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**PHYSICAL PHARMACY
(PP)**

POSTER PRESENTATIONS

POSTER PRESENTATION I.
(PP)

**New Approach In Computer Treatment Of Data From Potentiometric
Titration Of Drugs - Acids And Bases**

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The computer treatment of data is already a routine procedure in nowadays instrumentation in analytical chemistry but there are some shortcomings in case of the presence of other substance except the main component. In the present study is shown what more, a sophisticated computer treatment of data can perform for the acid-base titration.

The approach is based on the mass balance relations and one should have in mind a two-parameter mass-balance equation. In contrast to the widespread tactics, where the main attention is focused in the vicinity of the equivalent point (e.p.) the discussed mass-balance approach collects data by a monotonic adding of the titrant during the titration. One more consideration is in favor of leaving out data from this area because pH-measurements in the vicinity of the e.p. is inappropriate.

The essence of the method proposed is as follows: The experimental data obtained during the titration are mV/ml. The latter are recalculated to ml/pH and then treated by means of regression methods. From the computer data a very decisive conclusion can be drawn concerning the precision and accuracy of the results. The content of the sample and the pKa -value is obtained as well as the standard deviations.

The approach was used for the determination of different drugs with acid-base properties. The obtained results show very good coincidence with the theoretical and literature data.

POSTER PRESENTATION II.
(PP)

Cytotoxic Activity Of Zirconium Complexes With Coumarin Derivatives

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The Zirconium complexes with Mendiaxon, Warfarin, Coumachlor and Niffcoumar have been synthesized by reaction of the ligands with $ZrCl_4$ in stoichiometric ratio 1:2. The formation of the complexes has been proved on the basis of elemental analysis, IR-spectroscopy and 1H -NMR spectroscopy. It is concluded that the lactone- and keto-carbonyl groups of Warfarin, Coumachlor and Niffcoumar are bonded to the metal ion as bidentate ligands. Mendiaxon is bonded as monodentate ligand.

The synthesis of the complexes is taken into consideration with cytotoxic screening. Cytotoxicity determination by MTT-assay showed that the inorganic salt did not have any significant activity. The complexes were found to be cytotoxic in varying degrees. This fact shows that there is a correlation between cytotoxic activity and the proposed chemical structures. The data indicate that the new complexes may have advantageous properties as antitumour agents.

POSTER PRESENTATION III.
(PP)

Study Of Complexation Of Cu(II) And Fe(III) With Oximes Of 4-Hydroxycoumarines

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The process of complexation of new complexes of Cu(II) and Fe(III) with oximes of 4-hydroxycoumarines (Nifflcoumar oxime, Warfarin Oxime and Coumachlor oxime) in solution was studied by UV-VIS spectrophotometry.

The method of mol relations was applied under the following conditions

- Constant concentration of the metal ions,
- Variable concentration of the ligands,
- Fixed analytical zones of detection,
- Preliminary determination of some analytical parameters such as: limit of detection and quantitation, linearity, range and others.

The functional subsection between the mol relations of metals and ligands was defined based on absorption intensity. The complexation was confirmed complimentary by ¹H-NMR, IR-spectroscopy and elemental analyses.