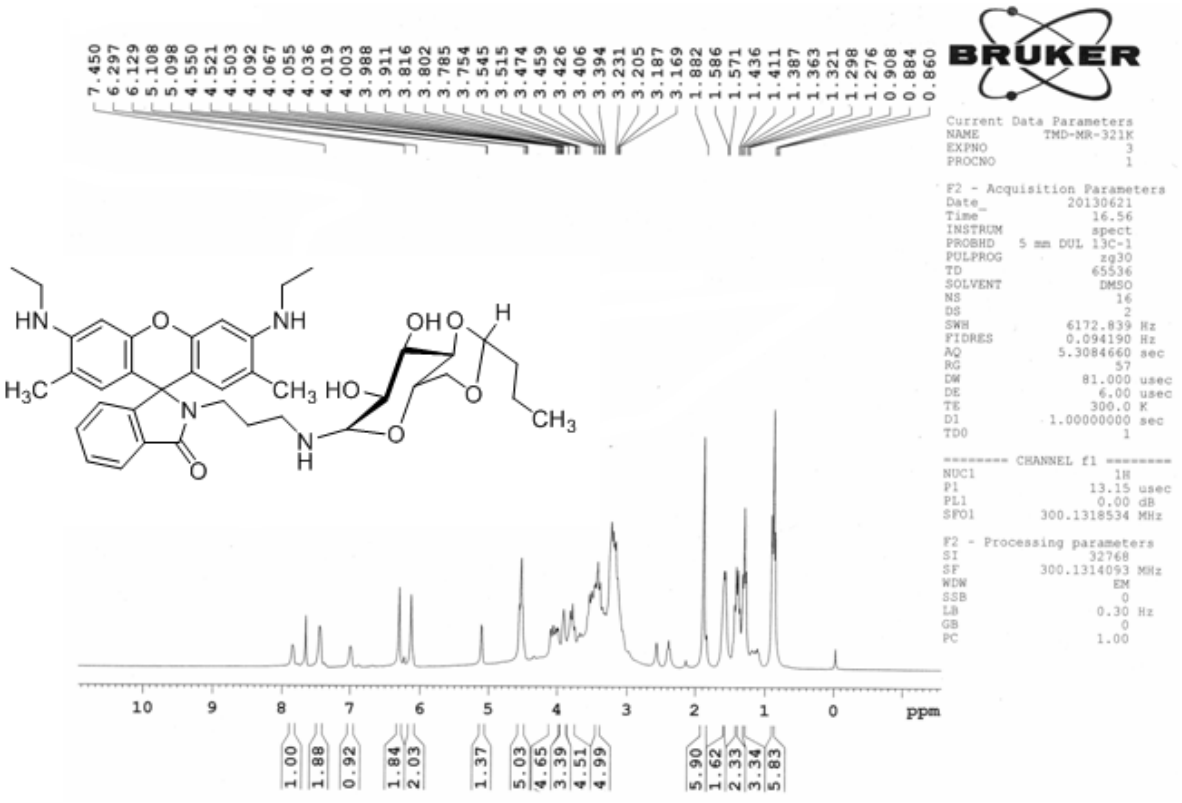
S19. ^{1}H NMR spectrum of compound **17**



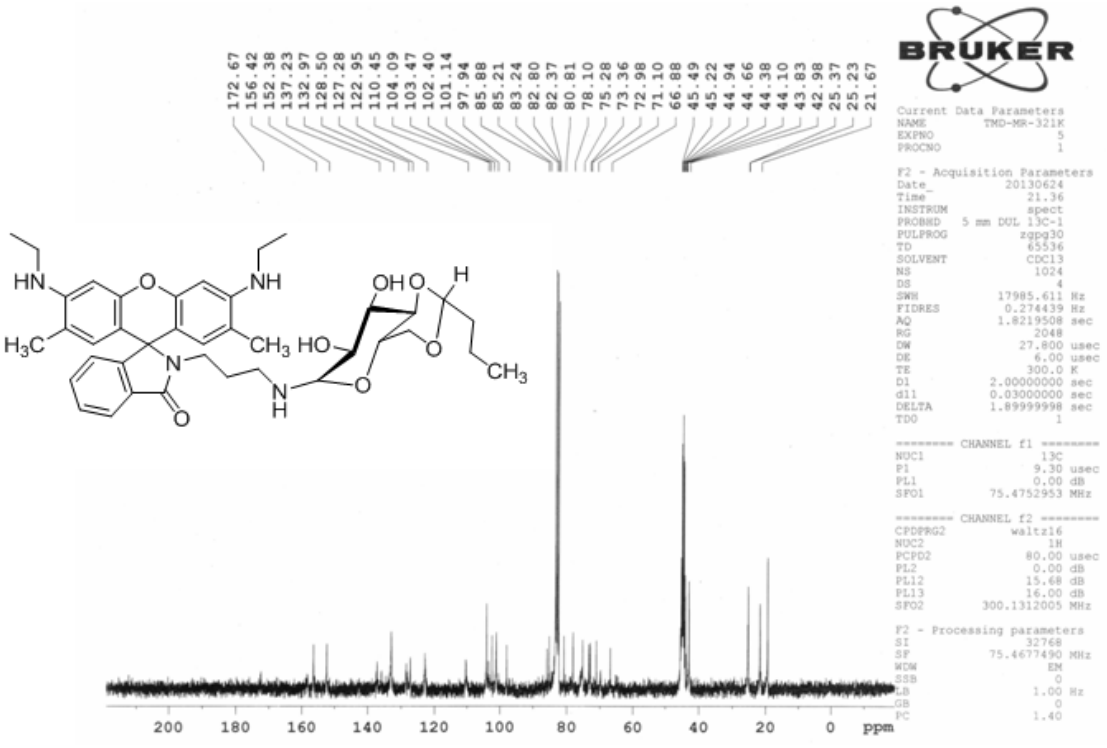
S20. ^{13}C NMR spectrum of compound **17**



