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NEW BICHROMOPHORE CARBOCYANINE DYES FOR FLUORESCENT VISUALISATION

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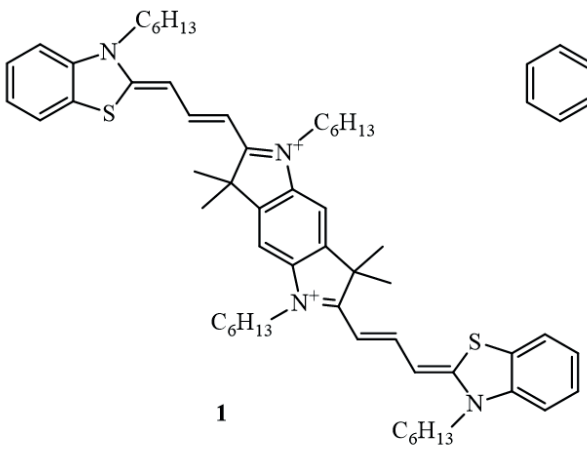
Cyanine dyes are widely used in medicine for the diagnostic and therapeutic purposes1 due to their high molar absorption and good fluorescence. The key factor for their angiography application is the ability to form complexes with blood transport proteins, with human serum albumin (HSA) playing the most essential role in dye transport.

In this study the novel biscarbocyanine dyes **(1, 2)** containing various substituents at the benzothiazole nitrogen atoms were synthesized, and the spectrokinetic properties of dye-albumin complexes were studied using the spectrofluorometric and TCSPC (time-correlated single photon counting) techniques. Dye-albumin binding constants were measured, the stoichiometric composition of the complexes was determined and the existence of several types of complexes was shown. The possible interactions between the dye molecule and HSA were analyzed by molecular docking.



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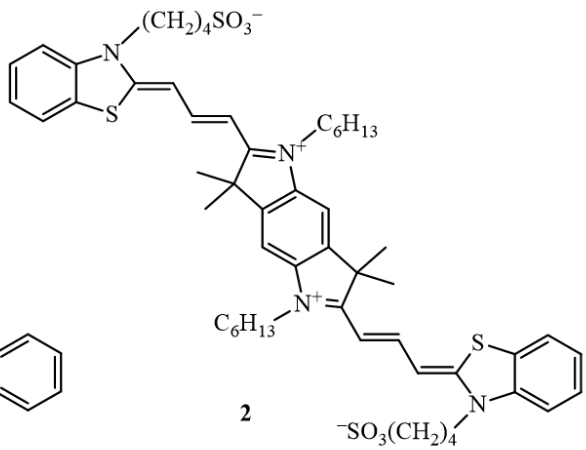

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Reference
1. Proskurnina M.V., Podrugina T.A., Kuzmin V.A., Nekipelova T.D., Zefirov N.S. Fluorophores with an indolenin scaffold and their use for biomedical purposes. Ufa: Gilem, Bash. Encycl., 2016.

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