Green and facile synthesis of biomass iron-doped carbon dots as dual-signal colorimetric and fluorometric probe for the detection of ascorbic acid

Pengfei Fan[1,2], Can Liu[1,2], Congcong Hu[1,2], Feifei Li[1], Xi Lin[1], Shengyuan Yang [1,2]*, Fubing Xiao[1,2]*

1. College of Public Health, Hengyang Medical School, University of South China, Hengyang, Hunan, 421001, People's Republic of China.

2. Hunan Key Laboratory of Typical Environmental Pollution and Health Hazards, Hengyang, Hunan, 421001, People's Republic of China.

*Corresponding author:

Prof. Shengyuan Yang, E-mail: yangshyhy@126.com

Dr. Fubing Xiao, E-mail: xiaofubing2008@163.com

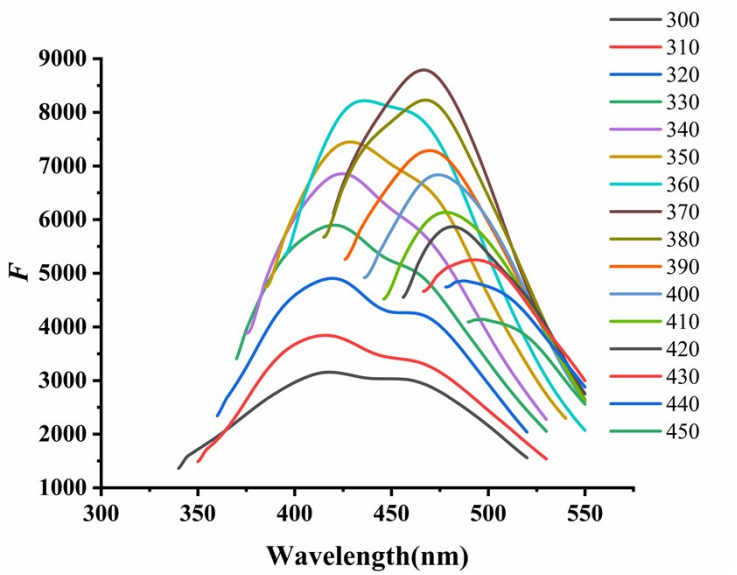

Fig. S1 Fluorescence spectra of Fe-CDs with different excitation wavelength (300-450 nm)

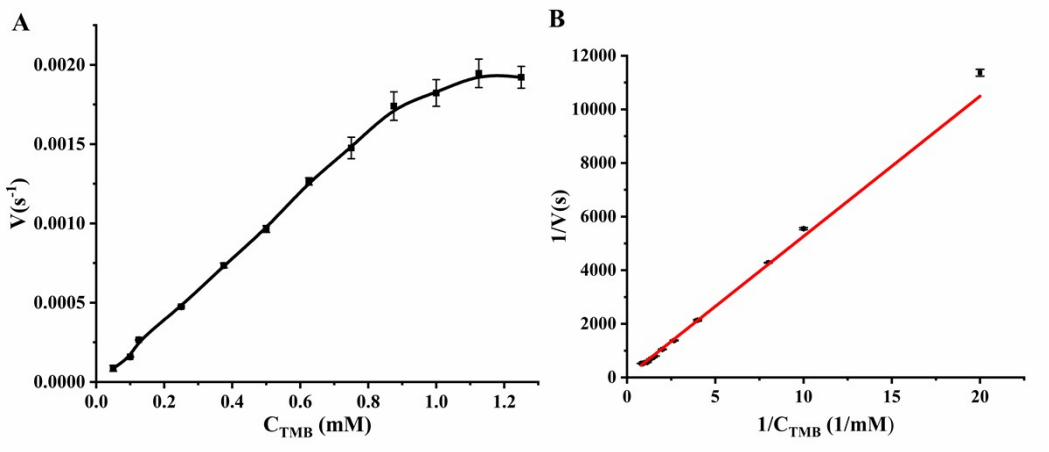

Fig. S2 Kinetic study of the catalytic reaction of Fe-CD: (A) TMB concentration-velocity curve, (B) Lineweaver-Burk Linear

