

# Gene Expression Analysis You Can Count On

## *Millions of qPCR assays readily available using pretested probes*

Increase the specificity and robustness of your gene expression assay using transcript-specific Universal ProbeLibrary (UPL) probes. Benefit from a new type of hydrolysis probe chemistry, enabling extensive transcript coverage with only 165 pretested probes. Combined with the appropriate Roche real-time PCR master mix (see list on next page), UPL assays can be performed on a wide range of instruments.

### ■ Benefit from innovative technology

Eight to nine base pair long UPL probes containing methylene-bridged riboses known as Locked Nucleic Acids (LNAs), ensure specificity (see **Figure 1**).

### ■ Never wait for probe synthesis or delivery

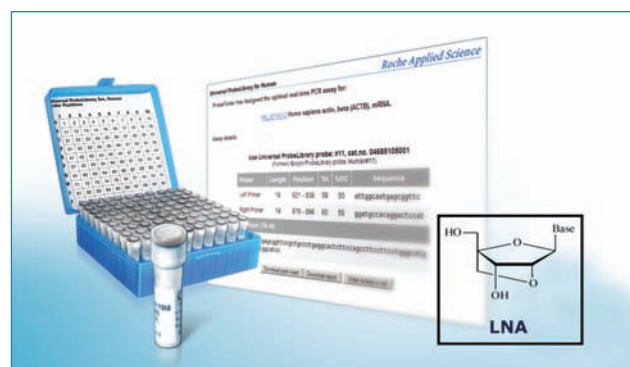
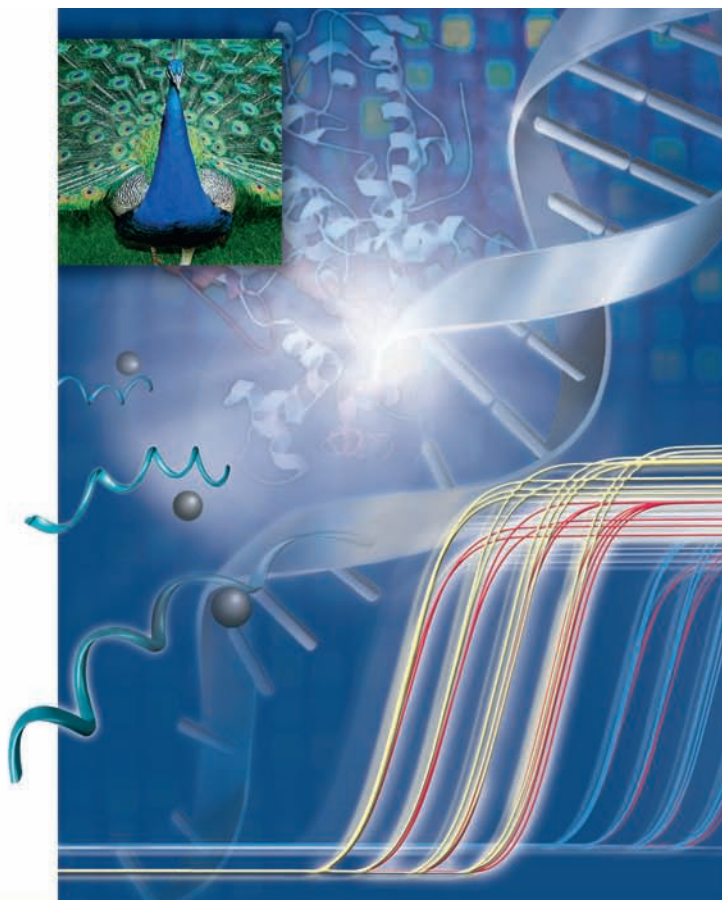
Only 165 UPL probes are required for gene detection in entire transcriptomes; UPL probes are easily stored in your freezer, providing universal assay flexibility at all times.

### ■ Design real-time qPCR assays in seconds

Use free web-based ProbeFinder Software to quickly design the right probe and primer combinations for your gene assay.

### ■ Produce high resolution dual-color experiments

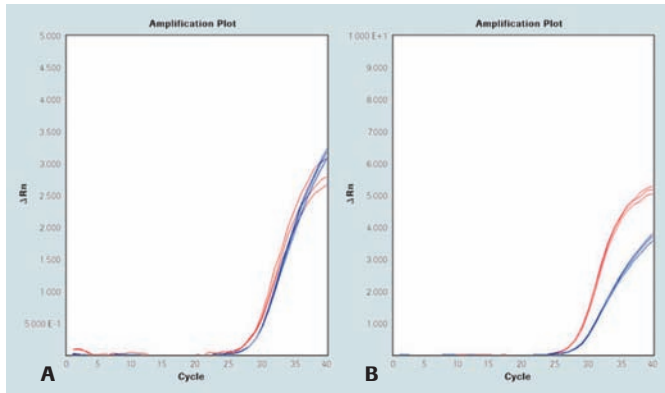
Use **Universal ProbeLibrary Reference Gene Assays** to easily quantify expression levels of human, mouse, or rat genes, relative to an endogenous reference gene in dual-color assays.



