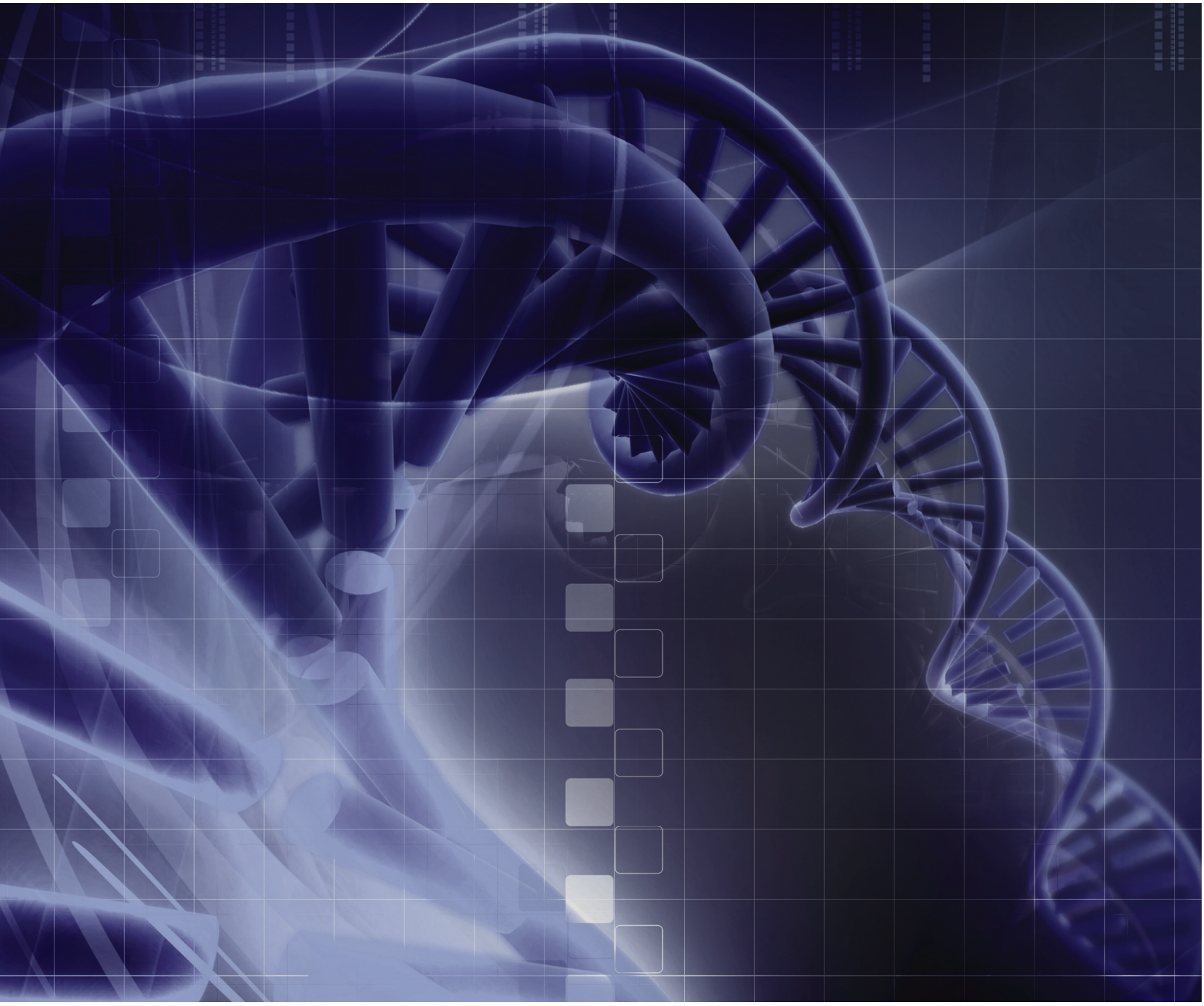
TaqMan®
life technologies™

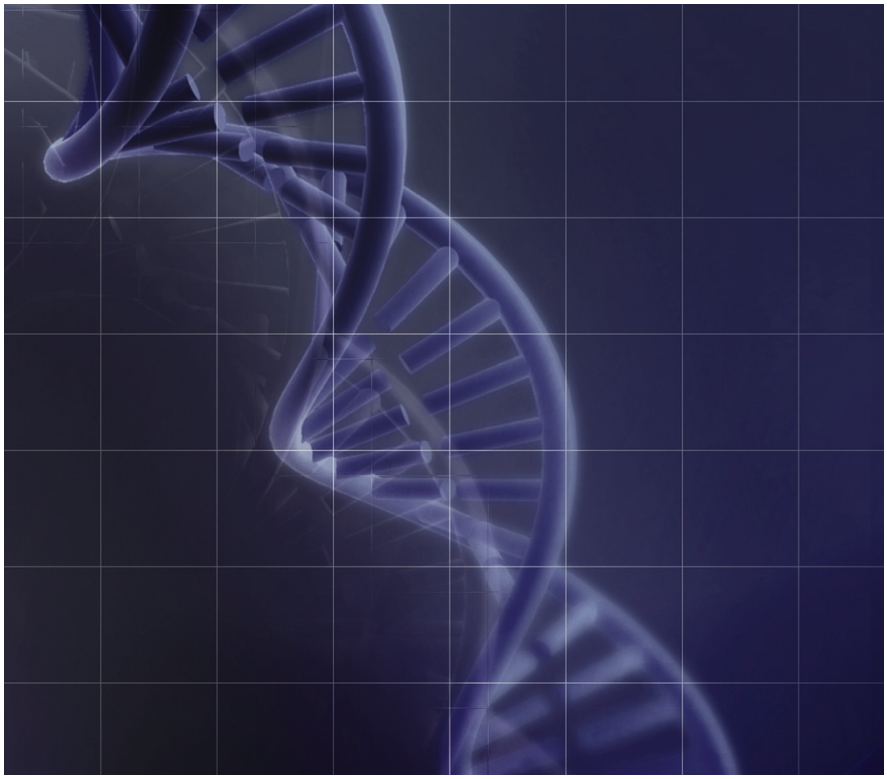


TaqMan® Gene Expression Assay solutions

Proven performance for fast, reliable results

life technologies™

The leader in gene expression analysis



Life Technologies is a leader in gene expression analysis, providing world-class sample preparation with Ambion® technologies, real-time PCR using TaqMan® or SYBR® Green chemistry, and industry-leading real-time PCR instruments and data analysis software.

