



The HotZyme Project

Systematic Screening For Novel Hydrolases From Hot Environments



The HotZyme Project - A Global investigation of diverse Hot Environments to identify new thermostable hydrolases with effective performance and/or novel functionalities for different industrial processes.

This is a worldwide major integrative programme that provides **cutting-edge tools and resources** to the European and international scientific and biotechnological communities.

Our ultimate goal is to develop and enhance **biotechnological innovation**, providing new opportunities for European biotechnology interests to acquire **intellectual property** and retain an internationally leading position.

The novel thermophilic enzymes discovered will have significant contributions to industrial enzyme applications, from **increasing energy savings** in the Pulp and Paper industry, to **higher yield and process efficiency** for the Oil industry, to **reduce environmental burden** in the Textile industry etc.

Project Objectives:

- ❖ Identification of novel genes or enzymatic functionalities in hot environments on earth (China, Japan, USA, Russia, Italy, Norway, New Zealand).
- ❖ Develop innovative bioinformatic techniques for metagenomic data analysis and handling and for high-throughput prediction of protein functions.
- ❖ Establish a “hot” metagenomic database of putative thermostable enzymes predicted by the newly developed bioinformatics tools. The database will be accessible for the public after the project is finished.
- ❖ To screen for and obtain novel thermostable hydrolases from metagenomes of (hyper)thermophiles and their viruses.
- ❖ Enzyme targets include thermostable glycosidases, lipases, starch degrading enzymes and proteases.



Development of advanced bioinformatics tools



Discovery of superior biotech enzyme for green chemistry and sustainable industrial processes



Strengthen European biotechnological innovation and competitiveness

An EU funded large-scale research project: 13 partners with strong expertise in Microbiology, Molecular Biology, Biochemistry and Bioinformatics etc.



University of Copenhagen



MicroDish BV



Montana State University Bozeman



Norwegian Geotechnical Institute



Winogradsky Institute of Microbiology



Novozymes A/S



Wageningen University



University of Exeter



Sigma-Aldrich Production GMBH



National Research Council of Italy



National Technical University of Athens



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