



# Synthelis®

## Enzyme

Protein Catalog

**T7 RNA polymerase**

**# S192**

### Product specification

**Acronym:** T7 RNA pol

**Synonyms:** DNA-directed RNA polymerase EC:2.7.7.6

**Origin species :** Bacteriophage T7

**Protein reference :** P00573 (UniProtKB)  
QZB83517.1 (GenBank)

**Family:** Enzyme

**Expression system:** *E.coli*

**Format:** Soluble

**Protein sequence:** Met1 – Ala883

**Tag :** 6xHis tag (N-ter)

**Product MW:** 100.1 kDa

**Application:** RNA production by *in vitro* transcription (IVT)

### Product description

The T7 RNA polymerase is a highly processive DNA-dependent RNA polymerase with a very low error rate. It is extremely specific to its promoter and allows the synthesis 5' → 3' of RNA from double strand DNA. This enzyme requires Mg<sup>2+</sup> ions as cofactors.

T7 RNA polymerase is widely used for *in vitro* transcription of RNA and allows the production of mRNA, templates for cell-free protein synthesis, radiolabeled RNA probes, probes for nucleic acid hybridizations, antisense-RNA ...

### Recombinant protein sequence

**His tag –**

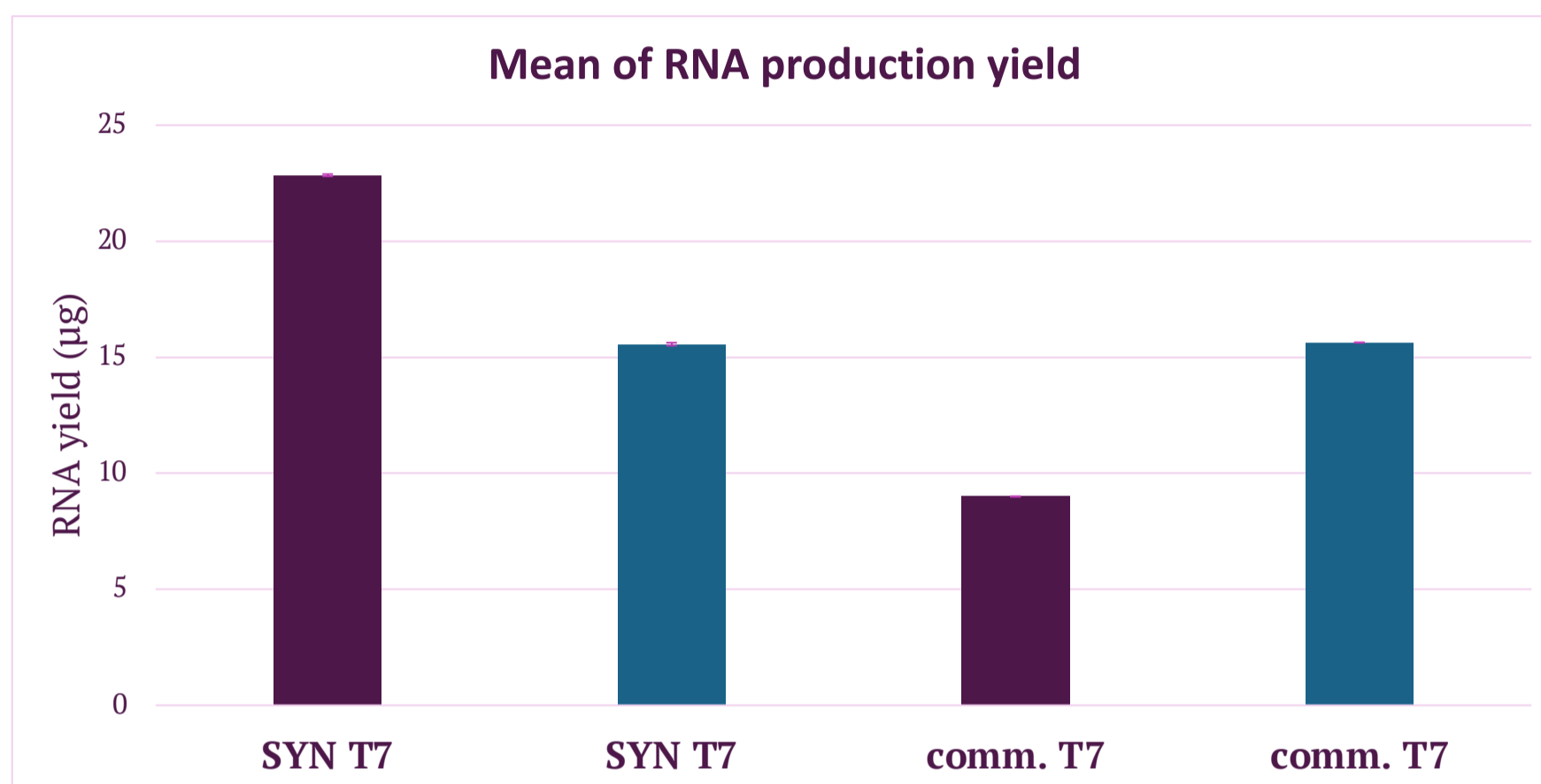
MNTINIAKNDFSDIELAAIPFNTLADHYGERLAREQLALEHESYEMGEARFRKMFERQLKAGEVADNAAKPLITTTLLPKMIARIN  
DWFEEVKAKRGKRPTAFQFLQEIKPEAVAYITIKTTLACLTSADNTTVQAVASAIGRAIEDEARFGRIRDLEAKHFKNVVEEQLNKR  
VGHVYKKAQVVEADMLSKGLLGGEAWSSWHKEDSIHVGVRCEMLIESTGMVSLHRQONAGVVGQDSETIELAPEYAEAIATR  
AGALAGISPMFQPCVPPKPWTGITGGGYWANGRRPLALVRTHSKKALMRYEDVYMPEVYKAINIAQNTAWKINKKVLAVANVI  
TKWKHCPVEDIPAIEREELPMKPEDIDMNPEALTAWKRAAAVYRKDKARKSRRISLEFMLEQANKFANHKAIFPYNMDWRG  
RVYAVSMFNPQGNDMTKGLLTLAKGKPIGKEGYWLVKIHGANCAGVDKVPFPERIKFIEENHENIMACAKSPLENTWWAEQDSP  
FCFLAFCFEYAGVQHHGLSYNCSLPLAFDGGSCSGIQHFSAMLRDEVGGRAVNLLPSETVQDIYGIVAKKVNEILQADAINGTDNEVV  
TVTDENTGEISEKVKLGTKALAGQWLAYGVTRSVTKRSVMTLAYGSKEFGFRQVLEDTIQPAIDSGKGLMFTQPNQAAGYMAK  
LIWESVSVTVVAAVEAMNWLKSAKLLAAEVKDKKTGEILRKRCVHWVTPDGFPVWQYKPKPIQTRLNLMFLGQFRLQOPTIN  
TNKDSEIDAHKQESGIAPNFVHSQDGSHLRKTVVWAHEKYGIESFALIHDSFGTIPADAANLFKAVRETMVDITYESCDVLADFYDQ  
FADQLHESQLDKMPALPAKGNLNLRDILESDFafa

