

A person wearing a blue lab coat and gloves is holding a petri dish. The petri dish contains a bacterial culture with numerous small, white, circular colonies. The petri dish is labeled "BRS1 (G23)". The background is a blurred image of a person's face.

BIOSYNTH[®]

Enzyme Services and Technologies Overview

Protein and Enzyme Screening
Custom Enzyme and
Protein Engineering
Bioprocess Development
Manufacture and Final
Formulation
Beta-lactamases

Securing Life Sciences Supply Chains

Enzyme Services and Technologies

We deliver high-performance enzyme solutions for custom applications in biopharma, biotech and applied markets. Our experts can provide enzyme engineering technologies to generate novel enzyme based biocatalysts for industrial and biotechnology applications and customized services in enzyme development and production. The team cover the whole spectrum of bioprocess establishment up to industrial-scale manufacture of target proteins under ISO9001:2015.

Enzyme Development Services

We are flexible and can shape our customer's enzyme projects using a selection or the entirety of our enzyme services below. From target enzyme identification to protein and enzyme engineering and manufacture we can guide you through part or the complete lifecycle of your product.

Target Enzyme Identification

Designing suitable screening assays to identify novel enzymes for your bioconversion reactions is our forte. We can screen candidate enzymes from your own enzyme collection or we can perform general database or library screening.

High-throughput Screening

To ensure that the quality and performance of all our enzymes and proteins are of a high standard and meet our customer's applications and activity, reaction kinetics and selectivity specifications, we perform in-depth analytical methods under our ISO9001 quality management system:

- **Protein analytics** - PAGE, western blot, analytical gel filtration, HPLC-MS
- **DSC and High-resolution MS**
- **Activity analysis with various substrates** - HT assays, HPLC-MS, GC-MS, TLC etc.
- **Purity and contaminant analysis** - HPLC-MS, Bioburden, TYMC, Heavy metals, Endotoxin, TAMC, Sterility, Leachables

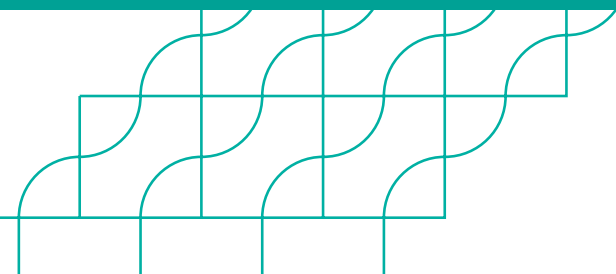
Protein and Biocatalyst Manufacture

Our team of professionals will manufacture your product using ISO9001 process controls and our novel fermentation processes, downstream processing and tailored formulations can produce protein and enzymes from a small to large scale. We can even provide compatible buffers with additives for increased stability and activity depending on your requirements. We also offer filling, labelling and packaging services for your final product and even transfer to GMP feasible facilities if required.

Protein and Enzyme Engineering

Our engineering tool box can produce customized proteins and enzymes with improved activity, stability and even substrate selectivity:

- In Silico Analysis of Protein Structures and Sequences
- Targeted Site Directed and Site Saturation Mutagenesis
- In vivo Recombination
- Gene Shuffling
- Random Mutagenesis



Bioprocess Development, Biocatalysis and Biofermentation

Optimizing the most efficient, renewable microbial fermentation methods and bioprocesses to produce your specific protein enzyme, recombinant protein or small molecule is our specialty.

- Cloning and Expression - (Yeast, Bacteria and Fungi)
- Fermentation Optimization
- Downstream Processing and Purification
- Final Formulation and Professional Upscale

Customers can choose from: spray drying, lyophilisation and immobilization. Furthermore, we give a range of professional upscaling options from 1L to 1000L bioreactors, as well as up to 150m³ with our partners in Europe. Our experts will also select the most suitable biocatalyst to carry out a specific reaction or synthetic pathway.

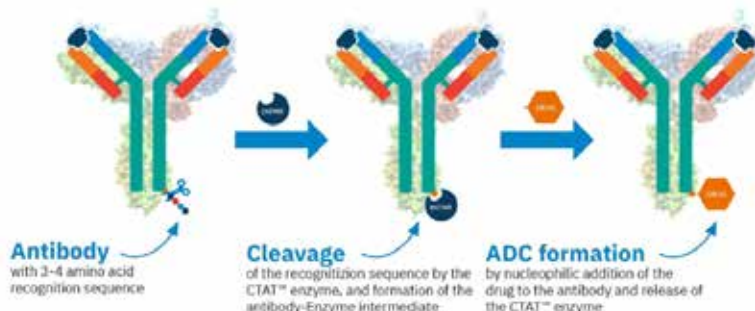


Enzyme Technology Services

State-of-the-art, natural process technology and customized enzyme solutions for a sustainable path for your project progression, offering economic and even more importantly environmental advantage.

Enzymatic Protein Drug Conjugation

Available at Biosynth is the patented linker technology CTAT™, successfully developed to conjugate your chosen payload molecule to a specific site on an antibody, antibody fragment or protein. With the potential for use in the development of antibody-drug conjugates, we are adaptable to your required payload molecule, be it a therapeutic drug molecule, bead, matrices or dye.



Environmental Monitoring

- High performing **LacBuster™ beta-lactamases** for use in monitoring the growth of microbes in sterile facilities
- Novel patented enzyme technology **Catalase**, which neutralizes hydrogen peroxide in liquid or solid media.

Immobilization

Depending on your specific requirements we can immobilize your biocatalyst using either:

- Hydrophobic resins for adsorption of the respective enzyme
- Chemically activated resins for covalent immobilization

We offer a wide range of optimal immobilized biocatalysts solutions.

For more information on our enzyme products, services and technologies visit www.biosynth.com/biologics/enzymes



Global Reach



Global locations

Switzerland	United States	Japan
United Kingdom	China	Austria
Ireland	India	Netherlands
Slovakia	South Korea	Germany

About Biosynth

Securing Life Sciences Supply Chains - where Chemistry meets Biology, Products meet Services and Innovation meets Quality, Biosynth is at the Edge of Innovation.

With an unrivaled research product portfolio of over a million products and end-to-end manufacturing services, we are science led and customer focused to solve problems, taking pride in delivering products and projects that others cannot. Our expertise and capability run across Complex Chemicals, Peptides and Key Biologics - All from one trusted partner.

Contact us

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