

Supporting Information

The selective detection of galactose based on boronic acid functionalized fluorescent carbon dots

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1. The constitutional formula of monosaccharide

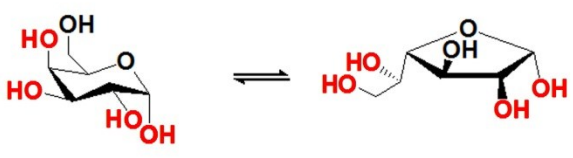
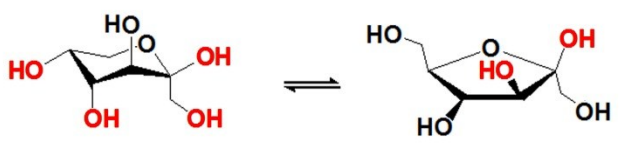
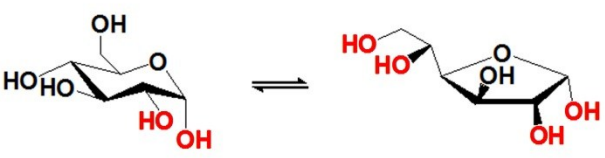
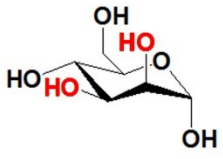
monosaccharide	Constitutional formula
D-galactose	
D-fructose	
D-glucose	
D-mannose	

Fig. S1 The constitutional formula of D-galactose, fructose, glucose and mannose ^[1, 2]. The cis-diol units of monosaccharide were marked with red font.

2. Detection limit of APBA-Cdots for galactose based on extrapolation method

Dividing 0.01263 by 2.03548 to get x-intercept which representative detection limit and the value is 6.2 μM ^[3].

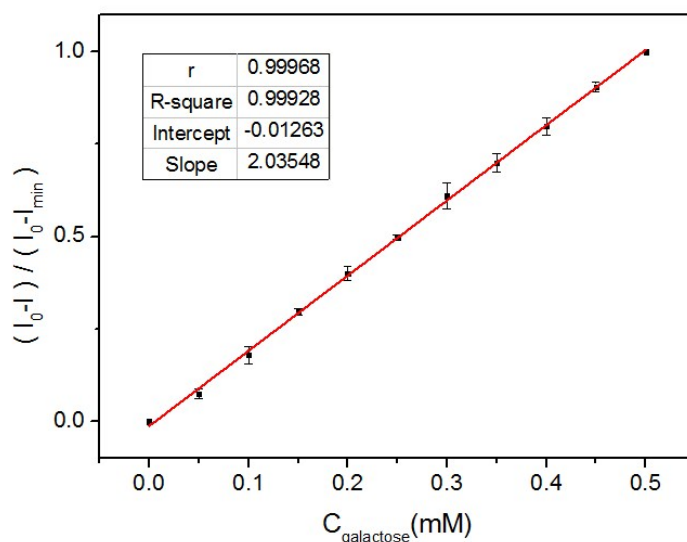


Fig. S2 Detection limit of APBA-Cdots (extrapolation). I_0 and I are fluorescence intensities of the APBA-Cdots in the absence and presence of galactose, respectively. $I_{\min}$ represents the fluorescence intensity with 0.5 mM galactose.

References

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- [2] Y. Liu, C. Deng, L. Tang, A. Qin, R. Hu, J.Z. Sun, B.Z. Tang, Specific detection of D-glucose by a tetraphenylethene-based fluorescent sensor, *J. Am. Chem. Soc.* 133(2011) 660-663.

- [3] M. Shortreed, R. Kopelman, M. Kuhn, B. Hoyland, Fluorescent Fiber-Optic Calcium Sensor for Physiological Measurements, *Anal. Chem.* 68(1996) 1414-1418.