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BIOCATALYSTS

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Biocatalysts

Gamechanger in Enzyme Development and Manufacture

Biocatalysts, founded in 1983, is a global biotechnology company producing specialty enzymes at commercial scales for food, flavor and fragrances, life science, pharmaceutical and fine chemical industries. In 2018, Biocatalysts became part of BRAIN Biotech AG – a specialist in industrial biotechnology, based in Germany.

Valeria Valkova,
Senior Technical Business Manager

"Combining our scale up and production capabilities with BRAIN Biotech AG's in-depth technology expertise suites for gene editing, protein engineering, and metagenomic capabilities, we are changing the game of enzyme production," says Daren Bryce, Commercial Director, Biocatalysts.

In the life sciences industry, Biocatalysts' aim is to bring unique solutions to clients that help them quickly scale up their projects. The company utilizes microbial fermentation technologies to enable the economical production of enzymes at a commercial scale. It has successfully run more than 50 fermentation scale-up projects across multiple strain platforms, including bacteria and yeast, and developed a wide range of enzyme classes. Biocatalysts starts working with clients at an early stage, understands their processes, conducts a custom scale-up, and drives them to the production stage.

Unlike firms that either develop processes or manufacture enzymes, Biocatalysts provide an all-in-one service. It offers both off-the-shelf enzyme products as well as customized enzyme discovery, development and manufacturing service. The company's state-of-the-art facility with a vertically integrated manufacturing system optimizes the production and development of enzymes, fermented proteins, and pharmaceutical biocatalysts.

> *"On combining scale up and our production capabilities with BRAIN's deep technology expertise suites for gene editing, protein engineering and metagenomic capabilities, we are rapidly scaling up the enzyme production*

With expertise in final product formulation and flexible scale up to larger commercial volumes, Biocatalysts has become a preferred product supply partner for the life science industry. In one instance, one of its clients was manufacturing DNA polymerase in-house at a small scale. The increasing enzyme demand, however, was expected to exceed the client's in-house capacity.

Biocatalysts developed and scaled up the process to enable the manufacture in commercial quantities. A vital part of the development process included the co-development of an activity assay to allow for reliable quantification of enzyme activity to be used at both Biocatalysts' and its customer's site.

Daren Bryce,
Commercial Director Biocatalysts Ltd

"We were competitive and worked with the client to get their transfer information for manufacturing and devised strategies to scale up the production to a large-scale," adds Valeria Valkova, Technical Manager, Biocatalysts.

Research and innovation are always at the heart of Biocatalysts and BRAIN Biotech. SolasCure, a spin-off from BRAIN Biotech, recently developed a wound management formula by leveraging biomimicry and fermenting proteolytic enzymes found in saliva of maggots. It destroys the necrotic flesh in the wound. This fit-for-purpose, efficacious wound care cream is in clinical trials and has the potential to improve the health and well-being of patients. Biocatalysts' aim is to become a part of such innovative projects to scale up the manufacturing process.

With a myriad of innovations, Biocatalysts maintains an industry-agnostic approach to projects they undertake. For the road ahead, the company plans to add more production and purification strains, including chromatography and BRAIN Engineered Cas (BEC) nuclease genome editing technology, to meet the demands of the industry. LS