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One- and Two-Photon Induced Fluorescence of Pacific Blue-Labeled Human Serum Albumin Deposited on Different Core Size Silver Colloids

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Abstract: *We studied one- and two-photon induced fluorescence of Pacific Blue (PB)-labeled human serum albumin (HSA) in the presence of different size silver colloids. The PB fluorescence emission intensity was observed with small (30–40 nm) and large (about 120 nm) colloids and compared with PB emission in absence of colloids. For the system with a small core size colloids we did not detect any fluorescence enhancement with one-photon excitation and the enhancement observed with two-photon excitation was about 2.5-fold. In contrast, for large silver colloids we observed about a 2-fold increase in PB fluorescence brightness for one-photon excitation, and the enhancement with two-photon excitation excided 13-folds. Much stronger increases in brightness observed with two-photon excitation, compared to one-photon excitation, indicate a dominant role of enhanced local field in fluorescence enhancement on silver colloids in solutions.* © 2005 Wiley Periodicals, Inc. Biopolymers 81: 249–255, 2006

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