

RED-EMITTING PYRROLYL BODIPY AS FLUORESCENT DYES FOR LIVING CELL IMAGING

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BODIPY fluorescent compounds has become popular fluorophores due to their abundant physical, chemical and optic properties. High molar extinction coefficients and fluorescence quantum yields makes them appropriate dyes for fluorescent analysis methods [1]. Novel fluorescent microscopy tend usage of near-red and red emitting fluorophores such as modified rhodamines, cyanines, Nile red and etc. [2, 3]. At the same time, it is lack of data about usage of already known 3-pyrrolylBODIPY family for cytological and microbiological research. Available publications describe application of modified 3-pyrrolylBODIPY with phosphonium cation moiety and none of them mention parent 3-pyrrolylBODIPY dye [4].

8-methyl-3-pyrrolylBODIPY and 8-phenyl-3-pyrrolylBODIPY (λ emission 596 and 609 nm in dichloromethane respectively) dyes were synthesized by treatment of acyl chloride and benzoyl chloride with excess of pyrrole without inert atmosphere followed by triethylamine and boron trifluoride adding in dichloromethane. Silica column chromatography and HPLC purification. *S. cerevisiae* yeasts were incubated with 0.5 mM ethanol solution of corresponding 3-pyrrolylBODIPY derivative for 1 hour, fixed by 4% formaldehyde solution, washed by phosphate buffer and processed for fluorescent microscopy analysis. Strong dyeing of both cell membrane and some internal aggregates (presumably lipid drops) was observed. Therefore, because of facile synthesis, red emitting spectra, clear and strong cell dyeing 3-pyrrolylBODIPY's could be applied as fluorescent dyes for living cell imaging.

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Библиографические ссылки

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