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SUPRAMOLECULAR COMPLEX OF MONOAMMONIUM SALT OF GLYCYRRHIZIC ACID (GLYCYRAM) WITH TRYPTOPHAN

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A new supramolecular complex of triterpene glycoside glycyram (monoammonium salt of glycyrrhizic acid (3-*O*-β-*D*-glucuronopyranosyl-(1→2)-*O*-β-*D*-glucuronopyranoside of 18β-glycyrrhetinic acid), GC) with hydrophobic essential amino acid *L*-tryptophan (Trp) was prepared.

The complexation of GC with Trp in aqueous solution at pH 7.2 (phosphate buffer Na_2HPO_4–NaH_2PO_4) was investigated by spectrophotometric method. Absorption spectrum of isomolar series for GC–Trp mixture has isobestic points at 232 and 274 nm. It was shown that GC and Trp forms a 1:1 complex, having a stability constant $K_{GC–Trp}$ = $(4.8\pm0.2)\cdot10^4$ M^{-1}. In the previously obtained 1:1 complexes of glycyrrhizic acid and GC with biologically active molecules, stability constants were of the order of 10^3–10^5 M^{-1}. Molecular complex of GC with Trp was studied by IR spectroscopy. The changes in the IR spectra were indicated to presence of ionic interactions of the zwitter-ion Trp with GC (NH_3^+ ^-OOC) and hydrophobic contacts.

Keywords: triterpene glycosides, glycyrrhizic acid, glycyram, tryptophan, supramolecular complex, spectrophotometry, IR spectroscopy, stability constant.

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