

On the origin of enzymes by means of laboratory evolution

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Department of Bioengineering

Carlos Abreu · Interdisciplinary Complex



Lígia O Martins

ITQB NOVA

Instituto Tecnologia Química e Biológica António Xavier,
Universidade Nova de Lisboa

Assistant professor ITQB NOVA

Master & Doctoral degree in Biotechnology, Instituto Superior Técnico, 1994

Bachelor's degree in Biology, Universidade de Coimbra, 1987

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Biocatalysis is considered a key component for the development of a sustainable bio-economy to replace the petrol-based industry that we have relied upon in the near past. The use of enzymes as biocatalysts has been constantly growing in the chemical, food, textile, pulp and paper and pharmaceutical industries. Enzymes are sustainable, selective and efficient, and offer a variety of benefits such as cleaner reactions with lower energy requirements. This talk will focus on how directed evolution, a discovery that awarded the Nobel Prize of Chemistry 2018, is an effective and reliable engineering approach to improve enzymes' properties. Experience gained from application of directed evolution at ITQB NOVA will be shared.

Lígia O Martins

Professor
ITQB NOVA



LO Martins is leading the Microbial and Enzyme Technology lab since 2004 in the areas of enzyme discovery, engineering and applications. She has been involved as PI in more than 10 national and EU funded projects and is currently the coordinator of the RISE-H2020-B-Ligzymes project. Lígia is in the Scientific Committee of the PhD Program in Sustainable Chemistry jointly hosted by Aveiro, Porto and NOVA Universities, of the MSc Biotechnology for Sustainability (ITQB) and of the Bio-based Industries EU Joint Undertaking (2014-20).