Hybrid C60 Fullerene Conjugates as Vectors for DNA Delivery

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Supporting Information

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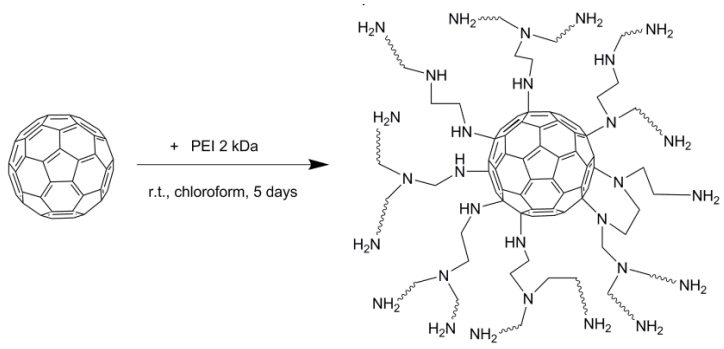
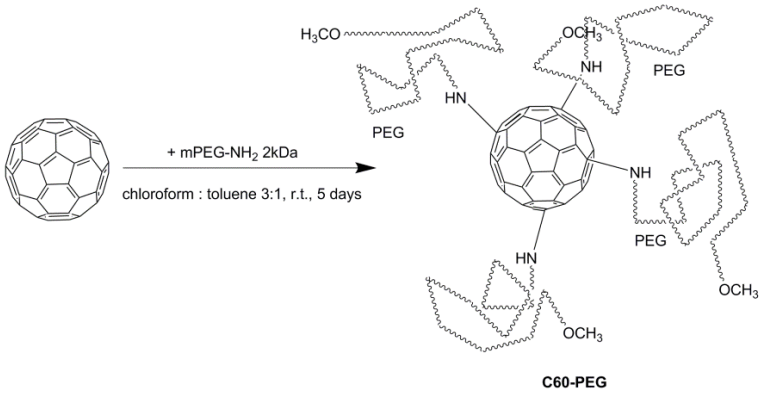


