



### 材料合成及性能

#### 新型4-氨基安替比林席夫碱的合成及对Cu<sup>2+</sup>的选择性识别

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摘要：设计合成了一种新型安替比林-席夫碱衍生物M(4-氨基安替比林缩5-硝基水杨醛席夫碱),用IR、<sup>1</sup>H NMR及元素分析对其结构进行了表征。通过紫外光谱和荧光光谱研究了M对Cu<sup>2+</sup>的选择性识别作用。结果表明:M与Cu<sup>2+</sup>能够以1:1的化学计量比形成配合物,结合常数为6.5×10<sup>4</sup> L·mol<sup>-1</sup>;M和Cu<sup>2+</sup>的结合导致M在496 nm处的荧光猝灭,紫外可见吸收光谱红移,且M对Cu<sup>2+</sup>有较高的选择性,受常见离子的干扰较小。

关键词：席夫碱 安替比林衍生物 铜离子 荧光探针

#### Synthesis and Properties of A New 4-Aminoantipyridine Schiff-base for Selective Recognition of Cu<sup>2+</sup>

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Abstract: A new 4-aminoantipyridine-based Schiff-base (M) was synthesized. Its structure was characterized by using IR, <sup>1</sup>H NMR and elemental analysis. The influences of a number of different metal ions on its UV-Vis absorption and fluorescence spectral were studied in acetonitrile. Spectroscopic studies revealed that compound M could detect Cu<sup>2+</sup> by UV-Vis absorption and fluorescence spectrophotometry. The stoichiometry ratio of M-Cu<sup>2+</sup> was 1:1, respectively. Moreover, the detection limit was calculated to be 1.41 μmol/L for Cu<sup>2+</sup> ion. The analysis suggested that M could behave as a fluorescent sensor for the selective detection of Cu<sup>2+</sup> and the binding constant was 6.5×10<sup>4</sup> L/mol. Thus a new kind of chemosensor for Cu<sup>2+</sup> with high sensitivity and selectivity was introduced.

Keywords: Schiff-base aminoantipyridine derivatives Cu<sup>2+</sup> fluorescent probe

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