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ABSTRACT

It has been generally believed that quinoline-acridine compounds act as antimalarial drug by interfering with DNA and RNA synthesis *in vivo*. Many hypotheses have been proposed in order to explain the nature of binding. However, some events still cannot be explained clearly.

In order to clarify the nature of binding,DNA-drug complexes at various pH were studied by spectrophotometric, spectrofluorometric method and thermal strand seperation. The data from spectrophotometric titration was analysed by Scatchard plots.

Intercalation (strong binding) between double stranded DNA and drug can occur without having to involve interaction between positive charge in the ring of drug molecule and negative charge of phosphodiester group of DNA. Also such interaction can occur between the drug molecule and the stacked bases of single-stranded DNA. The hydrogen bindings between side chains of drugs and phosphodiester group of DNA are not necessary for the weak binding process.

It is also an indication that interaction between drug and DNA really consists of strong binding and weak binding by different melting profiles of systems having different DNA to drug ratios.

Moreover, fluorescence studies at pH 3 indicated that the chloroquine may bind to the A-T rich region giving rise to fluorescence enhancement.