

**Nanozymes Market By Type (Active Metal Centre Mimic, Functional Mimic, Nanocomposite, 3D Structural Mimic), By Application (Healthcare, Chemical, Agriculture, Others): Global Opportunity Analysis and Industry Forecast, 2021-2031**

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**Report description:**

The global nanozymes market was valued at \$1.1 million in 2021, and is projected to reach \$1.9 million by 2031, growing at a CAGR of 5.7% from 2022 to 2031.

Nanozyme is a series of nanomaterials with enzyme-mimetic activities that can proceed with the catalytic reactions of natural enzymes. Nanozyme has constructed metal sites (type I nanozymes), such as metal oxides or metal sulphides, to mimic the metal catalytic active site found in metalloenzymes. The redox properties of metal and metaloxide nanozymes are mainly responsible for their regulatory action, analogous to natural enzymes containing metal centers. Similar to natural enzymes, the activities of active metal nanozymes can be tuned by many factors, such as pH, temperature, surrounding environment and others. Surge in application areas of nanozymes manufactured with metal nanoparticles and increasing demand for active metal centre mimic nanozymes from healthcare and pharmaceutical industries are the major factors driving the growth of nanozymes market over the projection period. Furthermore, rapid growth of healthcare sector is one of other factors anticipated to boost the market growth over the time. Furthermore, active metal based nanozymes enable biomedical advances and demonstrate basic design strategies to improve diagnostic and therapeutic efficacy in various diseases, is projected to drive the market growth. On the other hand, the development of the active metal center mimic nanozymes market is likely to be hampered due to the unpredictability and high cost of method assembly. Also, the cost of metal nanoparticles is generally exorbitant in emerging financial districts.

Moreover, the rise in demand for nanozymes materials from the biomedical industry and rising need low-cost and highly stable enzymes, are some of the major factors propelling growth of the market. In the healthcare sector, nanozymes are used for various application such as point-of-care (POC) for diagnosis and detection, drug deliveries and others. In recent years, there has been an increase in the occurrence of disorders related to metabolism, and correct understanding of enzyme abnormality has resulted in an increase in the use of enzymes as disease markers in clinical examinations. In addition, enzyme-based biosensors have grown

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significantly in popularity among medical practitioners over the time. As a result, market penetration for diagnostic and research applications is expected to rise.

For instance, the development of amperometry-based enzyme biosensors is on the rise which is attributed to their interdisciplinary approach involving materials science, electrochemistry, enzymology, polymer synthesis, and biological chemistry. Rising research activities are being targeted towards exploring the potential and accuracy of such biosensors for research as well as diagnostic applications.

The nanozymes market is segmented on the basis of type, application and region. On the basis of type, the nanozymes market is classified into active metal center mimic, functional mimic, nanocomposites, and 3D structural mimic. On the basis of application, the market is categorized into healthcare industry, chemical industry, agriculture, and others. Region-wise, it is analyzed across North America, Europe, Asia-Pacific, and LAMEA.

The major players operating in the industry include Profacgen, Max Systems LLC, FutureX Industries, Nano Medichem (P) Ltd., and Emergene Agrinovo Private Limited. These players have adopted product launch, acquisition, and business expansion as their key strategies to increase their market shares.

#### IMPACT OF COVID-19 ON THE GLOBAL NANOZYMES MARKET

After COVID-19 pandemic, increasing consumption of enzymes due to restoration of demand for cosmetics, food, and other biological components is expected to offer numerous growth opportunities to the enzymes market in the post-pandemic period. Along with this, strategic alliances in the form of collaborations and partnerships are expected to help in the growth of the nanozymes market.

#### Key Benefits For Stakeholders

- This report provides a quantitative analysis of the market segments, current trends, estimations, and dynamics of the nanozymes market analysis from 2021 to 2031 to identify the prevailing nanozymes market opportunities.
- The market research is offered along with information related to key drivers, restraints, and opportunities.
- Porter's five forces analysis highlights the potency of buyers and suppliers to enable stakeholders make profit-oriented business decisions and strengthen their supplier-buyer network.
- In-depth analysis of the nanozymes market segmentation assists to determine the prevailing market opportunities.
- Major countries in each region are mapped according to their revenue contribution to the global market.
- Market player positioning facilitates benchmarking and provides a clear understanding of the present position of the market players.
- The report includes the analysis of the regional as well as global nanozymes market trends, key players, market segments, application areas, and market growth strategies.

#### Key Market Segments

##### By Type

- 3D Structural Mimic
- Active Metal Centre Mimic
- Functional Mimic
- Nanocomposite

##### By Application

- Healthcare
- Chemical
- Agriculture
- Others

##### By Region

- North America
- U.S.
- Canada
- Mexico
- Europe

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- Germany
- France
- Italy
- Spain
- UK
- Rest of Europe
- Asia-Pacific
- China
- India
- Japan
- South Korea
- Australia
- Rest of Asia-Pacific
- LAMEA
- Brazil
- South Africa
- South Arabia
- Rest of LAMEA
- Key Market Players
- Profacgen
- FutureX Industries
- Nano medichem
- Max Systems LLC.
- Emergene Agrinovo Private Limited

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