

The kick-off meeting of the European project ROBUSTOO "Robust industrial biocatalysts with peroxygenase, phenol-oxidase or furfuryl-oxidase activities from bacterial and fungal hosts" (HORIZON-CL6-2023-CIRCBIO-01-101135119), coordinated by Dr Susana Camarero (CIB-CSIC), was held at the CIB Margarita Salas (Madrid, Spain) on 17-18 January.

The meeting was attended by representatives of the 10 partners forming the project consortium: four biotech companies MetGen (Finland), bisy (Austria), InnoSyn and Gecco (Netherlands), the consultancy Consorzio Italbiotec (Italy), a technology centre FCBA (France), and four Spanish research groups belonging to the Autonomous University of Barcelona, the Barcelona Supercomputing Centre, and two CSIC institutes, IRNAS and CIB.

ROBUSTOO aims to capitalize on the results of previous EU-funded projects that demonstrated the applicability of three oxidative enzymes, namely non-specific peroxygenases (UPOs), laccases and hydroxymethylfurfural oxidases (HMFOs), to provide novel and more environmentally-friendly production of bio-based chemicals and materials. To exploit their full industrial potential, ROBUSTOO will carry out the large-scale production and development of new robust enzymes adapted to demanding industrial application conditions. The new biotransformations to be demonstrated in the project represent breakthrough biotechnological solutions for: (i) the conversion of industrial lignins into bio-based material components using laccases, increasing the commercial value of existing lignin products; (ii) the production of intermediate and fine chemicals, difficult to achieve by chemical synthesis, through regio/stereoselective oxygenations of lipophilic substrates with UPOs; and (iii) the synthesis of plastic polymer building-blocks using HMFOs, as a sustainable alternative to chemical catalytic processes.



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