TaqMan® Assay technology is the gold standard in performance, quality, and content for gene expression analysis. Developed using long-standing bioinformatic expertise in primer and probe design, and stringent testing across applications and integrated platforms, TaqMan® Assays provide you with the most reliable and robust real-time PCR solutions.

With well over one million predesigned and preoptimized assays across a growing list of model species, a wide range of formats to scale to your needs, and a robust manufacturing quality system, we have a complete solution that will enable you to get fast, reliable, and accurate gene expression results.

Contents

TaqMan® Gene Expression Assays

Proven 5´ nuclease–based real-time PCR chemistry

Get results you can trust. Genuine TaqMan® Gene Expression Assays are referenced in tens of thousands of publications and are considered the gold standard for gene expression quantification by scientists around the world.

TaqMan® Gene Expression Assays are based on 5´nuclease chemistry, and each assay contains the primer and probe sets for your target of interest. Here's how it works (Figure 1):

1. At the start of the real-time PCR reaction, the temperature is raised to denature the double-stranded cDNA. At this point, the signal from the fluorescent dye on the 5´end of the TaqMan® probe is quenched by the MGB–nonfluorescent quencher on the 3´end of the probe.
2. In the next step, the reaction temperature is lowered to allow the primers and probe to anneal to their specific target sequences.
3. *Taq* polymerase synthesizes a complementary DNA strand using the unlabeled primers and template as a guide. When the polymerase reaches the TaqMan® probe, its endogenous 5´nuclease activity cleaves the probe, separating the dye from the quencher.

With each cycle of PCR, more dye molecules are released, resulting in an increase in fluorescence intensity proportional to the amount of amplicon synthesized.

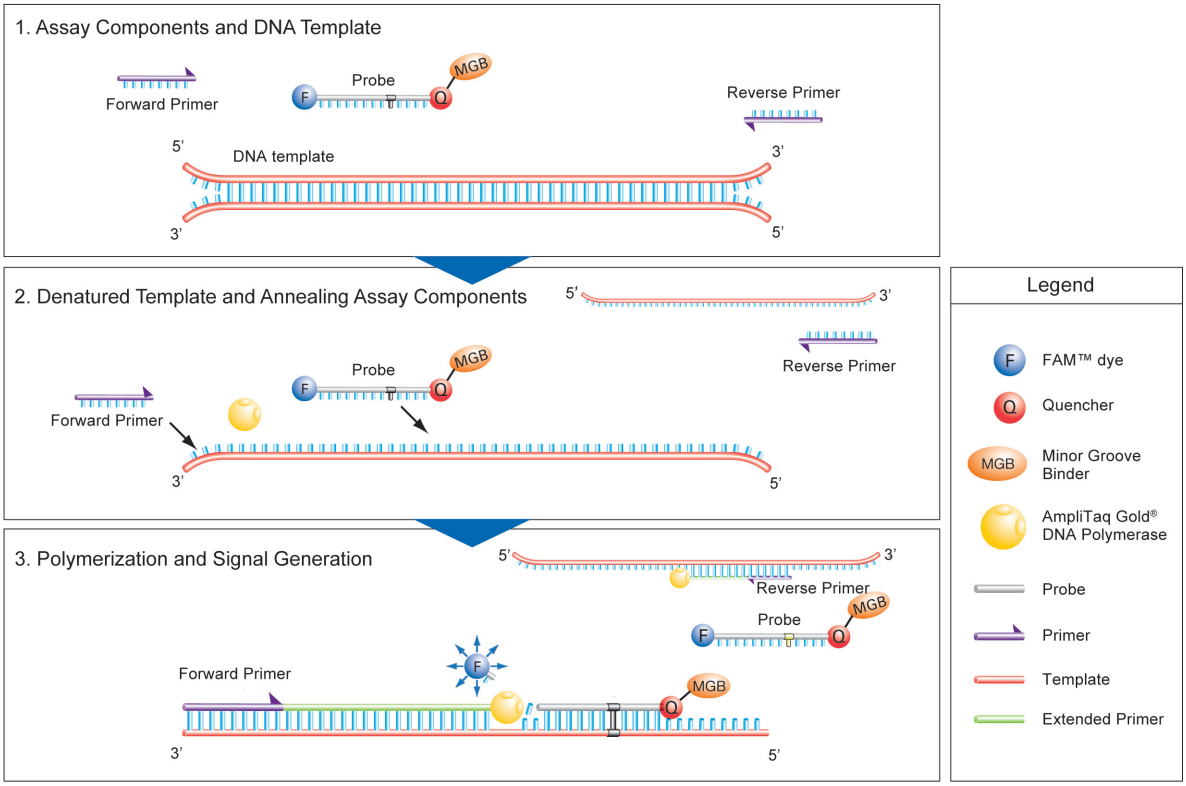


Figure 1. TaqMan® Gene Expression Assay reaction steps.

Prepare the cDNA sample

Prepare the total RNA

Perform reverse transcription

Evaluate the cDNA

··· Total RNA

VILO™ cDNA Synthesis Kit

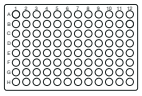
Thermal cycler or
real-time PCR instrument

Prepare the reaction mix and load the plate

Prepare the PCR reaction mix

Load the plate

TaqMan® Master Mix



48-, 96-, 384-well, or OpenArray®
reaction plate

Run the real-time PCR reaction

Create the plate document/experiment

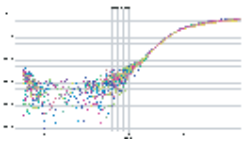
Run the plate

System software and information CD

Real-time PCR instrument

Analyze the results

Refer to the user guide for your real-time PCR instrument



DataAssist™ or ExpressionSuite Software

The largest selection of predesigned assays

Spend time on results, not assay design and optimization

With TaqMan® predesigned assays, spend your time generating results, not on assay design and optimization.

- Detect virtually any gene product—more than 1.3 million predesigned assays, and custom design for everything else
- Assays for nearly every human, mouse, and rat gene in the RefSeq database
- Available for 23 species, and some pathogens
- Assays for multiple locations per transcript and across nearly every exon junction in human
- Strain-neutral assays for mouse and rat

To learn more and order, go to **lifetechnologies.com/taqmangex**

- Not finding what you're looking for in our predesigned assay collection? Our Custom TaqMan® Assay Design Tool lets you design and order a TaqMan® Assay to detect any gene from any organism. Design and order your assays at **lifetechnologies.com/cadt.** Custom TaqMan® Assays are typically delivered in 5–12 business days.
- TaqMan® Endogenous Controls—a collection of TaqMan® Assays targeting commonly used control gene products for sample input normalization in real-time PCR.