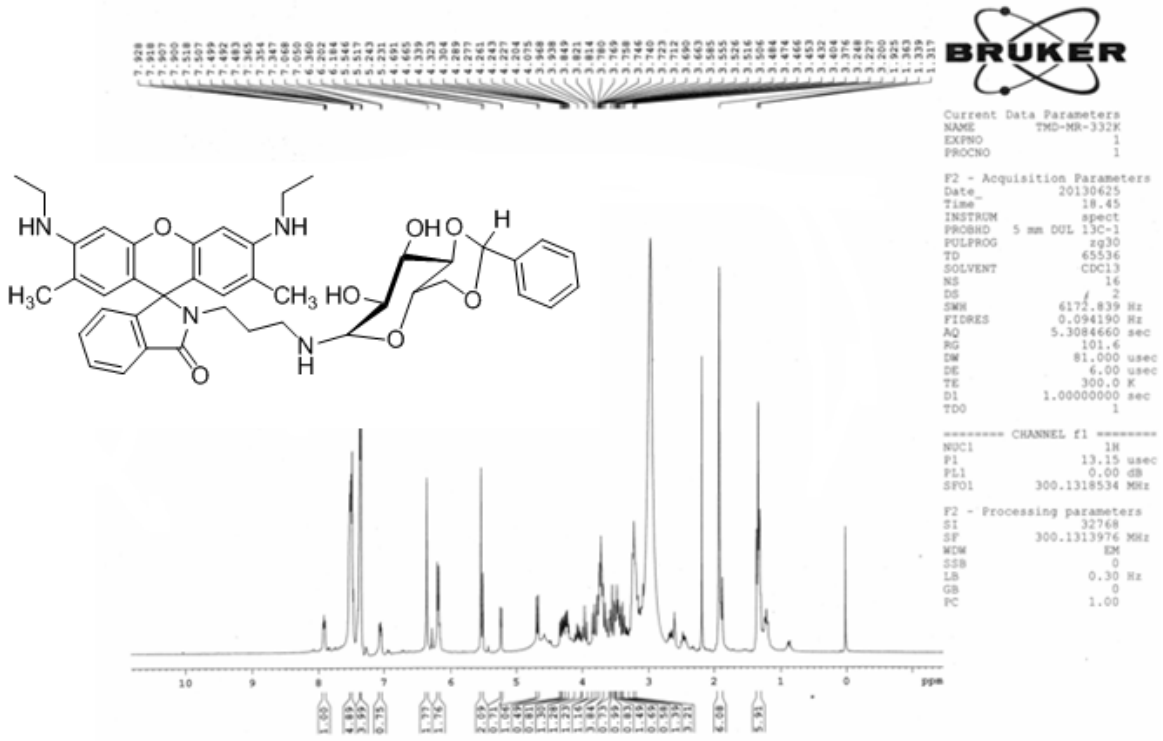
S21. ^{1}H NMR spectrum of compound **18**



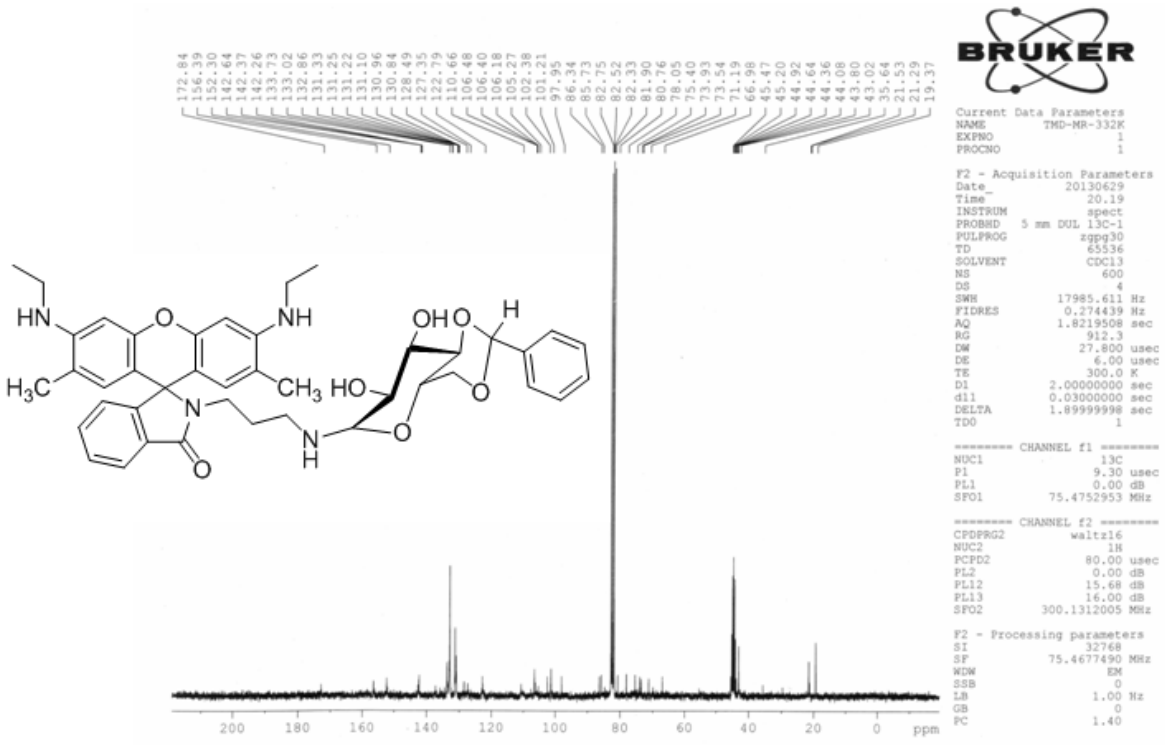
S22. ^{13}C NMR spectrum of compound **18**



