

# **Synthetic Biology Market by Tools (Oligonucleotides, Enzymes, Synthetic Cells), Technology (Genome Engineering, Bioinformatics), Applications (Tissue Regeneration, Biofuel, Food, Agriculture, Consumer Care, Environmental)- Global Forecast to 2027**

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## **Abstracts**

The global synthetic biology market size is projected to reach USD 35.7 billion by 2027 from USD 11.4 billion in 2022, at a CAGR of 25.6% during the forecast period. Factors such as increasing investment in synthetic biology research, declining cost of DNA sequencing, increasing adoption of synthetic biology across various industries are driving the market growth at faster pace.

“The oligonucleotides and synthetic DNA segment is likely to grow at highest CAGR during the forecast period of 2022-2027.”

On the basis of tools, the synthetic biology market is segmented into oligonucleotides & synthetic DNA, enzymes, cloning technology kits, synthetic cells, chassis organisms, and xeno-nucleic acids. The oligonucleotides and synthetic DNA segment is projected to grow at highest CAGR during the forecast period. The growth is attributed to increased demand for synthetic DNA, synthetic RNA, and synthetic genes across various industries. Furthermore, launch of novel products in the market is further likely to have positive impact on the segmental growth.

“The gene synthesis segment held dominant share in 2021.”

Based on technology, the market is segmented into gene synthesis, genome engineering, sequencing, bioinformatics, cloning, site-directed mutagenesis, measurement and modeling, microfluidics, nanotechnology. The genome engineering

segment is expected to grow at faster pace during the the forecast period due to factors such as the use of these techniques in therapeutics development, advancement in CRISPR technologies is increasing adoption.

“in 2021, medical applications segment held dominant share.”

Based on application, the synthetic biology market is segmented into medical applications, industrial applications, food & agriculture, and environmental applications. The medical applications segment held domiant share in synthetic biology market . Adoption of synthetic biology in research and drug discovery & development is one of the major factor anticipated to project the market growth.

“Asia Pacific region is likely to grow at faster pace.”

The synthetic biology market is divided into North America, Europe, the Asia Pacific, Latin America, and the Middle East & Africa. In 2021, North America accounted for the dominant share in synthetic biology market. The dominance of the region is attributable to various factors such as presence of dominant and key market players in the region coupled augmented use of synthetic biology in various application. Asia Pacific region is likely to grow at faster pace owing to various factors such as rise in demand for synthetic cells across the region, increased research and development funding and emergence of new market players in the synthetic biology market.

The primary interviews conducted for this report can be categorized as follows:

By Respondent: Supply Side- 60%, and Demand Side - 40%

By Designation (Supply Side): Managers - 45%, CXOs & Directors - 25%, Executives- 15%, Other -15.0%

By Region: North America -40%, Europe -25%, Asia-Pacific -20%, Latin America -10%, and Middle East and Africa -5%

Lists of Companies Profiled in the Report:

Thermo Fisher Scientific (US)

Merck KGaA (Germany)

Agilent Technologies (US)

Novozymes (Denmark)

Ginkgo Bioworks (US)

Amyris (US)

Precigen (US)

GenScript Biotech Corporation (China)

Twist Bioscience (US)

Synthetic Genomics (US)

Codexis (US)

Synthego (US)

Creative Enzymes (US)

Eurofins Scientific (Luxembourg)

Cyrus Biotechnology (US)

ATUM (US)

TeselaGen (US)

Arzeda (US)

Integrated DNA Technologies (US)

New England Biolabs (US)

Elevate Bio (US)

ZENFOLD (Iosynth) (India)

Synbio Technologies (US)

Inscripta, Inc. (US)

CRISPR Therapeutics (Switzerland).

#### Research Coverage:

This report provides a detailed picture of the synthetic biology market. It aims at estimating the size and future growth potential of the market across different segments, such as tool, technology, application, and region. The report also includes an in-depth competitive analysis of the key market players, along with their company profiles, recent developments, and key market strategies.

