

## Accepted Manuscript

Title: A novel “off-on” type fluorescent chemosensor for detection of  $Zn^{2+}$  and its zinc complex for “on-off” fluorescent sensing of sulfide in aqueous solution, in vitro and in vivo

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**A novel “off-on” type fluorescent chemosensor for detection of Zn<sup>2+</sup> and its zinc complex for “on-off” fluorescent sensing of sulfide in aqueous solution, in vitro and in vivo**

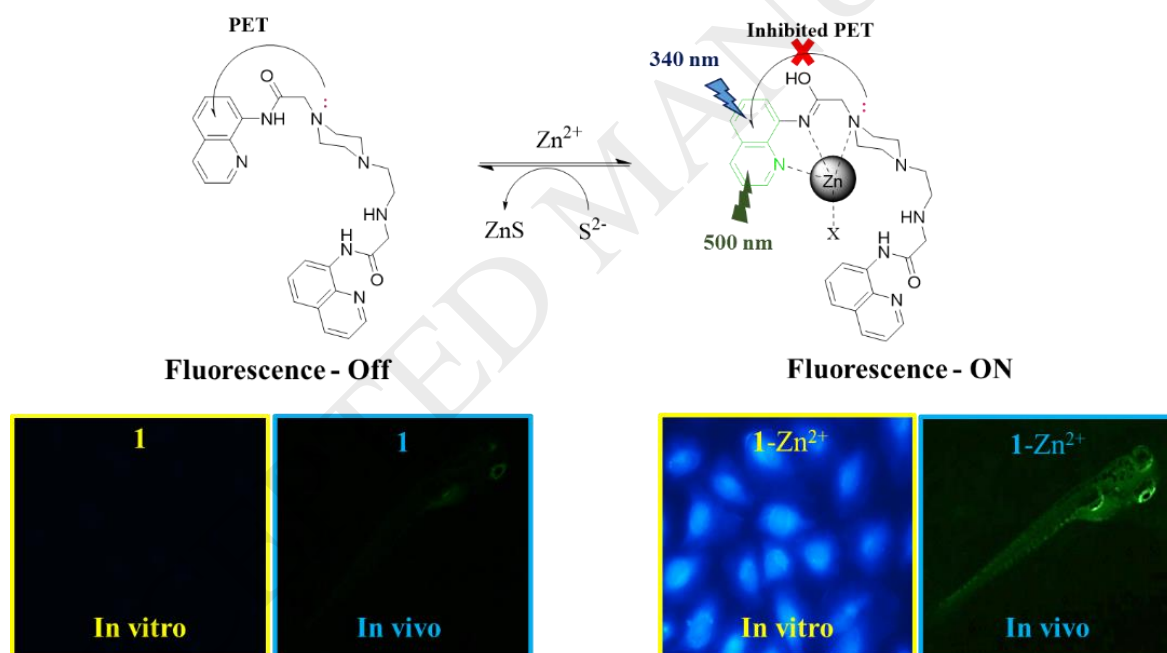
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**Graphical Abstract**



**Highlights**

- A highly selective fluorescent chemosensor **1** for Zn<sup>2+</sup> and S<sup>2-</sup> was synthesized.
- Sensor **1** could detect Zn<sup>2+</sup> and S<sup>2-</sup> ions at much lower concentration than WHO guidelines.
- Sensor **1** could sequentially detect Zn<sup>2+</sup> and S<sup>2-</sup> in vivo and in vitro.
- Sensing mechanism for Zn<sup>2+</sup> was supported by theoretical calculations.

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