Advantages of Thermophilic Reverse Transcriptase Cat. #: W140

This enzyme is thermostable and super-efficient, and thus greatly facilitate to RNA-based detection, such as one-step RT-PCR:

1) Thermophilic reverse transcriptase: a **thermophilic type A family DNA polymerase** works best at **60-62ºC**, overcoming common RT-PCR difficulties, such as GC-rich template and secondary structure of RNA template,

2) Highly efficient: as little as **one unit per 20 µl reaction**,

3) Heat inactivated: loss of RT activity at **≥ 90 ºC** for 2 min,

4) Detection limit: as low as **single digit** copies of target RNA templates,

5) Mg^{++} reaction buffer compatible with *Taq* and many other DNA polymerases,

6) Particularly suitable to **one-step** real-time, fluorescence RT-PCR.

Table 1. Comparison among different RTases

	Thermophilic RTase	**MMLV RTase**
Optimal temperature	60-62ºC	42-50ºC, difficult to amplify high GC RNA template
Incubation time	5-10 min.	10-30 min.
RTase amount in 20ul reaction	1 U	100-200 U
RT efficiency	Virtually 100%	Varied
RT sensitivity	Single digit copies of target RNA	Varied