

For general laboratory use.



FastStart Essential DNA Probes Master

 **Version: 09**

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Ready-to-use hot start reaction mix for real-time PCR with the LightCycler® PRO or the LightCycler® 96 Systems.

Cat. No. 06 402 682 001	1 kit 500 reactions of 20 µL final volume each
Cat. No. 06 924 492 001	1 kit 10 x 500 reactions of 20 µL final volume each

Store the kit at –15 to –25°C.

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1. General Information

1.1. Contents

Vial / Bottle	Cap	Label	Function / Description	Catalog Number	Content
1	red	FastStart Essential DNA Probes Master, 2x conc.	<ul style="list-style-type: none"> Ready-to-use hot start PCR mix. Contains FastStart Taq DNA polymerase, reaction buffer, dNTP mix (with dUTP instead of dTTP), and MgCl₂. 	06 402 682 001	5 vials, 1 mL each
				06 924 492 001	10 vials, 5 mL each
2	colorless	FastStart Essential DNA Probes Master, Water, PCR Grade	To adjust the final reaction volume.	06 402 682 001	5 vials, 1 mL each
				06 924 492 001	2 vials, 25 mL each

1.2. Storage and Stability

Storage Conditions (Product)

The kit is shipped on dry ice.

When stored at –15 to –25°C, the kit is stable through the expiry date printed on the label.

Once the kit is opened, store the kit components as described in the following table:

Vial / Bottle	Cap	Label	Storage
1	red	FastStart Essential DNA Probes Master, 2x conc.	Store at –15 to –25°C. ⚠️ Avoid repeated freezing and thawing. After first thawing, the master may be stored for up to 4 weeks at +2 to +8°C.
2	colorless	FastStart Essential DNA Probes Master, Water, PCR Grade	Store at –15 to –25°C.

1.3. Additional Equipment and Reagent required

Standard laboratory equipment

- Nuclease-free pipette tips
- 1.5 mL RNase-free microcentrifuge tubes to prepare master mixes and dilutions
- To minimize risk of RNase contamination, autoclave all vessels

2. How to Use this Product

For qPCR

- Real-Time PCR systems such as the LightCycler® PRO or LightCycler® 96 Systems*
- LightCycler® 480 Multiwell Plate 96, white*
- LightCycler® 480 Multiwell Plate 384, white*
- LightCycler® 480 Multiwell Plate 96, white, 4 bar codes*
- LightCycler® 480 Multiwell Plate 384, white, 4 bar codes*
- Sealing Foil Applicator*
- LightCycler® 480 Sealing Foil*
- LightCycler® 8-Tube Strips (white)*
- LightCycler® 8-Tube Strip Adapter Plate*
- Centrifuge with swinging-bucket rotor
- LightCycler® Uracil-DNA Glycosylase* (optional)

i For details about prevention of carryover contamination, see Section, **Prevention of Carryover Contamination**.

1.4. Application

The FastStart Essential DNA Probes Master is a ready-to-use hot start reaction mix designed for detecting DNA targets with hydrolysis probes. It allows very sensitive detection and quantification of defined DNA sequences as well as endpoint genotyping analysis. The kit may also be used in other types of PCR on the LightCycler® PRO and LightCycler® 96 Systems.

The kit can also help prevent carryover contamination during PCR (when used with LightCycler® Uracil-DNA Glycosylase) or to perform the second step of a two-step RT-PCR.

In principle, the FastStart Essential DNA Probes Master can be used to amplify and detect any DNA or cDNA target. However, the detection protocol must be adapted to the reaction conditions of the LightCycler® PRO or LightCycler® 96 Instruments, and specific PCR primers and probes must be designed for each target.

1.5. Preparation Time

Typical Run Time

The FastStart Essential DNA Probes Master can be used for various qPCR protocols. For example, a duplex protocol including a 10 minute pre-incubation step using 45 cycles requires about 70 minutes when using the LightCycler® PRO System.

