# BODIPY-GO Nanocomposites Decorated with Biocompatible Branched Ethylene glycol Moiety for Targeted PDT

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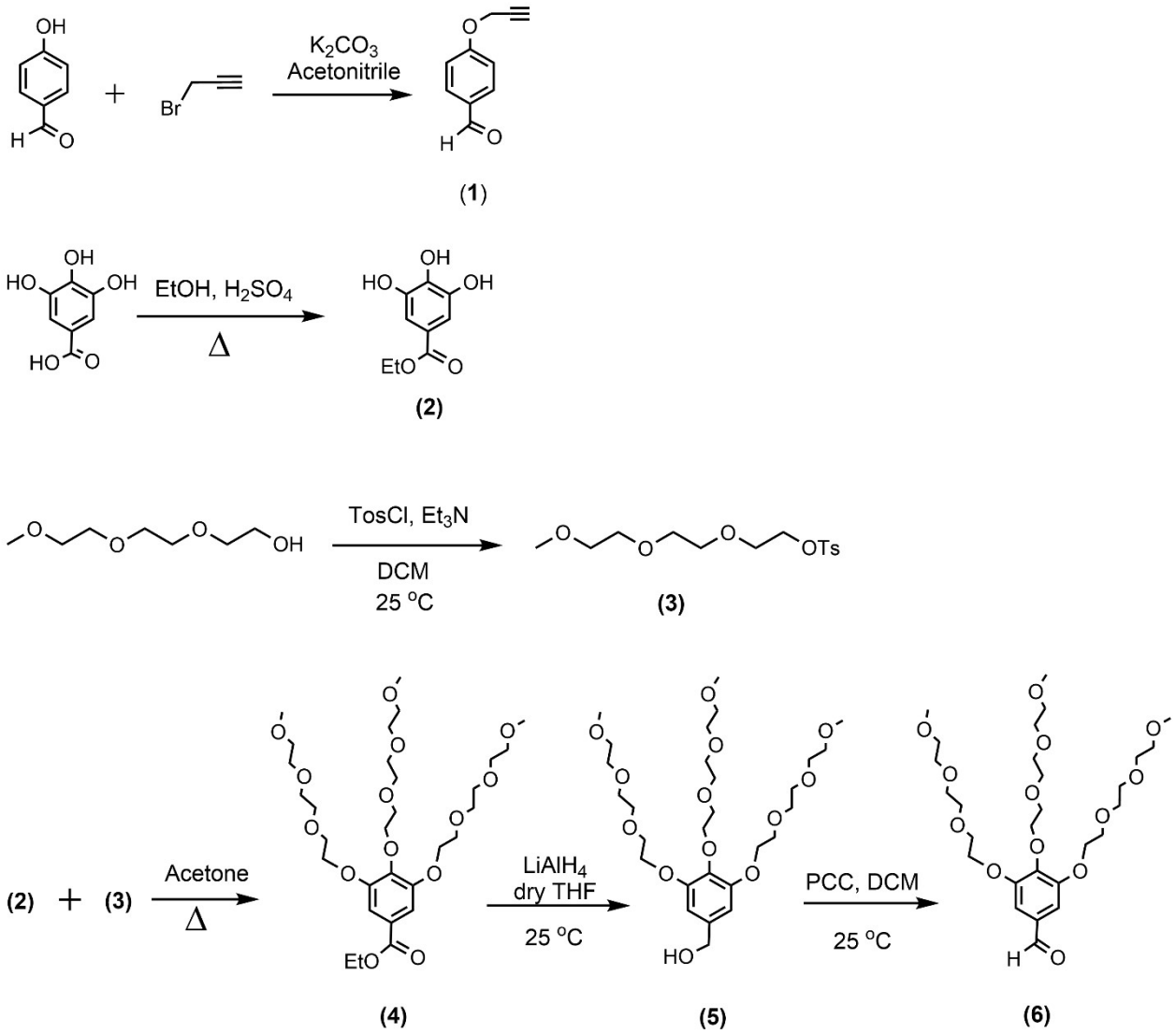


