ISOLATION AND DETERMINATION OF THE ACTIVITY OF MICROBIAL TRANSGLUTAMYNAZE

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Among the majority of enzymes widely used in a food industry the important place belongs trasglytaminase (TG), which catalyzed acyl-transfer reaction between peptide bound glytaminyl residues and primary amines. Recently, on the basis of the enzyme cross-links reaction, it has been used in the experiments improve the functional properties of foods. Food treated with microbial TG appeared to have improved flavor, appearance and texture. In addition, this enzyme can increase the shelf-life and reduce allergenicity of certain foodstuffs. The works connected with the microbial synthesis of enzymes of TG are not conducted in Ukraine. Up to now, commercial TG has been merely obtained from animal tissues. The complicated separation and purification procedure results in an extremely high price for the enzyme, which hampers a wide application in food processing. Scientists conduct the permanent search of new effective producents of TG among microorganisms.

Method of receipt of the enzyme with glutamyntransferase activity includes cultivation *Actinomyces* on a nutritional media, which contains starch, yeast extract, peptone, and also salts of magnesium, potassium and phosphoric acid. Producent of TG is the *Streptomyces mobaraensis.*

The main purpose of our work was to define the activity of the enzyme in the cultural liquid. For the receipt of enzyme the cultivation of *Streptomyces mobaraensis* was conducted on a liquid nutritional medium during 24 hours, with the permanent aeration and the temperature (25-35°C). Then the centrifugation and ultrafiltration of liquid were realized. TG is the ekzoenzyme and can be obtained withdrawn from the filtrate of cultural liquid by the separation of firm components.

The activity of enzyme was measured by photocalorimetric analysis and it was expressed in international units of activity. The unit of activity is the amount of enzyme which for one minute forms 1 mkmol' hydroxamic acids. In the result of the investigation it was established that the activity of this enzyme after 3 days of cultivation has been maximal and constituted 0,25 un/ml.

ВИДІЛЕННЯ ТРАНСГЛУТАМІНАЗИ МІКРОБНОГО ПОХОДЖЕННЯ ТА ВИЗНАЧЕННЯ ЇЇ АКТИВНОСТІ

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Вперше з культури *Streptomyces mobaraensis* був виділеній фермент трансглутаміназа, перспективний для використання у харчовій промисловості. Виявлено оптимальні умови для культивування продуцента. Визначено, що активність даного ферменту після 3 діб культивування була максимальною і становила 0,25 од/мл.