Predesigned TaqMan® Gene Expression Assays as of October 2011

Species	Number of assays	Gene coverage (%)*
Human *(H. sapiens)*	212,207	99.7
Mouse *(M. musculus)*	185,566	99.6
Rat *(R. norvegicus)*	151,955	86.7
Rice *(O. sativa)*	99,822	95.6
Arabidopsis *(A. thaliana)*	97,879	94.4
Nematode *(C. elegans)*	92,687	96.2
Cow *(B. taurus)*	67,104	82.5
Rhesus monkey *(M. mulatta)*	66,480	53.9
Zebrafish *(D. rerio)*	63,712	80.9
Frog *(X. tropicalis)*	56,764	88.8
Dog *(C. familiaris)*	55,202	64.3
Chicken *(G. gallus)*	48,432	93.0
Fruit fly *(D. melanogaster)*	41,607	95.3
Sweet corn *(Z. mays)*	38,446	59.6
Pig *(S. scrofa)*	9,868	90.5
Fission yeast *(S. pombe)*	6,538	94.6
Rabbit *(O. cuniculus)*	5,924	81.0
Baker's yeast *(S. cerevisiae)*	5,525	93.8
Soybean *(G. max)*	3,456	41.1**
Horse *(E. caballus)*	2,970	76.3
Guinea pig *(C. porcellus)*	2,037	72.4%
Grape *(V. vinifera)*	965	60.1%**
Wheat *(T. aestivum)*	760	47.1%**
Summary	**1,315,906**	**80.32%, 23 species**

*Percent coverage refers to genes in the RefSeq database.
**These species are not represented in the RefSeq database.

There are multiple assays for my gene product. How do I choose the right one?

Genomic alignment maps on our website make it easy to see exactly what gene products are detected and how they align to the genomic locus. The top of the map shows the target gene. Below it, all TaqMan® Gene Expression Assays for target gene products are shown relative to the genomic locus map. The known transcripts from the locus are shown below, with their RefSeq accession numbers.

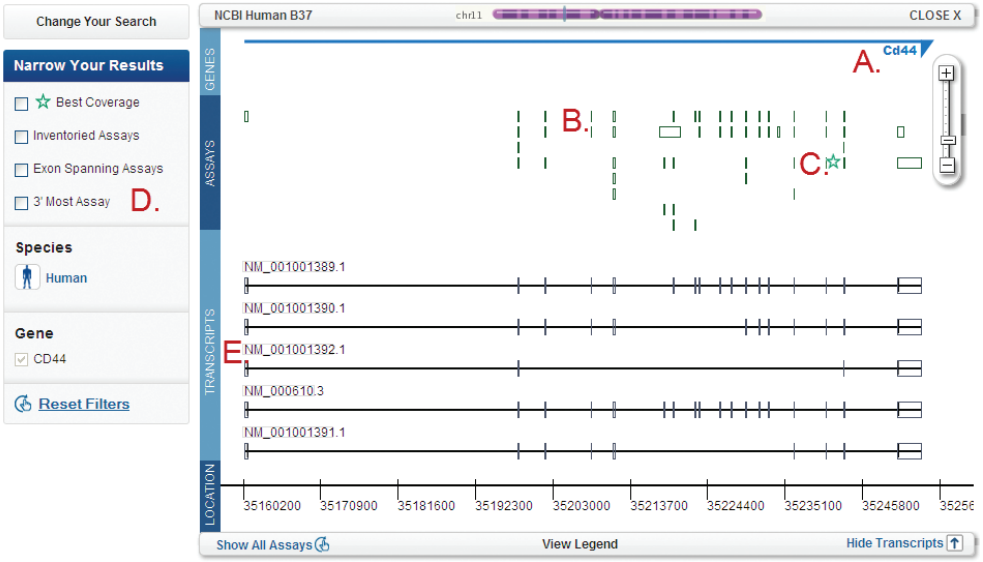
A. Gene symbol.

B. Alignment of TaqMan® amplicon to the gene. Hover over an assay to see its name and assay number as well as the transcripts it detects. Click on an assay to open an Assay Details pane for more information and to add the assay to your shopping cart.

C. Assays providing the best coverage are marked with a star symbol.

D. Narrow your results by specifying the type of assay you need.

E. All RefSeq transcripts that map to the gene locus, showing exon usage.



The TaqMan® Assays QPCR Guarantee

Life Technologies stands behind every predesigned TaqMan® Assay you buy. We are committed to helping you achieve your research goals and believe our predesigned TaqMan® primer and probe sets establish the benchmark for high quality and easy-to-use real-time PCR products.

We want you to be happy with your purchase and confident in the genomic tools Life Technologies provides—therefore, we guarantee every TaqMan® Assay in terms of:

- Quality—high-quality manufacturing for reproducible results from lot to lot
- Performance—superior sensitivity, specificity, and accuracy
- Content—the largest collection of primer and probe sets using the world's best and most extensively validated assay design pipeline
- Results—enables you to obtain data you can trust

If you are not satisfied with the performance of a predesigned TaqMan® Assay, we'll replace it at no cost or credit your account. For more information, and to see full terms and conditions of the guarantee, go to **lifetechnologies.com/taqmanguarantee.**

Proven performance

Reliable reagents for confidence in your results

TaqMan® MGB probes bind more tightly—shorter, more specific probes

TaqMan® probes include an MGB moiety at the 3′ end that increases the T_m of the probe and stabilizes probe–target hybrids. This means that TaqMan® probes can be significantly shorter than traditional probes, providing better sequence discrimination and flexibility to accommodate more targets.

Nonfluorescent quencher (NFQ) maximizes sensitivity

TaqMan® probes incorporate an NFQ to absorb (quench) signal from the fluorescent FAM™ or VIC® dye label at the other end of the probe. The properties of the NFQ combined with the short length of MGB probes result in lower background signal than with non-MGB/NFQ probes. Lower background noise results in increased sensitivity and precision in your data.

