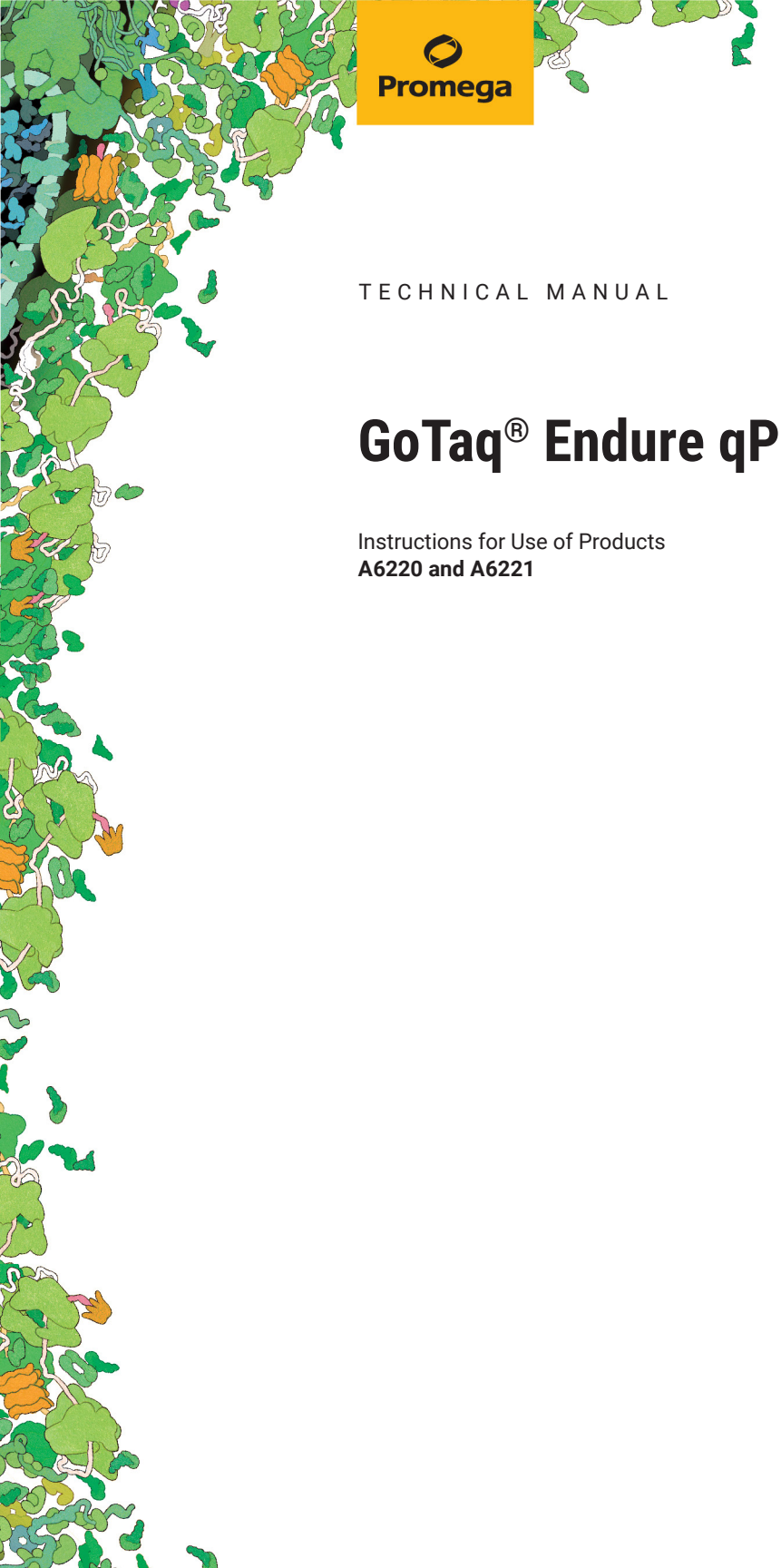

TECHNICAL MANUAL

GoTaq® Endure qPCR Master Mix

Instructions for Use of Products
A6220 and A6221

10/24
TM752

GoTaq® Endure qPCR Master Mix

All technical literature is available at: www.promega.com/protocols/
Visit the website to verify that you are using the most current version of this Technical Manual.
Email Promega Technical Services if you have questions on use of this system: techserv@promega.com

