Applied Biosystems TaqMan® Fast Universal PCR Master Mix

- **Fast, quantitative PCR results in about 35 minutes for 20 µL reactions**
- **Easy-to-use, premixed solution in convenient, single-tube format**
- **Compatible with Uracil-N-Glycosylase to prevent subsequent reamplification of carry-over PCR products**
- **Provides the same high-quality results you expect with TaqMan® products**

Features and Benefits at a Glance	
Unique formulation	Significantly reduces overall run time, providing results more quickly
Hot-Start DNA Polymerase	Minimizes nonspecific amplification products and primer/dimers, substantially increasing sensitivity
dNTPs with dUTP	Prevents subsequent reamplification of PCR products containing dU in the presence of Uracil-N-Glycosylase (required but not supplied)
Passive Reference Dye	Normalizes signal in all TaqMan® reactions and corrects inter-well signal variation caused by slight differences in the reaction volume
Complete Fast System	The Fast Real-Time PCR system is comprised of the 7900HT system with the Fast 96-Well block, software, TaqMan® Fast Universal PCR Master Mix Reagents, and consumables

TaqMan® Fast Universal PCR Master Mix, No AmpErase® UNG

Performing real-time quantitative PCR with the 5' fluorogenic nuclease assay and a TaqMan® probe provides additional specificity during PCR amplification, an essential component of successful analysis. To save you valuable time, Applied Biosystems has developed TaqMan® Fast Universal PCR Master Mix, which contains a hot-start enzyme system specific for fast quantitative PCR, and is fully compatible with two-step RT-PCR reactions.

Designed for ease-of-use and seamless integration with TaqMan® primers and probes, TaqMan Fast Universal PCR Master Mix enables more rapid screening of DNA and cDNA targets. This highly robust chemistry is optimized for the Applied Biosystems 7900HT Fast Real-Time PCR System equipped with the Fast 96-Well Sample Block Module. The 7900HT Fast Real-Time PCR System and TaqMan Fast Universal PCR Master Mix deliver sensitive and reproducible results three times faster than is possible with standard reagents and instuments.

Demonstrated Performance

The TaqMan Fast Universal PCR Master Mix delivers:

- Sensitive and reliable real-time results in one-third of the time when using the 7900HT Fast Real-Time PCR System
- Successful and reproducible amplification across a wide range of concentrations
- Excellent amplification efficiency as measured by the slope of the standard curve
- Highly robust chemistry across a variety of TaqMan® Gene Expression Assays