**Scheme S1.** Synthesis of compounds **1**-**6**.

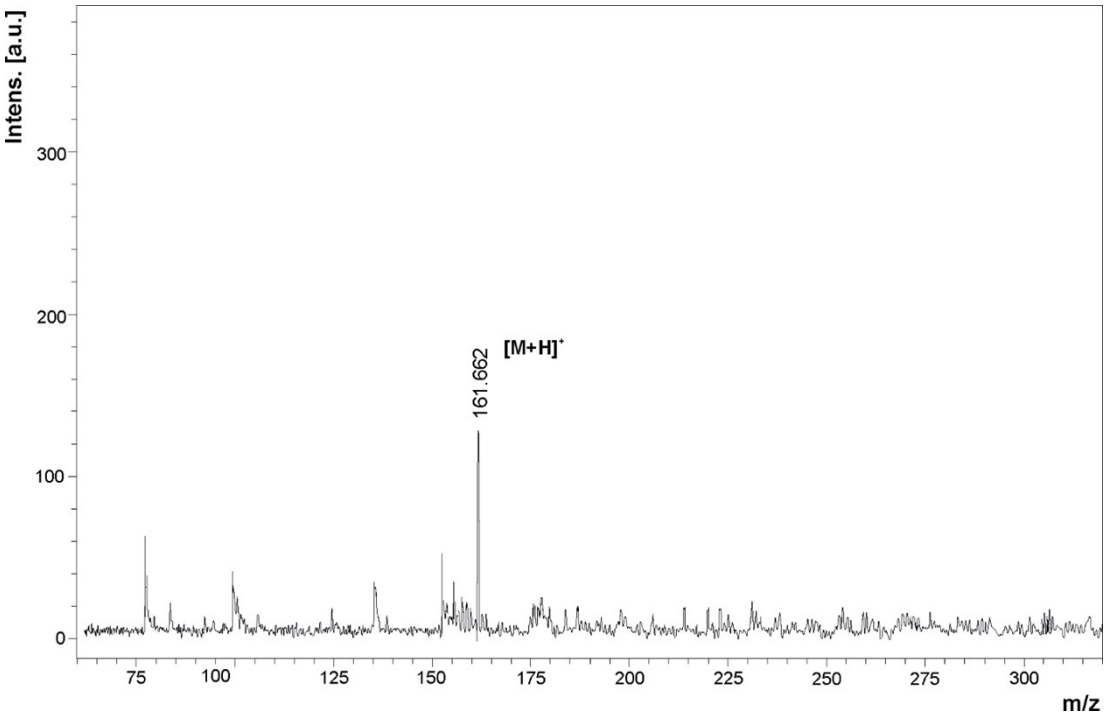


**Fig. S1** MALDI-MS spectrum of compound **1**

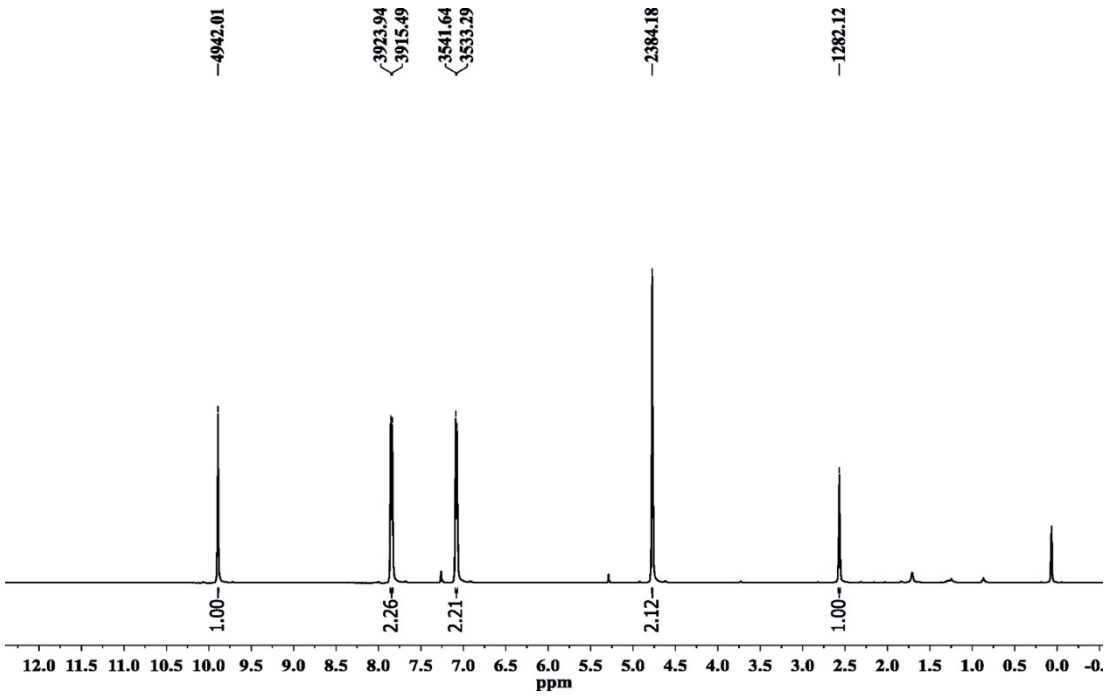


**Fig. S2** $^{1}$H NMR spectrum of compound **1** in $CDCl_3$

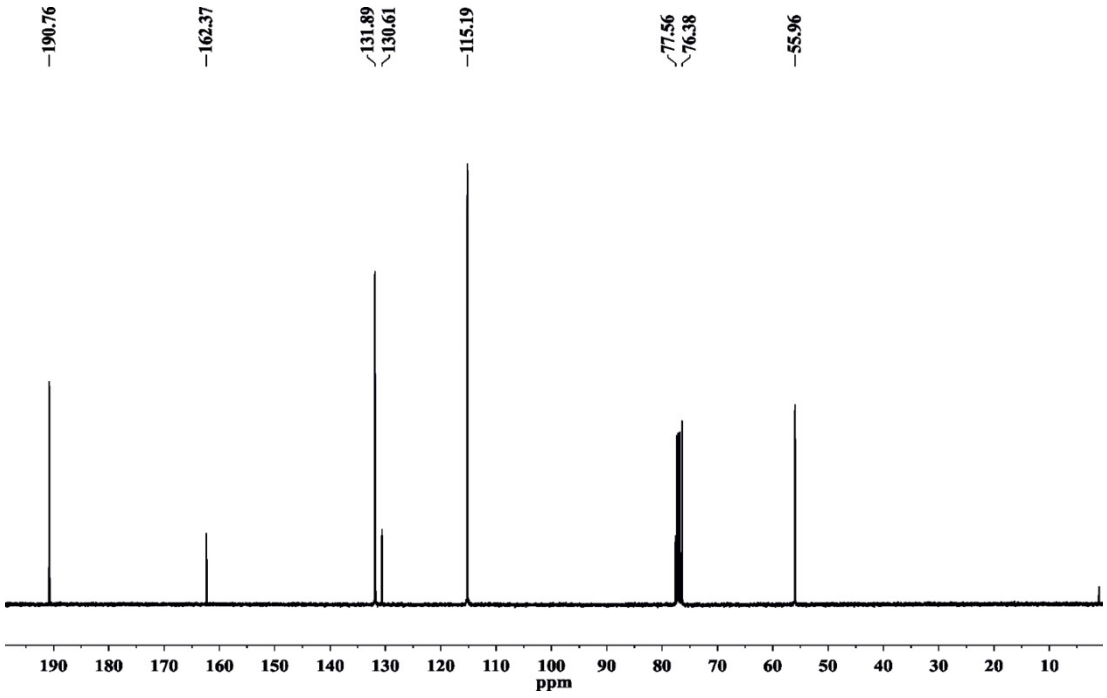


**Fig. S3** $^{13}C$ NMR spectrum of compound **1** in $CDCl_3$

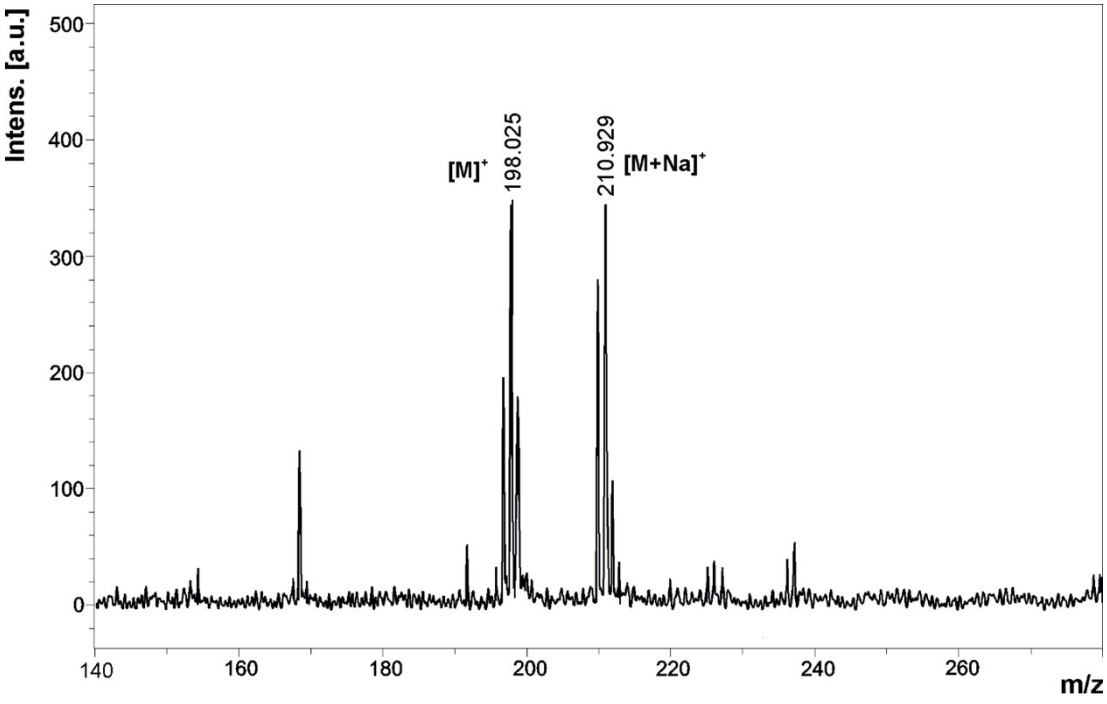


**Fig. S4** MALDI-MS spectrum of compound **2**

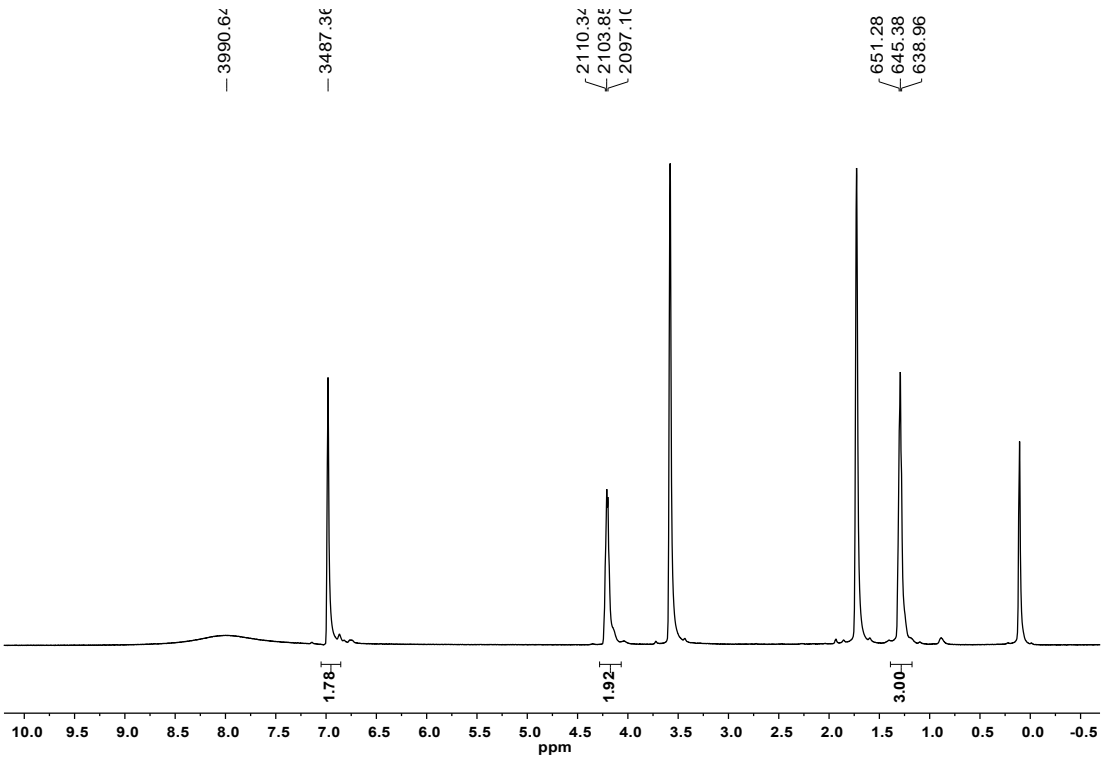


**Fig. S5** $^{1}H$ NMR spectrum of compound **2** in $CDCl_3$

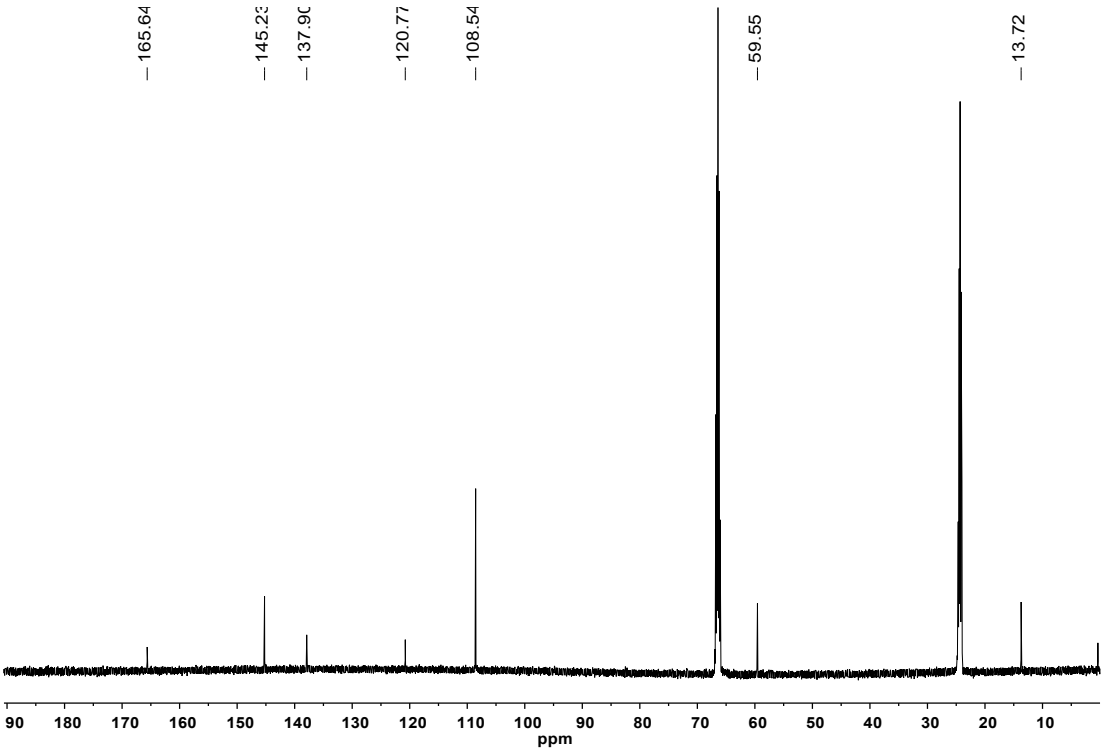


**Fig. S6** $^{13}C$ NMR spectrum of compound **2** in $CDCl_3$

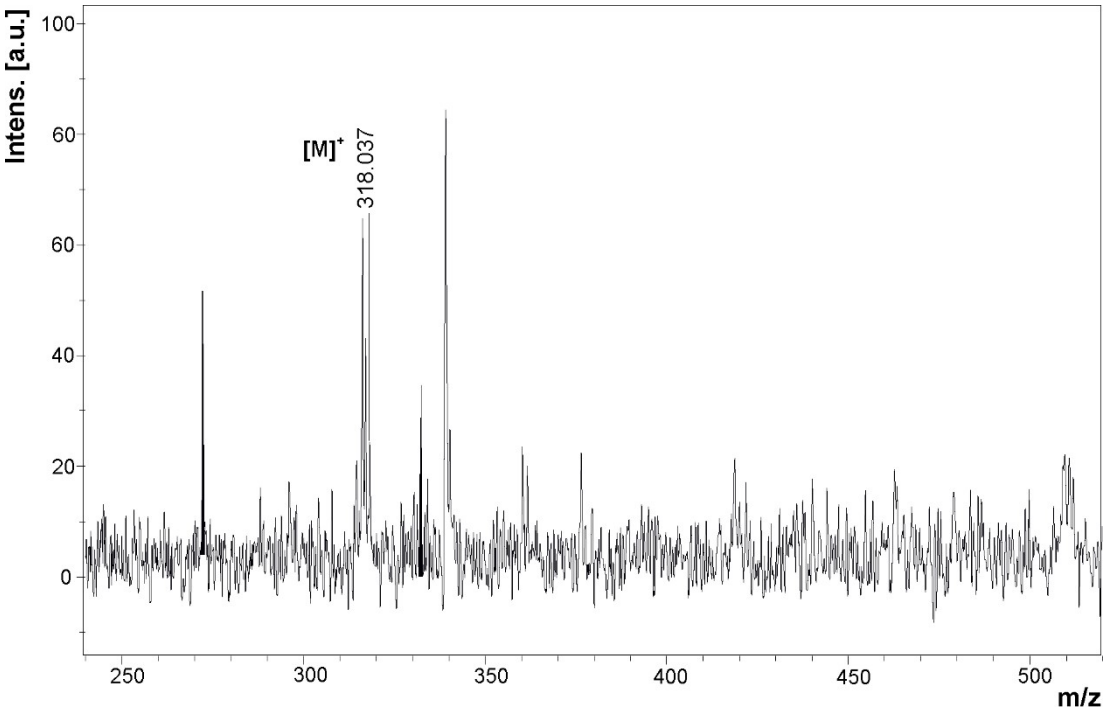


**Fig. S7** MALDI-MS spectrum of compound **3**

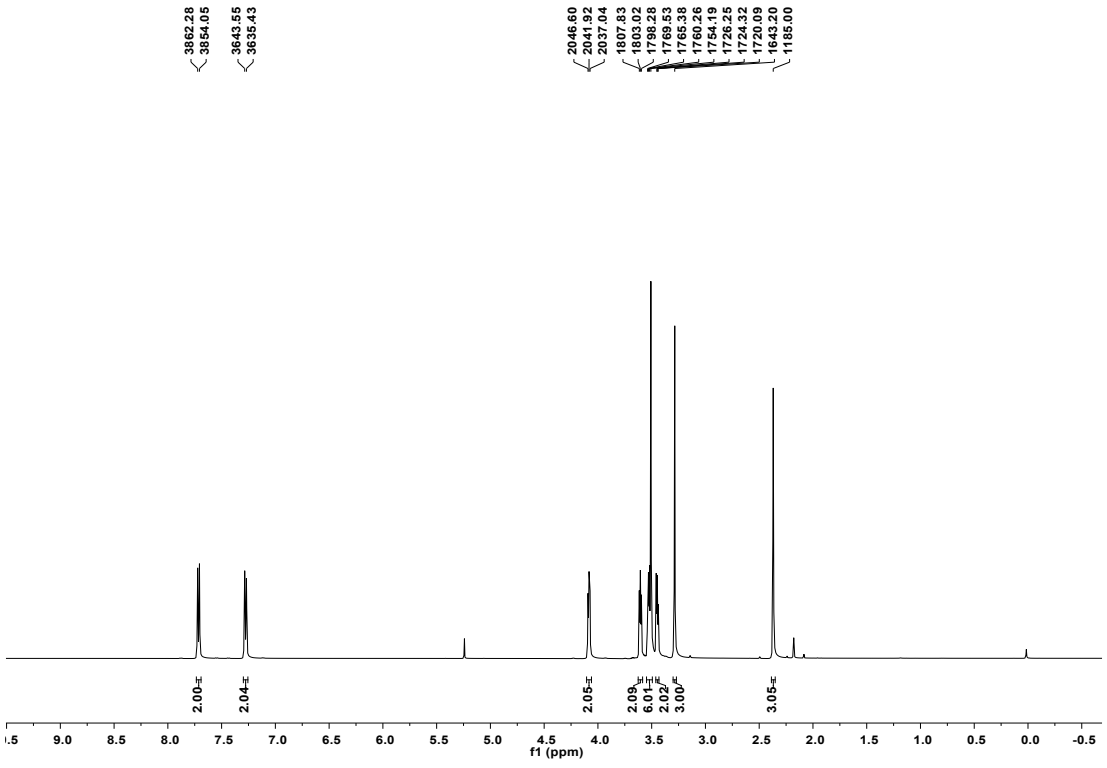


**Fig. S8** $^{1}$H NMR spectrum of compound **3** in $CDCl_3$

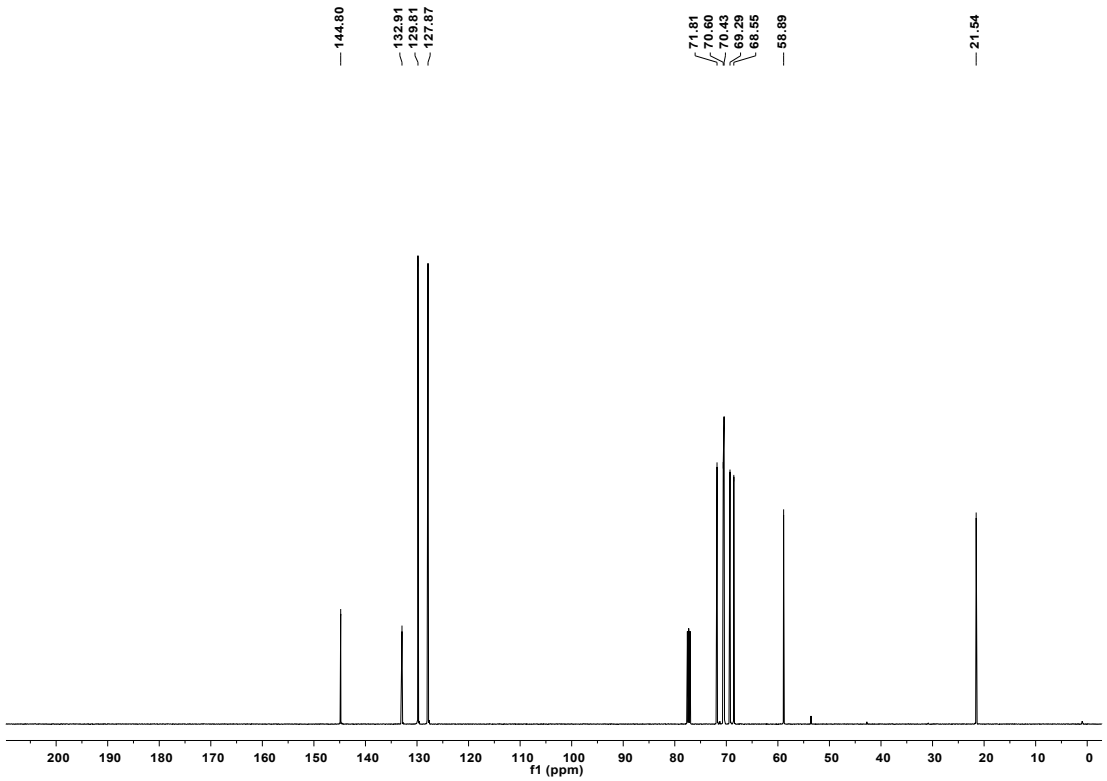


**Fig. S9** $^{13}C$ NMR spectrum of compound **3** in $CDCl_3$

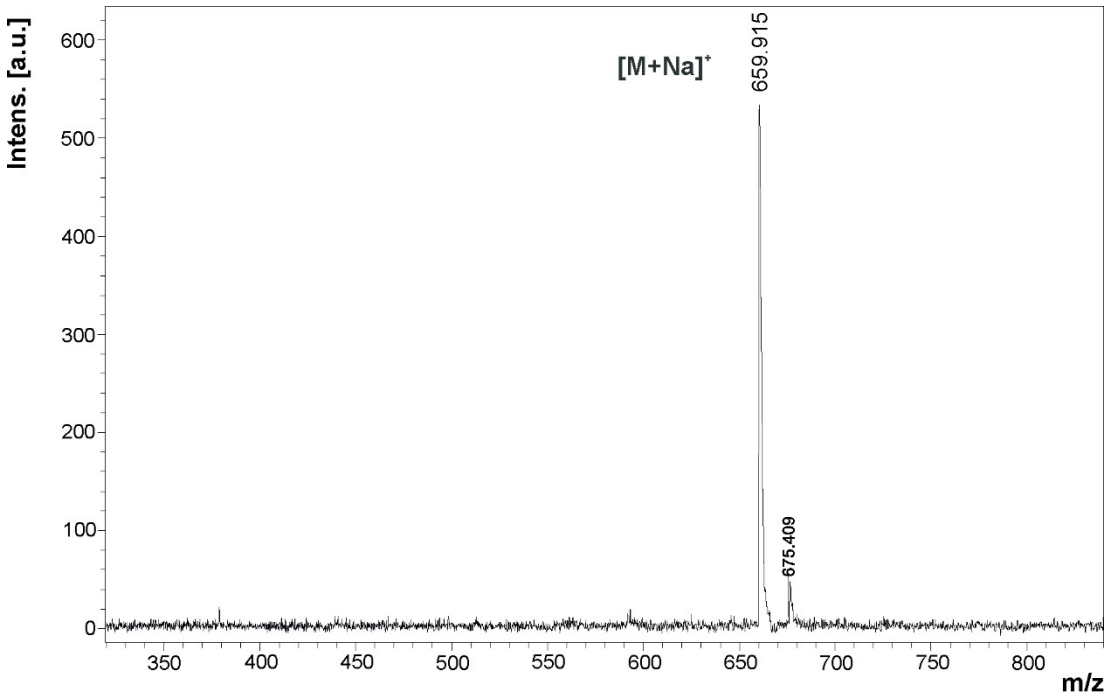


**Fig. S10** MALDI-MS spectrum of compound **4**

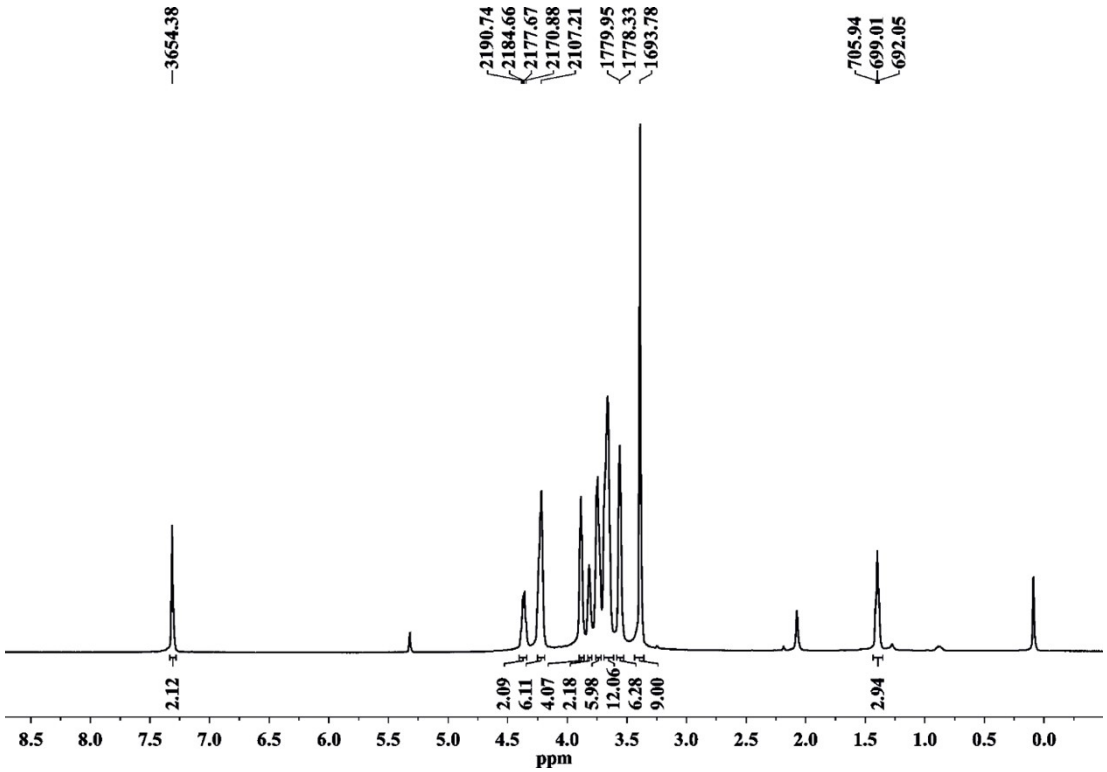


**Fig. S11** $^{1}$H NMR spectrum of compound **4** in $CDCl_3$

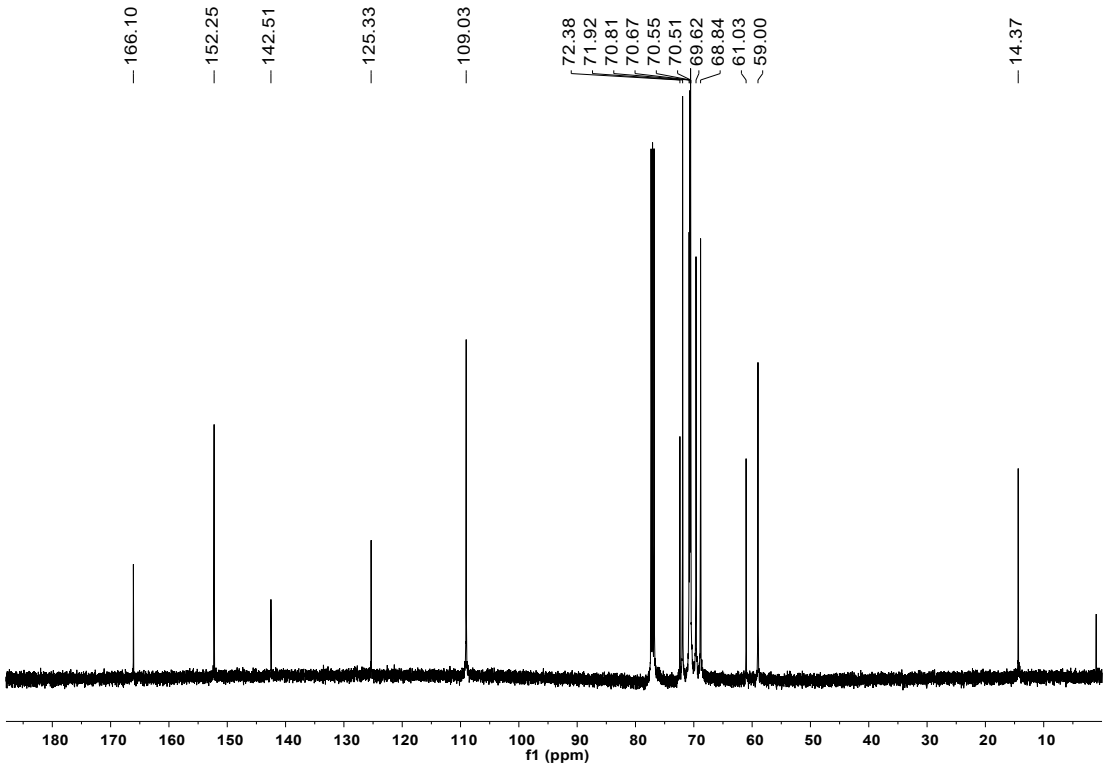


