Fulltext

A Study of the thermodynamic parameters (functions) of complexes formation of Sulfanilamid with metal ions and DL-Alanine by potentiometric method

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Abstract

The current study deals with the preparation of disulfonalmide complexes composed of the sulfanilamid drug , the salt of chromium(III) and the trisulfonalmide complexes composed of the sulfonalmide drug , the metal salt and the amino acid (alanin), as well as study in the stability constant of each complex and making a comparison between them . The obtained results show that the tricomplex stability constant is higher than the dicomplex stability constant due to the existence of the amino acid in the tricomplex which makes greater stereo structure and eventually easier interaction. Besides the thermodynamic functions in this experiment have been studed since they cause a chemical spontaneous reaction and a random arrangement in system.

Keywords

sulfonalmide, amino acid, alanine, stability constant, thermodynamic.

The thermodynamic parameters of formation of the MEdtaL, MEdtaHL and (CuEdta)2L complexes have been determined. The probable coordination mode of the complexone and the amino acid residue in the mixed-ligand complexes has been discussed. View. Formation constants of the complexes at 25 ±1° at a fixed ionic strength,I = 0.1 mol dm−3 (NaNO3) in aqueous solution were evaluated and the complex formation equilibria were elucidated with the aid of speciation curves. Spectrophotometric study of binary and ternary systems involving metal ions and benzylidenepyruvates January 1984 · The Analyst. Cristo B. Melios. temperatures and the corresponding thermodynamic parameters (G, H, and S) were derived and discussed. The dissociation process is nonspontaneous, endothermic, and entropically unfavorable. The method of potentiometric titrations investigates complex formation of some metals with 3-(4-nitrophenylazo)pentan-2,4-dione (L) in aqueous ethanol a solution at various temperatures (298?0.5; 308?0.5; 318?0.5 K). Standard thermodynamic functions of reaction of complex formation which change in the following sequence also are established: Method MO LCAO in approximation Hückel. The formation of the metal complexes has been found to be spontaneous, endothermic, and entropically favorable. View. Show abstract. Transition Metal Ion Formation. Ionic and Metallic Bonding. Transition Metal Ion Formation. Describe the formation of transition metal ions. How do transition metals form ions? The transition metals are an interesting and challenging group of elements. They have perplexing patterns of electron distribution that don't always follow the electron filling rules. Predicting how they will form ions is also not always obvious. Transition Metal Ions. Transition metals belong to the d block, meaning that the d sublevel of

electrons is in the process of being filled with up to ten electrons. Transition metal ion formation is more complex than simple cation formation. Transition metal ions often involve rearrangements of both d and s electrons. Practice. Answer the question on the link below The thermodynamic property studies on these complexes are performed. For the first one, Eu(Glu)(Im)5(ClO4)3·3HClO4·6H2O, the low temperature heat capacity, phase transition, and thermodynamic functions are determined by adiabatic calorimetry. For the second one, Nd(Gly)2Cl3·3H2O, the molar dissolution enthalpy and standard molar enthalpy of formation are determined by isoperibol solution reaction calorimetry. By making research easy to access, and puts the academic needs of the researchers before the business interests of publishers. Our authors and editors. We are a community of more than 103,000 authors and editors from 3,291 institutions spanning 160 countries, including Nobel Prize winners and some of the world’s most-cited researchers. Although there are many methods available to study the stability of metal-ligand complexes, pH-metry is most frequently used. In extension of our study on solution equilibria, we used Calvin-Bjerrum method for the calculation of stability constants. Stoichiometries and stability constants of binary systems containing the above metal ions in a 1:1 and 1:2 and/or 1:3 ratios were also determined to compare the effect of the secondary ligand on (1:1) Metal:Sulphathiazole system. It was found that glycine adds preferably [M-Sulfathiazole] rather than to the aqueous complexes of metal ions. In all cases 1:1:1 complex was formed.