#### Key Benefits of Buying the Report:

The report will help market leaders/new entrants by providing them with the closest approximations of the revenue numbers for the overall synthetic biology market and its subsegments. It will also help stakeholders better understand the competitive landscape and gain more insights to better position their business and make suitable go-to-market strategies. This report will enable stakeholders to understand the market's pulse and provide them with information on the key market drivers, restraints, opportunities, and challenges.

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8.5.1.1 Bioremediation helps in cleaning oil spills, preventing chemical pollution, and plugging nuclear leakages

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TABLE 284 GERMANY: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

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#### 9.3.2.1 Increasing R&D expenditure to favor market

TABLE 285 UK: SYNTHETIC BIOLOGY MARKET, BY TOOL, 2020–2027 (USD MILLION)

TABLE 286 UK: SYNTHETIC BIOLOGY MARKET, BY TECHNOLOGY, 2020–2027 (USD MILLION)

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TABLE 295 UK: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

### 9.3.3 FRANCE

9.3.3.1 Availability of funds from government and private organizations for domestic drug development to support market

TABLE 296 FRANCE: SYNTHETIC BIOLOGY MARKET, BY TOOL, 2020–2027 (USD MILLION)

TABLE 297 FRANCE: SYNTHETIC BIOLOGY MARKET, BY TECHNOLOGY, 2020–2027 (USD MILLION)

TABLE 298 FRANCE: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027 (USD MILLION)

TABLE 299 FRANCE: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 300 FRANCE: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 301 FRANCE: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

TABLE 302 FRANCE: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 303 FRANCE: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL ENZYMES, BY INDUSTRY, 2020–2027 (USD MILLION)

TABLE 304 FRANCE: SYNTHETIC BIOLOGY MARKET FOR CONSUMER CARE INDUSTRY, BY TYPE, 2020–2027 (USD MILLION)

TABLE 305 FRANCE: SYNTHETIC BIOLOGY MARKET FOR ENVIRONMENTAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 306 FRANCE: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

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9.3.4.1 Well-established pharmaceutical and biotechnology industry to favor market

TABLE 307 SWITZERLAND: SYNTHETIC BIOLOGY MARKET, BY TOOL, 2020–2027 (USD MILLION)

TABLE 308 SWITZERLAND: SYNTHETIC BIOLOGY MARKET, BY TECHNOLOGY, 2020–2027 (USD MILLION)

TABLE 309 SWITZERLAND: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027 (USD MILLION)

TABLE 310 SWITZERLAND: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

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TABLE 312 SWITZERLAND: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

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TABLE 317 SWITZERLAND: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

### 9.3.5 DENMARK

9.3.5.1 Third-largest commercial drug development pipeline in Europe to drive market

TABLE 318 DENMARK: SYNTHETIC BIOLOGY MARKET, BY TOOL, 2020–2027 (USD MILLION)

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TABLE 320 DENMARK: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027 (USD MILLION)

TABLE 321 DENMARK: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 322 DENMARK: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 323 DENMARK: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

TABLE 324 DENMARK: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 325 DENMARK: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL ENZYMES, BY INDUSTRY, 2020–2027 (USD MILLION)

TABLE 326 DENMARK: SYNTHETIC BIOLOGY MARKET FOR CONSUMER CARE INDUSTRY, BY TYPE, 2020–2027 (USD MILLION)

TABLE 327 DENMARK: SYNTHETIC BIOLOGY MARKET FOR ENVIRONMENTAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 328 DENMARK: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

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9.3.6.1 Increasing life science R&D, funded by both public and private organizations, to drive market

TABLE 329 ITALY: SYNTHETIC BIOLOGY MARKET, BY TOOL, 2020–2027 (USD MILLION)

TABLE 330 ITALY: SYNTHETIC BIOLOGY MARKET, BY TECHNOLOGY, 2020–2027 (USD MILLION)

TABLE 331 ITALY: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027

(USD MILLION)