**Fig. S12** $^{13}$C NMR spectrum of compound **4** in $CDCl_3$

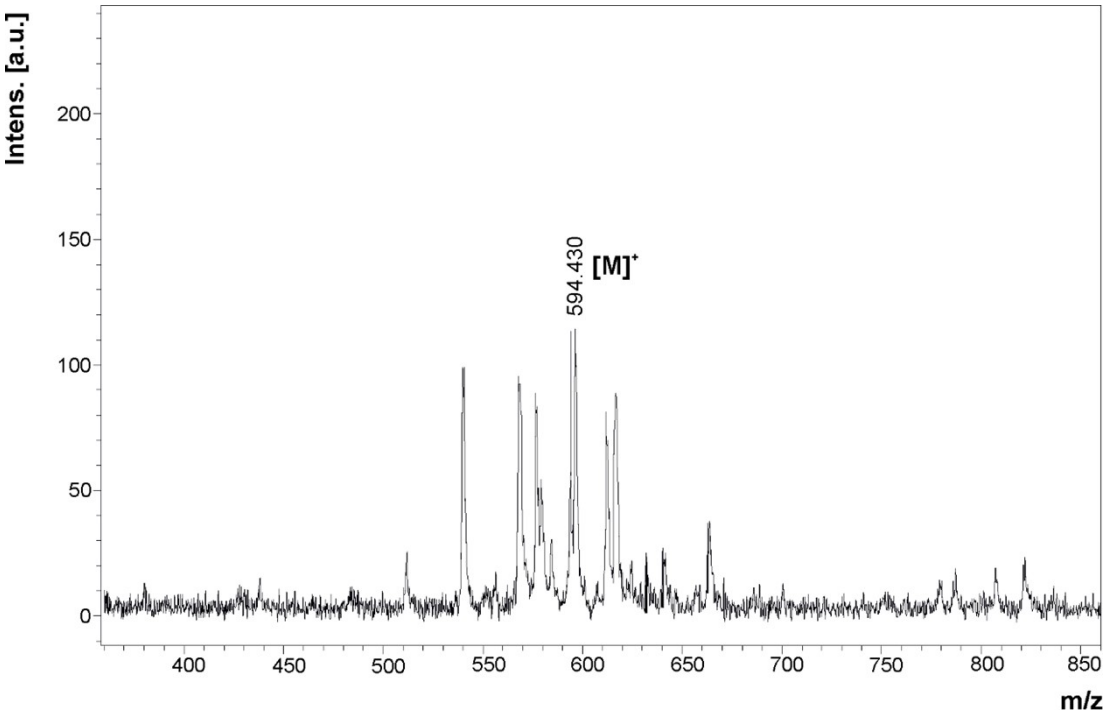


**Fig. S13** MALDI-MS spectrum of compound **5**

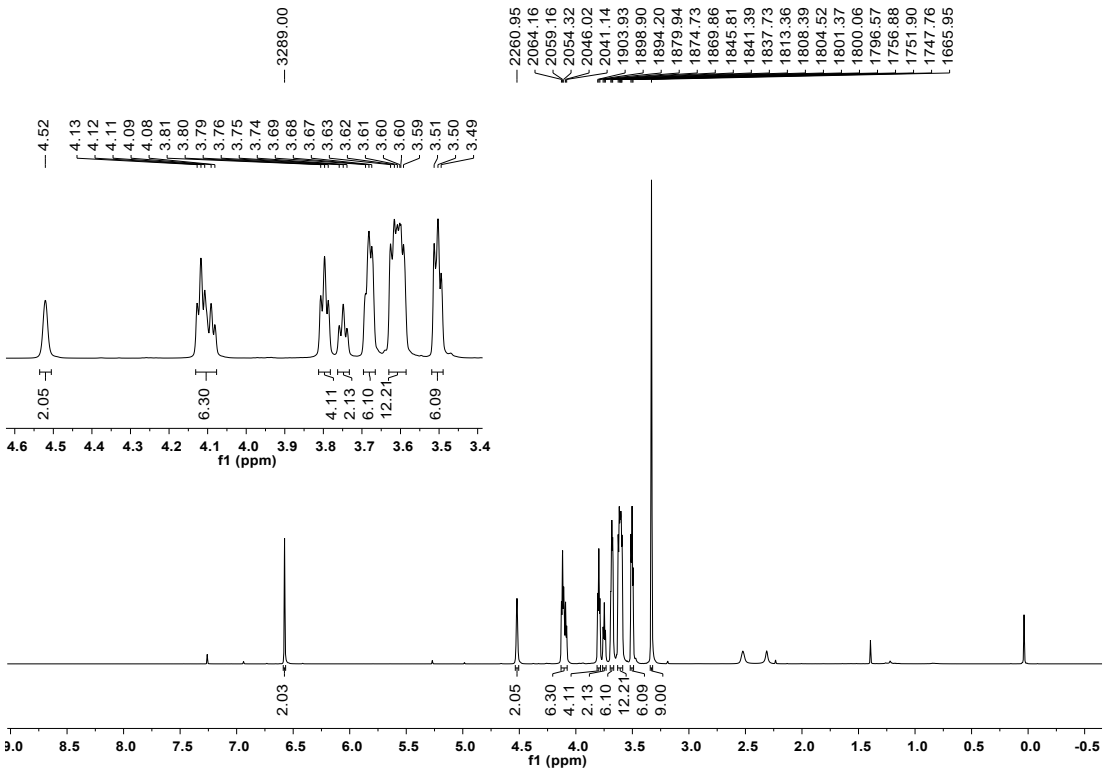


**Fig. S14** $^{1}$H NMR spectrum of compound **5** in $CDCl_3$

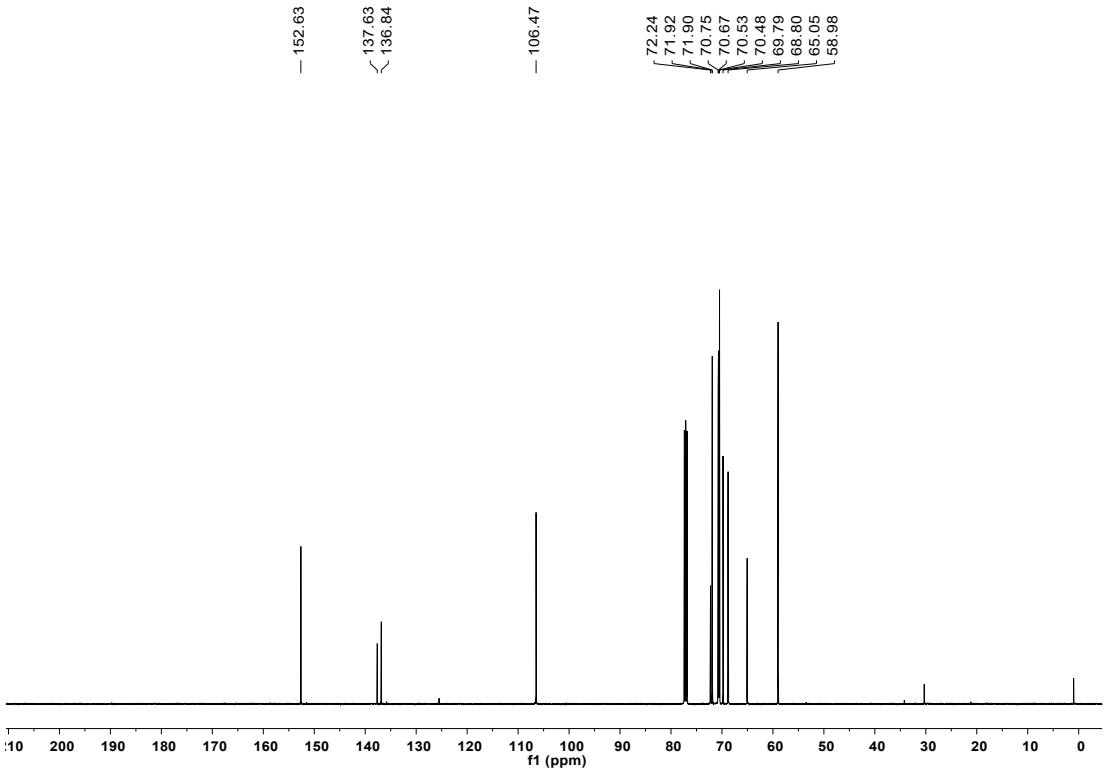


**Fig. S15** $^{13}C$ NMR spectrum of compound **5** in $CDCl_3$

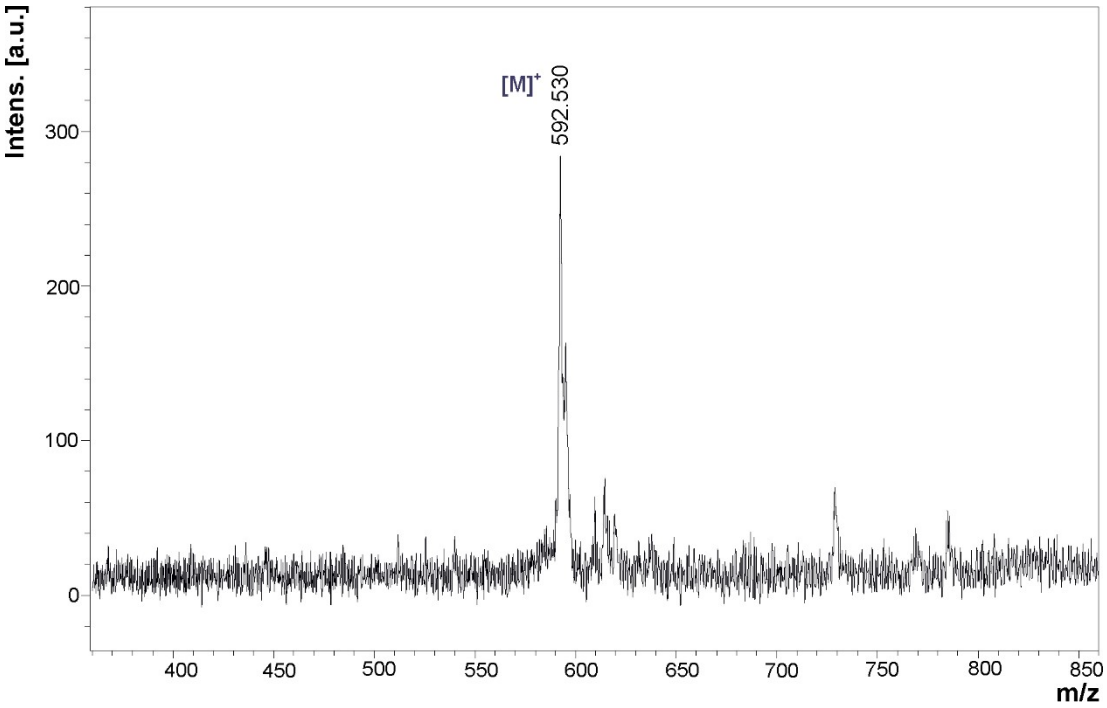


**Fig. S16** MALDI-MS spectrum of compound **6**

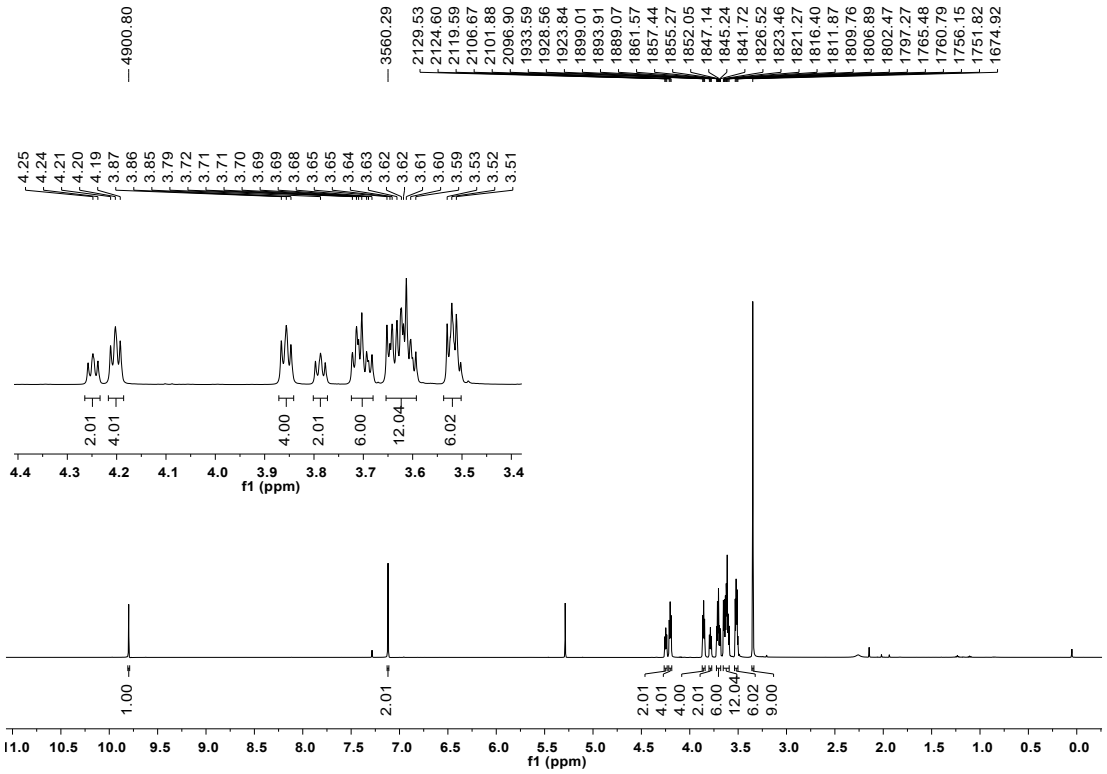

**Fig. S17** $^{1}$H NMR spectrum of compound **6** in $CDCl_3$

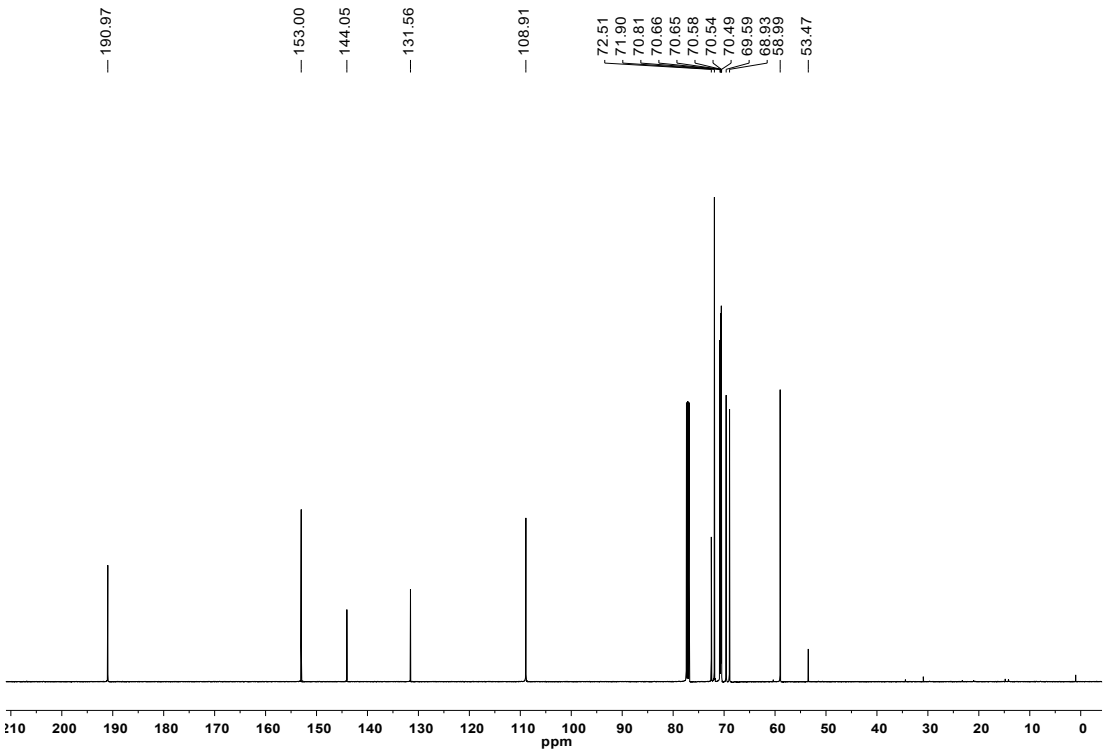

**Fig. S18** $^{13}$C NMR spectrum of compound **6** in $CDCl_3$

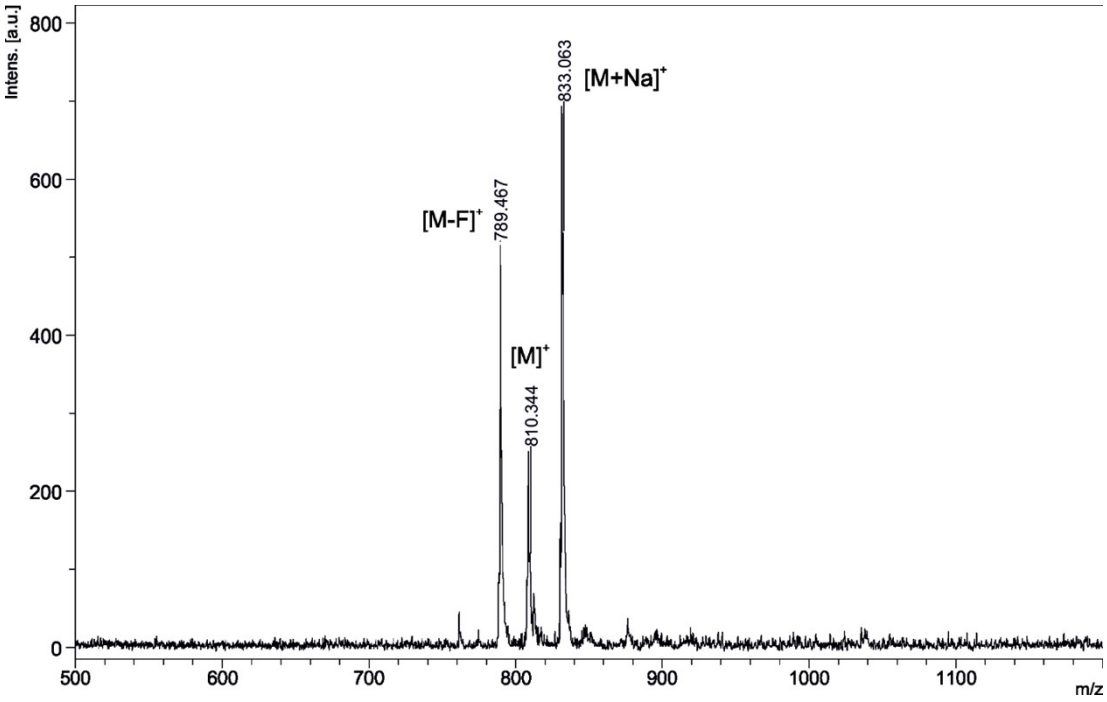


**Fig. S19** MALDI-MS spectrum of compound **7**

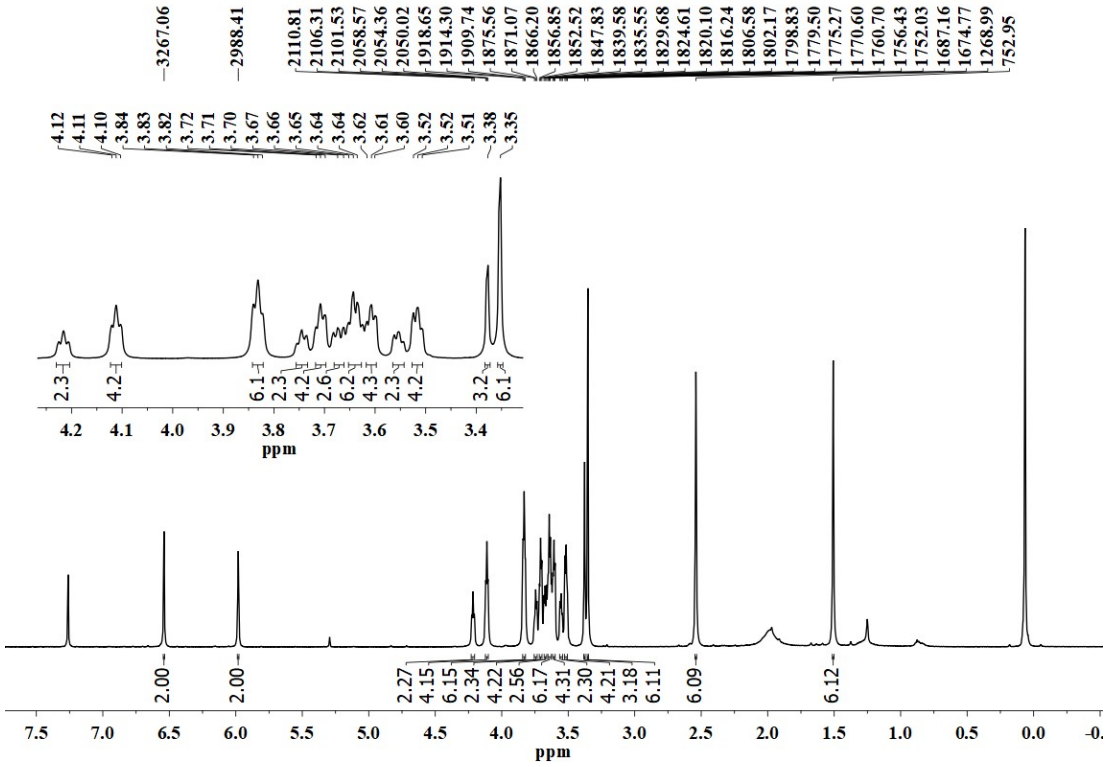


**Fig. S20** $^{1}$H NMR spectrum of compound **7** in $CDCl_3$

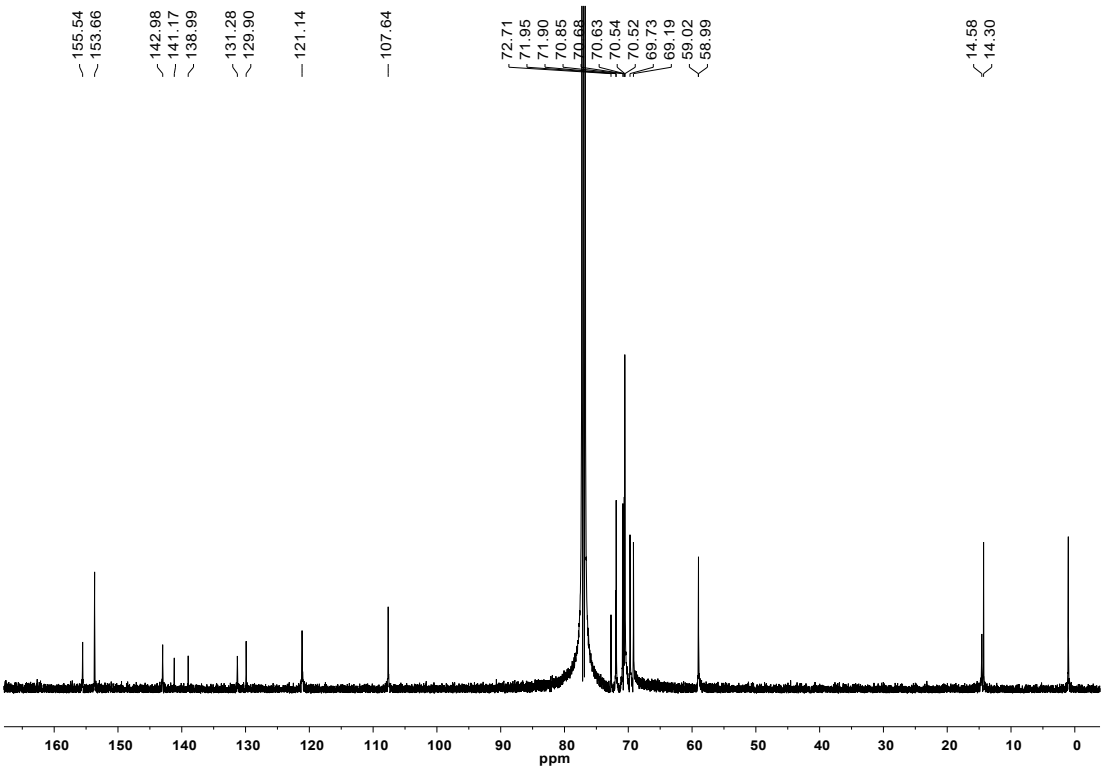


**Fig. S21** $^{13}C$ NMR spectrum of compound **7** in $CDCl_3$

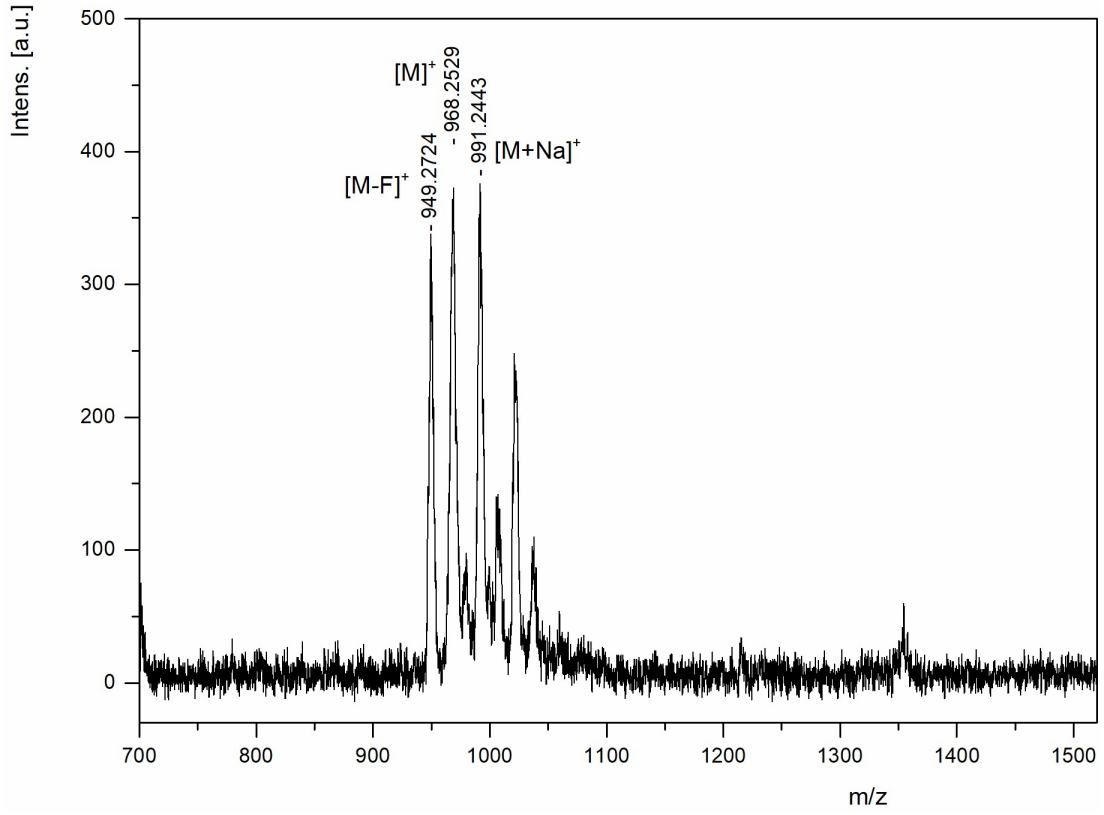


**Fig. S22** MALDI-MS spectrum of compound **8**

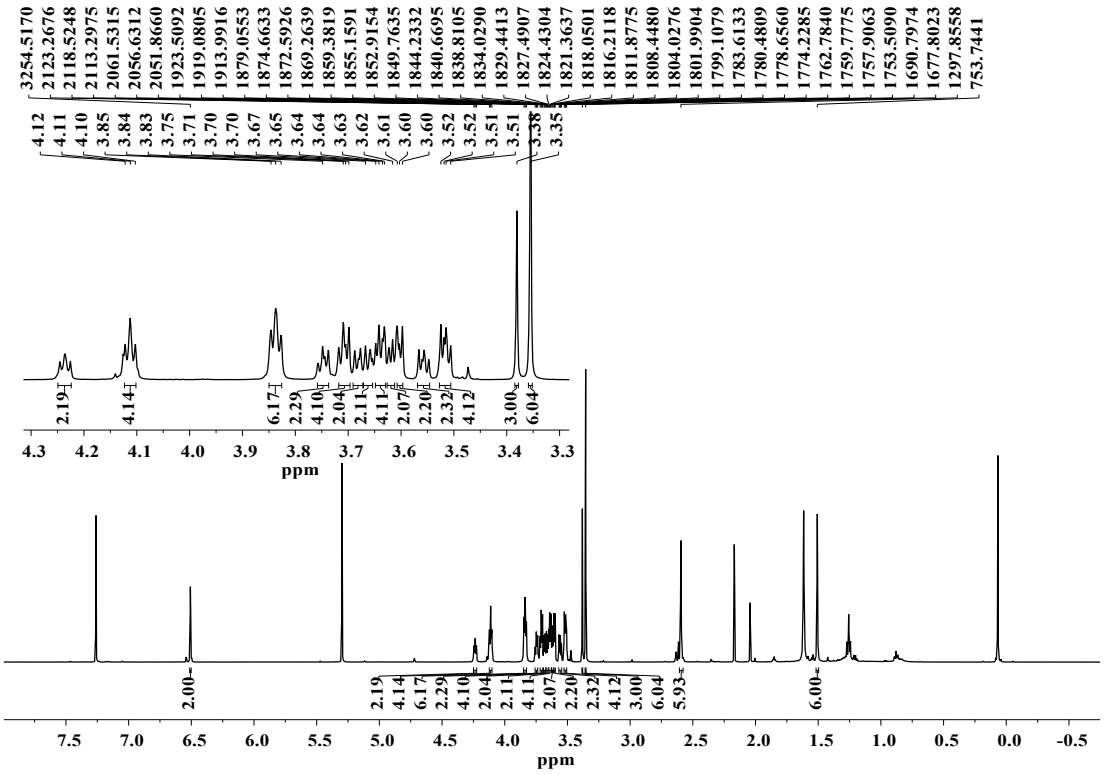

