

عنوان مقاله:

A Biophysical Study on the Interaction Between Alginate and Fibrinogen

محل انتشار:

پانزدهمین همایش بیوشیمی فیزیک ایران (سال: 1397)

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خلاصه مقاله:

Alginate is a natural polysaccharide present primarily in brown seaweed and also in bacteria. It is widely used in medicine and pharmacy because of its properties such as gelling, stabilization of dispersions, biocompatibility and antibacterial effects. These features have led us to investigate the interaction of alginate with fibrinogen for use in the wound healing. Fibrinogen has a coagulation property that plays a significant role in the wound healing. The objective of this study was to investigation on the structural change of fibrinogen in the absence and presence of alginate to determine the appropriate function of this protein and fundamental evidence for determining the sufficiency and safety of the alginate. We used fluorescence and circular dichroism (CD) spectroscopic techniques. We found that the addition of alginate to fibrinogen leads to formation of a complex, which reduced the fluorescence intensity, due to the fact that alginates are located in the hydrophobic domain of the protein and coating of tryptophan in the hydrophobic domain of fibrinogen indicating the interaction of alginate with fibrinogen. The results of CD spectroscopy also showed that the second structures of the protein have been altered by the formation of the complex by alginate.

کلمات کلیدی:

Alginate, Fibrinogen, Circular Dichroism Spectroscopy, Fluorescence Spectroscopy

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