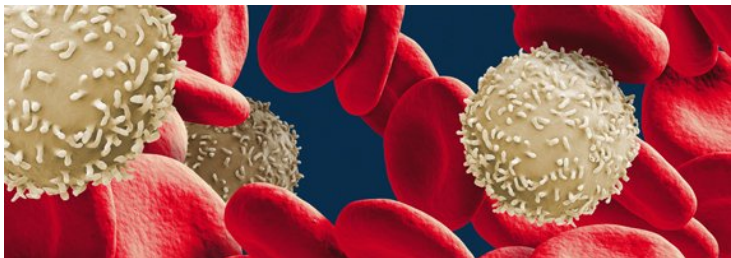


## Biotechnological separation systems to touch \$28 bn

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Macromolecules which include protein, RNA, DNA and nucleic acids undergo separation or are broken into smaller molecules, during production of commercially available biotechnological products.

This separation requires various advanced systems like centrifugation, liquid chromatography, electrophoresis, membrane filtration and other methods for biomolecular methods.

The other methods involve microarray and lab-on-a-chip, flow cytometry, magnetic separation.

The separation systems have immense application in complex compound separation, production of hormones, insulin, vaccines and enzymes used as therapeutic agents against various diseases.

They play important role in cell-tissue characterization and in forensic analysis as well.

The global market of biotechnological separation systems is forecasted to be around \$28 billion by 2019, growing at an approximate CAGR of 10 percent in the forecasted years.

The liquid chromatography market occupies a largest share of all the available techniques and membrane filtration market is the fastest growing segment.

Enhancing need for improved large-scale separation and purification methods in biotechnology industry, competition in research and development field and recognition of different separation techniques are the major drivers leading to market growth in developed countries.

Increasing investment in this sector contribute to market expansion in India, China and Brazil.

The major industry players in separation system market are Affymetrix (US), Applied biosystems Corporation (US), Beckman Coulter Inc (US), Bio-Rad Laboratories (US), Caliper Life Sciences, Dionex, GE Healthcare Life Sciences (US), Invitrogen (US), Life Technologies, Perkin-Elmer (US), Pall Corporation (US), Qiagen GmbH (Germany), Shimadzu Scientific Instruments (Japan), and Whatman International.