TaqMan® probe outperforms non-MGB probe in real-time PCR

	C_t		Standard deviation	
Input	TaqMan® Assay	Non-MGB assay	TaqMan® Assay	Non-MGB assay
10 ng	9.72	13.35	0.02	0.15
1 ng	13.36	16.82	0.04	0.18
0.1 ng	16.76	20.23	0.07	0.13
10^{-2} ng	20.19	23.72	0.04	0.13
10^{-3} ng	23.64	27.31	0.03	0.10
10^{-4} ng	27.01	30.66	0.04	0.12
10^{-5} ng	30.24	32.82	0.13	0.19

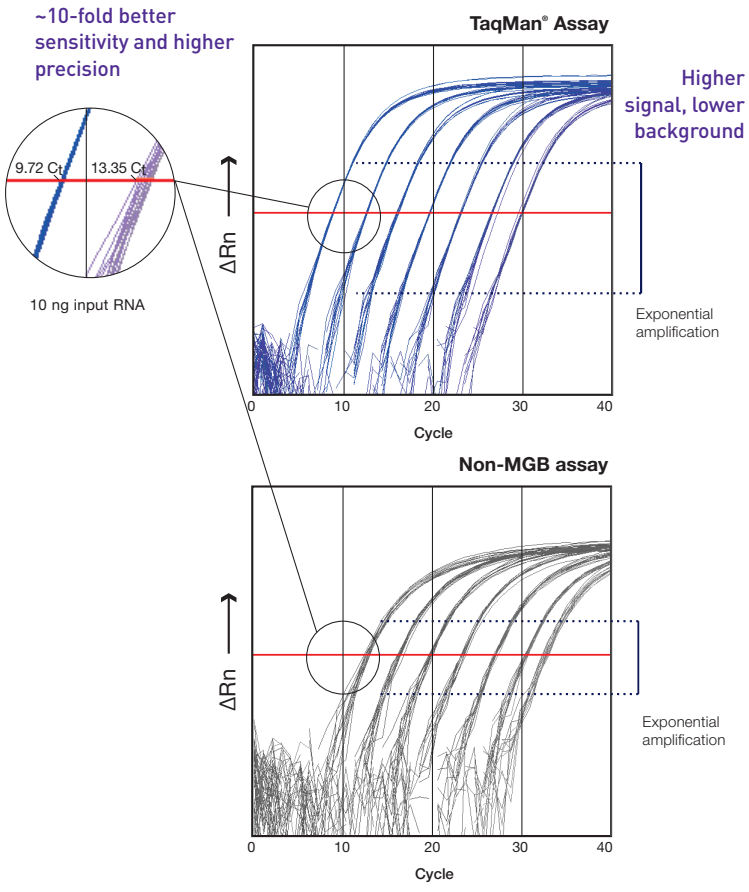


Figure 2. TaqMan® probes provide better sensitivity and precision. Comparison of two 5′ nuclease PCR assays for 18S rRNA. Ten-fold dilutions of Universal Human RNA (10–10^{-5} ng) were prepared and analyzed in 11 replicate real-time PCR reactions using either the TaqMan® Gene Expression Assay (FAM™ dye–labeled, with NFQ) or the non-MGB assay (FAM™ dye–labeled, with BHQ). Real-time PCR was run according the respective manufacturers' recommended conditions. Across a 6-log range of input template, the genuine TaqMan® Assay displayed earlier C_t values and better reproducibility across all data points. In addition, the TaqMan® Assay had higher signal and lower background, resulting in better sensitivity and higher precision.

- **Specificity:** Advanced primer/probe sequence selection criteria plus MGB probe enhancement deliver the specificity and reproducibility you need for confident results. *Your results are generated from amplification of the intended target, not from nonspecific dye binding or amplification of closely related genes or pseudogenes.*
- **Sensitivity:** The NFQ on TaqMan® probes minimizes background, and intelligent PCR primer and probe design maximizes amplification efficiency. *Get better sensitivity and accuracy—reliably detect targets present at 10 or fewer copies.*
- **Reproducibility:** *Accurately reproduce results from well to well, day to day, and lab to lab—even across manufacturing lots.*
- **Wide dynamic range:** Detect from a handful to millions of target molecules with the same reaction setup. *Capture the full spectrum of expression variability in virtually any experimental scenario.*
- **High amplification efficiency:** All TaqMan® Gene Expression Assays have a PCR efficiency of 100% (±10%). *Use the comparative C_t ($\Delta\Delta C_t$) method of quantification confidently.*
- **Ease of use:** All assays use a single, universal thermal cycling profile. *Run any assay combination on a single plate. Avoid instrument programming errors.*
- **Comprehensive assay information:** Genomic mapping data are provided prior to purchase.

Detect as few as 10 target molecules with high sensitivity and large dynamic range

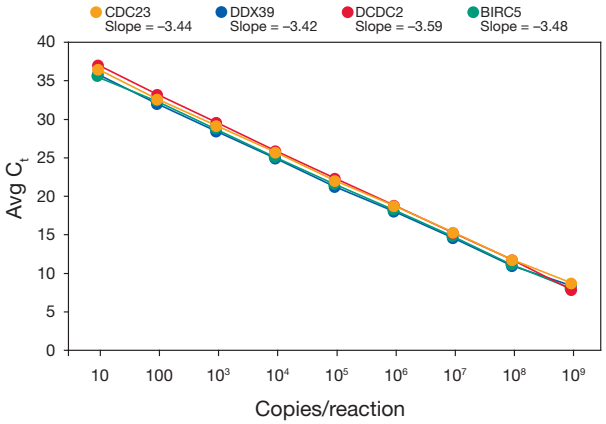


Figure 3. Sensitivity and wide dynamic range. Sequential 10-fold dilutions of synthetic sense RNA corresponding to 4 gene products—CDC23, DDX39, DCDC2, and BIRC5—were added to a background of yeast RNA to evaluate the sensitivity and dynamic range of TaqMan® Gene Expression Assays. Samples containing 50 to 5 x 10^7 target molecules were reverse transcribed, and 20% of each RT reaction was used in quadruplicate PCR reactions using TaqMan® Gene Expression Master Mix. Reactions containing as few as 10 copies were detected (C_t ~35).

