SUPPLEMENTARY INFORMATION

Targeting mitochondrial dysfunction and oxidative Stress in activated microglia using dendrimer-based therapeutics

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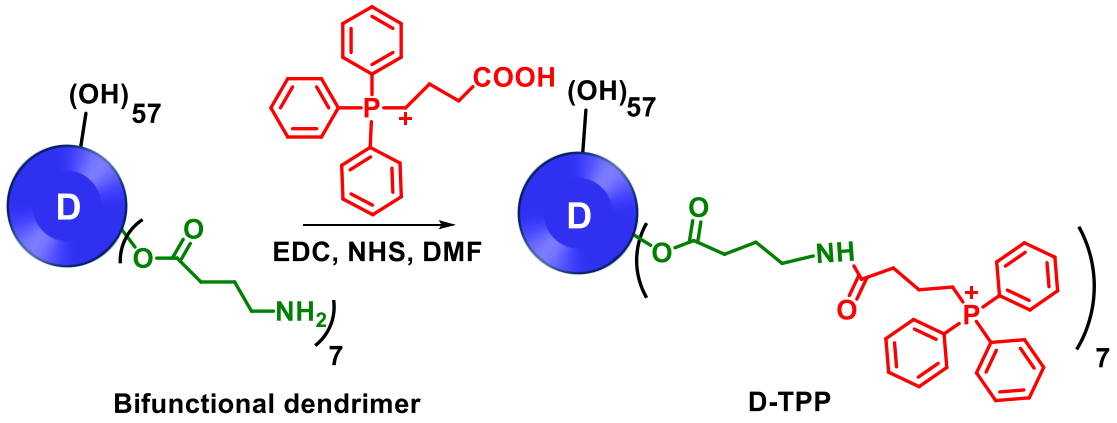


Scheme S1. Synthesis of D-TPP

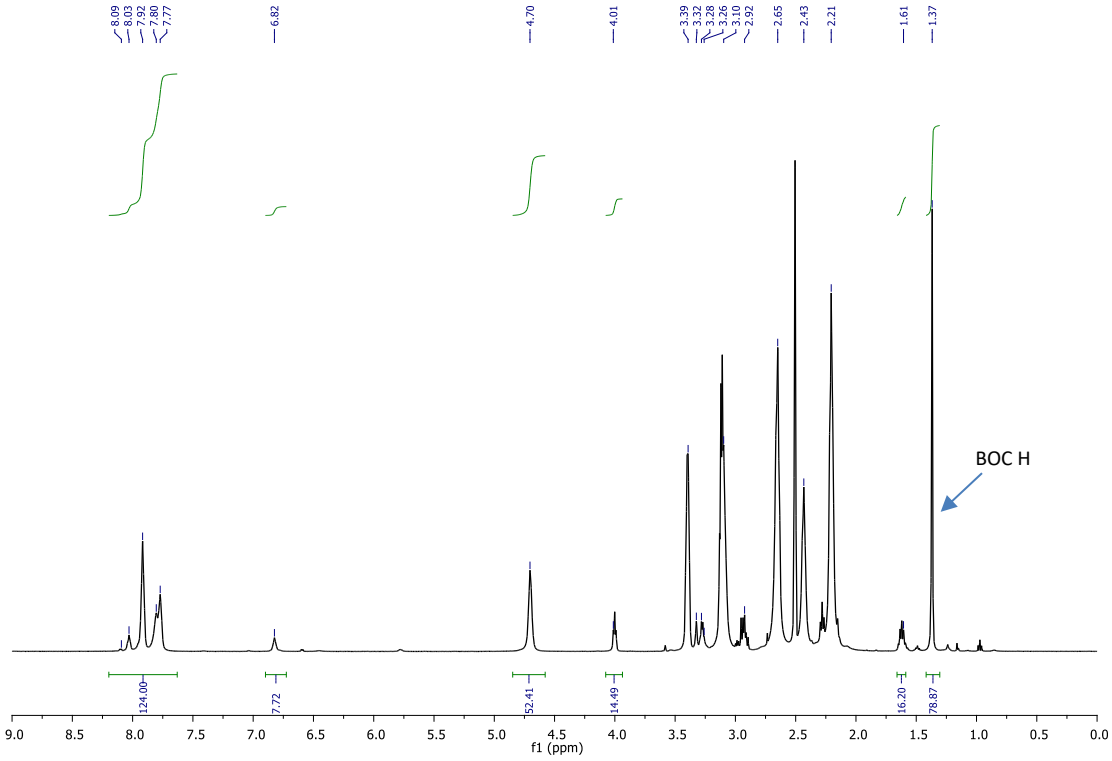


Figure S1. 1H NMR spectrum of BOC protected bifunctional dendrimer **2a** in DMSO (500 MHz).

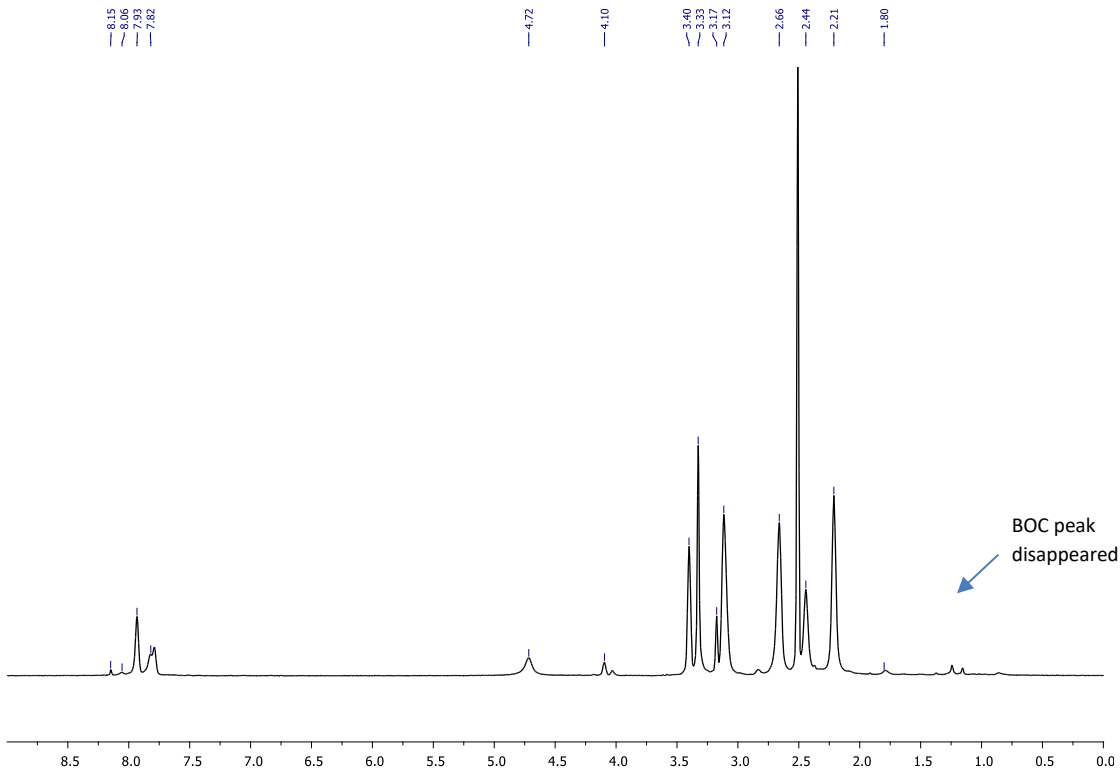


Figure S2. ^{1}H NMR spectrum of bifunctional dendrimer **3a** in DMSO (500 MHz).

