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Detection of Enzymes and Proteins Produced From Some Algae Isolated from Iraqi Aquatic Environment

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Abstract: The research was carried out to detection of enzymes (protease, amylase, beta-alkaline, phosphatase, and alkaline phosphatase) and proteins**,** detect two enzymes (protease, amylase) and proteins in ten local algae isolates, nine that belong to the blue-green algae and one to the green algae. The algae isolated from Tigris River in Iraq have been developedin BG-11 enrichment culture media. The result nine isolated algae (*Anabaena variabilia, Lyngbya digueti, Lyngbya limnetic, Microcystis aeruginosa, Oscillatoria limosa, Oscillatoria sancta, Phormidium mucicola, Spirulina laxissima, Westiellopsis prolific*) had the capability to produce the enzymes protease and amylase. The efficiency of the protease enzyme for green blue algae was 10.115-13.3 u ml^{-1} and the amylase enzyme activity was 0.112 - 0.562 u ml^{-1}, either the algae *Chrococcum sp*. The yield of the Green Algae Division was as high as the protease and amylase activity was 3.7 and 0.374 u ml^{-1}, respectively).The result indicated the capability to produce the proteins from the 10 isolates after development within a biomass ranged from 0.0607-0.5380 mg l^{-1} and protein content of 2.280-9.950 mg l^{-1} for algal. The *Chrococcum* sp. that belong to Green Algae produced protease, amylase, and betaalactase with concentrations of 3.7, 0.374 and 26.7 u ml^{-1}, respectively, and its production capability was 4.210 mg l^{-1}. The productivity of the phosphatase enzyme was0.06 and 0.03 u ml^{-1} *Anabaena variabilia* and *Lyngbya digueti* respectively, while the alklin phosphates enzyme was not produced in all studied algal isolates.

Keywords: Enzymes, Proteins, Algae and enzymes effect