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1. Description

The GoTaq® Endure qPCR Master Mix is an optimized formulation for quantitative PCR (qPCR) assays using a hydrolysis probe for real-time amplicon detection. This robust Master Mix amplifies DNA targets from challenging sample types that may contain PCR inhibitors, such as humic acid, heparin, hematin and other compounds found in clinical, health and safety, and agricultural research samples. The GoTaq® Endure qPCR Master Mix includes GoTaq® Endure Master Mix, 2X, a ready-to-use, stabilized 2X formulation that includes all components for qPCR, including GoTaq® Hot Start Polymerase, $MgCl_2$, dNTPs and a proprietary reaction buffer. The master mix does not contain a reference dye. However, a separate tube of carboxy-X-rhodamine (CXR) Reference Dye is included with this system, allowing addition of reference dye to amplification reactions if desired.

The GoTaq® Endure qPCR Master Mix provides resistance to a wide range of PCR inhibitors and is optimized for multiplexing, enabling detection of at least four targets in the same reaction. This formulation uses antibody-mediated hot-start chemistry, allowing reaction setup to be performed at room temperature. The master mix also employs rapid hot-start activation and processive enzymes, making it compatible with both standard and fast instrument cycling programs.

2. Product Components and Storage Conditions

PRODUCT	SIZE	CAT.#
GoTaq® Endure qPCR Master Mix	**200 reactions**	**A6220**

For Laboratory Use. Each system contains sufficient reagents for 200 × 20µl reactions. Includes:

- 2 × 1ml GoTaq® Endure Master Mix, 2X
- 1 × 100µl CXR Reference Dye, 30µM
- 2 × 1.25ml Nuclease-Free Water

PRODUCT	SIZE	CAT.#
GoTaq® Endure qPCR Master Mix	**1,000 reactions**	**A6221**

For Laboratory Use. Each system contains sufficient reagents for 1,000 × 20µl reactions. Includes:

- 10 × 1ml GoTaq® Endure Master Mix, 2X
- 2 × 200µl CXR Reference Dye, 30µM
- 1 × 13ml Nuclease-Free Water

Storage Conditions: Store all components at –30°C to –10°C. Protect CXR Reference Dye, 30µM, from light at all times. For best results, mix thawed solutions gently to minimize aeration and foaming. For short-term storage and frequent use, store GoTaq® Endure Master Mix, 2X, at +2°C to +10°C for up to 3 months, protected from light. GoTaq® Endure Master Mix, 2X can be stored for at least 4 hours at room temperature (+15°C to +30°C). Do not freeze-thaw the GoTaq® Endure Master Mix, 2X, more than five times.

3. General Considerations

3.A. Preventing Contamination

We recommend the following precautions to prevent contamination:

- Designated work areas and pipettes for pre- and post-amplification steps to minimize the potential for cross contamination between samples and prevent carryover of nucleic acids from one experiment to the next.
- Wear gloves and change them often.
- Do not open the reaction plate or strip wells after amplification is complete. Opening the reaction plate or strip wells increases the risk of contaminating subsequent reactions with the amplified product.
- Aerosol-resistant barrier pipette tips.

3.B. qPCR Primers and Probes

The concentrations of primers and probes should be optimized for each primer/probe combination. For gene expression assays, primer and probe concentrations may need to be adjusted based on target abundance. We recommend a starting concentration of 900nM for PCR primers and 250nM for the hydrolysis probe.

Concentrations of PCR primers can range from 200nM to 1µM, while probe concentration can range from 100nM to 300nM; titrations should be performed to ensure optimal results.

We recommend preparing and storing the PCR primers and hydrolysis probes as 20X solutions.

3.C. CXR Reference Dye

The GoTaq® Endure Master Mix, 2X does not contain a reference dye. However, a separate tube of CXR Reference Dye, 30µM, is included with this system for use if desired. Adding the reference dye will help maximize effectiveness of the GoTaq® Endure Master Mix, 2X when used with real-time PCR instruments with normalization capabilities. The CXR Reference Dye, 30µM, has the same spectral properties as ROX™ dye.

Some instrumentation is designed to normalize with a low concentration of ROX™ reference dye. We recommend adding CXR Reference Dye, 30µM, to a final concentration of 30nM for instruments that recommend a low level of ROX™ dye. For instruments that require ROX™ dye at a high concentration for normalization, we recommend adding CXR Reference Dye, 30µM, to a final concentration of 500nM.

