Electronic Supplementary Material (ESI) for Nanoscale.

Nontoxic Amphiphilic Carbon Dots as Promising Drug Nanocarriers across the Blood-Brain Barrier and Inhibitors of β-Amyloid

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Fig. S1. Confocal images of Y-CDs aqueous dispersion (0.1 mg/mL) permeated into the blood (a, b) and CNS: spinal cord (c, d) and brain (e, f) of zebrafish. (a, c, e are merged images of bright field and under the excitation of 405 nm; b, d, f are images under the excitation of 405 nm only). The figure is adapted with the permission from the publisher.[1]

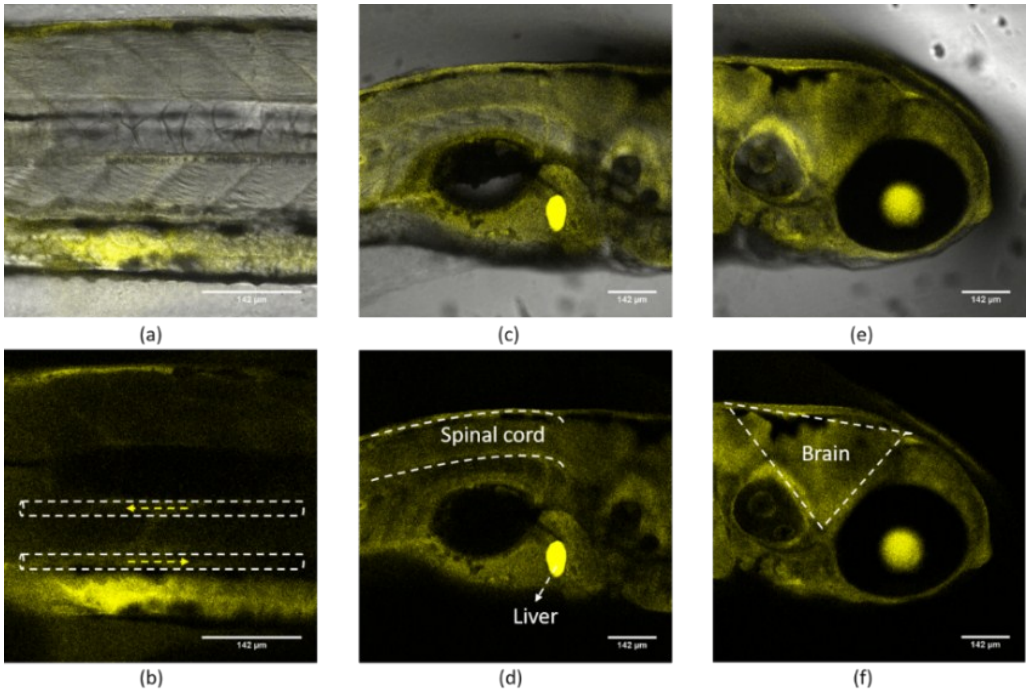
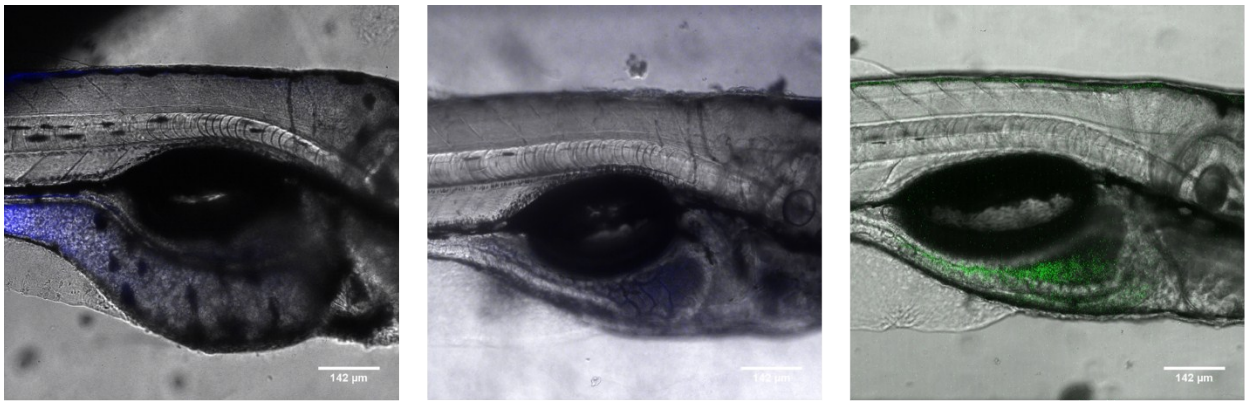
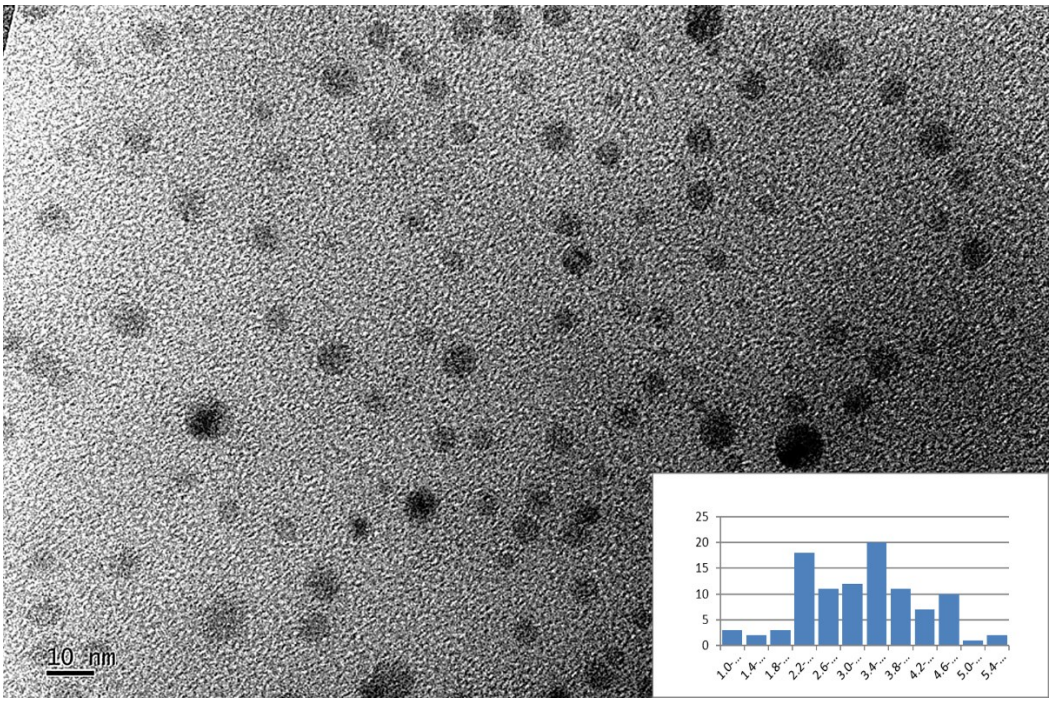


