

The aim of our study was to evaluate the number of 5-fluorouracil molecules, an oncologic drug, combined by PAMAM G4-OH 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-OH dendrimer complex with an oncologic drug such as 5-fluorouracil (FU) in aqueous solution 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. The character of bonding between 5-FU and the active sites of hydroxylated PAMAM dendrimer is reversible and the interactions between the drug and PAMAM G4-OH dendrimer are weaker than with their cationic equivalent.

ENTHALPIC PAIR INTERACTION COEFFICIENTS BETWEEN AMINOPHOSPHONIC ACIDS IN WATER AND AQUEOUS UREA AT 298.15 K

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Aminophosphonic acids are analogs of natural aminoacids. Aminophosphonate molecule consists a constant group $\text{NH}_2\text{-CH}_2\text{-PO}_3\text{H}_2$ and vane side chains -R which shows different affinities to water and are partly responsible for hydrofobic –hydrofilic properties. The structural analogy of these compounds is due to diverse biochemical activity, displayed especially in agrochemistry – glyphosate (N-(phosphonomethyl)glycine) is one of the most popular herbicide. They compete to active centre of enzymes as result it can inhibit enzymes such as aminotransferases or proteases. Their variety applications include enzyme inhibitors, potent antibiotics, herbicides, and also antitumor medicines. Aminophosphonates also occure in many living organisms, eg. bacteria, protozoa, inverbrates, sea anemones, mussels.

Thus is interesting to research interaction between these compounds and constituent organisms fluids, for example urea. Urea is used to produc-

tion of many fertilizers, its aqueous solutions are used as a protein denaturation factor and it is ingredient of cosmetic products.

In these studies solution enthalpies of series aminoalkanephosphonic acids (phosphonovaline and phosphononorvaline) and N-methyl derivatives (N-methyl-aminopropylphosphonic acid and N,N-dimethylaminopropylphosphonic acid) in water and aqueous urea in 298.15 K have been measured. Modified McMillan-Mayer theory allows use these data to calculate enthalpic heterogenous pair interaction coefficients of aminophosphonic acids – urea molecules.

MINERAL CONTENTS IN THE LONGEST BACK MUSCLE FOR SIX BREEDS OF PIGS

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Meat is known as an excellent source of essential trace elements such as iron (Fe), zinc (Zn), selenium (Se), vitamins A, B12 and folic acid (Gerber et al., 2009; Olaoye, 2011). Meat is an important nutrient as an essential part of a mixed diet that ensures adequate delivery of essential micronutrients and amino acids (Nohr et al., 2007; Gerber et al., 2009). For the genetic basis, the correct selection of breeds or lines is very important because the genetic influence on meat quality is very different among breeds as well as among animals in the same breed (Yu Gao et al., 2007). The aim of this study - to explore and compare the different pig breed and crossbreed longest back muscle mineral content.

The research of mineral content characteristics of various breeds pig was carried out at National Food and Veterinary Risk assessment Institute. The samples for analysis were taken from: large white (LW-12 samples), crossbreeds of landrace and large white (LWxL-16 samples), crossbreeds of yorkshire and large white (LWxY-12 samples), pietren (P-15 samples), landrace (L-10 samples), crossbreeds of yorkshire and pietren (YxP-9 samples) pig carcasses. Pigs were held at the Control Feeding Station of Pigs under standard feeding and keeping conditions. Samples were digested using ETHOS 900 microwave digestion system. The sample digestion procedure was performed according to the NF EN 13805 standard "Foodstuffs – Determination of trace elements – Pressure digestion. ICP-MS measurements were performed using ICP Mass Spectrometer ELAN DRC-e (Perkin Elmer Sciex).