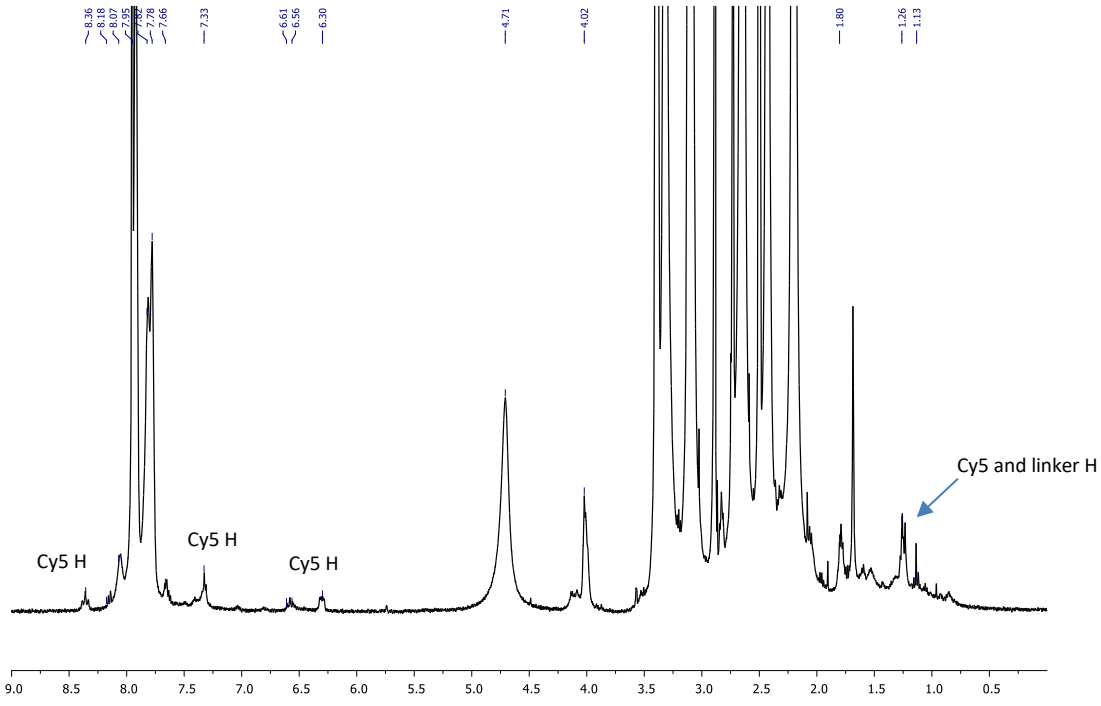


Figure S3. ^{1}H NMR spectrum of compound **4** in DMSO (500 MHz).

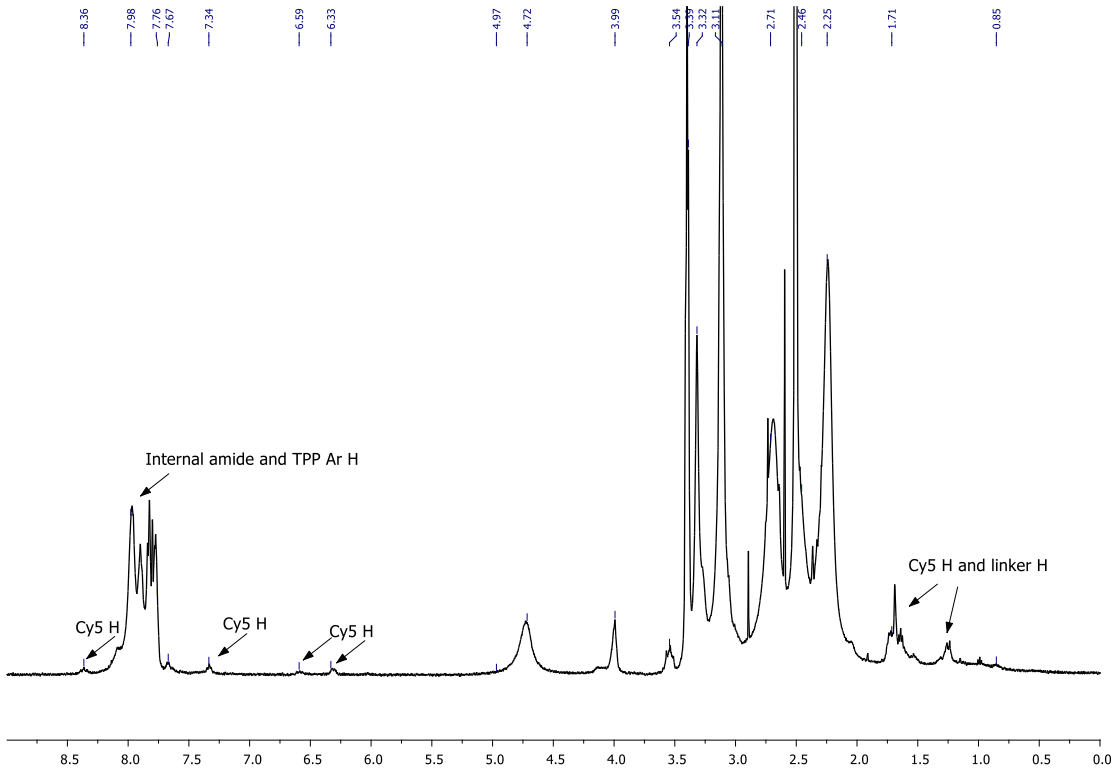


Figure S4. ^{1}H NMR spectrum of compound **5** in DMSO (500 MHz).

