ACTIVITY OF IMMOBILIZED ß-D-N-ACETILGLUCOSAMINIDASE FROM *Artemia franciscana* AND POSSIBLE APPLICATION AS CLORIDE MERCURY BIOSENSOR

Santos, P.C[1]; Nascimento, R.M[1]; Abreu, L.R.D[1]; Matta, L.D.M[1]; Rocha, H.A.O[1]

[1]Departamento de Bioquímica, UFRN, RN, Brazil

The biotechnological enzymes aplication possess an ample expansion market esteem in US$ 2,3 billion, they are important in some productive sectors as nourishing industry, pharmaceutical, cosmetic, cleanness, chemistry, for bioetanol and biodiesel production, and at effluent treatment. The present work suggests a possible use of a β-D-*N*-acetylglucosaminidase as biosensor of mercury cloride ($HgCl_2$). β-D-*N*-acetylglucosaminidase was extracted and partially isolated from crustacean *Artemia franciscana* by ammonium sulfate precipitation and filtration gel chromatography Bio Gel A 1.5m. The enzyme was immobilized on ferromagnetic Dacron yielding a insoluble active derivative with 5.0 units/mg protein and 10.35% of the soluble enzyme activity. β-D-*N*-acetylglucosaminidase was easily removed from the reaction mixture by a magnetic field, it was reused for ten times without loss in its activity. The ferromagnetic Dacron was better activated at pH 5.0. The particles visualized at scanning electron microscope (SEM) had presented different sizes, varying between 721nm and 100µm. Infra red confirmed immobilization on support, as showed by primary amino peaks at 1640 and 1560 cm^{-1}. The immobilized enzyme presented K_m of 2.32 ± 0.48 mM, optimum temperature at 50°C, larger enzymatic activity at pH 5.5 and better thermal stable than the soluble enzyme. The β-D-*N* acetylglucosaminidase assayed in presence os mercury chloride ($HgCl_2$), presented activity already diminished at 0,01mM and lost total activity at 4mM, indicating sensitivity for this type of metal, suggesting a possible aplication as mercury biosensor.

Key Words: β-D-*N*-acetylglucosaminidase; Immobilization; *Artemia franciscana*; Mercury; Biotechnology.

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