

Purification and anticholinesterase sensitivity of cholinesterase extracted from liver tissue of *Puntius javanicus*

ABSTRACT

The purification of a soluble cholinesterase (ChE) from *Puntius javanicus* liver using affinity chromatography was studied. Affinity matrix was synthesised through the cooling system of ligands procainamide to epoxy-activated Sephacryl 6B and purification process was performed using calibrated flow rate at 0.2 mL/min. Non-denaturing electrophoresis condition was employed and the single band native form of ChE was detected at 66.267 kDa after being stained with commasie brilliant blue. ChE detection was performed using gel filtration; ZORBAX column attached to the HPLC with the flow rate of 1 mL/min. Only a single peak was detected at the retention time of 3.720. From the assay evaluation, the final purified ChE procedure displayed the highest sensitivity of detecting the anticholinesterase namely mercury, copper, malaoxon and carbofuran compared to the impure ChE and the results were further discussed in detail to the potential application of ChE from *P. javanicus* as a biomarker for those toxicants.

Keyword: Purification; Cholinesterase; *Puntius Javanicus*; Anticholinesterase