

Cell Line Development Services Global Market - Forecast to 2030

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Abstracts

Cell lines are one the major tools used in research for studying the normal physiology and biochemistry of cells, the effects of drugs and toxic compounds on the cells, drug screening and development and large scale manufacturing of biological compounds. Cell culture is the process by which cells are grown under controlled conditions derived from microbial or animal cells. Cell lines are subculture of primary culture also known as sub-clone. Cell lines derived from primary cultures have a limited life span, after subsequent cultures, cells with the highest growth capacity dominate which are selected for further cell development. Primary cells are cells that are cultured directly from a subject and have a limited lifespan. An immortalized cell line can proliferate indefinitely either through random mutation or deliberate modification which are useful especially for production of therapeutics.

The cell line development service market is expected to grow at a double digit CAGR from 2022 to 2030 to reach \$2,093.2 million by 2030. Increasing trend of biologics outsourcing and increasing approval and demand for biologics and biosimilars are driving the market. While, growing incidence rate of oncology, autoimmune disorders, infectious diseases & genetic disorders, growth in research activities related to the diseases and also recombinant cell lines for the production recombinant biopharmaceutical proteins and technological advancements in cell line engineering (gene editing tools) & cell line development technologies, screening technologies and process development are giving immense growth opportunities for the market. However, tedious procedure involved in the development of stable cell lines and high risk of contamination are restraining the market. Furthermore, stringent and complex regulations and the high cost and technical requirement to adhere to accreditations such as GMP are posing threat to the industry.



Cell line development service global market is classified based on the expression system, cell line type, application and geography. Based on expression system, cell line development service global market is segmented into microbial, mammalian and others. Among these, mammalian expression system is accounted for the highest revenue of in 2022 and is expected to grow at a double digit CAGR from 2022 to 2030 due to increasing approval of novel biologics drugs with mammalian expression system, ability to add human-like post-translational modifications to the complex protein therapeutics and launch of advanced mammalian expression system to improve biologics development.

Based on the cell line type, global cell line development service market is segmented into CHO, Mouse Myeloma (NS0; Sp2/0), Human Embryonic Kidney (HEK), Baby Hamster Kidney (BHK), Hybridoma, Human Embryonic Retina (PER.C6) and others. Among these, CHO cell line accounted for the highest revenue in 2022 and is expected to grow at an early teen CAGR from 2022 to 2030 due to increasing approval of biologics which are developed from CHO cell lines, development of advanced CHO cell line development platform by the CDMO and collaboration to offer CHO based CLD services.

Cell lines are essential for a wide range of applications including gene function studies, drug discovery assays, the production of biotherapeutics and diagnostics. Based on application, cell line development service global market is segmented into research, bioproduction and diagnostics. Among these, bioproduction segment accounted for the highest revenue in 2022 and is expected to grow at a double digit CAGR from 2022 to 2030 due higher demand of biologics & biosimilars for therapeutics application and increasing collaboration between the companies for the development & production of biotherapeutics using cell line development platforms. Based on the geography, cell line development service global market is segmented into North America, Europe, Asia-Pacific and Rest of the world. North America commanded the highest revenue in 2022. The market is expected to grow at a high single digit CAGR of from 2022 to 2030. Asia-Pacific region is expected to grow at a early teen CAGR during the forecasted period.

Most of the CDO or CDMO offering cell line development services to generate cell lines for bio production, research or diagnostic purposes. Companies are developing advanced platforms to generate high-performance, highly stable, production cell lines. For instance, in October 2022, Aragen Life Sciences has launched its RapTr 2022 cell line development platform.RapTr2022 offers a 33% reduction in CLD timelines and delivers increased titres up to 6g/l. The RapTr CLD services include the proven CHO-DG44 and CHO-GS cell lines and proprietary vector combinations with an innovative



clone selection process.

Newer technologies such as automated screening methods, advanced cell line engineering techniques, enhanced expression systems, improved process monitoring, and use of single use bioreactor & micro bioreactor for small scale bioproduction are further expected to provide this market with lucrative future growth opportunities. Screening of high producing cell clone one of important step in cell line development. Automated screening is used for screening of a large number of clones to identify the small subset of high producing clones. Nanofluidic technologies offer a promising solution to further miniaturize cell culture processes. One such technology platform has been developed by Berkeley Lights. CDMO are adopting advanced clone selection technologies (such as omics, optofluidics, and siRNA) to enhance their cell line development services offerings. Apart from optiofludics technologies, CDMO are adding advanced single cell sorting technologies to expand their offerings.

The ability of non-human mammalian expression systems to produce non-human post translational modifications like N-glycolylneuraminic acid (NGNA) and alpha1,3-galactose (?-gal) that can affect the stability, biologic activity, immunogenicity and clearance of the biologic products produced from them has led to a gradual shift of focus to the equally productive and more valuable niche human expression systems.

The cell line development service global market is consolidated, top six players occupy a share of XX% and other companies occupy a share of XX% in 2022. The major players in cell line development service global market include AGC Inc. (AGC Biologics) (Japan), Boehringer Ingelheim International GmbH (Germany), Catalent Inc. (U.S.), Charles River Laboratories International Inc. (U.S.), Fujifilm Holdings Corporation (Japan), Genscript Biotech Corporation (U.S.), JSR Corporation (Japan), Lonza Group Ltd. (Switzerland), Samsung Biologics Co. Ltd. (South Korea), Thermofisher Scientific Inc. (Patheon N.V.) (Brammer Bio) (U.S.), Wuxi Biologics (China), Sartious Group (Germany), Merck KGaA (Germany), Eurofins Scientific S.E ((Luxembourg).



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