

Poster Presentation
Inter-Disciplinary Explorations in Chemistry (I-DEC 2018)

**Fluorescent Organic Probe Selective to the Endoplasmic Reticulum and
Monitor ER Stress Condition**

Pratibha Kumari,[†] Sanjay K. Verma[‡] and Shaikh M. Mobin,^{*†‡§}

Discipline of Biosciences and Bio-Medical Engineering[†], Discipline of Chemistry[‡], Discipline of Metallurgical Engineering and Materials Science[§], Indian Institute of Technology Indore, Simrol, Indore 453552, India.

Email: phd1401271003@iiti.ac.in

Endoplasmic reticulum (ER) plays important roles in various biological processes such as synthesis, proper folding, modification of protein and its trafficking to other organelles. It also regulates intracellular calcium ions and lipid metabolisms.¹ The morphological divergence of the endoplasmic reticulum (ER) during stress is a powerful indicator of several diseases.² A new two-photon, non-cytotoxic, fluorescent probe ERLp was designed and synthesized for selective tracking of Endoplasmic reticulum (ER) with high Pearson's colocalization coefficient 0.91, in live cells and tumor spheroids. ERLp monitored ER stress during cells apoptosis and vesicular transport from the ER to the lysosomal compartment. Furthermore, it can be used as a potent tool for examining vesicle transport or ER stress associated diseases in real time.

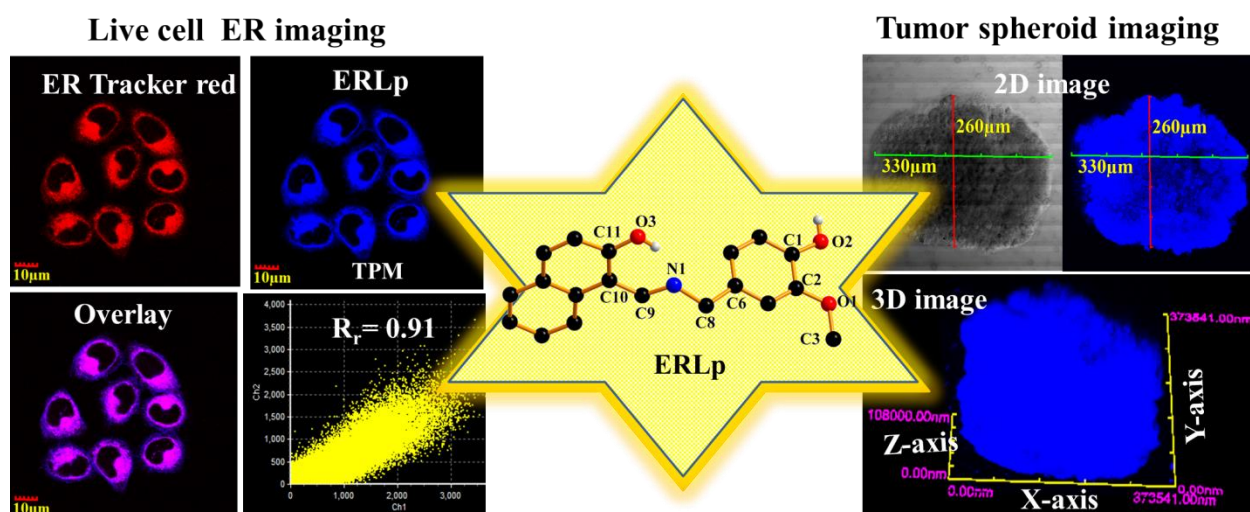


Fig. ERLp label endoplasmic reticulum in live cells and tumor spheroids.

References

- (1) Meldolesi, J.; Pozzan, T., *Trends Biochem. Sci.* **1998**, 23, 10-14.
- (2) Meinig, J. M.; Fu, L.; Peterson, B. R., *Angew. Chem. Int. Ed.* **2015**, 54, 9696-9699.