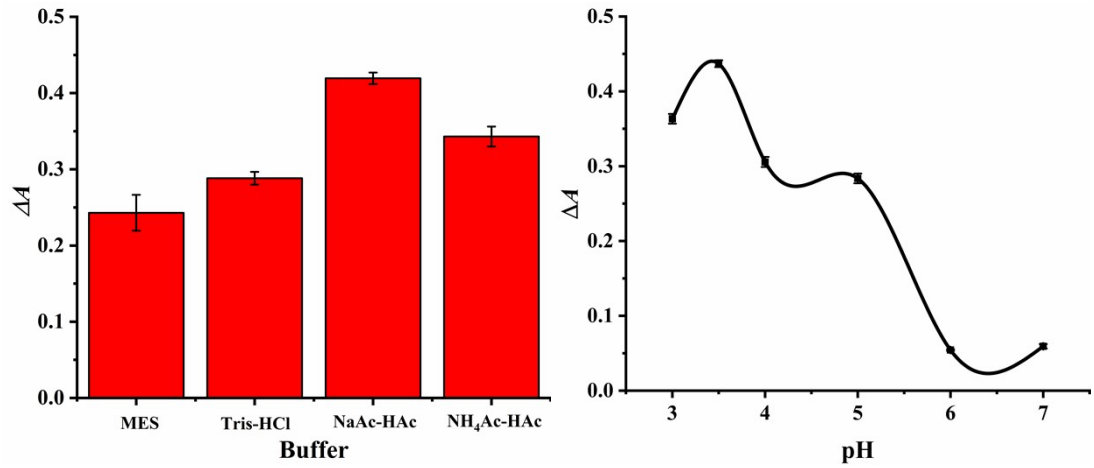

Fig. S3 Effects of buffer types and pH on the system

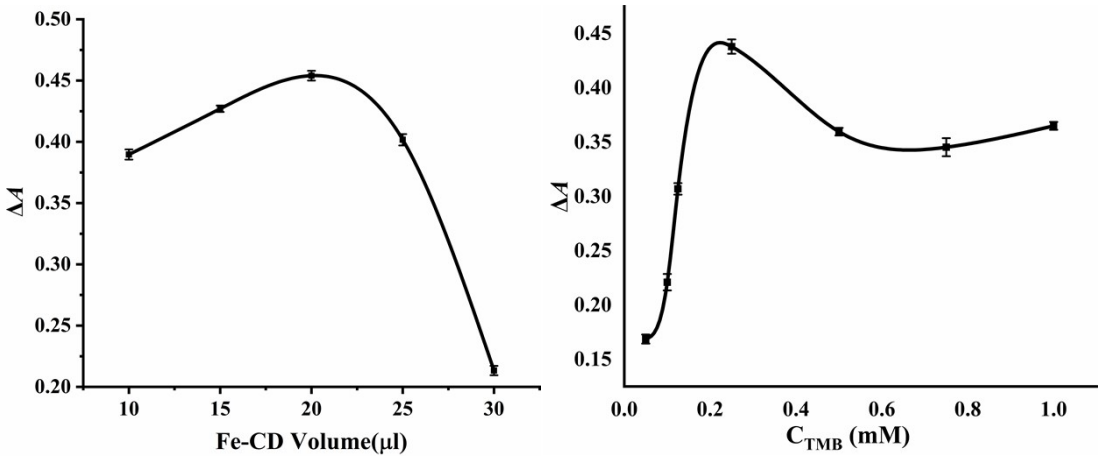

Fig. S4 The effect of the volume of Fe-CDs and TMB on the system

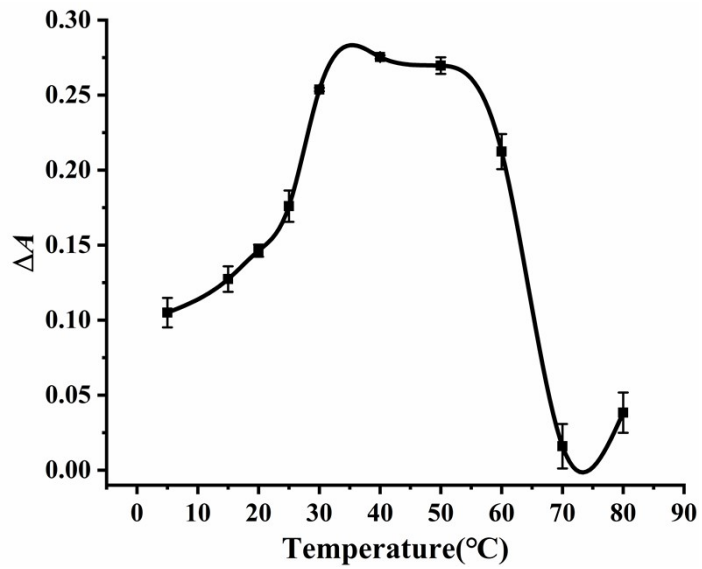

Fig. S5 The effect of the temperature on the system

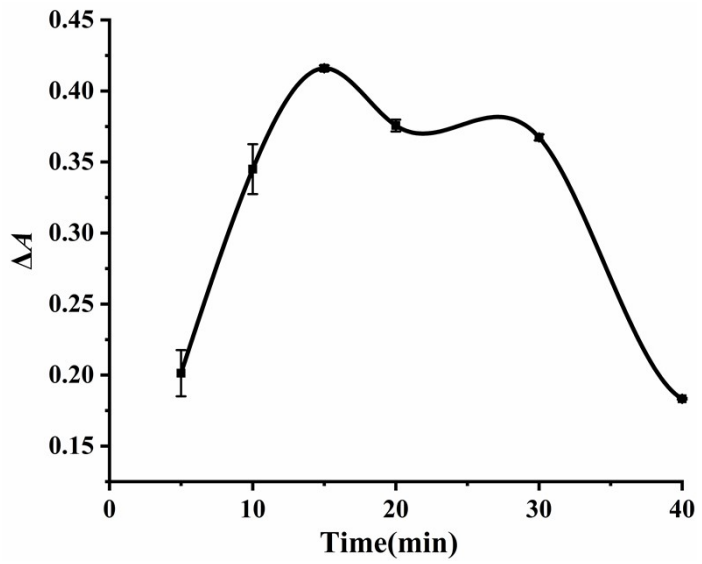

Fig. S6 The effect of the reaction time on detection system

Table S1 Comparison of several previously reported sensors for AA

Materials[a]	Method	Linear range(μM)	LOD(μM)	Reference
Silsesquioxane/histidine composite	Electrochemical	400–4000	299	[1]
HMT-PMBI-coated electrodes	Electrochemical	25-450	41.4	[2]
CDs	Fluorometric	100-2800	60	[3]
LCQDs	Fluorometric	0-350	5.34	[4]
silver nanoparticle	Colorimetric	20-10000	20	[5]

Fe-CDs	Colorimetric/ Fluorometric	20-500	5.13	This work

[a] LCQDs = lignin derived carbon quantum dots

Reference

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