

عنوان مقاله:

(Categories protein secondary structure using soft computing(Combined with genetic fuzzy and neural network

محل انتشار:

هفتمین همایش بیوانفورماتیک ایران (سال: 1396)

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خلاصه مقاله:

The prediction of the second protein structure is said to be a set of methods that determine the second local structure of the amino acid sequence. Determining the second structure means determining the position of the α -Helix, the β -sheet and the circles on the amino acid strand. The purpose of this study is to provide a prediction method for the second protein structure using soft computing, To train the neural network of the genetic algorithm and to determine the mutation rates and recombination of the genetic algorithm also from the fuzzy system. In the proposed method, Define a neural network with an input layer, a hidden layer and an Output Layer. The input layer encodes the slider window at each amino acid sequence input and in the main structure, the central element is projected in the window. Meanwhile, the reason for using soft computing has been its impressive success in solving various issues, on the other hand, this method (combination of fuzzy genetic neural networks) is the first to be used to solve the problem of the second structure of the protein. In fact, the problem of predicting the structure of proteins in pharmaceutical sciences has been important for the design of new drugs and avoids the extra bulk used to determine the structure of proteins by empirical methods. In pharmacy, thousands of different macromolecules are tested for the design of various drugs, it is unworkable and costly to determine the structure of all of them. Therefore, progress in predicting protein structure will pave the way for new drug design and reduces research costs by hundreds of times. Considering the recent investment in pharmaceutical industry in the country, the importance of this issue is undeniable to promote [this knowledge and technology].[1,2

کلمات کلیدی:

Prediction of the second protein structure; Soft calculations; neural network; Genetic Algorithm; Fuzzy system

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