Solvent Induced effects in Protein Folding and Protein Association

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Abstract

An analysis of all the solvent induced contributions to the thermodynamic driving forced for protein folding and protein-protein association reveals that, contrary to the commonly accepted paradigm, Hydrophilic interactions might be more important than hydrophobic interactions.

For over fifty years the hydrophobic effects were believed to be the dominant factors in biochemical processes. Twenty years ago, after critically examining the data on the various contributions to the driving forces for protein folding, and protein-protein association, I reached the conclusion that the *Hydrophilic* interactions, rather *hydrophobic* interactions are the more important in biochemical processes. Examples on the role of Hydrophilic interactions on solubility of proteins, protein folding, protein-protein association and molecular recognition will be presented.

References:

1. Arieh Ben-Naim , Molecular Theory of Solutions, Oxford University Press (2006)
3. Arieh Ben-Naim, Molecular theory of water and aqueous solutions, Part I and II. World Scientific (2009,2011)