



Rhodamine 101 as a fluorescent probe for sensing haemoglobin conformational changes at the lipid-water interface

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The spectral behaviour of the xanthene dye rhodamine 101 (R101) in model systems containing haemoglobin (Hb) and liposomes from phosphatidylcholine (PC) and cardiolipin (CL) was examined. Fluorescence parameters of R101 remained virtually unchanged in the presence of liposomes, while in Hb–lipid systems the emission maximum of R101 exhibited a hypsochromic shift coupled with fluorescence intensity changes. These effects were interpreted in terms of R101's ability to form complexes with free and lipid-bound Hb, differing in their spectral characteristics. It is proposed that R101 senses lipid-induced destabilization of Hb structure, implicating protein unfolding and splitting of haem-globin bonds.

Keywords: haemoglobin, liposomes, protein conformational changes, rhodamine 101