Recommended reference dye levels for various qPCR instruments are listed below. Directions for supplementing the GoTaq® Endure Master Mix, 2X with CXR Reference Dye, 30µM are included in Section 4.A.

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3.C. CXR Reference Dye (continued)

Instruments that do not require supplemental reference dye:

- Bio-Rad CFX96 Real-Time PCR Detection System
- Bio-Rad DNA Engine Opticon® and Opticon® 2 Real-Time PCR Detection Systems
- Bio-Rad/MJ Research Chromo4™ Real-Time Detector
- Bio-Rad iCycler iQ® and iQ®5 Real-Time PCR Detection Systems
- Bio-Rad MyiQ™ Real-Time PCR Detection System
- Roche LightCycler® 480 Real-Time PCR System
- Eppendorf Mastercycler® ep realplex Real-Time PCR System

Instruments requiring low levels (30nM) of reference dye:

- Applied Biosystems™ 7500 and 7500 FAST Real-Time PCR System
- Applied Biosystems™ QuantStudio® Real Time PCR Systems
- Applied Biosystems™ ViiA® 7 Real-Time PCR System
- Stratagene/Agilent Mx3000P® and Mx3005P® Real-Time PCR Systems
- Stratagene/Agilent Mx4000® Multiplex Quantitative PCR System

Instruments requiring high levels (500nM) of reference dye:

- Applied Biosystems™ StepOne™ and StepOnePlus™ Real-Time PCR Systems
- Applied Biosystems™ 7300 and 7900HT Real-Time PCR System

4. GoTaq® Endure qPCR Master Mix Protocol

Materials to Be Supplied By the User

- real-time PCR instrument and related consumables (e.g., optical-grade PCR plates and appropriate well caps or sealing film)
- sterile, aerosol-resistant barrier pipette tips
- nuclease-free pipettors dedicated to pre-amplification work
- DNA template
- qPCR primers and probe

4.A. Optional: Adding CXR Reference Dye, 30µM

Some real-time PCR instruments require addition of the CXR Reference Dye, 30µM; see Section 3.C. If you wish to add CXR Reference Dye to your amplification reactions, we recommend adding an aliquot of concentrated CXR Reference Dye to the 1ml tube of GoTaq® Endure Master Mix, 2X. Depending on your instrument, add the CXR Reference Dye at either the low dye (30nM) concentration or high dye (500nM) concentration (see Section 3.C).

1. Thaw the GoTaq® Endure Master Mix, 2X and CXR Reference Dye , 30µM, at ambient temperature or on ice.
2. Vigorously vortex the GoTaq® Endure Master Mix, 2X, for 30–60 seconds to ensure homogeneity before use. Briefly centrifuge to collect contents at the bottom of the tube.
3. When using an instrument designated as a high-dye instrument (Section 3.C), add 33.4µl of CXR Reference Dye, 30µM, to the 1ml tube of GoTaq® Endure Master Mix, 2X.

   When using an instrument designated as a low-dye instrument (Section 3.C), add 2µl of CXR Reference Dye, 30µM, to the 1ml tube of GoTaq® Endure Master Mix, 2X.
4. Vortex for 3–5 seconds to mix.
5. Mark the tube to indicate that you have performed this step. Store the GoTaq® Endure Master Mix, 2X, combined with CXR Reference Dye, 30µM, at –30°C to –10°C, protected from light.

   Note: Create aliquots of the combined GoTaq® Endure Master Mix, 2X, and CXR Reference Dye, 30µM, to avoid more than five freeze-thaw cycles of this mixture.

4.B. Assembling the GoTaq® Endure qPCR Master Mix Amplification Mix

The GoTaq® Endure qPCR Master Mix uses hot-start chemistry, allowing reaction setup to be performed at room temperature. The final reaction volume in this protocol is 20µl.

1. Thaw the GoTaq® Endure Master Mix, 2X and Nuclease-Free Water. Vigorously vortex the master mix for 30–60 seconds to ensure homogeneity before use. Briefly centrifuge to collect contents at the bottom of the tube.
2. Determine the number of reactions to be set up, including negative control reactions. Add one or two reactions to this number to compensate for pipetting error. While this approach does require a small amount of extra reagent, it ensures that you have enough reaction mix for all samples.

