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Supporting Information For:

Red-emitting dyes based on phenothiazine modified 2-hydroxychalcone analogues: mechanofluorochromism and gelation-induced emission enhancement

Hongqiang Gao[a], Pengchong Xue[b,*], Jiang Peng[a], Lu Zhai[a], Meng Sun[a], Jingbo Sun[a] and Ran Lu[a,*]

[a] State Key Laboratory of Supramolecular Structure and Materials, College of Chemistry, Jilin University, Changchun 130012, China.

E-mail:luran@mail.jlu.edu.cn

[b] Tianjin Key Laboratory of Structure and Performance for Functional Molecules, Key Laboratory of Inorganic-Organic Hybrid Functional Material Chemistry, Ministry of Education, College of Chemistry, Tianjin Normal University, No. 393, Bin Shui West Road, Tianjin, 300387, China.

E-mail: xuepengchong@126.com

Table S1 Photophysical data of **PTNn** in different solvents.

compound	Solvent	λ_{abs}(nm)	λ_{em}(nm)	Stokes shift (cm^{-1})	Φ_F[a]
PTN2	Cyclohexane	293, 435	589, 627	6011	0.01
	Toluene	305, 449	618	6090	0.02
	THF	306, 451	662	7067	0.05
	DCM	306, 454	705	7842	0.03
	DMF	307, 457	715	7895	0.02
PTN4	Cyclohexane	305, 439	590	5830	0.01
	Toluene	308, 449	621	6120	0.02
	THF	307, 450	661	7143	0.04
	DCM	309, 455	706	7814	0.02
	DMF	309, 458	721	7964	0.01
PTN8	Cyclohexane	304, 437	546, 579	4568	0.01
	Toluene	306, 448	620	6192	0.02
	THF	307, 451	660	7021	0.04
	DCM	306, 455	702	7733	0.03
	DMF	307, 458	720	7945	0.01
PTN12	Cyclohexane	300, 440	541, 585	5633	0.01
	Toluene	302, 445	617	6264	0.01
	THF	305, 445	661	7343	0.05
	DCM	306, 455	705	7793	0.03
	DMF	309, 456	721	8108	0.01
PTN16	Cyclohexane	300, 440	541, 578	4243	0.01
	Toluene	300, 445	611	6105	0.01
	THF	304, 445	660	7320	0.05
	DCM	307, 455	703	7753	0.03
	DMF	304, 460	718	7812	0.01

[a]Fluoresce in 1.0×10^{-5}M using Rhodamine 6G in ethylalcohol (Φ_F = 0.94) was used as the standard.

Table S2. Photophysical data of **PTNn** in different solid-state.

	λ_{abs} (nm)			λ_{em} (nm)		
	As-synthesized sample	Ground powders	$\Delta\lambda_{abs}$	As-synthesized sample	Ground powders	$\Delta\lambda_{em}$
PTN2	472	495	23	667	705	38
PTN4	470	492	22	666	702	36
PTN8	484	504	20	672	702	30
PTN12	478	497	19	662	688	26
PTN16	484	502	18	667	690	23

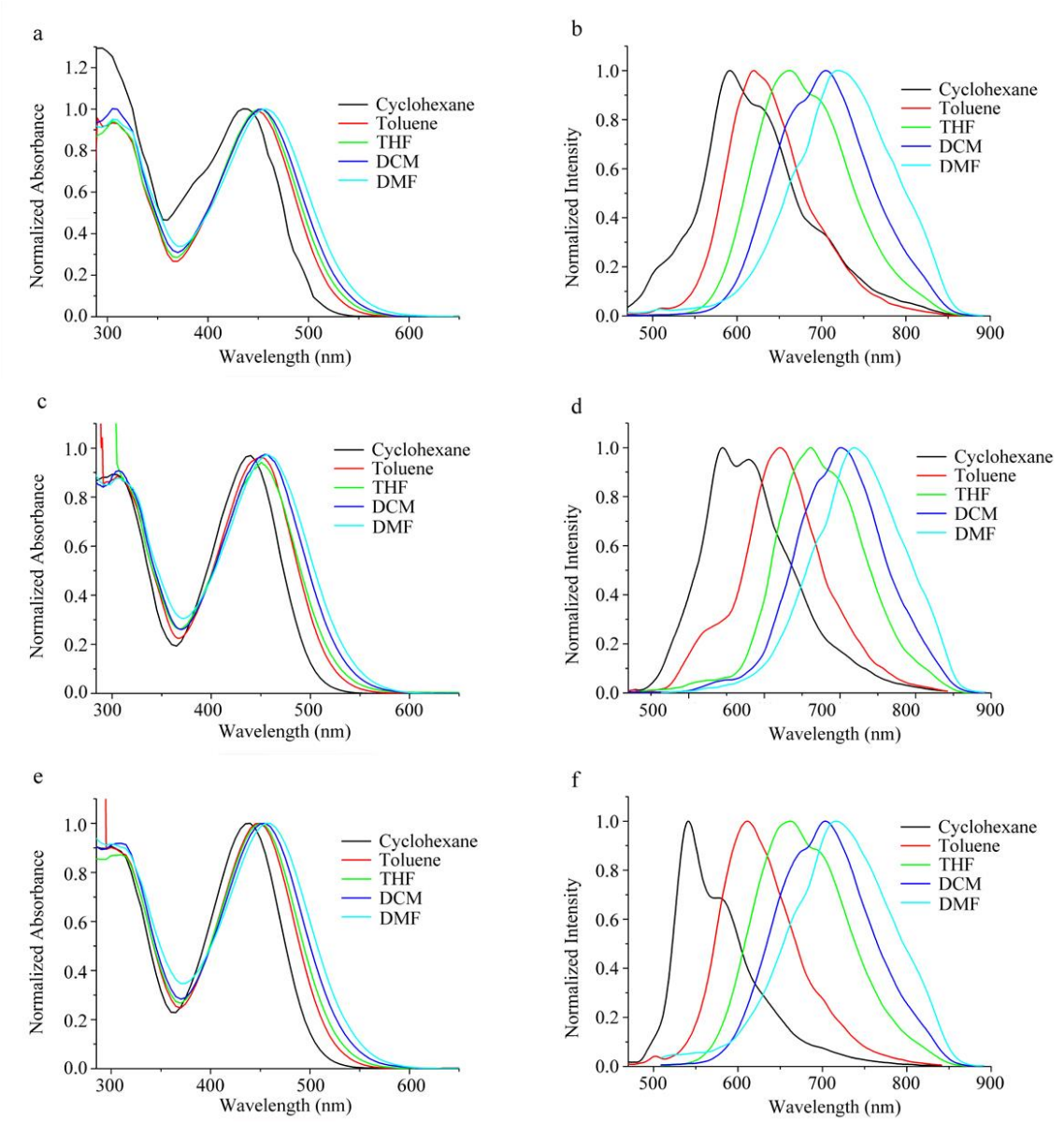

Figure S1 Normalized UV-vis absorption of (a) **PTN2**, (c) **PTN8**, (e) **PTN16** and normalized fluorescence emission (λ_{ex} =450 nm) spectra of (b) **PTN2,** (d) **PTN8,** (f) **PTN16** in different solvents (1.0×10^{-5} M).

