Agro Ingredients

Lonza

Integrated Biotech Services
From Strain to Commercial Product

Backed by Lonza's more than 30 years' experience and expertise in biological processing and our track record in the chemical and biotechnological industry, we offer our customers a full "one-stop-shop" service package at all stages of development and production.

Customized Fermentation / Down Stream Process Development and Manufacturing Services at Lab, Pilot and Commercial Scale

Strain Improvement

- Classical Mutation Technology – rational & random mutagenesis, genome shuffling (non GMO)
- Recombinant DNA Technology – metabolic engineering (GMO)
- Lonza's proprietary XS Microbial Expression Technologies™

Bioprocess Development

- Fermentation Process Development and Media Design
- Biotransformation and Biocatalysis
- Lonza's Bio catalytic Toolbox (>700 wild type strains and wide range of enzymes)
- Combined biotech and chemical process development

DSP & Formulation

- Development of product recovery & purification processes (e.g. membrane technologies, biomass separation, filtration, extraction, crystallization, drying and chemical modifications)
- Formulation technologies (e.g. spray drying, and lyophilisation)
- Analytical development for in-process and final product analysis

Scale-up & Piloting

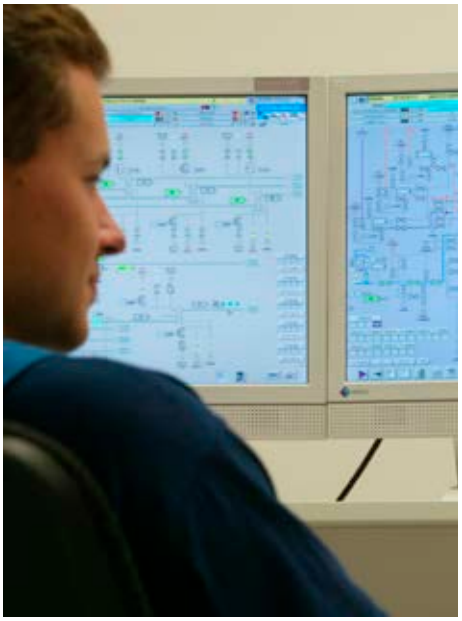
- Full range of equipment for scale-up studies
- Computational Modeling of unit operations and full processes
- Manufacturing of pilot volumes

Manufacturing & Regulatory

- Total fermentation capacity of several 100 m^3 (various fermenter sizes from 15 to 75 m^3 in combination with state of the art DSP)
- Access to Lonza's chemical manufacturing site in Visp, Switzerland
- Know-how of regulatory and registration standards

Lonza's Microbial Experience: bacteria (*E. coli*, *Bacillus sp.*, *Gluconobacter sp.*, *Rhizobium sp.*, *Pseudomonas sp.*, *Streptomyces sp.*, *Leuconostoc sp.*, *Rhodococcus sp.*, *Staphylococcus sp.*, *Lactococcus*, etc.) fungi (*Pichia sp.*, *S. cerevisiae, Aspergillus sp.*, *Penicillium sp.*, *Trichoderma*, etc.), microalgae (*Ulkenia*)

Lonza's Product Experience: sec. metabolites, biomass, enzymes, protein and peptides, biotransformation products, etc.



You have an idea of a specific target molecule, you have an initial strain and process to be further improved, for any request we develop together with you the most suitable service program.

Whether you need a few tons for your launch phase, or you request commercial volumes, we offer you a reliable technology transfer into our manufacturing assets, and take full responsibility for on-time and in-spec delivery of your product.

At our sites in Visp, Switzerland, and Kourim, Czech Republic, over 200 highly qualified experts are dedicated with their passion and motivation, to deliver out-standing results. Backed by Lonza's reliability, quality and service guarantees, we help you maximizing the financial benefit of your product.

www.lonza.com/products-services/agro-ingredients/agro-custom-manufacturing

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