

# Amplification Products for PCR and RT-PCR

## Reverse Transcriptase PCR

Interchim provides several convenient tools for performing reverse transcriptase PCRs, as well all-ready prepared cDNAs.

### One Tube RT-PCR kit

- ◆ For detection and quantification of gene expression
- ◆ Automated TEMPase Hot Start enzyme for increased specificity and product yield
- ◆ Designed to reduce the formation of a non-specific product
- ◆ Detection of low target copy number
- ◆ No reagent additions between RT and PCR step

The One Tube RT-PCR System is designed for sensitive, quick and reproducible analysis of RNA with high fidelity. This one-step reaction system uses AMV for first-strand synthesis and TEMPase Hot Start DNA polymerase for primer extension. The system also utilizes a single, optimized RT-PCR buffer. The kit amplifies target transcripts from as little as 10 pg of total RNA.

Also included in the kit is Magic Solution, which changes the melting behavior of nucleic acids and can be used for RT-PCR systems that do not work well under standard conditions.

Description	Cat.#	Qty
One Tube RT-PCR	UPS53944	100 tests
Contents :		
RT-PCR Enzyme Mix : 200 µl - dNTP mix (5 mM) : 400 µl		
5x RT-PCR Buffer : 1.5 ml - MgCl <sub>2</sub> (25 mM) : 1.5 ml		
Magic Solution (5x) : 1.5 ml		

### Single Step RT-PCR Kit

- ◆ Superior yields
- ◆ High sensitivity
- ◆ No cross contamination
- ◆ Multiple genes amplification
- ◆ Fast and convenient
- ◆ Robust RT-PCR

The single step RT-PCR Kit provides an easy-to-use procedure to perform RT-PCR (Figure 1). The entire reaction is performed in a single tube, eliminating cross-contamination. Along with convenience, this kit offers exquisite sensitivity and efficiency - the key to success in RT-PCR.

As illustrated in the figure 2, traditional methods require separate steps for reverse transcription and PCR, thus requiring more hands-on time and allowing potential sample cross-contamination. In contrast, no additional reagents are added between steps in the single step method, thus eliminating possible contamination. The single step RT-PCR kit out performs all other one-step RT-PCR kits, since it allows analysis of multiple genes in a single tube (RT-MPCR).

Description	Cat.#	Qty
Single Step RT-PCR Kit	T50330	50 tests
Contents :		
Universal SSRT-PCR Buffers : 2 x (containing chemicals, enhancer, stabilizer and dNTPs)		
RNase Inhibitors : 100 x - SSRT-Polymerases* : 50 x		
Oligo-dT Primer : 10 x - DEPC-H <sub>2</sub> O (RNase free) : 1.2 ml		

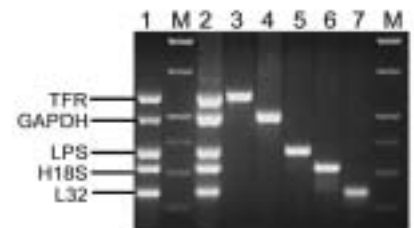


Fig.1. Single step RT-PCR is more sensitive and Convenient than traditional two step RT-PCR.  
 Lane 1 : Two step RT-MPCR (HKG-M052) using cDNAs derived from 1 µg RNA from keratinocyte cells.  
 Lane 2 : Single step RT-MPCR (HKG-M052) using 1 µgRNA from keratinocyte cells.  
 Lane 3-7 : Single step RT-PCR (in sequences of Transferin Receptor, GAPDH, PhosphoLipase A2, H18S and L32) using 1 µg RNA from keratinocyte cells.  
 Lane M : DNA Markers.

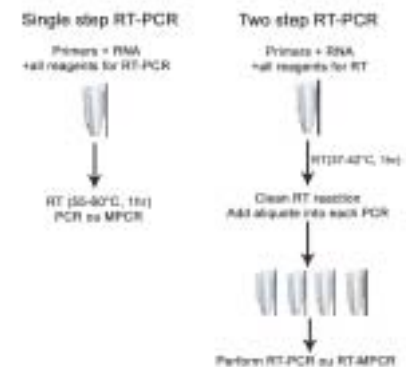


Fig.2. RT-PCR

\*: A blend of MMLV-RT and native Taq DNA Polymerase with proper activity for RT-PCR.

# Amplification Products for PCR and RT-PCR

## Reverse Transcriptase PCR

### AMV Reverse Transcriptase

Avian Myeloblastosis Virus (AMV) reverse transcriptase is an RNA-dependent DNA Polymerase that uses single stranded RNA or DNA as a template to synthesize the complementary DNA strand. AMV-RT is suitable for synthesizing long cDNA transcript and for dideoxy-sequencing of DNA and RNA. The AMV Reverse Transcriptase is isolated from Avian Myeloblastosis Virus particles.

Description	Cat.#	Qty
AMV Reverse Transcriptase	UPN1405A	1000 u

### M-MuLV Reverse Transcriptase

Moloney Murine Leukemia Virus (M-MuLV) reverse transcriptase is a RNA-dependent DNA polymerase. This enzyme can synthesize a complementary DNA strand initiating from a primer using either single-stranded RNA or DNA template. The enzyme lacks RNase H activity.

One unit is the amount of enzyme required to incorporate 1 nmol of dTTP into an acid insoluble form in 10 minutes at 37°C using poly(rA)-oligo(dt) 10-20 as template primer.

M-MuLV reverse transcriptase is tested for its ability to synthesize full length cDNA from 4kb RNA

Description	Cat.#	Qty
M-MLV Reverse Transcriptase, 100 units/μl	U54122	5000 u

### RT PCR - cDNA Synthesis Kit

RT PCR results are crucially dependent on high quality RNA and cDNA. If these messages are not copied, subsequent PCR will be difficult or impossible. Due to the robust power of PCR, sometimes-false amplification bands may appear. The RT kit represents a revolution in the ability to copy RNA. Specially selected reverse transcriptase with little RNase H activity provides the ability to synthesize high yield and full-length cDNA. The optimized RT protocol is easy to follow and is suited for GC-rich RNA targets. The control cRNA and its primers provide a positive control for each individual RT performance and for reagent stability. When used in combination with other PCR products, outstanding RT-PCR results are guaranteed.

Description	Cat.#	Qty
RTeasy Reverse Transcriptase Kit	R68030	10 tests
RTeasy Reverse Transcriptase Kit	R68031	50 tests

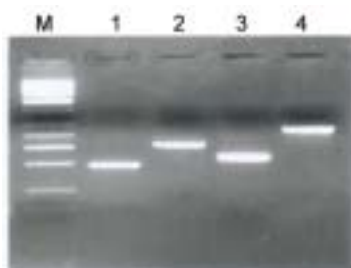


Fig.1. The viral RNA was isolated and RT-PCR were performed using cDNA generated by Maxim's first strand cDNA synthesis kit.

Lane M : DNA M.W. Marker  
Lane 1 : Influenza virus type A  
Lane 2 : Influenza virus type B  
Lane 3 : Respiratory Syncytial Virus  
Lane 4 : Adenovirus type 3

Each kit contains MMLV-RT (Reverse transcriptase), RNase inhibitor, dNTPs, RT buffer, Oligo(dT)20 mers, Random hexamers, GAPDH Control RNA, GAPDH Control primers