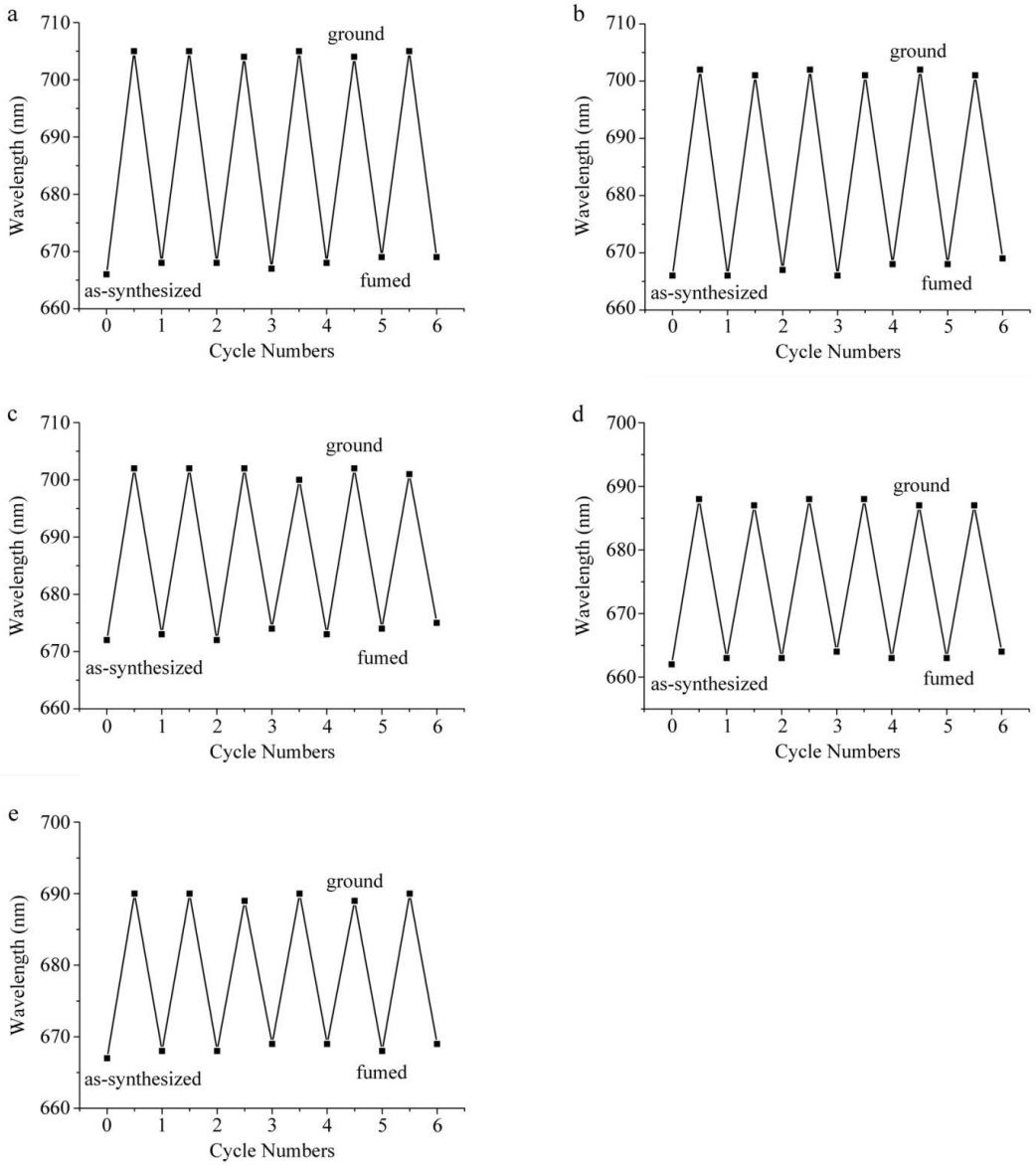

Figure S2 Maximum fluorescence emission of (a) **PTN2**, (b) **PTN4**, (c) **PTN8**, (d) **PTN12** and (e) **PTN16** upon repeating treated by ground and fumed with DCM.

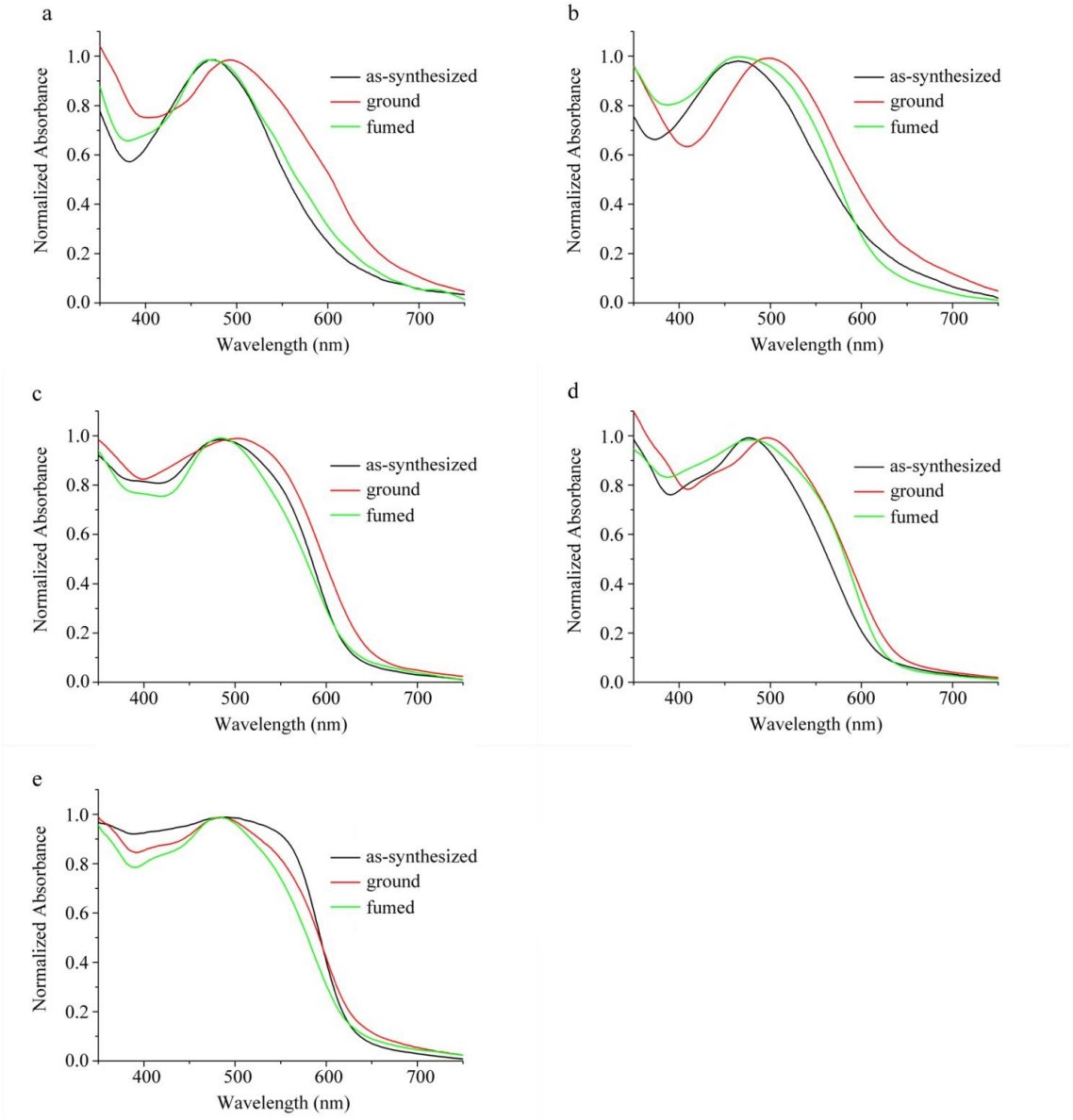

Figure S3 Normalized UV-vis spectra of (a) **PTN2,** (b) **PTN4,** (c) **PTN8,** (d) **PTN12** and (e) **PTN16** in different solid-state.