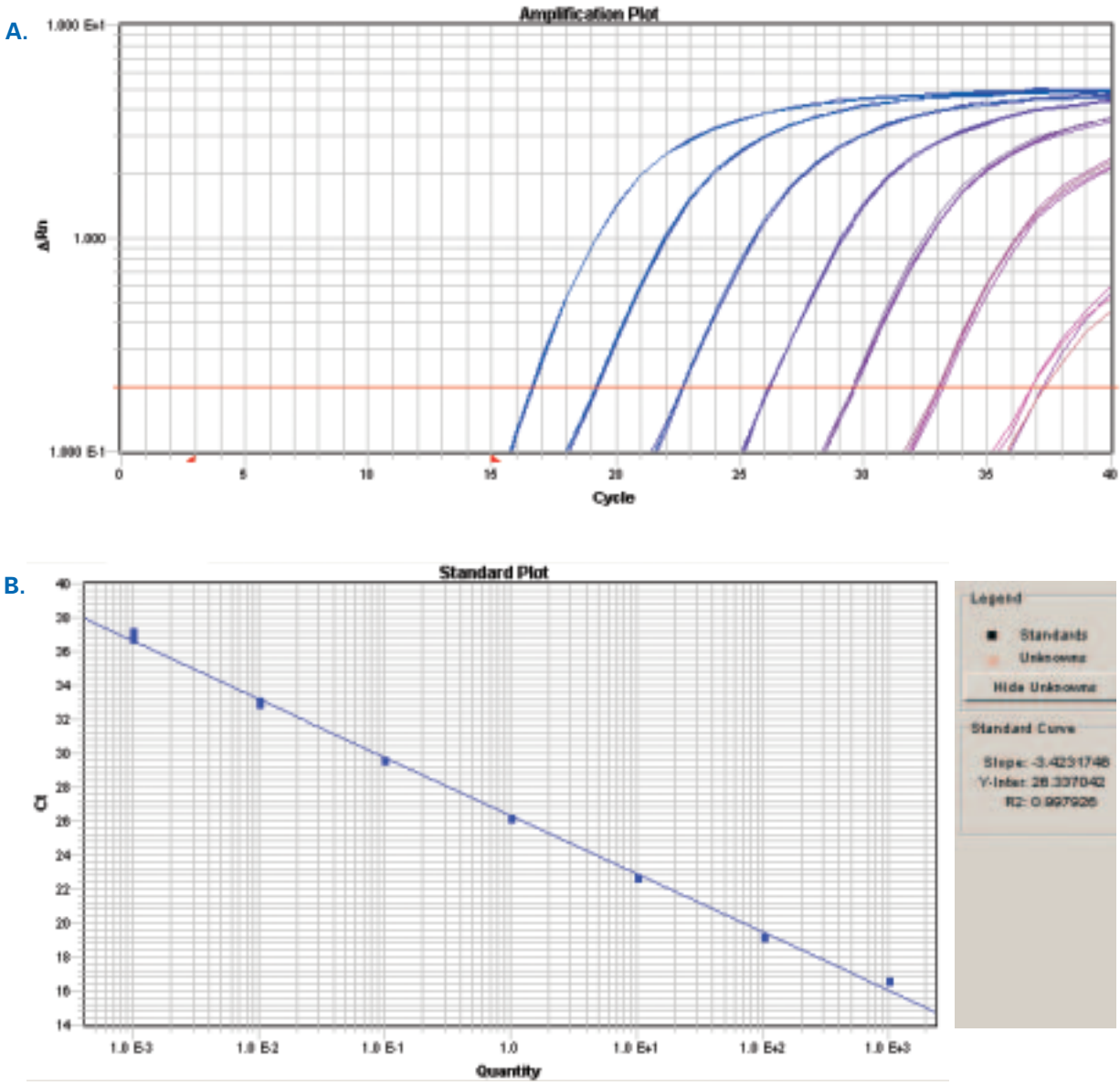

Figure 1. PCR amplification of a portion of the chaperonin containing TCP1, subunit 7 (CCT7) transcript, using TaqMan® Fast Universial PCR Master Mix on the Applied Biosystems 7900HT Fast Real-Time PCR System. **A.** Amplification plot for reactions with cDNA starting amounts of 1,000 ng, 100 ng, 10 ng, 1 ng, 0.1 ng, 10 pg, and 1 pg in four replicates using 20 µL reaction volumes. **B.** Standard curve of all replicates across 10-fold cDNA serial dilutions, plotting quantity versus threshold cycle (C_T).

Superior Sensitivity Even at Low Concentrations

Applied Biosystems TaqMan Fast Universal PCR Master Mix is formulated to be sensitive, even at low concentrations. To demonstrate this, a standard curve of cDNA was produced using Applied Biosystems TaqMan Fast Universal PCR Master Mix and TaqMan Gene Expression Assays (Figure 1). As shown in Figure 1A, 6-fold cDNA serial dilutions were performed from 1,000 ng to 1 pg of cDNA. The standard curve for 10 logs of dilutions illustrates the high efficiency obtained using the TaqMan Fast Universal PCR Master Mix (Figure 1B). These results confirm that the Applied Biosystems TaqMan Fast Universal PCR Master Mix provides superior amplification efficiency, with the sensitivity to quantitate low amounts of target DNA.

Gene Symbol	Target Expression Level	Average C_T	St. Dev
AGER	Low	30.54	0.06
CCR7	Medium	24.62	0.02
GAPD	High	17.65	0.01
Gene Symbol	**Template Sequence Content**	**Average C_T**	**St. Dev**
PGRMC1	GC-rich	26.60	0.03
RAB14	AT-rich	24.15	0.02

Table 1. Amplification of variable targets from 20 ng of human Raji cDNA using TaqMan® Fast Universal PCR Master Mix in a 20 µL reaction volume. Expression levels are designated as Low ($C_T > 27$), Medium (C_T 20-27), and High ($C_T < 20$). GC-rich is defined as > 50% GC content of the amplified template region. AT-rich is defined as > 50% AT content of the amplified template region.