Reproducible quantification with virtually 100% amplification efficiency

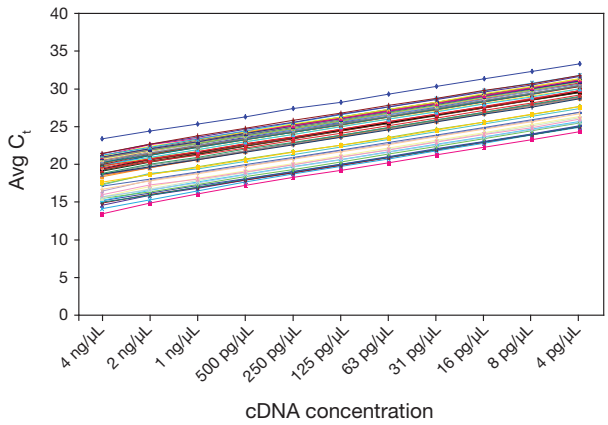


Figure 4. Reliable performance and wide dynamic range. TaqMan® Gene Expression Assays were used to analyze expression of 60 targets across a 2-fold dilution series of universal reference cDNA, from 4 ng/µL to 4 pg/µL. The average slope of the lines is 1.02. Because TaqMan® Assays exhibit virtually 100% amplification efficiency, at each cycle of PCR, each target molecule is copied, doubling the fluorescence signal.

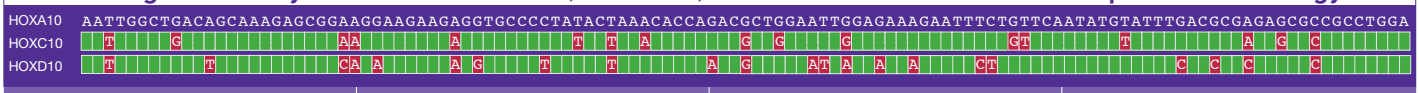
Specificity for your mRNA target

TaqMan® Assay design helps ensure target mRNA specificity: readily distinguish even highly homologous sequences

Specificity is built into the TaqMan® Assay design pipeline. As a result, assays detect only their intended targets. Even TaqMan® Gene Expression Assays for members of highly homologous gene families typically amplify their target with C_ts at least 10 cycles earlier than the closest homolog or with at least 1,000-fold discrimination, if an equal number of the two targets is present.

TaqMan® Gene Expression Assays are designed to detect only their intended targets, easily discriminating among highly homologous sequences.

HOX gene family members HOXA10, HOXC10, and HOXD10 share ~80% sequence homology



Gene	RefSeq ID	TaqMan® Assay ID	Homology
HOXA10	NM_018951.3	Hs00172012_m1	—
HOXC10	NM_017409.3	Hs00213579_m1	81%
HOXD10	NM_002148.3	Hs00157974_m1	79%

Clear gene expression results for HOX gene family members

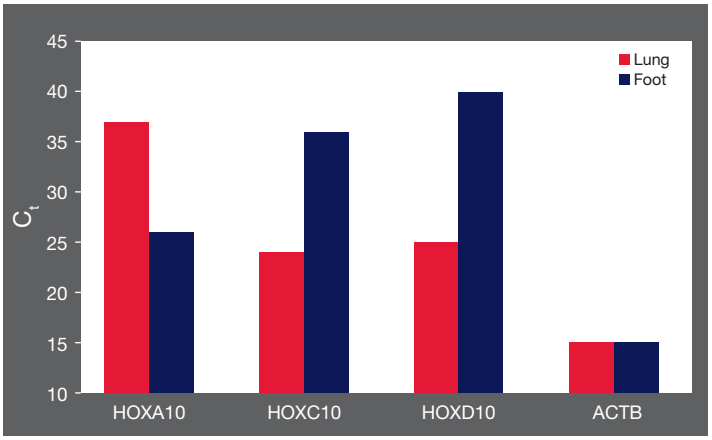
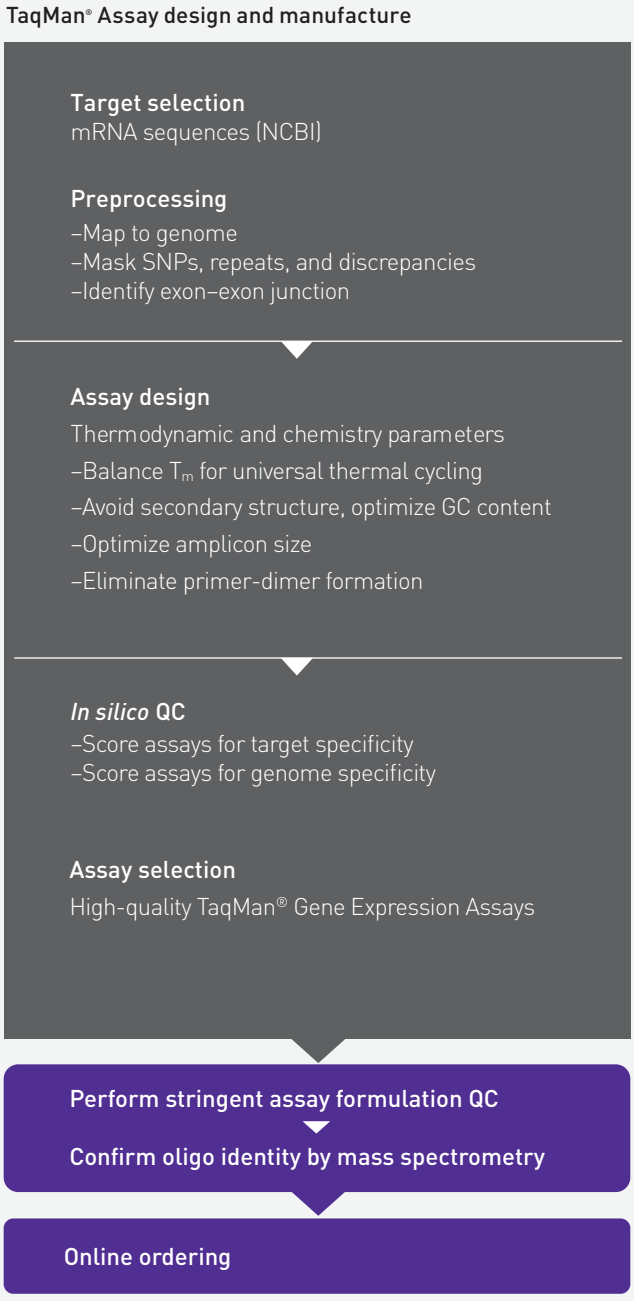


Figure 5. TaqMan® Gene Expression Assays are shown to detect only their intended targets, even among the highly homologous HOX gene family members. In vertebrates, as in *Drosophila*, location-appropriate expression of members of the HOX gene family is essential for normal embryogenesis. Tissue-specific expression of 3 closely related HOX gene products, comparable to published data, was easily detected using TaqMan® Gene Expression Assays.

