

## عنوان مقاله:

ANALYSIS OF ALPHA AMYLASE ENZYME IN IRANIAN THERMOPHILIC STRAINS

## محل انتشار:

نوزدهمین کنگره بین المللی میکروب شناسی ایران (سال: 1397)

تعداد صفحات اصل مقاله: 1

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## خلاصه مقاله:

**Background and Aim:** Amylase is one of the most important enzymes in biotechnology. Among amylase, alpha amylase [EC:3.2.1.1] is of more important due to its extensive application in industries and accounts for about 25% of the enzyme market. This enzyme causes the hydrolysis of the starch Glycosylated  $\alpha$  (1-4) and produces maltose and glucose. Thermostable heat-resistant enzymes, which are mainly isolated from thermoplastic microorganisms, have large commercial applications. Alpha amylase is used in different sectors such as detergent and paper industries, bread and alcohol production and etc. **Methods:** Using soil samples of a corn field and the enzymes Logel which cultivated at 50 ° C on the 1% containing starch environments, the bacteria were isolated from the alpha-amylase enzyme. Then, to select the best strain of the enzyme production, some quantitative and qualitative methods were done on Denitrosalicylic acid reagent and the suitable strain was selected. Finally, for Phylogenetic studies of this bacterium the 16S RIBOSOMAL RNA gene primers were used. **Results:** 23 strains of alpha amylase enzyme were isolated in this study. After qualitative and quantitative investigations, it was found that Z3 strain has the least amount of km with the highest activity. Bioinformatics studies showed that this strain has 98% similarity with *Bacillus subtilis*. **Conclusion:** The results of this study indicate that the selected strain has the alpha-amylase enzyme, which is suitable for the industry use.

## کلمات کلیدی:

Alpha-amylase, Thermostable, Starch

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