чем у третьей группы животных. Качество спермопродукции хряков-производителей зависело от времени реализации рефлекса садки на фантом. Организация моциона хрякам на расстояние 1 км в течение 1 ч и на расстояниеи 2 км в течение 2 ч ежедневно позволила увеличить общее число спермиев в эякулятах хряков I и II групп соответственно на 7,5 и 10,4%. В то же время прогон хряков на расстояние 3 км в течение 3 ч ежедневно снизило общее число спермиев в их эякулятах на 5,7%. Однако концентрация спермиев у хряков I и II групп в опытный период достоверно не изменилась по сравнению с подготовительным периодом, а у хряков III группы, когда их выгоняли на расстояние 3 км в течение 3 ч, этот показатель снизился на 20,1%, что и вызвало снижение у них общего количества спермиев в эякулятах.

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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 glycin, 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.

INTERACTION BETWEEN PAMAM G4 DENDRIMER AND 5-FLUOROURACIL IN AQUEOUS SOLUTION

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Poly(amidoamine) dendrimers (PAMAM) are polymeric macromolecules that can find their use as carriers oncologic drugs, including among others 5-fluorouracil.

The aim of our study was to evaluate the number of 5-fluorouracil molecules, an oncologic drug, combined by PAMAM G4 macromolecule and the equilibrium constant of the 5-FU combination with the active sites of this dendrimer in aqueous solution.

The formation equilibrium of PAMAM G4 dendrimer complex with an oncologic drug such as 5-fluorouracil (FU) in water at room temperature was examined. Using the results of the drug solubility in dendrimer solutions and the method of equilibrium dialysis, the maximal number of drug molecules in the dendrimer-drug complex and its equilibrium constant were evaluated. Solubility results show that PAMAM G4 dendrimer can transfer tens 5-fluorouracil molecules in aqueous solution. The number of active sites in a dendrimer macromolecule being capable of combining the drug, determined by the separation method, amounts to $n = 30 \pm 4$. The value of the equilibrium constant of bonding the drug with the active site ($K = 400 \pm 120$) indicates a reversible character of the bonding between 5-FU and the active sites of dendrimer.