

North America Enzymatic DNA Synthesis Market Forecast to 2028 – COVID-19 Impact and Regional Analysis – by Product Type (Custom DNA Synthesis and DNA Library Synthesis), Application (Synthetic Biology, Genetic Engineering, Therapeutic Antibodies, Vaccine Design, and Others), and End User (Academic & Research Institutes, Biotech & Pharmaceutical Companies, Diagnostic Laboratories, and Others)

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Abstracts

The North America enzymatic DNA synthesis market is expected to grow from US\$ 110.43 million in 2022 to US\$ 1,011.32 million by 2028. It is estimated to register a CAGR of 44.6% from 2022 to 2028.

Rising Prevalence of Genetic Disorders Drives North America Enzymatic DNA Synthesis Market Growth

Down syndrome, autism spectrum disorder, cancer, diabetes, cystic fibrosis, and sickle cell anemia are a few of the commonly known genetic disorders. Per the Global Genes, more than 10,000 different genetic and rare diseases have been identified, and ~400 million people suffer from rare diseases. Some genetic disorders cause symptoms at birth, while others develop over time. The global burden of genetic diseases appears to be increasing. According to the National Center for Biotechnology Information (NCBI), a US-based medical organization, as of November 2021, genetic disorders were identified in 9.4% of pediatric patients, with 44.7% being critically ill newborns. In addition, 13.17 million patients in the US suffer from unique genetic disorders. According to the Centers for Disease Control and Prevention (CDC) 2022 report, sickle cell disease affects

~100,000 Americans, and it occurs in 1 in 356 African American births. Cystic fibrosis, another common genetic disease worldwide, affects ~30,000 US citizens, and ~1,000 new cases are treated annually. Enzymatic DNA synthesis is a well-established DNA synthesis technique useful in synthetic biology, genetic engineering, and therapeutic antibody studies. In conjunction with enzymatic assays, DNA synthesis shows greater diagnostic possibilities. This method provides important information about people at risk and helps them make important decisions regarding disease diagnosis and medication. Hence, with the rising prevalence of genetic disorders across the world, people are becoming aware of the need for the early detection of these genetic flaws, which propels the growth of the North America enzymatic DNA synthesis market.

North America Enzymatic DNA Synthesis Market Overview

The US holds a significant share of the North America enzymatic DNA synthesis market. Companies in the US are focusing on developing products to improve DNA synthesis procedures. In January 2022, the synthetic DNA maker Twist Bioscience announced that it is developing enzymatic DNA synthesis technology. In 2020, Molecular Assemblies partnered with Codexis to increase their speed to market and raise new funding. According to Molecular Assemblies, use of funds will entail commercializing the Company's "Fully Enzymatic Synthesis" (FES) platform, which uses aqueous, nontoxic reagents and requires minimal post-synthesis purification and processing.

According to the National Center for Biotechnology Information (NCBI), ~13.2 million patients in the US suffer from unique genetic disorders. There are many genetic disorders, namely down-syndrome, autism spectrum disorder, cancer, diabetes, cystic fibrosis, and sickle cell anemia. The prevalence of genetic disorders drives the growth of the North America enzymatic DNA synthesis market.

North America Enzymatic DNA Synthesis Market Revenue and Forecast to 2028 (US\$ Million)

North America Enzymatic DNA Synthesis Market Segmentation

The North America enzymatic DNA synthesis market is segmented on the basis of product type, application, end user, and country.

Based on product type, the North America enzymatic DNA synthesis market is

bifurcated into custom DNA synthesis and DNA library synthesis. In 2022, the DNA library synthesis segment registered a larger market share.

Based on application, the North America enzymatic DNA synthesis market is segmented into synthetic biology, genetic engineering, therapeutic antibodies, vaccine design, and others. In 2022, the synthetic biology segment registered the largest market share.

Based on end user, the North America enzymatic DNA synthesis market is segmented into academic & research institutes, biotech & pharmaceutical companies, diagnostic laboratories, and others. In 2022, the biotech & pharmaceutical companies segment held the largest market share.

Based on country, the North America enzymatic DNA synthesis market is segmented into the US, Canada, and Mexico. In 2022, the US held the largest market share.

Ansa Biotechnologies, Inc.; Camena Bio; DNA Script; GenScript Biotech Corporation; Molecular Assemblies; Synbio Technologies; Telesis Bio Inc; Touchlight; and Twist Bioscience are among the leading companies operating in the North America enzymatic DNA synthesis market.

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