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A novel fluorescein-based "turn-on" probe for the detection of hydrazine and its application in living cells

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Abstract: We constructed a novel probe for hydrazine detection based on ICT and PET mechanism. Phthalimide and acetyl ester groups were used as the recognition units. Addition of hydrazine produced a turn-on fluorescence at 525 nm along with the fluorescent color change from dark to yellow. The probe could selectively detect hydrazine over other related interfering species. The detection limit of the probe for hydrazine was calculated to be 0.057 μM which was lower than the EPA standard (0.320 μM). Furthermore, the probe could also be applied for the imaging of hydrazine in living cells.

Keywords: Fluorescent probe; Hydrazine; Living cells; Fluorescein; Turn-on