

Effect of surfaces in modulating protein folding and aggregation mechanisms

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Protein-surface interactions are ubiquitous in the crowded cytosol, where proteins encounter a variety of surfaces, ranging from membranes surfaces, to the surfaces presented by chaperone molecules. Protein-surface interactions are also at the heart of a number of emerging technologies, including protein micro-arrays, biosensors and biomaterials. The effect of surfaces on protein structure and stability can vary substantially depending on the chemical composition of the surface. In this talk, I will present coarse-grained as well as detailed atomistic simulations of the folding of small proteins in the presence of surfaces of relevance to biology and biotechnology. Examples will range from the underwater adhesion of marine-mussels to globular protein adsorption on membrane-mimics.

