

# **Synthetic Biology Market Size, Trends, Analysis, and Outlook By Tool (Oligonucleotides and Synthetic DNA, Enzymes, Cloning Technologies Kits, Synthetic Cells, Chassis Organisms, Xeno-nucleic Acids), By Technology (Gene Synthesis, Genome Engineering, Sequencing, Bioinformatics, Site-directed Mutagenesis, Cloning, Measurement and Modelling, Microfluidics, Nanotechnology), By Application (Medical Application, Artificial Tissue and Tissue Regeneration, Industrial Applications, Environmental Applications, Others), by Country, Segment, and Companies, 2024-2032**

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## **Abstracts**

The global Synthetic Biology market size is poised to register 24.1% growth from 2024 to 2032, presenting significant growth prospects for companies operating in the industry. The industry study analyzes the global Synthetic Biology market across By Tool (Oligonucleotides and Synthetic DNA, Enzymes, Cloning Technologies Kits, Synthetic Cells, Chassis Organisms, Xeno-nucleic Acids), By Technology (Gene Synthesis, Genome Engineering, Sequencing, Bioinformatics, Site-directed Mutagenesis, Cloning, Measurement and Modelling, Microfluidics, Nanotechnology), By Application (Medical Application, Artificial Tissue and Tissue Regeneration, Industrial Applications, Environmental Applications, Others)

In the Synthetic Biology market, the convergence of biology, engineering, and

computational sciences is driving innovation in synthetic biology for the design, construction, and manipulation of biological systems and organisms for various applications in healthcare, agriculture, energy, and environmental sustainability. Synthetic biology encompasses a range of techniques, such as gene synthesis, genome editing, metabolic engineering, and pathway optimization, aimed at creating novel biological functions, pathways, and organisms with enhanced properties or functionalities. With the growing demand for sustainable solutions, personalized medicine, and biomanufacturing, there is a rising need for synthetic biology tools and platforms that offer precision, scalability, and reproducibility in engineering biological systems for specific applications. Further, advancements in DNA synthesis, genome editing technologies, and computational design algorithms are driving market growth by enabling more efficient and cost-effective synthetic biology workflows. By 2030, the market is poised for significant expansion as academic institutions, biotechnology companies, and industrial biotech firms increasingly leverage synthetic biology to address global challenges and develop innovative solutions for healthcare, agriculture, and industrial bioprocessing.

## Synthetic Biology Market Drivers, Trends, Opportunities, and Growth Opportunities

This comprehensive study discusses the latest trends and the most pressing challenges for industry players and investors. The Synthetic Biology market research analyses the global market trends, key drivers, challenges, and opportunities in the industry. In addition, the latest Future of Synthetic Biology survey report provides the market size outlook across types, applications, and other segments across the world and regions. It provides data-driven insights and actionable recommendations for companies in the Synthetic Biology industry.

## Key market trends defining the global Synthetic Biology demand in 2024 and Beyond

The industry continues to remain an attractive hub for opportunities for both domestic and global vendors. As the market evolves, factors such as emerging market dynamics, demand from end-user sectors, a growing patient base, changes in consumption patterns, and widening distribution channels continue to play a major role.

## Synthetic Biology Market Segmentation- Industry Share, Market Size, and Outlook to 2032

The Synthetic Biology industry comprises a wide range of segments and sub-segments. The rising demand for these product types and applications is supporting companies to

increase their investment levels across niche segments. Accordingly, leading companies plan to generate a large share of their future revenue growth from expansion into these niche segments. The report presents the market size outlook across segments to support Synthetic Biology companies scaling up production in these sub-segments with a focus on expanding into emerging countries.

### Key strategies adopted by companies within the Synthetic Biology industry

Leading Synthetic Biology companies are boosting investments to capitalize on untapped potential and future possibilities across niche market segments and surging demand conditions in key regions. Further, companies are leveraging advanced technologies to unlock opportunities and achieve operational excellence. The report provides key strategies opted for by the top 10 Synthetic Biology companies.

### Synthetic Biology Market Study- Strategic Analysis Review

The Synthetic Biology market research report dives deep into the qualitative factors shaping the market, empowering you to make informed decisions-

**Industry Dynamics:** Porter's Five Forces analysis to understand bargaining power, competitive rivalry, and threats that impact long-term strategy formulation.

**Strategic Insights:** Provides valuable perspectives on key players and their approaches based on comprehensive strategy analysis.

**Internal Strengths and Weaknesses:** Develop targeted strategies to leverage strengths, address weaknesses, and capitalize on market opportunities.

**Future Possibilities:** Prepare for diverse outcomes with in-depth scenario analysis. Explore potential market disruptions, technology advancements, and economic changes.

### Synthetic Biology Market Size Outlook- Historic and Forecast Revenue in Three Cases

The Synthetic Biology industry report provides a detailed analysis and outlook of revenue generated by companies from 2018 to 2023. Further, with actual data for 2023, the report forecasts the market size outlook from 2024 to 2032 in three case scenarios-

low case, reference case, and high case scenarios.

## Synthetic Biology Country Analysis and Revenue Outlook to 2032

The report analyses 22 countries worldwide including the key driving forces and market size outlook from 2021 to 2032. In addition, region analysis across Asia Pacific, Europe, the Middle East, Africa, North America, and South America is included in the study. For each of the six regions, the market size outlook by segments is forecast for 2032.

