

THE VARIED COORDINATION COMPOUNDS OF THE ANESTHETIC LIGANDS WITH PLATINUM (II) AND PALLADIUM(II)

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At the present time coordination compounds obtaining with biometals and heavy metals on the basis of biologically active ligands and some of medicines have changed to a large investigative object. In the investigation the ligands having N-, S-, O-donor atoms and/or functional groups pertaining to these atoms are usually used.

The main goal here was obtaining of biologically active coordination compounds that effect alternatively and even effect through another mechanism. The coordination compound of platinum (II) and palladium (II) has been obtained in the acidic medium with lidocaine–2-(diethylamine)-N-(2,6-dimethylphenyl)-acetamide has a local anesthetic feature.

The complexoformation reaction has taken action at 60 °C, in the acidic medium and the ratio of the binary salts of Pt(II) and Pd(II) to lidocaine (Me:lid) was 1:1. At the result of the reaction the cationic-anionic complex compounds with (LidH)₂[Pdhal₄] and (LidH)₂[Pthal₄] contents were formed. It is necessary to note that at pH = 7,5–8 the nonelectrolyte such as [Me(Lid)₂hal₂] was formed (hal→Cl, Br). The elemental analysis of synthesized complexes has been carried out and their melting and decomposition temperatures have been determined. One adsorption band of 425 and 430 cm⁻¹ in the IR-spectrum was used to determine of the structure of the complexes.

The IR-spectroscopic researches of the complexes indicate that platinum and palladium coordinate directly with acidoligands in the cationic and anionic complexes. The evidence of that is existence of just one adsorption band of 425 and 430 cm⁻¹ in the IR-spectra of both complexes. But molecule of lidocaine as cation forms outer sphere as a result of protonating (3410 and 3446 cm⁻¹) of trio nitrogen atom.

In the spectrum of neutral [Me(Lid)₂hal₂] complexes the adsorption bands 470, 458 and 341, 346 cm⁻¹ show that ligand is coordinated with central atom through trio nitrogen atom. Other two bands located in the high area belong to Me–hal bond.

When complex compounds are dissolved in water and in water-alcohol mixture no structural changes happen. It is important especially in pharmacological investigation of these compounds.