Figure SI-1. *Synthesis of C60-PEI conjugate.*



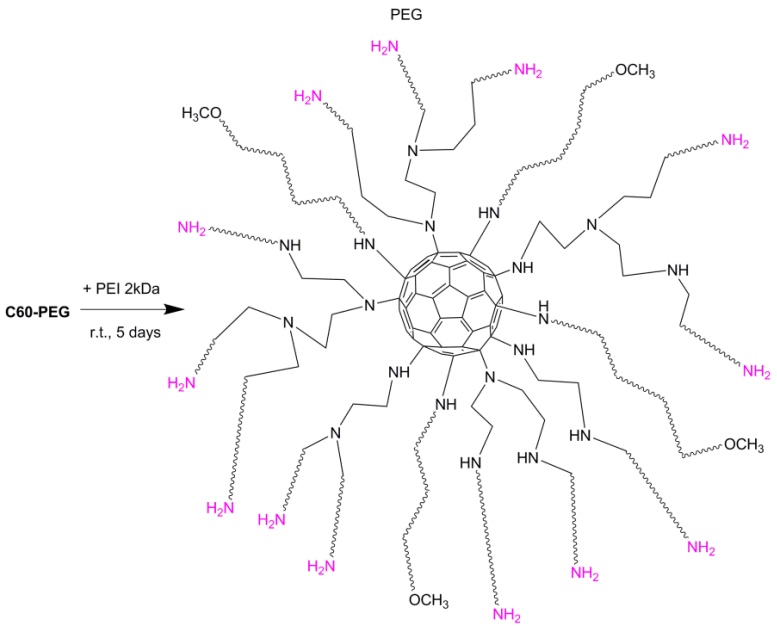


Figure SI-2. *Synthesis of C60-PEG-PEI conjugate.*

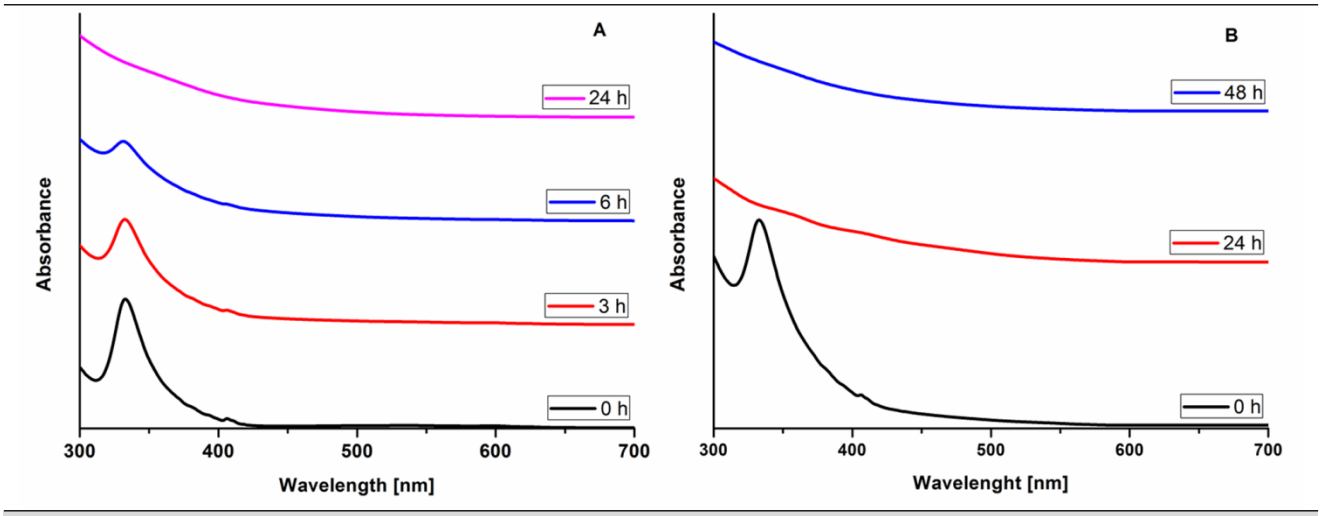


