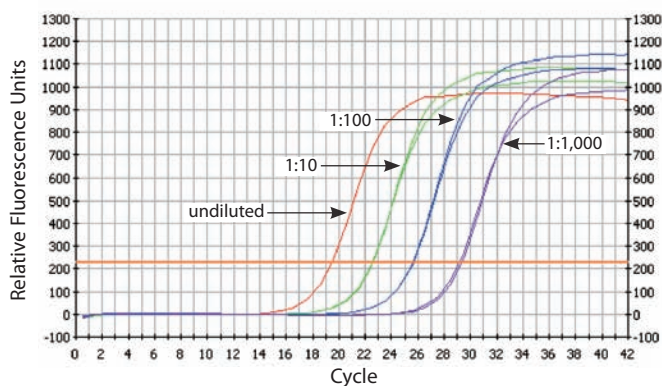


## Gene Expression Analysis

### MessageBOOSTER™ cDNA Synthesis from Cell Lysates Kit

The MessageBOOSTER cDNA Synthesis from Cell Lysates Kit enables the amplification of mRNA directly from the lysates of 1 to 1,000 cultured cells, and converts the amplified RNA to cDNA that is ready for qPCR. There is no RNA purification required, and rapid detection of even low-abundance transcripts is achieved. Linear RNA amplification maintains the relative transcript abundance of the sample. The 1-day reaction produces sufficient cDNA from a single-cell lysate for thousands of sensitive qPCRs. More qPCRs per sample allows less frequent sample collection and enables archiving the sample for future use.

Cat. #	Quantity
MBCL90310	10 Reactions



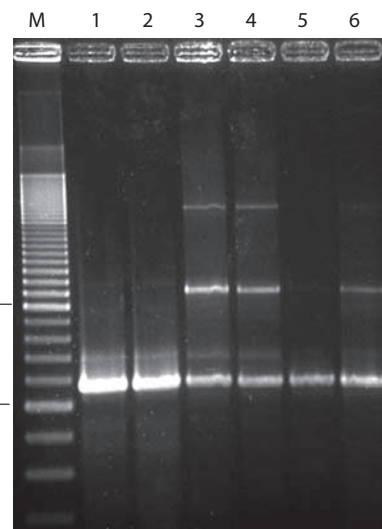
**Figure 1.** A MessageBOOSTER™ Kit reaction produces sufficient cDNA from a single-cell lysate for thousands of sensitive qPCRs. qPCR was performed using undiluted (red), 1:10 diluted (green), 1:100 diluted (blue), and 1:1,000 diluted (purple) cDNA from a lysate of a single NRK cell. The low-abundance PBGD transcript was readily detected.

## DNA & RNA Purification

### QuickExtract™ RNA Extraction Kit

Rapidly extract RNA for RT-PCR (end-point or real-time) from cultured cells in minutes using a simple, one-tube protocol. Process one to hundreds of samples simultaneously without sample loss, toxic organic solvents, or spin columns. Simply add the QuickExtract RNA Extraction solution to the cell pellet and vortex for 1 minute. The sample is now ready for RT-PCR. The kit works with adherent and suspension cells, including buccal cells, and has been tested on human, mouse, rat, *E. coli*, and *S. aureus* cells. An optional DNase I (provided) treatment may improve the performance of some downstream applications.

Cat. #	Quantity
QER09015	5 ml (50 Extractions)
QER090150	50 ml (500 Extractions)



**Figure 2.** Comparative yield of RT-PCR product with different RNA extraction kits. Lysates were prepared according to manufacturers' instructions and used as template to produce cDNA using the MMLV RT 1st Strand cDNA Synthesis Kit, followed by PCR using the FailSafe™ PCR System with primers for the ALDOA gene. Products were separated on a 2% agarose gel and stained with SYBR® Gold. Lane M, 100-bp ladder; lanes 1 and 2, QuickExtract™ RNA Extraction Kit; lanes 3 and 4, kit from Vendor 1; lanes 5 and 6, kit from Vendor 2.

### QuickExtract™ Seed DNA Extraction Solution

Rapidly extract PCR-ready genomic DNA from most ground or fragmented seed samples using a simple, one-tube protocol that takes only 8 minutes. Process one to hundreds of samples simultaneously, without centrifugation, spin columns, or toxic organic solvents. Simply add the QuickExtract Seed Solution to the ground sample and perform two sequential heating steps. A small aliquot of the sample mix can be used as template for PCR or qPCR. Most ground seed material up to 10 mg is acceptable for DNA extraction, and the procedure is suitable for high-throughput or automated workflows. For more information, visit: [www.epibio.com/plants](http://www.epibio.com/plants)

