



## mRNA Raw Material

mRNA (Messenger RNA) was first discovered in the 1960s and has been in existence for decades. During COVID-19 pandemic, mRNA was brought into the spotlight with the development of the first mRNA vaccine.

mRNA is made using DNA sequence as a base. The DNA sequence is made up of nucleotides, which is the combination of letters that make up a double DNA strand. Enzymes, the machinery of cells, “read” the DNA sequence and assemble an mRNA sequence made up of complementary nucleotides. The mRNA sequence is wrapped inside tiny bubbles of fat, called lipid nanoparticles (LNPs), that are then delivered into the cell. Once inside the cell, the mRNA sequence is used by other cellular machinery to produce the protein that helps treat or prevent a disease. Many of these materials used to manufacture and deliver mRNA are custom materials, which must be taken into consideration.

In simple terms, mRNA is a molecule that carries instructions (genetic code) from the cell’s DNA (cell’s nucleus) to the cell’s watery interior (cytoplasm) to produce a specific protein (antibodies) that will help prevent or treat diseases. Our cells read the message and programs themselves to produce the protein - in essence, training our immune system to recognize and destroy infectious pathogens.

The main raw materials used in the preparation of mRNA vaccines include basic nucleotide raw materials, modified nucleotide materials, cap analogs and polynucleotide tails to support the research and production of the mRNA vaccines

Catalog No.	Product Description	Pack Size
56140001	Alkaline Phosphatase	100µL / 500µL
56140002	Bsa I	50µL / 250µL / 1mL
56140003	BspQI	50µL / 250µL 1mL
56140004	DNase I	200µL / 1mL
56140005	Pyrophosphatase Inorganic	100µL / 500µL / 1mL
56140006	Poly(A) polymerase	20µL / 100µL
56140007	RNase III	125µL / 500µL
56140008	RNase Inhibitor	62.5µL / 250µL / 1mL
56140009	T4 RNA Ligase	100µL / 500µL
56140010	T7 RNA polymerase	100µL / 1mL
56140011	T7 RNA Enzyme Mix	100µL / 1mL
56140021	mRNA Cap 2'-O-methyltransferase	50µL / 200µL / 1mL
56140022	mRNA Vaccinia capping enzyme	50µL / 200µL / 1mL
56140031	3-OH AG(cap1) [100mM]	1mL / 5mL
56140032	3-OMe AG(cap1) [100mM]	1mL / 5mL
56150001	GpppA [100mM]	1mL / 5mL
56150002	GpppG [100mM]	1mL / 5mL
56150003	M7-GpppA [100mM]	1mL / 5mL
56150004	M7-GpppG [100mM]	1mL / 5mL
56150005	SAM [32mM]	5mL / 10mL
56150011	Pseudo-UTP [100mM]	1mL / 5mL
56150012	N1-Me-Pseudo UTP [100mM]	1mL / 5mL
56150020	NTP mix [100mM]	5mL / 10mL / 25mL
56150021	ATP [100mM]	5mL / 10mL / 25mL
56150022	CTP [100mM]	5mL / 10mL / 25mL
56150023	GTP [100mM]	5mL / 10mL / 25mL
56150024	UTP [100mM]	5mL / 10mL / 25mL

