ZYMVOL and AMINOVERSE team up to develop custom-made alcohol dehydrogenases

Barcelona/ES and Nuth/NL, January 12th 2021. Two biotech companies specialized in enzyme discovery and design, Zymvol Biomodeling and Aminoverse, will work together on the development of custom-made alcohol dehydrogenases through data-driven enzyme optimization.

The collaboration aims to advance the design of better performing enzymes by developing and utilizing data-driven approaches and demonstrate their yet unexplored potential over other more traditional methods like random mutagenesis.

"For the first time, we strive to provide a 'data foundation' to improve predictive accuracy of models and simulations" declared **David Schönauer, CEO of Aminoverse**. "The challenges are two-fold: first, obtain data sets that are actually usable (i.e. all data points can be compared, the list is complete and descriptive); and second, actually make sense of the data to procure better predictions".

The integration of experimental data with physics based simulations is currently limited by the amount of data (both in quantity and quality) available to deploy effective machine learning algorithms. According to **Maria Fátima Lucas, CEO of Zymvol**: "True progress in particularly difficult engineering campaigns render the need for out-of-the-box thinking, which is why we are joining efforts to advance industrial enzyme engineering beyond state of the art".

The two biotech companies expect to have their enzymes in the market by the second quarter of 2021. Furthermore, the initiative counts with the support of "**UNLOCK-EDD: UNLOCKing next generation computer guided Enzyme Discovery & Design**", a project financed by **Horizon 2020**, the European Union's research and innovation programme. Its goals are:

- To keep improving proprietary technology by implementing artificial intelligence approaches
- The development of a computational pipeline for enzyme kits
- The development of proprietary enzymes

Democratizing the use of green chemistry

Alcohol dehydrogenase is a type of enzyme that helps convert alcohols into ketones/aldehydes with exceptionally high stereoselectivity. They are primarily used in industries like Flavours & Fragrances (F&F) and Fine Chemicals, where they have the potential to replace existing chemical routes for other, much eco-friendlier solutions.

This is because the use of alcohol dehydrogenases can significantly decrease -or, in some cases, eliminate- the need for toxic chemicals. And since the production occurs at mild conditions, there is no need for high temperatures and pressure, which amounts to considerable energy savings.

The use of enzymes as industrial biocatalysts has increased in the last few decades as companies begin to embrace more sustainable production activities. However, most enzymes must go through an "adaptation process" before being ready for use in an industrial setting.

That is why Zymvol and Aminoverse center their activity in the current market need for better performing enzymes, adapted to each industry's particular processes and products. According to Grand View Research, the global enzyme market was worth $9.9B€ in 2019 and is estimated to grow at 8% yearly until 2027.

About ZYMVOL

ZYMVOL Biomodeling SL is a privately funded company specialized in *in silico* enzyme engineering. Founded in May 2017, the company currently has customers in more than 10 countries worldwide and is actively engaged in highly innovative and competitive R&D projects. ZYMVOL was selected in July 2019 as one of the top 10 most promising startups in Catalonia by L'Economic.

About AMINOVERSE

Aminoverse B.V. is a biotechnology company specialized in the development of enzyme-based products and applications through artificial intelligence. Founded in January 2020, the company currently has a team of scientists and investors with over 30 years of cumulative experience in enzyme R&D. Aminoverse acts as a service provider for start-ups and large corporations alike, with a portfolio ranging from genetic engineering over enzyme production and purification towards enzyme evolution and assay development.

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This Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 873593