

Supporting Information

The effects of serial of carbon dots to fibrillation and cytotoxicity of human islet amyloid polypeptide

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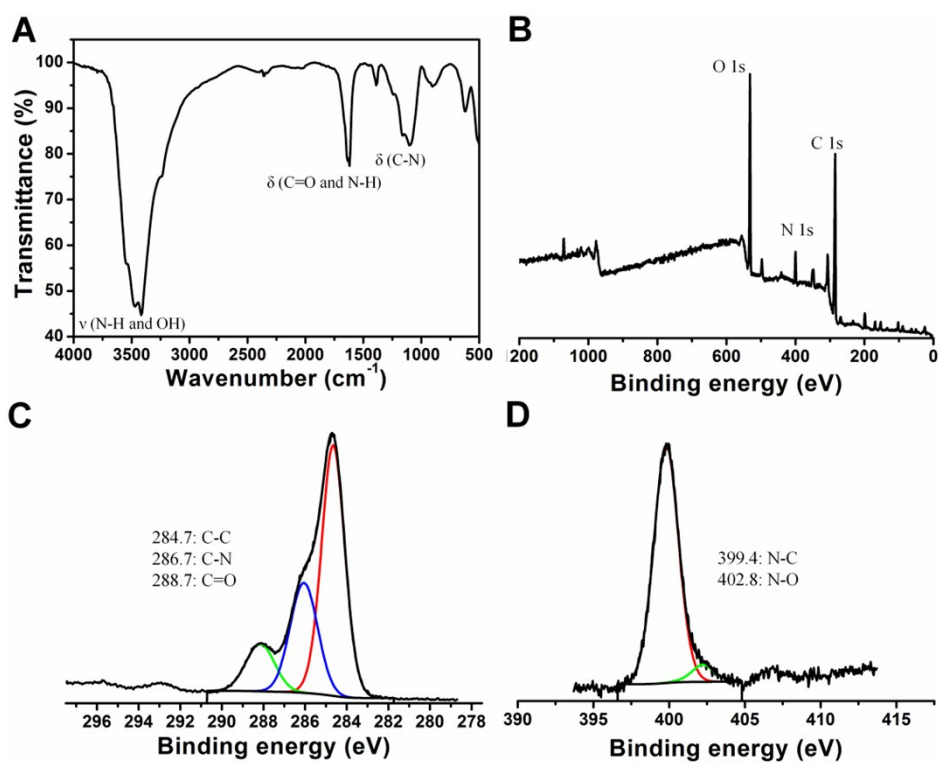


Figure S1 (A) IR image of the PDs-1. (B, C, D) XPS data of PDs-1.