Fig. S2. Confocal images of zebrafish soaked in different carbon dots solutions (0.1 mg/mL). (left-right: control (a), carbon dots from carbon nanopowder (b), and from BSA (c)).

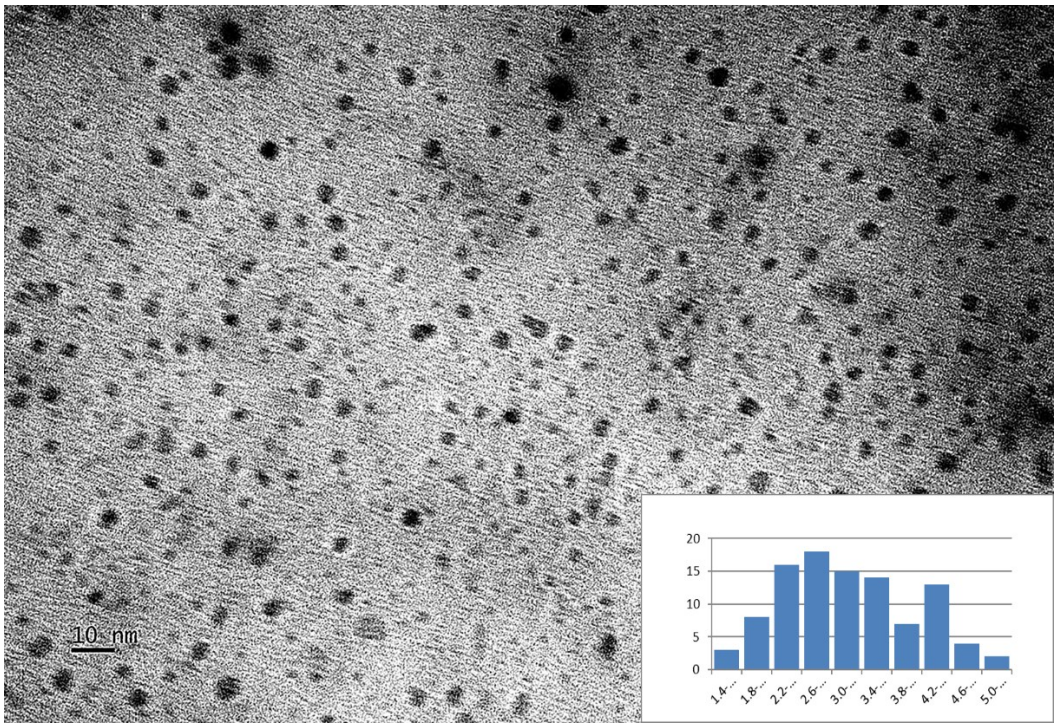


(a) (b) (c)

Fig. S3. TEM images of other two CDs aqueous dispersions (0.1 mg/mL). (a) CDs prepared from carbon nanopowder; (b) CDs prepared from BSA.