Advanced bioinformatics

TaqMan® Gene Expression Assays are designed using our sophisticated design pipeline that was stringently validated by functionally testing more than 18,000 assays (a statistically significant subset). Since then, our customers have consistently confirmed through their own validation experiments that TaqMan® Gene Expression Assays enable reliable, reproducible results.

This process is used to design all TaqMan® Gene Expression Assays, including inventoried assays, made-to-order assays, and Custom Plus Assays. We offer ~55,000 inventoried assays and over 1.3 million made-to-order assays that are manufactured when an order is placed. Custom Plus TaqMan® RNA Assays are ideal for newly identified genes and specific splice variants and offer the same performance as predesigned TaqMan® Assays.



Flexible formats

A variety of formats for different research needs

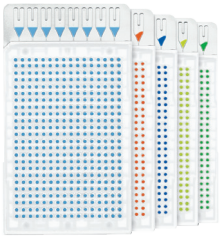
Configurations to fit your research goals

Are you analyzing hundreds (or thousands) of samples and expression from a handful of genes? Or does your research involve a few samples that need to be analyzed for a long list of mRNA targets? No matter what experiment you are performing, there is a TaqMan® Gene Expression Assay format and real-time PCR instrument for your research needs.

TaqMan® Gene Expression Assay formats

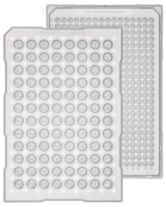
Single tubes

- Low entry price
- Flexible
- Run on any real-time PCR instrument



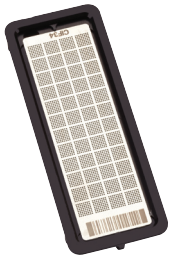
384-well microfluidic cards

- Low cost per reaction
- Optimal for medium to large projects
- Run on QuantStudio™ 12K Flex, ViiA™ 7, or 7900HT Real-Time PCR Systems



96- or 384-well plates

- Optimal for small to medium projects
- Balances flexibility with streamlined reaction setup
- Run on any 96- or 384-well real-time PCR instrument



OpenArray® plates

- Lowest cost for large projects
- Ultimate throughput
- Run on QuantStudio™ 12K Flex Real-Time PCR System

Size	No. of reactions*	Concentration	Reporter dye	Cat. No.
Extra small (Inventoried)[1]	75	20X	FAM™	4453320
Extra small (Made-to-Order)[2]	75	20X	FAM™	4448892
Small (Inventoried)[1]	250	20X	FAM™	4331182
Small (Made-to-Order)[2]	360	20X	FAM™ or VIC®	4351372, 4448489 (VIC®) 4448484 (VIC®-PL**)
Medium (Made-to-Order)[2]	750	20X	FAM™ or VIC®	4351370, 4448490 (VIC®) 4448485 (VIC®- PL**)
Large (Made-to-Order)[2]	2,900	60X	FAM™ or VIC®	4351368, 4448491 (VIC®) 4448486 (VIC®-PL**)

*Reaction number is based on 20 µL reaction size. **Primer-limited.
1. Inventoried assays are typically delivered in 1–4 business days.
2. Made-to-Order assays are typically delivered in 5–12 business days.

TaqMan® Gene Expression Assays (single tubes)

Predesigned assays come in four different sizes so that you can order only the number of assays appropriate for your research. In addition, for made-to-order assays in small, medium, and large sizes, you can choose FAM™ or VIC® dye labeling, and non–primer-limited or primer-limited formulation. (Extra small assays are only available with FAM™ dye labels.)

For more information, visit **lifetechnologies.com/allgenes**.

TaqMan® Arrays: 96-well plates or 384-well microfluidic cards

- Configure a Custom TaqMan® Array containing inventoried predesigned assays, or select from our gene signature assay collections
- TaqMan® Gene Expression Assays are loaded into one of two TaqMan® Array formats: 96-well plates (Fast or standard) or 384-well microfluidic cards

(To include made-to-order or custom assays on your plate or card, order using our TaqMan® Custom Plating Service, or contact your local sales representative for other options.)

Custom TaqMan® Array 96-well plates

- Choose any inventoried TaqMan® Gene Expression Assay
- 6-plate minimum order
- Choose standard (20 µL rxn) or Fast (10 µL rxn) format
- Typically delivered in 4–14 business days

To learn more and order, go to **lifetechnologies.com/arrayplates**

Assays + controls	Assay replicates	Samples per plate	Name	Cat. No. (standard)	Cat. No. (Fast)
95 + 1*	1	1	Format 96	4391524	4413255
92 + 4**	1	1	Format 96 +	4391525	4413256
47 + 1*	2	1–2	Format 48	4391526	4413257
44 + 4**	2	1–2	Format 48 +	4391527	4413258
31 + 1*	3	1–3	Format 32	4391528	4413259
28 + 4**	3	1–3	Format 32 +	4391529	4413260
15 + 1	6	1–6	Format 16	4413264	4413261
12 + 4	6	1–6	Format 16 +	4413265	4413262
7 + 1	12	1–12	Format 8	4413266	4413263

*Available with one manufacturing control assay for 18S ribosomal RNA. These formats are required for plates with assays for rhesus, canine, or a mixture of species.

**Include the manufacturing control assay for 18S ribosomal RNA, plus assays for 3 additional candidate endogenous control genes: GAPDH, HPRT1, and GUSB, appropriate for human, mouse, or rat sample analysis.

Custom TaqMan® Array 384-well microfluidic cards

- Choose any inventoried TaqMan® Gene Expression Assays
- 10-card minimum order
- Run on the QuantStudio™ 12K Flex, ViiA™ 7, or 7900HT Fast Real-Time PCR Systems
- No robotics required: cards have 8 sample-loading ports, each connected to 48 wells containing dried-down TaqMan® Assays
- 1 µL reactions (2 µL including channel filling and overage)
- Typically delivered in 3–4 business weeks

To learn more and order, go to **lifetechnologies.com/arraycards**.