Figure SI-3. *UV-VIS spectra confirming the advance of conjugation reaction between C60 fullerene and the PEI and PEG precursors.*

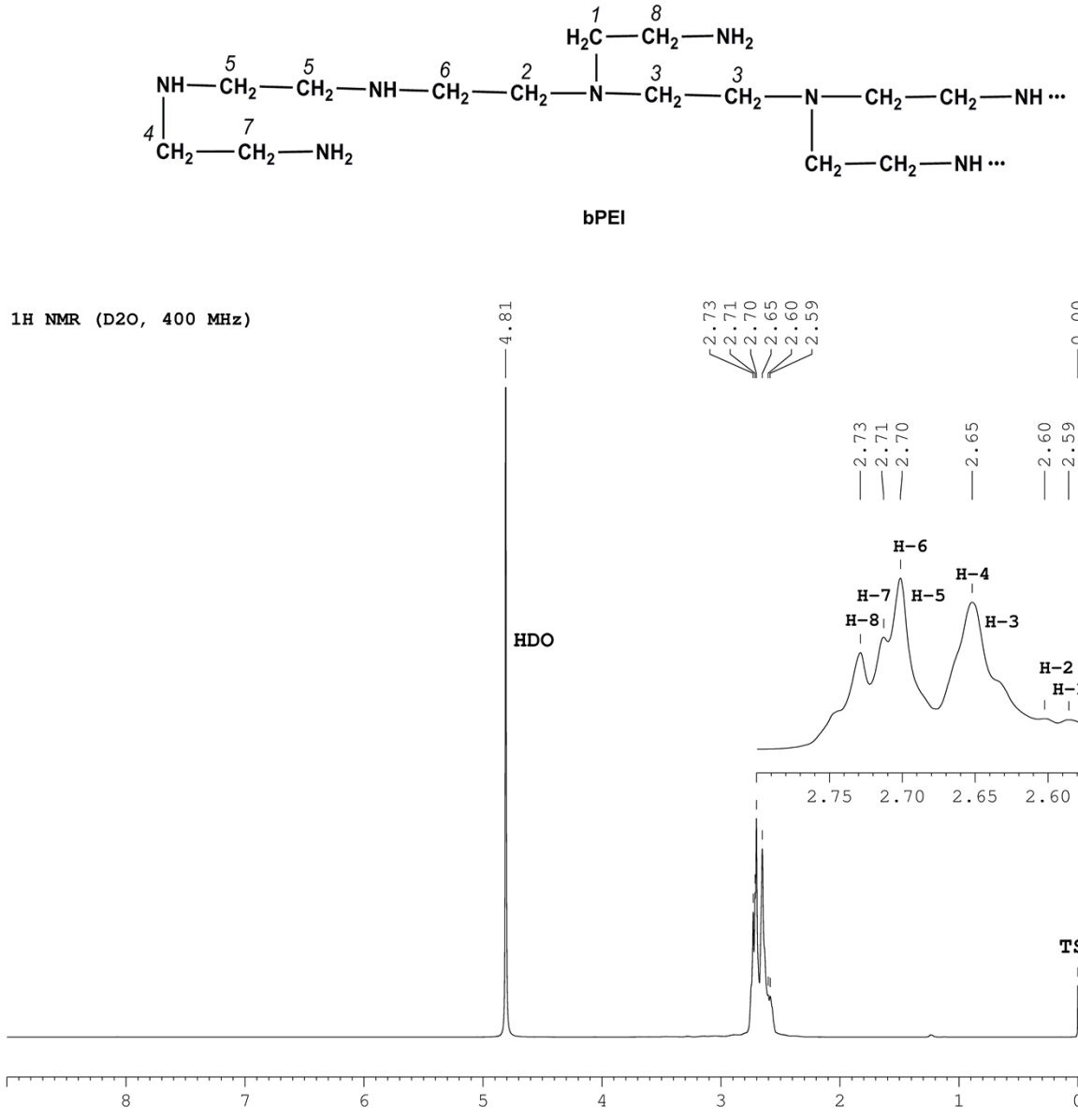
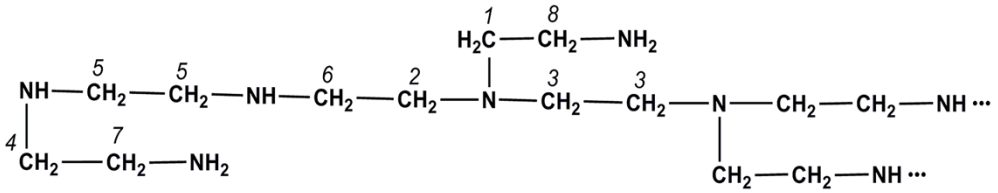


