Assessment of C-phycocyanin effect on astrocytes-mediated neuroprotection against oxidative brain injury using 2D and 3D astrocyte tissue model

Supplementary Information

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This file includes :

2 tables and 4 figures which are supporting our research.

Gene	Forward (5'→3')	Reverse (5'→3')
MnSOD	CGGGTTTCTGAGTGAGGTCAG	GTCAGGGAAAGGGTGTCCTTC
CuZnSOD	TCACTTCGAGCAGAAGGCAA	TGAGGTCCTGCAGTGGTACA
EcSOD	GAGAGCTTGTCAGGTGTGGAA	CGGACTCTCCGGTATCTGAC
Catalase	GGCACAAGCCTCACCAGTAA	CCCTCGGGAAATGCCATCAA
BDNF	GACTCTGGAGAGCGTGAA	CCACTCGCTAATACTGTCAC
NGF	CTGGACTAAACTTCAGCATTC	TGTTGTTAATGTTCACCTCGC
TNF-α	GCTTGGTGGTTTGCTACGAC	ATGGGCTCCCTCTCATCAGT
IL-6	CCTATTGAAAATCTGCTCTG	TTGGGGTAGGAAGGACTATT
IL-1β	AAATGCCTCGTGCTGTCTGA	AGGCCACAGGGATTTTGTCG
Neurocan	TTTCAGTCCACAGCGATCAG	AGGAGAGGGATACAGCAGCA
Phosphacan	TTGACAAGTGATGAAGAGAGTGG	AATCAGCACATCTCGTTCTATCC
β-actin	CCGCGAGTACAACCTTCTTG	CATGCCGGAGCCGTTGTC

Table S1. mRNA sequences that were designed for the analysis of neuroprotective function of C-Pc treated astrocytes.

	Control group		MCAO group	
	Base	C-Pc treatment	Base	C-Pc treatment
Temperature, ℃	37.1 ± 0.2	37.1 ± 0.1	37.0 ± 0.1	37.1 ± 0.1
pH	7.7 ± 0.1	7.6 ± 0.1	7.6 ± 0.1	7.6 ± 0.1
pO_2, mmHg	146 ± 19.2	149.5 ± 7.3	150.2 ± 6.7	154.3 ± 13.0
pCO_2, mmHg	40.3 ± 1.5	41.3 ± 1.4	39.1 ± 1.2	38.8 ± 0.6
Glucose, mg/dL	109.8 ± 5.6	109.6 ± 2.2	109.6 ± 5.2	118.4 ± 2.4

Values are means SD (n=3). One way analysis of variance revealed no significant intergroup difference for any variance.

Table S2. Physiological parameters

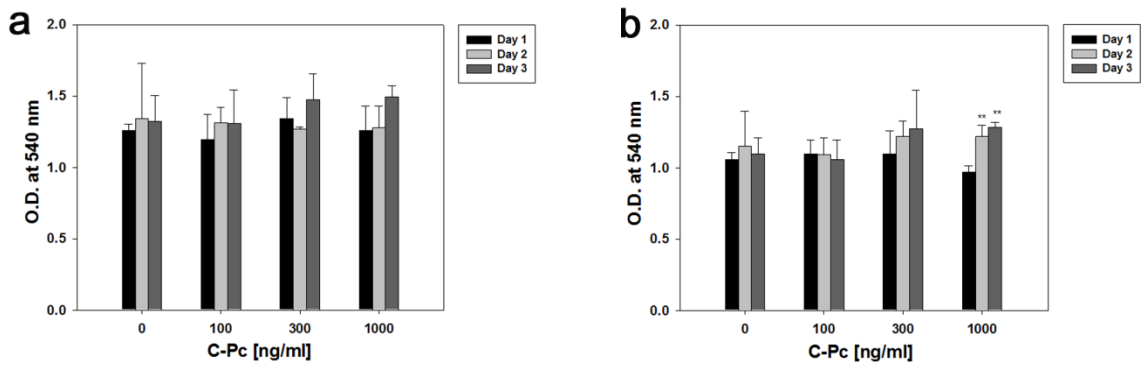

Figure S1. Effects of C-Pc on normal and oxidized Neuro2A. The C-Pc concentrations were 0, 100, 300, 1000, and 3000 ng/ml and the treatment times were 1, 2, and 3 day. (a) The viability of Neuro2A under normal condition was not changed with time and concentration of C-Pc. (b) The viability of Neuro2A under oxidative stress was also maintained and even upregulated by treatment of C-Pc. Data are presented as the means±SEMs. * $p < 0.05$ and ** $p < 0.01$ versus "day 1" at each concentration.

