Pharmaceutical Biotechnology

Pharmaceutical Biotechnology is an interdisciplinary field that involves the use of biological systems, organisms, or their derivatives in the discovery, development, and manufacturing of pharmaceutical products. Integrating knowledge from molecular biology, genetic engineering, immunology, cell biology, and pharmaceutical sciences, the discipline primarily focuses on the development of biotechnological drugs such as monoclonal antibodies, recombinant proteins, gene therapies, and vaccines.

Through modern biotechnological approaches, it is now possible to move beyond conventional pharmaceutical strategies and develop more targeted, effective, and personalized therapies for various diseases. Key technologies in the field include cell culture techniques, fermentation systems, purification strategies, and advanced analytical characterization methods. Additionally, quality assurance systems and the development of biosimilars constitute critical aspects of Pharmaceutical Biotechnology.