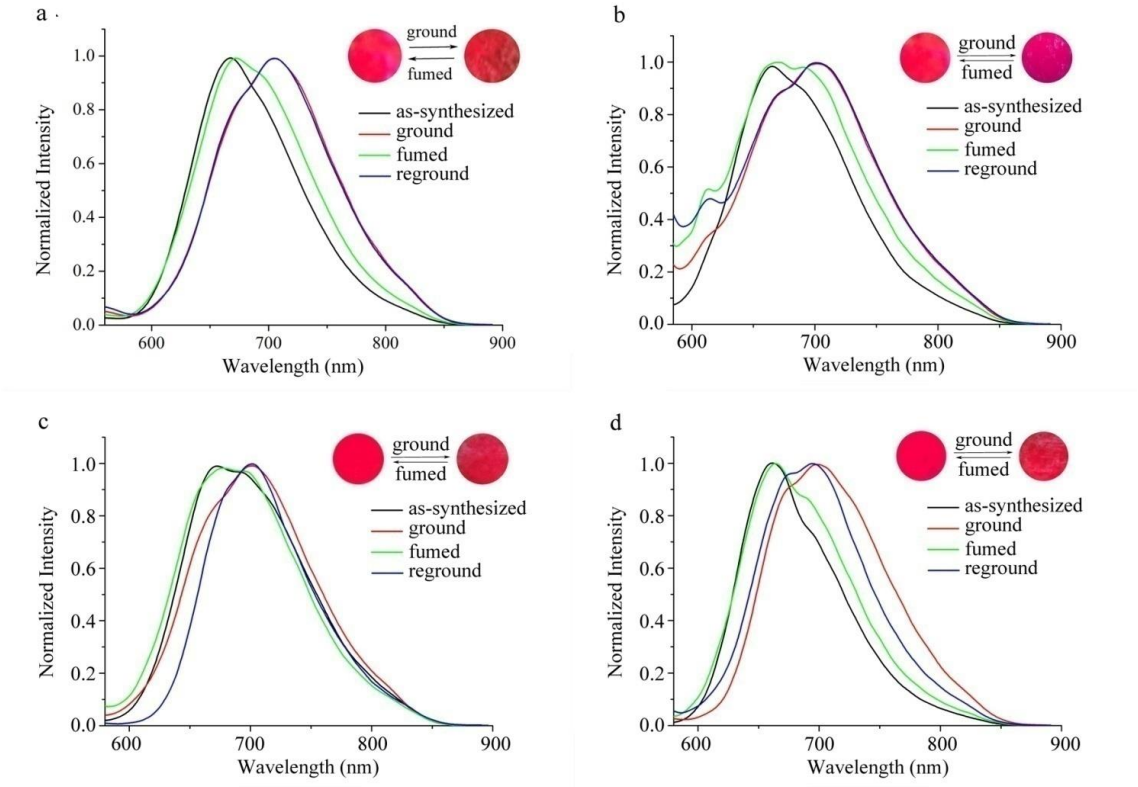

Figure S4 Normalized fluorescent emission spectra of (a) **PTN2,** (b) **PTN4,** (c) **PTN8,** (d) **PTN12** excited at 450 nm in different solid-state.

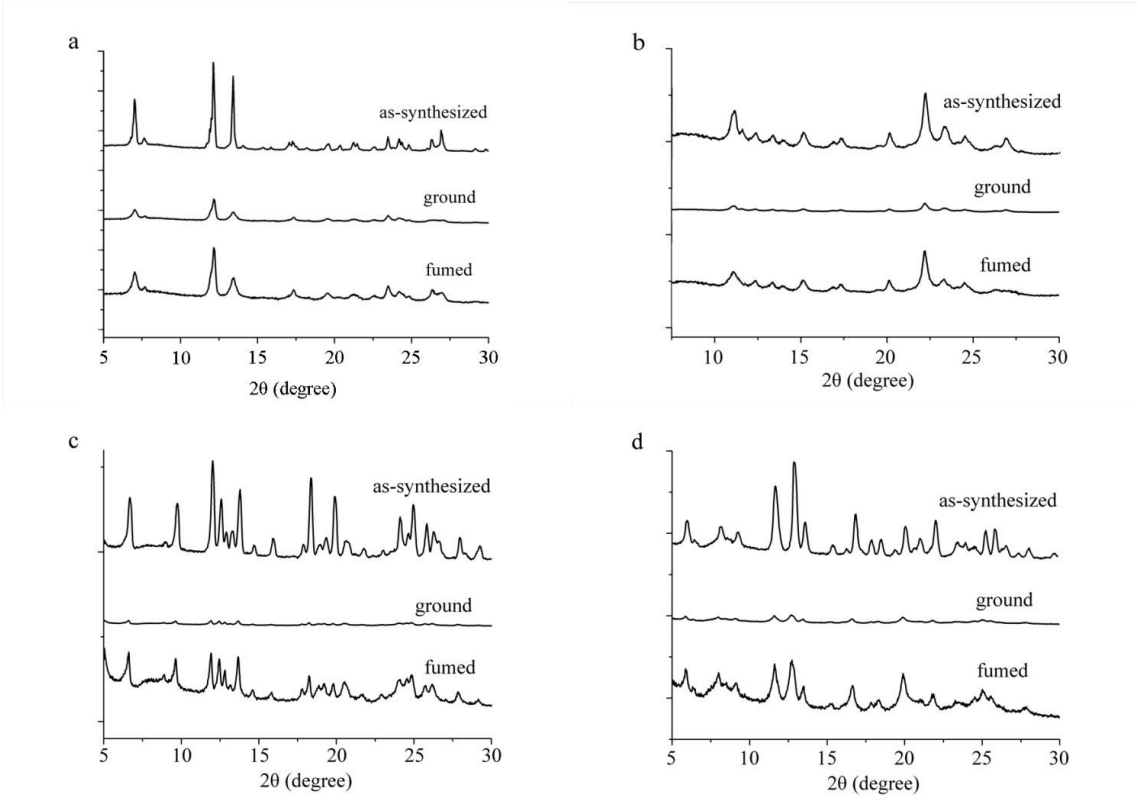

Figure S5 X-ray powder diffraction of (a) **PTN2,** (b) **PTN4,** (c) **PTN8** and (d) **PTN12** in the as-synthesized state and after different treatments.

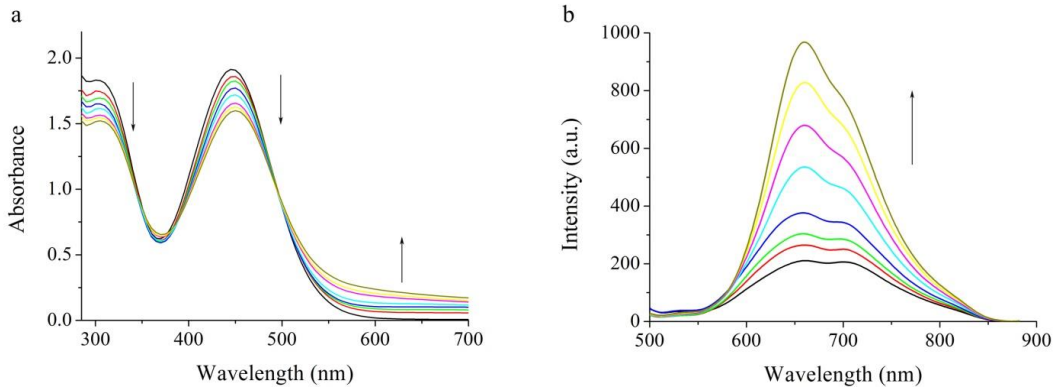

Figure S6 Time-dependent (a) UV-vis spectra and (b) fluorescence emission spectra of **PTN12** (λ_{ex} = 450 nm) upon aging the hot solution in *n*-butanol, which is first stimulated by ultrasound.