Assays + controls*	Assay replicates	Samples per card	Name	Cat. No.
11 + 1	4	8	Format 12	4342247
15 + 1	3	8	Format 16	4346798
23 + 1	2 (or 4)	8 (or 4)	Format 24	4342249
31 + 1	3	4	Format 32	4346799
47 + 1	1 (or 2)	8 (or 4)	Format 48	4342253
63 + 1	3	2	Format 64	4346800
95 + 1	1 (or 2)	4 (or 2)	Format 96a	4342259
95 + 1	2 (or 4)	2 (or 1)	Format 96b	4342261
191 + 1	2	1	Format 192	4346802
380 + 4	1	1	Format 384	4342265

* These arrays are available with one manufacturing control assay for 18S ribosomal RNA.

TaqMan® Array Gene Signature Plates and Cards

- Predesigned, preloaded TaqMan® Assays for gene products specific to pathways, biomarkers, or disease target classes to facilitate drug discovery and disease research
- Endogenous control panels are also available to identify the best housekeeping gene products for your research
- Gene signature plates are typically delivered in 5–10 business days, and gene signature cards in 1–4 business days
  - —Here is a sampling of what's available:
    - *Apoptosis*
    - *Cancer*
    - *Cell cycle proliferation and regulation*
    - *Development and stem cells*
    - *ECM matrix and adhesion*
    - *Endogenous controls*
    - *Immune system and inflammation*
    - *Neurology*
    - *Signal transduction*
    - *Toxicology and drug metabolism*

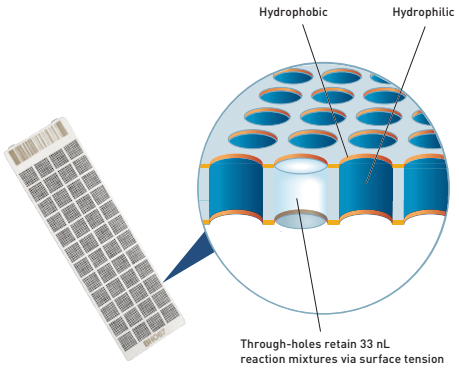
See the complete collection of 96-well gene signature plates at **lifetechnologies.com/signatureplates**. To see the collection of 384-well gene signature microfluidic cards, go to **lifetechnologies.com/signaturecards**.

OpenArray® Real-Time PCR Plates

- TaqMan® Assays loaded and dried down into the 3,072 through-holes on OpenArray® Real-Time PCR Plates
- Process up to 576 samples to obtain over 43,000 data points, with a single operator in an 8-hour day, without the use of robotics
- For use with the QuantStudio™ 12K Flex Real-Time System with an OpenArray® block configuration and supporting reagent kits only
- OpenArray® plates with inventoried assays are typically delivered in 4–5 weeks, and within 5–6 weeks for custom assays

Learn more about OpenArray® technology on the QuantStudio™ 12K Flex system at **lifetechnologies.com/quantstudio**.

Assays + controls	Assay replicates	Samples per plate	Name	Cat. No.
18	3	Up to 48	Format 18	4454009
56	1	Up to 48	Format 56	4454013
112	1	Up to 24	Format 112	4454005
168	1	Up to 16	Format 168	4454007
224	1	Up to 12	Format 224	4454011



TaqMan® Custom Plating Service: 96- or 384-well plates

Configure 96- or 384-well plates with any TaqMan® Gene Expression Assays, including custom assays designed to your target sequences and made-to-order assays.

- Set up custom configurations of any TaqMan® Assays, including inventoried, made-to-order, custom, or Custom Plus Gene Expression Assays or custom TaqMan® probes and primers
- Choose 96- or 384-well plate, and Fast or standard formats
- Receive in dried-down or liquid formulation
- Typically delivered in 2–5 business weeks

Complementary reagents

Everything you need for reliable results

Life Technologies provides everything you need for real-time PCR analysis, starting with isolating RNA from virtually any sample type, to reverse transcription into cDNA, optional preamplification to stretch small samples for analysis of many gene products, and of course, real-time PCR data analysis.

1 Sample preparation	2 Reverse transcription	3 Real-time PCR	4 Data analysis
TaqMan® Cells-to-C_T™ Kits: A suite of kits for real-time PCR directly in cultured cell lysates without purifying DNA			ExpressionSuite Software DataAssist™ Software RealTime StatMiner® Software from Integromics
RNAlater® Tissue Collection: RNA Stabilization Solution MagMAX™-96 Total RNA Isolation Kit MagMAX™-96 Blood RNA Isolation Kit RNAqueous®-4PCR Kit RecoverAll™ Total Nucleic Acid Isolation for FFPE Tissues	TaqMan® RNA-to-C_T™ 1-Step Kit		
	SuperScript® VILO™ cDNA Synthesis Kit	TaqMan® Fast Advanced Master Mix TaqMan® Universal Master Mix II TaqMan® Gene Expression Master Mix TaqMan® PreAmp Master Mix	

ambion® by life technologies™

invitrogen™ by life technologies™

TaqMan® life technologies™

applied biosystems® by life technologies™

TaqMan® chemistry vs. SYBR® Green chemistry for real-time PCR

Life Technologies offers two types of chemistries to detect PCR products using real-time PCR instruments:

- TaqMan® Assay chemistry (also known as "fluorogenic 5' nuclease chemistry")
- SYBR® Green I dye chemistry

	TaqMan® Assay-based detection	SYBR® Green-based detection
Chemistry overview	Uses a fluorogenic probe to enable the detection of a specific PCR product as it accumulates during PCR cycles	Uses SYBR® Green I, or similar: a dye that binds to double-stranded DNA, to detect PCR product as it accumulates during PCR cycles

	TaqMan® Assay reagents	SYBR® Green reagents
Specificity	High	Low
Sensitivity – low copies	High	Variable*
Reproducibility	High	Variable*
Multiplexing	Yes	No
Predesigned assays	Yes	No
User design and optimization	No	Yes
Cost	High	Low*
Gene expression quantitation	High	Low
DNA quantitation	Yes	Yes (pathogen detection)
ChIP	Yes	Yes
SNP genotyping	Yes	No
microRNA	Yes	No
Copy number	Yes	No
Somatic mutation detection	Yes	No
Pathway analysis	Yes	No

* Depends on template quality and primer design/optimization

Support at every step of your workflow

Consistent reliability from manufacturing to follow-up

Quality manufacturing and stringent quality control

TaqMan® Assays are manufactured in-house under rigorous quality processes at our ISO 13485–certified manufacturing facilities, and are never outsourced.

