

Baked to perfection

Puratos is using a Freedom EVO® 200 workstation to aid the development of novel enzymes for use in the baking industry. By automating enzyme screening and characterization, the Company is able to increase throughput and productivity, as well as improving quality control testing.

Puratos is an international manufacturer of innovative products and raw materials for the bakery, patisserie and chocolate sectors. The Company's bakery division develops a wide range of improvers which bakeries can use to alter the flavor, texture and shelf life of their products. The Enzymes Business

Unit, based at the Company's facility in Andenne, Belgium, is responsible for the development of novel enzymes for inclusion in these baking ingredients, and has seen a steady growth in its workload since it was created in 1994.

Valérie Dorgeo, Laboratory Supervisor for the Enzymes Business Unit, explained: "Our laboratory is constantly looking for new or enhanced enzymes which can improve or accelerate our customers' baking processes. We start by screening new enzymes or by creating a variety of genetic variants of the enzyme of interest, then use *in vitro* activity assays to characterize these enzymes. Since





David Denis and Valérie Dorgeo alongside the Freedom EVO 200 workstation

we were first established, the laboratory has seen a significant increase in both the number of projects we perform, and the number of samples per assay. To deal with this, we began investing in laboratory automation several years ago and have semi-automated several of our methods. However, even semi-automated protocols are prone to human error, and so we investigated the possibility of using a fully automated workstation to help us improve process security, as well as further increasing our throughput.”

“We looked at a number of options, and the Freedom EVO workstation from Tecan offered the most flexibility in terms of the number of different protocols we could run, as well as being a very robust instrument. It is also very quiet, which has to be a consideration for any piece of laboratory equipment which is likely to be in constant use, and has a number of built-in security features to simplify day-to-day operation. Tecan was very helpful in terms of understanding our needs, and arranged for us to run one of our protocols on a demonstration instrument. This gave us complete confidence that our workflow could be automated in the way that we wanted.”

Valérie continued: “Our Freedom EVO 200 platform is configured to be as versatile as possible, allowing us to continuously switch between assays. The instrument

is equipped with both eight-channel LiHa (Liquid Handling) Arm and MCA 96 (MultiChannel Arm™) pipetting options, as well as a RoMa (Robotic Manipulator) Arm for microplate handling, offering true parallel tasking. It also has a number of other devices integrated onto the deck of the instrument to allow on-board assay processing, including heated and shaking incubators, a thermal cycler and an Infinite® M200 PRO multimode reader equipped with a NanoQuant Plate™. Although there are currently several small steps which are performed manually – we do not yet have an integrated plate sealer or centrifuge – our intention is to completely automate around 10 of our assay protocols.”

The increased process security offered by the Freedom EVO is also helping the Enzymes Business Unit to streamline its quality control (QC) activities. David Denis, QC operator, explained: “Because manufacturing is located on the same site as the enzymes development department, we have been able to take advantage of the reproducibility and precision offered by the Freedom EVO for QC testing. The system’s in-built process security features and PosID™ sample tracking are well suited to this application, providing us with additional guarantees that our products meet the stringent specifications of our rigorous QC program, as well as accelerating the overall speed of the QC process.”

Valérie concluded: “Since taking delivery of our Freedom EVO workstation, we have had very good support from our local Tecan representative, who has assisted us in transferring existing manual protocols to the workstation platform, as well as providing on-site training for several users. Although we are still in the validation phase, we are totally confident that we will be able to switch many of our current assays to the Freedom EVO, improving the quality of our data and streamlining our laboratory workflow.”

To find out more on Tecan’s food applications, visit www.tecan.com/food

To learn more about Puratos, go to www.puratos.com