

INTERACTIONS BETWEEN SOME DIPEPTIDES AND UREA IN WATER AT 298.15 K.

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The study of the chemical and biological properties of protein is complicated because of variety of functional groups, as well as a large number of mutually actions of protein and surrounding components. The data of thermodynamic investigations of a simple organic substance containing functional groups analogues to those of protein molecules can be helpful in understanding behavior of protein in aqueous solutions. The presented work includes results of the thermochemical investigations of small peptides dissolved in urea-water solutions. Our team has recently studied the interactions between the molecules of dipeptides, derivatives of glycine, and the molecules of urea.

In order to assess the interactions between peptide and urea molecules, the enthalpies of solution of selected dipeptides in aqueous urea solution at a temperature of 298.15 K were measured by calorimetry. The obtained values

of dissolution enthalpies were used to calculate the enthalpic pair interaction coefficients based on modified McMillana–Mayer’s theory. The enthalpic pair interaction coefficients well describe the global effects of the interaction between two molecules (dipeptide and urea) proceeding with the competitive contribution of water molecules.