Figure SI-4. *^{1}H-NMR spectrum of branched PEI precursor.*



bPEI

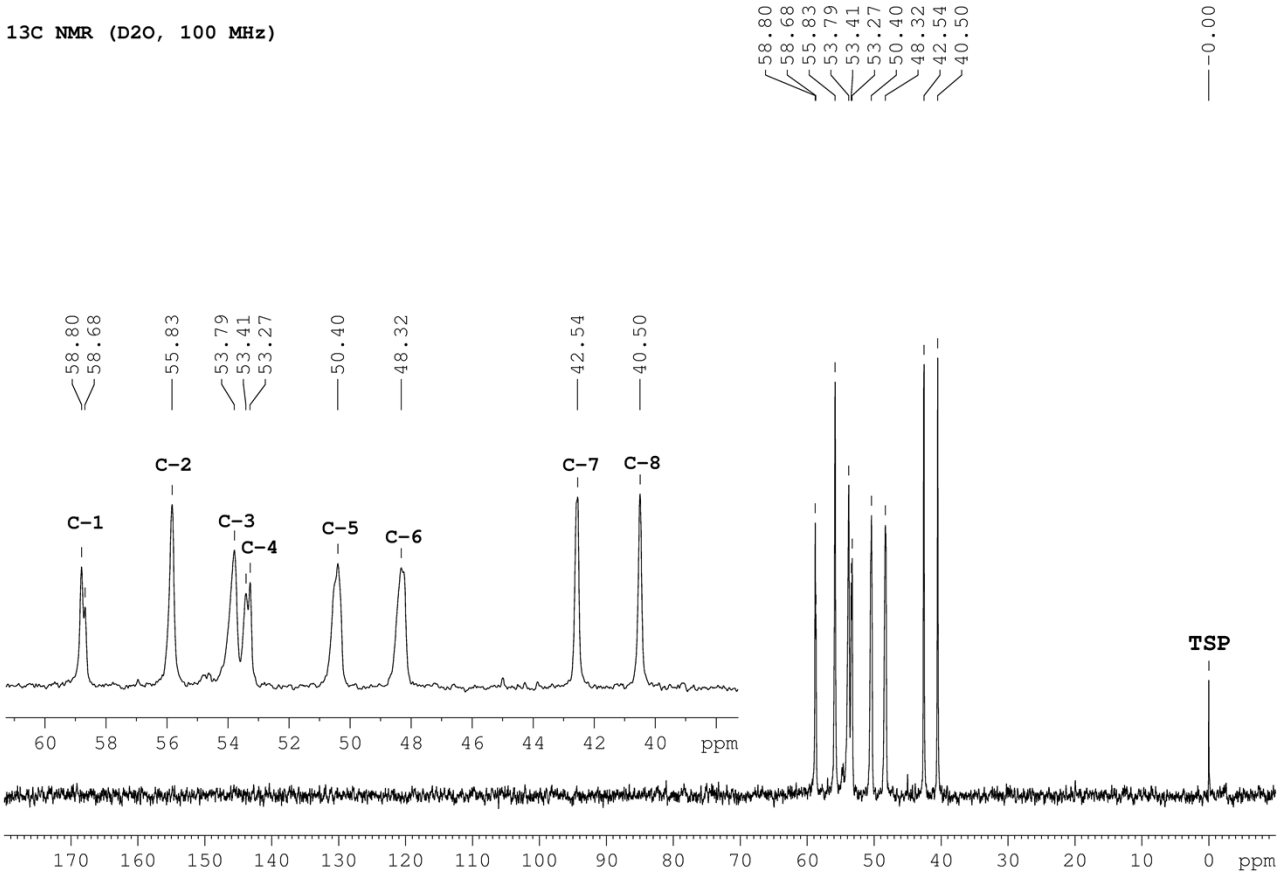


Figure SI-5. *^{13}C-NMR spectrum of branched PEI precursor.*