**Fig. S23** $^{1}$H NMR spectrum of compound **8** in $CDCl_3$

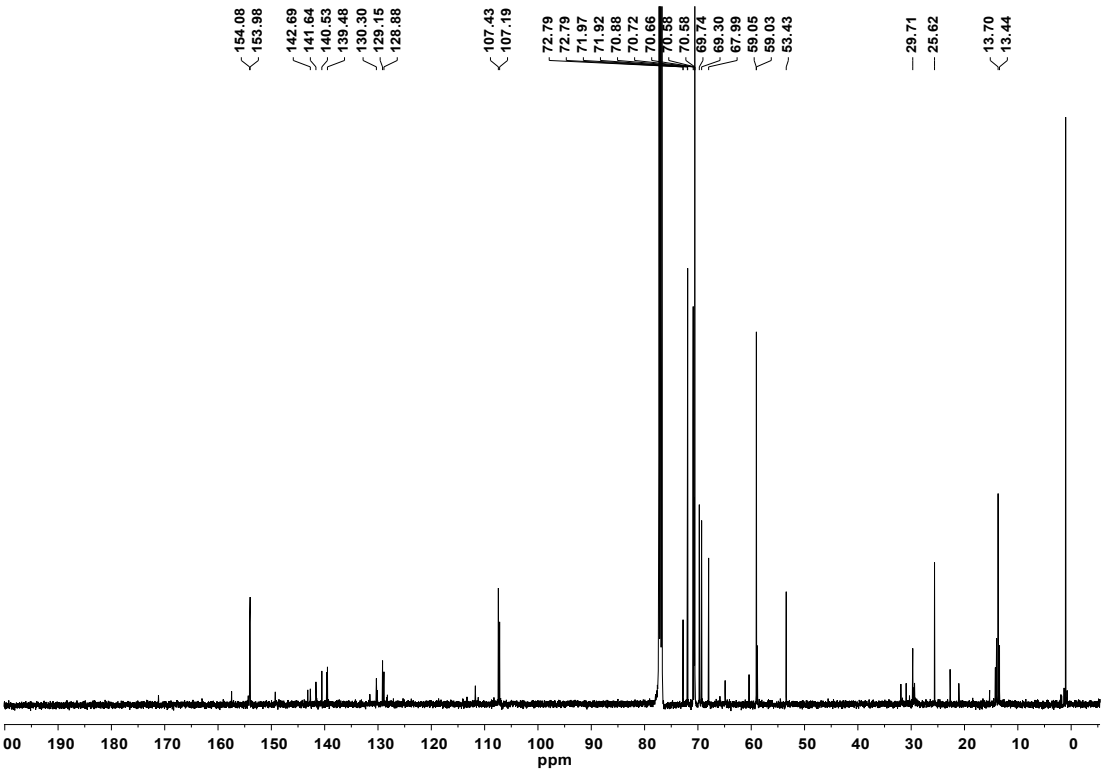

**Fig. S24** $^{13}$C NMR spectrum of compound **8** in $CDCl_3$

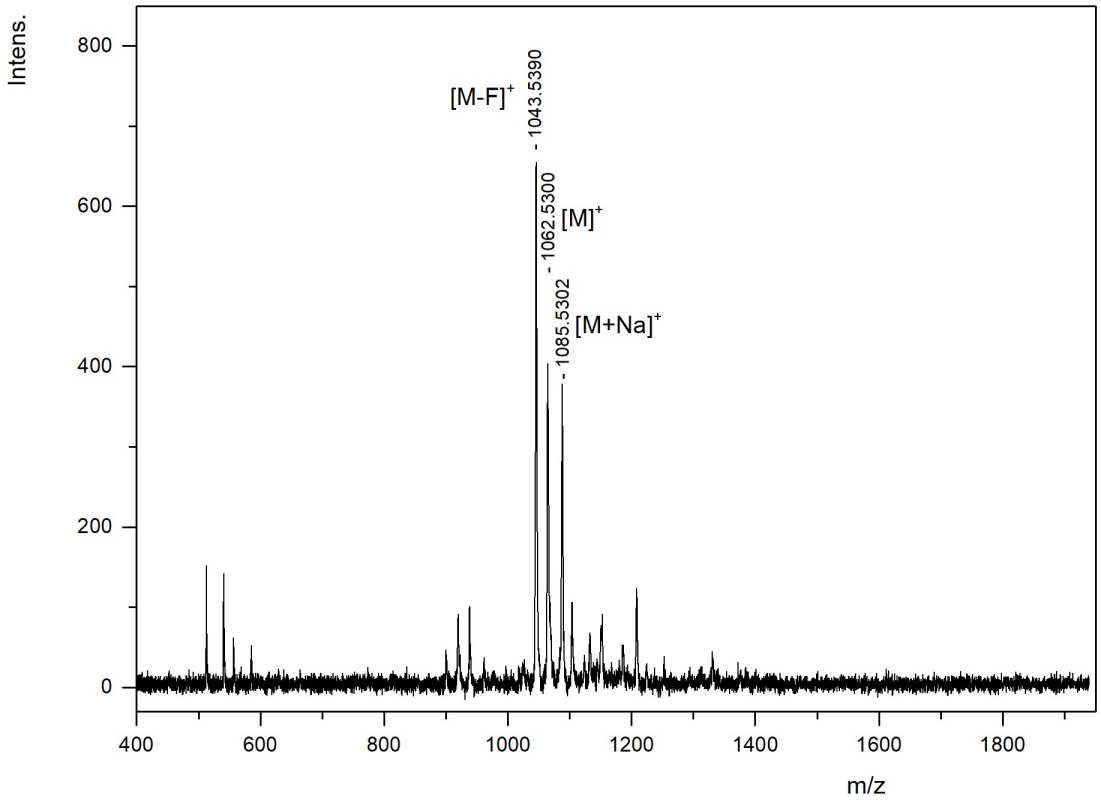


**Fig. S25** MALDI-MS spectrum of compound **9**

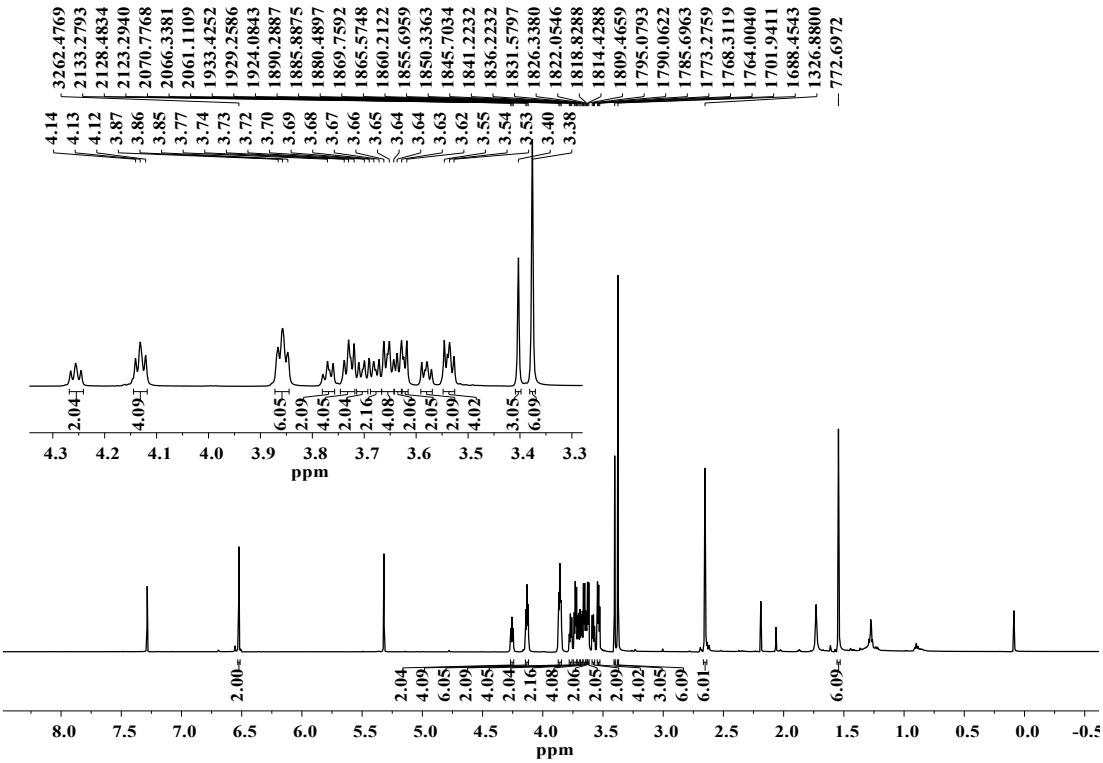


**Fig. S26** $^{1}$H NMR spectrum of compound **9** in $CDCl_3$

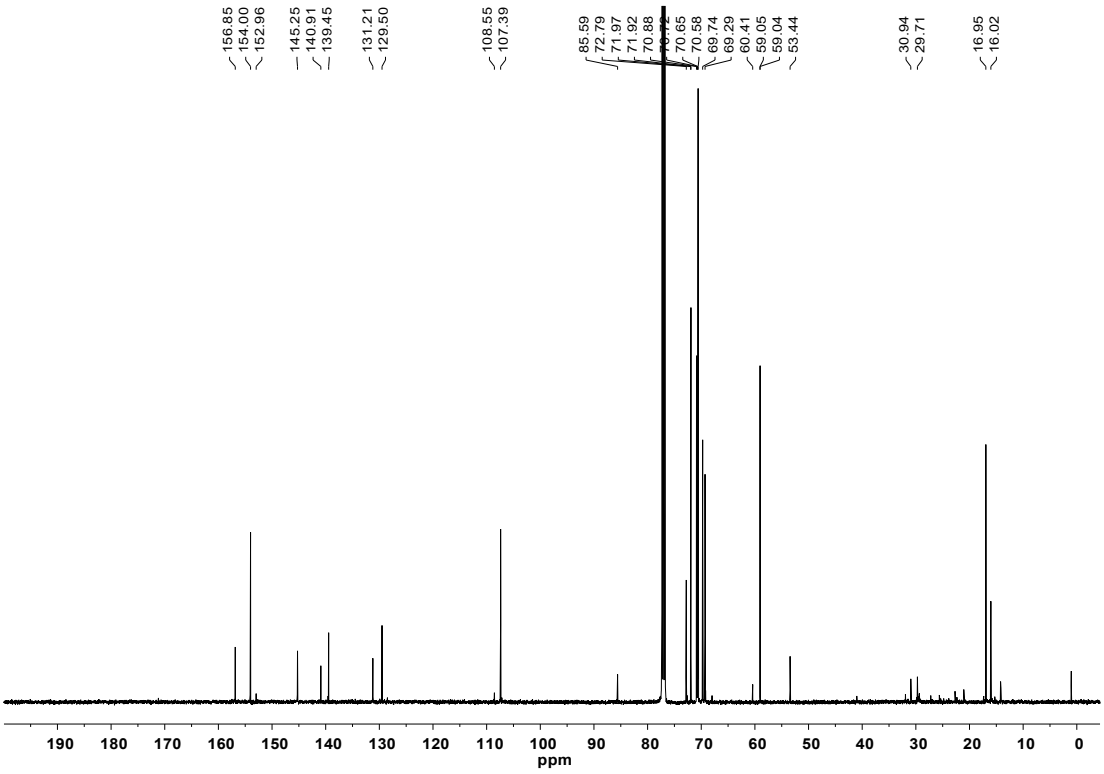


**Fig. S27** $^{13}C$ NMR spectrum of compound **9** in $CDCl_3$

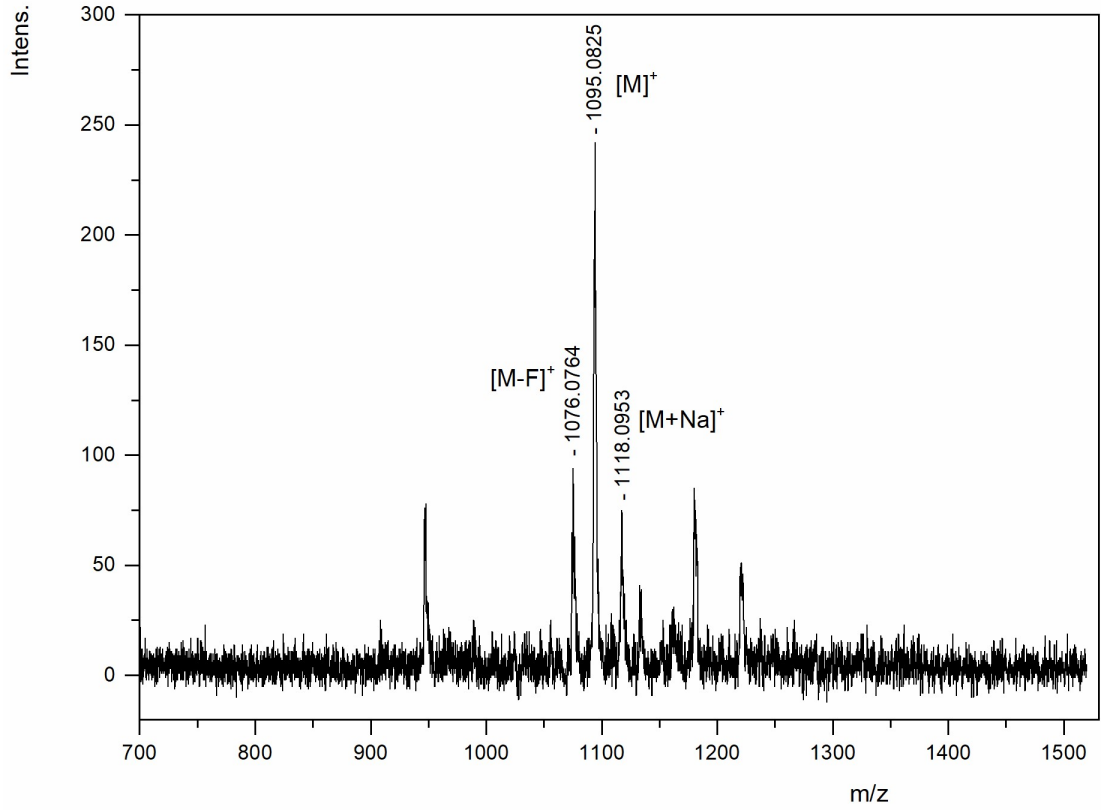


**Fig. S28** MALDI-MS spectrum of compound **10**

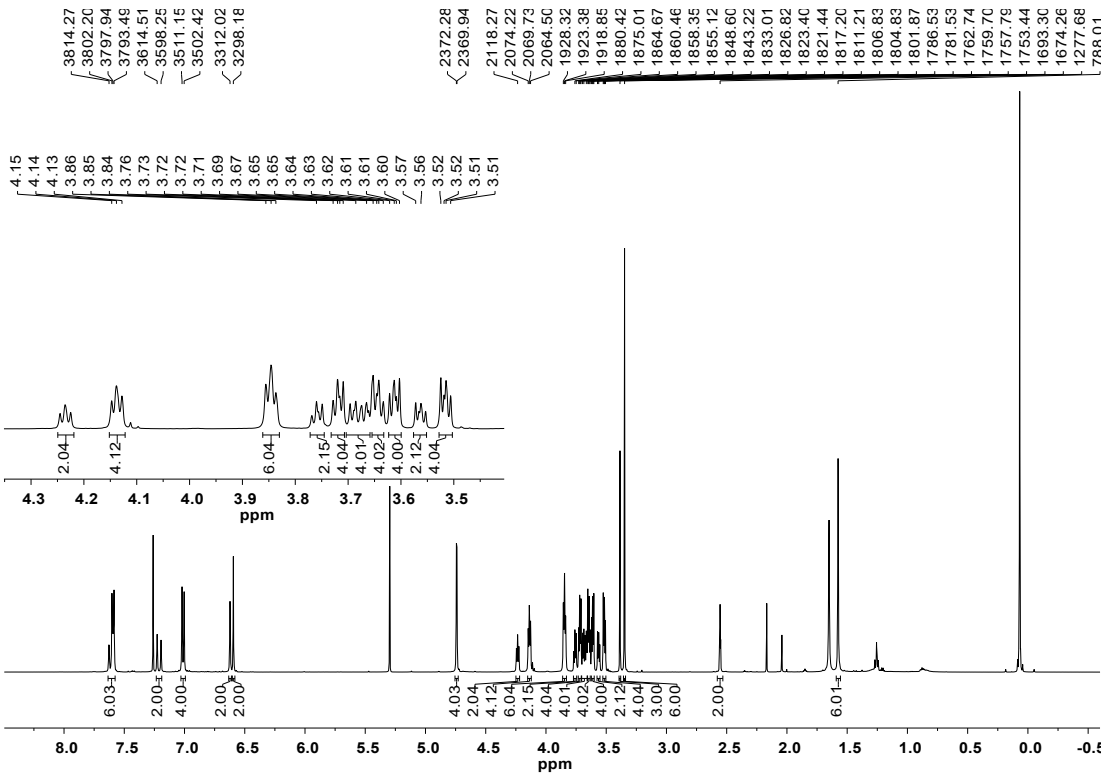

**Fig. S29** $^{1}$H NMR spectrum of compound **10** in $CDCl_3$

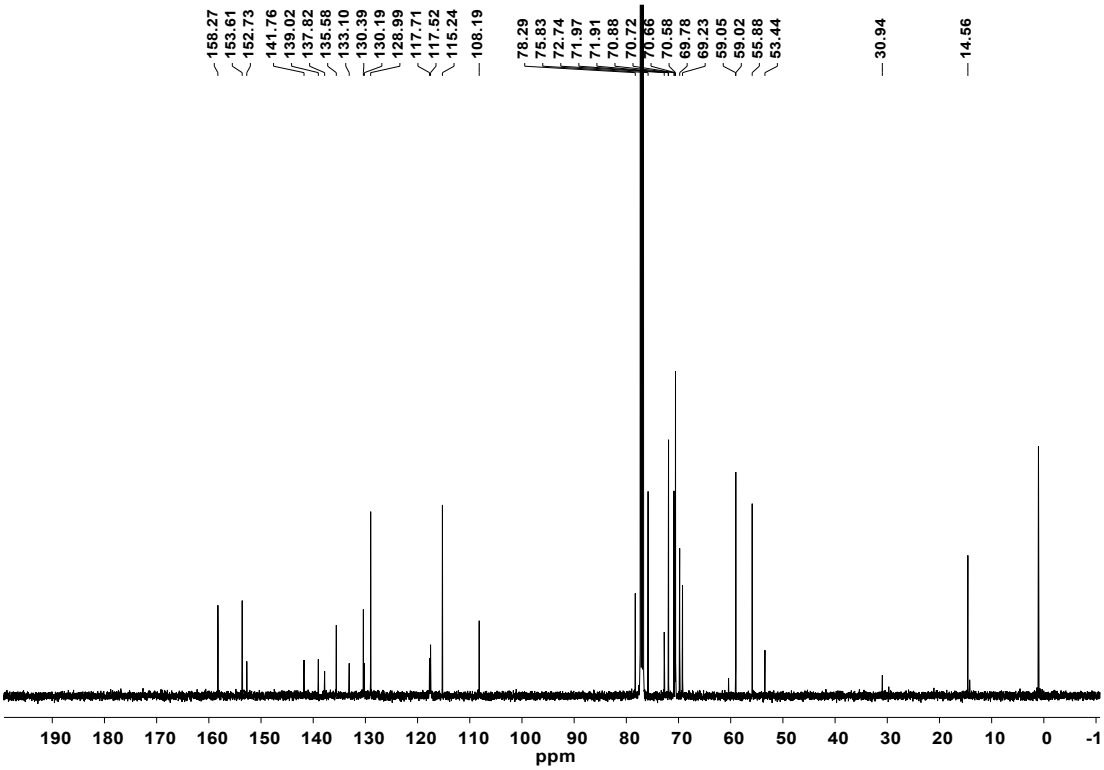

**Fig. S30** $^{13}$C NMR spectrum of compound **10** in $CDCl_3$

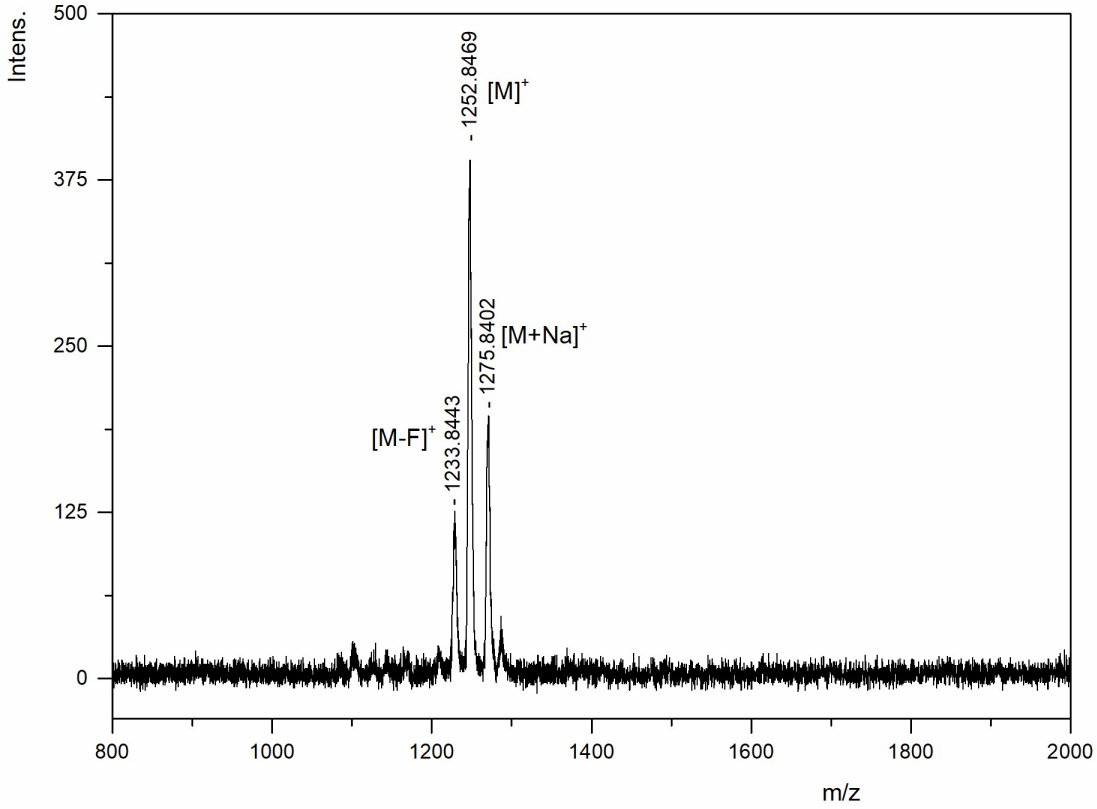


**Fig. S31** MALDI-MS spectrum of compound **11**

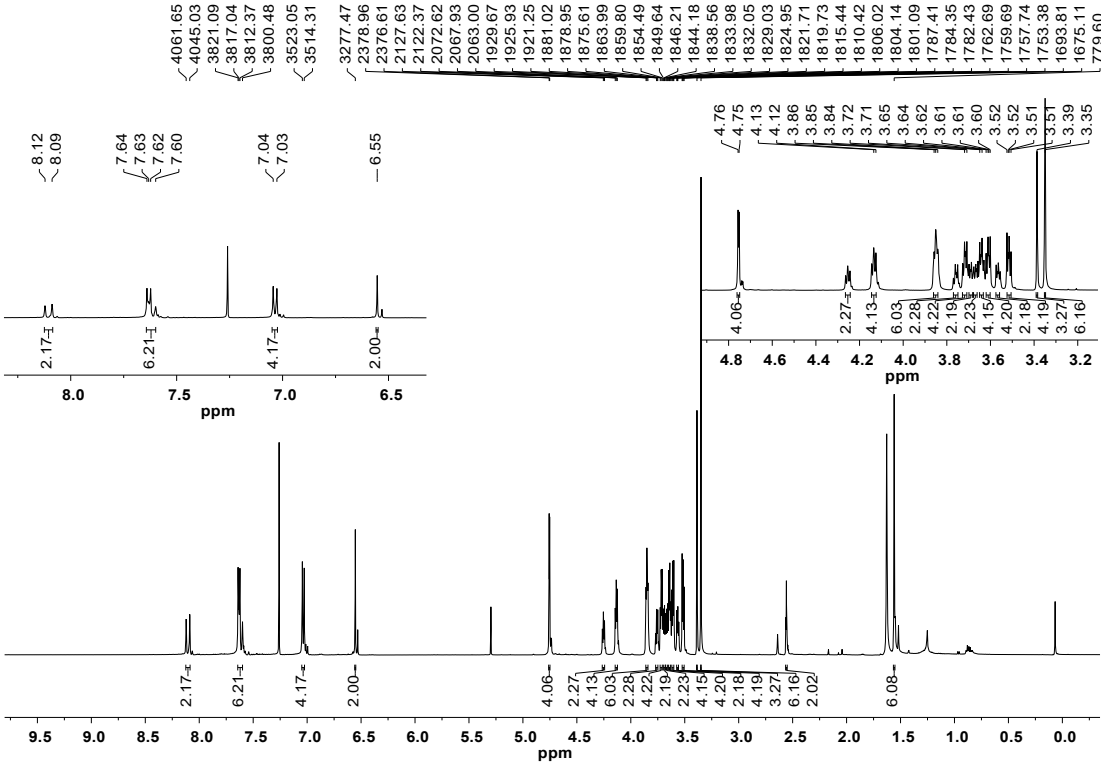


**Fig. S32** $^{1}$H NMR spectrum of compound **11** in $CDCl_3$

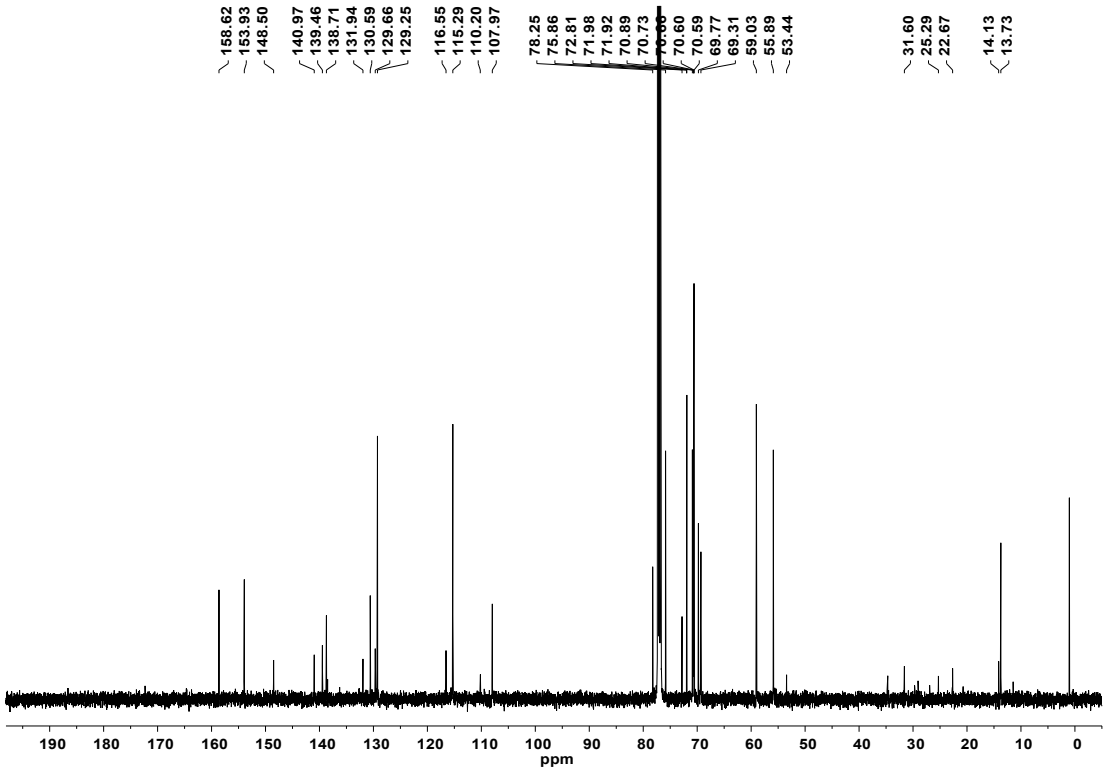


**Fig. S33** $^{13}C$ NMR spectrum of compound **11** in $CDCl_3$

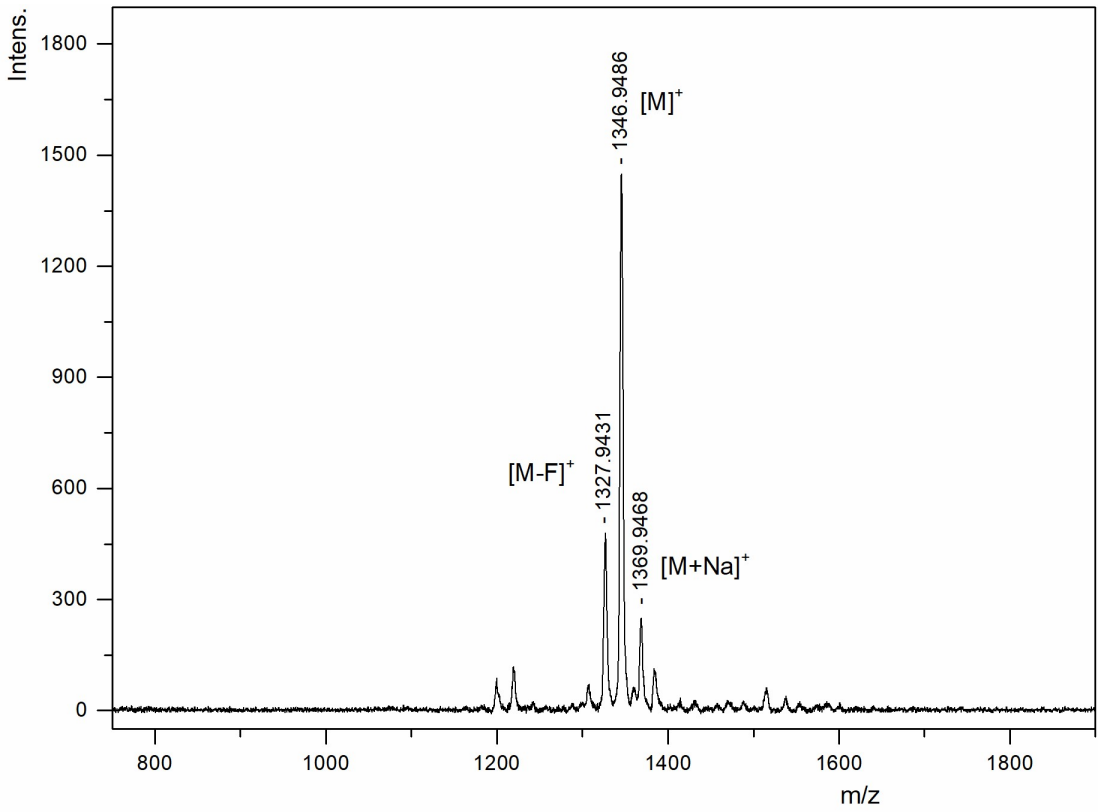


**Fig. S34** MALDI-MS spectrum of compound **12**

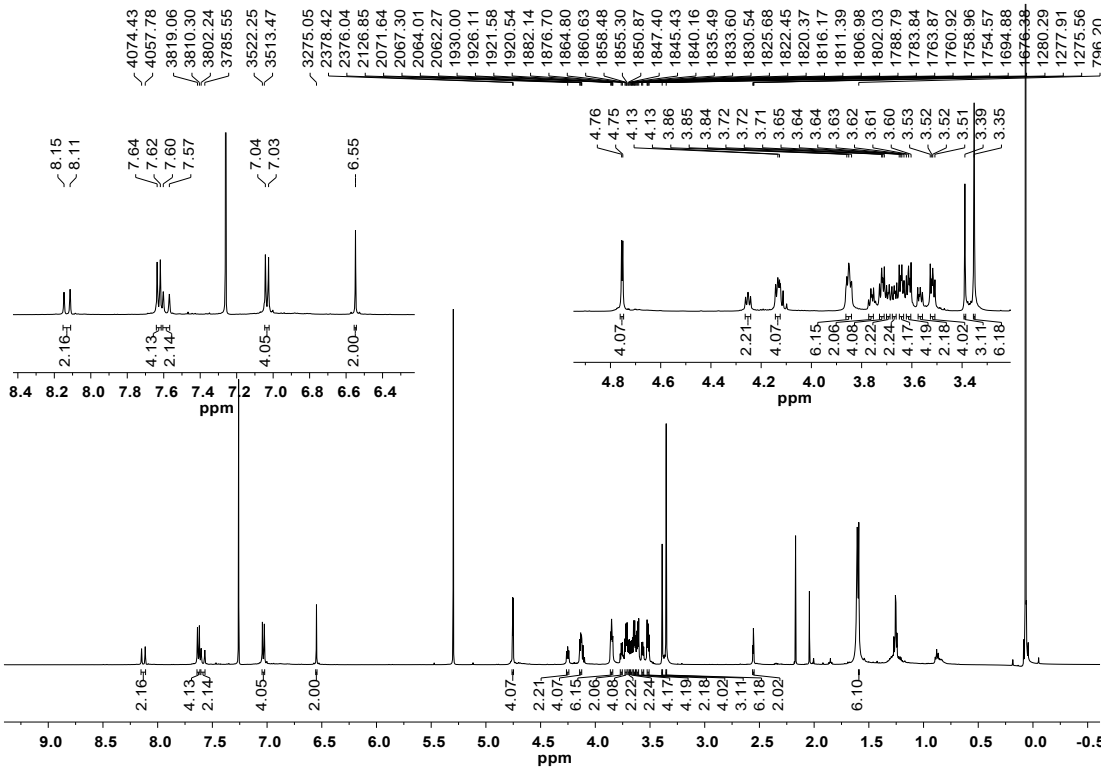

