

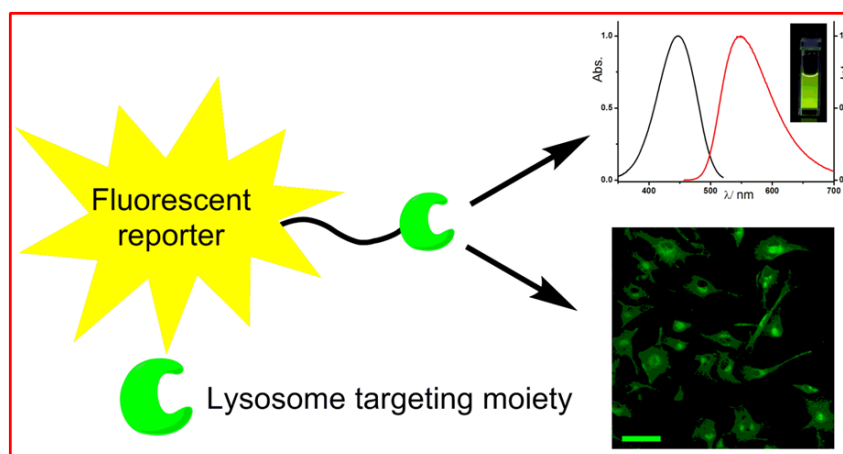
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Rationally Designed Solvatochromic Two-component Naphthalimide Derivatives for Lysosomal Imaging

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Abstract:

Lysosome is the garbage disposal cellular-organelle for nearly all eukaryotic cells, plays one of the most important role in cellular health, and intracellular digestion.¹ It is well established that lysosome is significantly involved in cell metabolism so, modern scientific techniques are required for better and accurate understanding of the metabolic mechanism. Fluorescence microscopy by using an extremely specific fluorescent probe is a potential tool for specific imaging of lysosome and exploring their local micro-environmental properties. By now, many lysosome specific fluorescent molecules are reported in the literature but most of them suffer from low water-solubility, high energy excitation, and low photostability.



Herein, we have developed a series of two-component fluorescent probes, consisting of one naphthalimide derivative as fluorescent reporter and morpholine as a lysosome targeting moiety^{2,3} connected *via*, a flexible aliphatic linker (as shown above). The series of fluorescent probes were synthesized by varying the aliphatic carbon chain length and after spectroscopic characterization the same were employed for live cell-imaging to investigate the effect of chain length on the cell-permeability.

References:

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3. S. Biswas *et al.*, *Sens. Actuator B-Chem.*, **2018**, *260*, 460-464