**Figure 1: Universal ProbeLibrary System.** UPL probes are available individually, or as complete sets covering whole transcriptomes, with assay designs produced using free ProbeFinder software. The special “locked nucleic acid (LNA)” chemistry, shown in the insert, allows precise hybridization using 8–9 base probes.

## Simplify gene expression studies on any real-time PCR instrument.

UPL assays are compatible with all real-time PCR instruments detecting fluorescein, FITC, FAM and SYBR Green I (see Figure 2).



**Figure 2: UPL probe performance compared to probes from other suppliers, using real-time PCR instrumentation other than the LightCycler® System.** RNA isolated from cells was transcribed using the **Transcriptor First Strand cDNA Synthesis Kit**. Universal ProbeLibrary assays (red) were performed using the **FastStart TaqMan® Probe Master**, whereas assays from other suppliers (blue) were done with the recommended PCR master. Panel **A** shows target gene PDLC (phosducin-like), and Panel **B** shows target gene STARD3 (Start domain containing 3)

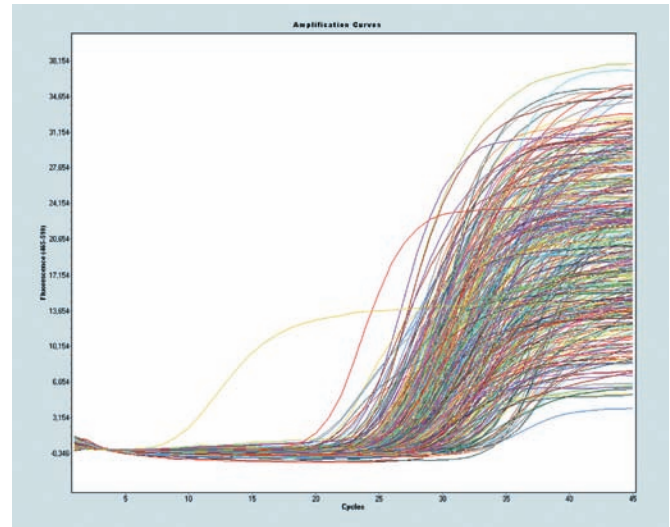
Product	Cat. No.	Pack Size
Universal ProbeLibrary Set, Human Reference Gene Assays	05 046 114 001	1 set
Universal ProbeLibrary Set, Human	04 683 633 001	1 set
Universal ProbeLibrary Set, Mouse	04 683 641 001	1 set
Universal ProbeLibrary Set, Rat	04 683 650 001	1 set
Universal ProbeLibrary Extension Set	04 869 877 001	1 set
RealTime <i>ready</i> Human Apoptosis Panel, 96	05 392 063 001	2 plates
RealTime <i>ready</i> Human Reference Gene Panel, 96	05 339 545 001	2 plates
Transcriptor First Strand cDNA Synthesis Kit	04 896 866 001	100 reactions
LightCycler® 480 Probes Master <sup>1</sup>	04 707 494 001	5 x 1 ml
FastStart TaqMan® Probe Master <sup>2</sup>	04 673 409 001	2.5 ml
FastStart Universal Probe Master (ROX) <sup>3</sup>	04 913 949 001	2.5 ml

1: for the Roche LightCycler® 480 Real-Time PCR System  
 2: for non-LightCycler® Systems *not* requiring normalization with ROX  
 3: for non-LightCycler® Systems requiring normalization with ROX

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 SYBR is a trademark of Molecular Probes, Inc.  
 Other brands or product names are trademarks of their respective holders.

## RealTime *ready* UPL assays: pre-filled plates for studying cellular pathways and gene families using 96- and 384-well formats.

Assays focused on specific cellular pathways and gene families are now easily done using the LightCycler® 480 System. RealTime *ready* Focus Panels are pre-plated with primers and probes: just add master mix and sample cDNA. All assays show high PCR efficiency, reproducibility, and dynamic range (see **Figure 3**). Each panel contains on-plate controls and reference genes permitting fast and easy evaluation of results.



**Figure 3: Amplification plot of 84 apoptosis-related genes using the LightCycler® 480 Instrument.** UPL assays performed using a 96-well RealTime *ready* Human Apoptosis Panel show high performance and reproducibility for each of the 84 genes on the panel.

For more information about Roche Applied Science's complete line of tools for the gene expression analysis workflow, please visit our Gene Expression Analysis Special Interest site at:  
[www.gene-expression.roche.com](http://www.gene-expression.roche.com)

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