2. How to Use this Product

2.1. Before you Begin

Sample Materials

Use any template DNA suitable for qPCR in terms of purity, concentration, and absence of PCR inhibitors. For reproducible isolation of nucleic acids, use:

- Either a MagNA Pure System together with a dedicated reagent kit (for automated isolation),
 - or a High Pure Nucleic Acid Isolation Kit (for manual isolation).
- Use the RealTime ready Cell Lysis Kit* (for lysing cells prior to two-step real-time RT-PCR applications).
- Use up to 500 ng complex genomic DNA or 1 to 10¹⁰ copies plasmid DNA for a reaction volume of 20 µL. For larger volumes, the amount of template can be increased equivalently.
- i** If you are using an unpurified cDNA product from a reverse transcription reaction, especially if it contains high background concentrations of RNA and oligonucleotides, you can improve your results by using 2 µL (or less) of that sample in the reaction and applying a 10 minute pre-incubation at +95°C. This will result in lower quantification cycle (C_q) values with a decreased standard deviation.

Control Reactions

Always run appropriate positive and negative controls with the samples.

- To check for the presence of contamination, prepare and include a negative control by replacing the template DNA with Water, PCR Grade (Vial 2).
- In a 2-step RT-PCR setup, omit addition of reverse transcriptase to the cDNA synthesis reaction (this will indicate whether DNA in RNA samples causes false-positive results).

Primers

Suitable concentrations of PCR primers range from 0.3 to 1 μM (final concentration in reaction). The recommended starting concentration is 0.5 μM each.

i *The optimal primer concentration is the lowest concentration that results in the lowest C_q and an adequate fluorescence for a given target concentration.*

⚠ ***Optimize the primer concentration first, then determine the probe optimization using the optimized primer concentrations.***

Probe

Suitable concentrations of hydrolysis probes range from 0.05 to 0.2 μM (final concentration in reaction).

i *The optimal probe concentration is the lowest concentration that results in the lowest C_q and an adequate fluorescence for a given target concentration.*

⚠ ***For a digestible hybridization complex to form correctly, the hydrolysis probe must anneal to the target before primer extension. The T_m of the probe should be only slightly higher than the T_m of the PCR primer, so the hybridization complex is stable. Furthermore, the probe sequence must account for mismatches in the DNA template, since these will also affect the annealing temperature.***

Mg²⁺ Concentration

The reaction mix in this kit contains an optimal concentration of MgCl_2 , which works with nearly all primer combinations.

i *You do not need to adjust the MgCl_2 concentration to amplify different sequences.*

Prevention of Carryover Contamination

Uracil DNA N-Glycosylase (UNG) can help prevent carryover contamination in PCR. The prevention technique involves incorporating deoxyuridine triphosphate (dUTP, a component of the Master Mix in this kit) into amplification products, then pretreating later PCR mixtures with UNG. If a dUTP-containing contaminant is present in the later PCRs, it will be cleaved by UNG during incubation at +40°C and will not serve as a PCR template. The high temperatures of the initial denaturation step will heat-inactivate the UNG to prevent degradation of the newly synthesized dUTP-containing PCR products.

⚠ ***To ensure optimal results in carryover prevention reactions with the FastStart Essential DNA Probes Master, always use LightCycler® Uracil-DNA Glycosylase*. Follow the Instructions for Use for the enzyme.***

i *Since your target DNA template contains thymidine rather than uridine, it is not affected by this procedure.*

2.2. Protocols

LightCycler® PRO and LightCycler® 96 System protocols

The following procedure is optimized for use with the corresponding LightCycler® System you are using.

⚠ Program the LightCycler® Instrument before preparing the reaction mixes.

i For details on how to program the experimental protocol, see the *LightCycler® PRO System User Assistance* or *LightCycler® 96 System Operator's Guide*.