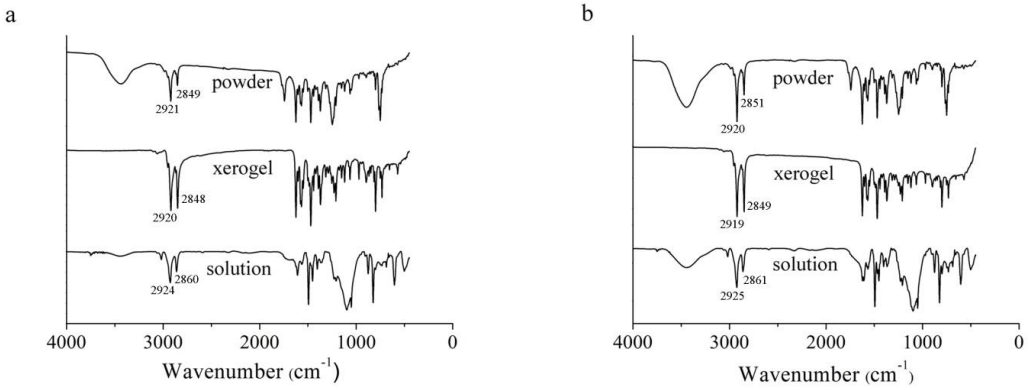

Figure S7 FT-IR spectra of (a) **PTN12** and (b) **PTN16** in chloroform(1 wt%), xerogel obtained from *n*-butanol and powders.

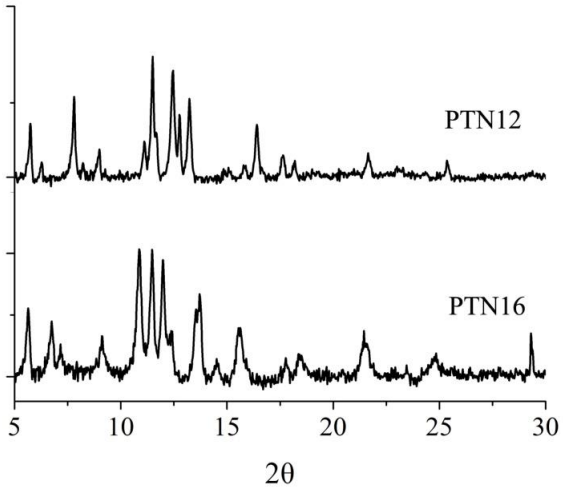

Figure S8 X-ray diffraction pattern of the xerogel (a) **PTN12** and (b) **PTN16** deposited on a glass slide.

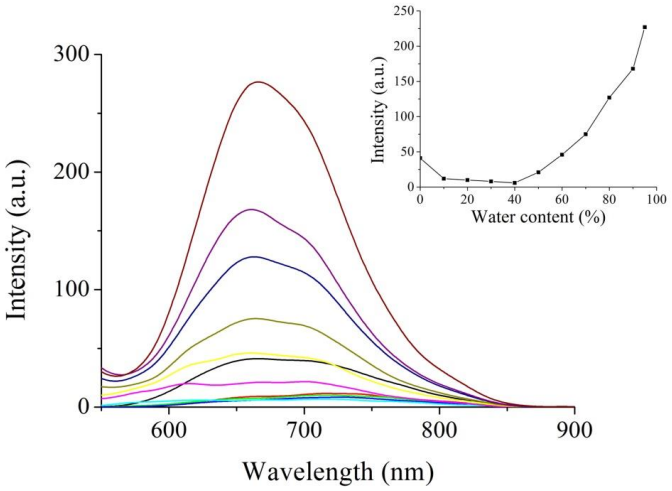

Figure S9 Fluorescence emission spectra of **PTN12** in THF/water with different water contents (λ_{ex} = 450 nm). Inset: the plot of the emission intensities at 660 nm *vs*. water contents.

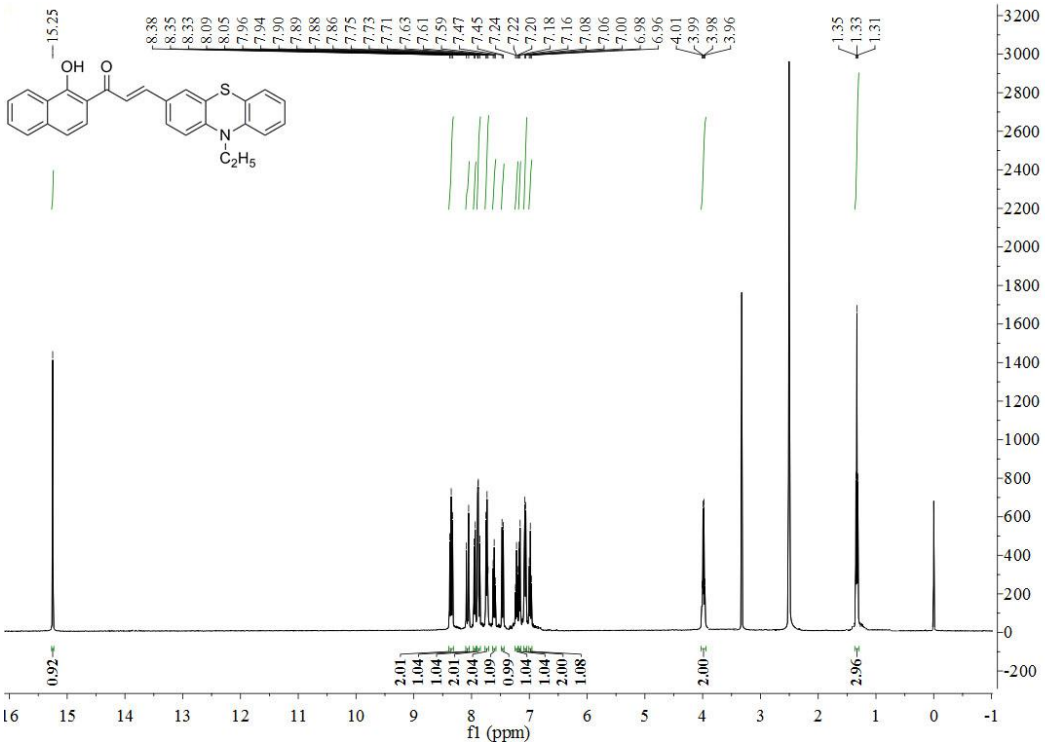

Figure S10 ^{1}H NMR spectrum (400 MHz) of **PTN2** in DMSO-d_6.

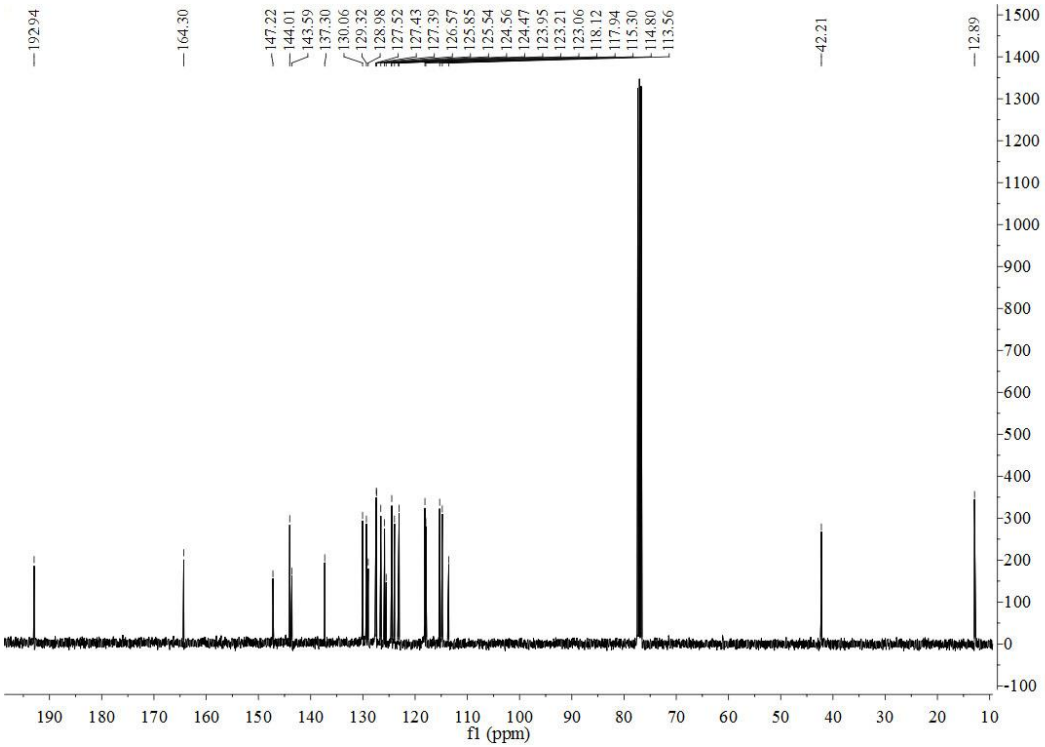

Figure S11 ^{13}C NMR spectrum (100 MHz) of **PTN2** in $CDCl_3$.

