SPECTRAL STUDY OF THE BINDING OF VANCOMYCIN TO DNA

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Vancomycin is a glycopeptide antibiotic that is widely used in the treatment of G+ bacterial infections. Vancomycin consists of a core heptapeptide with attached saccharide moieties, one of which is the deoxyaminosugar vancosamine. The self-association of vancomycin in aqueous solutions was considered in terms of dimerization equilibrium and the dimerization constant, the molar absorption coefficient of the monomer and dimer were determined. The absorption spectra of vancomycin in the presence of different amounts of calf thymus DNA are presented and discussed. The results were rationalized taking into account both self-association of the drug and the cooperativity effects. The binding constants of drugs to DNA were determined using Scatchard, Schwarz and Watanabe methods in different conditions.