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Biodegradable Aniline-derived Electroconductive Film for the Regulation of Neural Stem Cells Fate

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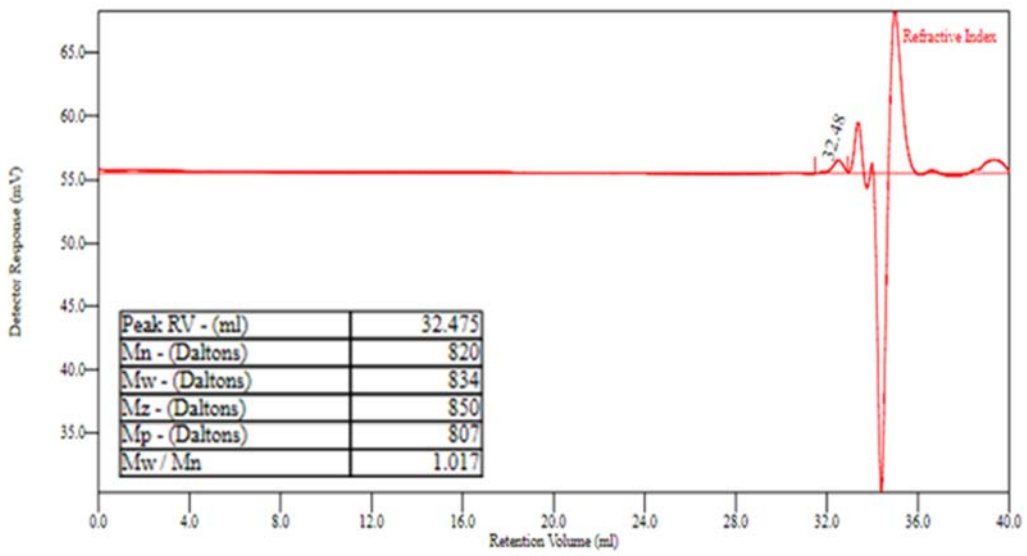
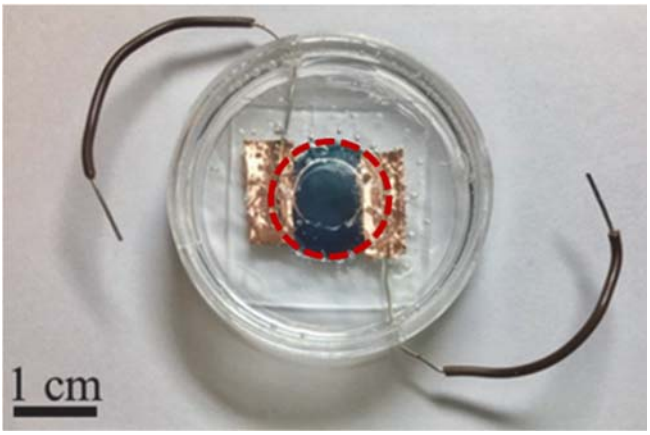
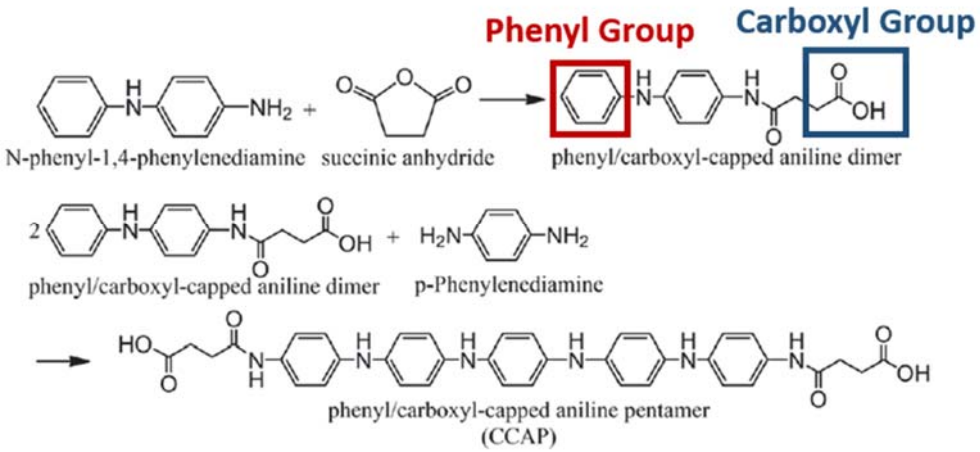


Supplementary Figure 1. Molecular weight determination of the synthesized CCAP by gel permeation chromatography.



Supplementary Figure 2. The stereotype of electrical stimulation device. The top view of the representative electrical stimulation device. The area framed in the red circle was the reported 4a-PLAAP thin film. Two parallel gold strips were deposited on two sides of thin film and connected to the electrodes. Then, a pulsed DC electric field was used to provide electrical stimulation.



Supplementary Figure 3. The schematic illustration of synthesis process of CCAP (phenyl/carboxyl-capped aniline pentamer).

Supplementary Table 1. Molecular weight prediction and calculated Mn of 4a-PLA

Code	In feed (molar ratio)		In polymer (molar ratio)		Theoretical Mw	Actual Mn[a]
	PER	Lactide	PER	Lactide		
4a-PLA$_{4k}$	1	31	1	27	4000 Da	3501 Da
4a-PLA$_{10k}$	1	68	1	59	10000 Da	8638 Da

[a] determined by ^{1}H NMR

Supplementary Table 2. The amount of CS added in different doping levels was calculated and recorded in this table.

Doping Level (-NH/-SO_3)	CCAP		Chondroitin Sulfate (CS)	
	mmol	Weight (g)	mmol	Weight (g)
6/0.6	0.5	0.336	0.05	0.024
6/3	0.5	0.336	0.25	0.119
6/6	0.5	0.336	0.5	0.238

Supplementary Table 3. Primers used for real-time polymerase chain reaction

Gene		Primer sequence (Rattus norvegicus))
Actinβ	Forward	5′-ATGTTGCCCTAGACTTCGAGCAAGAG-3′
	Reverse	5′-GGCAGTAATCTCCTTCTGCATCCTGT-3′
Nestin	Forward	5′-AAGAGAGTCAGGACTCAGGGAAGTCT-3′
	Reverse	5′-TTCCTTCTTTCCAGGTCCTCTTCTGC-3′
Glial fibrillary acidic protein (GFAP)	Forward	5′-CATCGAGATCGCCACCTACAGGAAAT-3′
	Reverse	5′-GATGGGAATTGGGCCTAGCAAACAAG-3′
βIII-tubulin	Forward	5′-TTTATCTTCGGTCAGAGTGGTGCTGG-3′
	Reverse	5′-GAAGCAGATGTCGTAGAGGGCTTCAT-3′
Microtubule-associated protein 2 (Map2)	Forward	5′-CCCTCTTCTGCTGACAAATCAGGACT-3′
	Reverse	5′-TTCTCTGCTCTCTCAGGTGCTGTTTC-3′