Comprehensive worldwide support

Whether you need help finding a TaqMan® Assay for your target, deciding which format best suits your needs, placing your order through our online ordering system, or setting up your reactions, our global sales and technical support staff are here to help.

Technical support

If you have questions about how to use TaqMan® Assays or how to analyze results, call or email our Technical Support specialists. These agents are skilled in experimental planning and design, are expert troubleshooters, and are familiar with a wide variety of applications that use TaqMan® Assays.

Rapid delivery

We continually strive to minimize delivery time on TaqMan® Assay products. To that end, we have implemented streamlined order processing systems that interface with our new manufacturing facilities to help reduce delivery times.

Everything you need to meet the MIQE guidelines for peer-reviewed publications

The Minimum Information for Publication of Quantitative Real-Time PCR Experiments (MIQE) guidelines, published by Bustin et al. in *Clinical Chemistry* (April 2009), are meant to ensure that real-time PCR experiments are meaningful, accurate, and reproducible. We support this initiative and commend the leadership demonstrated by the MIQE scientists. We provide the following for easier adherence to these guidelines:

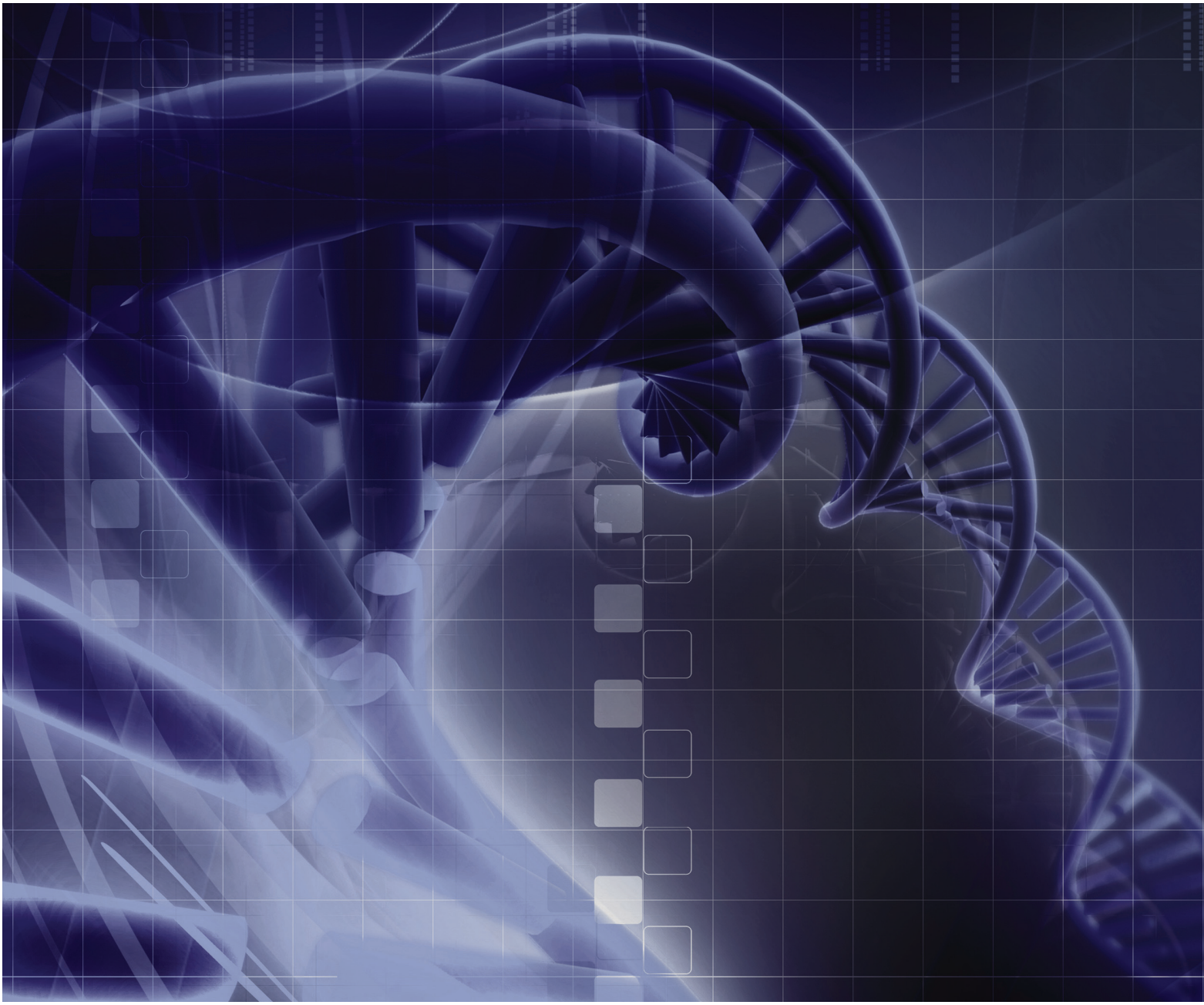
- **TaqMan® Assay annotation—**Information requested under the real-time PCR target, oligonucleotide, and protocol sections of the guidelines are provided in your assay shipment and on our website. All biologically relevant information is available, including assay location, transcripts detected, and amplicon size. Protocols with recommended reagents and reaction conditions are also available on our website.
- **Publications—**There are >3,500 peer-reviewed publications that cite predesigned TaqMan® Gene Expression Assays, so including the TaqMan® Assay ID in lieu of sequences is sufficient and widely accepted.
- **Instrument software—**Applied Biosystems® instrument software reports threshold cycle (C_t) values for quantification. The C_t can be used to generate standard curves, determine slope, and derive r^2 values. To help adhere to the MIQE guidelines, the term quantification cycle (C_q) may be used directly in place of C_t.
- **Data analysis—**We offer data analysis software, including ExpressionSuite and DataAssist™ Software, simple-to-use tools for calculating relative gene expression using statistical analysis and visualization; and RealTime StatMiner® Software (Integromics) for additional statistical analysis workflows.

Built on 20 years of industry-leading innovation

Only the Applied Biosystems® real-time PCR portfolio can grow with your research needs.

From the simple reliability of the StepOne® systems to the unprecedented throughput of the QuantStudio™ 12K Flex system, no other lineup offers you more flexibility, scalability, and performance.

TaqMan®
life technologies™



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