S23. ^{1}H NMR spectrum of compound **19**



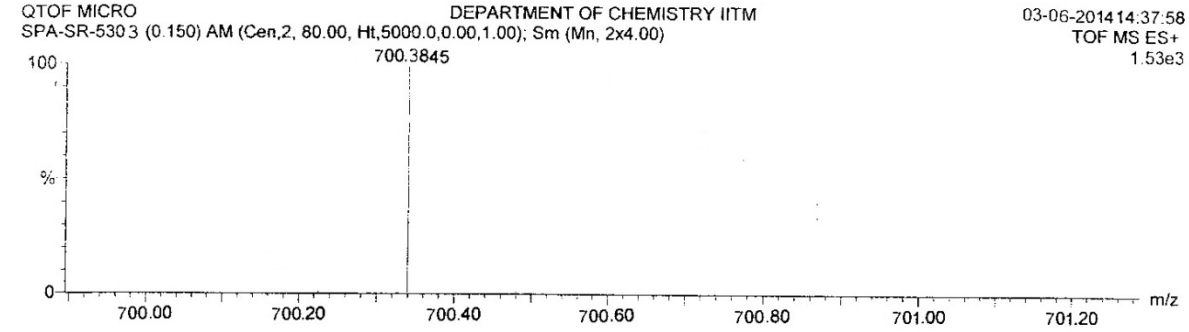
S24. ^{13}C NMR spectrum of compound **19**



Mass spectrum of compound **9**

Single Mass Analysis (displaying only valid results)
Tolerance = 200.0 mDa / DBE: min = -1.5, max = 50.0
Isotope cluster parameters: Separation = 1.0 Abundance = 1.0%

Monoisotopic Mass, Odd and Even Electron Ions
12 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

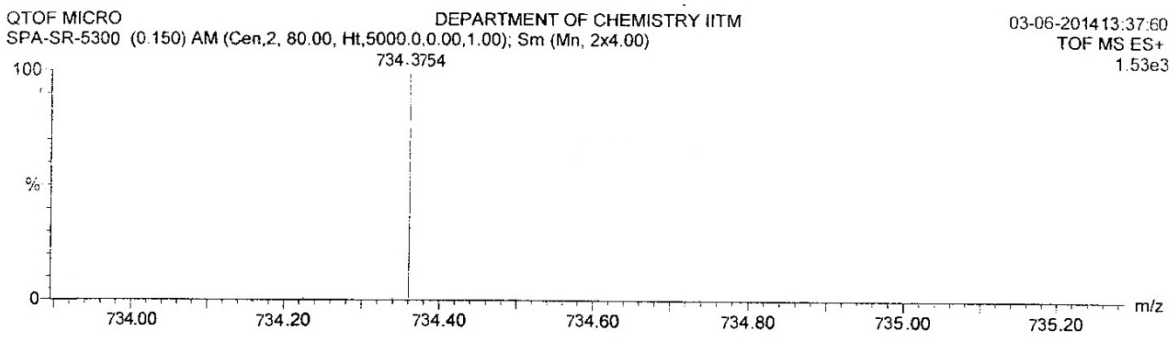


Minimum:				-1.5		
Maximum:		200.0	5.0	50.0		
Mass	Calc. Mass	mDa	PPM	DBE	Score	Formula
700.3845	700.3858	-0.8	-1.8	13.5	1	C40 H52 N4 O7

Mass spectrum of compound **10**

Single Mass Analysis (displaying only valid results)
Tolerance = 200.0 mDa / DBE: min = -1.5, max = 50.0
Isotope cluster parameters: Separation = 1.0 Abundance = 1.0%

Monoisotopic Mass, Odd and Even Electron Ions
12 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)



Minimum:				-1.5		
Maximum:		200.0	5.0	50.0		
Mass	Calc. Mass	mDa	PPM	DBE	Score	Formula
734.3754	734.3767	-0.8	-1.8	13.5	1	C43 H50 N4 O7

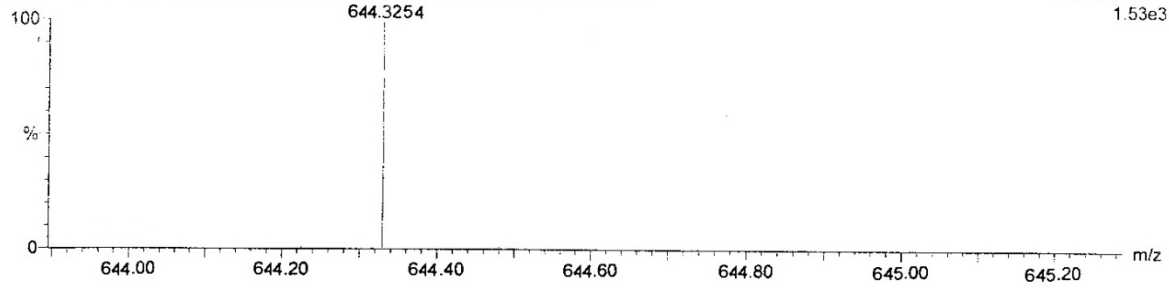
Mass spectrum of compound **11**

.lemental Composition Report **Page 1**

Single Mass Analysis (displaying only valid results)
Tolerance = 200.0 mDa / DBE: min = -1.5, max = 50.0
Isotope cluster parameters: Separation = 1.0 Abundance = 1.0%

Monoisotopic Mass, Odd and Even Electron Ions
12 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

QTOF MICRO DEPARTMENT OF CHEMISTRY IITM 03-06-201414:37:56
SPA-SR-530 7 (0.150) AM (Cen,2, 80.00, Ht,5000.0,0.00,1.00); Sm (Mn, 2x4.00) TOF MS ES+
644.3254 1.53e3