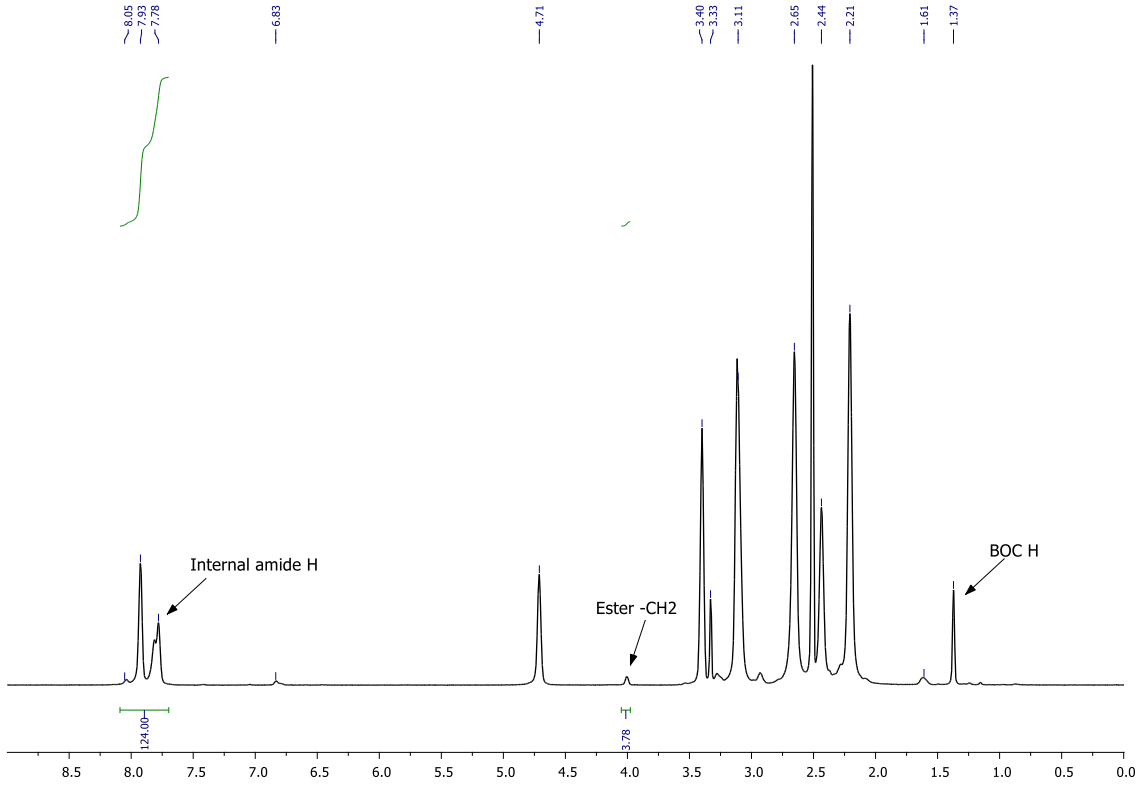


Figure S5. ^{1}H NMR spectrum of compound **2b** in DMSO (500 MHz).

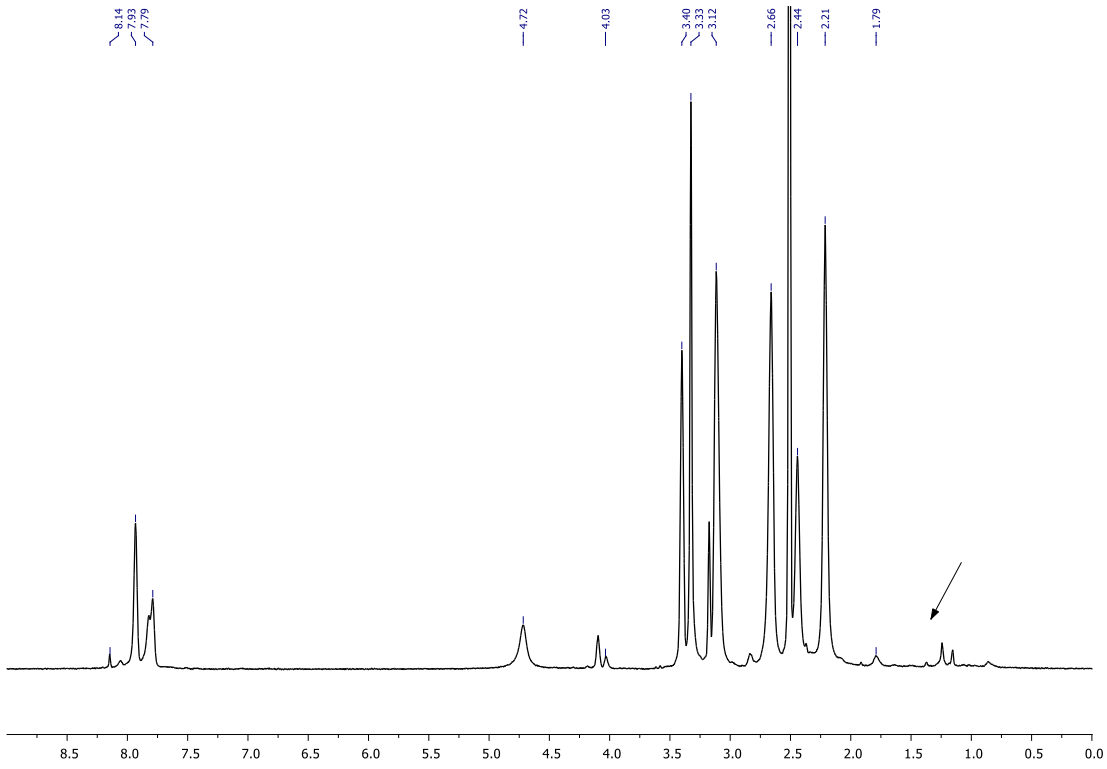


Figure S6. ^{1}H NMR spectrum of compound **3b** in DMSO (500 MHz).