4.B. Assembling the GoTaq® Endure qPCR Master Mix Amplification Mix (continued)

3. Prepare the amplification mix (minus the DNA template) by combining the GoTaq® Endure Master Mix, 2X, PCR primers, hydrolysis probe and Nuclease-Free Water as described below. The DNA template is added in Step 5. Vortex briefly to mix.

Component	Volume	Final Concentration
GoTaq® Endure Master Mix, 2X	10µl	1X
forward primer (20X)	1µl	200nM–1µM
reverse primer (20X)	1µl	200nM–1µM
hydrolysis probe (20X)	1µl	100–300nM
template DNA	2–5µl	≤250ng
Nuclease-Free Water to a final volume of	**20µl**	**—**

Note: Optimize the concentrations of primers and hydrolysis probe for each primer combination.

4. Add the appropriate volume of amplification mix (without the DNA template) to each PCR tube or well of an optical-grade PCR plate.

5. Add the DNA template or Nuclease-Free Water for no-template control (NTC) reactions, to the appropriate wells of the reaction plate.

6. Seal the tubes or optical plate. Centrifuge plates briefly at 300 × *g* to collect contents at the bottom of the wells. Protect from extended light exposure and elevated temperatures before cycling. The samples are now ready for thermal cycling.

   Note: Assembled reaction plates can be stored protected from light at ambient temperature for up to 4 hours.

5. Thermal Cycling

The cycling parameters below are offered as a guideline and may be modified as necessary for optimal results.

Standard Cycling Conditions

Step	Temperature	Time	Number of Cycles
GoTaq® DNA Polymerase activation	95°C	2 minutes	1
Denaturation	95°C	15 seconds	40
Annealing and extension	60°C	1 minute	

FAST Cycling Conditions

Step	Temperature	Time	Number of Cycles
GoTaq® DNA Polymerase activation	95°C	2 minutes	1
Denaturation	95°C	3 seconds	40
Annealing and extension	60°C	30 seconds	

6. Appendix

6.A. Inhibitor Tolerance Data with GoTaq® Endure qPCR Master Mix

The GoTaq® Endure qPCR Master Mix is designed to tolerate PCR inhibitors that may be present in difficult sample types. A series of titrations was performed to determine the maximum concentration of common inhibitors that could be present without significant inhibition of amplification. The table below shows the highest concentration of inhibitors tolerated.

Table 1. GoTaq® Endure qPCR Master Mix Tolerates qPCR Inhibitors. Inhibitors were individually added to purified DNA samples at high concentrations to determine their effect on C_q values. The maximum amount of inhibitor that produced a less than 2 C_q shift is shown.

Inhibitor	Amount Tolerated with Minimal Inhibition
Hematin	>500µM*
Ethanol	9%
Sodium Citrate	12mM
Heparin	0.0725U/µl (1.45U/reaction)
EDTA	4.5mM
Humic Acid	1,000ng/reaction

*Maximal amount tested, no inhibition observed.

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6.B. Using the GoTaq® Endure qPCR Master Mix with a qPCR Exogenous Internal Positive Control (IPC) Assay

Pairing the GoTaq® Endure qPCR Master Mix with an exogenous amplification positive control provides additional confidence in qPCR results and data interpretation. The IPC qPCR Inhibition Control Assay, CAL Fluor® 560 (Cat.# AM2040) contains primers, probe and an exogenous template for a complete amplification control in one step. CAL Fluor® 560 is compatible with HEX™/JOE/VIC® dye channels. Below are instructions for use of the IPC qPCR Inhibition Control Assay with the GoTaq® Endure qPCR Master Mix. For more information, see *IAC RT-qPCR Inhibition Control Assay, CAL Fluor® 560 and IPC qPCR Inhibition Control Assay, CAL Fluor® 560 Technical Manual,* #TM657.

Assembling a Reaction Mix

Note: The final reaction volume for this protocol is 20µl.

