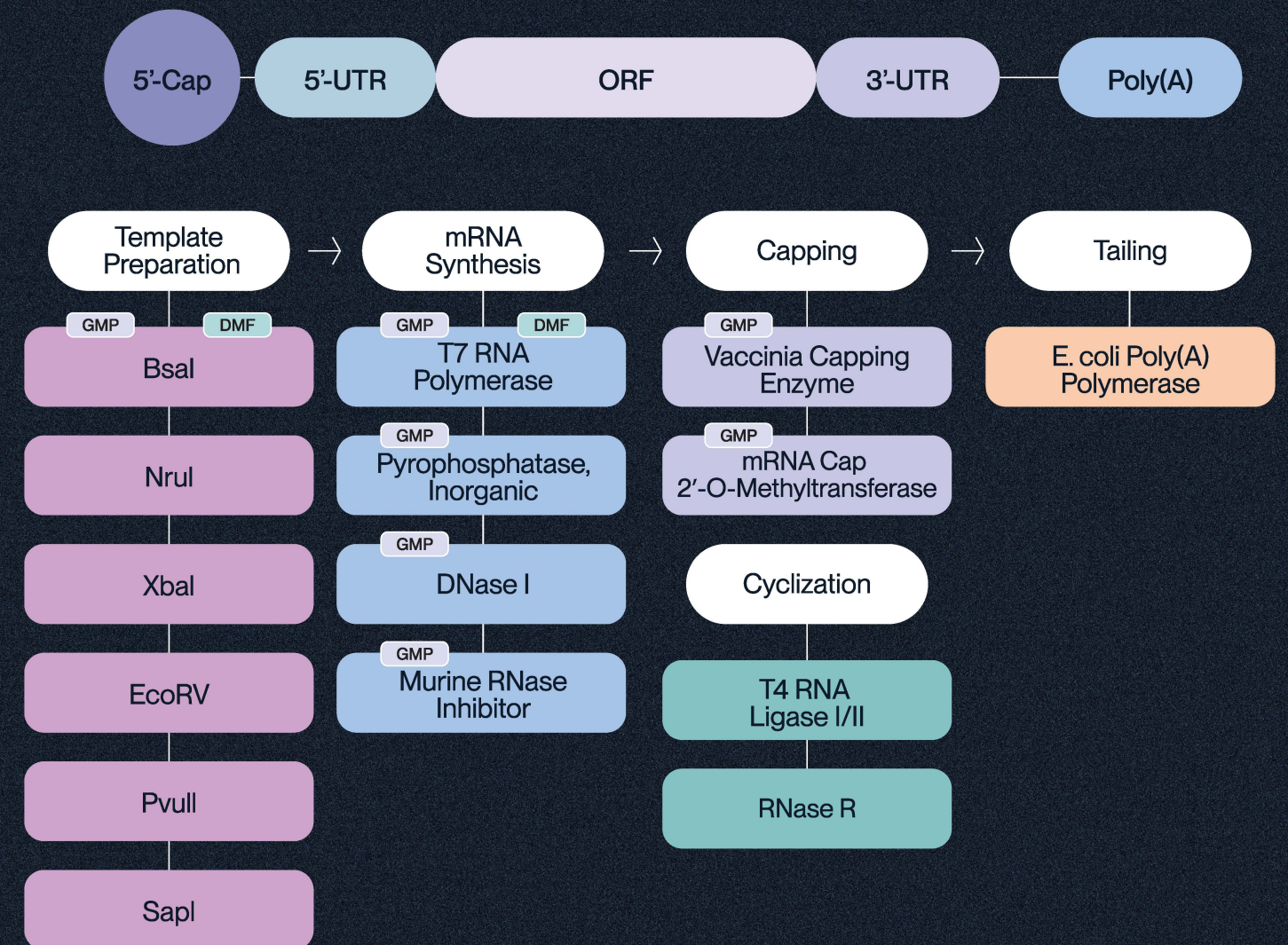


Description	Product Grade	Catalog #	Quantity
T7 RNA Polymerase	cGMP (DMF #037660)	GMP-T7P-EE101	50KU, 1MU
Pyrophosphatase, Inorganic	cGMP	GMP-PYR-YE101	100U, 800U
Murine RNase Inhibitor	cGMP	GMP-RNI-ME101	40KU, 2200KU
Vaccinia Capping Enzyme	cGMP	GMP-VCS-VE101	10KU, 1MU
mRNA Cap 2'-O-Methyltransferase	cGMP	GMP-MEH-VE101	50KU, 5MU
Bsal	cGMP(DMF #037503)	GMP-BSA-EE101	20KU, 400KU
Xbal	GMP-Ready	XBA-EE101	2000U, 20KU
EcoRV	GMP-Ready	ECO-EE101	400U, 4000U, 20KU
Nrul	GMP-Ready	NRU-RE101	400U, 2000U, 20KU
Pvull	GMP-Ready	PVU-PE101	400U, 2000U, 20KU
Sapl	GMP-Ready	SAP-SE101	1000U, 10KU
E.coli Poly (A) Polymerase	GMP-Ready	PLA-EE101	100U, 500U
DNase I	cGMP	GMP-DNI-EE001	4000U, 40KU
T4 RNA Ligase I/II	GMP-Ready	TRL-BE101	600U, 3000U, 30KU