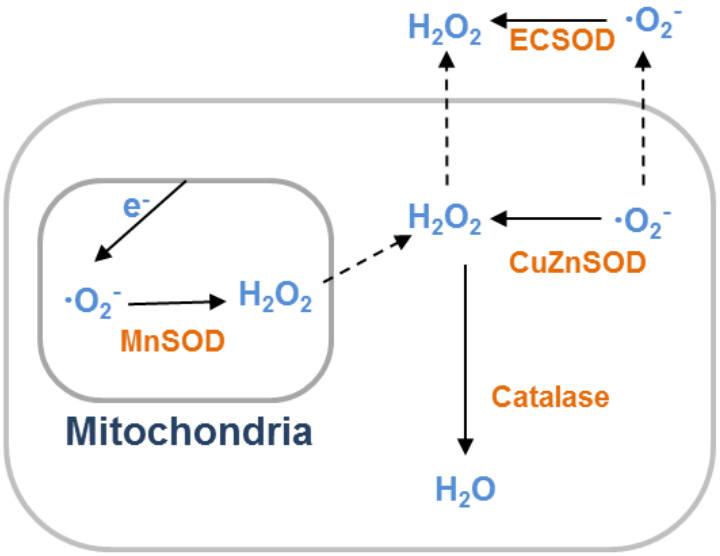

Figure S2. Typical antioxidant enzymes (MnSOD, CuZnSOD, EcSOD and Catalase) for removing ROS from the cells are marked in the metabolic pathway.

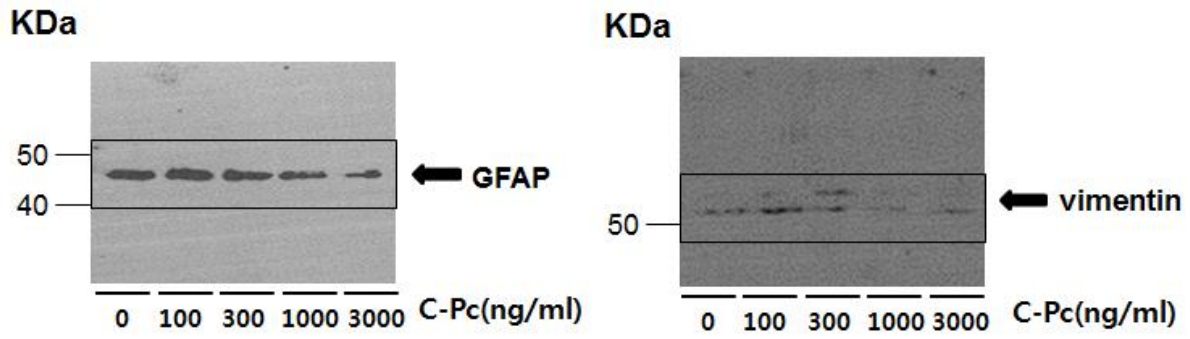

Figure S3. Full length blots of Fig. 4c

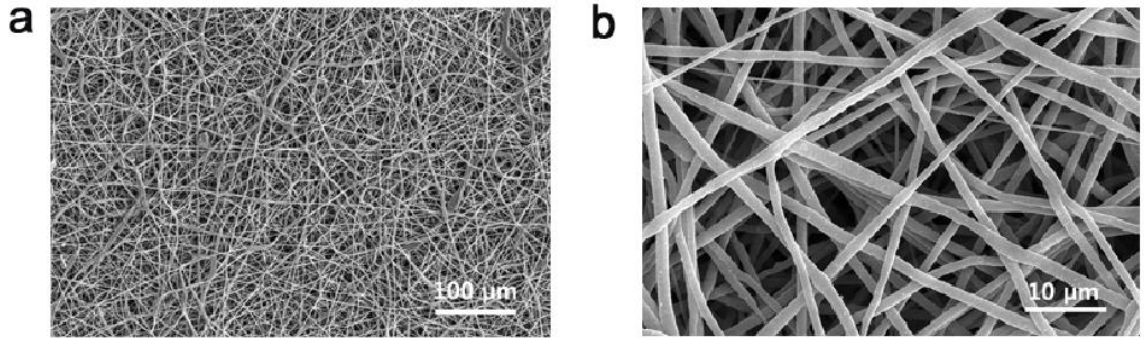

Figure S4. Fabricated electrospun nanofiber used for cell culture surface