

Fluorescence Analysis of Sulfasalazine Bound to Defatted Serum Albumin in the Presence of Denaturing Factors

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Urea (U) and guanidine hydrochloride (Gu·HCl) - induced destabilization and denaturation of defatted bovine serum albumin (dBSA) and binding of sulfasalazine (SSZ) to dBSA has been studied *in vitro* by the fluorescence spectroscopy.

Disorder of tertiary structure of protein caused by the effect of chemical denaturing agents makes possible a change in binding ability of protein. This results in side-effects.

On the basis on relative fluorescence the binding site of SSZ to dBSA the quenching and the binding constants for complexes dBSA-SSZ, dBSA(U)-SSZ and dBSA(Gu·HCl)-SSZ have been found.

Gu·HCl in concentration higher than 1,8 M causes unfolding of tertiary structure of albumin. Then, on the fluorescence spectrum of dBSA two maxima of fluorescence appeared. The same effect was observed when 5M urea was used as a denaturing factor.

By applying the denaturing coefficient f we indicated concentration of denaturant needed to evoke full denaturation of dBSA.

Fatty acids bound to albumin molecules protect them from denaturing effect of urea and guanidine hydrochloride. Structure of albumin complexed with fatty acids undergoes perturbations in the presence of a higher denaturant concentration than that of the defatted one.

The above empiricism can provide the introduction to clinical trials. Denaturated or destabilized by chemical denaturants albumin *in vitro* probably can be compared *in vivo* with deformed transporting protein molecule or with molecule which passes irregular process of folding.