## Quality analysis

**Purity:** > 90 % (determined by SDS-PAGE stained by Coomassie Blue).

**Purification procedure:** affinity purification by IMAC.

**Activity test:** comparison of RNA production yields obtained in 50µL reaction volume containing Synthelis' or a commercial T7 RNA polymerase (Fig.2).



**Fig.2:** Mean of RNA production yield from 50µL reactions. Purple : recommended conditions | Blue : same amount of RNA polymerase in the reaction

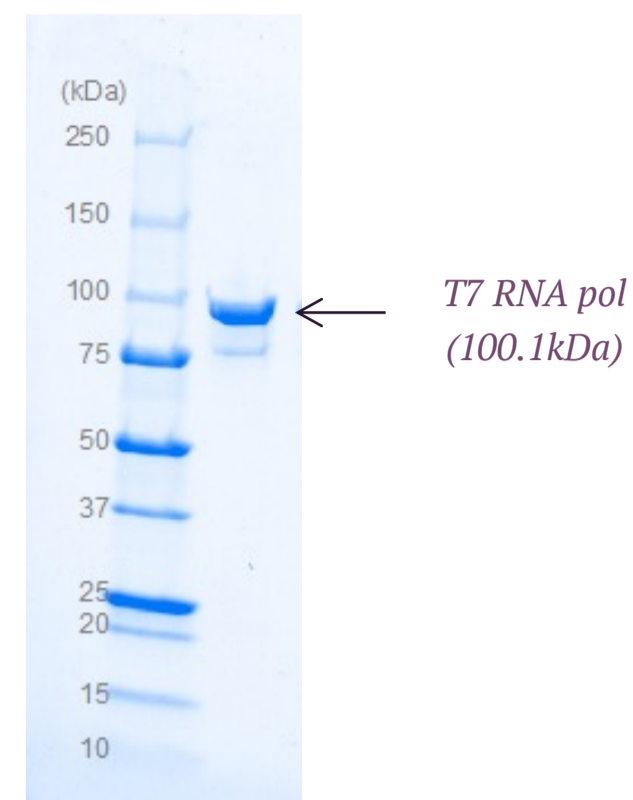
## Formulation

**Buffer:** Available in Tris 50 mM, pH 8 with 150 mM NaCl and 50 % glycerol. Other buffers or customized formulation can be provided upon request.