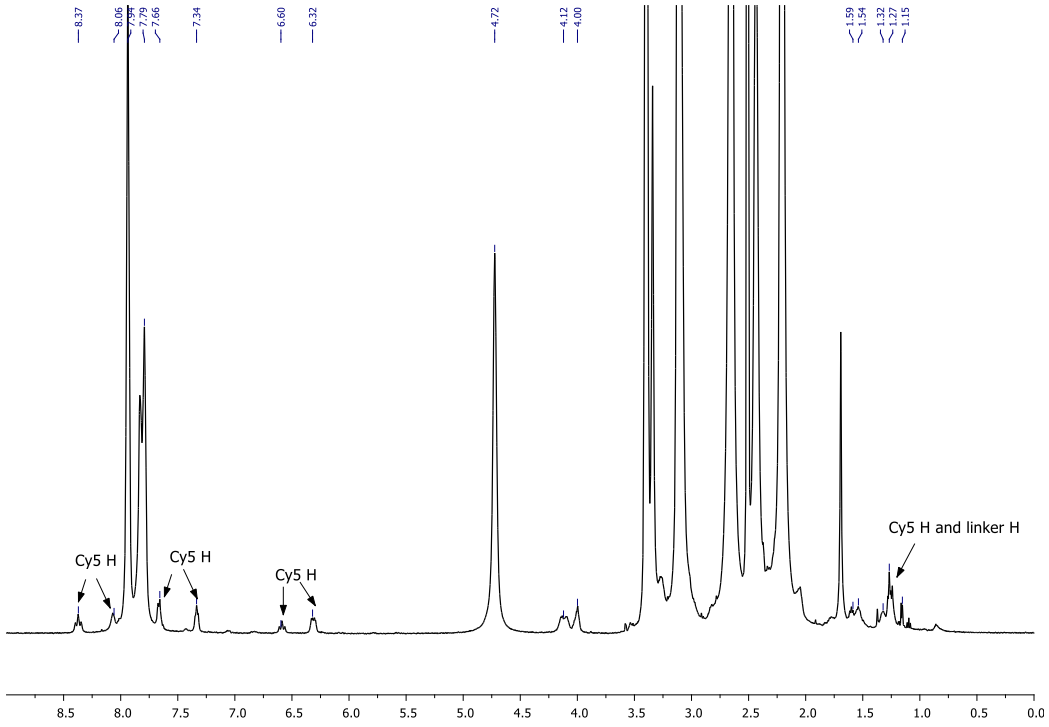


Figure S7. ^{1}H NMR spectrum of compound **6 (D-Cy5)** in DMSO (500 MHz).

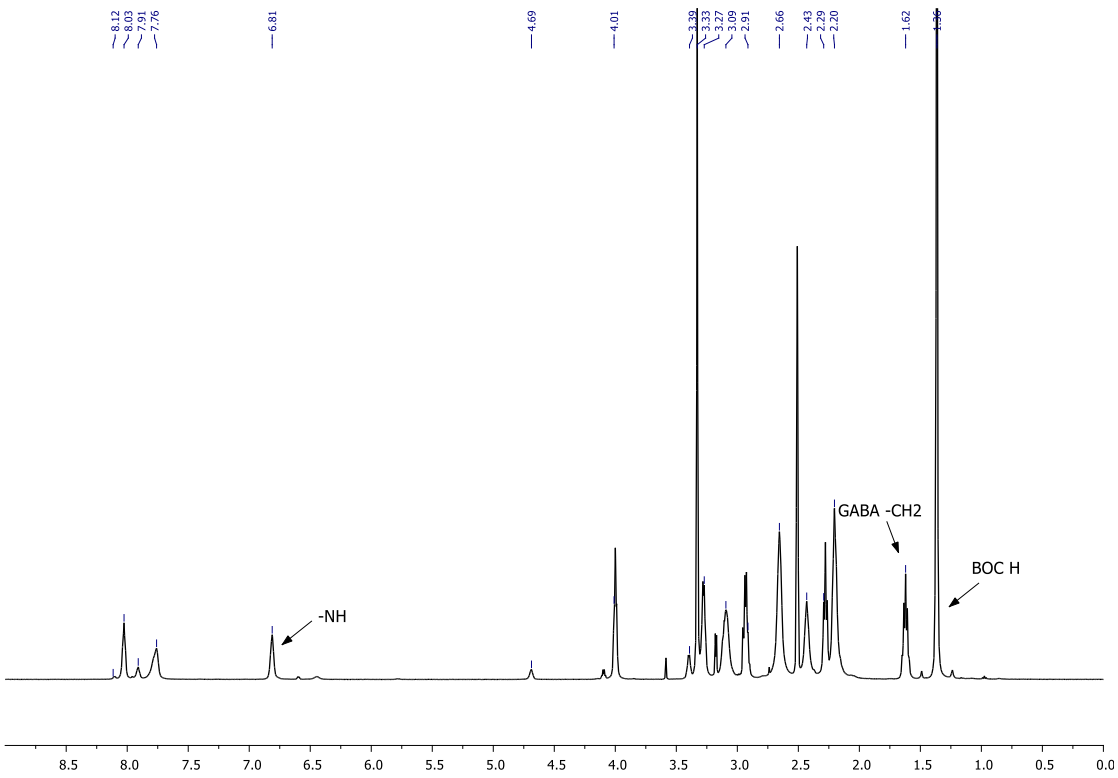


Figure S8. ^{1}H NMR spectrum of compound **2c** in DMSO (500 MHz).

