

Enzymes for mRNA Production

The advent of mRNA vaccines has revolutionized the field of immunization, providing a rapid and flexible platform to combat infectious diseases. The success of mRNA vaccines, such as those developed for COVID-19, relies on sophisticated biotechnological processes that allow for the precise synthesis of mRNA molecules. These molecules are encapsulated in lipid nanoparticles and administered into the human body, where they instruct cells to produce viral antigens. This, in turn, stimulates a specific immune response and creates immunological memory, providing protection against the virus.

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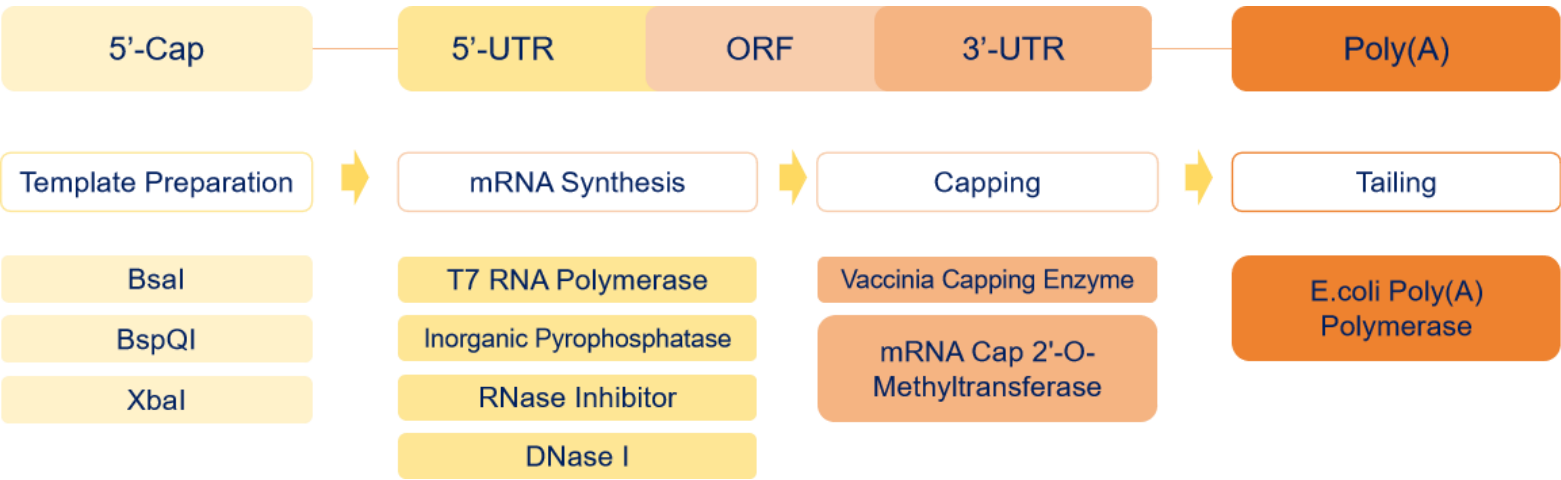
Product Information

The in vitro synthesis of mRNA is a critical component of this process, involving several key steps and specialized enzymes. Creative Enzymes, a leading enzyme supplier, offers a comprehensive range of high-quality GMP and non-GMP enzymes that are indispensable for the industrial production of mRNA vaccines.

Cat No.	Product Name
NATE-1698	Modified T7 RNA polymerase
NATE-0354	Native Baker's yeast (<i>S. cerevisiae</i>) Inorganic Pyrophosphatase
NATE-0355	Inorganic Pyrophosphatase from <i>Escherichia coli</i>, Recombinant
NATE-1281	Inorganic Pyrophosphatase from <i>Saccharomyces cerevisiae</i>, Recombinant
COV-003	RNase Inhibitor from Mouse, Recombinant
NATE-1875	Native Bovine Deoxyribonuclease I
VCE-001	Vaccinia Capping Enzyme
NATE-1636	Ribonuclease R from <i>E. coli</i>

Steps of In Vitro mRNA Synthesis

The synthesis of mRNA in vitro involves a multi-step process, each requiring specific enzymes to ensure high yield and quality of the final product. Below are the essential steps, along with the roles of the required enzymes.



Creative Enzymes also provides other [enzymes](#) for research and diagnostic uses. Please [contact us](#) for any needs.