1. Thaw the IPC qPCR Inhibition Control, GoTaq® Endure Master Mix, 2X, and Nuclease-Free Water at ambient temperature or on ice. Add CXR Reference Dye to the Master Mix according to instructions in Section 4.A, if desired.
2. Vortex the GoTaq® Endure Master Mix, 2X and IPC qPCR Inhibition Control for 3–5 seconds to mix.
3. Determine the number of reactions to be set up, including negative control reactions. Add one or two reactions to this number to compensate for pipetting error. While this approach uses a small amount of extra reagent, it ensures that you have enough reaction mix for all samples.
4. Prepare the reaction mix (minus the DNA template) by combining the reagents as described below. Add 1µl of IPC qPCR Inhibition Control Assay and template per 20µl reaction. Vortex briefly to mix.

Component	Volume per 20µl	Final Concentration
GoTaq® Endure Master Mix, 2X	10µl	1X
forward primer (20X)	1µl	200nM–1µM
reverse primer (20X)	1µl	200nM–1µM
hydrolysis probe (20X)	1µl	100nM–300nM
CXR Reference Dye	0.02µl/0.33µl	30nM/500nM
IPC qPCR Inhibition Control, CAL Fluor® 560, 20X*	1µl	1X
DNA template	2–4µl	
Nuclease-Free Water to a final volume of	**20µl**	**–**

***Note:** The IPC qPCR Inhibition Control, CAL Fluor 560, 20X contains primers, probes and exogenous DNA template.

5. Add the appropriate volume of reaction mix to each PCR tube or to each well of an optical-grade PCR plate.
6. Add the DNA template (or Nuclease-Free Water for the no-template control reactions) to the appropriate wells of the reaction plate.

7. Seal the tubes or optical plate. Centrifuge briefly to collect the contents at the bottom of the tube or wells. Protect from extended light exposure and elevated temperatures. The samples are now ready for thermal cycling.
8. Analyze the inhibitor control in a CAL Fluor® 560-compatible channel (HEX/JOE/VIC).

Table 2. GoTaq® Endure qPCR Master Mix Tolerates qPCR Inhibitors. qPCR was performed with the IPC qPCR Inhibition Control Assay, using either the GoTaq® Endure qPCR Master Mix or a traditional master mix with varying amounts of humic acid, a known PCR inhibitor. Nuclease-Free Water was used as a no-inhibitor control. No C_q indicates that PCR was completely inhibited by humic acid, while a ΔC_q of 0 indicates no inhibition by humic acid.

	Humic Acid (ng/reaction)							
Assay	**125**	**62.5**	**31.25**	**15.63**	**7.81**	**3.91**	**1.95**	**0**
GoTaq® Endure qPCR Master Mix (ΔC_q)	0.63	0.2	0	0	0	0	0.02	0
Traditional Master Mix (ΔC_q)	No C_q	No C_q	No C_q	8.84	0.05	0	0	0

A shift in C_q value from the no-inhibitor control reflects the level of qPCR inhibition.

$\Delta C_q = C_q$ [with Inhibitor] – C_q [no Inhibitor]

ΔC_q >2 represents significant inhibition of the reaction.

6.C. Use of XpressAmp™ Direct Amplification Reagent with the GoTaq® Endure qPCR Master Mix

The GoTaq® Endure qPCR Master Mix is designed to be a robust mix that can handle the most challenging sample types. This system can be paired with the XpressAmp™ Direct Amplification Reagent (Cat.# A8880) to enable qPCR directly from sample lysates. For more information, see the *XpressAmp™ Direct Amplification Reagents Technical Manual #*TM647.

Preparing XpressAmp™ Solutions

1. Ensure the XpressAmp™ Lysis Buffer is at room temperature (+15°C to +30°C) before use. If the XpressAmp™ Lysis Buffer has been stored below room temperature, you may see a precipitate. Warm the XpressAmp™ Lysis Buffer to room temperature, with gentle mixing, for at least 30 minutes prior to use to ensure the precipitate is back in solution.
2. Add 1-Thioglycerol to a concentration of 1% (v/v) to an aliquot of XpressAmp™ Lysis Buffer before use.
   Note: For best results, use XpressAmp™ Lysis Buffer containing 1% 1-Thioglycerol within 1 hour of preparation.

Component	Volume for One Amplification Reaction	Volume for 96 Amplification Reactions
1-Thioglycerol	0.025µl	2.5µl
XpressAmp™ Lysis Buffer	2.475µl	247.5µl
final volume	**2.5µl**	**250µl**

6.C. Use of XpressAmp™ Direct Amplification Reagent with the GoTaq® Endure qPCR Master Mix (continued)

Preparing XpressAmp™ Sample Lysates

1. Combine sample 1:1 with freshly prepared XpressAmp™ Lysis Buffer containing 1% 1-Thioglycerol (e.g., 2.5µl of sample with 2.5µl of XpressAmp™ Lysis Buffer containing 1% 1-Thioglycerol, as shown in the table below).

