

INTERACTIONS OF LIPIDS AND INTRINSIC MEMBRANE MOLECULES  
A METHOD FOR DATA EVALUATION

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A method is presented which allows the evaluation of transition curves of reconstituted systems of lipids and other intrinsic membrane molecules (fatty acids, alcohols, proteins etc.). The main application is to experimental data as obtained by calorimetry, fluorescence, light scattering or similar methods. Simple approximations (Bragg-Williams, quasichemical) are used to describe the mixing and phase transition properties. The change in transition temperature, the steepness of the transition curves and its general shape can be calculated as a function of intrinsic molecule concentration.

The main feature of the model is that it takes account of the comparatively smooth phase transition behaviour of lipids. In this way it is possible to explain in a natural way that phase separation may occur at temperatures well below the transition midpoint, as found for many lipid-protein systems.

The formalism is rather simple and can be used for standard evaluation.