Protection and Reversion of Protein Aggregation – Mechanisms of Molecular Chaperones

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Abstract:

Molecular Chaperones assist protein folding in all kingdoms of life. Although these ubiquitous proteins and enzymes appear in all kinds of size, oligomeric organization and structural topologies, their mode of action can be reduced to a few principal mechanisms. Particular interesting are chaperones that consume ATP to drive protein client binding and release cycles (Hsc70/DnaK) or otherwise unfavorable reactions like disentangling polypeptide chains of aggregated Proteins (Hsp104/ClpB). Key questions that are addressed in this talk concern the potential role of the highly dynamic nature of assembly/disassembly of the hexameric ClpB AAA+ disaggregase and its nucleotide binding properties.

Thursday, October 13th, 2011, 13:00

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