

Protein Sequence Textuary of Biomedical Images Based on Protein Modelization of MRI



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Abstract

Serving an image as a text is one of the items on the data-base. A variety of methods could be employed. In this paper we have proposed a novel method for converting medical images into textuary formats. Through this method it is possible to create protein sequences of the current biomedical medical images. This is achieved using the protein modelization of digital medical images. Protein modelization of a digital image is an arrangement for allowing numbers of pixels values to be presented as sequences of characters. In this system every pixel values of color scale is procedure into four protein characters. One advantage of protein sequence textuary compared to other image serving methods is the browsing, retrieving and sequence blasting from database.

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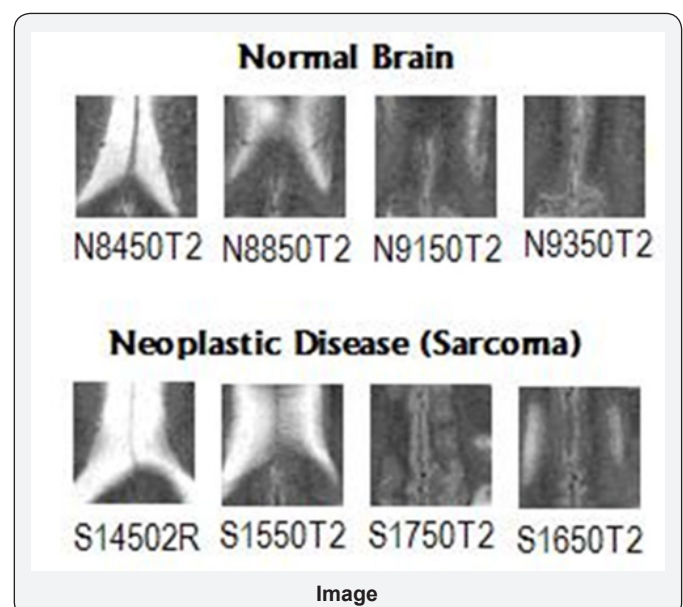
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Methods and Materials

Protein Modelization of a digital image is an arrangement for allowing numbers of pixels values and pixels maps to be presented as sequence of protein characters. The possible pixel value is arranged from 0 to 255 and the permutations with repetitions of four letters are 256, therefore every pixel values could be procedure into four letters. The first step is to carry out the direct coding of the digital image, with the four letters A, G, C, and T. Alphabet {A, C, G, T} is chosen, because it is the same as in real DNA sequences. The second stage is translation DNA sequence to protein sequence. This is performed with translated tools which allow the translation of DNA sequences to protein sequences. ExpASy [7] and Translate Nucleic Acid

Sequence Tool [8] are examples of free online translation tools. Last section will execute with multiple sequence alignment. The results will be obtained by the statistical significance of match's ratio. The similar image could be finding by corresponding degree of similarity (match's ratio) with image list.

Experiment Results



In this section we present the experiment result of protein modelization using Translate tool and Multiple Sequence



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