PURIFICATION AND PARTIAL CHARACTERIZATION OF AN N-ETYLMALEIMIDE SENSITIVE b-N-ACETYLHEXOSAMINIDASE FROM GONADS OF THE ECHINODERM ECHINOMETRA LUCUNTER

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β-N-acetylhexosaminidases constitute a group of enzymes that is distributed among mammalian tissues, higher plants and microorganisms. They were important in the catabolism of many cellular proteins *in vivo* because their remove specifically β-N-acetylglycosaminide or β-N-acetylgalactosaminide moiety O- N- and S- linked from nonreducing ends of linear and branched oligosaccharides, cellular and matrixes polysaccharides, and connective tissue of the exoskeleton of arthropods. A β-N-acetylhexosaminidase was purified from gonads extract of *Echinometra lucunter* using ammonium sulfate fractionation, followed by gel filtration chromatographies (Sephacryl S-200 and Sephadex G-75). The enzyme was purified 192.47 -fold with a 28.5% yield. Molecular weight of 42 kDa was estimated by SDS-PAGE analysis and in Sephadex G-75, 84 kDa, indicating that the enzyme is a dimeric protein. An apparent Km of 0.235 mM and Vmax of 0.9 absorbance units was observed when p-nitrophenyl-ß-D-glycosaminide was used as substrate. The enzyme has optimal pH and temperature at 5.0 and 60 °C, respectively. The enzymatic activity was inhibited by silver nitrate but it wasn't activating by any other tested salt. Glucuronic acid was a potent activator. The enzyme was severely inhibited by n-etylmaleimide sowed the involvement of the sulphydril groups in enzymatic catalysis.

Key words: β-N-acetylhexosaminidases, *Equinometra lucunter* , gonads.