**Fig. S35** $^{1}$H NMR spectrum of compound **12** in $CDCl_3$

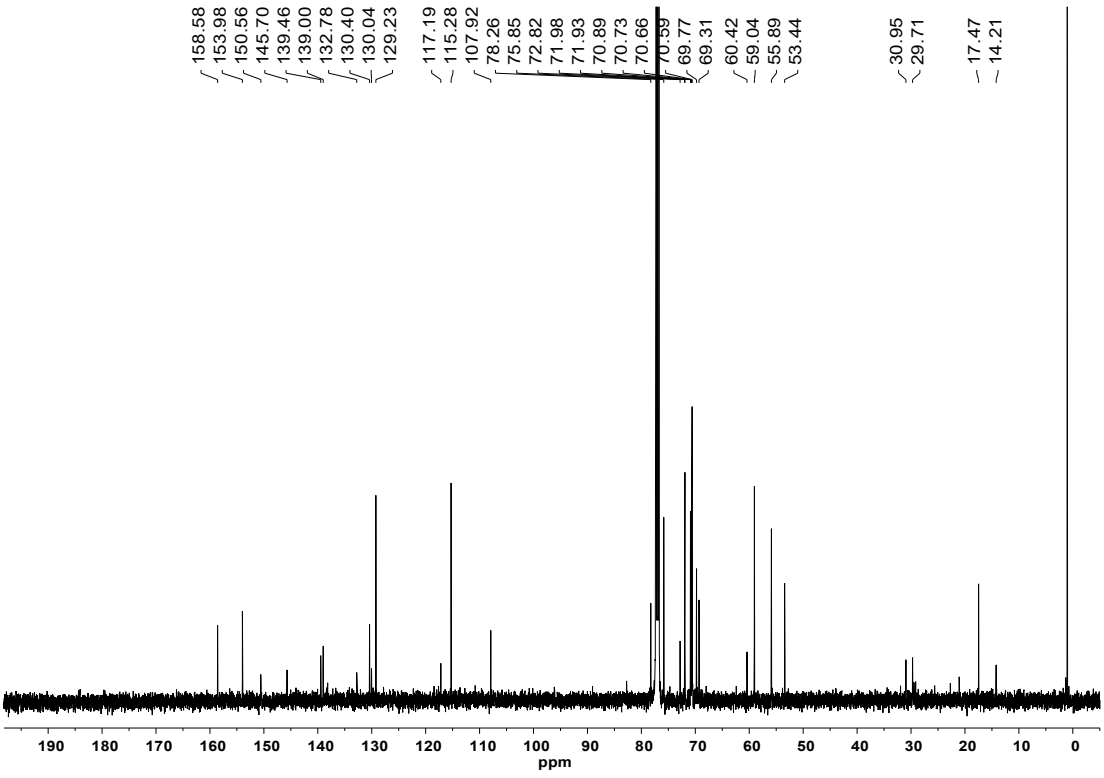

**Fig. S36** $^{13}$C NMR spectrum of compound **12** in $CDCl_3$

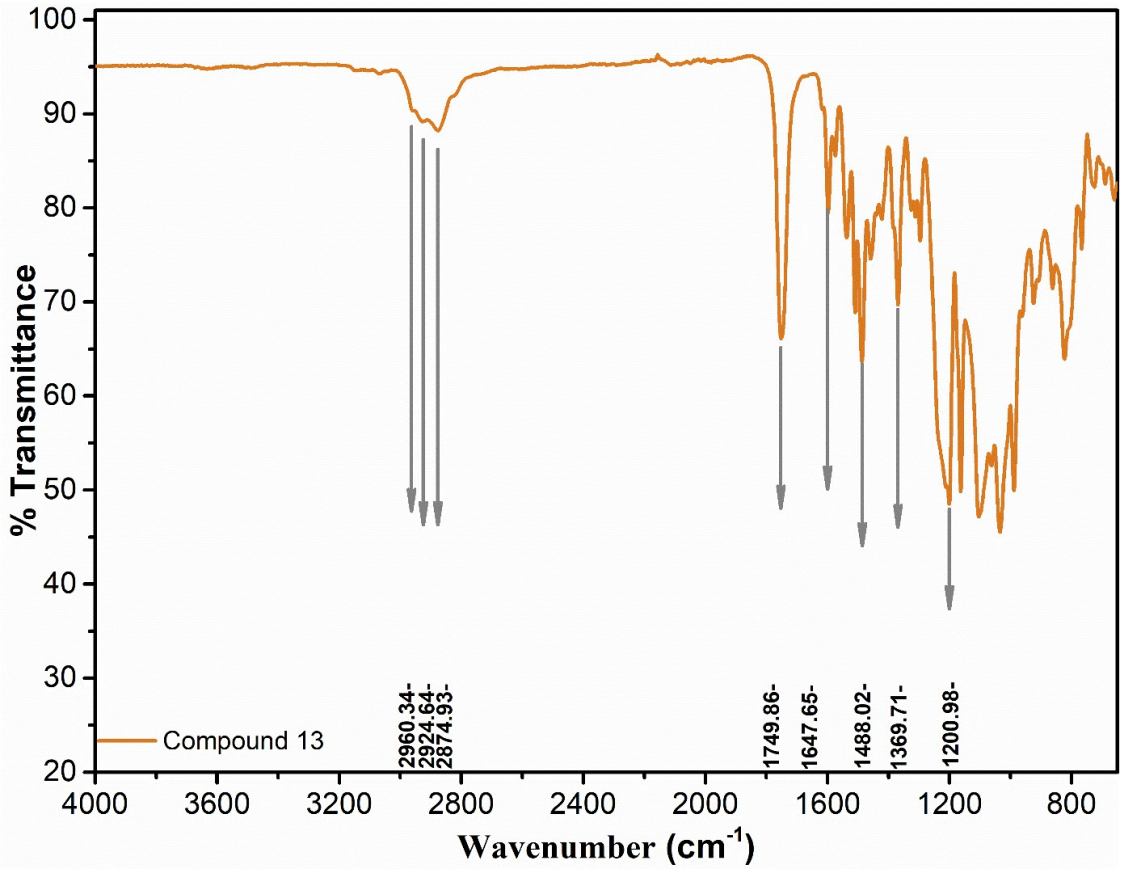


**Fig. S37** FT-IR spectrum of compound **13**

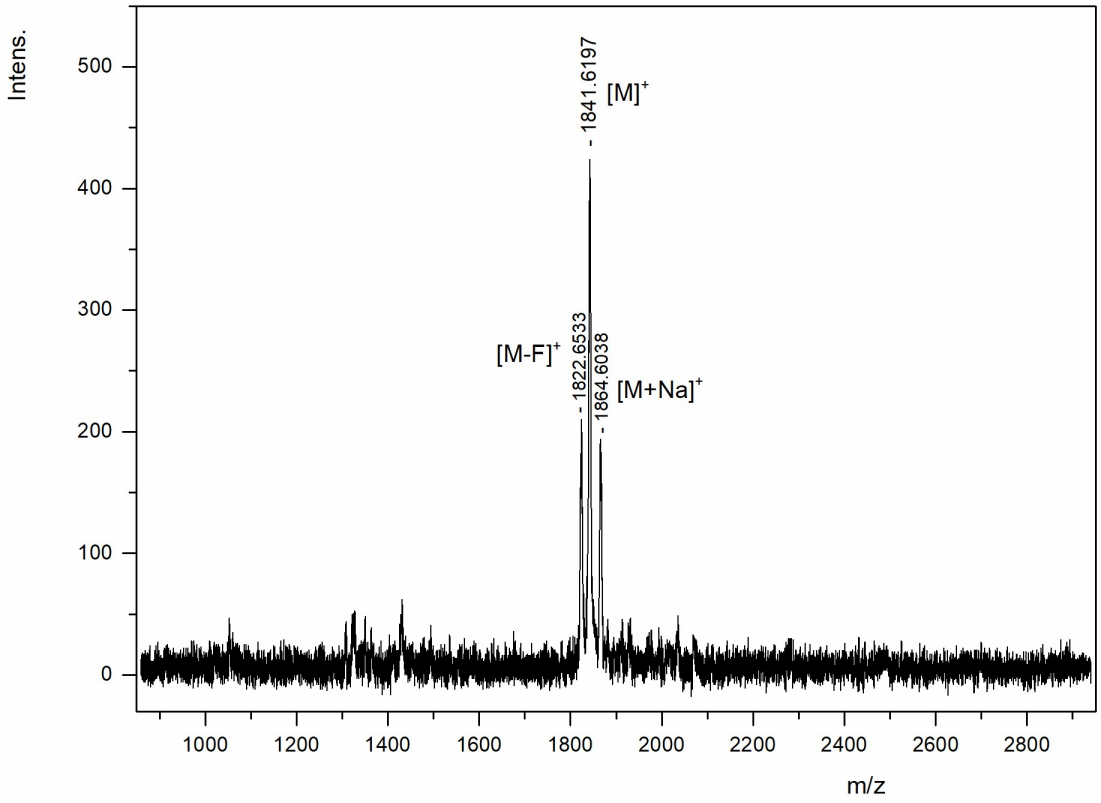


**Fig. S38** MALDI-MS spectrum of compound **13**

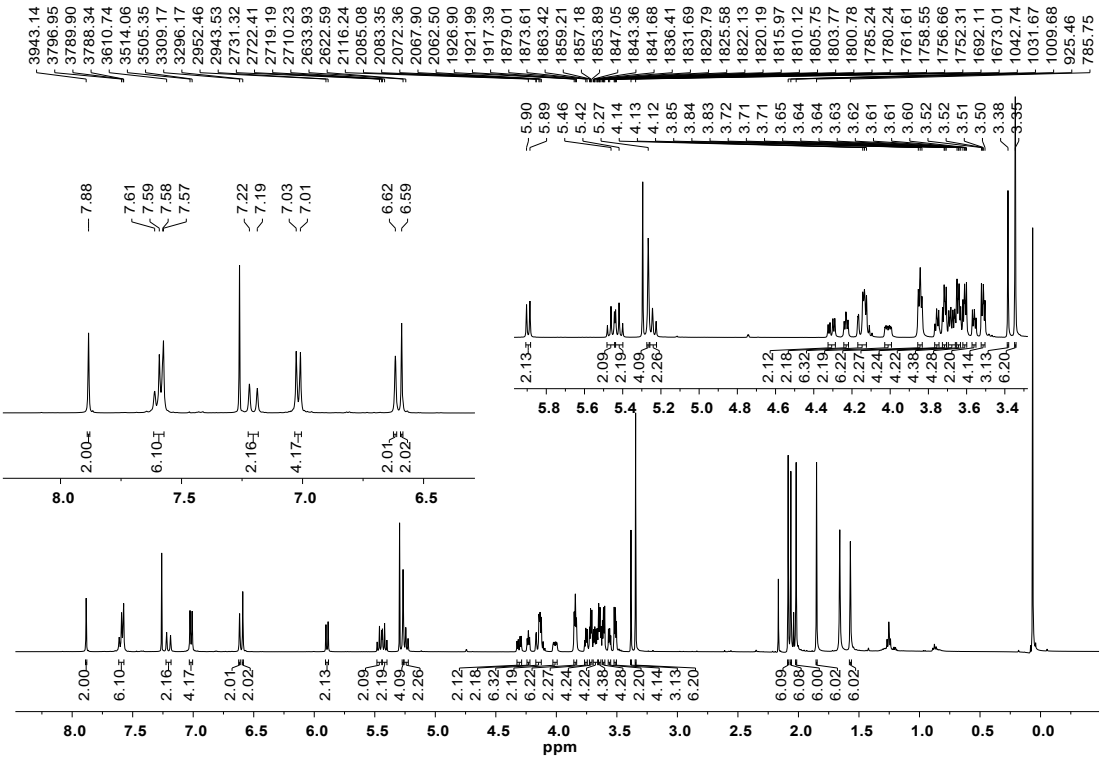


**Fig. S39** $^{1}$H NMR spectrum of compound **13** in $CDCl_3$

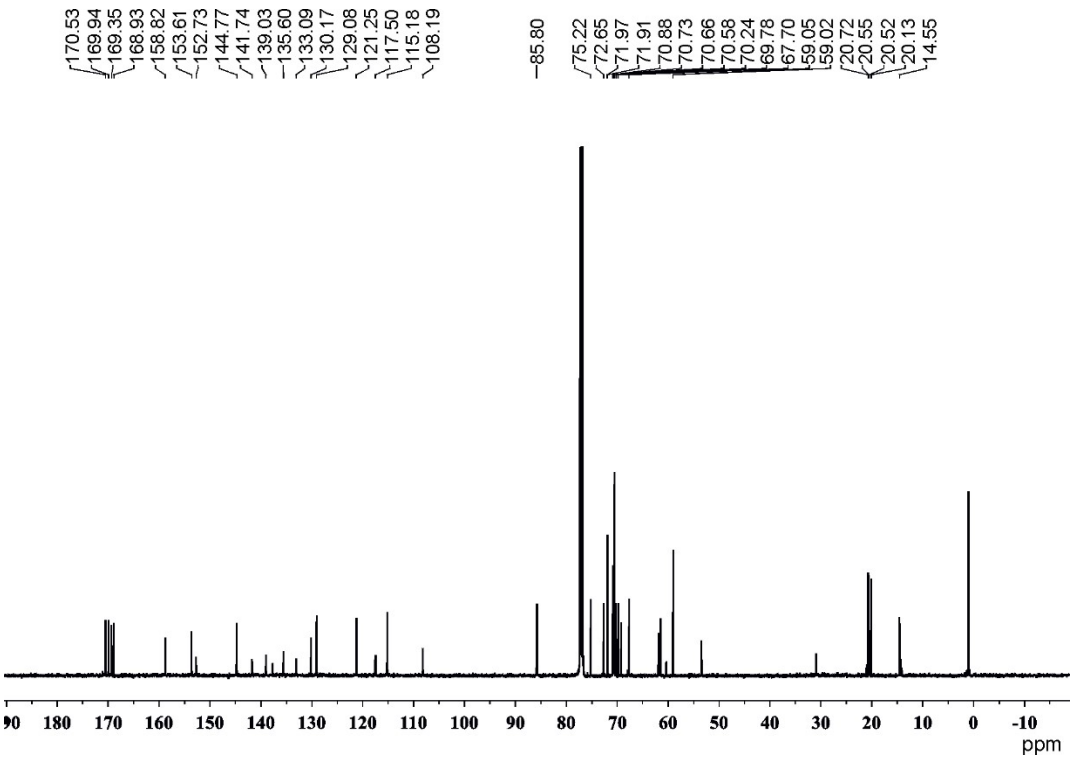


**Fig. S40** $^{13}C$ NMR spectrum of compound **13** in $CDCl_3$

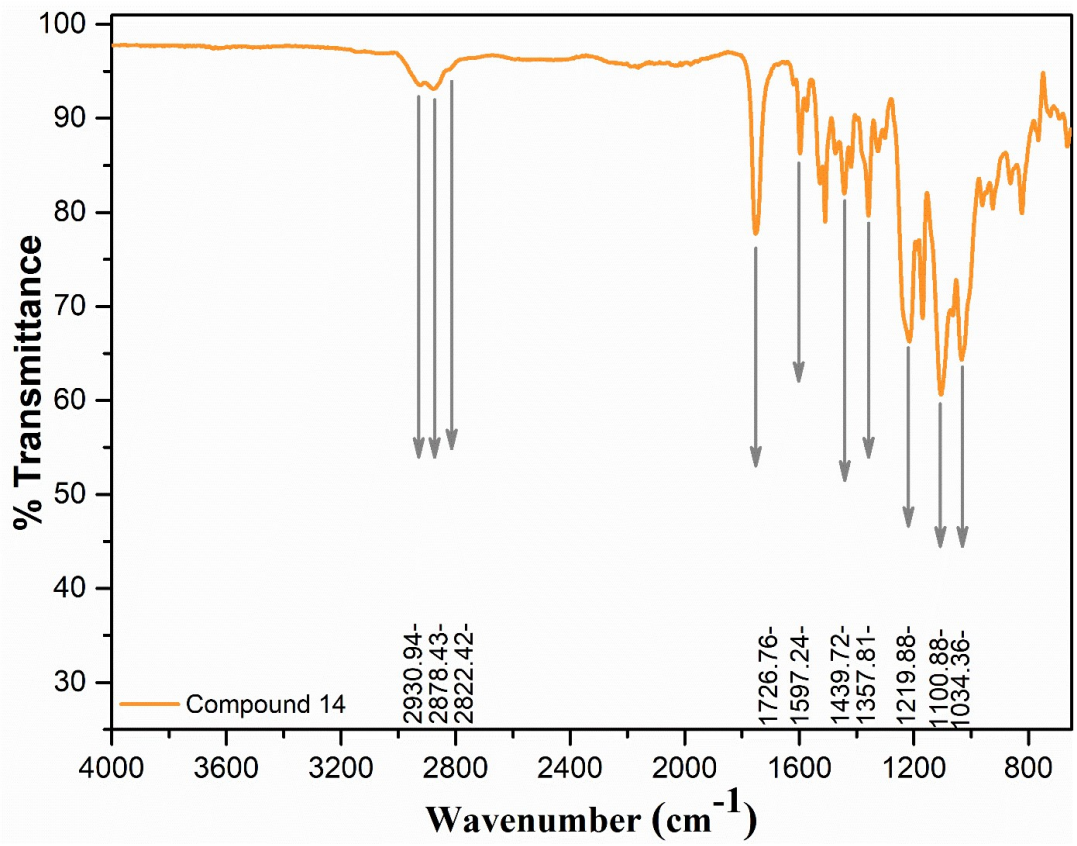


**Fig. S41** FT-IR spectrum of compound **14**

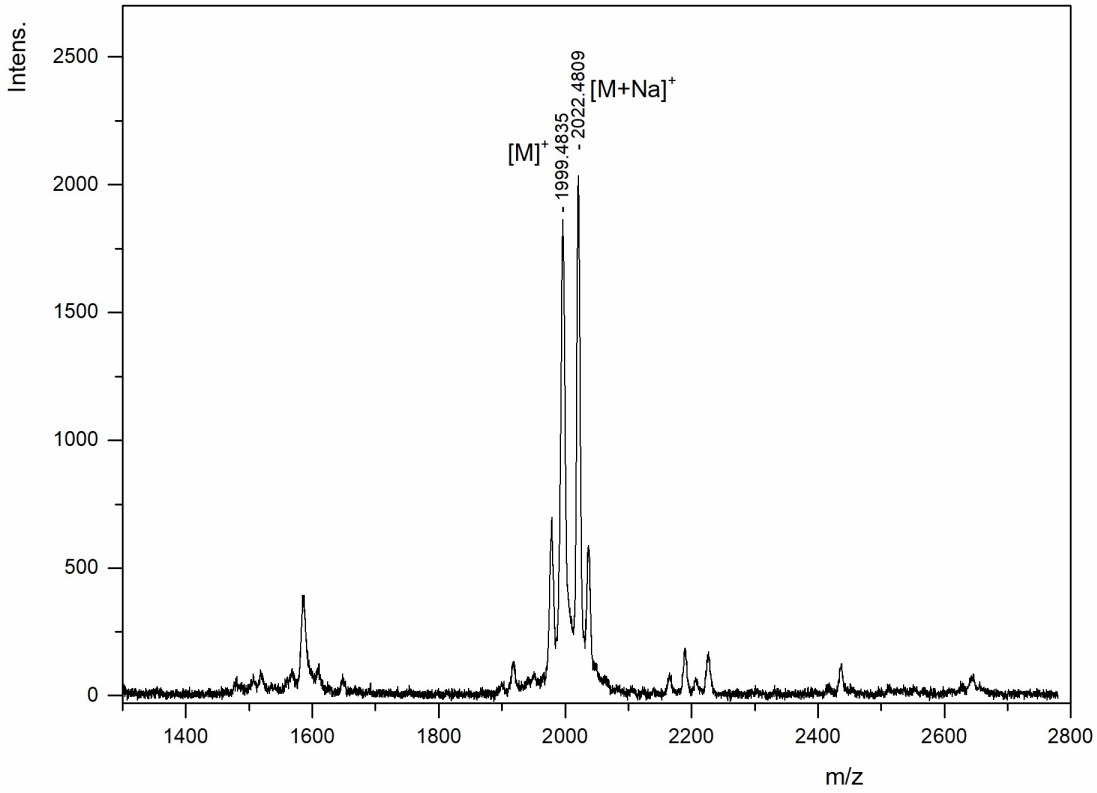


**Fig. S42** MALDI-MS spectrum of compound **14**

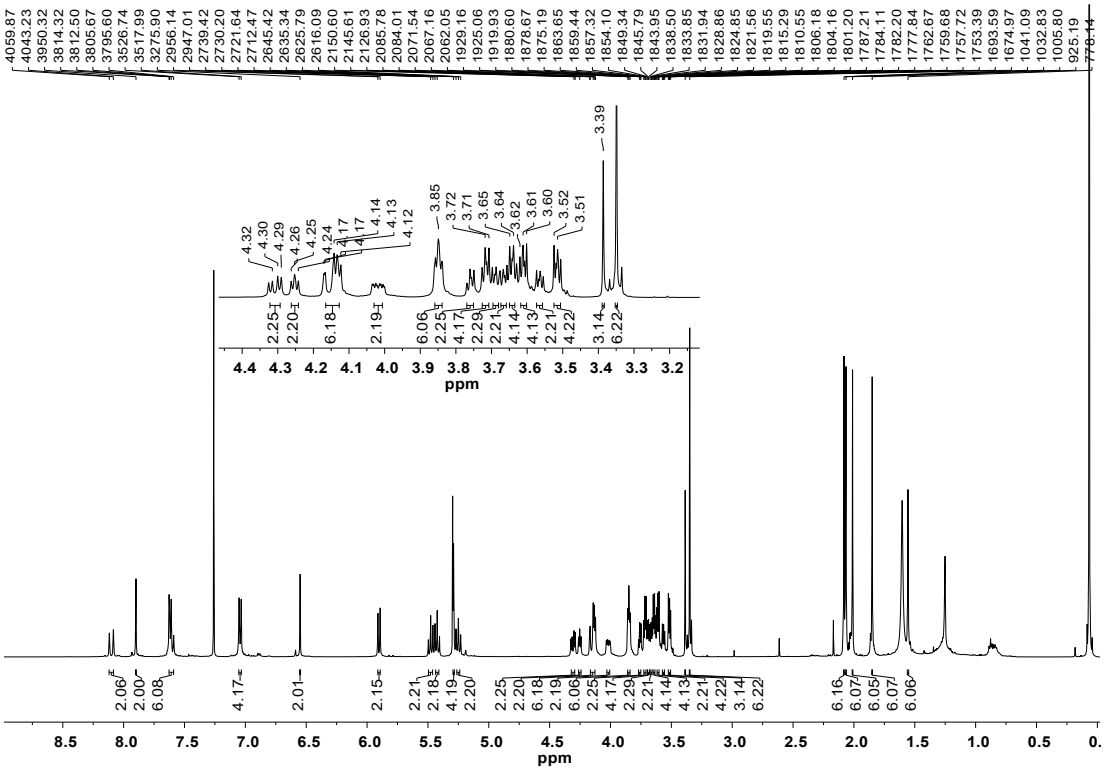


**Fig. S43** $^{1}$H NMR spectrum of compound **14** in $CDCl_3$

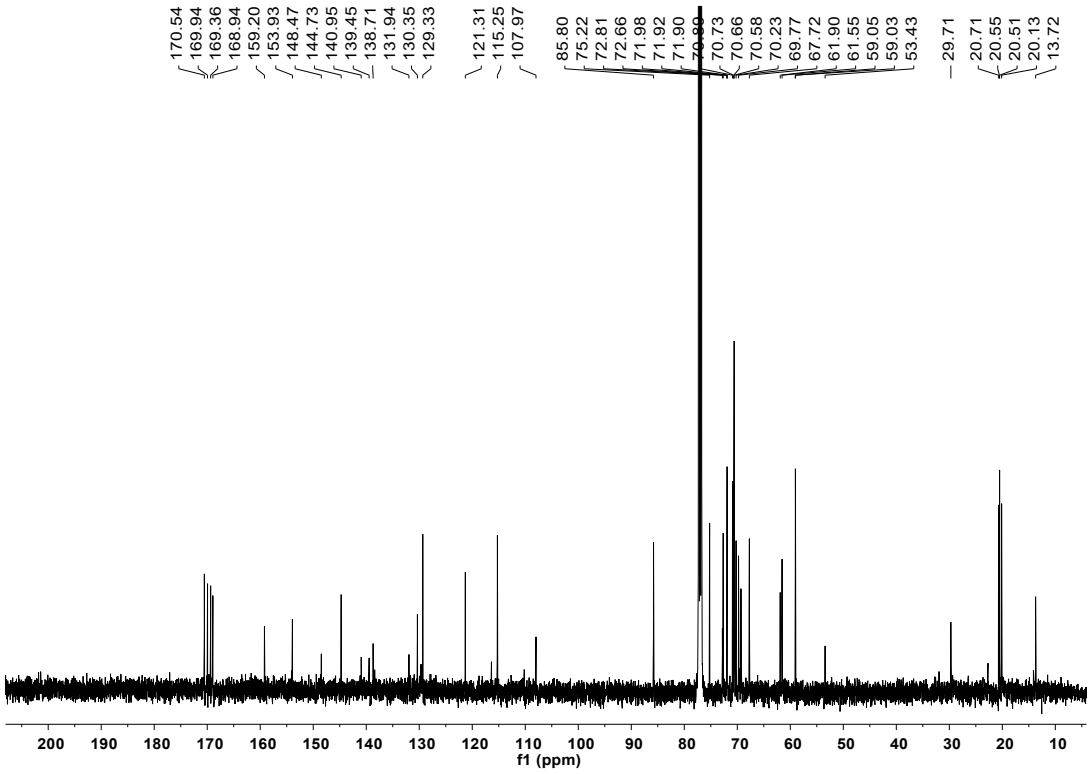


**Fig. S44** $^{13}C$ NMR spectrum of compound **14** in $CDCl_3$

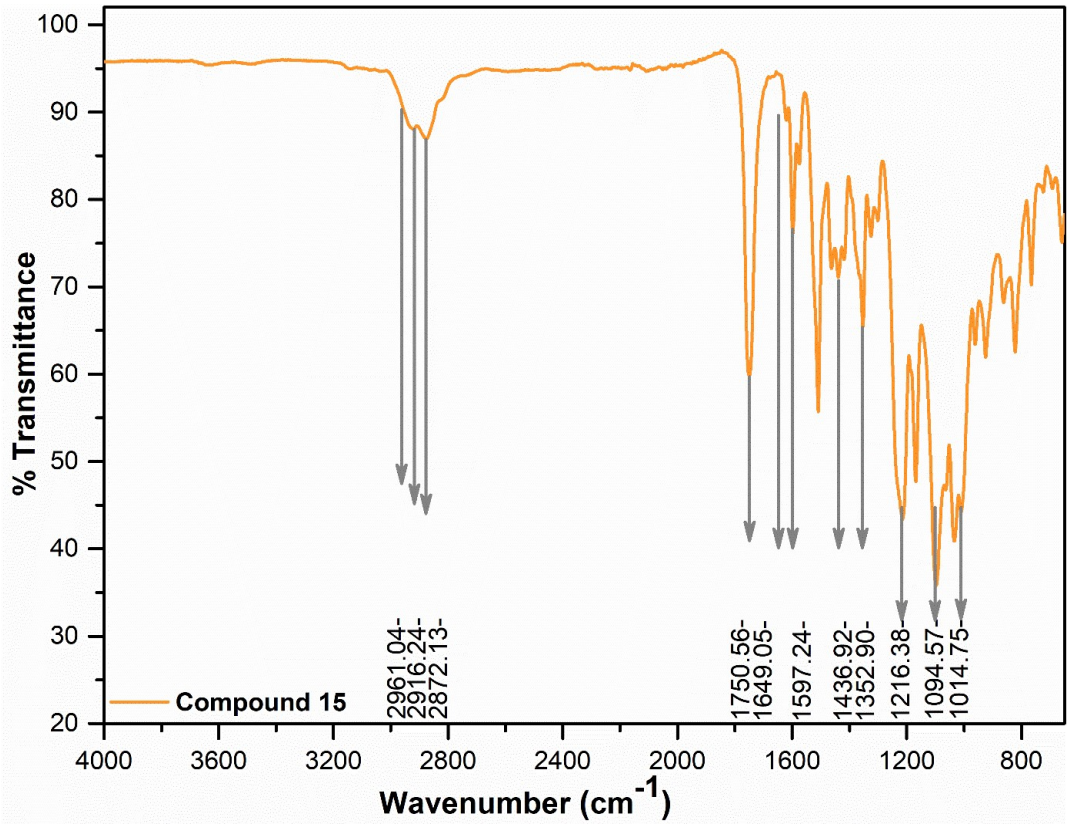


**Fig. S45** FT-IR spectrum of compound **15**

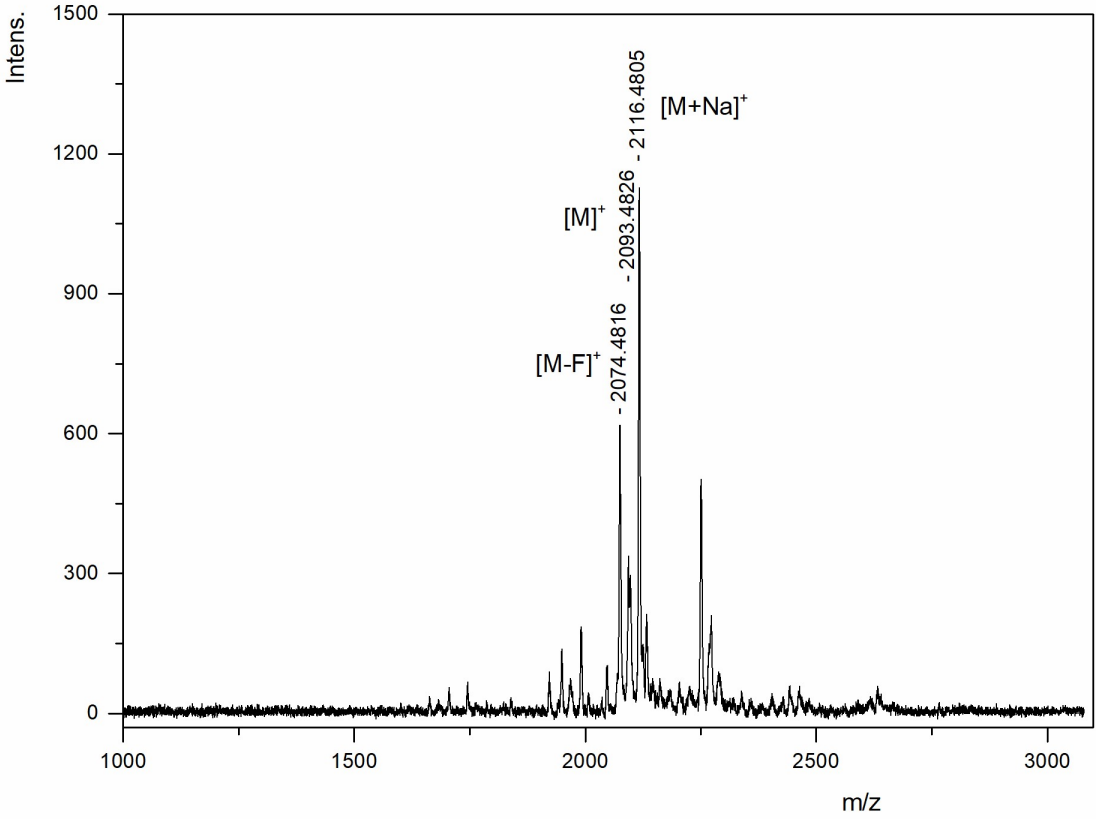


