

## Electronic Supplementary Information

### Sensitive and selective detection of L-tryptophan using Mn-ZnS QDs as the ratiometric emission probe

Yanli Wei, <sup>\*a</sup> Hongye Hao, <sup>a</sup> Jiangang Zhang, <sup>a</sup> Xiaoli Hao, <sup>b</sup> Chuan Dong<sup>\*a</sup>

#### Preparation of Mn-Doped SH-β-CD modified ZnS QDs

Briefly, to a three-necked flask, aqueous solutions of ZnSO<sub>4</sub>, Mn(CH<sub>3</sub>COO)<sub>2</sub> and 6-SH-β-CD was added and the final volume of the mixture was 50 mL. Then removed the air with nitrogen bubbling at room temperature, and adjusted the pH value of the solution to 11 with 1.0mol/L NaOH. Afterwards, Na<sub>2</sub>S was quickly injected into the solution. The mixture was stirred for 40 min, and then the solution was aged for 2 h to form mono-6-SH-β-CD capped Mn doped ZnS QDs. Finally, the resultant mono-6-SH-β-CD modified ZnS QDs (β-CD-Mn-ZnS QDs) was centrifuged and washed with ultrapure water and anhydrous ethanol for three times, and dried in vacuum. The as-prepared QDs powder is highly soluble in water.

<sup>a</sup> Institute of Environmental Science, and School of Chemistry and Chemical Engineering, Shanxi University, Taiyuan 030006, P. R. China. Fax: +86 3517011011; Tel: +86 3517011322; E-mail: weiyanni@sxu.edu.cn;

<sup>b</sup> School of Foreign Languages, Shanxi University, Taiyuan 030006, P. R. China.