

Messenger Ribonucleic Acid (mRNA) Capping Enzyme Market to Reach USD \$1.72 Billion by 2029 at 14.2% CAGR

*The Business Research Company's
Messenger Ribonucleic Acid (mRNA)
Capping Enzyme Global Market Report
2025 – Market Size, Trends, And Global
Forecast 2025-2034*

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/EINPresswire.com/ -- How Big Is The

Messenger Ribonucleic Acid (mRNA) Capping Enzyme Market In 2025?

The [mRNA capping enzyme market](#) has seen swift growth in recent years. The estimated value is set to increase from \$0.89 billion in 2024 to \$1.02 billion in 2025 with a CAGR of 14.6%. The rapid market expansion in the previous years can be credited to advancements in molecular biology



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and biotechnology research, the progression of genetic engineering and synthetic biology, escalating use in vaccine research, increased government and private investment in RNA research, and the growth of the biopharmaceutical manufacturing industry.

The [messenger ribonucleic acid \(mRNA\) capping enzyme market growth](#) is predicted to experience quick expansion in the coming years, with an anticipated increase to \$1.73 billion by 2029, signifying a compound annual growth rate (CAGR) of 14.2%. This growth during the forecast period is

attributed to increased investment in RNA-based drug development, a burgeoning pipeline of mRNA-based clinical trials, advancement in personalized and precision medicine, heightened emphasis on the stability and translational efficiency of mRNA, and escalated adoption of mRNA vaccines and treatments. Key trends expected during the forecast period entail a merger with artificial intelligence and machine learning, improvements in in-vitro transcription (IVT) technologies, creation of next-generation enzymatic capping systems, progress in synthetic cap analogs and co-transcriptional capping technologies, and creativity in enzyme structure design.



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What Are The Key Driving Factors For The Growth Of The Messenger Ribonucleic Acid (mRNA) Capping Enzyme Market?

The increasing utilization of personalized medicine is anticipated to fuel the expansion of the messenger ribonucleic acid (mRNA) capping enzyme market. This approach to healthcare personalizes medical treatment based on a person's distinct genetic make-up, lifestyle, and environment. With evolutions in genetic testing technologies, personalized medicine is being increasingly adopted, enabling precise identification of specific patient needs and facilitating targeted and efficient treatments. mRNA capping enzymes are advantageous for personalized medicines as they enhance the stability and correct functioning of therapeutic mRNA, ensuring effective translation into proteins specific to an individual's treatment needs. For example, the Personalized Medicine Coalition, a US-based non-profit organization, reported in February 2024 that the FDA approved 16 new personalized treatments for patients with rare diseases in 2023, a significant jump from the six approvals in 2022. Hence, the rising adoption of personalized medicine is spurring the growth of the messenger ribonucleic acid (mRNA) capping enzyme market.

Who Are The Key Players In The Messenger Ribonucleic Acid (mRNA) Capping Enzyme Industry? Major players in the Messenger Ribonucleic Acid (mRNA) Capping Enzyme Global Market Report 2025 include:

- Roche AG
- Thermo Fisher Scientific Inc.
- Merck KGaA
- Takara Bio Inc.
- Aldevron
- New England Biolabs Inc.
- CellScript Inc.
- Krishgen Biosystems
- Yeasen Biotechnology Co. Ltd.
- Novoprotein Scientific Inc.

What Are The Future Trends Of The Messenger Ribonucleic Acid (mRNA) Capping Enzyme Market?

Major players in the market for messenger ribonucleic acid (mRNA) capping enzyme concentrate their efforts on creating innovative solutions such as extensive temperature mRNA capping solutions. These solutions aim to streamline logistics by removing the requirement for rigid cold chain storage. The extensive temperature mRNA capping solutions are engineered to maintain the effectiveness and stability of mRNA capping enzymes at various temperatures, thereby making them suitable for diverse storage and treatment environments. For example, New England Biolabs, a U.S. life science enterprise, introduced the Faustovirus Capping Enzyme (FCE)

in August 2022 which is an innovative enzymatic gadget designed to overcome traditional capping limitations in mRNA production. With a unique sub-unit arrangement that merges three specific activities into one enzyme, it provides widespread temperature stability, operating effectively between 20°C and 55°C, thus allowing more adaptability in reaction conditions. The system employs a novel viral enzyme platform for the production of Cap-0 structures as well as facilitates simple one-pot synthesis of Cap-1 structures when used alongside NEB's 2'-O-methyltransferase. This solution can easily be merged into existing mRNA production procedures, offering improved capping efficiency, decreasing enzyme usage by almost half compared to former methods and avoiding the necessity for damaging organic solvents.

What Segments Are Covered In The Messenger Ribonucleic Acid (mRNA) Capping Enzyme Market Report?

The messenger ribonucleic acid (mRNA) capping enzyme market covered in this report is segmented as

- 1) By Product Type: Recombinant Messenger Ribonucleic Acid (mRNA) Capping Enzymes, Natural Messenger Ribonucleic Acid (mRNA) Capping Enzymes
- 2) By Application: Research And Development, Therapeutics, Diagnostics, Other Applications
- 3) By End-User: Pharmaceutical And Biotechnology Companies, Research Institutions, Contract Manufacturing Organizations (CMOS)

Subsegments:

- 1) By Recombinant Messenger Ribonucleic Acid (mRNA) Capping Enzymes: Vaccinia Capping Enzyme (VCE), RNA Triphosphatase, Guanylyltransferase, (Guanine-N7)-Methyltransferase
- 2) By Natural Messenger Ribonucleic Acid (mRNA) Capping Enzymes: Cap 0 Capping Enzymes, Cap 1 Capping Enzymes, Cap 2 Capping Enzymes

View the full messenger ribonucleic acid (mrna) capping enzyme market report:

<https://www.thebusinessresearchcompany.com/report/messenger-ribonucleic-acid-mrna-capping-enzyme-global-market-report>

Which Region Is Expected To Lead The Messenger Ribonucleic Acid (mRNA) Capping Enzyme Market By 2025?

In the 2025 Global Market Report for Messenger Ribonucleic Acid (mRNA) Capping Enzyme, North America stood as the leading region. Forecasts predict Asia-Pacific will experience the most rapid growth within the market. The report encompasses regions including Asia-Pacific, Western Europe, Eastern Europe, North America, South America, Middle East, and Africa.

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