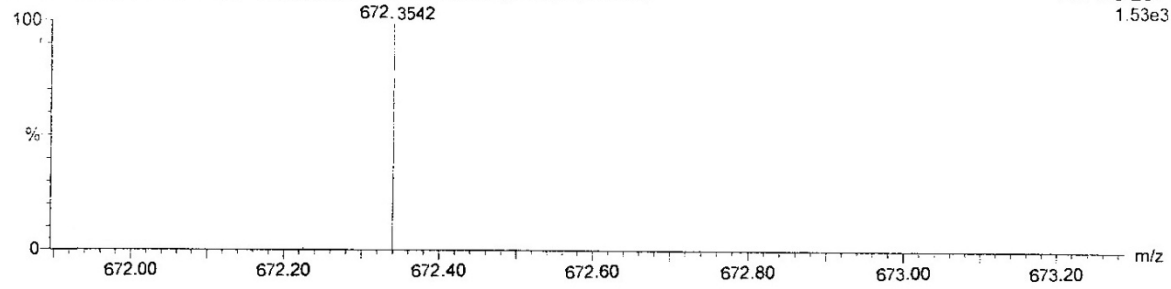
Minimum:				-1.5		
Maximum:		200.0	5.0	50.0		
Mass	Calc. Mass	mDa	PPM	DBE	Score	Formula
644.3254	644.3263	-0.8	-1.8	13.5	1	C36 H44 N4 O7

Mass spectrum of compound **12**

Single Mass Analysis (displaying only valid results)
Tolerance = 200.0 mDa / DBE: min = -1.5, max = 50.0
Isotope cluster parameters: Separation = 1.0 Abundance = 1.0%

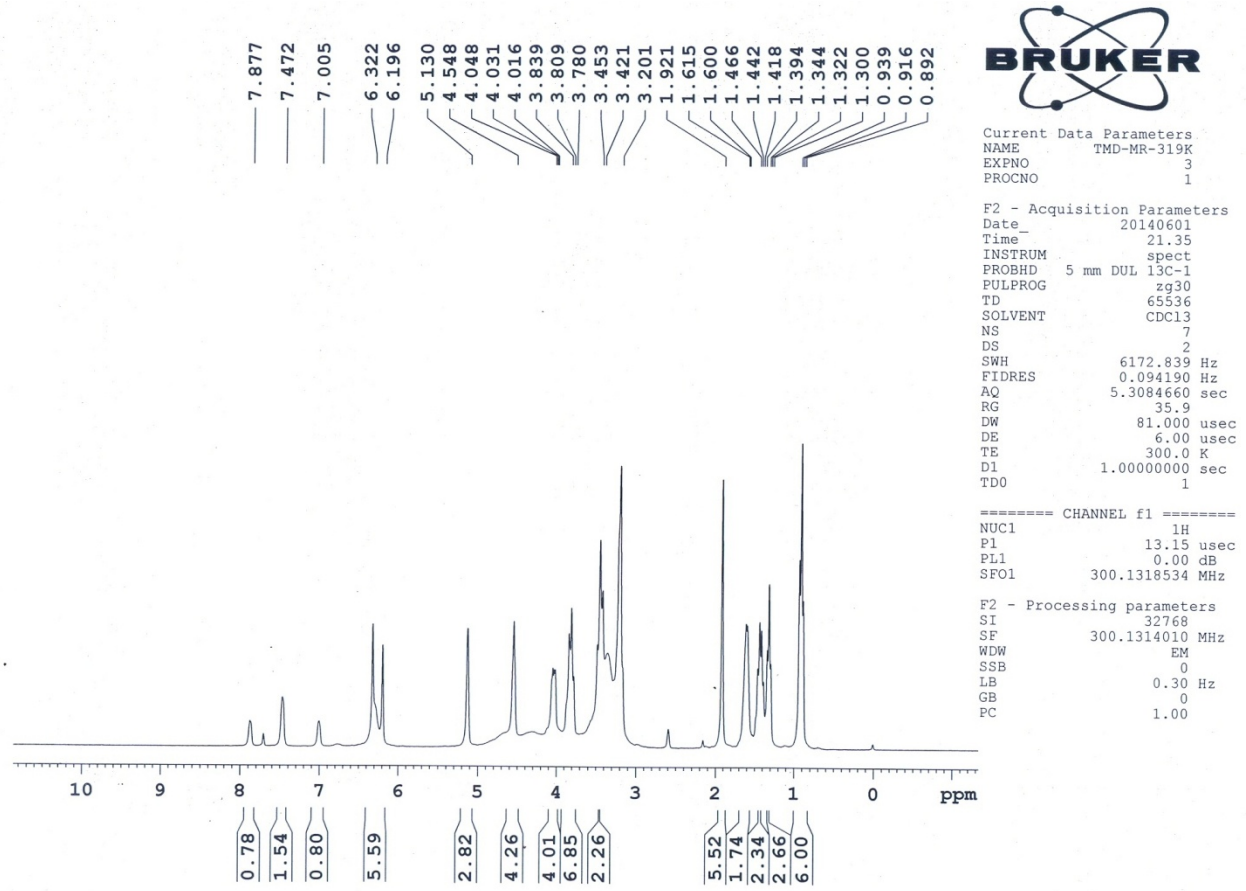
Monoisotopic Mass, Odd and Even Electron Ions
12 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

QTOF MICRO DEPARTMENT OF CHEMISTRY IITM 03-06-2014 13:37:56
SPA-SR-5300 (0.150) AM (Cen,2, 80.00, Ht,5000.0,0.00,1.00); Sm (Mn, 2x4.00) TOF MS ES+
672.3542 1.53e3

