

Extremozymes and Bioprocess (Bioproducts)

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ABSTRACT

This talk will approach the extremozymes derived from extremophilic organisms that thrive in extreme environmental conditions such as high or low temperatures, high salinity, extreme pH, or high pressure. These enzymes are naturally adapted to function optimally under extreme conditions, making them valuable in various bioprocessing applications. Concerning bioprocess, we intend to discuss using biological materials, such as cells or enzymes, to carry out industrial processes. Extremozymes offer several advantages in bioprocessing due to their stability and efficiency under harsh conditions, such as Biofuel Production, Bioherbicides, Environmental Applications, and Industrial Biocatalysis. These supracited processes have benefits such as reduced contamination risk, high operational temperatures or extreme conditions limiting microbial contamination, cost efficiency, eliminating the need for precise environmental controls, like temperature or pH adjustments, and increased reaction rates. In conclusion, extremozymes revolutionize bioprocessing by enabling efficient and sustainable industrial processes under challenging conditions. Advances in biotechnology, such as protein engineering and synthetic biology, further expand their utility and cost-effectiveness.

Keywords: Extremozymes, Bioprocess applications, Sustainable industrial process

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