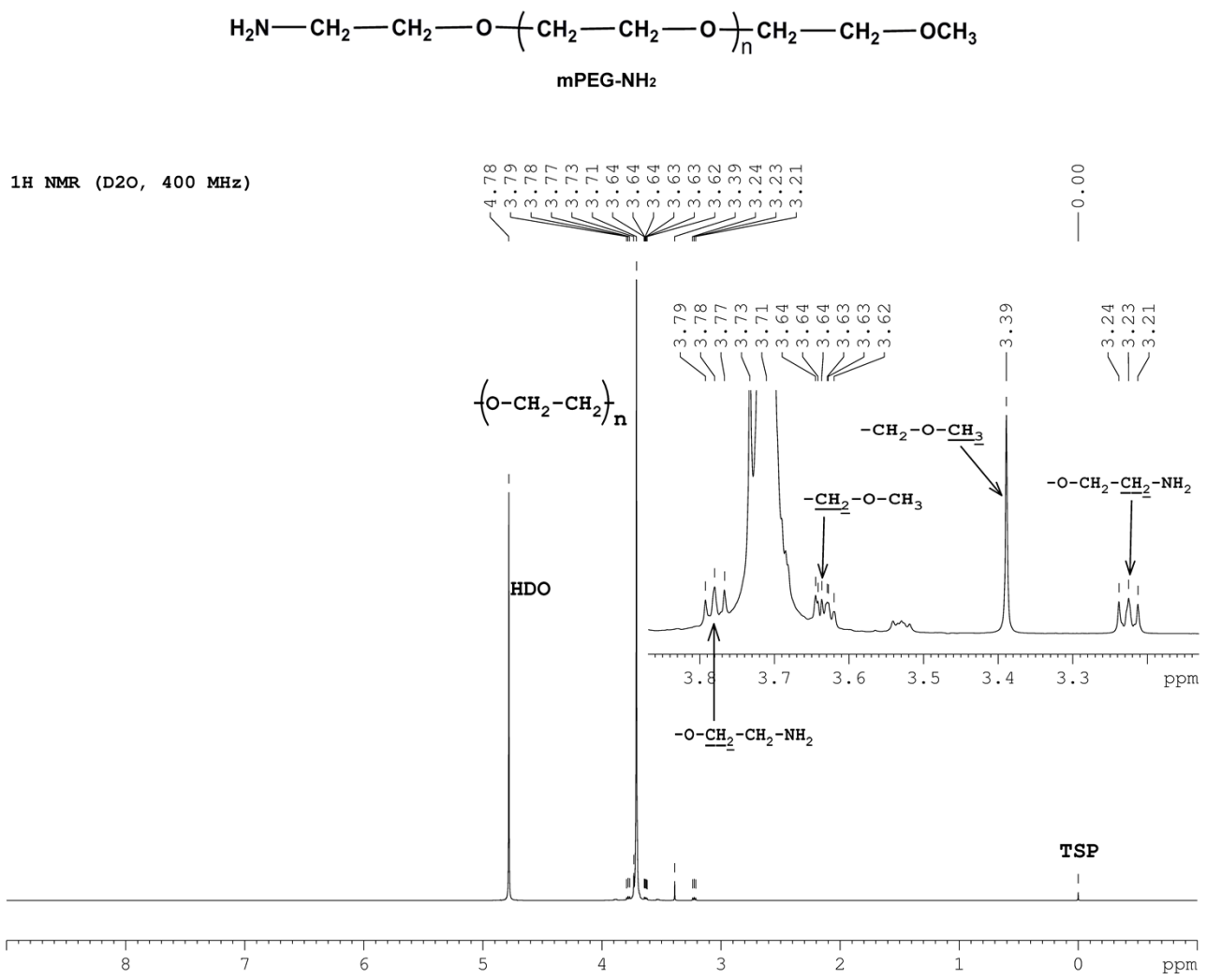


Figure SI-6. *^{1}H-NMR spectrum of α-amino-PEG precursor.*

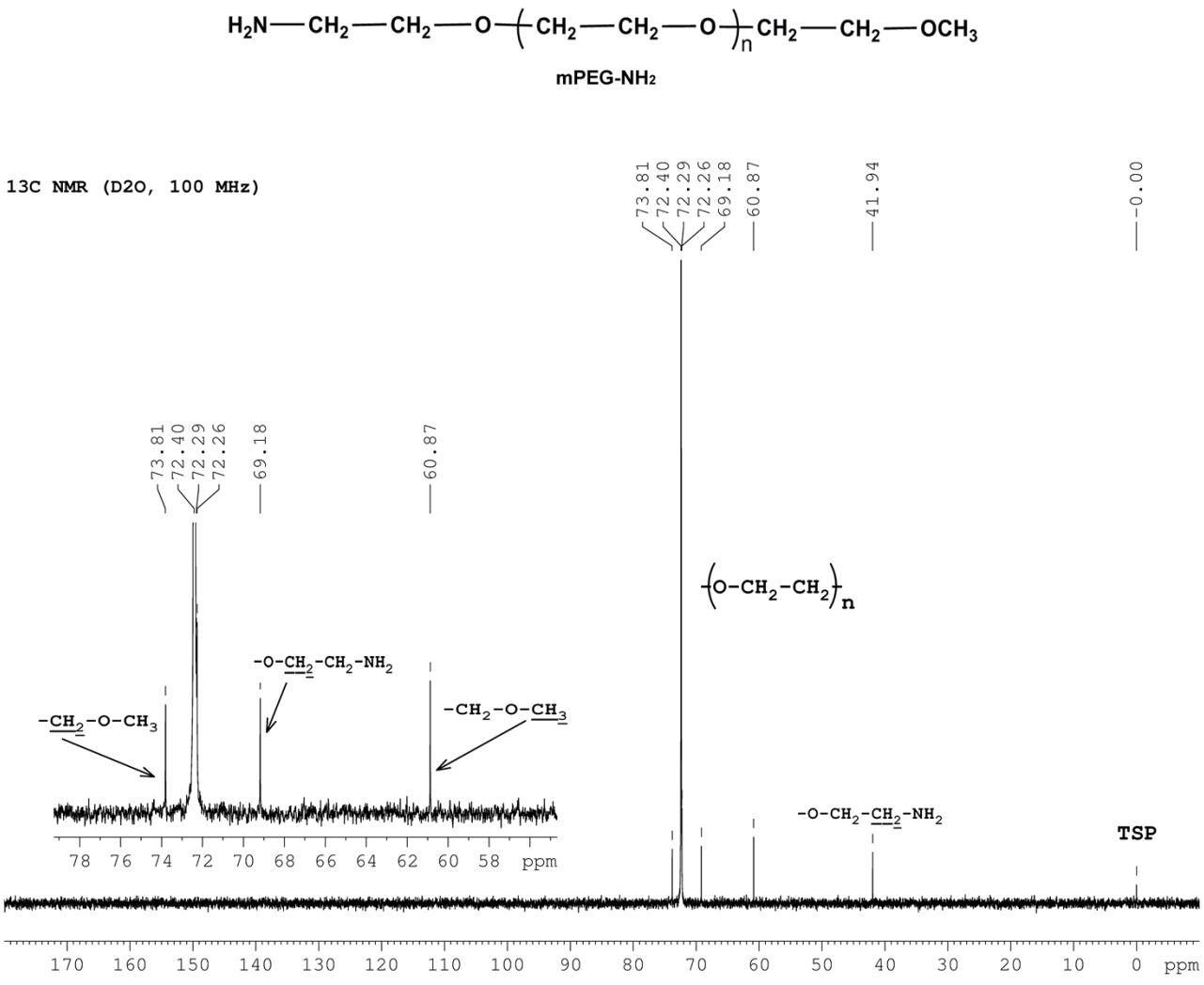
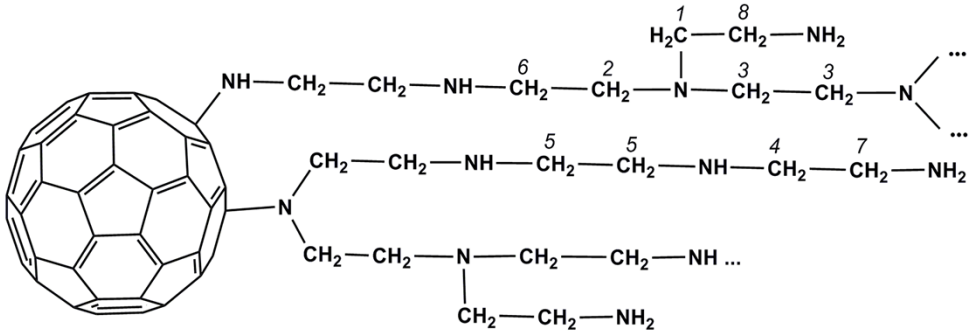


