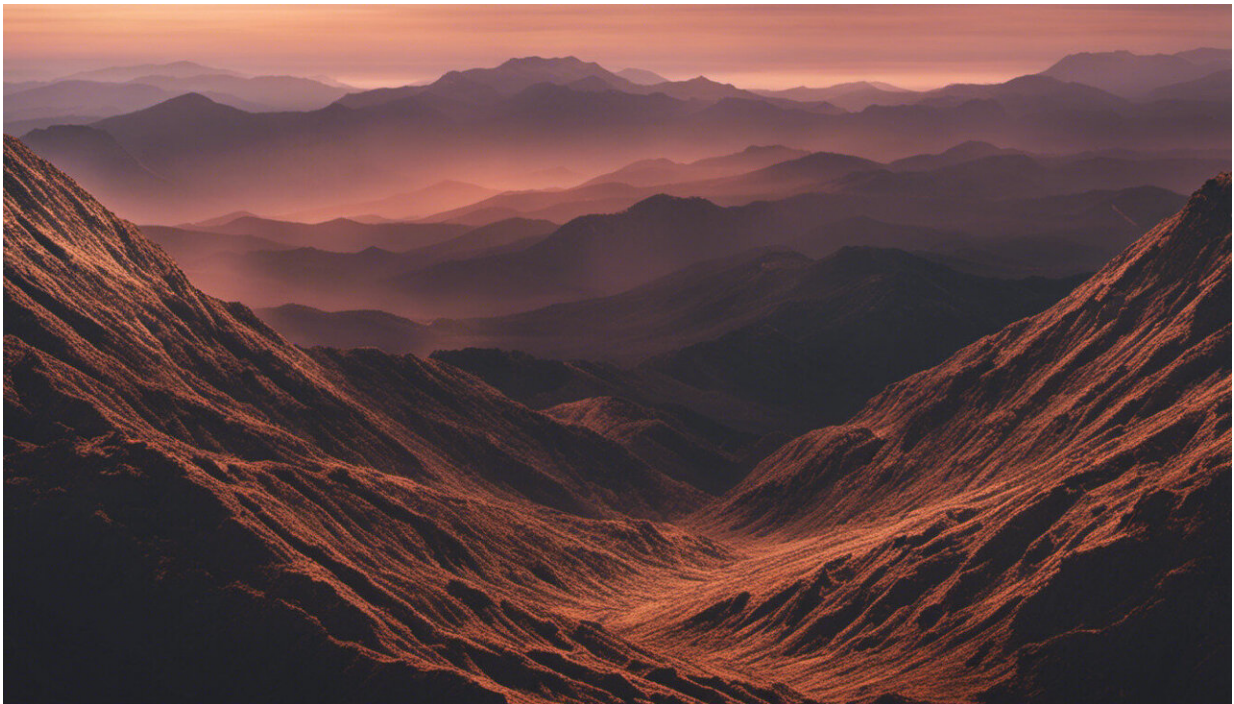


New steps in the quest to break the code of life

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Credit: AI-generated image ([disclaimer](#))

The deciphering of the human genome in 2000 was a major milestone in the history of science and a vital step towards the more complete understanding of human life.

But like many advancements in science, what it really did was lay the

groundwork for a far more challenging task: to understand the intricate and diverse modes of action of the proteins, which are the products of genes.

Understanding [protein function](#) on a genomic scale is now one of the central goals of biology. EU-funded project ENZYME MICROARRAYS ('An integrated technology for the deconvolution of complex biochemical systems, drug discovery and diagnostics') was aimed at developing new techniques to help better understand protein functioning.

Proteins are the large [biological molecules](#) that perform a vast array of functions within [living organisms](#), including catalysing [metabolic reactions](#), replicating DNA, responding to stimuli, and transporting molecules from one location to another.

Until now, the lack of appropriate technologies capable of dealing with the complexity of the entire set of proteins expressed by a genome, the so-called 'proteome', has represented a major obstacle.

ENZYME MICROARRAYS researchers at the Munich Technical University set out to develop a novel enzyme microarray technology (EMT), as a powerful tool for studying one class of proteins, the enzymes. Enzymes are large biological molecules responsible for catalysing multitudes of chemical activities that sustain life.

The project's novel EMT relies on the development of chemical probes that can be used to monitor the activity of a multitude of enzyme microarrays - a large number of enzymes arranged in classes and attached to a solid surface.

Researchers used the technique in conjunction with designed [chemical libraries](#) in order to perform a detailed, en masse, molecular assessment

of the activity of important families of enzymes.

Large scale correlations were carried out to test new hypotheses about the involvement of enzymes in networks that govern many important biochemical processes. With its success, the ENZYME MICROARRAYS project has taken us another step closer to a more fundamental understanding of the mechanisms of life.

More information: Project factsheet
cordis.europa.eu/projects/rcn/79163_en.html

Provided by CORDIS

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