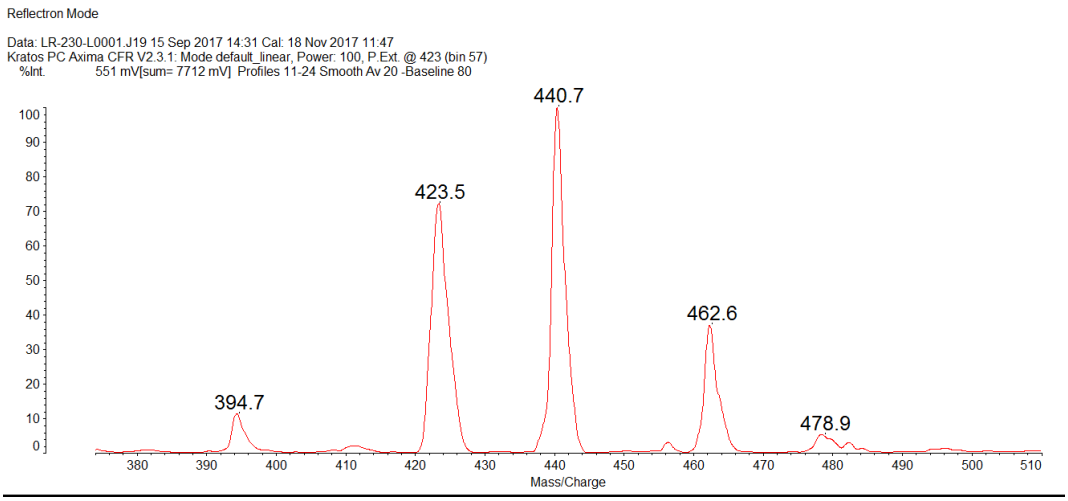

Figure S12 MALDI-TOF spectrum of**PTN2**.

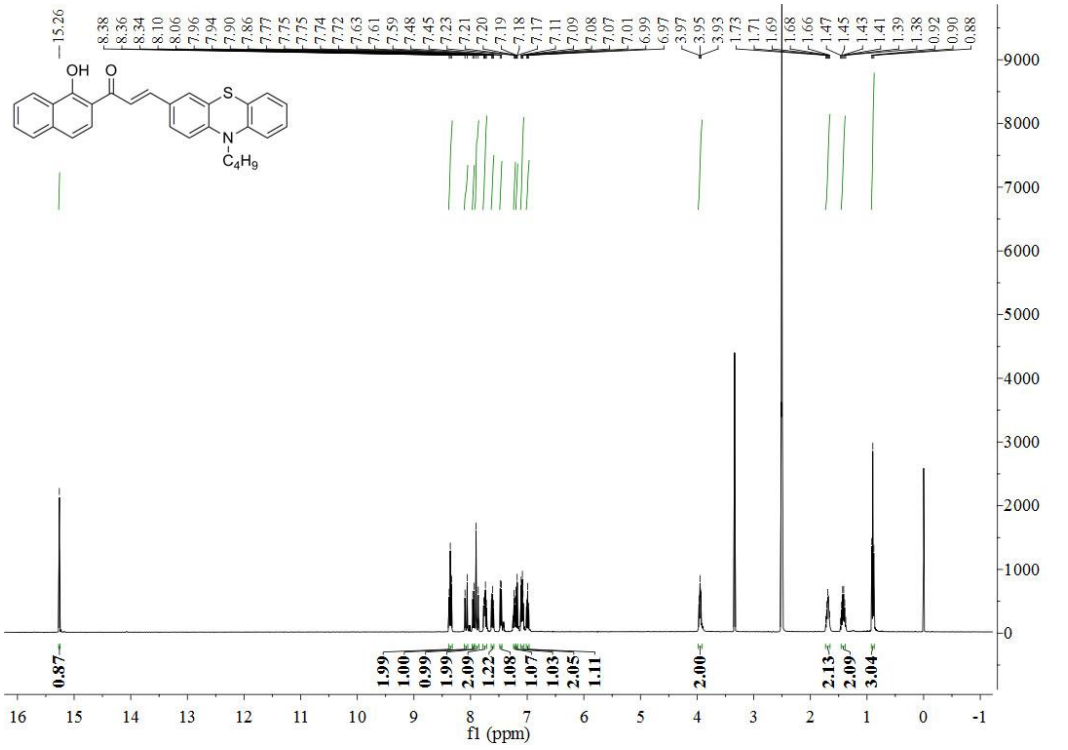

Figure S13 ^{1}H NMR spectrum (400 MHz) of **PTN4** in DMSO-d_6.

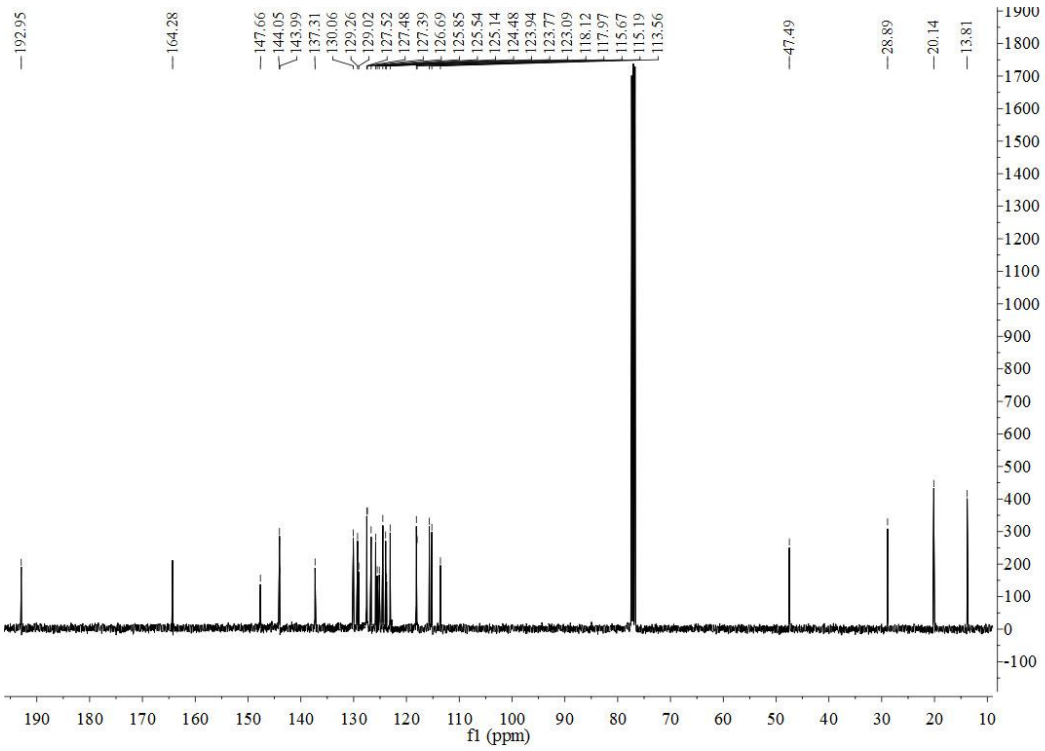

Figure S14 ^{13}C NMR spectrum (100 MHz) of **PTN4** in $CDCl_3$.