Figure SI-7. *^{13}C-NMR spectrum of α-amino-PEG precursor.*



C60-PEI

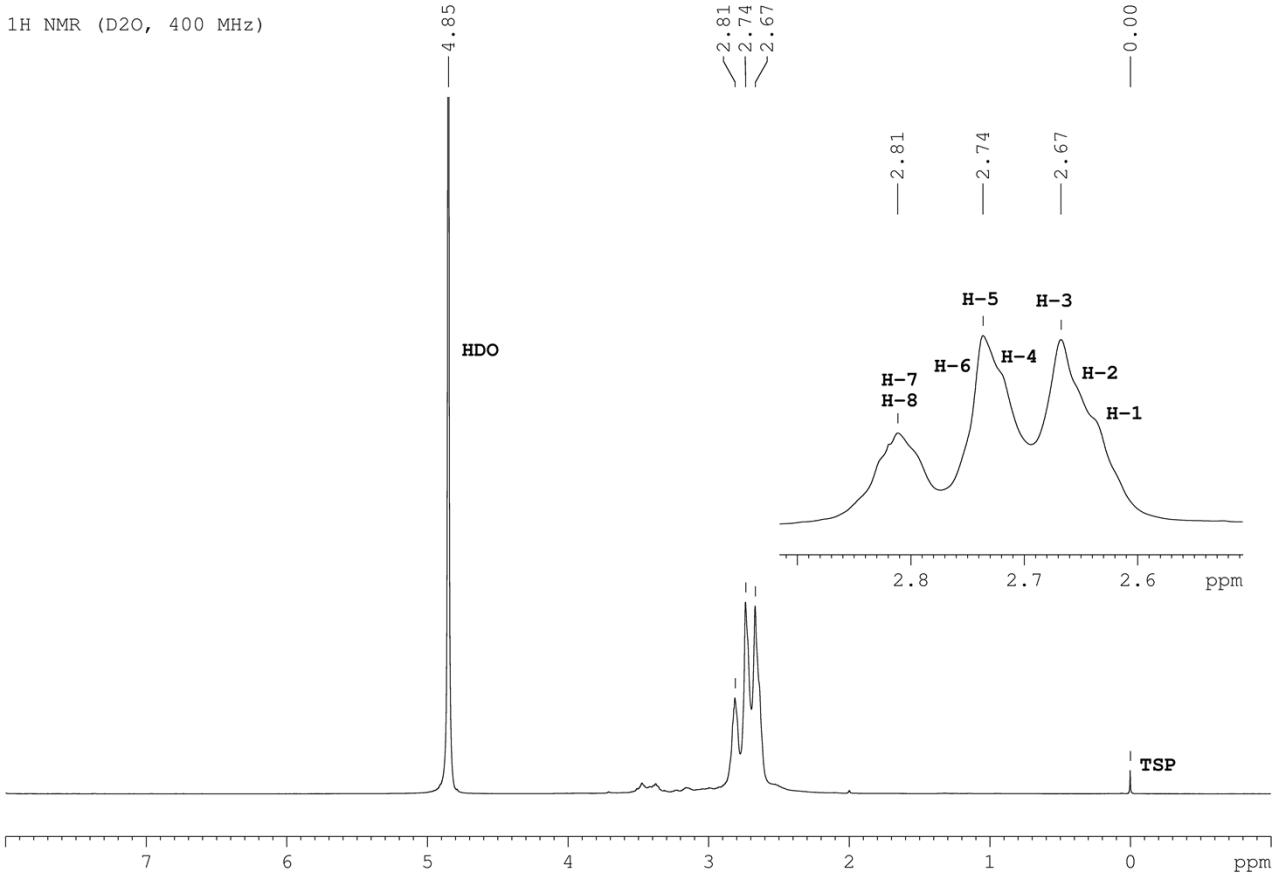


Figure SI-8. *^{1}H-NMR spectrum of the C60-PEI conjugate.*

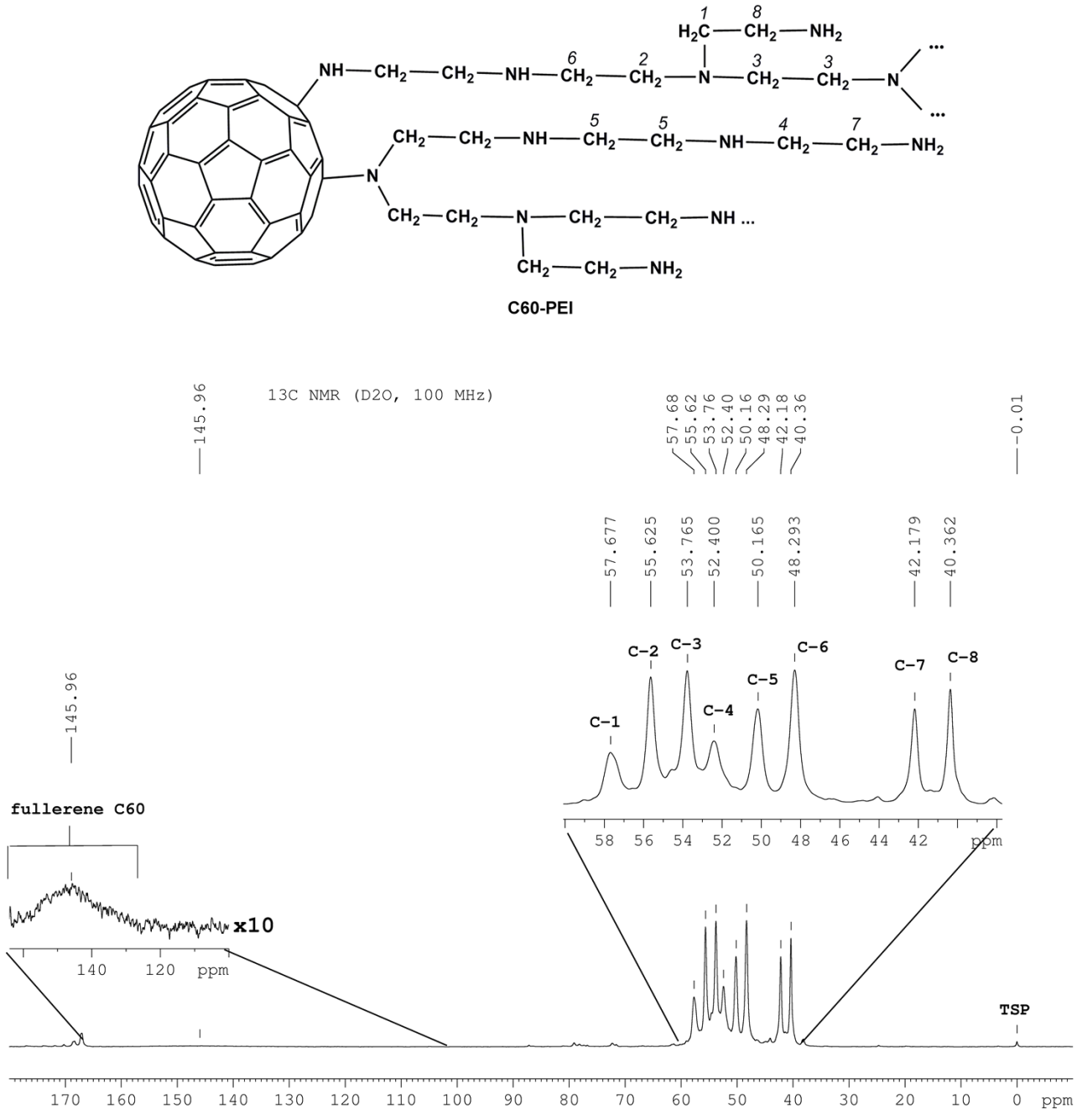


Figure SI-9. *^{13}C-NMR spectrum of the C60-PEI conjugate.*

