

## عنوان مقاله:

Interaction studies of diazacyclam-based macrocyclic copper complex with bovine serum albumin (BSA):  
Spectroscopic investigations

## محل انتشار:

سومین کنفرانس سراسری تحقیقات جدید در شیمی، مهندسی شیمی و نفت (سال: 1396)

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## خلاصه مقاله:

In the present investigation, the interaction of a new macrocyclic copper(II) complex, [CuL]Br<sub>2</sub>, that L is 1,3,6,10,12,15-hexa aza tricyclo [13.3.1.16,10] eicosane with the transport protein, bovine serum albumin (BSA), was studied in vitro under simulated physiological conditions using multi-spectroscopic methods. It is found that [CuL]Br<sub>2</sub> has a strong ability to quench the intrinsic fluorescence of BSA through static quenching mechanism with a binding constant of about 10<sup>4</sup> M<sup>-1</sup>. Thermodynamic parameters ( $\Delta H < 0$  and  $\Delta S < 0$ ) and competitive fluorescence study with ANS, indicated that van der Waals force and hydrogen bonding play major roles in the binding of complex and BSA. Job's plot result confirms that there is one binding site in BSA for Cu(II) complex (1:1 stoichiometry). The displacement experiments indicate that the binding of [CuL]Br<sub>2</sub> to BSA primarily occurred in the sub-domain IIA (site) of BSA. The results of circular dichroism (CD) and UV-vis spectroscopy showed that the microenvironment of amino acid residues and the conformation of BSA were changed after addition of [CuL]Br<sub>2</sub> complex.

## کلمات کلیدی:

Copper(II) complex, Diaza cyclam, Bovine serum albumin (BSA), Fluorescence spectroscopy

## لینک ثابت مقاله در پایگاه سیویلیکا:

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