

Glossary

Antibody-Drug Conjugates (ADCs)

A highly targeted class of biopharmaceutical drugs designed as a targeted therapy for treating cancer. Unlike traditional chemotherapy, ADCs are engineered to precisely target and kill tumor cells while sparing healthy tissue.

ADA (Anti-Drug Antibody)

Immune proteins formed by the body against a biologic drug, potentially impacting its safety, clearance, and clinical efficacy.

Advanced Therapy Medicinal Products (ATMPs)

Medicines for human use that are based on genes, tissues, or cells. They offer groundbreaking new opportunities for the treatment of disease and injury, including gene therapies and tissue-engineered medicines.

ANRF (Anusandhan National Research Foundation)

India's apex body for funding, regulating, and fostering strategic scientific research across the country.

API (Active Pharmaceutical Ingredient)

The primary, biologically active chemical or biological component in a drug that delivers the intended health effect.

Assay

A laboratory test or investigative procedure used to qualitatively assess or quantitatively measure the presence, amount, or functional activity of a target entity, such as a drug molecule or protein.

Biobanking

The process of collecting, processing, storing, and distributing biological samples (such as blood, tissue, or DNA) and associated medical data for clinical research and future scientific studies.

Biosimilars

A biologic medical product that is highly similar to, and has no clinically meaningful differences from, another already-approved biological drug (known as the reference product).

Bioanalytical Services / Bioanalysis

A sub-discipline of analytical chemistry covering the quantitative measurement of biological drugs, small molecules, or metabolites in biological systems such as blood, plasma, or urine.

Cell and Gene Therapies

An advanced field of medicine where a patient's own cells or genetic material are modified – often using specialized DNA or RNA vehicles – to treat or cure serious genetic diseases and cancers.

Central Laboratory

A centralized laboratory facility that handles the standardized testing, analysis, and management of safety and efficacy samples collected across multiple clinical trial sites, ensuring consistent and uniform data.

Clinical Trial Management System (CTMS)

A specialized software system used by biotechnology and pharmaceutical companies to manage the complex operations of clinical trials, including tracking milestones, compliance, and participant recruitment.

Cost of Goods Sold (COGS)

The direct costs attributable to the production of the goods sold by a company, including the cost of raw materials, power utilities, and direct labor used in manufacturing.

Discovery Services

The early-stage scientific research phase where scientists identify, screen, and optimize prospective chemical or biological compounds to evaluate their potential to become safe and effective new medicines.

DMPK (Drug Metabolism and Pharmacokinetics)

The scientific study of how a drug is absorbed, distributed, metabolized, and excreted by a living organism.

Drug Substance (DS)

Also called as active pharmaceutical ingredient, API or pharmacologic substance. It is the main ingredient in a medicine that causes the desired effect of the medicine.

Drug Product (DP)

The drug substance together with added agents is called the drug product or 'Finished Product'

Flow Chemistry / Continuous Flow Chemistry

A chemical manufacturing process where chemical reactions are run in a continuous flowing stream through tubes or pipes rather than in traditional, large stationary chemical batches.

Formulations Development

The multi-step process where the active drug substance is combined with inactive ingredients (excipients) to create a final, usable drug product (like a tablet, capsule, or injection) that is stable and effective for patients.

GenAI (Generative Artificial Intelligence)

Advanced AI models utilized in corporate workflows to analyze complex datasets, automate technical reporting, and accelerate project delivery times.

Green Chemistry

A sustainable approach to chemistry and chemical engineering that focuses on designing chemical products and processes that minimize or eliminate the use and generation of hazardous substances.

GxP (Good Practice standards)

A general acronym for the collective quality guidelines and regulations (such as GMP, GLP, and GCP) governing life sciences.

Design of Experiments (DOE)

A systematic, efficient method that enables scientists and engineers to study the relationship between several input variables and critical output variables.

High-Throughput Screening (HTS)

An automated scientific testing method that uses robotics, data processing software, and sensitive detectors to rapidly screen thousands of chemical or biological compounds for activity against specific disease targets.

Large Molecule

Large molecules are therapeutic proteins. They are also known as biologics.

Liquid-Filled Hard Gelatin Capsules

A specialized drug presentation format where liquid, semi-solid, or paste-like active drug formulations are filled into a solid gelatin capsule, commonly used to improve the absorption of hard-to-dissolve medicines.

Messenger RNA (mRNA)

A family of RNA molecules that delivers precise genetic instructions to a cell's internal machinery to produce specific proteins, famously used to develop highly target-specific vaccines and therapies.

Modality

The specific physical mechanism or molecular class of a therapeutic agent used to treat a disease, such as a small molecule drug, a large molecule biologic, a peptide, or an oligonucleotide.

Monoclonal Antibodies (mAbs)

Laboratory-produced molecules engineered to serve as substitute antibodies that can restore, enhance, or mimic the immune system's attack on diseased cells.

Next-Generation Sequencing (NGS)

A modern, high-throughput DNA sequencing technology that allows scientists to rapidly sequence entire genomes or deep sections of DNA and RNA to understand genetic drivers of disease.

Oligonucleotides

Short, synthetic strands of DNA or RNA molecules that can bind to specific genetic sequences to alter gene expression, used as highly targeted therapies for rare or complex diseases.

Peptides

Short chains of amino acids linked together that act as targeted therapeutic agents, bridging the gap between traditional small molecule drugs and large molecule biologics.

Perfusion (N-1 Perfusion)

An advanced cell culture cultivation method used in biologics manufacturing where cells are continuously supplied with fresh nutrients while waste is filtered out, dramatically increasing cell density and production efficiency.

Photoredox and Electrochemistry

Modern, green synthesis techniques that use light energy (photoredox) or electrical currents (electrochemistry) to drive chemical reactions, resulting in safer processes with reduced chemical waste.

PROTACs (Proteolysis Targeting Chimeras)

An emerging class of small-molecule drugs designed to harness the body's natural waste-disposal system to selectively degrade and destroy specific disease-causing proteins inside cells.

Quality by Design (QbD)

A modern, systematic approach to pharmaceutical development that begins with predefined objectives and emphasizes product and process understanding and process control, based on sound science and quality risk management.

Right-First-Time (RFT)

A core operational excellence metric that measures the percentage of laboratory analyses, documentation entries, or manufacturing batches completed successfully without any errors or rework on the initial attempt.

Science Based Targets initiative (SBTi)

A global corporate climate action organization that defines and promotes best practices in emissions reductions and reviews and approves companies' greenhouse gas reduction targets in line with climate science.

Single-Use Technology (SUT)

Bioreactors and manufacturing equipment designed with disposable plastic bags and components instead of traditional stainless steel tanks, reducing cleaning times, water usage, and the risk of cross-contamination.

Small Molecule

Small molecules are low molecular weight compounds that can be synthesized through organic chemistry