Samples may be infectious. Use appropriate protection equipment when handling samples. Adhere to your institutional guidelines for the handling and disposal of potentially infectious substances when using these reagents.

Component	Volume for One Amplification Reaction	Volume for Multiple (X) Amplification Reactions
Sample	2.5µl	2.5µl × (X + 1) reactions
Prepared XpressAmp™ Lysis Buffer containing 1-Thioglycerol	2.5µl	2.5µl × (X + 1) reactions
final volume	**5µl**	**5µl × (X + 1) reactions**

2. Mix the sample by pipetting.
3. Incubate at room temperature for 10 minutes.
4. Proceed with PCR amplification of the XpressAmp™ sample lysate. Holding XpressAmp™ sample lysates for greater than 24 hours before amplification reduces amplification sensitivity.

Amplification of XpressAmp™ Sample Lysates

Determine the number of reactions to be set up, including control reactions.

Prepare enough amplification reaction mix for the number of reactions needed plus 10% additional reaction volume to compensate for pipetting error. This ensures that you have enough reaction mix for all samples. Add CXR dye to the Master Mix according to instructions in Section 4.A if desired. If adapting a previously optimized PCR assay to direct amplification by adding XpressAmp™ Solution to your reaction, you may need to reoptimize your PCR amplification conditions (e.g., annealing temperature and primer/probe concentration). Optimizing the amount of sample lysate added (e.g., diluting 1:50 or 1:100) may be necessary to achieve efficient amplification.

1. Prepare the amplification reaction mix (minus the sample lysate) by combining qPCR master mix, primer/probe mix, XpressAmp™ Solution and Nuclease-Free Water. The example below shows how to set up the amplification reaction when using the GoTaq® Endure qPCR Master Mix. Vortex briefly to mix. The prepared XpressAmp™ sample lysate is added in Step 3.

Component	Starting Concentration	Final Concentration	Single-Well Reaction Volume		Number of Reactions (n ×1.1)		Master Mix Volume
GoTaq® Endure Master Mix, 2X	2X	1X	12.5µl	×		=	
Primer/Probe Mix	25X	Primers: 0.1–1µM Probe: 0.1–0.5µM	1µl	×	__	=	
XpressAmp™ Solution	5X	1X	5µl	×		=	
Nuclease-Free Water			1.5µl	×		=	
Prepared XpressAmp™ sample lysate*			5µl				
final reaction volume			**25µl**				™

*You can change the final volume of the PCR amplification to accommodate other volumes of prepared XpressAmp™ sample lysate. If you change the final PCR volume, adjust the volume of XpressAmp™ Solution to ensure a 1X final reaction concentration. For samples containing strong PCR inhibitors or very high levels of transcript, such as whole blood, diluting the sample lysate 1:50 or 1:100 may be necessary.

2. Add 20µl of reaction mix (without XpressAmp™ sample lysate) to each PCR tube or well of an optical-grade PCR plate.
3. Add 5µl of XpressAmp™ sample lysate to the appropriate tubes or wells of the reaction plate.
4. Seal the tubes or optical plate. Centrifuge briefly to collect the contents at the bottom of tubes or wells. The samples are ready for thermal cycling. Protect tubes or plate from extended light exposure or elevated temperatures before cycling.
5. Begin thermal cycling. See Section 5 for example cycling parameters. The optimal annealing and extension temperatures and times are dependent on the sequence of your primers/probes, the length of your amplicon and the amplification reagents used in the qPCR. We recommend optimizing the annealing/extension temperature and time for your assay in the presence of XpressAmp™ Direct Amplification Reagents containing known amounts of control DNA before testing samples.