TABLE 332 ITALY: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 333 ITALY: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 334 ITALY: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

TABLE 335 ITALY: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 336 ITALY: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL ENZYMES, BY INDUSTRY, 2020–2027 (USD MILLION)

TABLE 337 ITALY: SYNTHETIC BIOLOGY MARKET FOR CONSUMER CARE INDUSTRY, BY TYPE, 2020–2027 (USD MILLION)

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TABLE 339 ITALY: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

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9.3.7.1 Well-established network of research centers, universities, and hospitals to support market

TABLE 340 SPAIN: SYNTHETIC BIOLOGY MARKET, BY TOOL, 2020–2027 (USD MILLION)

TABLE 341 SPAIN: SYNTHETIC BIOLOGY MARKET, BY TECHNOLOGY, 2020–2027 (USD MILLION)

TABLE 342 SPAIN: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027 (USD MILLION)

TABLE 343 SPAIN: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 344 SPAIN: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 345 SPAIN: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

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TABLE 347 SPAIN: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL ENZYMES, BY INDUSTRY, 2020–2027 (USD MILLION)

TABLE 348 SPAIN: SYNTHETIC BIOLOGY MARKET FOR CONSUMER CARE INDUSTRY, BY TYPE, 2020–2027 (USD MILLION)

TABLE 349 SPAIN: SYNTHETIC BIOLOGY MARKET FOR ENVIRONMENTAL

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TABLE 350 SPAIN: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

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TABLE 351 REST OF EUROPE: SYNTHETIC BIOLOGY MARKET, BY TOOL, 2020–2027 (USD MILLION)

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TABLE 353 REST OF EUROPE: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027 (USD MILLION)

TABLE 354 REST OF EUROPE: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 355 REST OF EUROPE: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 356 REST OF EUROPE: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

TABLE 357 REST OF EUROPE: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 358 REST OF EUROPE: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL ENZYMES, BY INDUSTRY, 2020–2027 (USD MILLION)

TABLE 359 REST OF EUROPE: SYNTHETIC BIOLOGY MARKET FOR CONSUMER CARE INDUSTRY, BY TYPE, 2020–2027 (USD MILLION)

TABLE 360 REST OF EUROPE: SYNTHETIC BIOLOGY MARKET FOR ENVIRONMENTAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 361 REST OF EUROPE: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

#### 9.3.9 RECESSION IMPACT

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TABLE 365 ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027 (USD MILLION)

TABLE 366 ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)



TABLE 367 ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

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TABLE 369 ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 370 ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL ENZYMES, BY INDUSTRY, 2020–2027 (USD MILLION)

TABLE 371 ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET FOR CONSUMER CARE INDUSTRY, BY TYPE, 2020–2027 (USD MILLION)

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TABLE 373 ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

#### 9.4.1 CHINA

9.4.1.1 Growing R&D to enhance technological capabilities to favor market

TABLE 374 CHINA: SYNTHETIC BIOLOGY MARKET, BY TOOL, 2020–2027 (USD MILLION)

TABLE 375 CHINA: SYNTHETIC BIOLOGY MARKET, BY TECHNOLOGY, 2020–2027 (USD MILLION)

TABLE 376 CHINA: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027 (USD MILLION)

TABLE 377 CHINA: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 378 CHINA: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 379 CHINA: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

TABLE 380 CHINA: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 381 CHINA: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL ENZYMES, BY INDUSTRY, 2020–2027 (USD MILLION)

TABLE 382 CHINA: SYNTHETIC BIOLOGY MARKET FOR CONSUMER CARE INDUSTRY, BY TYPE, 2020–2027 (USD MILLION)

TABLE 383 CHINA: SYNTHETIC BIOLOGY MARKET FOR ENVIRONMENTAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 384 CHINA: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

#### 9.4.2 JAPAN

9.4.2.1 Large number of research initiatives for development of precision medicine to support market

TABLE 385 JAPAN: SYNTHETIC BIOLOGY MARKET, BY TOOL, 2020–2027 (USD MILLION)