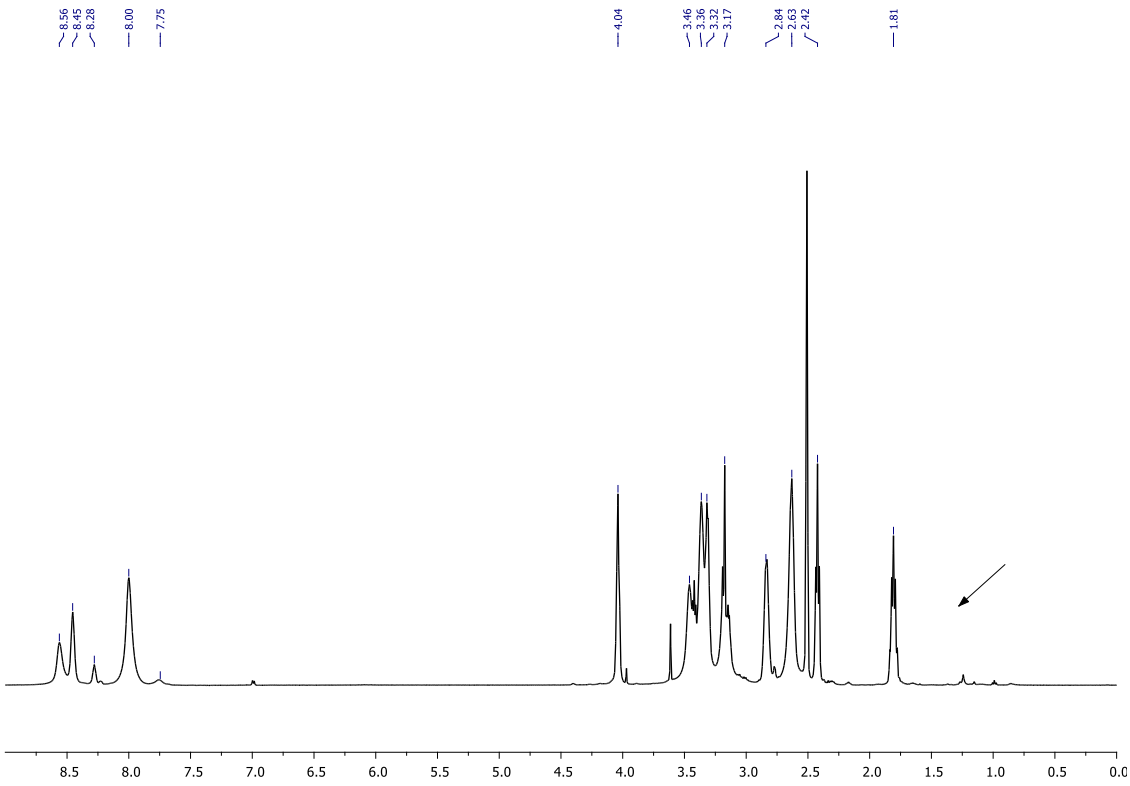


Figure S9. ^{1}H NMR spectrum of compound **3c** in DMSO (500 MHz).

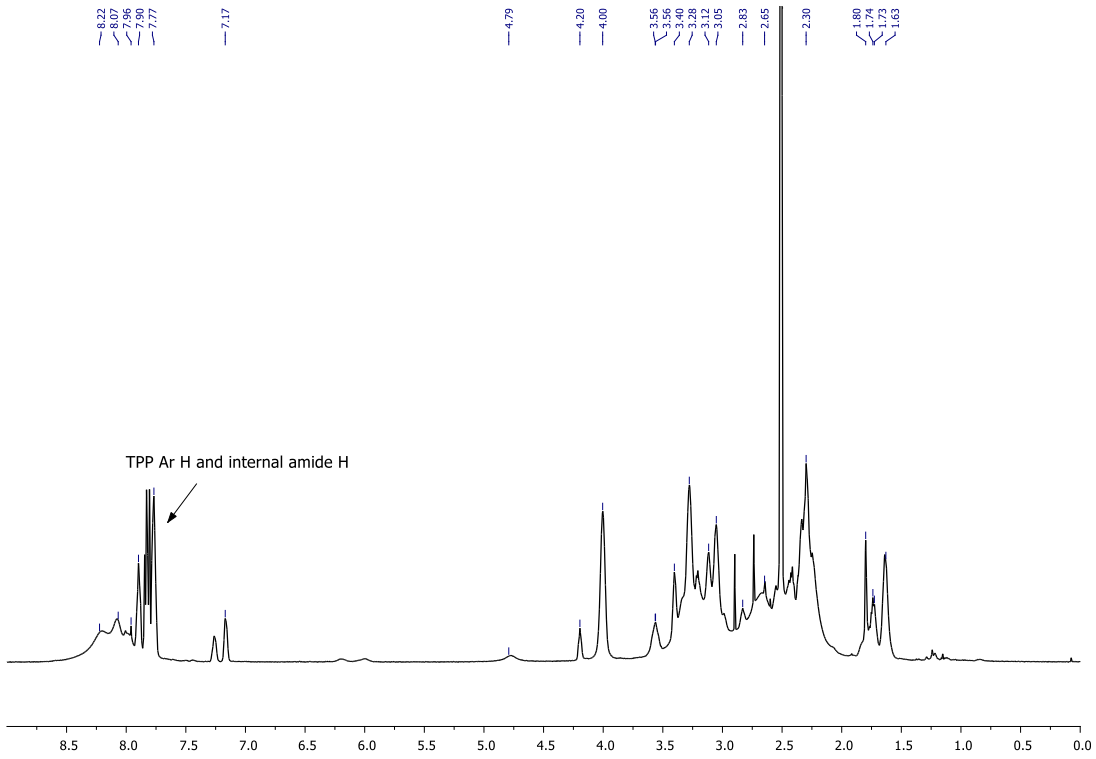


Figure S10. ^{1}H NMR spectrum of compound **7** in DMSO (500 MHz).

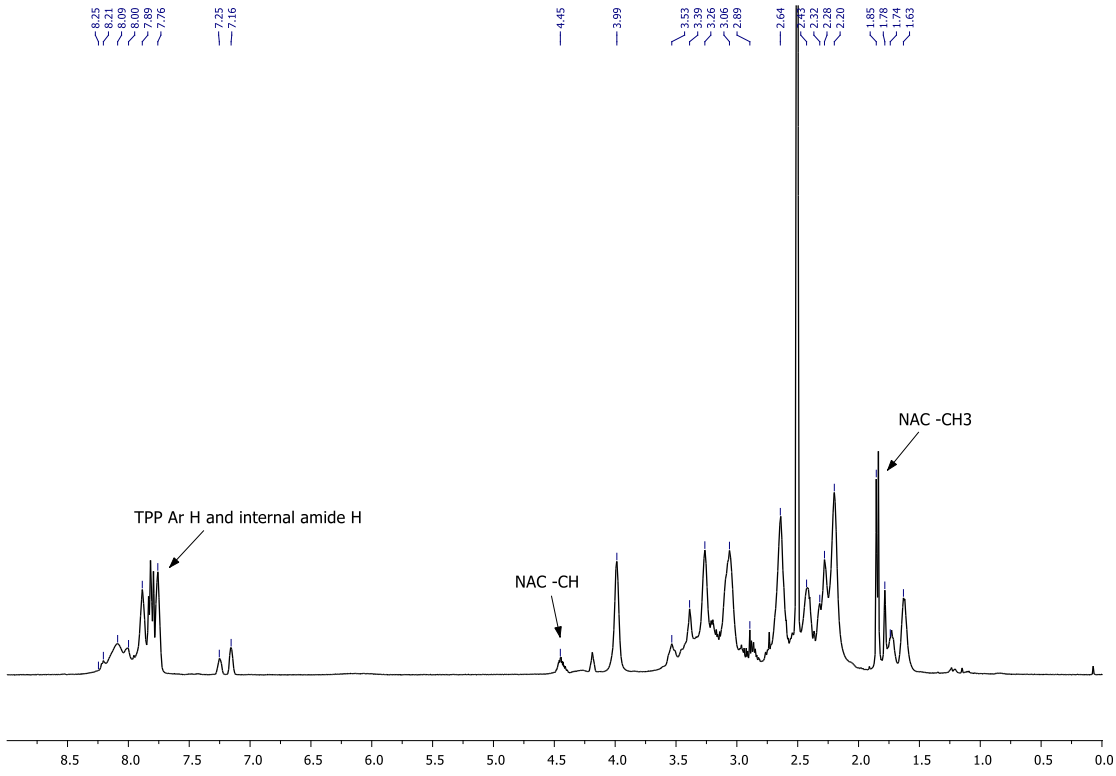


Figure S11. ^{1}H NMR spectrum of compound **9** in DMSO (500 MHz).