### North America Synthetic Biology Market Size Outlook- Companies plan for focused investments in a changing environment

The US continues to remain the market leader in North America, driven by a large consumer base, the presence of well-established providers, and a strong healthcare infrastructure. Leading companies focus on new product launches in the changing environment. The US healthcare expenditure is expected to grow to \$4.8 trillion in 2024 (around 3.7% growth in 2024), potentially driving demand for various Synthetic Biology market segments. Similarly, Strong market demand is encouraging Canadian Synthetic Biology companies to invest in niche segments. Further, as Mexico continues to strengthen its relations and invest in technological advancements, the Mexico Synthetic Biology market is expected to experience significant expansion, offering lucrative opportunities for both domestic and international stakeholders.

### Europe Synthetic Biology Market Size Outlook-Companies investing in assessing consumers, categories, competitors, and capabilities

The German industry remains the major market for companies in the European Synthetic Biology industry with consumers in Germany, France, the UK, Spain, Italy, and others anticipated to register a steady demand throughout the forecast period, driving the overall market prospects. In addition, the proactive approach of vendors in identifying and leveraging new growth prospects positions the European Synthetic Biology market for an upward trajectory, fostering both domestic and international interest. Leading brands operating in the industry are emphasizing effective marketing strategies, innovative product offerings, and a keen understanding of consumer preferences.

### Asia Pacific Synthetic Biology Market Size Outlook- an attractive hub for opportunities for both local and global companies

The increasing prevalence of indications, robust healthcare expenditure, and increasing investments in healthcare infrastructure drive the demand for Synthetic Biology in Asia Pacific. In particular, China, India, and South East Asian Synthetic Biology markets present a compelling outlook for 2032, acting as a magnet for both domestic and multinational vendors seeking growth opportunities. Similarly, with a burgeoning population and a rising middle class, India offers a vast consumer market. Japanese and Korean companies are quickly aligning their strategies to navigate changes, explore new markets, and enhance their competitive edge. Our report utilizes in-depth interviews with industry experts and comprehensive data analysis to provide a comprehensive outlook of 6 major countries in the APAC region.

**Latin America Synthetic Biology Market Size Outlook- Continued urbanization and rising income levels**

Rising income levels contribute to greater purchasing power among consumers, spurring consumption and creating opportunities for market expansion. Continued urbanization and rising income levels are expected to sustainably drive consumption growth in the medium to long term.

**Middle East and Africa Synthetic Biology Market Size Outlook- continues its upward trajectory across segments**

Robust demand from Middle Eastern countries including Saudi Arabia, the UAE, Qatar, Kuwait, and other GCC countries supports the overall Middle East Synthetic Biology market potential. Fueled by increasing healthcare expenditure of individuals, growing population, and high prevalence across a few markets drives the demand for Synthetic Biology.

**Synthetic Biology Market Company Profiles**

The global Synthetic Biology market is characterized by intense competitive conditions with leading companies opting for aggressive marketing to gain market shares. The report presents business descriptions, SWOT analysis, growth strategies, and financial profiles. Leading companies included in the study are Agilent Technologies Inc, Amyris Inc, Codexis Inc, Creative Enzymes, Eurofins Scientific SE, GenScript Biotech Corp, Ginkgo Bioworks Holdings Inc, Merck KGaA, Novozymes A/S, Precigen Inc, Synthego Corp, Synthetic Genomics Inc, Thermo Fisher Scientific Inc, Twist Bioscience Corp.

**Recent Synthetic Biology Market Developments**

The global Synthetic Biology market study presents recent market news and developments including new product launches, mergers, acquisitions, expansions, product approvals, and other updates in the industry.

## Synthetic Biology Market Report Scope

Parameters: Revenue, Volume Price

Study Period: 2023 (Base Year); 2018- 2023 (Historic Period); 2024- 2032 (Forecast Period)

Currency: USD; (Upon request, can be provided in Euro, JPY, GBP, and other Local Currency)

## Qualitative Analysis

Pricing Analysis

Value Chain Analysis

SWOT Profile

Market Dynamics- Trends, Drivers, Challenges

Porter's Five Forces Analysis

Macroeconomic Impact Analysis

Case Scenarios- Low, Base, High

## Market Segmentation:

By Tool

Oligonucleotides and Synthetic DNA

Enzymes

Cloning Technologies Kits

Synthetic Cells

Chassis Organisms

Xeno-nucleic Acids

By Technology

Gene Synthesis

Genome Engineering

Sequencing

Bioinformatics

Site-directed Mutagenesis

Cloning

Measurement and Modelling

Microfluidics

Nanotechnology

By Application

Medical Application

Artificial Tissue and Tissue Regeneration

Industrial Applications

Environmental Applications

Others

Geographical Segmentation:

North America (3 markets)

Europe (6 markets)

Asia Pacific (6 markets)

Latin America (3 markets)

Middle East Africa (5 markets)

Companies

Agilent Technologies Inc

Amyris Inc

Codexis Inc

Creative Enzymes

Eurofins Scientific SE

GenScript Biotech Corp

Ginkgo Bioworks Holdings Inc

Merck KGaA

Novozymes A/S

Precigen Inc

Synthego Corp



Synthetic Genomics Inc

Thermo Fisher Scientific Inc

Twist Bioscience Corp

Formats Available: Excel, PDF, and PPT

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Synthetic Cells  
Chassis Organisms  
Xeno-nucleic Acids  
By Technology  
Gene Synthesis  
Genome Engineering  
Sequencing  
Bioinformatics  
Site-directed Mutagenesis  
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  - Ginkgo Bioworks Holdings Inc
  - Merck KGaA
  - Novozymes A/S
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  - Synthetic Genomics Inc
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