

OP-02

Partial characterization of phosphotriesterase activity from the earthworm, *Eisenia andrei*

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Phosphotriesterase (PTE) receives attention because it seems to be associated with the detoxification of organophosphorous pesticides and organophosphate resistance mechanism. In order to understand the biodegradation of phosphotriester pesticides and its significance in the earthworm, a major non-target animal of pesticides, selected phosphotriesterase activity derived from the crude extract of *Eisenia andrei* were investigated. The native molecular weight of earthworm PTE was 260 kDa and isoelectric point was approximately 4. The optimal pH was approximately 9. The earthworm PTE had a substrate affinity for paraoxon with Km value in the millimolar range. The presence of EGTA and EDTA completely abolished the activity and replacement of Ca^{2+} ion restored activity to greater than 95% suggesting that Ca^{2+} ion is essential to maintain the activity.

Key words : Earthworm, Phosphotriesterase, Characterization, Localization, Ca^{2+} -dependent