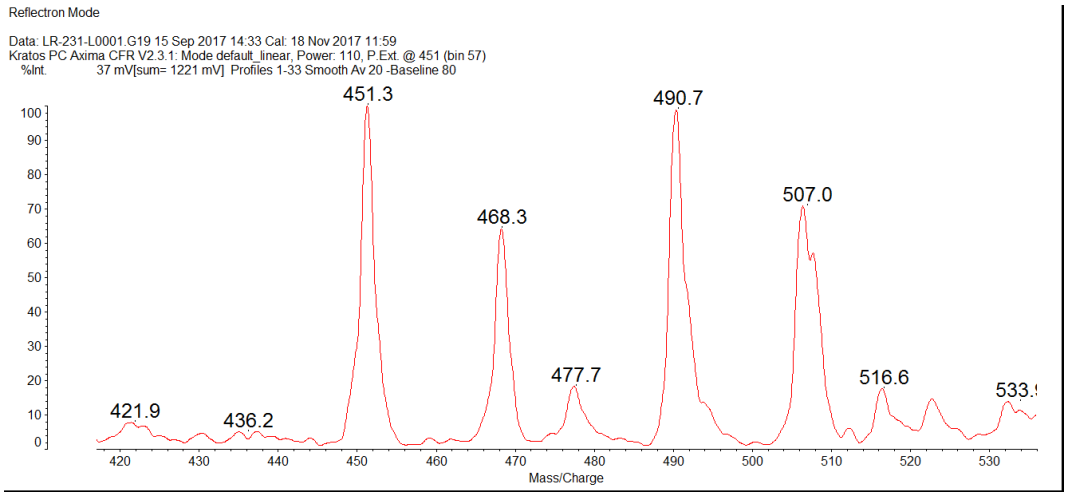

Figure S15 MALDI-TOF spectrum of **PTN4**.

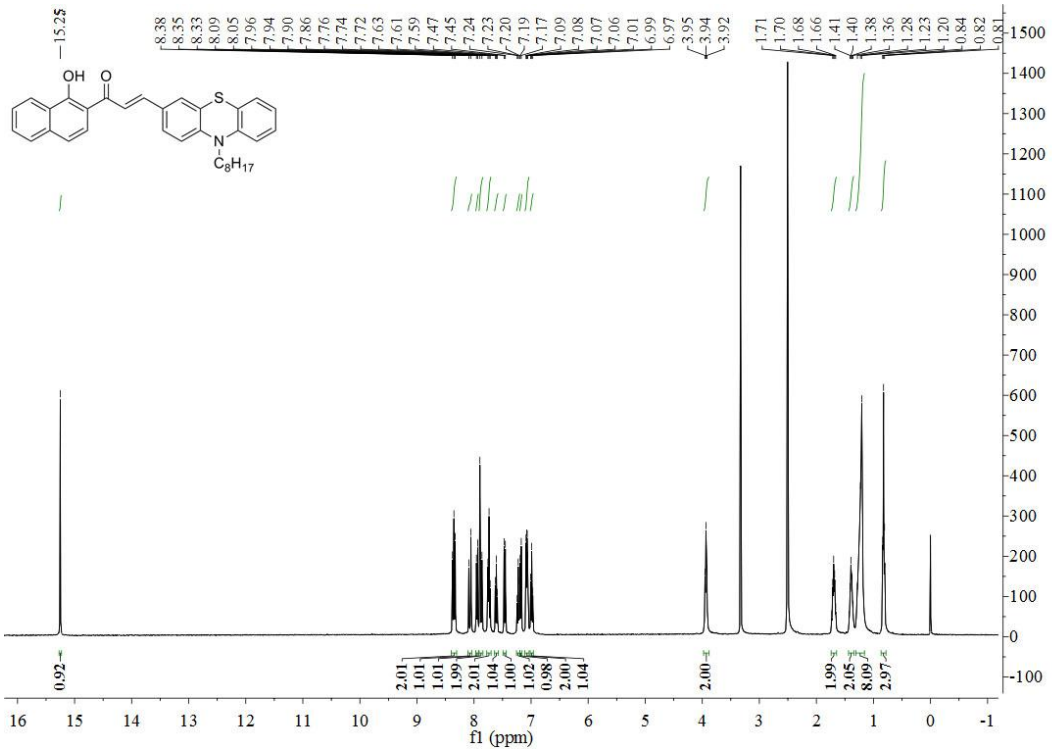

Figure S16 ^{1}H NMR spectrum (400 MHz) of **PTN8** in DMSO-d_6.

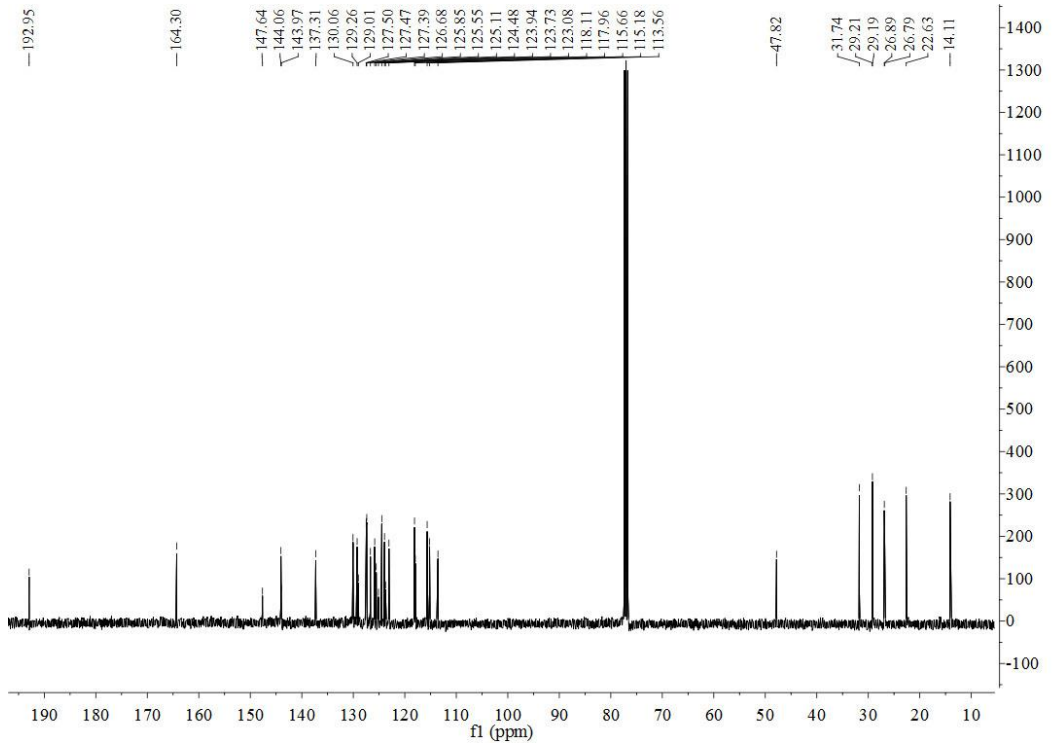

Figure S17 ^{13}C NMR spectrum (100 MHz) of **PTN8** in $CDCl_3$.

