Supplementary information

A novel glutathione-stabilized silver-gold nano-alloy/Cu\(^{2+}\) combination as a fluorescent switch probe for L-histidine

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**Fig. S1** Fluorescence response of GSH-AgAuNAs with different amount of HAuCl₄, showing the optimized addition amount (1.2 mL) of HAuCl₄.
**Fig. S2** XRD pattern and SEM image of AgCl.
Fig. S3 Fluorescence response of different interaction time. The concentration of L-histidine and Cu$^{2+}$ was 15 μM and 10μM respectively. All experiments were carried out under pH7.40 with PBS buffer (10 mM).
**Table S1** Comparison of our proposed fluorescence probe with other assays for determination of L-histidine.

<table>
<thead>
<tr>
<th>Method</th>
<th>Linear range (μM)</th>
<th>Detection limit (μM)</th>
<th>Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator-displacement assay</td>
<td>2-30</td>
<td>0.4</td>
<td>1</td>
</tr>
<tr>
<td>DNA/ligand/ion-based ensemble</td>
<td>0-4.4</td>
<td>0.01</td>
<td>2</td>
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<tr>
<td>Spectrophotometry</td>
<td>5-30</td>
<td>5.0</td>
<td>3</td>
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<tr>
<td>Fluorescence</td>
<td>5-30</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td><strong>GSH-AgAuNAS/Cu²⁺</strong></td>
<td><strong>2-40</strong></td>
<td><strong>1.19</strong></td>
<td><strong>This work</strong></td>
</tr>
</tbody>
</table>

**References**

1 S. K. Sun, K. X. Tu and X. P. Yan, Analyst, 2012, 137, 2124-2128.