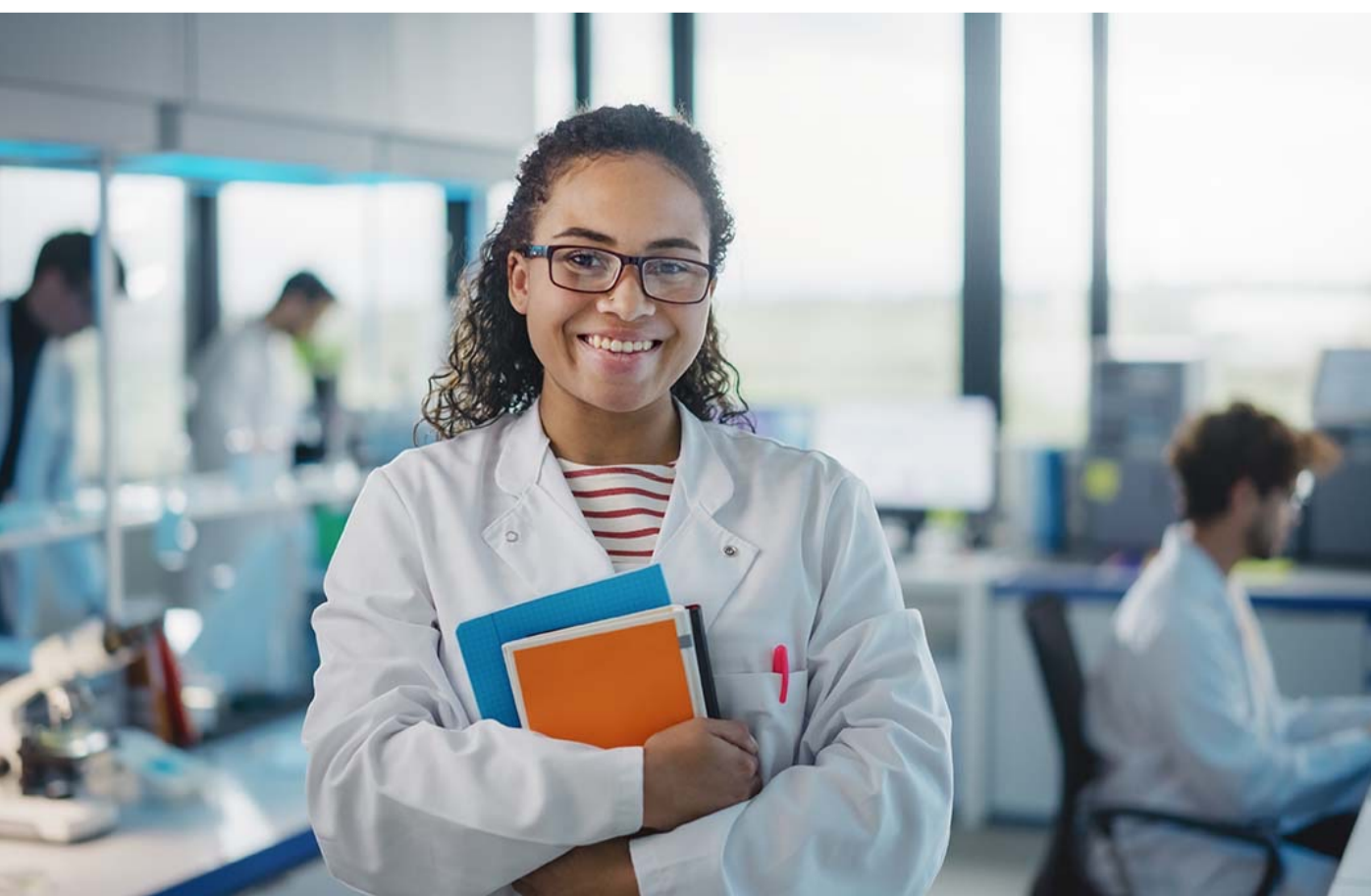
**Storage/Stability:** Store at -20°C for up to six months or longer at -80°C. Aliquot for storage.  
Do not freeze-thaw after aliquoting.

**Use restrictions:** For life science research use only.

**Available sizes:** 10 µg, 50 µg, 100µg, customized quantity on request.



**Fig.1:** T7 RNA polymerase analysis by Coomassie-Blue stained SDS-PAGE.



Need a specific amount, a quote or any additional information?  
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