Protocol for use with the LightCycler® PRO System (Multiwell Plate 96 or 384)

The LightCycler® PRO System protocol contains the following programs:

- **Pre-incubation** for activation of FastStart Taq DNA polymerase and denaturation of the DNA
- **Amplification** of the DNA
- **Cooling** of the thermal cycler

Setup				
Thermal cycler type		Reaction volume [μL]		
96 (384)		10 – 100 (5 – 20)		
Detection format				
Select dyes used in your assays.				
If the dye is not predefined, use appropriate filter combination in the user-defined detection format.				
Programs				
Program name		Cycles		
Pre-incubation		1		
Amplification		45		
Cooling		1		
Temperature targets				
	Target [°C]	Acquisition mode	Duration [s]	Ramp rate [°C/s]
Pre-incubation	95	None	600 ⁽¹⁾	4.4 (4.8)
2-step amplification	95	None	10 ⁽²⁾⁽³⁾	4.4 (4.8)
	60 primer dependent ⁽⁴⁾	Single	30 ⁽²⁾⁽³⁾	2.2 (2.5)
Cooling (automatically added)	40	None	30	2.2 (2.5)

⁽¹⁾ For some assays, a pre-incubation of 300 seconds is sufficient (fast protocol). However, if high polymerase activity is required in early cycles, a 600-second period is recommended, especially for higher reaction volumes and when working with unpurified cDNA samples as template. Do not use more than 2 μL unpurified cDNA sample.

⁽²⁾ For well-established assays (with amplicon size not exceeding 200 bp in length), you may shorten the amplification times.

⁽³⁾ For greater precision in target quantification experiments, it can be advantageous (in some cases) to choose longer annealing and extension times for the amplification cycles. This is especially recommended for higher reaction volumes.

⁽⁴⁾ For initial experiments, set the target temperature (the primer annealing temperature) +5°C below the calculated primer T_m.

Color Compensation protocol for the LightCycler® PRO Instrument

The LightCycler® PRO Instrument does not require the creation of a color compensation object.

Protocol for use with the LightCycler® 96 Instrument

A LightCycler® 96 Instrument protocol that uses FastStart Essential DNA Probes Master should contain the following programs:

- **Pre-incubation** (Hold) for activation of FastStart Taq DNA polymerase and denaturation of the DNA
- **Amplification** of the target DNA

The following procedure is optimized for use with the LightCycler® 96 Instrument.

Run editor				
Detection format			Reaction volume [μL]	
FAM			20	
Programs				
	Temp. [°C]	Ramp [°C/s]	Duration [s]	Acquisition mode
Pre-incubation	95	4.4	600 ⁽¹⁾	None
2-step amplification	No. of cycles: 45			
	95	4.4	10 ⁽²⁾⁽³⁾	None
	60	2.2	30 ⁽²⁾⁽³⁾	Single
	primer dependent ⁽⁴⁾			

⁽¹⁾ For some assays, a pre-incubation of 300 seconds is sufficient (fast protocol). However, if high polymerase activity is required in early cycles, a 600-second period is recommended, especially for higher reaction volumes and when working with unpurified cDNA samples as template. Do not use more than 2 μL unpurified cDNA sample.

⁽²⁾ For well-established assays (with amplicon size not exceeding 200 bp in length), you may shorten the amplification times.

⁽³⁾ For greater precision in target quantification experiments, it can be advantageous (in some cases) to choose longer annealing and extension times for the amplification cycles. This is especially recommended for higher reaction volumes.

⁽⁴⁾ For initial experiments, set the target temperature (the primer annealing temperature) +5°C below the calculated primer T_m.

Color Compensation protocol for the LightCycler® 96 Instrument

The LightCycler® 96 Instrument does not require the creation of a color compensation object.

Setup of the qPCR reaction for the LightCycler® PRO and LightCycler® 96 Instruments

Follow the procedure below to prepare one 20 µL standard reaction.

i Always wear gloves during handling.

- 1 Thaw one vial of FastStart Essential DNA Probes Master (Vial 1) and Water, PCR Grade (Vial 2).
 - Briefly spin vials in a microcentrifuge before opening to ensure recovery of all the contents.
 - Mix carefully by pipetting up and down.
- 2 Prepare a 10x-concentrated solution that contains PCR primers and hydrolysis probe.
- 3 In a 1.5 mL reaction tube, prepare the PCR mix for one 20 µL reaction by adding the following components in the order listed below:
 - To prepare the PCR mix for more than one reaction, multiply the amount in the “Volume” column below by z, where z = the number of reactions to be run plus sufficient additional reactions.

