

## A NOVEL FLUORESCENT AMINE REACTIVE COUMARIN SUITABLE FOR LABELING BIOMOLECULES: SPECTRAL CHARACTERISTICS AND SOLVENT EFFECTS

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Labeling of proteins, DNA and other biomolecules with fluorescent dyes has become a very powerful research tool in immunology, histochemistry, cell biology and microbiology. New reactive dyes are continuously being developed looking for high sensitivities, efficiencies and/or large Stokes shifts. Thus, investigation of the spectral characteristics of the new dyes and of the solvent effects on them is of utmost importance. In this work the spectral properties of a novel coumarin tetra-fluorophenyl ester, suitable for labeling biomolecules containing amine groups by formation of an amide bond, were investigated in different solvents. The absorption (around 390 nm) and emission maxima (400- 550 nm) were determined. Among other solvent effects a bathochromic shift of emission maxima was observed. The molar absorption coefficients (between 10000 and 20000 M<sup>-1</sup>cm<sup>-1</sup> at 372 or 392 nm in most solvents) and the quantum yields of the coumarin ester fluorescence (0.11 in PBS 22mM) were found to be moderate. The new dye exhibited large Stokes shifts in several of the solvents used (80-130 nm in water, ethanol and acetone *inter alia*) reducing or eliminating absorption/emission spectral overlap and allowing detection of fluorescence without or with low interference. The spectral characteristics of the novel coumarin point out to the possibility of using it as a reactive dye for labeling biomolecules.

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