**Fig. S46** MALDI-MS spectrum of compound **15**

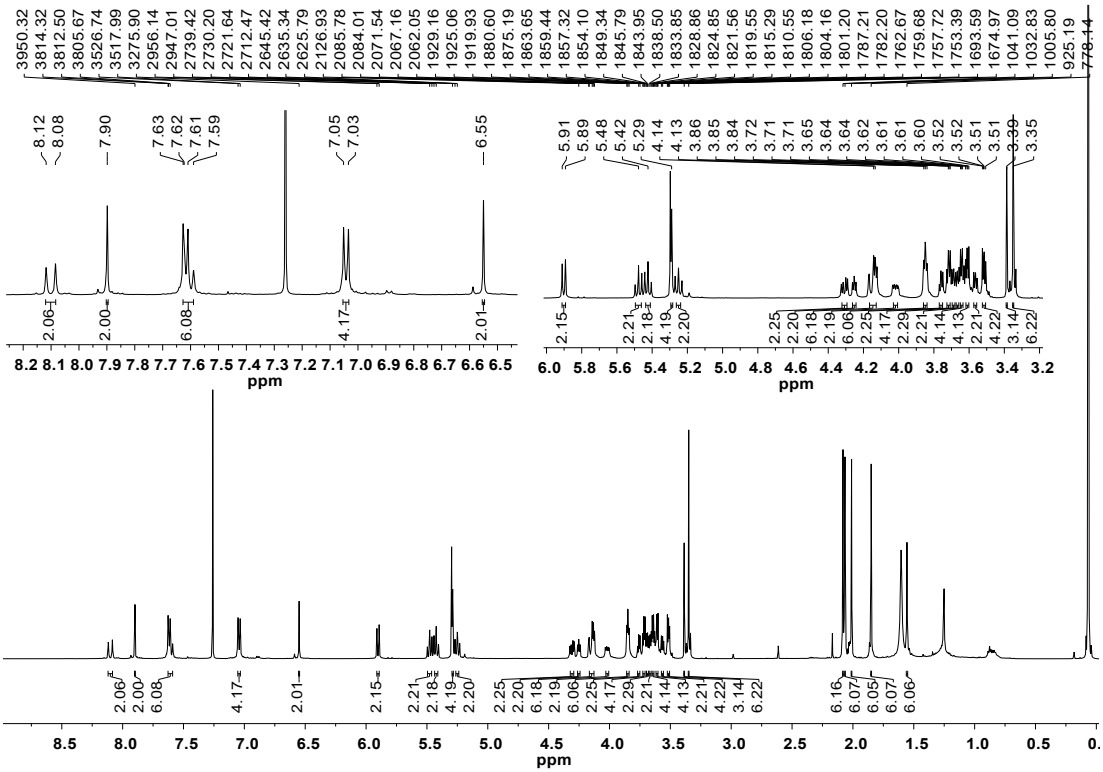


**Fig. S47** $^{1}$H NMR spectrum of compound **15** in $CDCl_3$

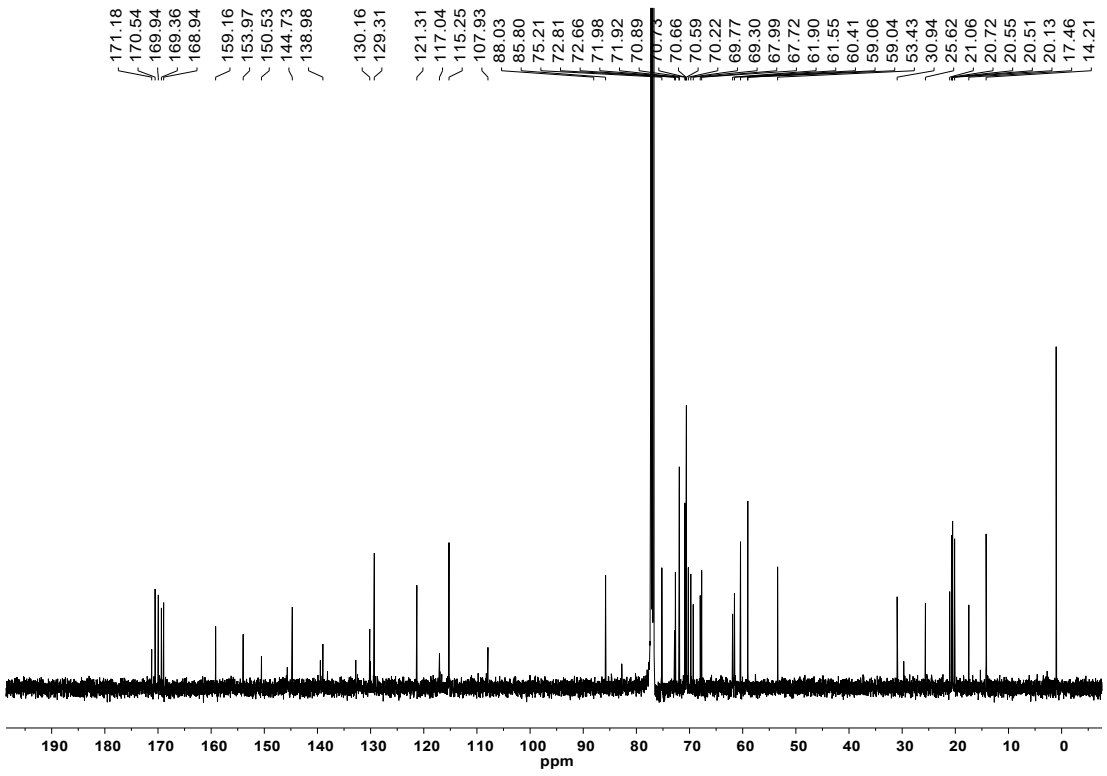


**Fig. S48** $^{13}C$ NMR spectrum of compound **15** in $CDCl_3$

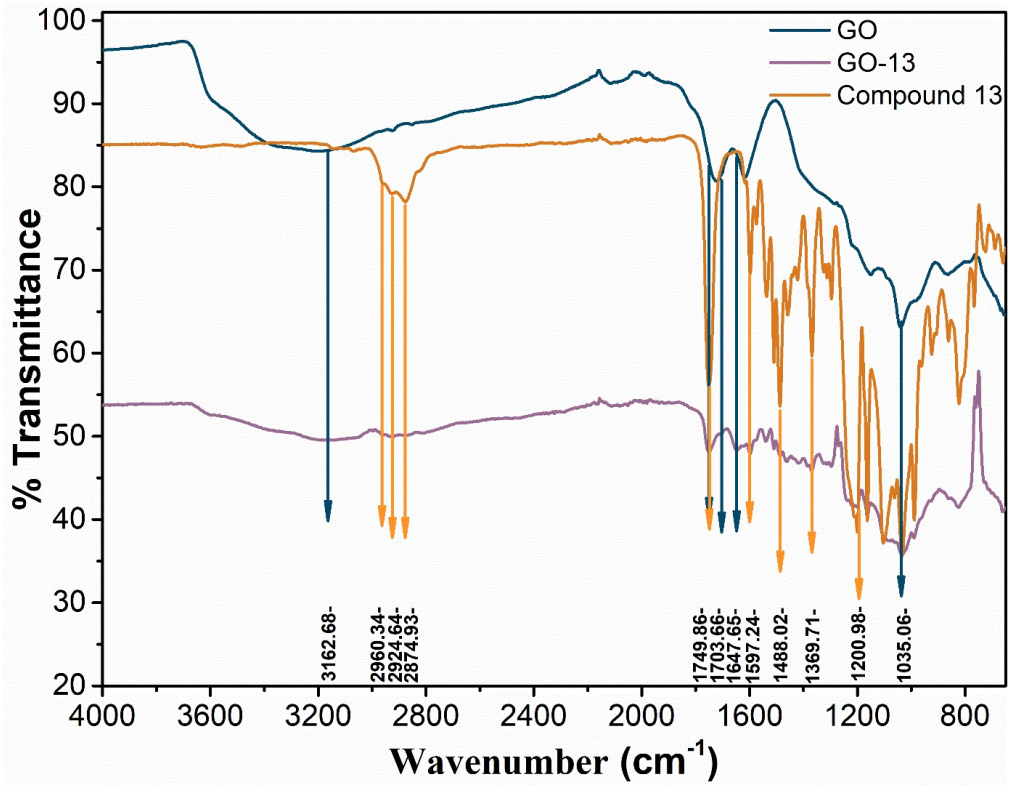


**Fig. S49** FT-IR spectra of compound **13**, **GO** and **GO-13**

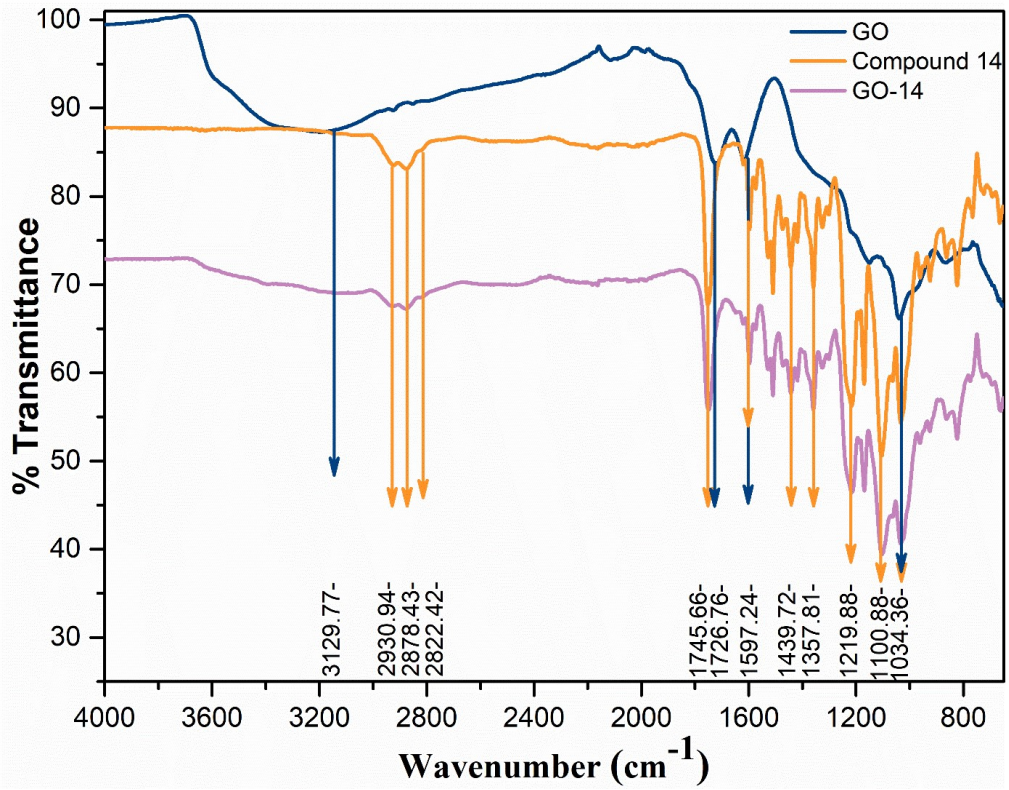


**Fig. S50** FT-IR spectra of compound **14**, **GO** and **GO-14**

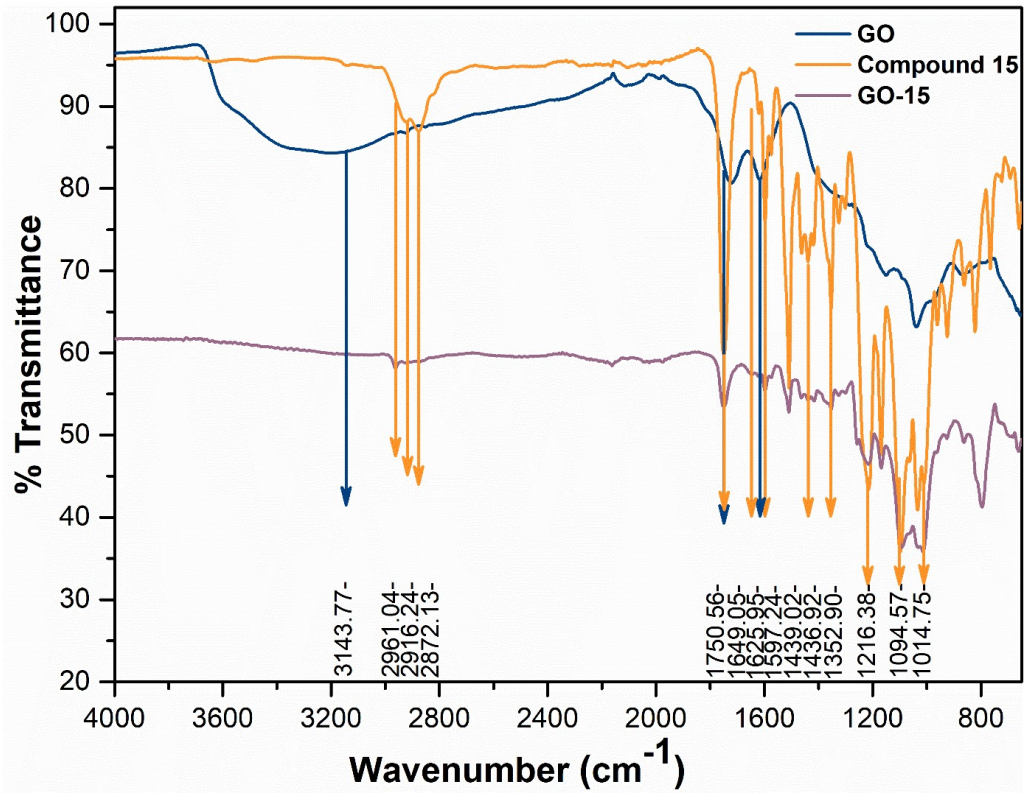


**Fig. S51** FT-IR spectra of compound **15**, **GO** and **GO-15**

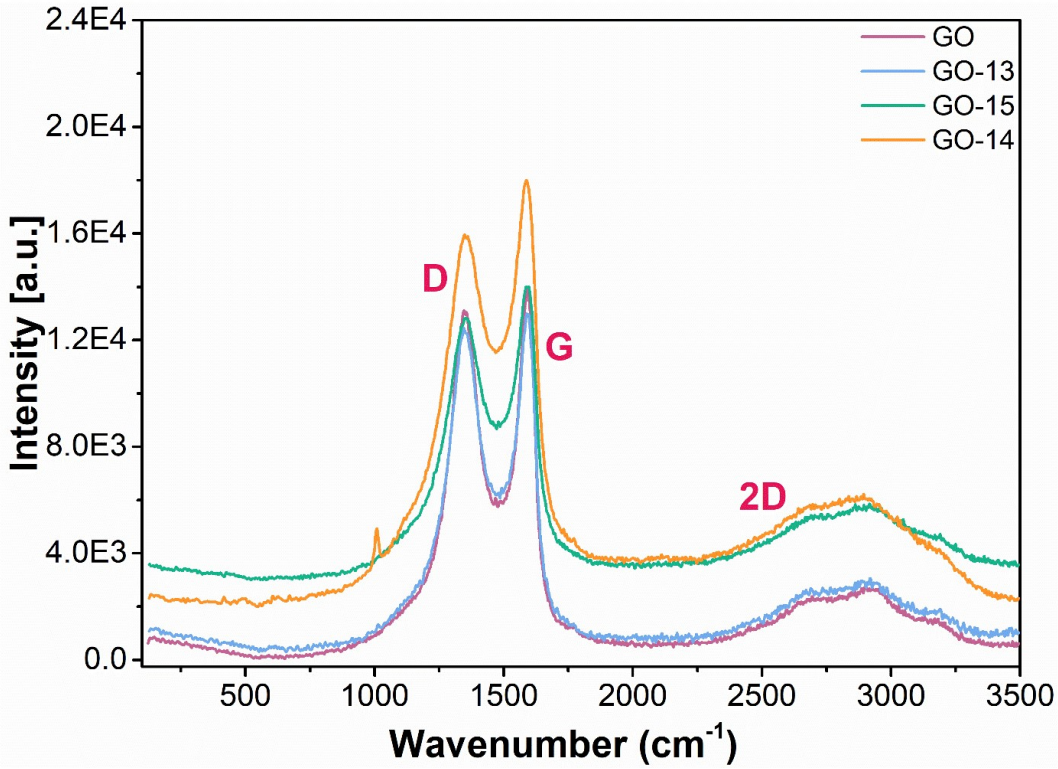


**Fig. S52** Raman spectra of **GO, GO-13, GO-14,** and **GO-15**

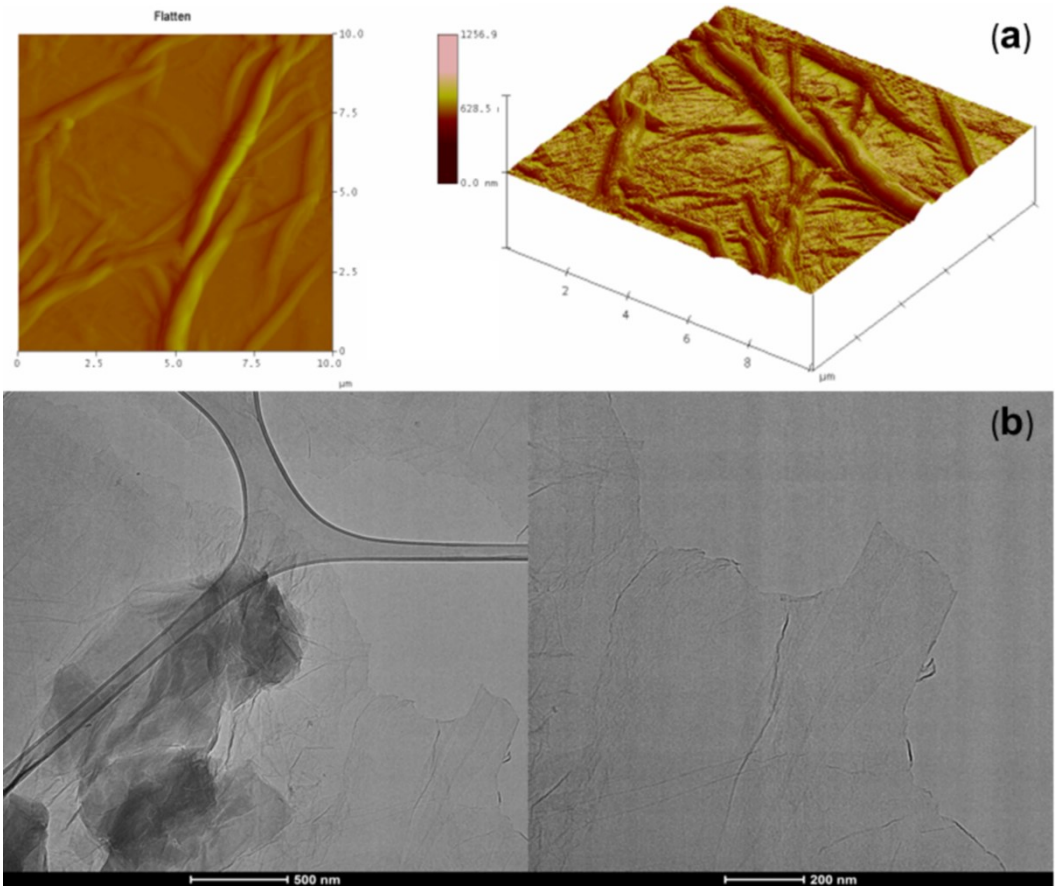


**Fig. S53 (a)** AFM images and (b) TEM micrographs of **GO**

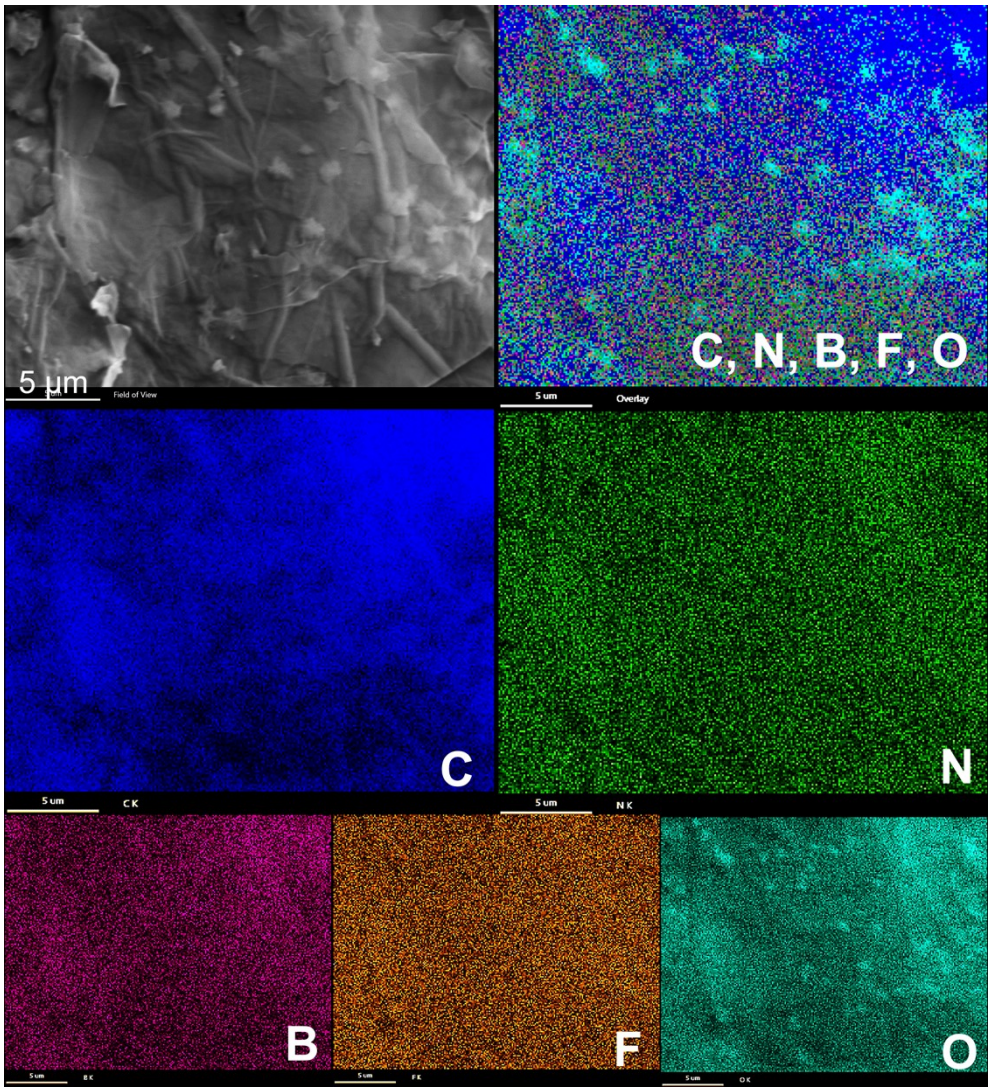


**Fig. S54** TEM-EDX analysis of **GO-13**

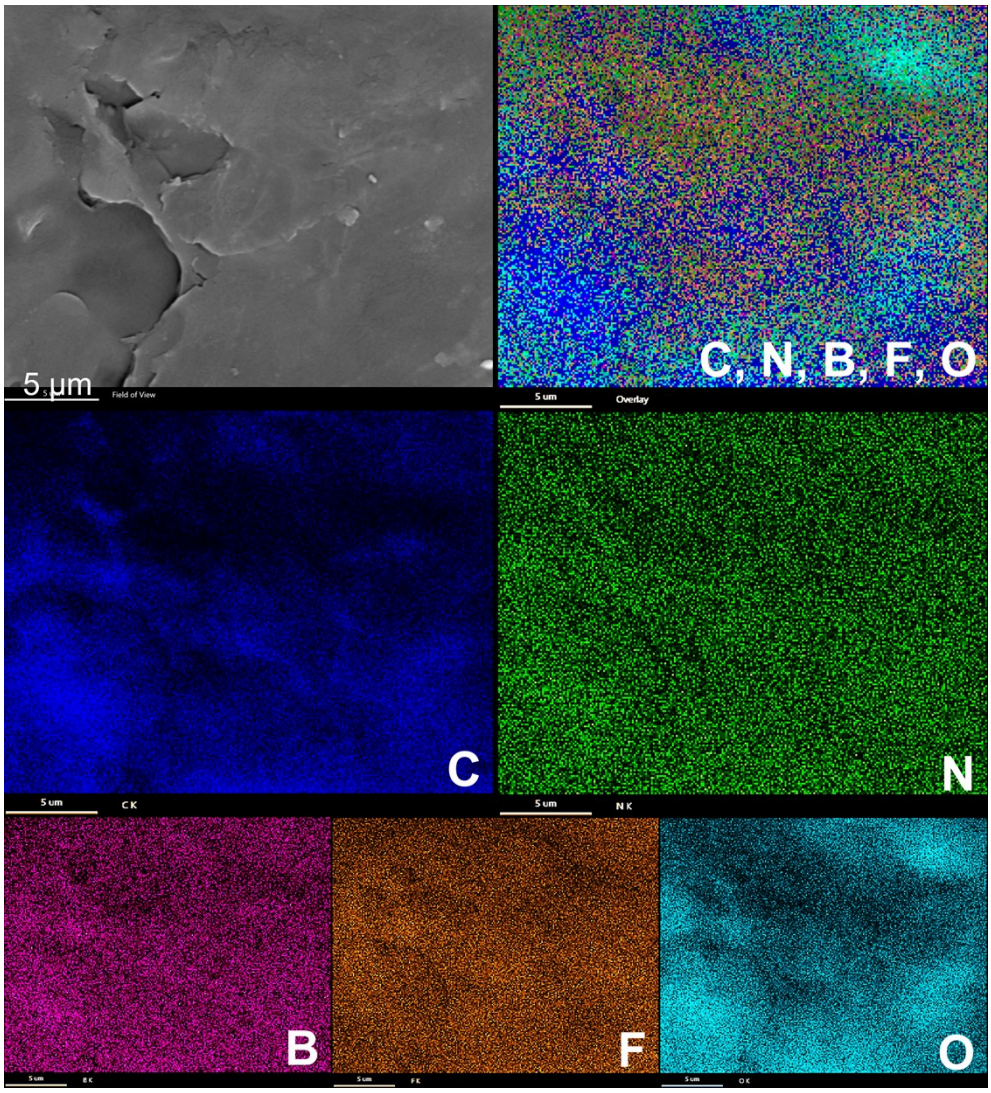


**Fig. S55** TEM-EDX analysis of **GO-14**

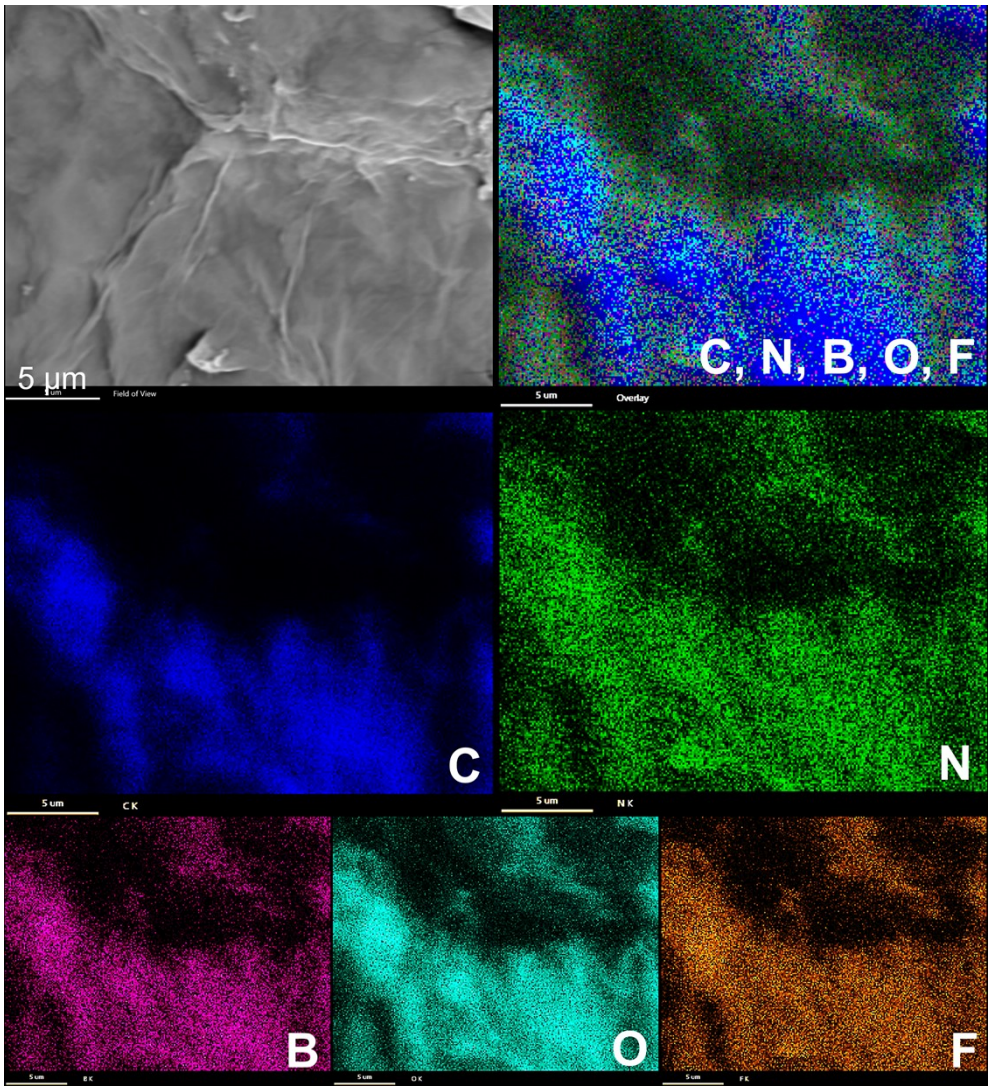


**Fig. S56** TEM-EDX analysis of **GO-15**

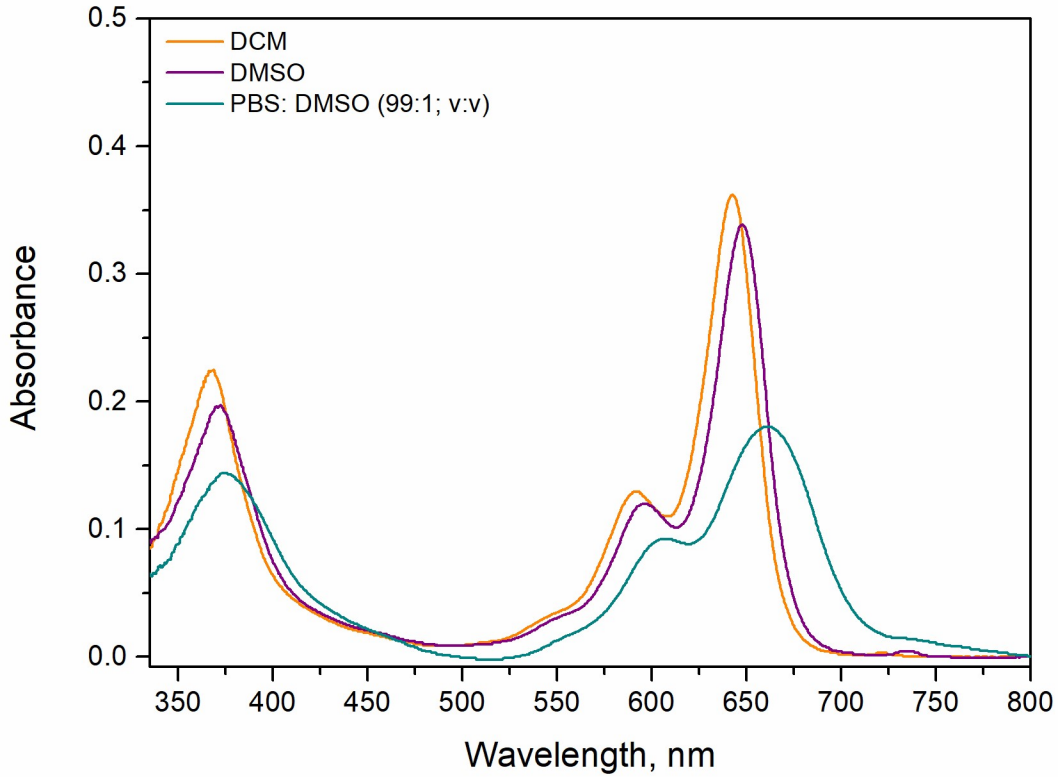


**Fig. S57** Absorbance spectra of compound **13** in different solvents (2 μM)

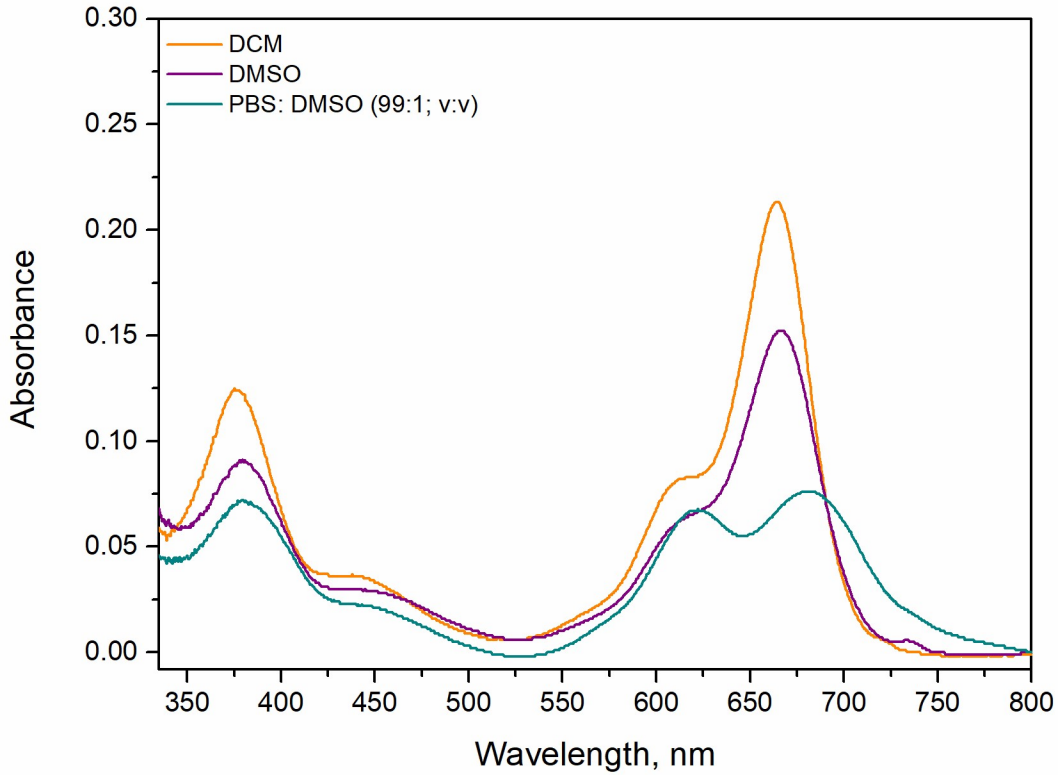