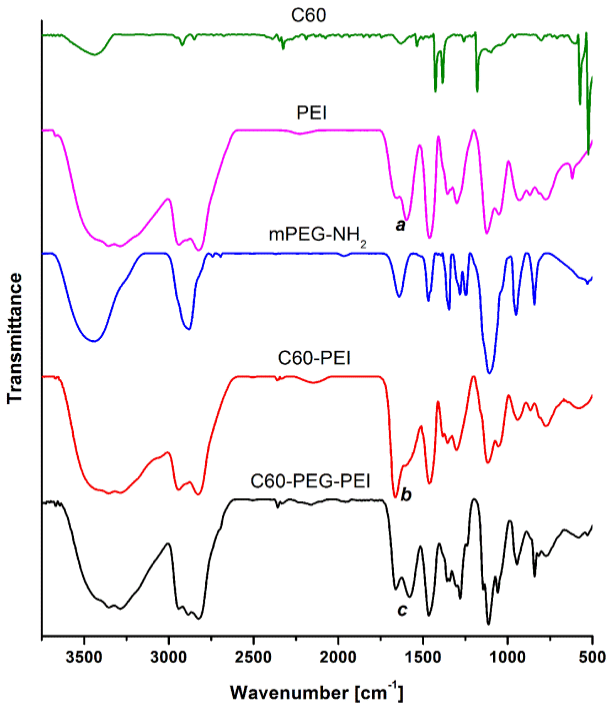


Figure SI-10. *FT-IR spectra of the precursors and C60-based conjugates.*

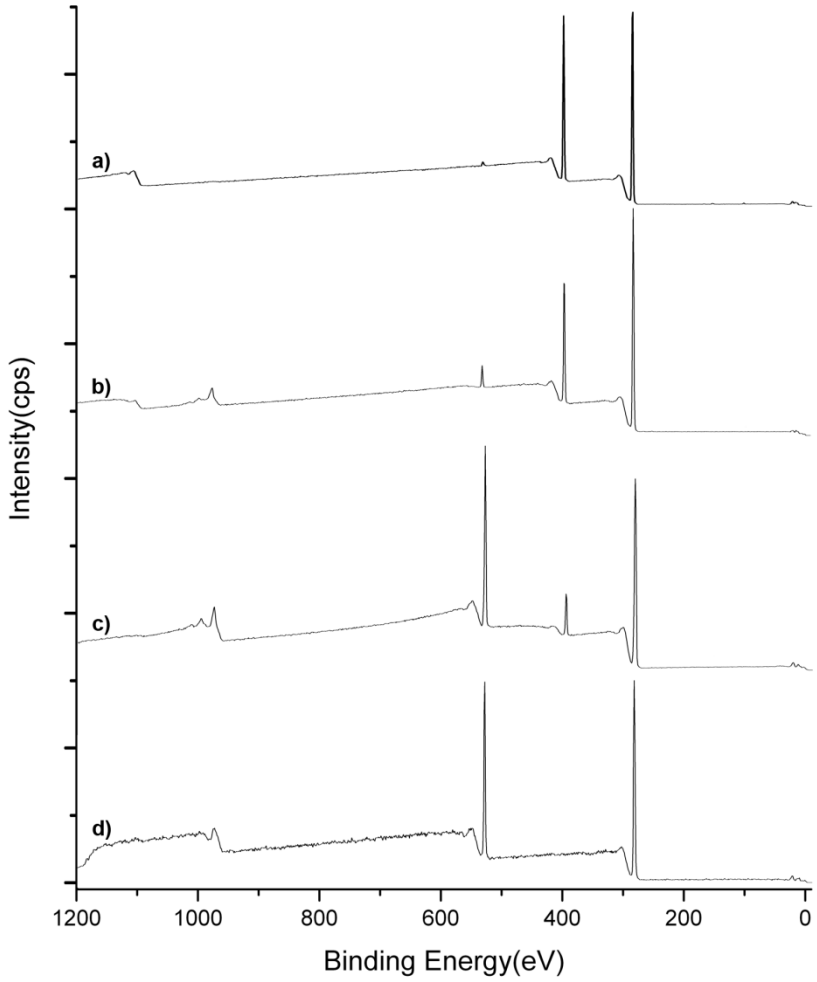


Figure SI-11. *The wide scan XPS spectra of PEI (a), C60-PEI (b), C60-PEG-PEI (c), and mPEG-NH_2 (d).*

