FLUORESCENCE DYNAMICS OF C153 WITH -CYCLODEXTRIN AND THIOL--CYCLODEXTRIN IN WATER SOLUTION

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Abstract

The aim of the work described fluorescence dynamics of supramolecular complexes based on coumarine C153 with -cyclodextrin and with -cyclodextrin derivate 6-deoxy-6-thio--cyklodextrin (-CD-SH) in a water solution. Steady state and time resolved spectroscopy was used. Differences in solvatation conditions and different rates of supramolecular complexes were found as according to their modification of cyclodextrin. Thiol group play a main role. The less polarity of Thiol group indicates different complex formation between C153 and -CD-SH. The blue shift in emission wavelength, increase fluorescence intensity, decrease Stokes shift and association constant 4500 M-1 for 1:1 and 37x105 M-1 for 1:2 (C153:CD) complex could be interpreted as changing of cavity: polarity and geometry. Complex formation of C153 with -CD-SH 1:2 was observed but also another type of confinement of C153 could occur.

Keywords: Fluorescence, cyclodextrin, coumarine, water

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