Electronic Supplementary Information

For

Glutenin-directed gold nanoclusters employed for assaying

vitamin B1†

Jie Liu, Lanlan Gan and Xiaoming Yang*

College of Pharmaceutical Sciences, Key Laboratory of Luminescent and Real-Time Analytical Chemistry (Ministry of Education), Southwest University, Chongqing 400715, China

Figures

Figure S1 Structure of VB$_1$

* To whom correspondence should be addressed. Tel: 86-23-68251225; Fax: 86-23-68251225
E-mail: ming4444@swu.edu.cn
Figure S2 UV-vis absorption spectra of glutenin and AuNCs@Glu

Figure S3 Optimizing the synthesizing conditions of AuNCs@Glu with different temperature (A), time (B), amounts of HAuCl₄ (C) and NaOH (D)
Figure S4 Fluorescence stability of AuNCs@Glu with different temperature (A), organic solvents (B), time (C), pH (D), ions (E) and concentrations of NaCl (F).

Figure S5 Fluorescence decrease ($F/F_0$) of AuNCs@Glu with VB$_1$ in presence of ions or compounds (A); Fluorescence decrease ($F/F_0$) of AuNCs@Glu in presence of VB$_1$ or other compounds (B).
**Figure S6** UV-vis absorption spectra of $\text{VB}_1$, AuNCs@Glu without or with $\text{VB}_1$

![UV-vis absorption spectra](image)

**Figure S7** Stability of AuNCs@Glu with or without $\text{VB}_1$ in blood serum and blood plasma

![Stability spectra](image)

**Table S1**

High performance liquid chromatography for detecting VB1 or its derivatives

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Sample</th>
<th>Detection</th>
<th>Year</th>
<th>Ref</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{Th, ThMP, ThDP}$</td>
<td>Brain tissue homogenate, whole blood</td>
<td>FLD</td>
<td>2016</td>
<td>1</td>
</tr>
<tr>
<td>$\text{Th, B}<em>2, B_3, B_5, B_6, B_9, B</em>{12}$, biotin</td>
<td>Plasma</td>
<td>UV-VIS</td>
<td>2015</td>
<td>2</td>
</tr>
<tr>
<td>$\text{Th, ThMP, ThDP}$</td>
<td>Cell culture</td>
<td>FLD</td>
<td>2016</td>
<td>3</td>
</tr>
<tr>
<td>$\text{Th, B}<em>6, B</em>{12}$, sulbuthiamine,</td>
<td>Plasma</td>
<td>HPLC-MS</td>
<td>2015</td>
<td>4</td>
</tr>
<tr>
<td>$\text{Th, B}<em>2, B_3, B_5, B_6, B_7, B_9, B</em>{12}$</td>
<td>Blood serum, human tears</td>
<td>HPLC-MS</td>
<td>2015</td>
<td>5</td>
</tr>
</tbody>
</table>

**Reference:**