**Fig. S58** Absorbance spectra of compound **14** in different solvents (2 μM)

**Fig. S59** Absorbance spectra of compound **15** in different solvents (2 μM)

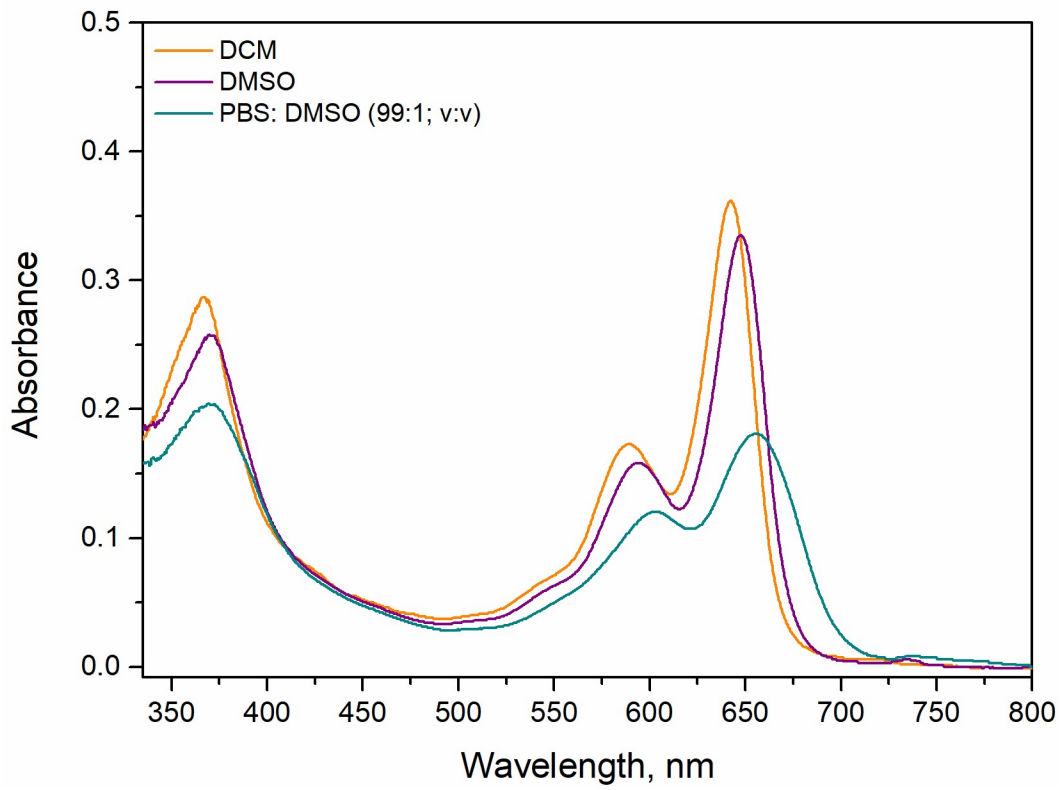


**Fig. S60** Absorbance spectra of **GO-13** in different solvents (2 μM)

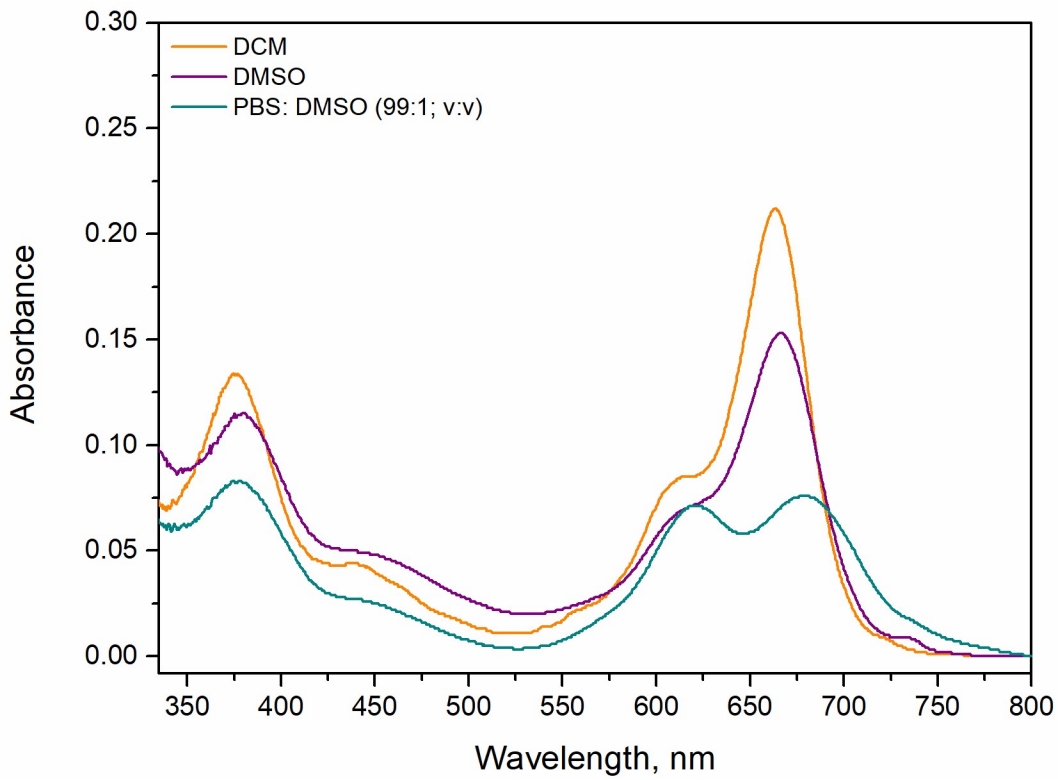


**Fig. S61** Absorbance spectra of **GO-14** in different solvents (2 μM)

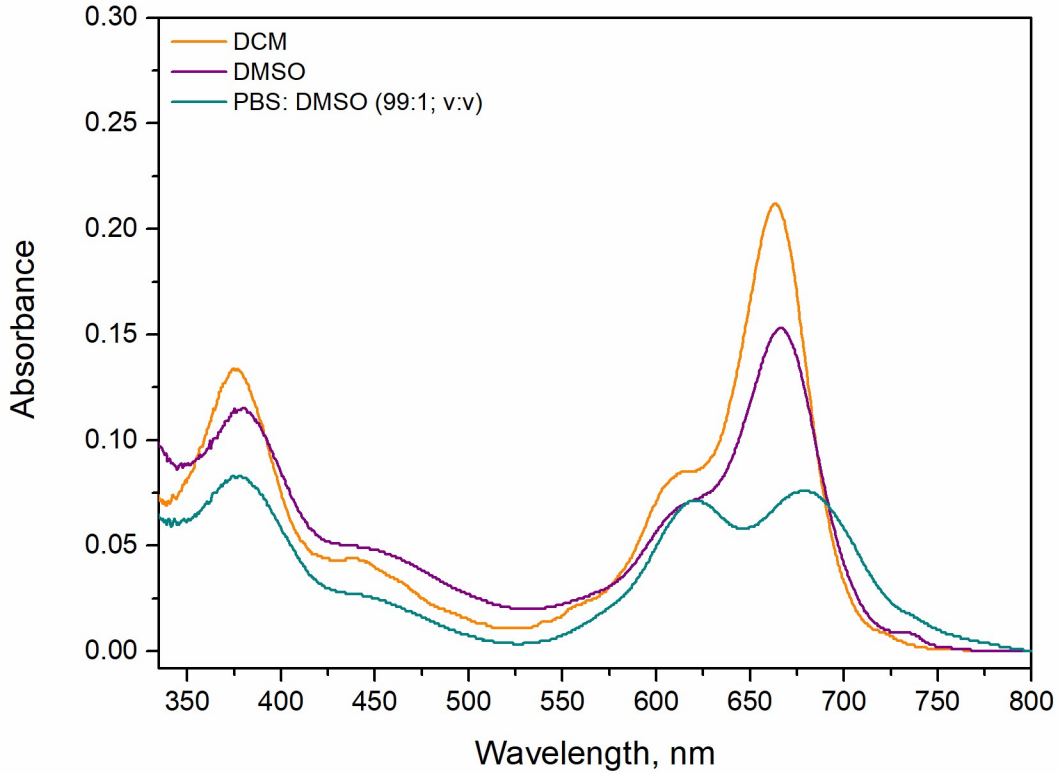


**Fig. S62** Absorbance spectra of **GO-15** in different solvents (2 μM)

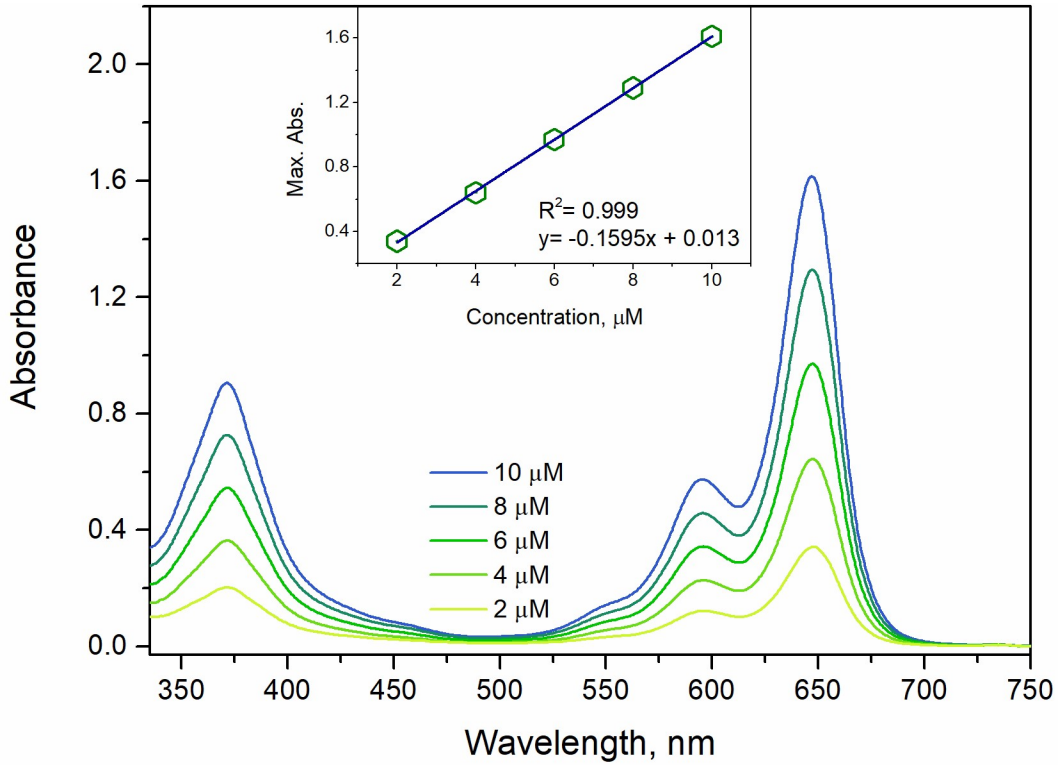


**Fig. S63** Absorption spectra of compound **13** in DMSO at different concentrations

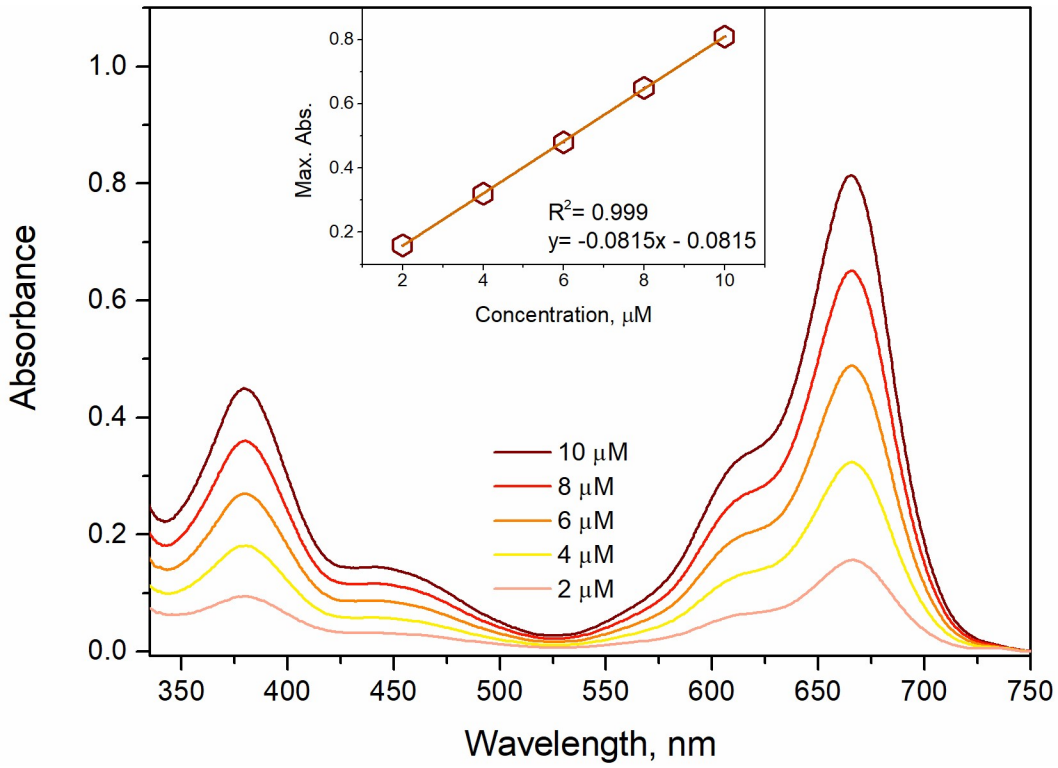


**Fig. S64** Absorption spectra of compound **14** in DMSO at different concentrations

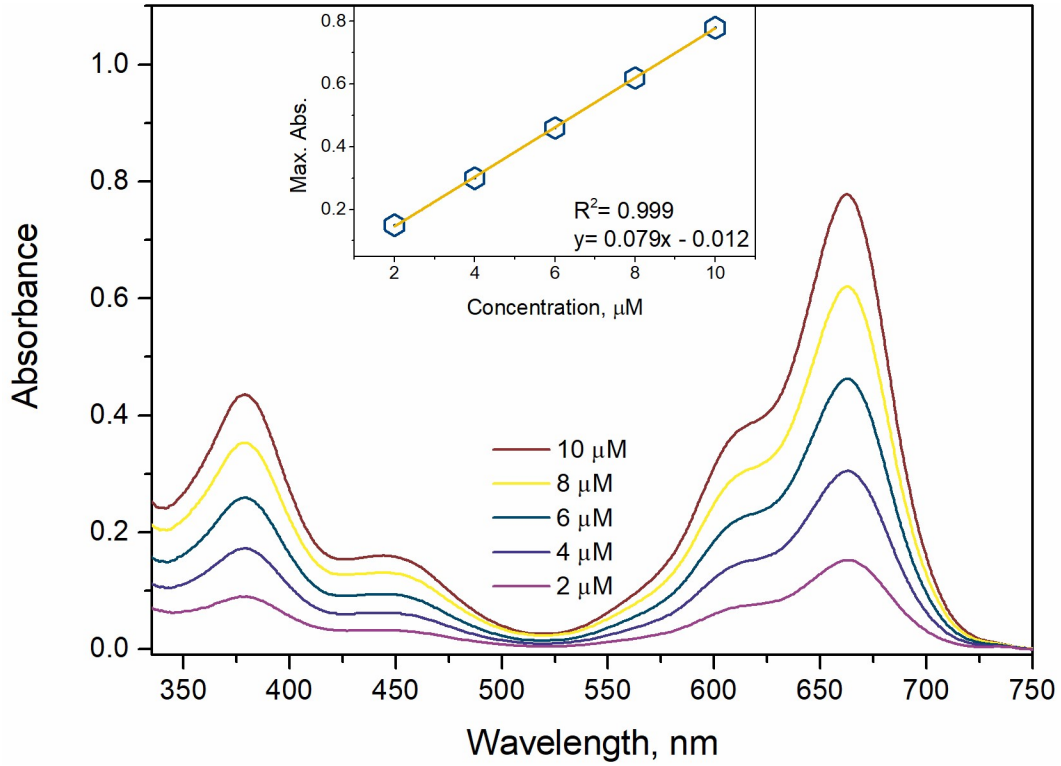


**Fig. S65** Absorption spectra of compound **15** in DMSO at different concentrations

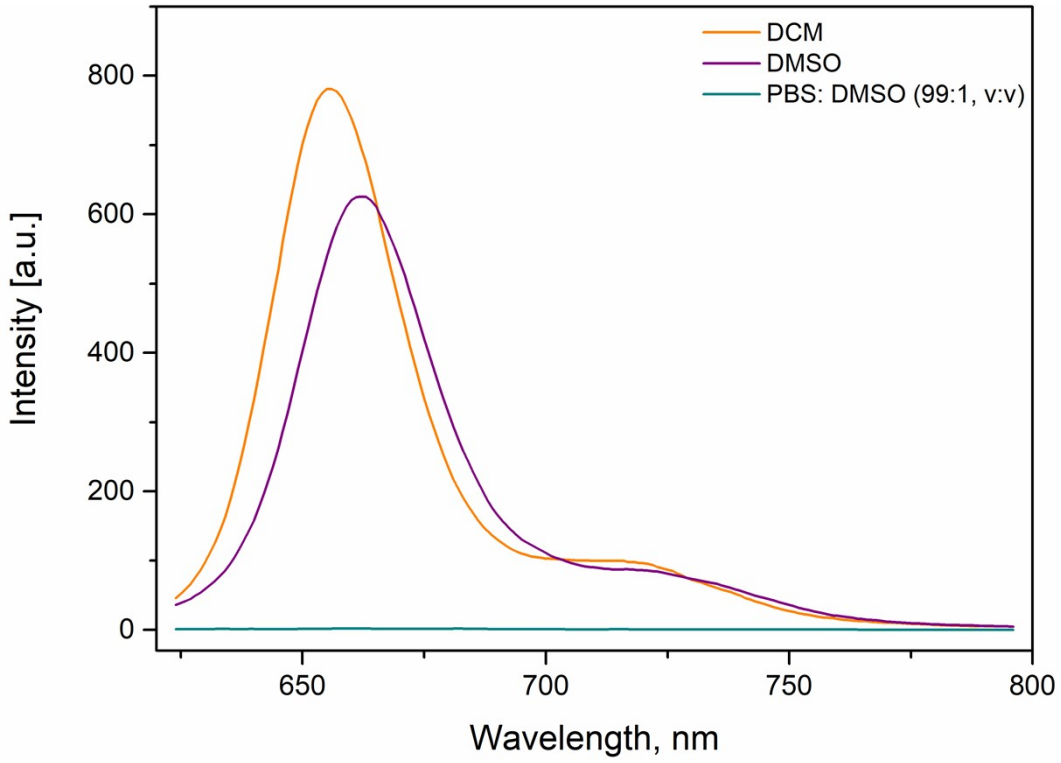


**Fig. S66** Fluorescence spectra of compound **13** ($\lambda_{ex}$:610 nm) in different solvents (0.5 μM)

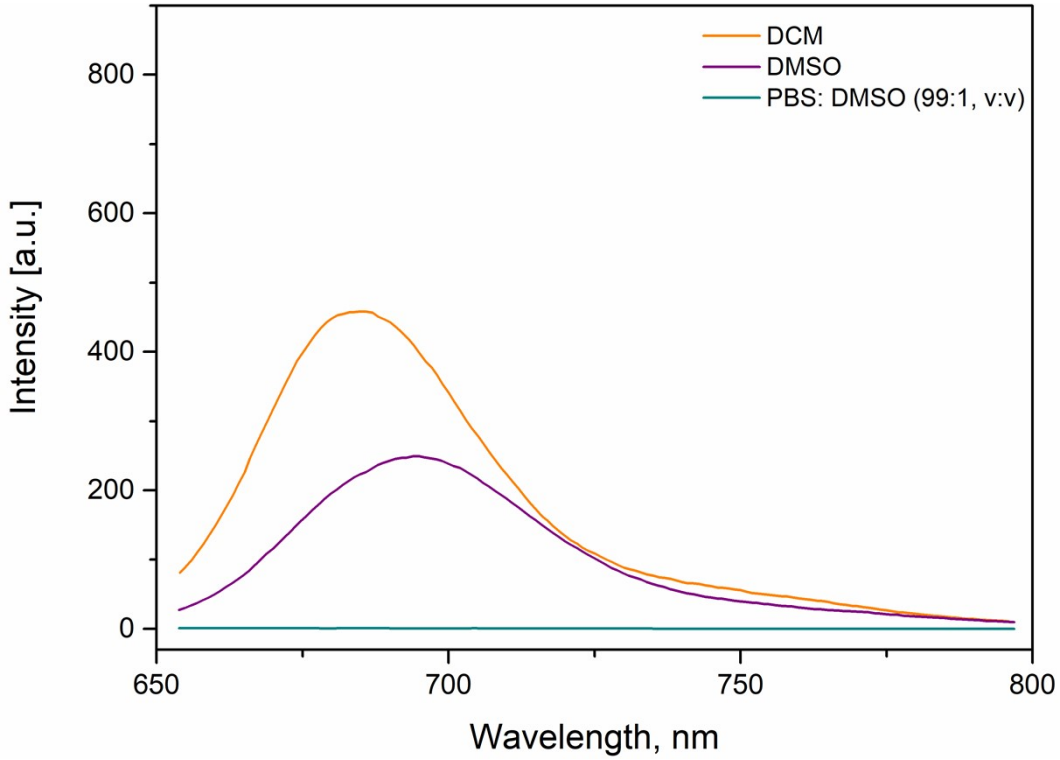