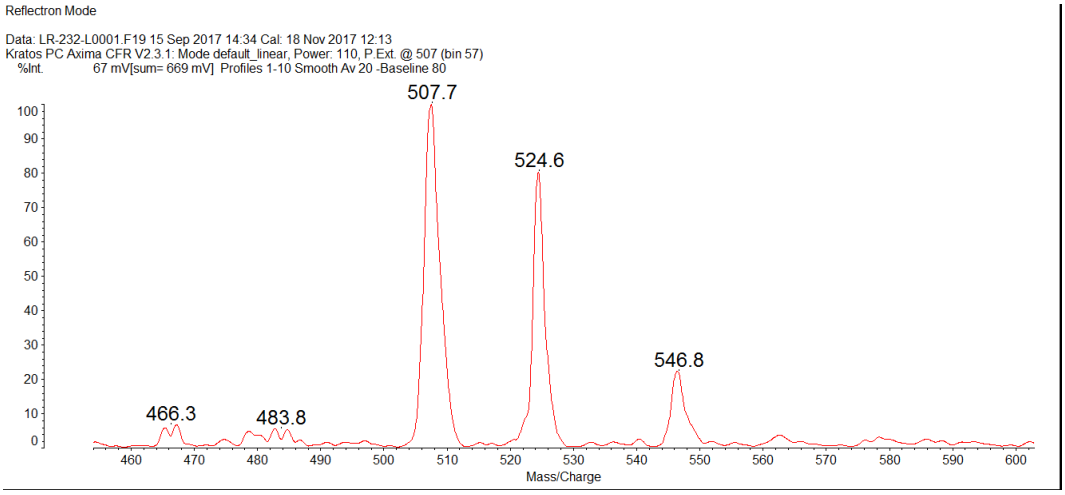

Figure S18 MALDI-TOF spectrum of **PTN8**.

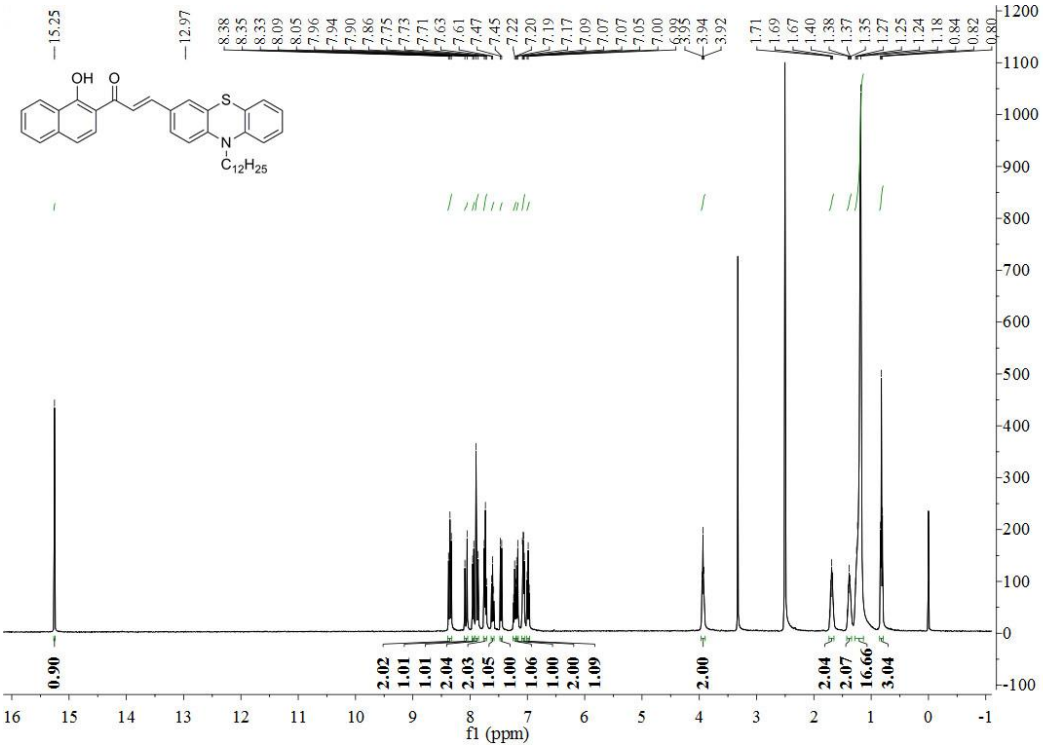

Figure S19 ^{1}H NMR (400 MHz) spectrum of **PTN12** in DMSO-d_6.

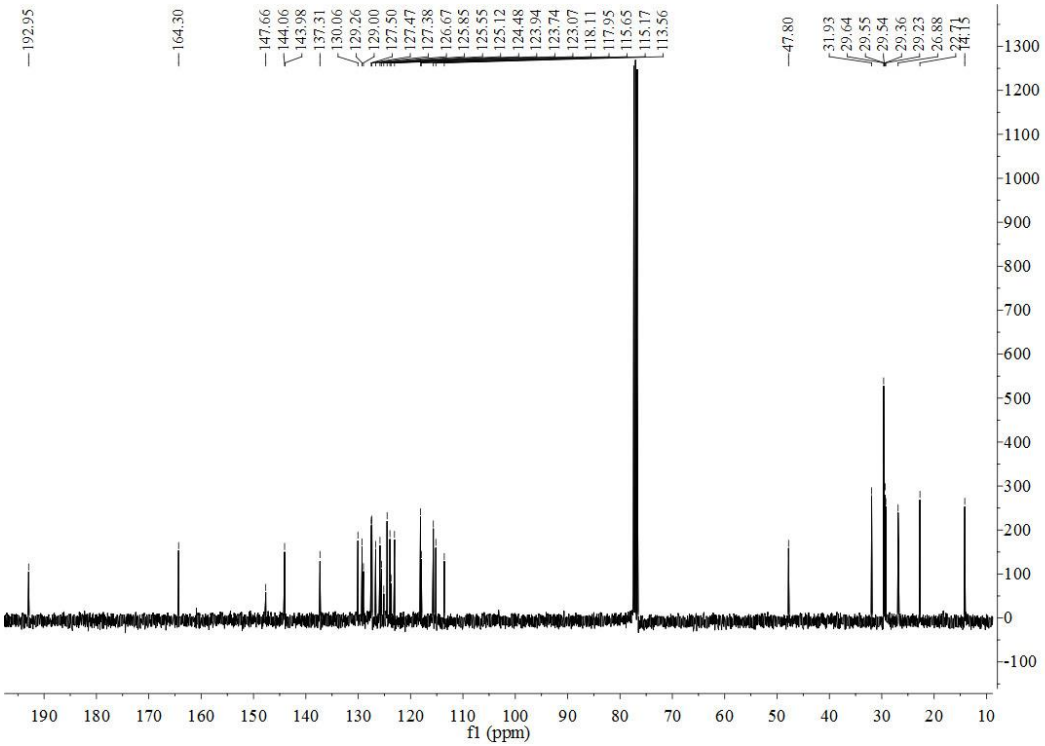

Figure S20 ^{13}C NMR (100 MHz) spectrum of **PTN12** in $CDCl_3$.

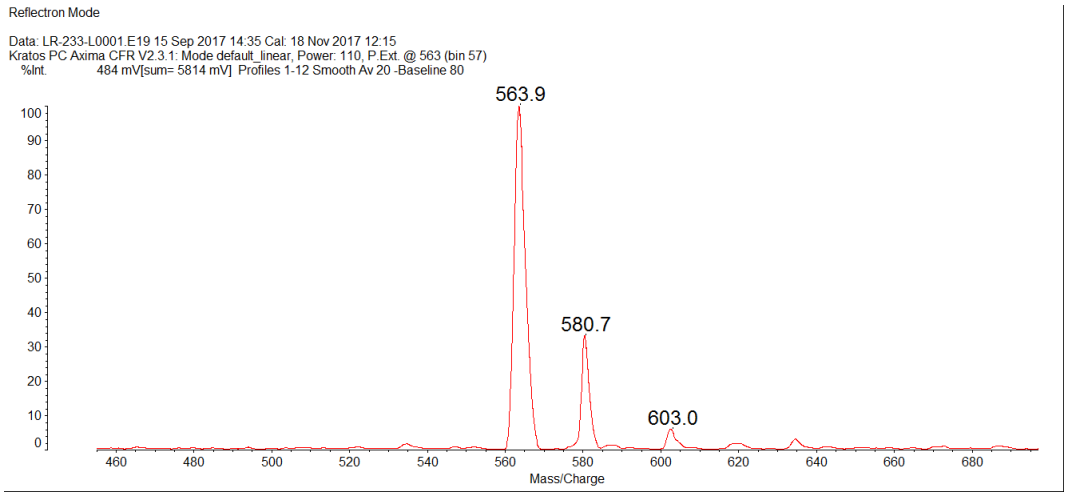

Figure S21 MALDI-TOF spectrum of **PTN12**.