TABLE 386 JAPAN: SYNTHETIC BIOLOGY MARKET, BY TECHNOLOGY, 2020–2027 (USD MILLION)

TABLE 387 JAPAN: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027 (USD MILLION)

TABLE 388 JAPAN: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 389 JAPAN: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 390 JAPAN: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

TABLE 391 JAPAN: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 392 JAPAN: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL ENZYMES, BY INDUSTRY, 2020–2027 (USD MILLION)

TABLE 393 JAPAN: SYNTHETIC BIOLOGY MARKET FOR CONSUMER CARE INDUSTRY, BY TYPE, 2020–2027 (USD MILLION)

TABLE 394 JAPAN: SYNTHETIC BIOLOGY MARKET FOR ENVIRONMENTAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 395 JAPAN: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

#### 9.4.3 AUSTRALIA

9.4.3.1 Increasing focus of healthcare system on precision medicine to offer significant growth opportunities

TABLE 396 AUSTRALIA: SYNTHETIC BIOLOGY MARKET, BY TOOL, 2020–2027 (USD MILLION)

TABLE 397 AUSTRALIA: SYNTHETIC BIOLOGY MARKET, BY TECHNOLOGY, 2020–2027 (USD MILLION)

TABLE 398 AUSTRALIA: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027 (USD MILLION)

TABLE 399 AUSTRALIA: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 400 AUSTRALIA: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 401 AUSTRALIA: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

TABLE 402 AUSTRALIA: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 403 AUSTRALIA: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL ENZYMES, BY INDUSTRY, 2020–2027 (USD MILLION)

TABLE 404 AUSTRALIA: SYNTHETIC BIOLOGY MARKET FOR CONSUMER CARE INDUSTRY, BY TYPE, 2020–2027 (USD MILLION)

TABLE 405 AUSTRALIA: SYNTHETIC BIOLOGY MARKET FOR ENVIRONMENTAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 406 AUSTRALIA: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

#### 9.4.4 INDIA

9.4.4.1 Increasing pharma R&D activities and government funding for biotechnology industry to support market

TABLE 407 INDIA: SYNTHETIC BIOLOGY MARKET, BY TOOL, 2020–2027 (USD MILLION)

TABLE 408 INDIA: SYNTHETIC BIOLOGY MARKET, BY TECHNOLOGY, 2020–2027 (USD MILLION)

TABLE 409 INDIA: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027 (USD MILLION)

TABLE 410 INDIA: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 411 INDIA: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 412 INDIA: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

TABLE 413 INDIA: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 414 INDIA: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL ENZYMES, BY INDUSTRY, 2020–2027 (USD MILLION)

TABLE 415 INDIA: SYNTHETIC BIOLOGY MARKET FOR CONSUMER CARE INDUSTRY, BY TYPE, 2020–2027 (USD MILLION)

TABLE 416 INDIA: SYNTHETIC BIOLOGY MARKET FOR ENVIRONMENTAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 417 INDIA: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

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TABLE 419 REST OF ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET, BY



TECHNOLOGY, 2020–2027 (USD MILLION)

TABLE 420 REST OF ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027 (USD MILLION)

TABLE 421 REST OF ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 422 REST OF ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 423 REST OF ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

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TABLE 425 REST OF ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL ENZYMES, BY INDUSTRY, 2020–2027 (USD MILLION)

TABLE 426 REST OF ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET FOR CONSUMER CARE INDUSTRY, BY TYPE, 2020–2027 (USD MILLION)

TABLE 427 REST OF ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET FOR ENVIRONMENTAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 428 REST OF ASIA PACIFIC: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

9.4.6 RECESSION IMPACT

9.5 LATIN AMERICA

TABLE 429 LATIN AMERICA: SYNTHETIC BIOLOGY MARKET, BY COUNTRY, 2020–2027 (USD MILLION)

