NEW MOLECULES BASED ON INDOLIUM FOR TWO-PHOTON ABSORPTION BIOIMAGING APPLICATIONS

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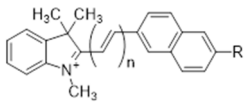
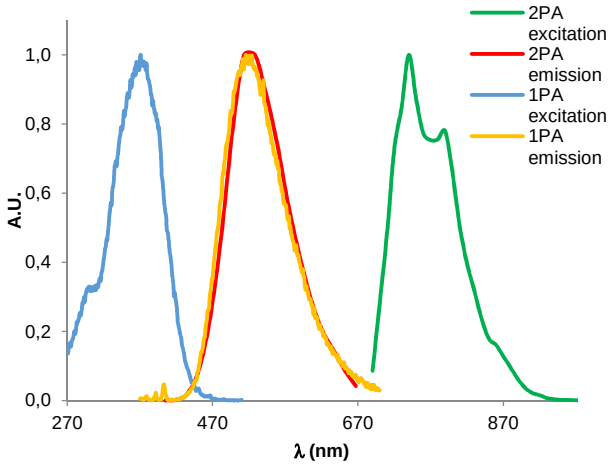
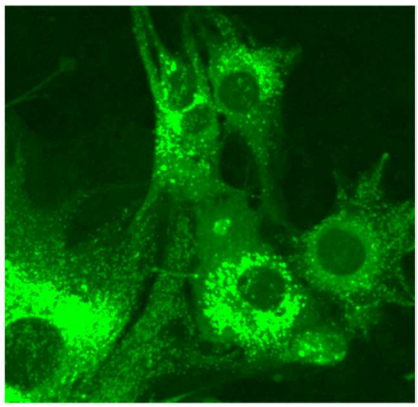
The development of organic materials with 2PA has attracted intensive attention in the past two decades.[1] In two-photon bio-imaging applications the design of the chromophore requires to have a good cross-section (σ_{2PA}) and good biological compatibility which depends on the molecular volume and polarity.[2]

Fluorophores based on indolenines are one of these organic materials. These compounds and related are used in fluorescence microscopy as in super-resolution.[3] The non-invasive nature of light allows imaging of biological specimens with minimal disruption, so you can see the dynamic processes that occur in living cells and tissues.

In this work, we present the design, synthesis and characterization of new indolium derivatives. These compounds are easy to achieve with good yields and good photophysical properties. In addition, time-dependent density functional theory (TDDFT) has been carried out to investigate the energy level of the ground and excited state. Also, these molecules have been proved on cells.







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References

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