Component	Volume [µL]
Water, PCR Grade (Vial 2)	3.0
Primer-probe mix ⁽¹⁾ , 10x conc.	2.0
Master Mix, 2x conc. (Vial 1)	10.0
Total volume	15.0

- 4 Mix carefully by pipetting up and down. Do not vortex.
 - Pipette 15 µL PCR mix into a multiwell plate.
 - Add 5 µL of the DNA template.
 - Seal multiwell plate with a LightCycler® 480 Sealing Foil.
- 5 Place the multiwell plate into the centrifuge with a swinging-bucket rotor and suitable adapter, and balance it with a suitable counterweight, such as another multiwell plate.
 - Centrifuge at 1,500 × g for 2 minutes.
- 6 Load the multiwell plate into the LightCycler® PRO or LightCycler® 96 Instrument.
- 7 Start the PCR program described above.

i If you use reaction volumes different from 20 µL, it might be advantageous to adapt the hold times.

⁽¹⁾ Due to possible primer/primer interactions that occur during storage, it may be necessary to preheat the PCR primer-probe mix for 1 minute at +95°C before starting the reaction. This extra step will ensure optimum sensitivity.

Two-Step RT-PCR

FastStart Essential DNA Probes Master can also be used to perform the second step of a two-step RT-PCR. In two-step RT-PCR, the first step (reverse transcription of RNA into cDNA) is performed outside a LightCycler® System. Subsequent amplification and online monitoring is performed according to a LightCycler® System standard procedure, using cDNA as starting sample material. The Transcriptor First Strand cDNA Synthesis Kit* is recommended for reverse transcription of RNA into cDNA. Synthesis of cDNA is performed according to the instructions provided with the kit.

⚠ For initial experiments, run undiluted, 1:10 diluted, and 1:100 diluted cDNA template in parallel to determine the optimum template amount. If you use undiluted cDNA as template, use a 600-second pre-incubation.

3. Results

Results on the LightCycler® PRO Instrument

The following results were obtained using the FastStart Essential DNA Probes Master on the LightCycler® PRO Instrument.

All targets:

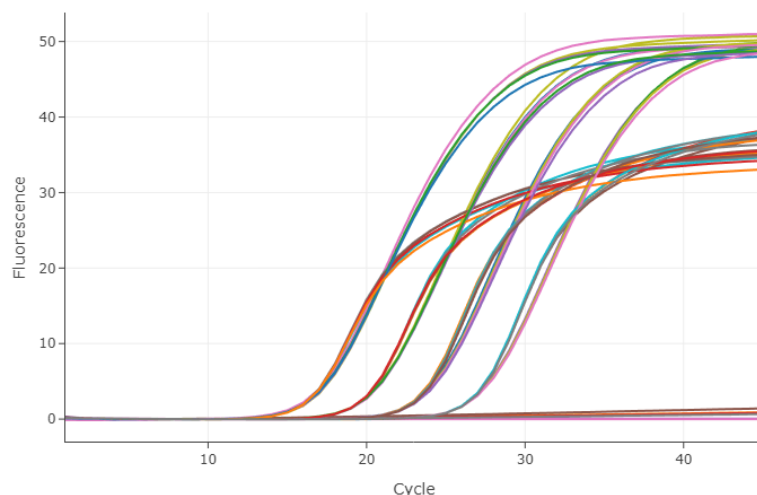


Fig. 1: Duplex qPCR amplification reaction on the LightCycler® PRO Instrument within one picture.

