

Abstract Submitted
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The small angle x-ray scattering of globular proteins in solution during heat denaturation¹ JOSE BANUELOS, New Mexico State University, JACOB URQUIDI, New Mexico State University; LANSCE, Los Alamos National Laboratory — The ability of proteins to change their conformation in response to changes in their environment has consequences in biological processes like metabolism, chemical regulation in cells, and is believed to play a role in the onset of several neurodegenerative diseases. Factors such as a change in temperature, pressure, and the introduction of ions into the aqueous environment of a protein can give rise to the folding/unfolding of a protein. As a protein unfolds, the ratio of nonpolar to polar groups exposed to water changes, affecting a protein's thermodynamic properties. Using small angle x-ray scattering (SAXS), we are currently studying the intermediate protein conformations that arise during the folding/unfolding process as a function of temperature for five globular proteins. Trends in the observed intermediate structures of these globular proteins, along with correlations with data on protein thermodynamics may help elucidate shared characteristics between all proteins in the folding/unfolding process. Experimental design considerations will be discussed and preliminary results for some of these systems will be presented.

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