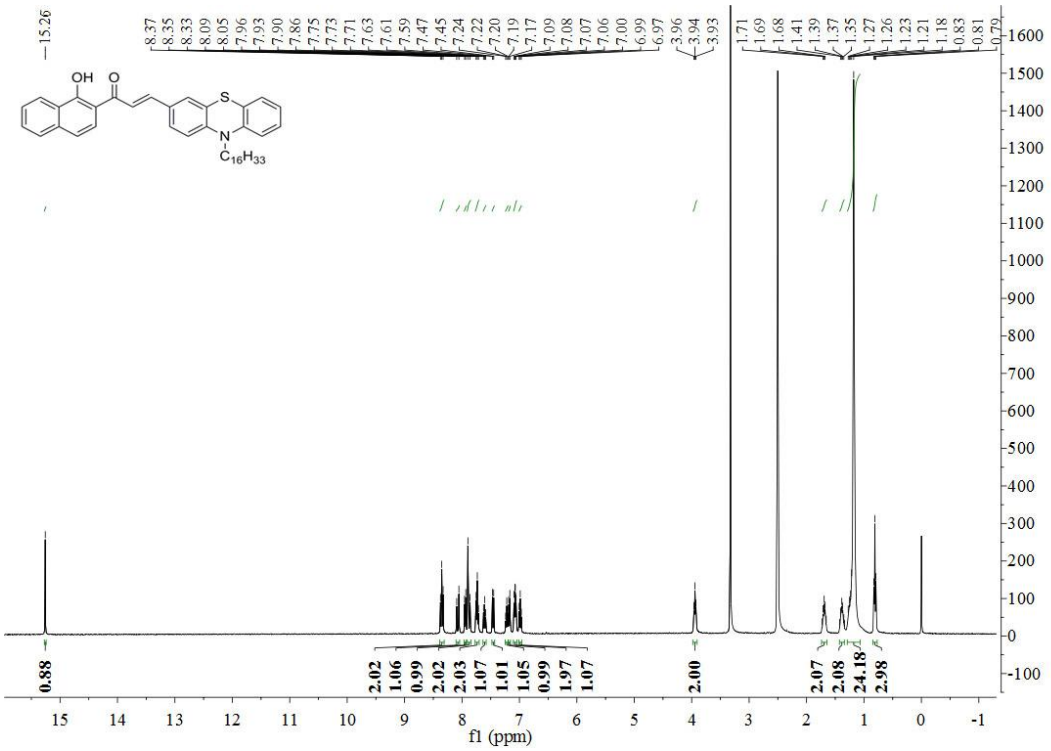

Figure S22 ^{1}H NMR (400 MHz) spectrum of **PTN16** in DMSO-d_6.

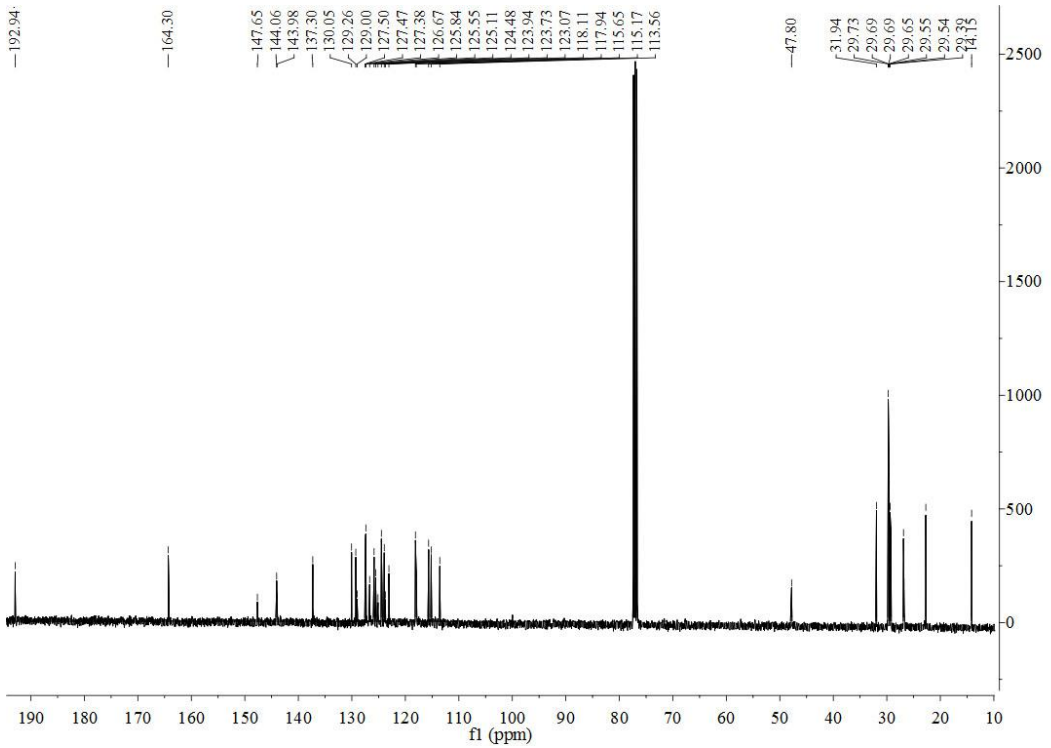

Figure S23 ^{13}C NMR (100 MHz) spectrum of**PTN16** in $CDCl_3$.

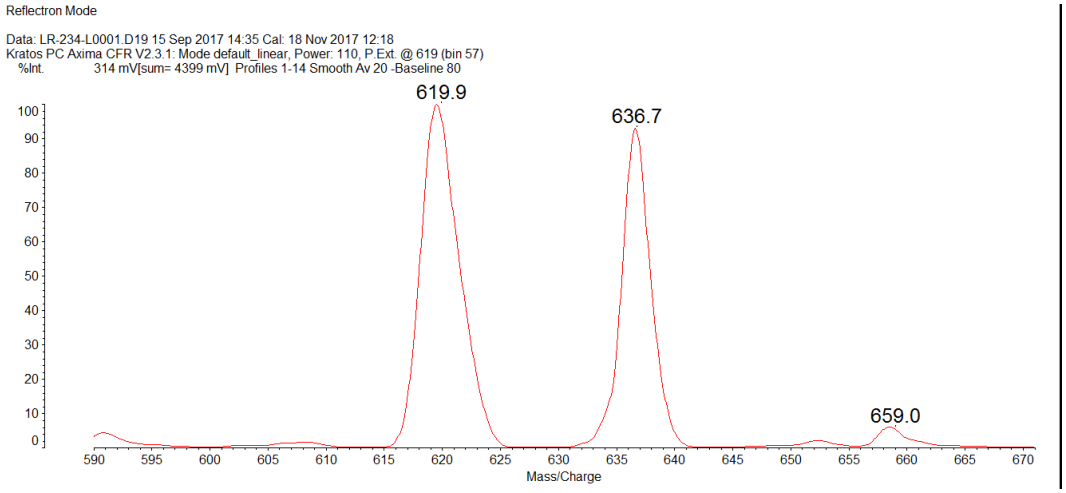

Figure S24 MALDI-TOF spectrum of **PTN16**.