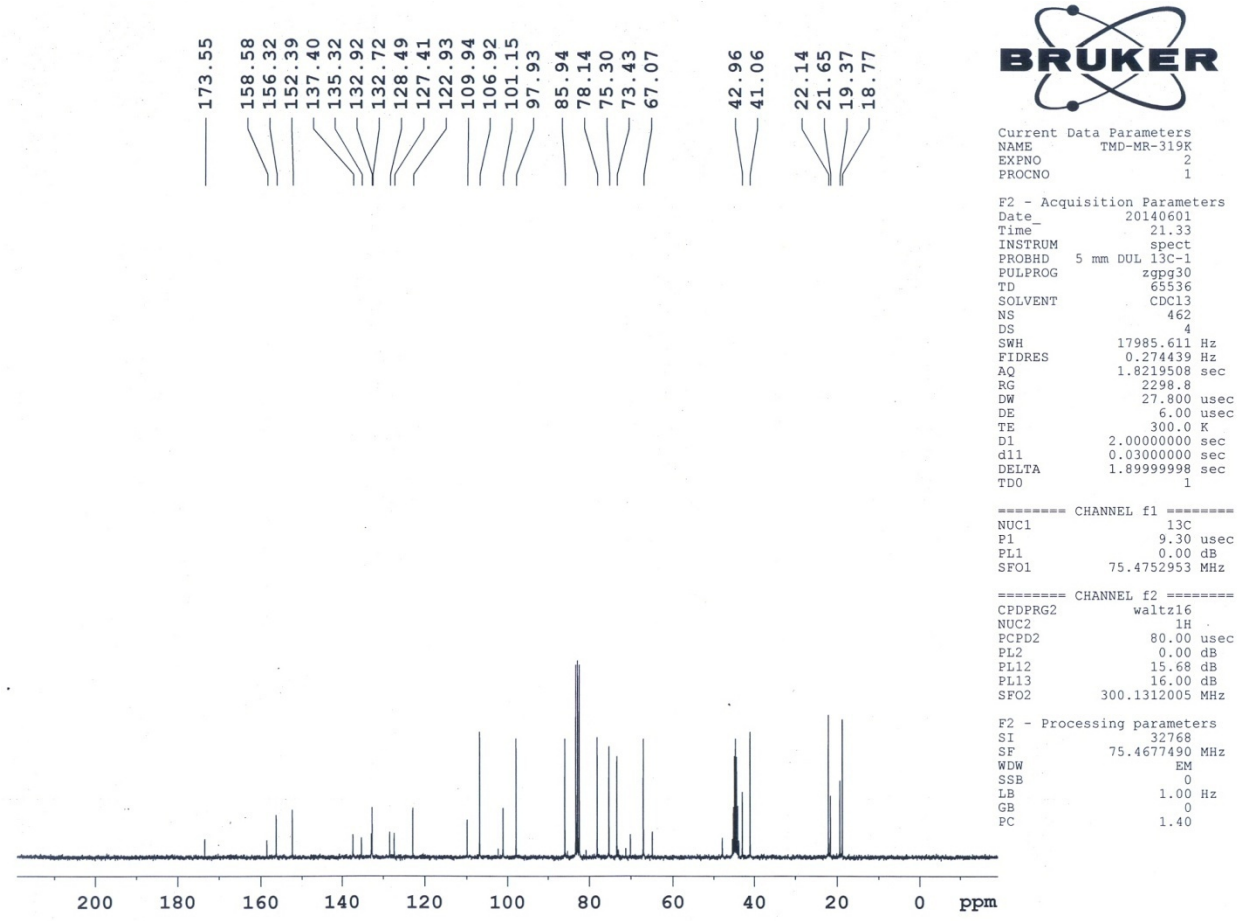


Minimum:				-1.5		
Maximum:		200.0	5.0	50.0		
Mass	Calc. Mass	mDa	PPM	DBE	Score	Formula
672.3542	672.3553	-0.8	-1.8	13.5	1	C38 H48 N4 O7

