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Fluorenone based fluorescent probe for selective "*turn-on*" detection of Pyrophosphate and Alanine

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Abstract

To sense biologically important entities with different size and dimensions, a fluorenone based fluorescent receptor was designed and synthesized. Probe **1** displayed a distinct fluorescence enhancement emission at 565 nm for pyrophosphate and 530 nm for alanine in polar solvent. The fluorescence titration experiments confirm 1:1 stoichiometric ratio with high-binding constant and very low limit of detection (LoD) values. Receptor **1** showed a highly selective and sensitive recognition to $HP_2O_7^{3-}$ and to alanine over other competitive anions and amino acids. In addition, the fluorescence lifetime measurement and reversible binding study results support the practical importance of **1**.

Keywords: Fluorenone; Biological entities; H-bonds; Stoichiometry; Zwitterionic form

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