Electronic Supplementary Data

Investigation on bindings of a binaphthoquinone derivative with serum albumin proteins by fluorescence spectroscopy

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1: Binding constant calculation equation:

Binding constants of BSA and HSA with substrates were determined using the Benesi-Hildebrand equation by the fluorescence method in Eq. 1.

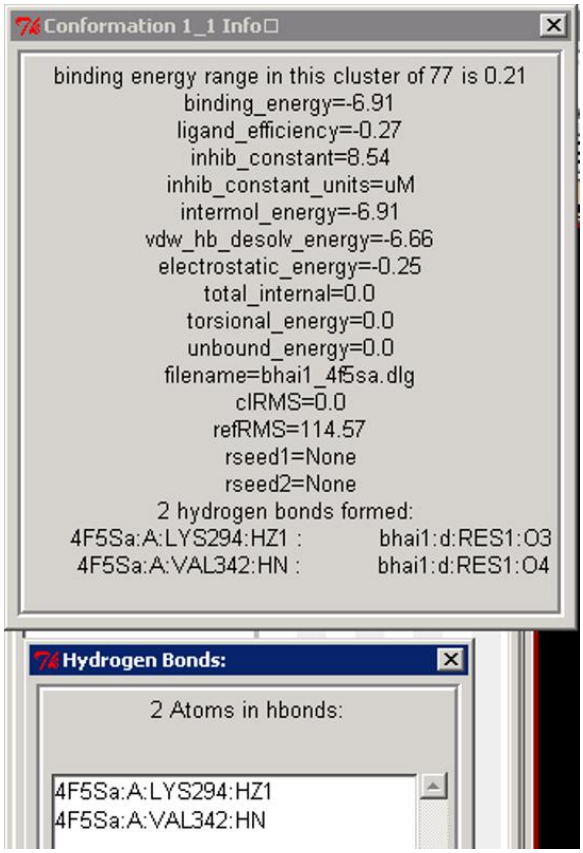
$$1/\Delta F = 1/\Delta Fmax + (1/Ka[C]n) \times (1/\Delta Fmax) \qquad (1)$$

Here $\Delta F = (Fx - F0)$ and $\Delta Fmax = F\infty - F0$, where F0, Fx, and F∞ are the emission intensities of BSA in the absence of substrate, at an intermediate substrate concentration, and at a concentration of the complete interaction, respectively. Ka is the binding constant, C is the concentration of the substrate and n is the number of substrate bound each to BSA (here n = 1).

Reference:

[1] Benesi, H. A., Hildebrand, J. H. A spectrophotometric investigation of the interaction of iodine with aromatic hydrocarbons, J. Am. Chem. Soc., 1949, 71 2703-2707. DOI:org/10.1021/ja01176a030.

2: Free energy of binding (docking analysis):



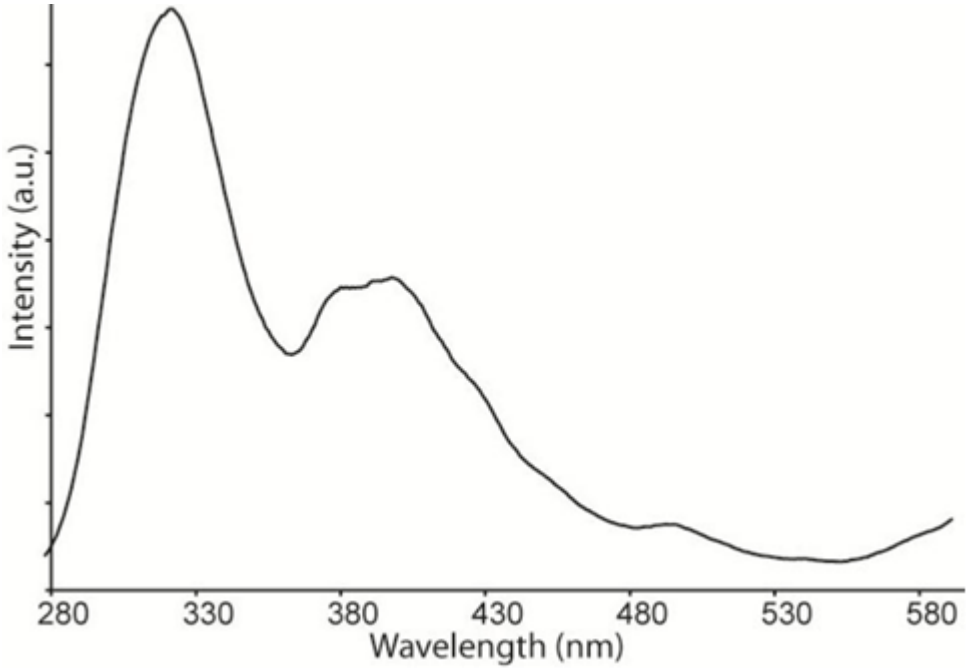


Fig. S1 — Fluorescence spectrum of L (in DMSO), emission at λ 323 nm and 390 nm upon irradiation at λ 230 nm