Sensitizers, Acceptors and Secondary Sources of Singlet Oxygen and Their Supramolecular Complexes with Cyclodextrins

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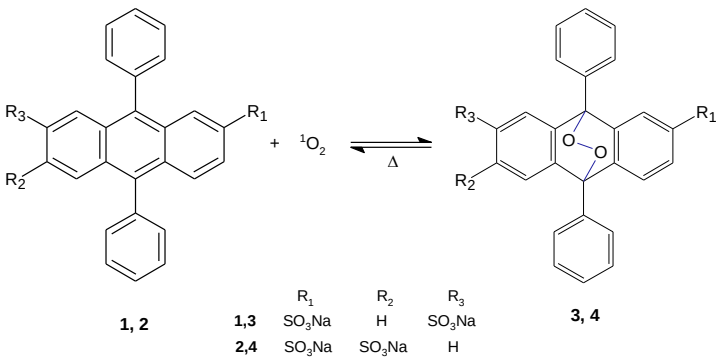
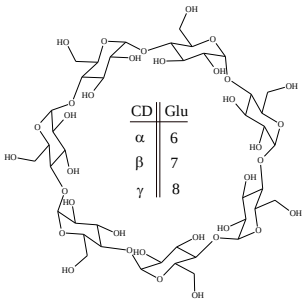
Disulfonated derivatives of 9,10-diphenylanthracene are known carriers of singlet oxygen. Compounds **1**, **2** and corresponding endoperoxides **3**, **4** form supramolecular complexes with cyclodextrins (CDs). Binding interactions were proved by UV-Vis, fluorescence and NMR spectroscopy.





Stoichiometry and binding constant K_b of complexes of **1** and **2** with CDs were determined by Job´s method of continuous variations and binding isotherm analysis respectively. The modes of host-quest interaction of **1-4** with native β-CD and γ-CD were studied by ^{1}H NMR and 2D NMR (ROESY). Inclusions of phenyl groups of **1-4** into the cyclodextrin cavities were found for both β-CD and γ-CD. The mode of interaction depends on the size of the CD cavity and position of sulfo group.