

## عنوان مقاله:

Activity Improvement of Organophosphorus Hydrolase Enzyme by Error Prone PCR Method

## محل انتشار:

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## خلاصه مقاله:

**Introduction:** Organophosphorus compounds are frequently used as pesticides and insecticides in agriculture, livestock and home. Because of the high toxicity, it seems is very important its removal from the environment. An enzyme called organophosphorus hydrolase (OPH) is responsible for the decomposition of organophosphorus compounds in most of the strains. Production of enzymes and strains with more efficiency is frequently performed by genetic engineering techniques. **Materials and Methods:** In this study, we used PCR-based method for quick and easy improvement in activity of OPH enzyme. We selected 5.5 mM Mg<sup>2+</sup> and 0.2 mM and Mn<sup>2+</sup> concentrations for high PCR product. **Results:** After one round of error prone PCR (epPCR), The 5 number of screened strains (29%) were shown more ability than the native strains to degrade of diazinon, with more than 25% raising ratio. The E6 strain was found to have highest improvement degradation, with 29.3% improvement. At 48-hour time point, the E6 strains were able to completely remove of diazinon. **Conclusions:** The epPCR method has the low complexity than other methods .and can provide a diverse library include efficient mutants

## کلمات کلیدی:

Error Prone PCR, OPH Enzyme, Organophosphorus Hydrolase, improvement, Diazinon

## لینک ثابت مقاله در پایگاه سیویلیکا:

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