Cyan 500 channel (432 - 474)

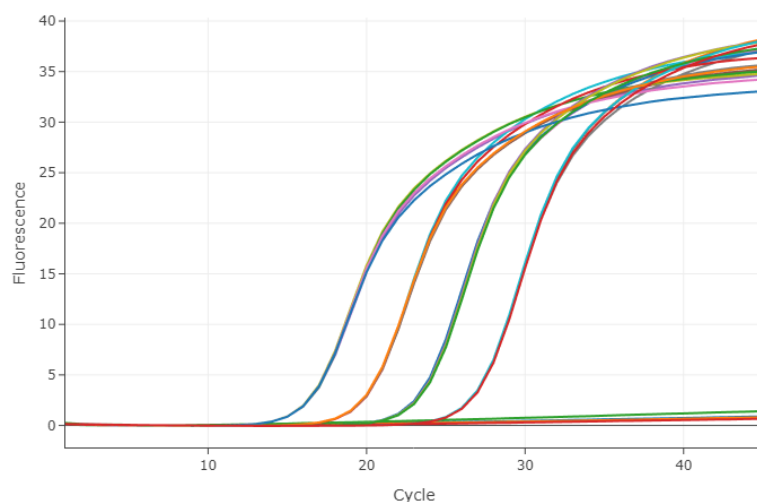


Fig. 2: The Cyan 500 channel shows the result for an amplification of a 133 bp fragment of the **gyrB** gene detected with a Cyan 500-labeled hydrolysis probe. Amplification curves shown were generated from a ten-fold dilution series [100,000,000 copies (far left), 10,000,000 copies, 1,000,000 copies, 100,000 copies (far right)] from a plasmid for *Yersinia Enterocolitica*, 5 replicates per concentration. No template controls are shown as a flat line. Duplex qPCR was performed in a reaction volume of 20 µL per well in a LightCycler® 480 Multiwell Plate 96.

3. Results

HEX channel (541 - 565)

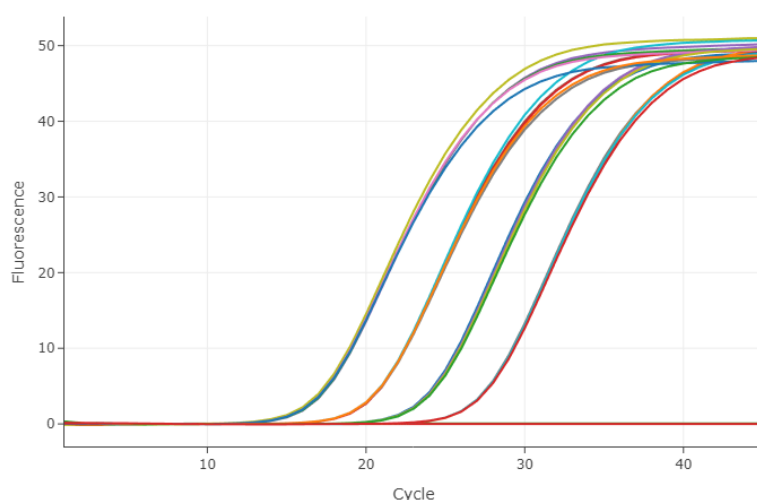


Fig. 3: The HEX channel shows the result for an amplification of a 111 bp fragment of the **ipaH** gene detected with a R6G-labeled hydrolysis probe. Amplification curves shown were generated from a ten-fold dilution series [100,000,000 copies (far left), 10,000,000 copies, 1,000,000 copies, 100,000 copies (far right)] from a plasmid for **Shigella/EIEC**, 5 replicates per concentration. No template controls are shown as a flat line. Duplex qPCR was performed in a reaction volume of 20 μ L per well in a LightCycler[®] 480 Multiwell Plate 96.

Results on the LightCycler[®] 96 Instrument

The following results were obtained using the FastStart Essential DNA Probes Master on the LightCycler[®] 96 Instrument.

Quantification analysis

The following amplification curves were obtained on the LightCycler[®] 96 Instrument using the FastStart Essential DNA Probes Master. A reaction using primers and a FAM-labeled probe specific for the target gene HSPA2 was performed.

The intensity in relative fluorescence units (RFU) versus cycle number is displayed (see Fig. 4).