^{1}H NMR spectrum of compound **12**



^{13}C NMR spectrum of compound **12**



BRUKER

Current Data Parameters
NAME TMD-MR-319K
EXPNO 2
PROCNO 1

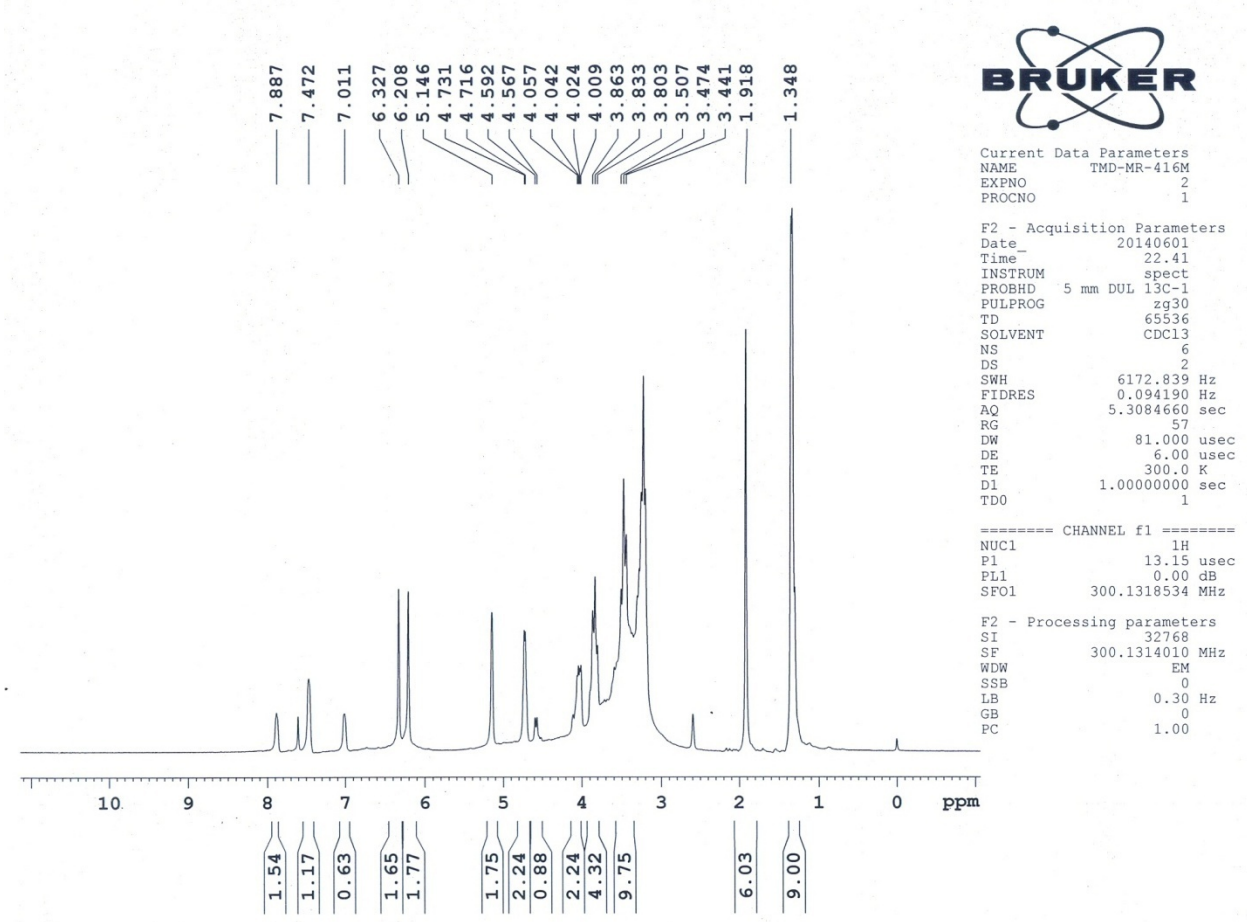
F2 - Acquisition Parameters
Date_ 20140601
Time 21.33
INSTRUM spect
PROBHD 5 mm DUL 13C-1
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 462
DS 4
SWH 17985.611 Hz
FIDRES 0.274439 Hz
AQ 1.8219508 sec
RG 2298.8
DW 27.800 usec
DE 6.00 usec
TE 300.0 K
D1 2.00000000 sec
d11 0.03000000 sec
DELTA 1.89999998 sec
TD0 1

======== CHANNEL f1 ========
NUC1 13C
P1 9.30 usec
PL1 0.00 dB
SFO1 75.4752953 MHz

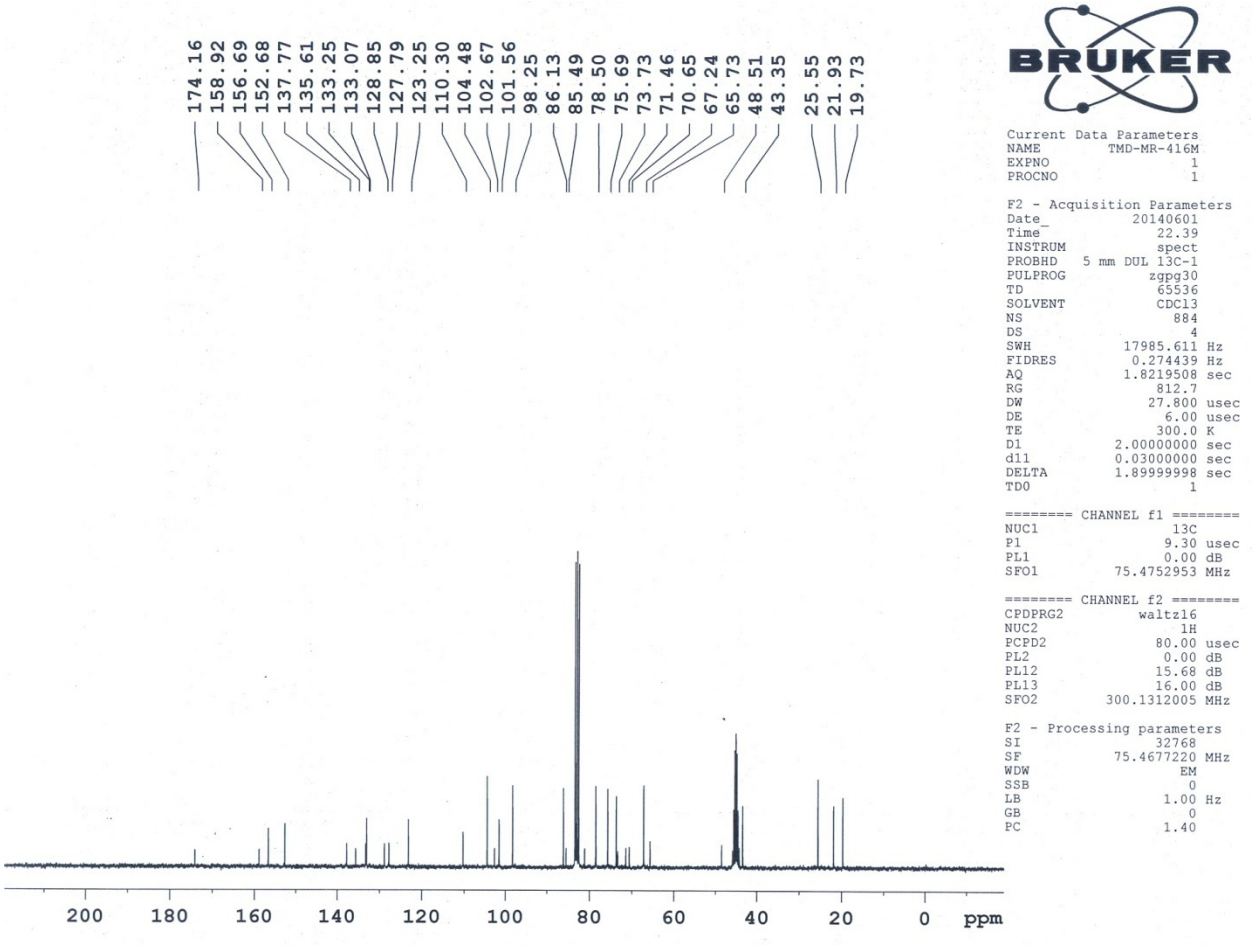
======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 0.00 dB
PL12 15.68 dB
PL13 16.00 dB
SFO2 300.1312005 MHz