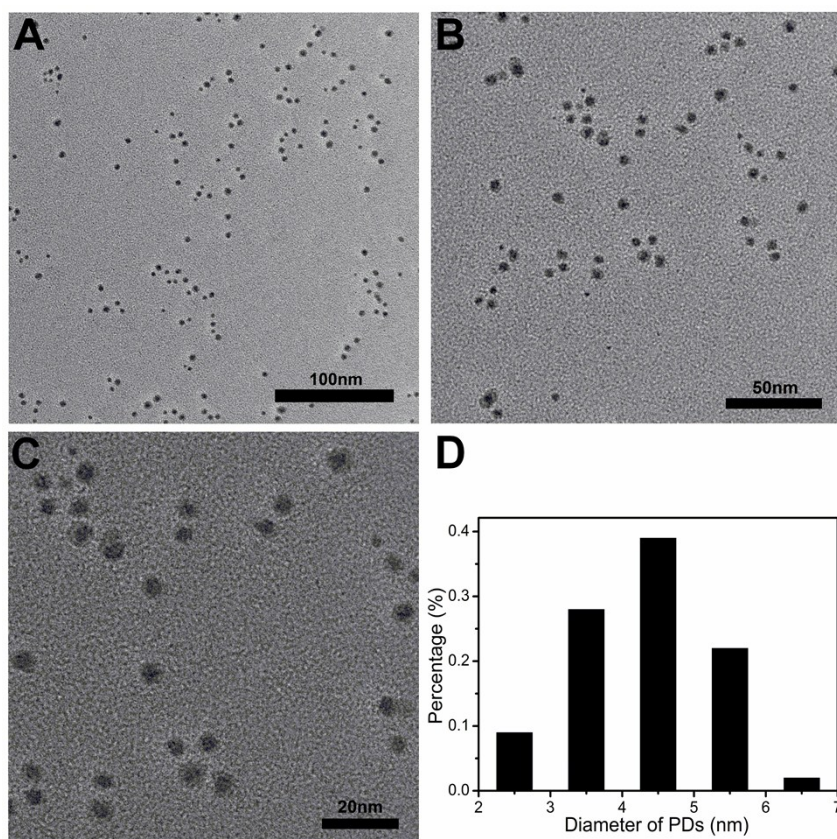


Figure S2 (A, B and C) Three typical TEM images of PDs-1 by which the size distribution is obtained. (D) The corresponding particle size distribution histograms of PDs-1.