□ ▢ 🔍 📄 📊

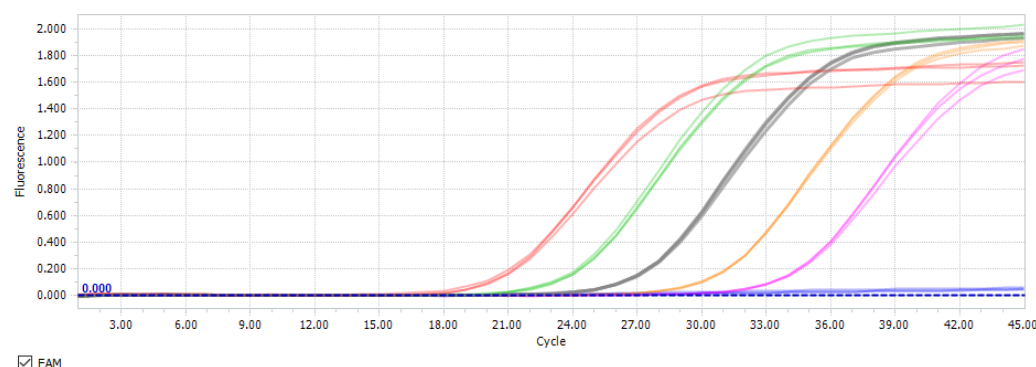


Fig. 4: The amplification diagram shows the result for the target gene **HSPA2**. The amplification curves shown were obtained from human genomic DNA from human blood 1,000 ng (far left) to 0.1 ng (far right) per well, including a no template control (blue flat line). Singleplex qPCR with three replicates for each dilution was performed in a reaction volume of 20 μ L per well.

4. Troubleshooting

Observation	Possible cause	Recommendation
Log-linear phase of amplification just starts as the cycling program ends.	Starting amount of nucleic acid is very low.	Improve PCR conditions, such as primer design. Use more starting DNA template. Repeat the run.
	Hold times in the cycling protocol are too short.	Optimize the run protocol by extending the hold times for annealing and elongation.
	The number of cycles is too low.	Increase the number of cycles in the cycle program.
No amplification detectable.	Wrong detection format.	Change the dye for the target.
	Impure sample material inhibits reaction.	Try a 1:10 dilution of your sample. Purify the nucleic acids from your sample material to ensure removal of inhibitory agents.
	FastStart DNA Polymerase is not sufficiently activated.	Make sure PCR protocol includes an initial pre-incubation step (+95°C for 10 minutes). Make sure denaturation time during amplification is 10 seconds.
	Zoom function in the graph is active and only a small part of the chart is visible.	Undo the zoom function.
	Measurements do not occur.	Check the cycling program of the experimental protocol. For Hydrolysis Probes, choose “Single” under Acquisition Mode (LightCycler® System) at the end of the annealing/elongation phase.
	Pipetting errors or omitted reagents.	Check for missing or defective reagents.
	Difficult template, for example, unusually GC-rich sequence.	Optimize temperatures and times used for the amplification cycles. Optimize primer/probe sequences. Repeat PCR, but add increasing amounts of DMSO. (Use as much as 10% DMSO in the reaction.)
	Amplicon length is too long.	Do not design primers that produce amplicons >200 bp.
Fluorescence intensity varies.	Some of the reagent is still in the upper part of the reaction vessel, or an air bubble is trapped in the reaction vessel.	Repeat centrifugation, but allow sufficient centrifugation time, for example, 2 minutes at $1,500 \times g$, for all reagents to reach the bottom of the reaction vessel and/or to expel air bubbles.
	Skin oils or dirt are present on the lid or sealing foil.	Always wear gloves.

5. Additional Information on this Product

Fluorescence intensity is very low.	Wrong Optics Settings in the Run Settings folder.	Check Optics Settings for proper selection prior to each run.
	Poor PCR efficiency (reaction conditions not optimized).	Check concentrations of reagents and probes. Optimize protocol.
	Low concentration or deterioration of dyes in the reaction mixtures because dye was not stored properly.	Always run a positive control along with your samples.
		⚠ Keep dye-labeled reagents away from light. Store the reagents at –15 to –25°C. ⚠ Avoid repeated freezing and thawing.
Negative control sample gives a positive signal.	Contamination	Remake all critical solutions.
		Pipette reagents on a clean bench.
		Use UNG to eliminate carryover contamination.
High background	Fluorescence signals are very low, therefore the background seems relatively high.	Follow general strategies for optimizing PCR runs.
	Probe quality is poor.	Prepare a new probe solution.
High standard deviation of Cq values.	Impure, heterogeneous DNA template.	Make sure PCR included a pre-incubation step at +95°C for 10 minutes.
		Use a maximum of 2 µL unpurified cDNA sample.
Baseline drift	Reaction vessels not sealed properly.	Be sure to seal the tubes or multiwell plate correctly.
	Cycler is loaded unbalanced.	If you use only two strips, be sure to load the 8 tube strips balanced in the outer rows.