RNase R	GMP-Ready	RNR-EE001	500U, 2000U, 20KU

# GMP-Grade mRNA Production Enzymes

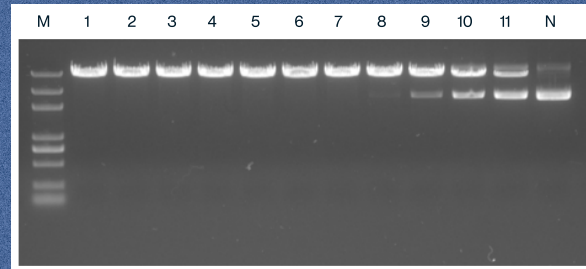


# Restriction Enzymes

## Bsal, GMP-Grade

5'...GGTCTC(N)1↓...3'  
3'...CCAGAG(N)5↑...5'

BSA-free reaction system

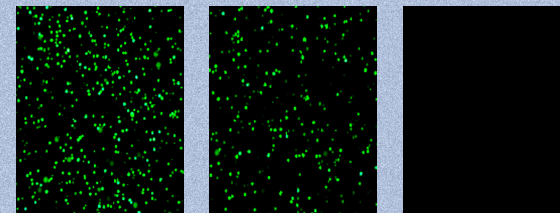


DNA plasmid digested using Bsal in a 2-fold serial dilution (lane 1 - 11) digestion reaction

# Capping Enzymes

## Vaccinia Capping Enzyme, GMP-Grade mRNA Cap 2'-O-Methyltransferase, GMP-Grade.

GFP mRNA capped with vaccinia capping system was transfected into 293T cells.

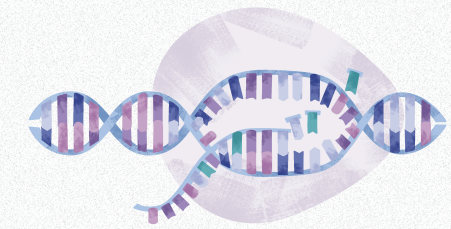


Kactus Supplier A Uncapped

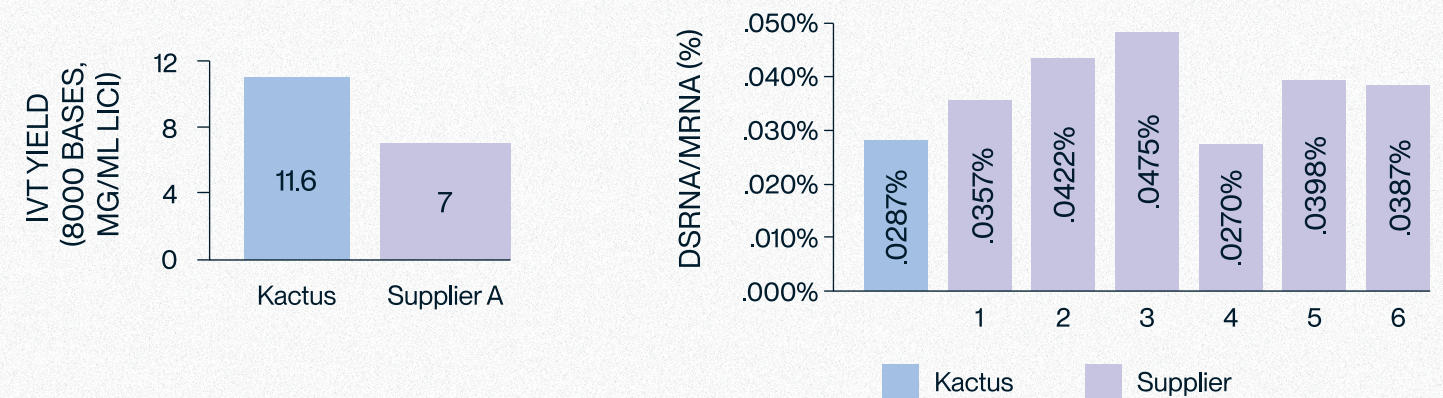
KACTUS offers a one-step capping system for Cap0 and Cap1 structure.