TABLE 430 LATIN AMERICA: SYNTHETIC BIOLOGY MARKET, BY TOOL, 2020–2027 (USD MILLION)

TABLE 431 LATIN AMERICA: SYNTHETIC BIOLOGY MARKET, BY TECHNOLOGY, 2020–2027 (USD MILLION)

TABLE 432 LATIN AMERICA: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027 (USD MILLION)

TABLE 433 LATIN AMERICA: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 434 LATIN AMERICA: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 435 LATIN AMERICA: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

TABLE 436 LATIN AMERICA: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 437 LATIN AMERICA: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL

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TABLE 439 LATIN AMERICA: SYNTHETIC BIOLOGY MARKET FOR ENVIRONMENTAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 440 LATIN AMERICA: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

#### 9.5.1 BRAZIL

9.5.1.1 Growing pharmaceutical industry to drive market

TABLE 441 BRAZIL: SYNTHETIC BIOLOGY MARKET, BY TOOL, 2020–2027 (USD MILLION)

TABLE 442 BRAZIL: SYNTHETIC BIOLOGY MARKET, BY TECHNOLOGY, 2020–2027 (USD MILLION)

TABLE 443 BRAZIL: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027 (USD MILLION)

TABLE 444 BRAZIL: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 445 BRAZIL: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 446 BRAZIL: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

TABLE 447 BRAZIL: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 448 BRAZIL: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL ENZYMES, BY INDUSTRY, 2020–2027 (USD MILLION)

TABLE 449 BRAZIL: SYNTHETIC BIOLOGY MARKET FOR CONSUMER CARE INDUSTRY, BY TYPE, 2020–2027 (USD MILLION)

TABLE 450 BRAZIL: SYNTHETIC BIOLOGY MARKET FOR ENVIRONMENTAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 451 BRAZIL: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

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9.5.2.1 Increasing support for biotechnology infrastructure development to drive market

TABLE 452 MEXICO: SYNTHETIC BIOLOGY MARKET, BY TOOL, 2020–2027 (USD MILLION)

TABLE 453 MEXICO: SYNTHETIC BIOLOGY MARKET, BY TECHNOLOGY, 2020–2027 (USD MILLION)

TABLE 454 MEXICO: SYNTHETIC BIOLOGY MARKET, BY APPLICATION,

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TABLE 455 MEXICO: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 456 MEXICO: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 457 MEXICO: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

TABLE 458 MEXICO: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 459 MEXICO: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL ENZYMES, BY INDUSTRY, 2020–2027 (USD MILLION)

TABLE 460 MEXICO: SYNTHETIC BIOLOGY MARKET FOR CONSUMER CARE INDUSTRY, BY TYPE, 2020–2027 (USD MILLION)

TABLE 461 MEXICO: SYNTHETIC BIOLOGY MARKET FOR ENVIRONMENTAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 462 MEXICO: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

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TABLE 464 REST OF LATIN AMERICA: SYNTHETIC BIOLOGY MARKET, BY TECHNOLOGY, 2020–2027 (USD MILLION)

TABLE 465 REST OF LATIN AMERICA: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027 (USD MILLION)

TABLE 466 REST OF LATIN AMERICA: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 467 REST OF LATIN AMERICA: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 468 REST OF LATIN AMERICA: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

TABLE 469 REST OF LATIN AMERICA: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 470 REST OF LATIN AMERICA: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL ENZYMES, BY INDUSTRY, 2020–2027 (USD MILLION)

TABLE 471 REST OF LATIN AMERICA: SYNTHETIC BIOLOGY MARKET FOR CONSUMER CARE INDUSTRY, BY TYPE, 2020–2027 (USD MILLION)

TABLE 472 REST OF LATIN AMERICA: SYNTHETIC BIOLOGY MARKET FOR ENVIRONMENTAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 473 REST OF LATIN AMERICA: SYNTHETIC BIOLOGY MARKET FOR FOOD AND AGRICULTURAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

