DATA SHEET

Jena Bioscience

T7 P&L RNA Polymerase HC

Highly concentrated and modified T7 RNA Polymerase for set-up of high yield in vitro transcription reactions

Cat. No.	Amount
RNT-018	50 µl (2 µg/µl)

For general laboratory use.

Shipping: shipped on gel packs

Storage Conditions: store at -20 °C

Additional Storage Conditions: avoid freeze/thaw cycles

Shelf Life: 12 months

Purity: ≥ 95 % (SDS-PAGE)

Form: liquid

Concentration: 2.0 – 2.2 µg/µl (A280, ε = 140 L $mmol^{-1}$ cm^{-1} [1] in T7 RNA Polymerase HC Storage Buffer)

Description:
Bacteriophage T7 RNA Polymerase is a DNA-dependent RNA polymerase (99 kDa) that catalyzes *in vitro* RNA synthesis from a DNA sequence containing a T7 phage promoter.

The highly concentrated version and modified T7 RNA Polymerase HC is ideally suited for set-up and optimization of high yield *in vitro* transcription reactions. Proline 266 has been replaced by leucine (P266L) which has been associated with

- decreased abortive transcription[1].
- increased 5' homogeneity of transcripts synthesized from A-initiating phi2.5 promoter[2]
- increased 5' incorporation efficiency of GTP analogs[3]

The provided T7 IVT Set-up Buffer, $MgCl_2$ and DTT solutions enable testing of different reaction conditions such as nucleotide/ $MgCl_2$ concentrations. Recommendation for assay set-up with minimal optimization: HighYield T7 P&L RNA Synthesis Kit (#RNT-201).

Activity: 1 µl T7 P&L RNA Polymerase HC generates >/= 30 µg RNA in 10 min at 37°. This is comparable to 1000 U of NEB's T7 RNA Polymerase (High Concentration), #M0460T (activity assay conditions: 1x T7 IVT Set-up Buffer supplemented with 10 mM DTT, 12 mM $MgCl_2$, 3 mM NTPs, 1 µl T7 RNA Polymerase HC and 1 µg DNA template (1.4 kpb RNA transcript) in 20 µl. RNA yield was determined with a fluorescence microplate assay.)

Content:
T7 P&L RNA Polymerase HC
1x 50 µl (2 µg/µl)
50 mM Tris-HCl, 1 mM EDTA, 100 mM NaCl, 5 mM DTT, 0.1 % Triton-X-100, 50 % Glycerol (v/v), pH 8.0

T7 IVT Set-up Buffer
1x 200 µl (10x)
400 mM Tris-HCl (pH 8.0), 20 mM Spermidin

DTT
1x 100 µl (100 mM)

$MgCl_2$
1x 200 µl (200 mM)

Related Products:
HighYield T7 RNA Synthesis Kit, #RNT-101
RNAse Inhibitor - recombinant, #PCR-392
NTP bundle, #NU-1014

Selected References:
[1] Guillerez *et al.* (2005) A mutation in T7 RNA polymerase that facilitates promoter clearance. *Natl. Acad. Sci. U.S.A***102**:5958.