Persistency And Permanency of Two Stages DNA Splicing Languages with Respect to One Initial String and Two Rules Via Yusof-Goode (Y-G) Approach

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ABSTRACT

The notion of Yusof-Goode (Y-G) splicing system was first schemed by Yusof to study the relationship between formal language theory and molecular biology. The splicing languages that are produced by splicing system have some important characteristics called persistent and permanent. In biological perspective, the recombinant DNA molecules can be manipulated by recombination action if they have persistent property. Thus, the persistency as well as permanency of splicing languages (recombinant DNA molecules) is considered to be an interesting topic in the field of DNA recombination, particularly when the recombination process is accomplished at second stage. Conducting a wet-lab experiment to show the mentioned properties of splicing languages are time consuming and expensive. Therefore, to overcome this problem, mathematical approach is chosen to investigate the persistency and permanency of splicing languages which will be then given as theorem and corollary. Thus, an initial string (with two recognition sites) and two rules are considered for introducing the above characteristics using Y-G approach.

KEYWORDS: DNA; String Theory

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