

An equation for predicting second virial coefficients of two protein system

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The modified perturbed hard-sphere (MPHSC) pair potential function is employed to represent the protein-protein interaction in the two-protein systems. The equation of state developed in this work is based on a hard-sphere reference with perturbations introduced through a potential function to account for electrostatic forces and for attraction between protein particles. To describe osmotic properties of protein systems, energy parameter is fitted to experimental cloud point temperature data for corresponding protein/salt systems. Those parameters are then introduced to calculate phase behavior in the aqueous two-protein system. Agreement with experimental data is reasonable in the given pH and ionic strength range with no additional binary parameters.