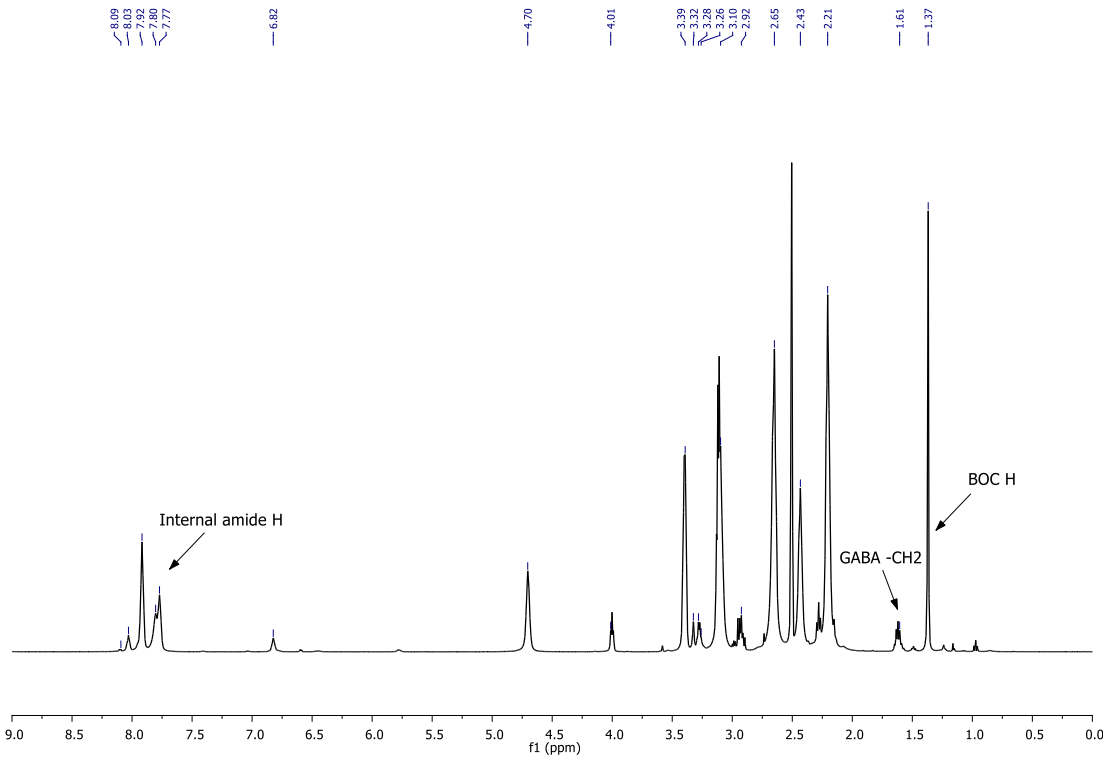


Figure S12. ^{1}H NMR spectrum of compound **2d** in DMSO (500 MHz).

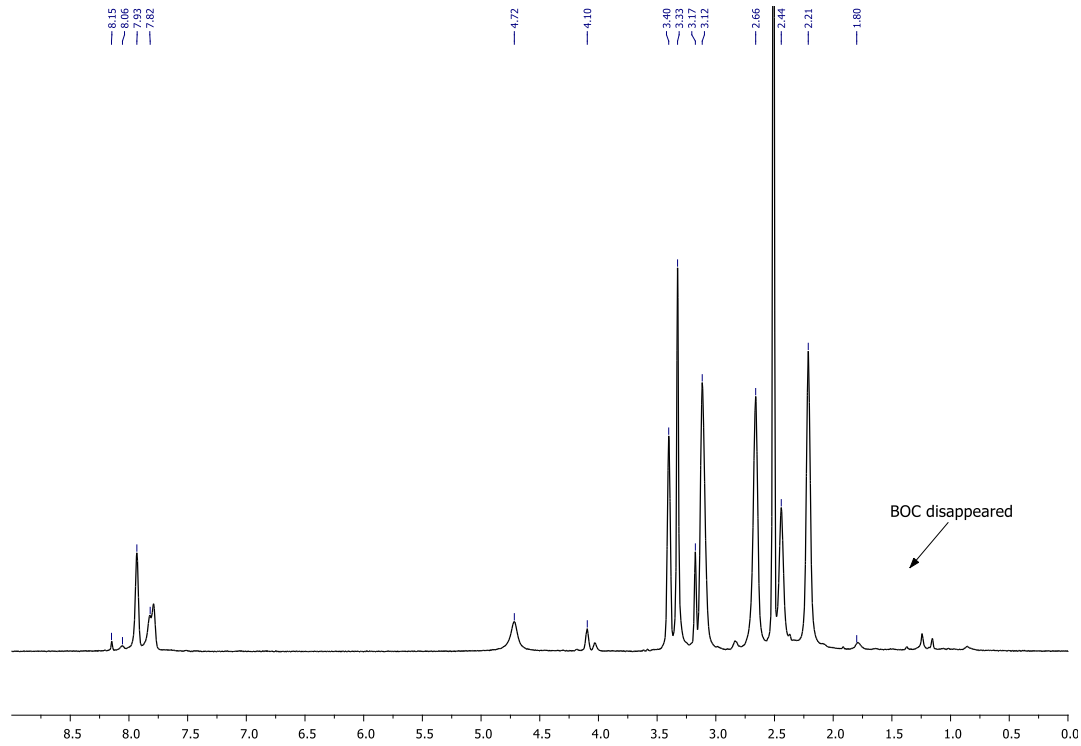


Figure S13. ^{1}H NMR spectrum of compound **3d** in DMSO (500 MHz).