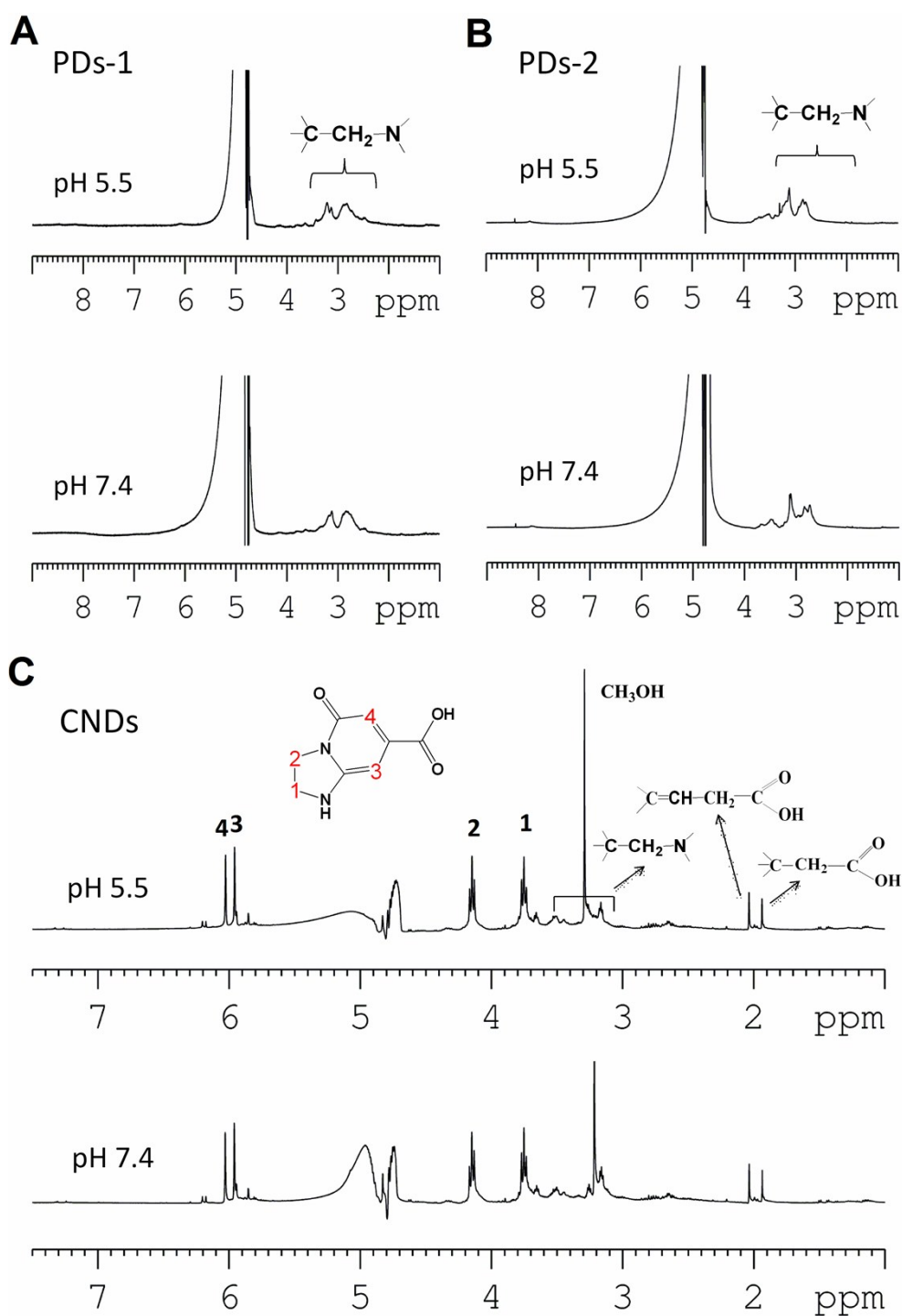


Figure S3 The ^1H NMR spectra of PDs-1 (A), PDs-2 (B) and CNDs (C) in PBS solution at pH 5.5 and 7.4. The resonances in the region of *ca.* 2.6-3.8 ppm in (A) and (B) are assigned to the methylene binding to different amine groups originating from PEI. A new molecule that is produced by the reaction between citric acid and ethylenediamine is identified as a main composition of CNDs based on the analysis of the ^1H NMR spectra. The assignments of the proton signals of the main composition molecule are indicated in the spectra.

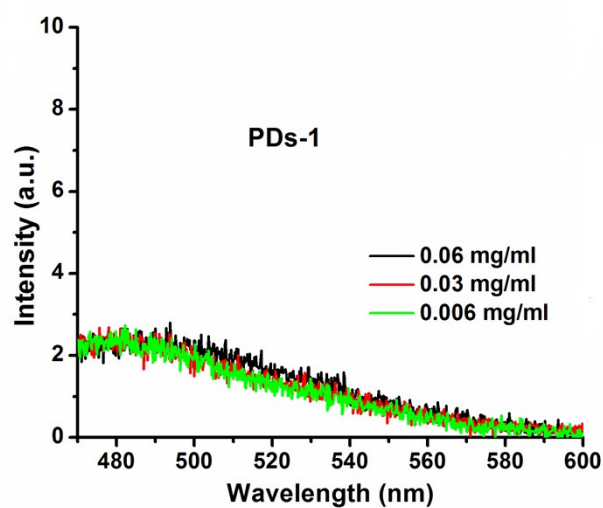


Figure S4 The fluorescence spectra of different concentrations of PDs-1.

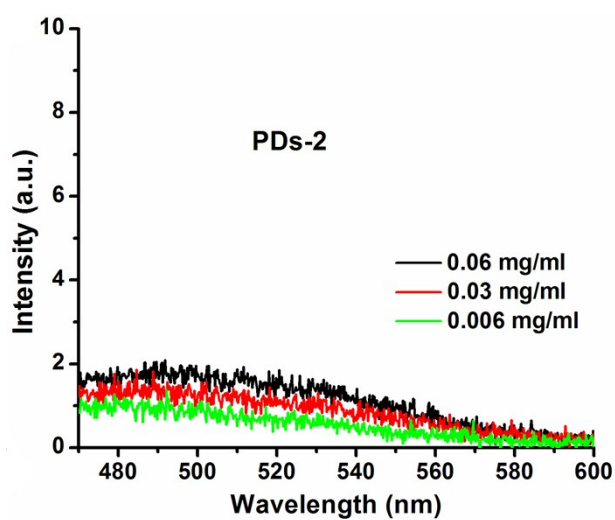


Figure S5 The fluorescence spectra of different concentrations of PDs-2.

Samples	Incubation time (h)	α -Helix	β -Structure	Unordered
hIAPP	0	1.7%	41.8%	56.4%
hIAPP+PDs-1 (1:1)		2.6%	30.3%	67%
hIAPP+PDs-2 (1:1)		1.6%	31.1%	67.4%
hIAPP+CNDs (1:1)		2.4%	40.5%	57.1%
hIAPP+CQDs (1:1)		2.7%	41.3%	56%
hIAPP+GQDs (1:1)		2.4%	37.5%	60.7%
hIAPP	24	3.6%	63.7%	32.7%
hIAPP+PDs-1 (1:1)		2.6%	53%	44.5%
hIAPP+PDs-2 (1:1)		1%	34.9%	64.3%
hIAPP+CNDs (1:1)		3.2%	60.3%	36.5%
hIAPP+CQDs (1:1)		2.9%	61.1%	36%
hIAPP+GQDs(1:1)		3.3%	60.7%	33.3%

Table S1 Secondary structure contents (in %) of hIAPP in PBS buffer estimated by the CDPro software package with the program CONTINLL using SDP42 set.^[1]

[1] B. Cheng, X. Liu, H. Gong, L. Huang, H. Chen, X. Zhang, C. Li, M. Yang, B. Ma, L. Jiao, *J. Agric. Food. Chem.* **2011**, 59, 13147.