

Abstract Submitted
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Fluorescence Correlation Spectroscopy of Tryptophan-containing Proteins in Sugar Solutions using Two Photon Excitation¹ YULI WANG, NATHAN HOLMAN, DAVID SIDEBOTTOM, MICHEAL NICHOLS, ERIC HAAS, Creighton University — Sugars are common ingredients for many commercial cryopreserving agents yet their function in this role is poorly understood. Some believe that sugars preferentially bind with a protein surface thereby replacing hazardous, ice-forming water. In an attempt to test idea, we have undertaken studies of the diffusion of proteins and protein-coated nanospheres using fluorescence correlation spectroscopy in an effort to determine if the hydrodynamic size is influenced by the addition of sugars. Some novelty of our approach lies in exploiting the native fluorescence of tryptophan (a common fluorphore found in many proteins) by use of two-photon excitation.

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