

Superior mRNA Purity with Engineered T7 PRO RNA POLYMERASE (CAT. NO. 10310)

Traditional T7 RNA Polymerase variants generate high levels of double-stranded RNA (dsRNA) as a byproduct of transcriptional pausing and snap-back synthesis. Areterna's engineered **T7 RNAP (Cat. No. 10310)** addresses this by improving the enzyme's specific activity.

Product Name	Size	Cat. No.
T7 Pro RNA Polymerase	100 µL/20KU	10310-20K
	1 mL/200KU	10310-200K
	10 mL/2MU	10310-2M

Why dsRNA Matters

dsRNA is an undesirable process impurity that can:

- Trigger innate immune responses, leading to unintended inflammation.
- Interfere with therapeutic mRNA applications, reducing efficacy and safety.
- Complicate downstream purification processes.

With **T7 Pro RNA Polymerase**, you get **cleaner mRNA**—ideal for protein replacement, gene editing, and other sensitive applications.

Key Features & Benefits

- ✓ **Lower dsRNA** – Minimizes immunogenicity risks for safer mRNA therapeutics.
- ✓ **High Specific Activity** – Generates full-length transcripts efficiently, reducing short and abortive RNAs.
- ✓ **Consistent High Yield & Integrity** – Matches wild-type T7 RNAP in mRNA production while improving purity.
- ✓ **Scalable & Reliable** – **GMP-grade version available** for clinical and commercial applications.



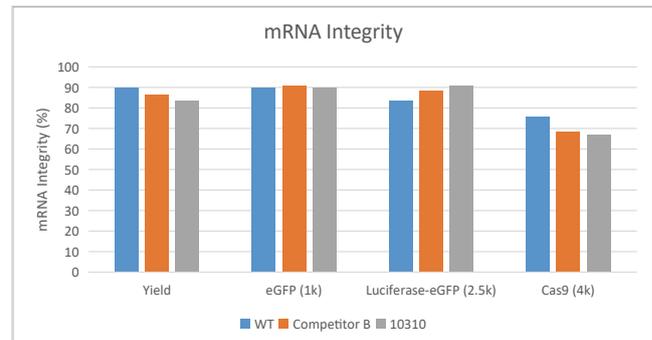
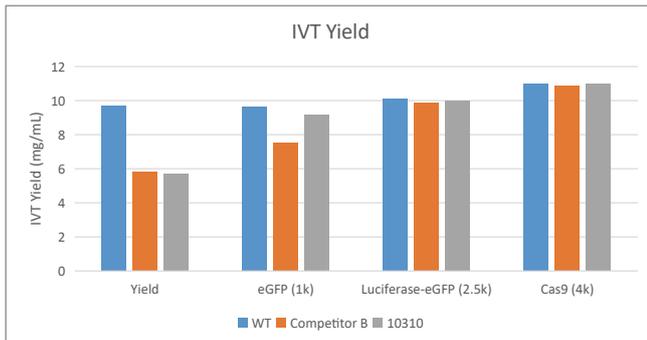
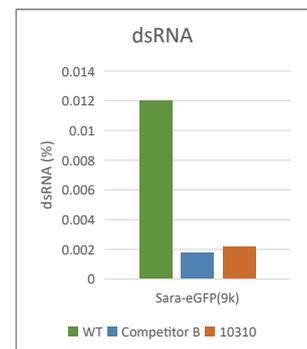
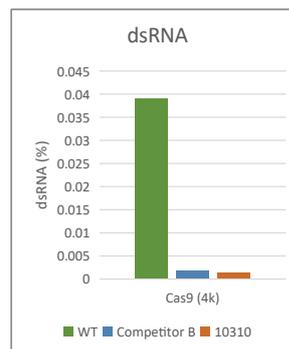
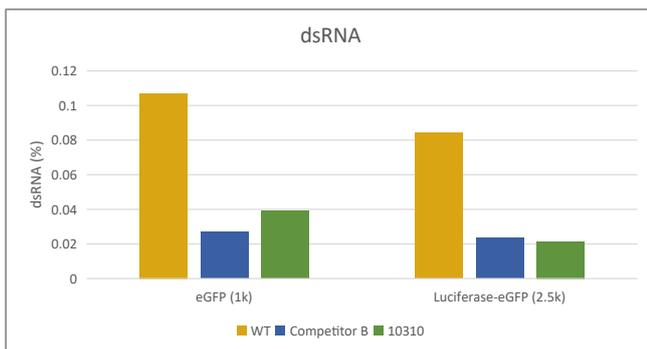
Proven Performance Across mRNA Lengths

In head-to-head comparisons with wild-type (WT) T7 RNAP, **10310 outperformed** in IVT reactions with mRNAs ranging from **1kb to 9kb**, including:

- **eGFP (1kb)**
- **FLuc-eGFP (2.5kb)**
- **Cas9 (4kb)**
- **eGFP saRNA (9kb)**

Results:

- **Far lower dsRNA levels** vs. WT
- **Equivalent mRNA yield and integrity**—no compromise on productivity



Summary

Why Choose 10310?

- ✓ **Reduced dsRNA** → Safer, more effective mRNA
- ✓ **GMP-grade option** → Ready for therapeutic development

Upgrade your mRNA synthesis with **T7 Pro RNA Polymerase** where purity meets performance!