# T7 RNA Polymerase, GMP-Grade

FDA Drug Master Files (DMF) #037660



Engineered to optimize yield & purity



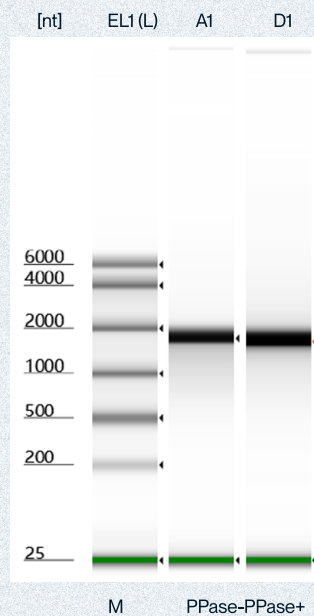
*In Vitro* Transcription Yield Using T7 RNA Polymerase. KACTUS T7 has 65% higher yield versus leading supplier.

dsRNA Measured After *In Vitro* Transcription Using J2-based ELISA. KACTUS T7 has low dsRNA comparable or superior to leading suppliers.

# *In Vitro* Transcription Enzymes

## Pyrophosphatase, Inorganic

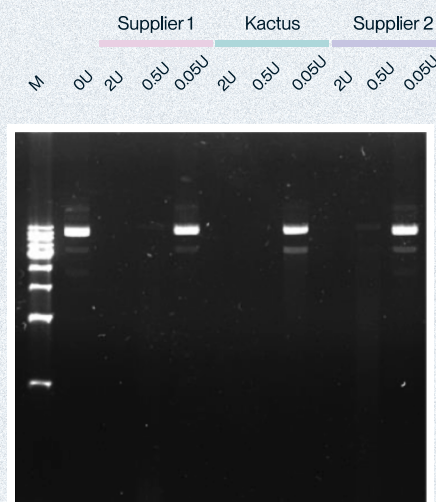
Increases mRNA yield



*In vitro* transcription yield with and without Inorganic Pyrophosphatase

## DNase I

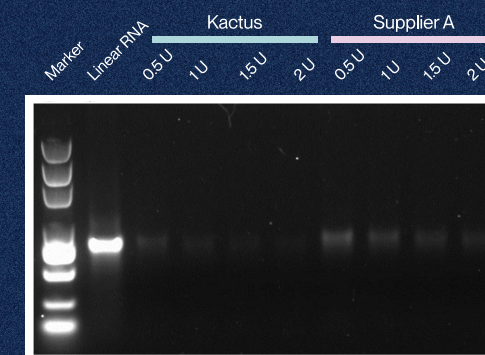
Digests single- & double-stranded DNA for mRNA purification



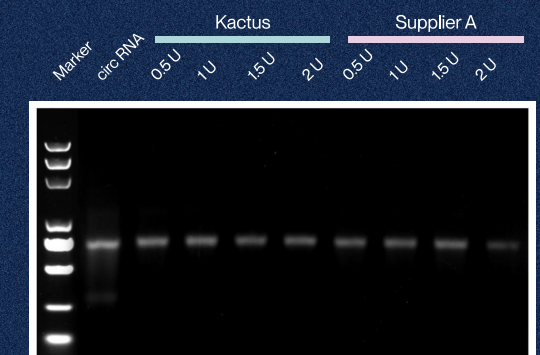
2U, 0.5U, and 0.05U of DNase I added to 1µg of DNA

# Cyclization Enzymes

## RNase R For digestion of linear RNA



RNase R efficiently digests linear RNA



RNase R has no effect on circRNA