5. Additional Information on this Product

5.1. Test Principle

Sequence-specific detection of PCR products relies on sequence-specific oligonucleotide probes that are coupled to fluorophores. These probes hybridize to their complementary sequence in target PCR products. Hydrolysis probe chemistry uses the so-called FRET principle. Fluorescence Resonance Energy Transfer (FRET) is based on the transfer of energy from one fluorophore (the donor or reporter) to another adjacent fluorophore (the acceptor or quencher). Hydrolysis probe assays can technically be described as homogeneous 5'-nuclease assays, since a single 3' non-extendable probe, which is cleaved during PCR amplification, is used to detect the accumulation of a specific target DNA sequence. This single probe contains two labels, a fluorescent reporter and a quencher, in close proximity to each other. When the probe is intact, the quencher dye is close enough to the reporter dye to suppress the reporter fluorescent signal (fluorescent quenching takes place via FRET). During PCR, the 5'-nuclease activity of the polymerase cleaves the hydrolysis probe, separating the reporter and quencher. The reporter dye is no longer quenched and emits a fluorescent signal when excited.

The LightCycler® PRO and the LightCycler® 96 Instrument are factory calibrated for commonly used reporter dyes as listed in the respective systems. For example, different labeled hydrolysis probes can be used separately or in combination, which permits up to four-color (LightCycler® 96 Instrument) or up to seven-color (LightCycler® PRO Instrument) detection. There is no need for color compensation runs.

i For multicolor hydrolysis probe assays, use dark quencher dyes, that is, dye molecules which efficiently quench the fluorescence of a FRET reporter dye without emitting fluorescence themselves. For example, use BHQ-2 (quenching range 550 to 650 nm) for all hydrolysis probe reporter dyes.

i Color compensation is automatically performed (all analysis data are color compensated).

How this product works

FastStart Essential DNA Probes Master is a ready-to-use reaction mix specifically developed for the hydrolysis probe detection format in:

- LightCycler® 480 Multiwell Plates 96 or,
- 8-Tube Strips **without** an adapter plate on the **LightCycler® 96 Instrument** or,
- LightCycler® 480 Multiwell Plates 96 or,
- LightCycler® 480 Multiwell Plates 384 or,
- 8-Tube Strips **with** the LightCycler® 8-Tube Strip Adapter Plate on the **LightCycler® PRO Instrument**.

The master contains FastStart Taq DNA Polymerase for hot start PCR, which significantly improves the specificity and sensitivity of PCR by minimizing the formation of nonspecific amplification products.

FastStart Taq DNA Polymerase is a chemically modified form of thermostable recombinant Taq DNA Polymerase that shows no activity up to +75°C. The enzyme is active only at high temperatures, where primers no longer bind non-specifically. The enzyme is completely activated (by removal of blocking groups) in a single pre-incubation step (+95°C, 5 to 10 minutes) before cycling begins. Activation does not require the extra handling steps typical of other hot start techniques.

5.2. Quality Control

The FastStart Essential DNA Probes Master is function tested using the LightCycler® System.

6. Supplementary Information

6.1. Conventions

To make information consistent and easier to read, the following text conventions and symbols are used in this document to highlight important information:

Text convention and symbols

 **Information Note:** Additional information about the current topic or procedure.

 **Important Note:** Information critical to the success of the current procedure or use of the product.

① ② ③ etc. Stages in a process that usually occur in the order listed.

① ② ③ etc. Steps in a procedure that must be performed in the order listed.

* (Asterisk) The Asterisk denotes a product available from Roche Diagnostics.