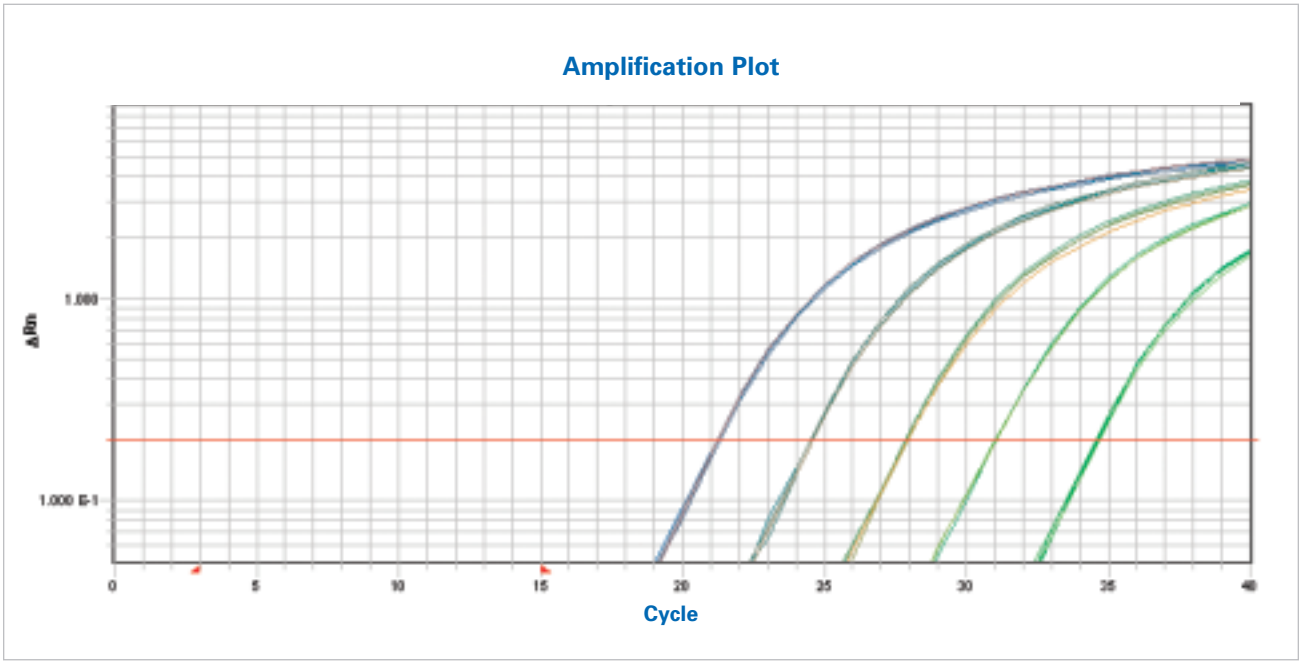

Figure 2. Amplification using human genomic DNA template to detect 100,000, 10,000, 1000, 100, and 10 copies of the RNase P gene. Samples were run in replicates of four using the fluorogenic 5' nuclease assay.

Robustness

Applied Biosystems Fast Universal PCR Master Mix is both highly reproducible and robust across a variety of TaqMan Gene Expression Assays, assuring quality performance. Table 1 shows successful amplification results across five TaqMan Gene Expression Assays, based on target abundance and template sequence content.

Precise, Low Copy Detection

TaqMan Fast Universal PCR Master Mix provides a hot start to fast PCR reactions. The resulting specificity is sufficient for high-precision detection of a wide range of target concentrations (Figure 2).

Fast System Requirements

TaqMan Fast Universal PCR Master Mix is developed for use with TaqMan Gene Expression Assays, the Applied Biosystems 7900HT Fast Real-Time PCR System with the Fast 96-Well Block Module and with Optical 96-Well Fast Thermal Cycling Plates.

For more information, please visit **www.appliedbiosystems.com**

Ordering Information

Description	Quantity/Rxns	Part Number
TaqMan® Fast Universal PCR Master Mix, No AmpErase® UNG (2X)	2.5 mL/250 rxns	4352042
TaqMan® Fast Reagent Starter Kit	125 reactions	4352407
Applied Biosystems Optical 96-Well Fast Thermal Cycling Plate with Barcode (code 128)	20 plates	4346906

TaqMan® Fast Universal PCR Master Mix can also be ordered at **https://store.appliedbiosystems.com**

iScience™

iScience. To better understand the complex interaction of biological systems, life scientists are developing revolutionary approaches to discovery that unite technology, informatics, and traditional laboratory research. In partnership with our customers, Applied Biosystems provides the innovative products, services, and knowledge resources that make this new, **Integrated Science** possible.

Worldwide Sales Offices
Applied Biosystems vast distribution and service network, composed of highly trained support and applications personnel, reaches 150 countries on six continents. For international office locations, please call the division headquarters or refer to our Web site at **www.appliedbiosystems.com**

Applera Corporation is committed to providing the world's leading technology and information for life scientists. Applera Corporation consists of the Applied Biosystems and Celera Genomics businesses.

Headquarters
850 Lincoln Centre Drive
Foster City, CA 94404 USA
Phone: 650.638.5800
Toll Free: 800.345.5224
Fax: 650.638.5884

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

Printed in the USA, 09/04
P+s, Publication 117PB17-01

Applied Biosystems