



Phyton Biotech

World leader in plant cell culture technology

Plants are the very foundation of life

The plant kingdom's more than 250,000 species produce an amazing number of chemical entities, yet most of these entities have never been investigated for their medicinal properties. Although many high-profile pharmaceutical drugs such as Taxol^{®1} and Camptosar^{®2} are plant-based, plants remain underutilized as a source for novel drugs. The primary reasons are uncertain re-supply of plant material following discovery of active substances, especially for endangered or slow-growing species, and the potential complexity of synthetic routes to commercial production.

Phyton Biotech's PCF™ technology is an integrated platform designed to solve these critical issues.



Environmentally Friendly

PCF™ is an environmentally friendly method that utilizes cultured cells instead of whole plants. Since only minute amounts of native plant matter are required, natural wealth and biodiversity are preserved. Culture under completely controlled and sterile laboratory conditions ensures the optimized, reproducible production of desired plant cell-derived substance at high purity levels.

1. Registered trademark of Bristol-Myers Squibb.
2. Registered trademark of Pfizer.

Cryopreservation

Phyton Biotech has also developed proprietary cryopreservation technology for long-term storage of plant cells to stably express their traits, thereby ensuring re-supply on demand.

Manufacturing

Phyton Biotech is unique in being able to offer a complete package for commercial manufacturing. Phyton Biotech owns and operates the world's largest plant cell cGMP fermentation facility with fermentors specifically designed to meet the needs of plant cells in culture. The planning for additional production capacity is ongoing. Consequently, Phyton Biotech is able to scale production – in a short time – to any level of demand. The inherently difficult task of forecasting demand of active pharmaceutical ingredients for a new drug is overcome with the help of the flexible scalability of the PCF™ process.

Phyton Biotech has a successful track record with the FDA and other regulatory authorities.



Outsource with Confidence

Phyton Biotech, A DFB Pharmaceuticals Company, benefits from the extensive contract R&D and manufacturing experience of DFB, as well as its financial stability.



To address the needs of our customers, Phyton Biotech has developed a streamlined, three-phase approach to commercialization, consisting of Feasibility, Process Development and preparing Commercial Production. These phases encompass all activities from plant collection, strain selection and refinement, regulatory filings, process specification and optimization to pilot and commercial-scale manufacturing.

The Feasibility phase allows our customers to assess the potential of PCF™ technology to meet their needs in a competitive time frame.



New Development

Plants have recently gained significant publicity as an alternative, low cost production system for protein therapeutics. Plant cell cultures are naturally free of animal viruses and therefore do not require expensive processing for virus inactivation. Unlike microbes, plants fold proteins accurately, thus eliminating the requirement for refolding, and are capable of producing glycosylated proteins. Since plants use simple, defined, protein-free media, purification of target proteins is much simpler. Moreover, the fully controlled environment of plant cell fermentation assures nature-independent production, compared to molecular farming approaches. Phyton Biotech maintains an active involvement through research collaborations with technology leaders to bring the significant advantages of PCF™ technology to this field.

Through its leadership in this cutting-edge platform, Phyton Biotech is committed to bringing a new generation of PCF™-produced small molecules and protein therapeutics to the market.

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