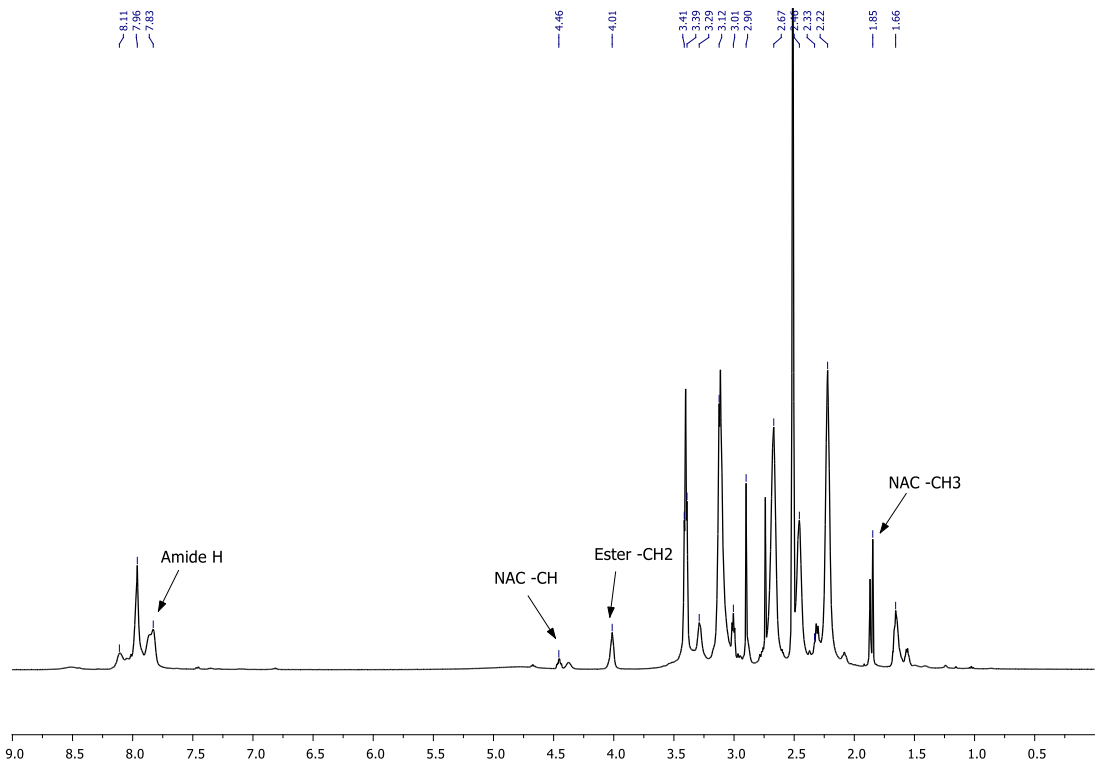


Figure S14. ^{1}H NMR spectrum of compound **10** (**D-NAC**) in DMSO (500 MHz).

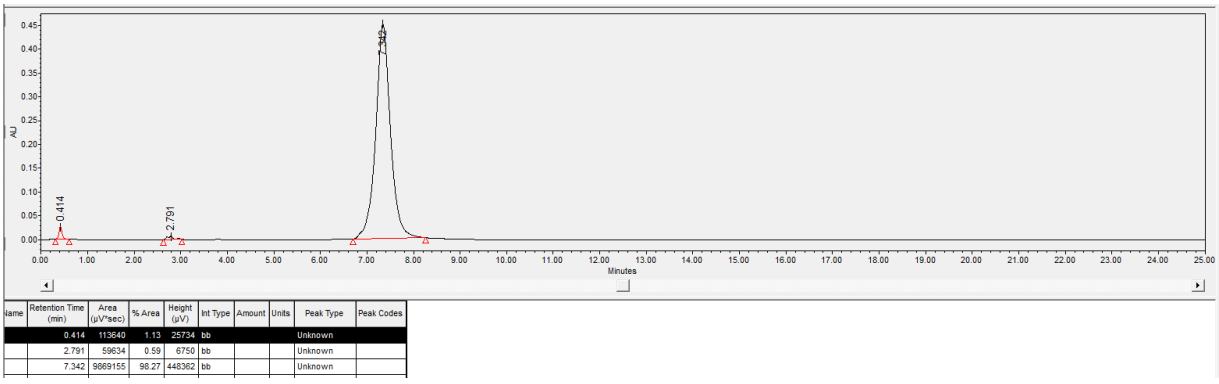


Figure S15. HPLC chromatogram of compound **5** (**TPP-D-Cy5**) at 650nm.

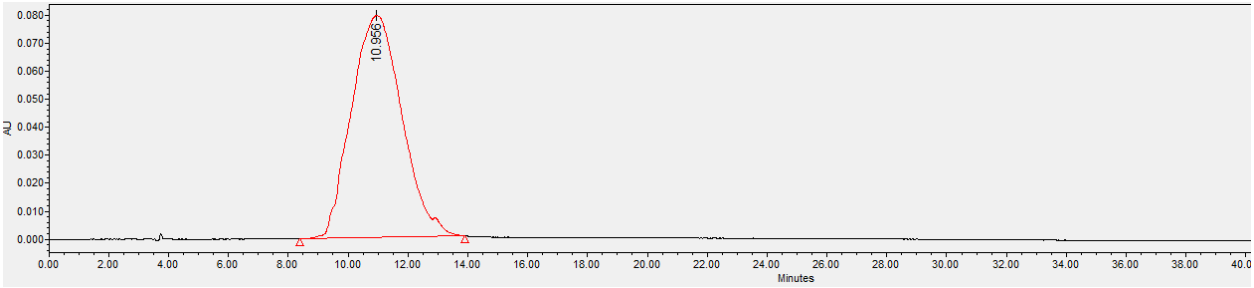
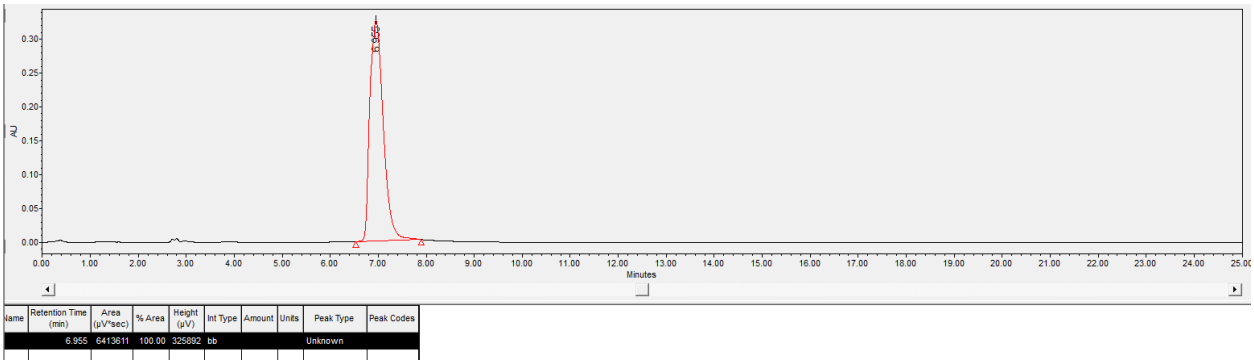
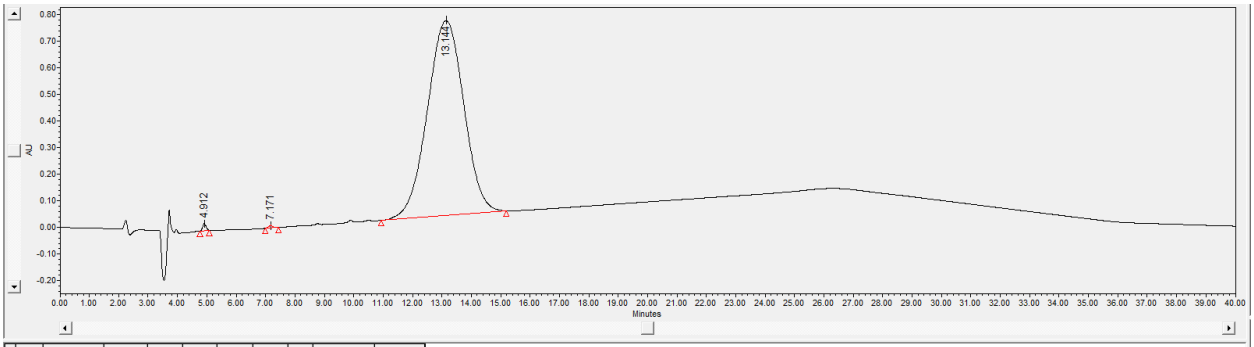


