

عنوان مقاله:

Interaction of all-trans retinoic acid with human serum albumin

محل انتشار:

پانزدهمین همایش بیوشیمی فیزیک ایران (سال: 1397)

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خلاصه مقاله:

All-trans retinoic acid (ATRA) is the most effective drug in the treatment of acute promyelocytic leukemia (APL). However, the use of ATRA is not without problem. ATRA is poorly soluble in water and has limited bioavailability and its pharmacologic levels can cause retinoic acid syndrome. On the other hand, albumin is the major protein in plasma that interacts with a wide range of drugs. Often, more than 90% of the drug is bound to albumin, which has a significant effect on the drug's efficacy, the rate of drug delivery to target cells, and drug removal. In this study, ATRA binding to albumin and the effect of some compounds on the binding is investigated using different methods. Fluorescence results indicated the static type of quenching mechanism in the binding of ATRA to albumin. The association constants between ATRA and albumin and the number of binding sites as well as the thermodynamic parameters of complex were obtained at different temperatures. The calculated thermodynamic parameters revealed that the binding reaction is spontaneous and endothermic process, and hydrophobic interactions have a main role in the binding of ATRA to albumin. The effect of other compounds on the binding is under investigation.

کلمات کلیدی:

ATRA, all-trans retinoic acid, Albumin, Interaction

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