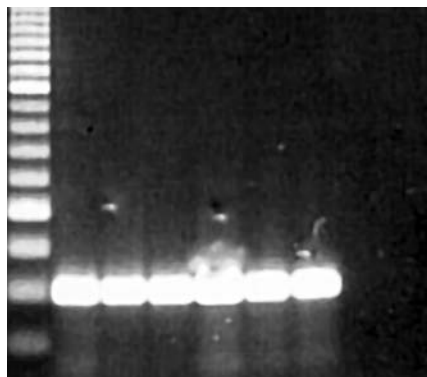
Cat. #	Quantity
QES08095T	5 ml (50 Extractions)
QES080950	50 ml (500 Extractions)

## End-Point PCR

### PlantAmp™ PCR System

PCR amplification of genomic DNA from plants such as sunflower and cotton is challenging due to inhibitory compounds. The presence of polyphenols also makes it difficult to detect DNA of spoilage bacteria in wine samples. The PlantAmp PCR System is formulated to optimize PCR amplification from samples containing polyphenols and other plant-derived PCR inhibitors, as well as GC-rich templates.

M 1 2 3 4 5 6 7 8



**Figure 3.** PCR of DNA extracted from cottonseed. Cottonseed (a green fiber cultivar) was processed as in Fig 1. Several dilutions of the extract were tested in PCR using primers for the transcription factor DREB1 and the PlantAmp™ PCR System (EPICENTRE). Lane M, 100-bp ladder; lanes 1-4, 1:10 dilutions of cottonseed extracts; lanes 5-6, 1:100 dilutions of cottonseed extracts; lanes 7 and 8, negative controls containing only TE buffer or QuickExtract Seed Solution, respectively.

The PlantAmp Enzyme Mix has 3'→5' proofreading activity for high fidelity. The PlantAmp PreMix includes all four dNTPs and MgCl<sub>2</sub>. For more information, visit: [www.epibio.com/plants](http://www.epibio.com/plants)

Cat. #	Quantity
PA0809100	100 Units
PA08091K	1,000 Units

## Transcriptome Discovery

### ExactSTART™ Platform of Kits

The ExactSTART kits combine the advantages of RNA Ligase-Mediated (RLM) 5'-RNA tagging and a select group of RNA modifying enzymes with strict enzymatic specificity. When used in a defined order, these enzymes enable the researcher to selectively “tag” the 5' and 3' ends of a specific class of RNA contained in a total RNA preparation. Examples include 5'-capped RNAs (eukaryotic mRNAs and eukaryotic viral RNAs), 5'-triphosphorylated RNAs (e.g., some noncoding RNAs), 5'-monophosphorylated RNAs (e.g., miRNAs), as well as other RNAs whose functions are not yet identified. By incorporating 5' and 3' tags with unique, functional sequences, the selected class of transcripts can be amplified for a specific downstream application such as next-generation sequencing, rapid amplification of cDNA ends (RACE), library cloning, RT-PCR, microarray target preparation, etc. Since the tags

are specific, researchers can accurately map alternative transcription or splicing sites, and characterize the 5'- or 3'-end-structures of RNAs. For more information, visit: [www.epibio.com/exactstart](http://www.epibio.com/exactstart)

### ExactSTART™ Full-Length cDNA Library Cloning Kit

Cat. #	Quantity
ES0907	10 Reactions

### ExactSTART™ Eukaryotic mRNA 5'- & 3'-RACE Kit

Cat. #	Quantity
ES80910	10 Reactions

### ExactSTART™ End-Tagged Double-Strand cDNA Synthesis Kit for Small RNA

Cat. #	Quantity
ES81010	10 Reactions

### ExactSTART™ Small RNA Cloning Kit

Cat. #	Quantity
ES81005	5 Reactions

## Enzymes for Molecular Biology

### CircLigase™ II ssDNA Ligase

CircLigase II ssDNA Ligase is a thermostable enzyme that catalyzes circularization of single-stranded DNA templates (ssDNA) having a 5'-phosphate and a 3'-hydroxyl end. Unlike T4 DNA ligase, which ligates DNA ends that are annealed adjacent to each other on a complementary DNA sequence, CircLigase II ligates ssDNA ends in the absence of a complementary sequence. Therefore, the enzyme is useful for making circular ssDNA molecules from linear ssDNA templates.

CircLigase II ssDNA Ligase efficiently circularizes ssDNA of >15 bases (including cDNAs) without T4 DNA Ligase, oligo “splints,” or “bridges.” The reaction produces virtually no linear or circular concatamers, and circular DNA can be used for next-generation sequencing or rolling-circle replication and transcription experiments. The standard CircLigase II reaction uses 10 pmol of linear ssDNA, and does not require magnesium. CircLigase II enzyme has optimal activity at 60°C, and the circularization reaction can be completed in 60 minutes. The kit includes a ssDNA Control Oligo (a linear 5'-phosphorylated 55-mer oligonucleotide) to monitor circularization efficiency.

Cat. #	Quantity
CL9021K	1,000 Units
CL9025K	5,000 Units