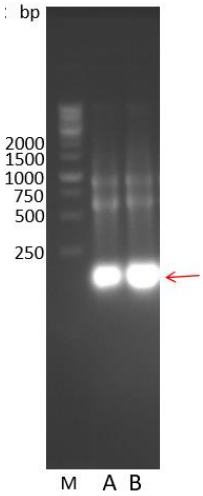
Quality Control (QC) Report

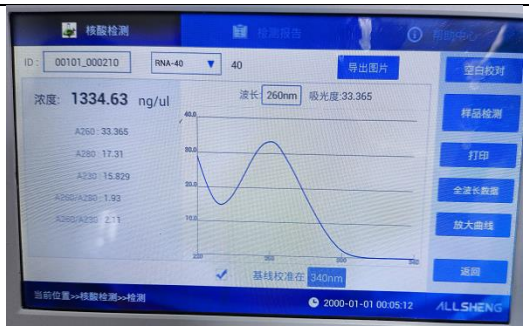
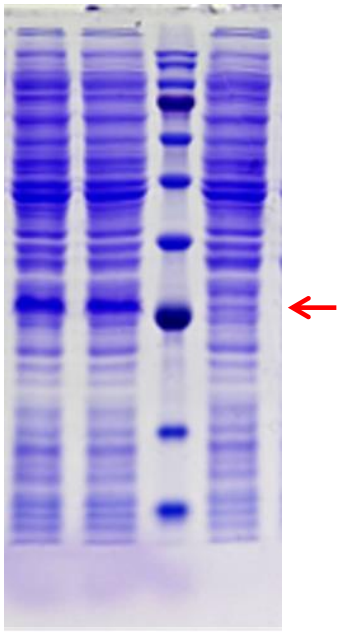
Product Name	tRNA
Other Name	transfer ribonucleic acid, (tRNA)
Catalogue Number	PF10041
Batch Number	AY20260317
Product Date	20260317
Storage	Liquid State Store at -80°C/Powder State Store at 2-8°C
Species	*E. coli*
Concentration	5 mg/mL
Manufacture date	17/03/2026
Expiry	1 year

Introduction:

This QC report documents the purification and activity detection of tRNA samples. The primary objectives are to ensure the purity and functionality of the tRNA for subsequent applications, such as *in vitro* translation or structural studies.

Results:

Specification	Result
Purity Analysis: The agarose gel electrophoresis profile showed a single major band corresponding to the target tRNA, with no significant impurities observed. The purity was estimated to be>90%. Lane A and B in the electrophoresis a tRNA sample with known concentration and the newly produced tRNA.	 Passed

Concentration: The concentration of tRNA sample was measured on a Micro-volume UV Spectrophotometer as 1.33 mg/mL.	 Passed
Activity: A tube of lyophilized tRNA sample was reconstituted with 1 mL MQ to make a tRNA solution with a final concentation of 5 mg/mL. A 50 µl *in vitro* translation reaction with 2 uL, 1 uL, 0 uL tRNA solution and 10 uL mRNA encoding a EGFP (enhanced green fluorescence protein) were conducted in 30°C for 12 hours. 3 uL of each sample was taken after the reaction and loaded into a SDS-PAGE (from left to right are reactions with 1.6 µL, 0.8 µL, protein marker, 0 µL tRNA). The translation yields were consistent across different titration of tRNA, demonstrating the functionality of the purified tRNA.	 Passed

Conclusion:

The purification and activity detection processes were successfully completed, resulting in high-purity and functional tRNA. The tRNA constructs were shown to be functionally indistinguishable from those produced using our standard protocols, making them suitable for downstream applications, including *in vitro* translation.

Approved by

Dan Wu

Dan, Wu
Quality Analyst
17/03/2026

NOTES: Product is for research use only. Not for use in diagnostic procedure. If you have any further question about this QC report, please contact Technical Services at +8618530054499