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

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.