

Extremozymes

NATURE'S TOOLS FROM THE EDGE

EXTREMOPHILES are microorganisms that thrive in environments previously thought uninhabitable—such as extreme heat, cold, salinity, acidity, alkalinity, or pressure. Their enzymes, known as **extremozymes**, remain active and stable under extreme conditions, making them valuable for both science and industry.



Psychrophiles

Cold-active enzymes for detergents and food processing.



Acidophiles

Active in extreme pH levels. Used in mining and leather treatment.



Barophiles

Potential for deep-sea biotech and high-pressure systems.



Thermophiles

Heat-stable and widely used in PCR (i.e., Taq polymerase).



Halophiles

Adapted to high-salt conditions. Used in producing bioplastics.

Eco-friendly

THEIR RESILIENCE ENABLES GREENER PROCESSES



Enzymes from extremophiles are up to 5x more stable at extreme pH or temperature than their mesophilic counterparts. High salt tolerance of halophilic enzymes makes them ideal for bioplastic and biocatalysis in saline environments.

DISCOVERY



Sampling



Metagenomics



Protein engineering



DNA extraction



Bioinformatics

APPLICATIONS



PCR & DNA amplification



Synthetic biology



High/low-temp detergents



Biofuel production



Molecular biology research



Astrobiology & life detection



Food technology



Bioremediation in harsh environments



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