



**ONE YEAR AFTER THE LAUNCH OF THE INTERNATIONAL NETWORK OF BIOCATALYSIS,
OLON PRESENTS THE FIRST RESULTS ANNOUNCING TO HAVE ACHIEVED THE
DEVELOPMENT OF A NEW PRODUCTION PROCESS THROUGH THE ENGINEERING OF A
TARGET ENZYME**

Milan, 10th May 2023 - One year after the launch of the International Network for Biocatalysis, an innovative scientific platform for the study and development of new industrial applications of biocatalysis, Olon, the Biocatalysis research group from the University of Amsterdam's Van 't Hoff Institute for Molecular Sciences HIMS and Biosphere jointly present the results obtained and announce that their cooperation has achieved the goal of developing a new production process through the engineering of the target enzyme, which has given extremely positive conversion results.

The effectiveness of the enzyme in the conversion of ketoacid to the corresponded unnatural aminoacid useful as key starting material for the production of an Active Pharmaceutical Ingredient, was substantiated by the significant metrics measuring complete conversion; the supporting data are: target minimum enantiomeric purity required 99.7%, enantiomeric purity obtained > 99.9%

The research project followed a virtuous model of collaboration between Olon Group, the HIMS-Biocat group led by Prof. Francesco Mutti, who has pioneered ground-breaking research in enzyme engineering and the use of enzymes for performing novel, sustainable and “green” chemical reactions, and Biosphere, an Italian SME specialized in fermentation and industrial biotechnology. The first phase of the research focused on the selection of the enzyme and its engineering to obtain the best yield and selectivity in the reductive amination reaction. Once the ad hoc optimized enzyme was obtained, the second phase took the form of developing the enzyme production process by fermentation. Now, the project is in the final phase which foresees the completion of the production process on an industrial scale.

The partnership, which will be continued in the future with other research projects, brings together some of the most advanced expertise in the field of biocatalysis from both academic and industrial spheres, to implement large-scale biocatalysis as an industrial technology used within its production facilities in Italy and around the world.

Biotransformation is the conversion of a substrate, catalysed by an either free or immobilized enzyme, obtained from cellular cultures followed by different type of purification depending of the grade of enzyme needed for the specific process. New biocatalysts and biocatalytic systems can foster more sustainable and efficient synthesis of organic molecules that are relevant for the chemical industry, as well as to address fundamental questions of bioorganic chemistry and biochemistry.

The international network was created with the objective to launch large-scale biocatalysis as an industrial technology used within Olon production facilities in Italy and around the world. The partnership, bringing together some of the most advanced expertise in the field of biocatalysis from both academic and industrial spheres, unites the Olon Group, Biosphere — an Italian SME specialised in fermentation and industrial biotechnology — and the Biocatalysis Group of the Van't Hoff Institute for Molecular Sciences (HIMS-Biocat) at the University of Amsterdam (UvA). The HIMS-Biocat group, headed by Prof. Francesco Mutti, has pioneered ground-breaking research in the area of enzyme engineering and the use of enzymes for performing novel, sustainable and “green” chemical reactions.