

#### عنوان مقاله:

Bioinformatics analysis of polyketide synthases

محل انتشار:

پنجمین همایش بین المللی زیست شناسی و علوم زمین (سال: 1401)

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#### خلاصه مقاله:

Secondary metabolites are very important in various industries such as pharmaceuticals as various antitumor and antibiotic drugs, as well as biological pesticides in agricultural sectors and in food industries such as flavorings and pigments. Many common antibiotics, such as tetracycline and macrolides, and industrially essential polyketides, such as sirolimus (immune suppressant), erythromycin (antibiotic), and lovastatin (anticholesterol drug) by Polyketide synthases are produced. Polyketide synthases (PKSs) are a family of multidomain enzymes or enzyme complexes that produce polyketide, a large class of secondary metabolites. On the other hand, polyketide biosynthesis shows remarkable similarities with fatty acid biosynthesis. It is known that unsaturated fatty acids are also made from polyketide synthases. Omega- $\mu$  fatty acids such as DHA and EPA are necessary to prevent heart disease and increase brain and retina development and learning capacity in children. Marine single cells are sources that can synthesize omega- $\mu$  fatty acids, including DHA. In this study, through bioinformatics analysis, nucleotide, amino acid sequences, and evolutionary relationship of polyketide synthases will be studied in the native strain of protist. Finally, these data have increased our knowledge of this pathway in this native strain, and through genetic engineering .techniques, the production of omega fatty acids and secondary metabolites can be increased in this strain

### کلمات کلیدی:

Bioinformatics studies, polyketide synthases, phylogenic trees, bioinformatics analysis

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