F2 - Processing parameters
SI 32768
SF 75.4677490 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

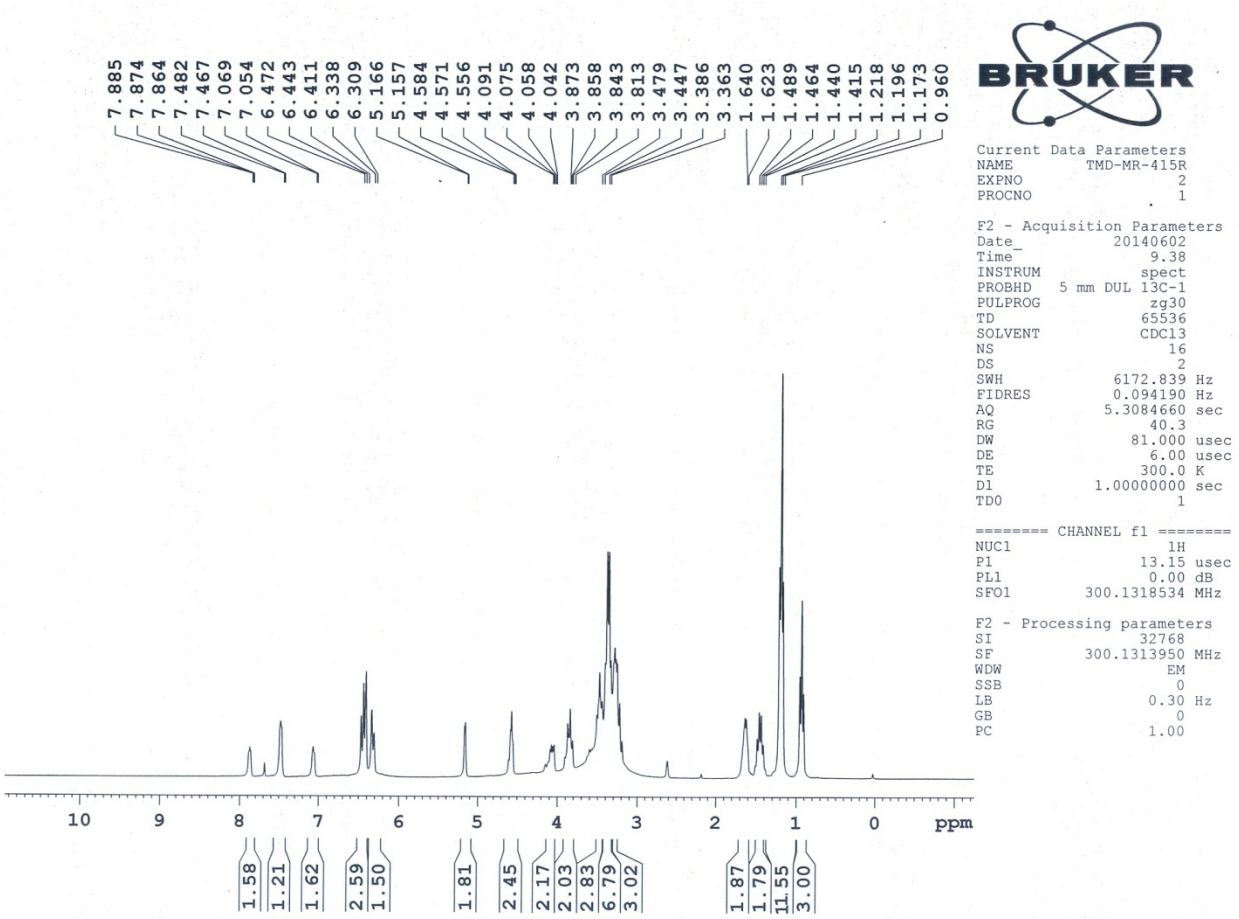
^{1}H NMR spectrum of compound **11**



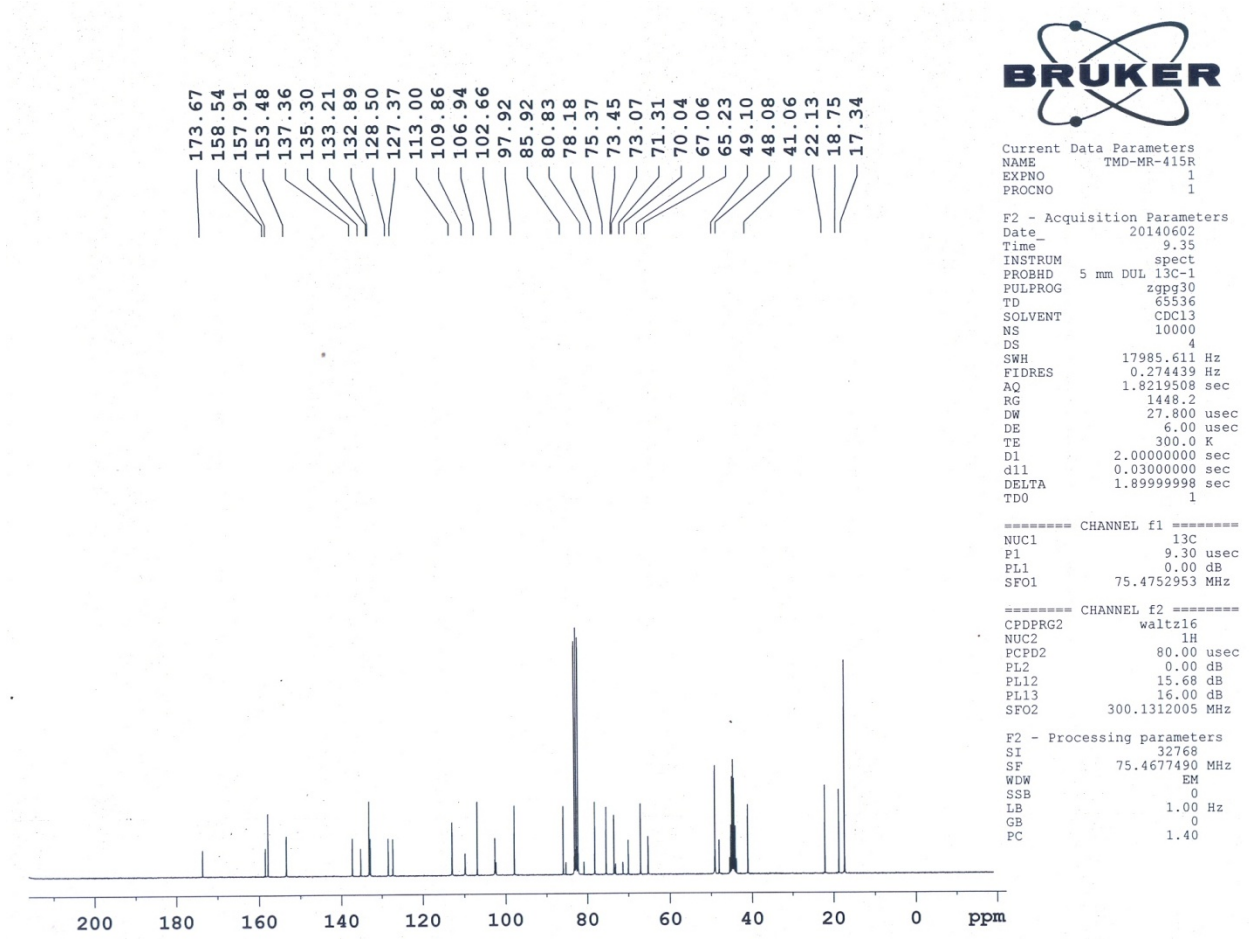
^{13}C NMR spectrum of compound **11**