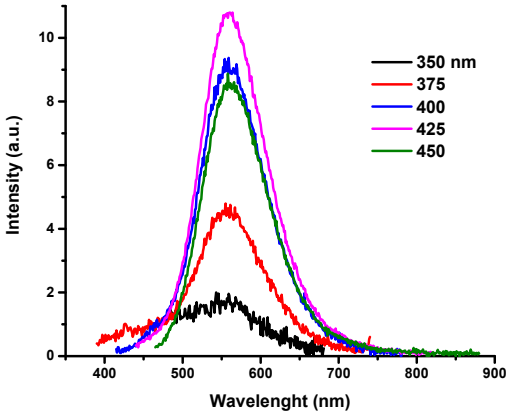


(a)

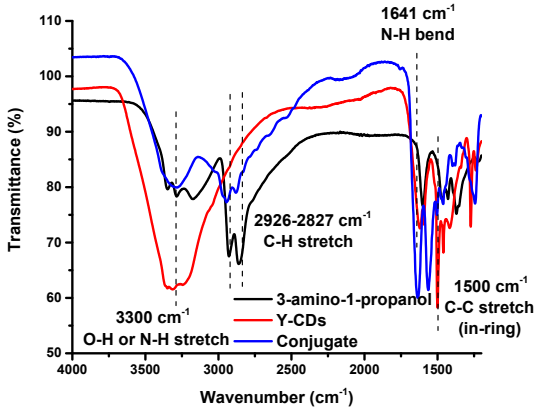


(b)

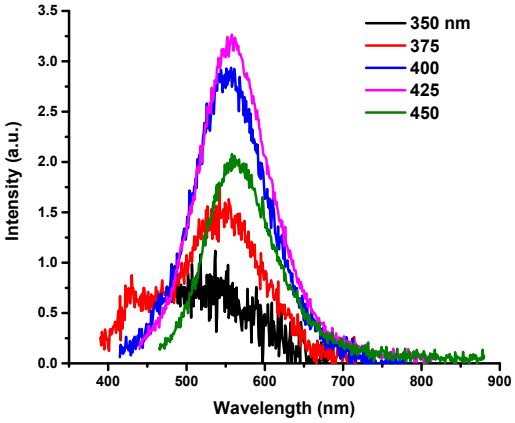
Fig. S4. The fluorescence emission spectra of Y-CDs coated with 3-amino-1-propanol (a) or DEA (c) measured with a 1 cm quartz cuvette; FTIR spectra of Y-CDs coated with 3-amino-1-propanol (b) or DEA (d) with air as the background.



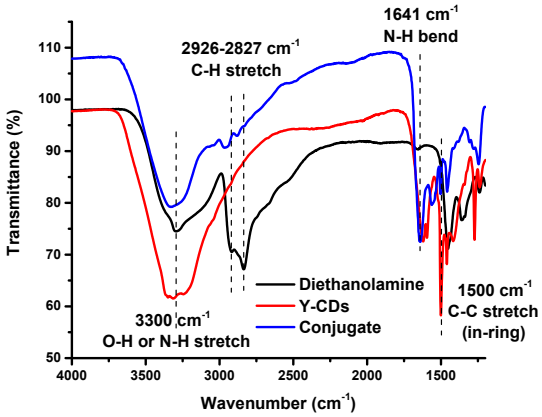
(a)



(b)



(c)



(d)

Table 1. Zeta potential values of all the three CDs aqueous dispersions (0.1 mg/mL).

	Black CDs	**Y-CDs**	**BSA CDs**
Zeta potential (mV)	-13.9	-15.3	-12.7

Table 2. Particle sizes of all the three types of CDs.

	Black CDs	**Y-CDs**	**BSA CDs**
Mean (nm)	3.34	3.416	3.227
STDEV	0.988	0.985	0.937
Minimum (nm)	1.154	1.351	1.538
Maximum (nm)	6.401	5.731	6.866

References

1. Y. Zhou, K. J. Mintz, S. K. Sharma and R. M. Leblanc, *Langmuir*, 2019, **35**, 9115-9132.