FRACTIONATION OF TRANSGLUTAMINASE PRODUCED BY *STREPTOMYCES MOBARAENSIS* ATCC 27441

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Abstract

Microbial transglutaminase (mTG) can catalyze covalent bonds between proteins, a property used in the food industry to restructure meat, improve the texture of dairy products, and extend the shelf life of foods. In our study, mTG was obtained using Streptomyces mobaraensis ATCC 27441 strain and fractionation using various ion exchange resins. The enzymatic activity was monitored using a spectrophotometric method. The results showed that the use of the Fractogel EMD SO_3^- resin led to the highest yield in the fractionation process (84.23%), recovering an enzymatic activity of 1613.83 U. Using Relisorb, a total enzymatic activity of 882.07 U and a yield of 46.04% was evidenced. In the case of Amberlite CG-50, a total activity of 869.558 U was achieved, with a final yield of 45.38%. The lowest final yield was recorded for Resindion SP 825L resin - 5.08%, with an enzymatic activity of 97.420 U. The results indicate that Fractogel EMD SO_3^- is the most efficient resin for mTG fractionation, providing a robust approach for obtaining a high-purity enzyme suitable for industrial applications.

Key words: *transglutaminase, Streptomyces mobaraensis, fractionation, ion exchange chromatography*