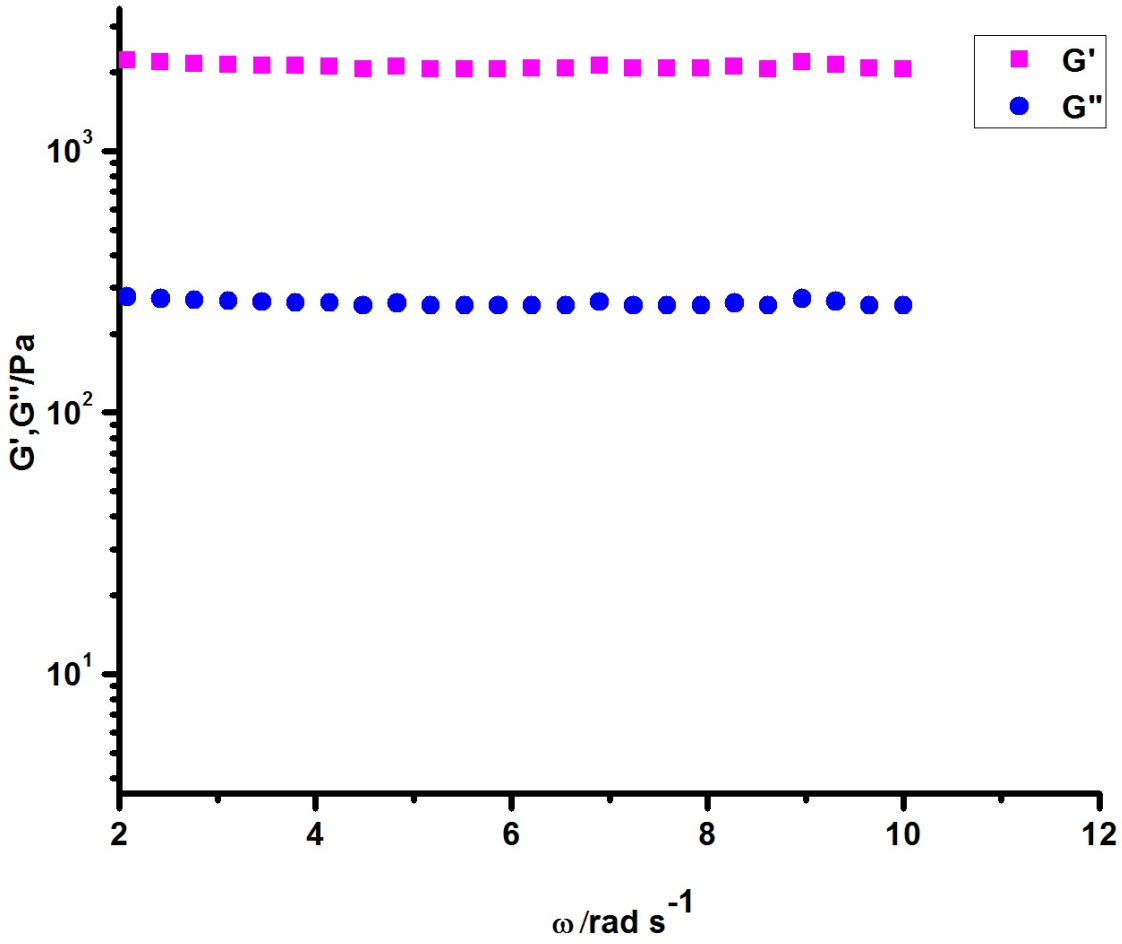
^{1}H NMR spectrum of compound **9**



^{13}C NMR spectrum of compound **9**



Rheological studies of compound 8



Angular frequency dependence of the storage modulus (G') and loss modulus (G'') of **8** gel in nitrobenzene.