Supporting information

Novel fluorescent chemosensing of CN⁻ anion with nanomolar detection using Zn²⁺-isonicotinohydrazide metal complex

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Figure S1. A Benesi-Hildebrand methodology for receptor ZnL, $K_a = 3.33 \times 10^5 \text{M}^{-1}$. 
**Figure S2.** A Scatchard methodology for receptor \( \text{ZnL} \), \( K_a = 7.73 \times 10^4 \text{M}^{-1} \).

**Figure S3.** Connor’s fitting method for receptor \( \text{ZnL} \), \( K_a = 8.62 \times 10^4 \text{M}^{-1} \).
Figure S4. Plot of the emission intensity as a function of the concentrations of CN⁻.

Figure S5. Plot of pH titration of ZnL-CN⁻ complex.
### Table S1. Comparison of reported detection limit with present work

<table>
<thead>
<tr>
<th>Solvent System</th>
<th>Detection Limit</th>
<th>Response</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>water</td>
<td>&gt;20 µM</td>
<td>quenching</td>
<td>1</td>
</tr>
<tr>
<td>water</td>
<td>0.13 ppm</td>
<td>Blue shifting</td>
<td>2</td>
</tr>
<tr>
<td>DMF/H₂O</td>
<td>1.0 µM</td>
<td>Enhancement</td>
<td>3</td>
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<tr>
<td>CH₃CN:H₂O</td>
<td>0.037 µM</td>
<td>Blue shifting</td>
<td>4</td>
</tr>
<tr>
<td>DMSO/H₂O (1:1, v/v)</td>
<td>5.49 nM</td>
<td>Enhancement</td>
<td><strong>Present Work</strong></td>
</tr>
</tbody>
</table>

**References**