Figure S16. HPLC chromatogram of compound **6** (**D-Cy5**) at 650nm.



Retention Time (min)	Area (µV*sec)	% Area	Height (µV)	Int Type	Amount	Units	Peak Type	Peak Codes
6.955	6413611	100.00	325892	bb			Unknown	

Figure S17. HPLC chromatogram of compound **9** (**TPP-D-NAC**) at 210nm.



	Name	Retention Time (min)	Area (µV*sec)	% Area	Height (µV)	Int Type	Amount	Units	Peak Type	Peak Codes
1		4.912	221811	0.35	27521	bb			Unknown	
2		7.171	97104	0.15	9883	bb			Unknown	
3		13.144	63201049	99.50	733267	bb			Unknown	

Figure S18. HPLC chromatogram of compound **10** (**D-NAC**) at 210nm.

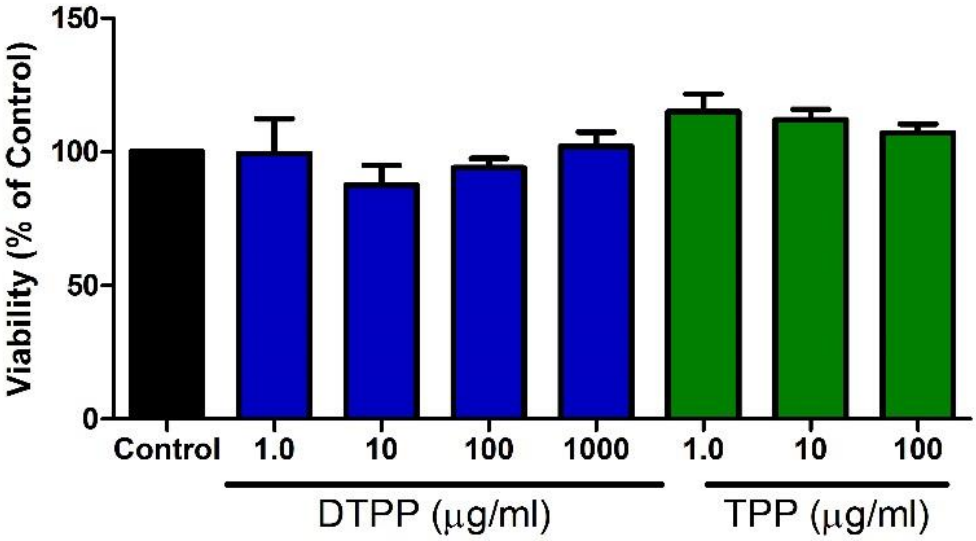


Figure S19. Cell viability assessment of TPP-conjugated dendrimer. Free TPP and TPP-conjugated dendrimer do not exhibit cytotoxicity at and above the range of concentrations used in *in vitro* experiments.

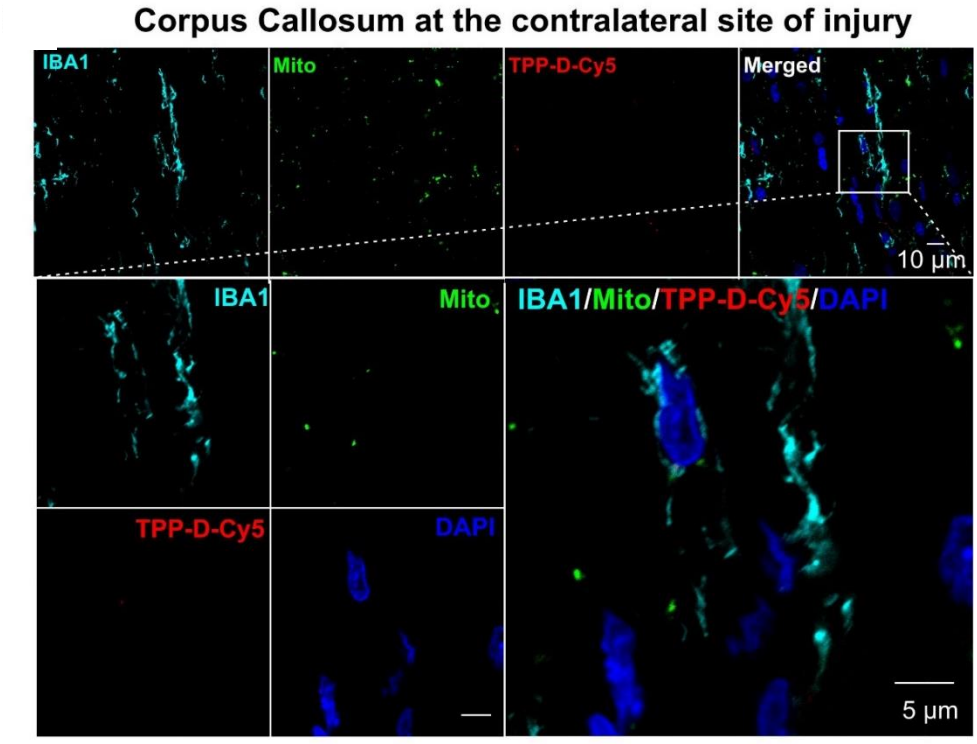


Figure S20. Confocal images showing that at the corpus callosum of the contralateral site of injury, there was no significant TPP-D-Cy5 uptake in the resting microglia in pediatric TBI rabbit kits.