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Binding of Perylene derivatives to Human Serum Albumin[1]
MOHAMMED FAROOQI, MATHEW MAHINDARATNE, MARK PENICK, GEORGE NEGRETE, LORENZO BRANCALEON, University of Texas San Antonio — The binding and effects of polyaromatic hydrocarbons (PAH) on proteins remains a very important aspect in the study of the function of many proteins. We employ asymmetric perylene derivatives designed to optimize electron donating/accepting properties. Unlike the widely used perylene diimides, these novel perylenes are synthesized with an array of possible electron donating and accepting group that would optimize photoinduced electron transfer (PET). Our study focuses on the interaction of four 3,9-substituted perylenes with Human Serum Albumin(HSA) which is the prime protein model for the binding of PAH. We present absorption and fluorescence spectroscopy results that help elucidate the binding of these perylenes to HSA. We determined that not all perylene derivative bind the protein and that their location is likely different.

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