9.5.4 RECESSION IMPACT

9.6 MIDDLE EAST AND AFRICA

TABLE 474 MIDDLE EAST & AFRICA: SYNTHETIC BIOLOGY MARKET, BY TOOL, 2020–2027 (USD MILLION)

TABLE 475 MIDDLE EAST & AFRICA: SYNTHETIC BIOLOGY MARKET, BY TECHNOLOGY, 2020–2027 (USD MILLION)

TABLE 476 MIDDLE EAST & AFRICA: SYNTHETIC BIOLOGY MARKET, BY APPLICATION, 2020–2027 (USD MILLION)

TABLE 477 MIDDLE EAST & AFRICA: SYNTHETIC BIOLOGY MARKET FOR MEDICAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 478 MIDDLE EAST & AFRICA: SYNTHETIC BIOLOGY MARKET FOR DRUG DISCOVERY AND THERAPEUTICS, BY TYPE, 2020–2027 (USD MILLION)

TABLE 479 MIDDLE EAST & AFRICA: SYNTHETIC BIOLOGY MARKET FOR ARTIFICIAL TISSUE AND TISSUE REGENERATION, BY TYPE, 2020–2027 (USD MILLION)

TABLE 480 MIDDLE EAST & AFRICA: SYNTHETIC BIOLOGY MARKET FOR INDUSTRIAL APPLICATIONS, BY TYPE, 2020–2027 (USD MILLION)

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\*Details on Business Overview, Products Offered, Recent Developments, and MnM View (Key strengths/Right to Win, Strategic Choices Made, and Weaknesses and Competitive Threats) might not be captured in case of unlisted companies.

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## About

Synthetic biology is defined as an emerging area of research that can broadly be described as the design and construction of novel artificial biological pathways, organisms or devices, or the redesign of existing natural biological systems. Tools and technologies that are used in synthetic biology are used to arrive at the global synthetic biology market.

Synthetic biology is an emerging area of research and is broadly described as the design and construction of novel organisms or devices, artificial biological pathways, and also the redesign of existing natural biological systems.

The synthetic biology market is rapidly evolving that has resulted in a paradigm shift within the market, resulting in various technological advancements such as production of synthetic genes and chassis organisms, to more recent efforts to develop synthetic organisms from scratch. Synthetic biology has a wide range of applications in both the academic and life sciences industries, including biofuels, biochemicals, pharmaceuticals, drug discovery and therapeutics, and bioremediation, among others.

The global synthetic biology market is expected to reach \$XX billion by 2018 from \$XX billion in 2013, growing at a CAGR of XX% from 2013 to 2018. The key factors propelling the growth of this market are rising R&D expenditure of pharmaceutical and biotechnology companies worldwide, increasing demand for synthetic genes, rise in production of genetically modified crops, and increasing funding for synthetic biology research. On the other hand, ethical and societal issues, such as biosafety and biosecurity, may hamper market growth.

In 2013, the technologies market accounted for the largest share of the global synthetic biology market, by segment. This market is likely to grow at the highest CAGR of XX% from 2013 to 2018, owing to the wide application of these technologies in the production of tools and synthetic biology products. The enabling technologies segment accounted for the largest share of the global synthetic biology technologies market in 2013, owing to high usage of gene synthesis and bioinformatics solutions in synthetic biology.

The gene synthesis technology accounted for the largest share of ~XX% of the enabling technologies market in 2013, owing to high demand for synthetic genes, DNA-based vaccines, and bioengineered antibodies. However, bioinformatics is likely to grow at the highest CAGR of XX% from 2013 to 2018 due to its critical role in designing and



constructing new biological parts, devices and systems, and redesigning of existing systems.

In the tools segment, oligonucleotides accounted for the largest share of XX% of the synthetic biology tools market in 2013. However, the cloning technology kits segment is likely to witness the highest CAGR of XX% from 2013 to 2018, owing to the growing demand for these kits in various synthetic biology processes such as biofuel production, biochemical generation, and gene synthesis, among others.

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