6.2. Changes to previous version

Editorial changes.

Information about the LightCycler® PRO System has been added.

List of additional reagents and equipment has been updated.

6.3. Ordering Information

Roche offers a large selection of reagents and systems for life science research. For a full overview of related products and manuals, please visit and bookmark our homepage lifescience.roche.com.

Product	Pack Size	Cat. No.
Accessories general (hardware)		
LightCycler® 8-Tube Strip Adapter Plate	1 piece, adapter plate The adapter plate can be used multiple times	06 612 598 001
Thermal Cycler Assembly 96	1 piece	09 742 565 001
Thermal Cycler Assembly 384	1 piece	09 742 581 001
Sealing Foil Applicator	1 piece	10 018 607 001
Consumables		
LightCycler® 8-Tube Strips (white)	10 x 12 white strips and clear caps	06 612 601 001
LightCycler® 480 Sealing Foil	50 foils	04 729 757 001
LightCycler® 480 Multiwell Plate 96, white	5 x 10 plates	04 729 692 001
MagNA Pure 96 Internal Control Tube	150 tubes	06 374 905 001
LightCycler® 480 Multiwell Plate 384, white	5 x 10 plates	04 729 749 001
LightCycler® 480 Multiwell Plate 96	5 x 10 plates without sealing foils	05 220 319 001
LightCycler® 480 Multiwell Plate 384	5 x 10 plates without sealing foils	05 217 555 001
Instruments		
LightCycler® 96 Instrument	1 instrument	05 815 916 001
MagNA Pure 96 Instrument	1 instrument	06 541 089 001
LightCycler® PRO Instrument	1 instrument, 96-well version	09 541 713 001
	1 instrument, 384-well version	09 582 487 001
MagNA Pure 24 Instrument	Instrument with built-in control unit, software and accessories	07 290 519 001
Reagents, kits		
LightCycler® Uracil-DNA Glycosylase	50 µL, 100 U, (2 U/µL)	03 539 806 001
RealTime ready Cell Lysis Kit	1 kit, 50 lysis reactions with a final reaction volume of 40 µL each	06 366 821 001
	1 kit, 500 lysis reactions with a final reaction volume of 40 µL each	05 943 523 001
Transcriptor First Strand cDNA Synthesis Kit	1 kit, 50 reactions, including 10 control reactions	04 379 012 001
	1 kit, 100 reactions	04 896 866 001
	1 kit, 200 reactions	04 897 030 001
High Pure Viral Nucleic Acid Kit	1 kit, up to 100 isolations	11 858 874 001
MagNA Pure 96 DNA and Viral NA Large Volume Kit	Kit for up to 3 x 96 isolations	06 374 891 001
MagNA Pure 96 DNA and Viral NA Small Volume Kit	For up to 3 x 192 isolations	06 543 588 001
MagNA Pure 24 Total NA Isolation Kit	Kit for up to 96 isolations (200 µL)	07 658 036 001

6.4. Trademarks

MAGNA PURE, LIGHTCYCLER and FASTSTART are trademarks of Roche.
All other product names and trademarks are the property of their respective owners.

6.5. License Disclaimer

For additional documentation such as certificates and safety data sheets, please visit:
documentation.roche.com.

6.6. Regulatory Disclaimer

For general laboratory use.

6.7. Safety Data Sheet

Please follow the instructions in the Safety Data Sheet (SDS).

6.8. Contact and Support

If you have questions or experience problems with this or any Roche product for Life Science, please contact our Technical Support staff. Our scientists are committed to providing rapid and effective help.
Please also contact us if you have suggestions for enhancing Roche product performance or using our products in new or specialized ways. Such customer information has repeatedly proven invaluable to the research community worldwide.

To ask questions, solve problems, suggest enhancements or report new applications,
please visit our **Online Technical Support** Site.

Visit **documentation.roche.com**, to download or request copies of the following Materials:

- Instructions for Use
- Safety Data Sheets
- Certificates of Analysis
- Information Material

To call, write, fax, or email us, visit **lifescience.roche.com** and select your home country to display country-specific contact information.