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6.D. Troubleshooting

For questions not addressed here, please contact your local Promega Branch Office or Distributor. Contact information available at: **www.promega.com**. Email: **techserv@promega.com**

Symptoms	Causes and Comments
Internal Positive Control (IPC) C_q in a sample well is shifted significantly (C_q ≥2) compared to NTC well	PCR inhibitors are present in the experimental sample and results should be considered qualitative and not quantitative. Repeat the purification or clean-up of nucleic acid if necessary.
	If the IPC fails to amplify or the IPC C_q is shifted >3 C_q compared to NTC wells, no conclusions can be made about the absence of genetic material in a sample. Results can be considered invalid.
	IPC can fail to amplify if the assay is set up incorrectly. Check each step of amplification setup to ensure there are no mistakes, then repeat amplification.
Failure to detect qPCR signal	Improper nucleic acid extraction from samples, resulting in loss of DNA, DNA degradation or both.
	Inhibition of DNA polymerase by inhibitors in the sample.
	Absence of sufficient nucleic acid due to poor collection or pasteurization of sample.
	Improper assay set up or execution. Reagent or equipment malfunction.
Low yield of qPCR product	DNA degradation. Always use nuclease-free, commercially autoclaved reaction tubes, sterile aerosol resistant tips and gloves.
	Poor primer design. If the reaction products appear to be entirely primer artifacts, the reaction may not have amplified the desired PCR product because of primer-primer interactions. Make sure the primers are not self-complementary. Check the length and melting temperature of the PCR primers.
	Extension time was too brief for amplicon length. To minimize interactive effects of reverse transcriptase and thermophilic DNA polymerase, design the thermal cycling program with a longer extension time in each cycle. Begin with 1 minute per kilobase per cycle and increase to 2 minutes or more if necessary.
	Too few PCR cycles. To detect rare or difficult DNA targets by PCR, increase the cycle number to 40 to maximize sensitivity.

Symptoms	Causes and Comments
Low yield of qPCR product (continued)	Wrong reaction tubes were used. Make sure to use thin-walled reaction tubes for optimal heat transfer during PCR. Use only sterile, nuclease-free commercially autoclaved tubes, strip tubes or plates for PCR. Autoclaving eliminates volatile contaminants that inhibit amplification.

6.E. General qPCR References

1. Bustin, S.A. *et al*. (2009) The MIQE guidelines: Minimum information for publication of quantitative real-time PCR experiments. *Clin. Chem*. **55**, 611–22.
2. Dorak, M.T. (2009) Glossary of real-time PCR terms. This can be viewed online at: **www.dorak.info/genetics/glosrt.html**
3. Fleige, S. and Pfaffl, M.W. (2006) RNA integrity and the effect on the real-time qRT-PCR performance. *Mol. Aspects Med*. **27**, 126–39.
4. Lefever, S. *et al*. (2009) RDML: Structured language and reporting guidelines for real-time quantitative PCR data. *Nucleic Acids Res*. **37**, 2065–9.
5. Livak, K.J. and Schmittgen, T.D. (2001) Analysis of relative gene expression data using real-time quantitative PCR and the $2^{-\Delta\Delta C_T}$ Method. *Methods* **25**, 402–8.

6.F. Related Products

Real-Time PCR and RT-PCR Reagents

Product	Size	Cat.#
GoTaq® qPCR Master Mix*	5ml	A6001
IPC qPCR Inhibition Control Assay, CAL Fluor® 560*	100 reactions	AM2030
GoTaq® Endure RT-qPCR System*	200 reactions	A6222
	1,000 reactions	A6223
GoTaq® 1-Step RT-qPCR Master Mix*	5ml	A6020
IAC RT-qPCR Inhibition Control Assay, CAL Fluor® 560*	100 reactions	AM2040
Nuclease-Free Water	50ml	P1193
Set of dATP, dCTP, dGTP, dUTP	10µmol each	U1335
	40µmol each	U1245
CXR Reference Dye	100µl	C5411
XpressAmp® Direct Amplification Reagents	250 reactions	A8882

*For Research Use Only. Not for use in diagnostic procedures.

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6.F. Related Products (continued)

Nucleic Acid Purification Systems and Reagents

Product	Size	Cat.#
Maxwell® RSC PureFood GMO and Authentication Kit**	48 preps	AS1600
Maxwell® RSC PureFood Pathogen Kit**	48 preps	AS1660
Maxwell® RSC Plant DNA Kit	48 preps	AS1490
Maxwell® RSC Whole Blood DNA Kit*	48 preps	AS1520
Wizard® Genomic DNA Purification Kit*	100 isolations × 300µl	A1120

*For Research Use Only. Not for use in diagnostic procedures. Additional sizes are available.
**Not for Medical Diagnostic Use.

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