Table SI-1. *Elemental composition derived from wide scan XPS spectra.*

Sample code	Mass concentration (%)		
	C	N	O
PEI	62.01	37.99	-
C60-PEI	65.98	34.02	-
C60-PEG-PEI	67.52	25.00	7.48
PEG	68.74	0.80	30.46

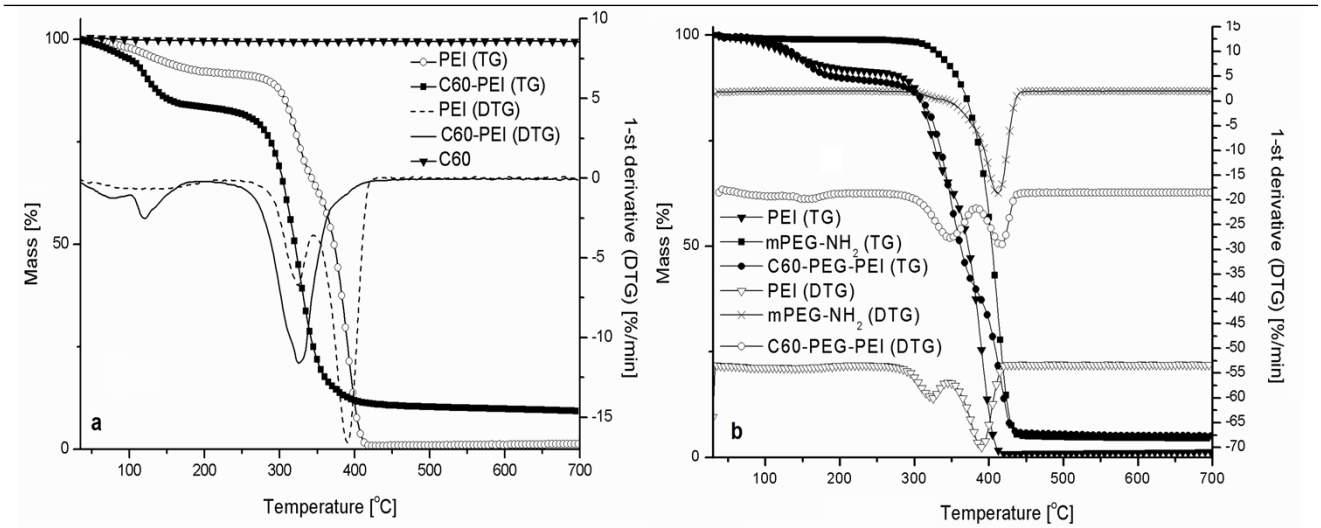
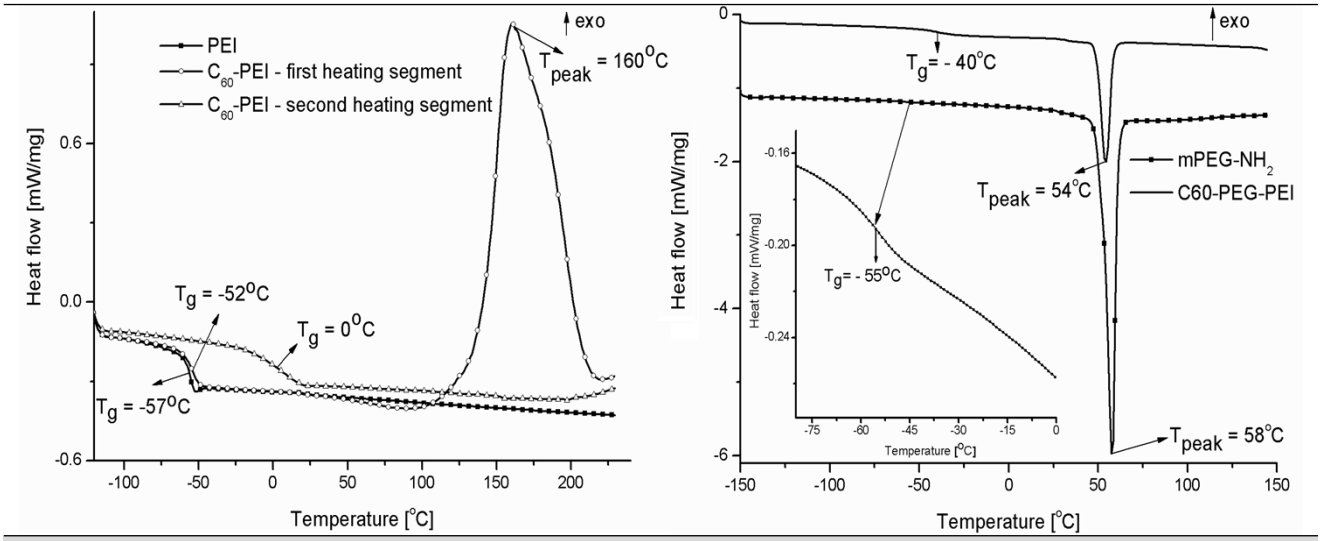


Figure SI-12. *Comparative thermal characterization of PEI and PEG precursors, and of synthesized C60-PEI and C60-PEG-PEI conjugates.*



(a) *(b)*

Figure SI-13. *DSC heating curves of precursors and synthesized C60-based conjugates.*