



Press Release

1.5 Million Euros for Enzyme Research

Freiburg biochemist Jennifer Andexer receives Starting Grant from European Research Council

Junior professor Dr. **Jennifer Andexer** has submitted a successful proposal for a Starting Grant from the European Research Council (ERC). The biochemist from the University of Freiburg's Institute of Pharmaceutical and Medical Chemistry will receive 1.5 million euros in research funding in the coming five years. The grant is one of the most prestigious awards offered by the European Union. It is designed to support young scholars who wish to launch an independent career and establish their own research group in the years after earning their doctoral degree. In her project, Andexer aims to develop methods for the efficient use of enzymes that depend on a particular cofactor in biotechnological applications. This is of particular interest for the production of medicines and flavorings for the food industry.

Enzymes are proteins that catalyze chemical reactions in organisms. They are present in many products we use in our daily lives, such as laundry detergents or lactose-free dairy products. In biotechnology, enzymes are used as environmentally friendly catalysts to produce various chemicals. However, it is not always possible to transfer enzymes from the natural organism to the biotechnological process. They often need a particular kind of helper molecule, so-called cofactors. Since cofactors are often expensive, it is advantageous to recycle them from more inexpensive precursor chemicals during the reaction. Systems like this, in which the cofactor is reconstructed from its degradation products, are already well established for several classes of enzymes. This is not the case for enzymes that require

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the cofactor S-adenosyl methionine (SAM), as it is recycled in nature over a complex multi-step biosynthesis path. “Yet many reactions catalyzed by SAM-dependent enzymes are of great interest for biotechnology—particular with regard to the environmentally friendly production of pharmaceuticals and flavorings,” says Andexer. The researcher and her team aim to develop efficient methods for recycling the cofactor SAM in the coming years, thus paving the way for the sustainable use of the enzymes dependent on it.

Jennifer Andexer studied biology at the University of Düsseldorf and earned her PhD in molecular enzyme technology at Forschungszentrum Jülich in 2008. Following a stint as a postdoctoral researcher at the University of Cambridge, England, she accepted a position as junior professor of pharmaceutical and medical chemistry/chemical biology at the University of Freiburg in 2011.

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