One-step synthesis of chiral carbon quantum dots and their enantioselective recognition

**Fig. S1** (a) TEM and (b) AFM images of D-CQDs.

**Fig. S2** Photoluminescence emission spectra of (a) L-CQDs; (b) D-CQDs with excitation wavelength from 390 nm to 490 nm.

**Fig. S3** FT-IR spectrum of D-CQDs.
Fig. S4 EDS spectra of (a) L-CQDs and (b) D-CQDs.

Fig. S5 Full scan XPS survey spectra of (a) L-CQDs and (b) D-CQDs.

Fig. S6 High-resolution XPS spectra of (a) C 1s, (b) N 1s, (c) O 1s and (d) S 2p of D-CQDs.
Fig. S7 (a) UV-vis absorption curves of D-cys and D-CQDs. (b) CD spectra of L-cys and D-cys (black and red lines, respectively). L-cysteine is L-cys and D-cysteine is D-cys.

Fig. S8 EIS spectra of achiral carbon quantum dots (achiral-CQDs) (a) toward L-tart (black line) and D-tart (red line) at a scan rate of 50 mV/s in 0.5 M Na$_2$SO$_4$. LSV curves for oxidation of L-tart and D-tart on achiral-CQDs (b) with a sweep rate of 50 mV/s in 0.5 M Na$_2$SO$_4$. 