**Fig. S67** Fluorescence spectra of compound **14** ($\lambda_{ex}$:640 nm) in different solvents (0.5 μM)

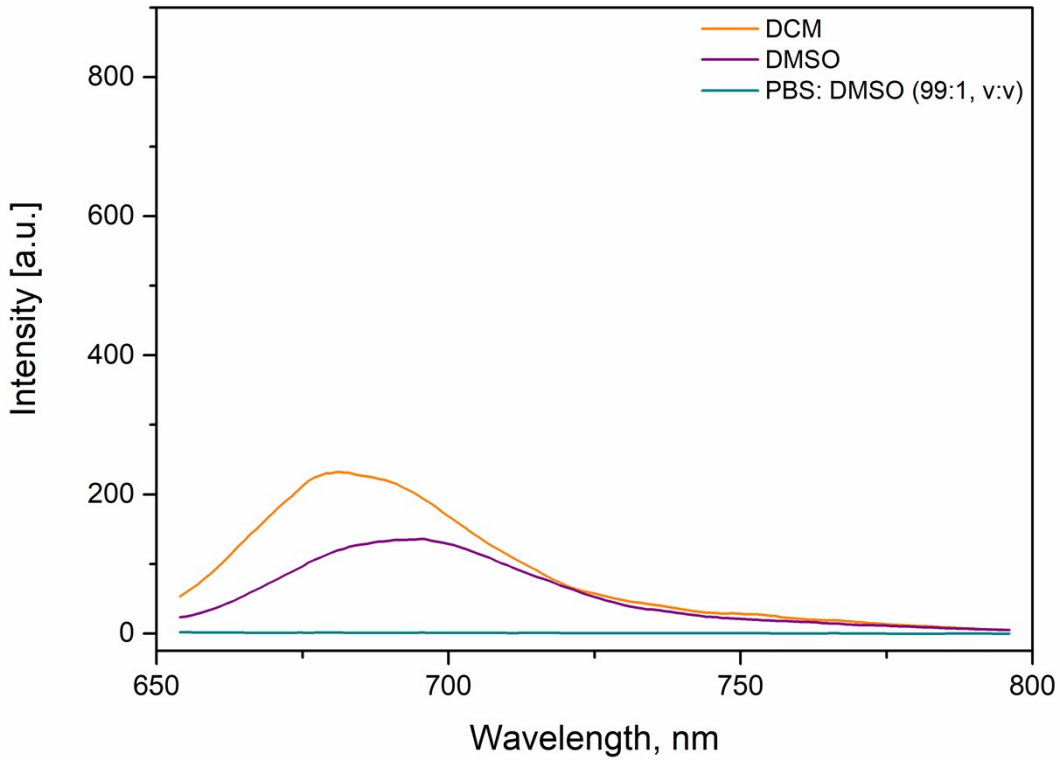


**Fig. S68** Fluorescence spectra of compound **15** ($\lambda_{ex}$:640 nm) in different solvents (0.5 μM)

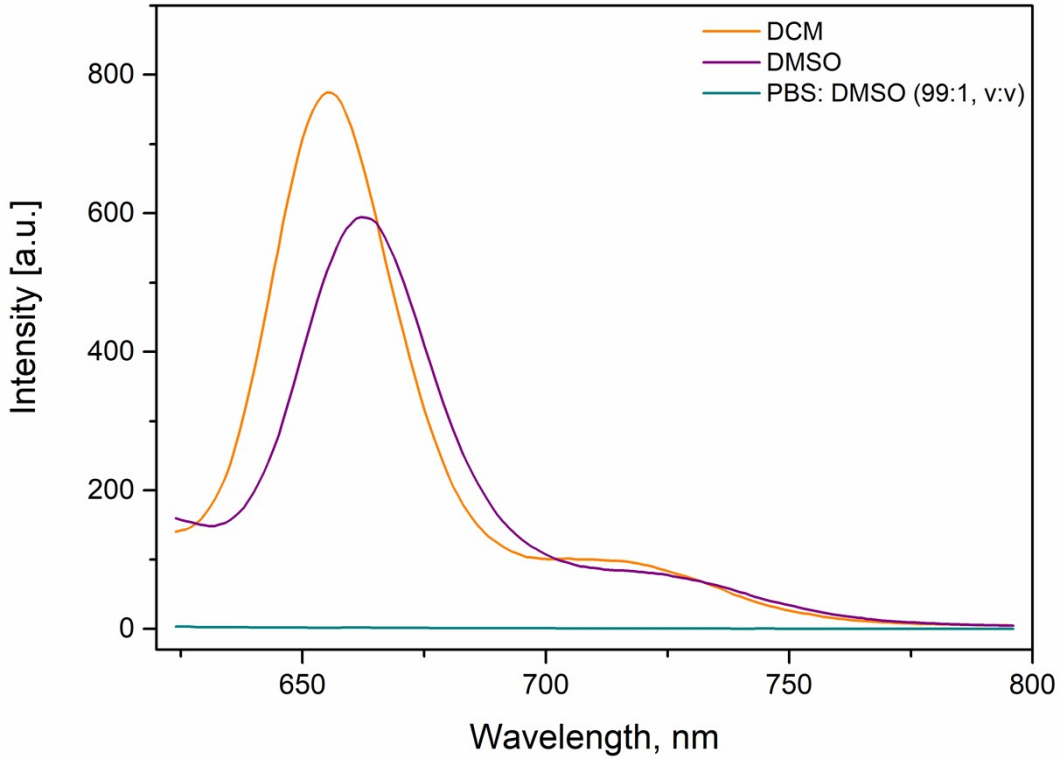


**Fig. S69** Fluorescence spectra of **GO-13** ($\lambda_{ex}$:610 nm) in different solvents (0.5 μM)

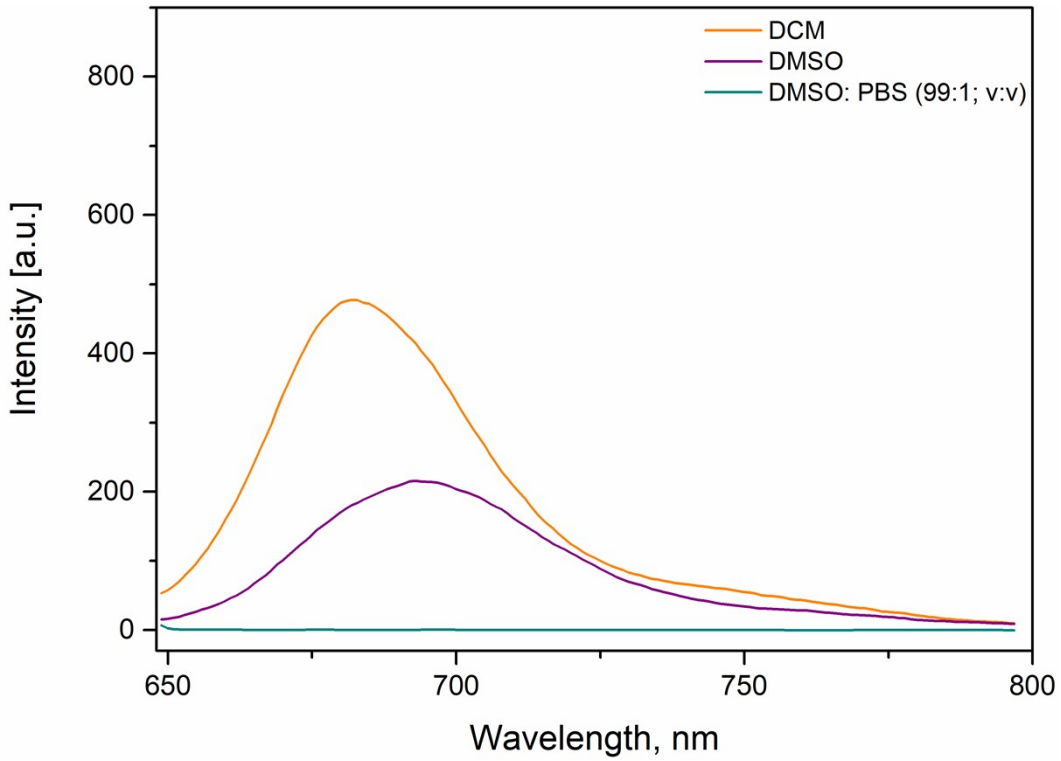


**Fig. S70** Fluorescence spectra of **GO-14** ($\lambda_{ex}$:640 nm) in different solvents (0.5 μM)

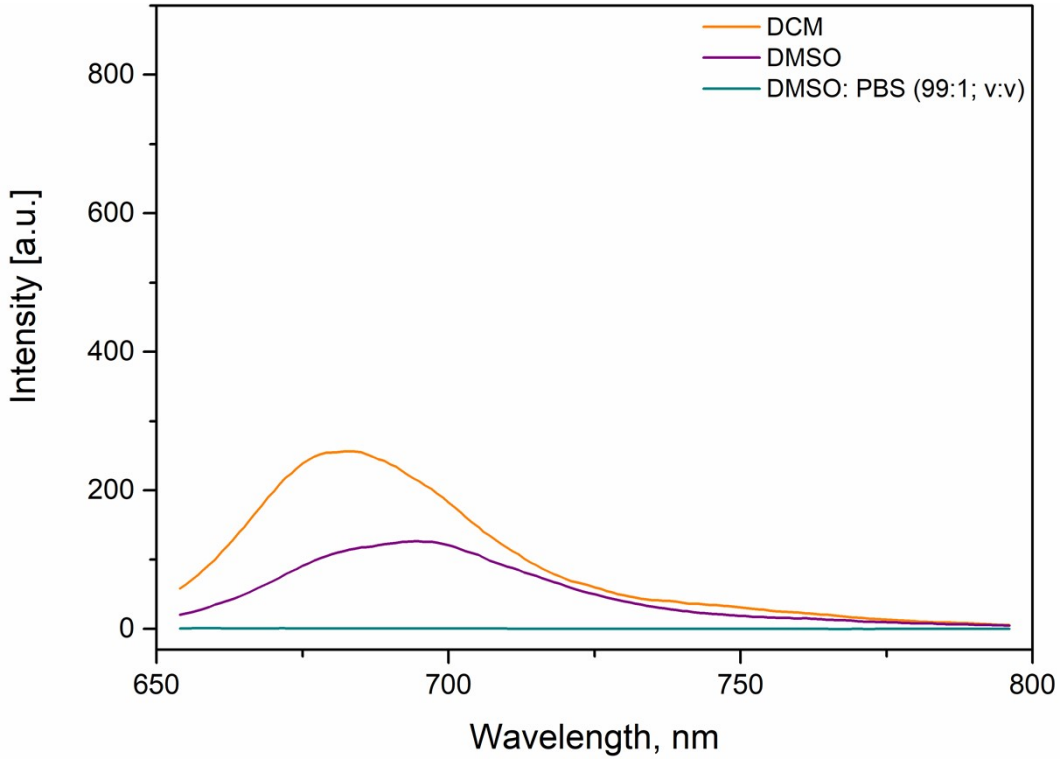


**Fig. S71** Fluorescence spectra of **GO-15** (λex:640 nm) in different solvents (0.5 μM)

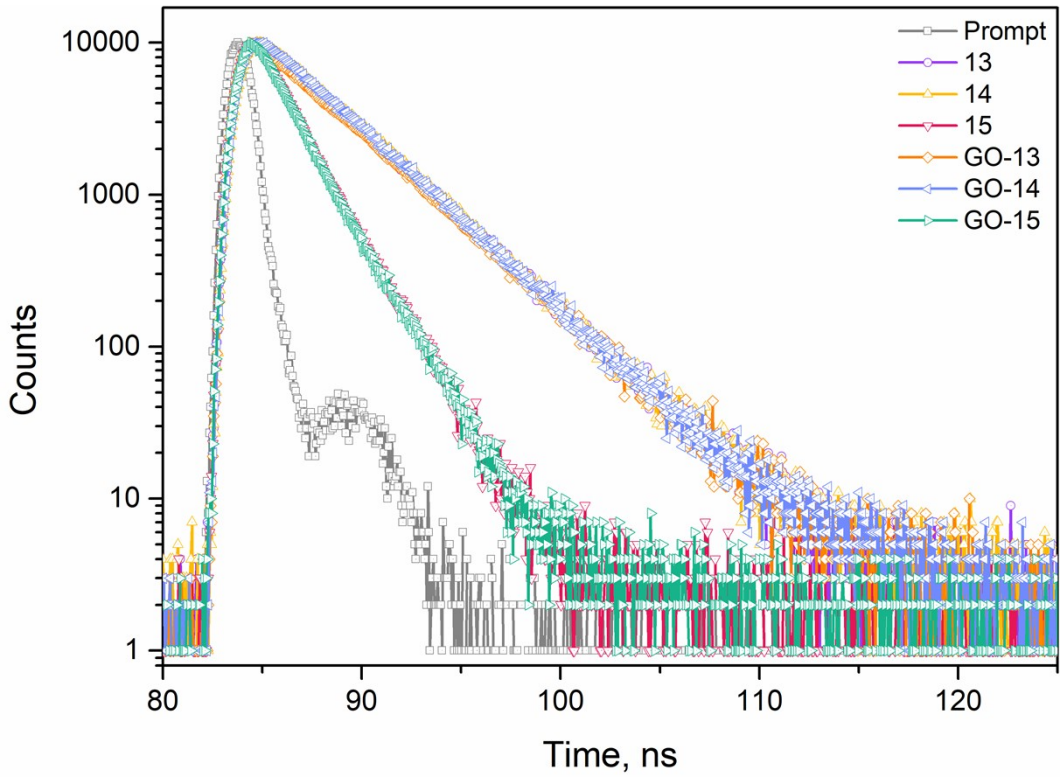


**Fig. S72** Fluorescence decay profiles of **13-15** and **GO-(13-15)** in DMSO

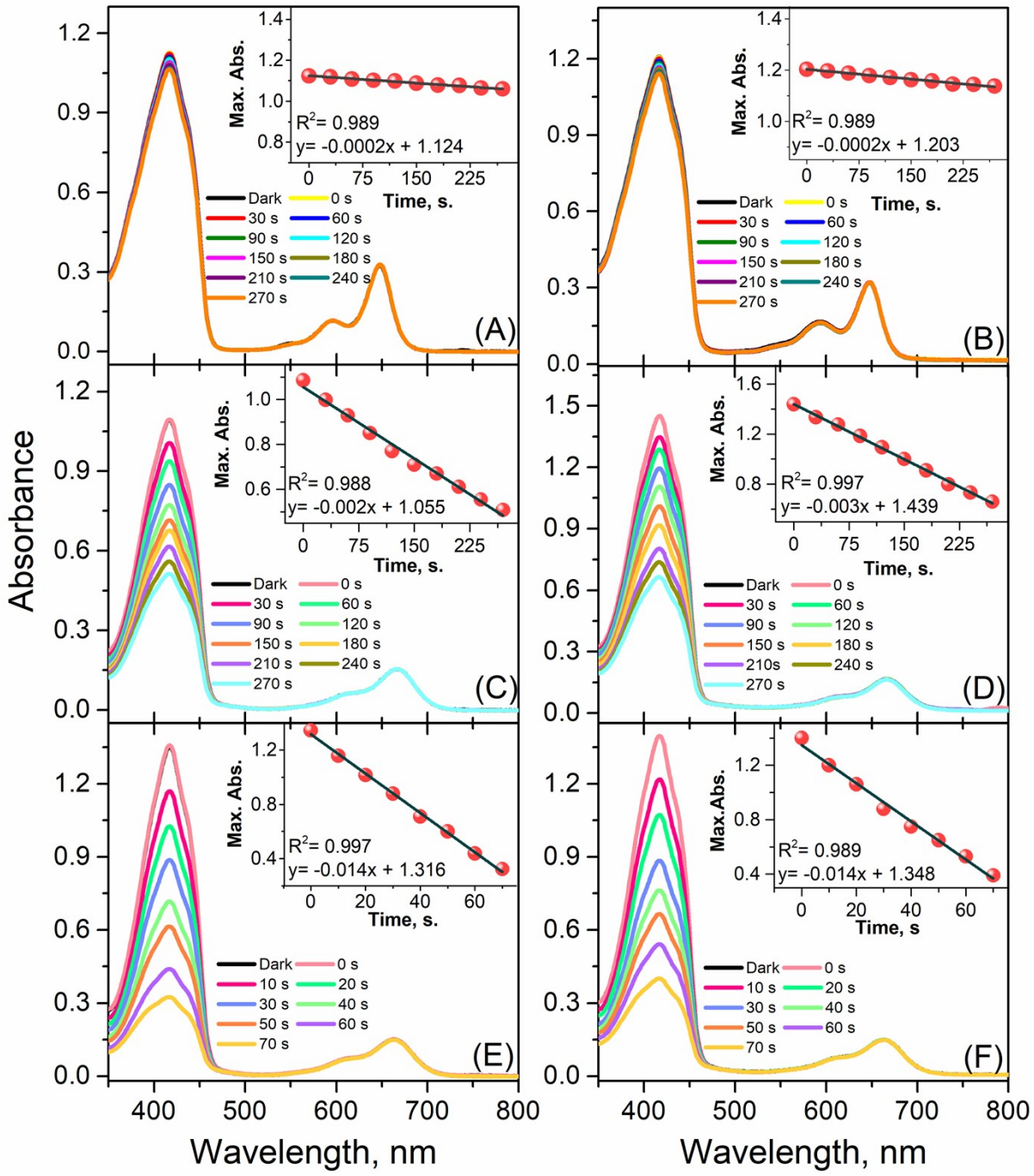


**Fig. S73.** Singlet oxygen generation of **(A) 13**, **(B) GO-13**, **(C) 14**, **(D) GO-14**, **(E) 15**, **(F) GO-15** in DMSO (2 μM).

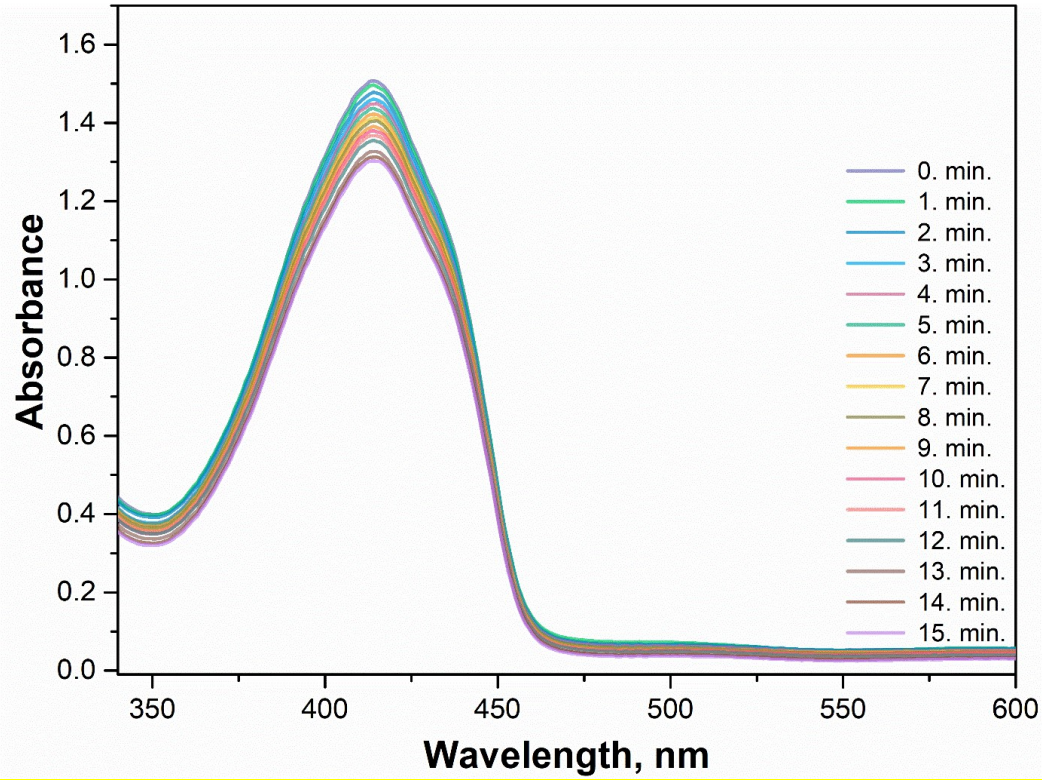


**Fig. S74.** Decrease in absorbance spectra of DPBF in the presence of GO in DMSO

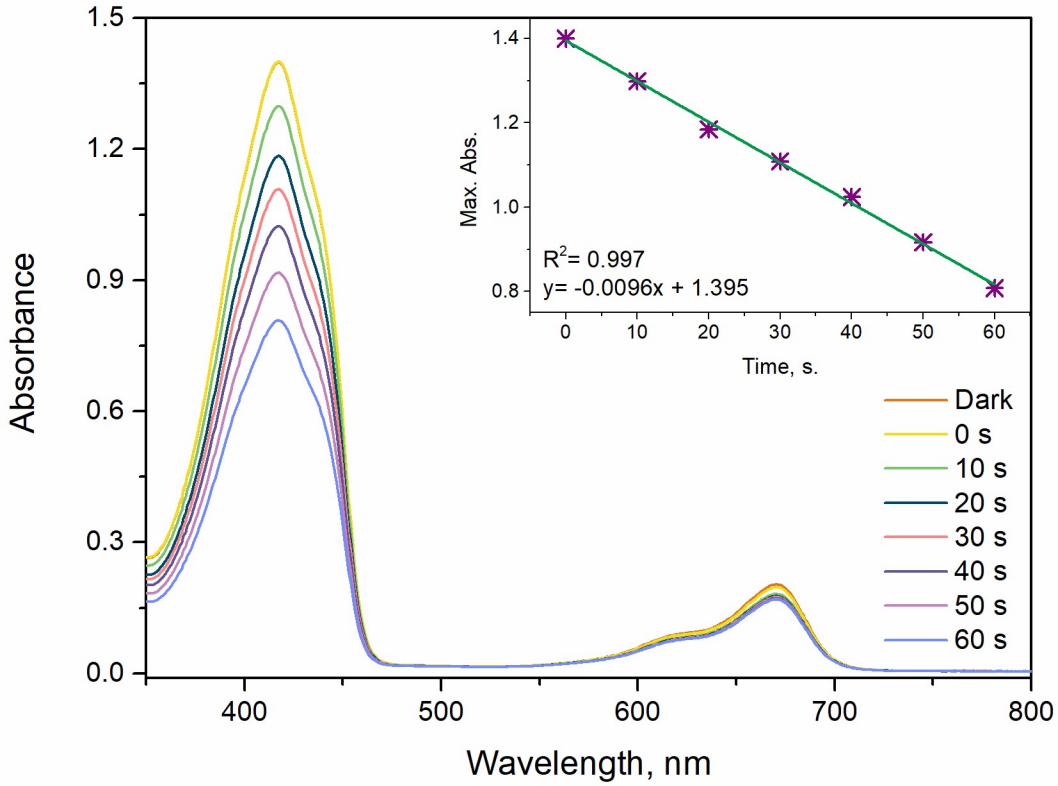


**Fig. S75.** Decrease in absorbance spectra of DPBF in the presence of MB in DMSO