Product Profile

QuantiNova Multiplex PCR Kits

For ultrafast, multiplex real-time PCR with in-process safety measures

Generate more results per sample, ultrafast, with the QuantiNova® Multiplex PCR Kit. Our unique multiplex PCR buffer contains the Q-Bond additive, which significantly reduces annealing and extension times, allowing multiplex qPCR in less than one hour. The specialized master mix provides multiplex results entirely comparable to singleplex PCR with no optimization required. The kit clearly distinguishes between small differences in template amount and accurately quantitates targets of widely differing abundance.

The QuantiNova Multiplex PCR Kit provides:

- Sensitive detection of up to 5 targets in 1 tube
- Reliable quantitation of low- and high-abundance targets
- Up to 800 ng template input for outstanding sensitivity
- Built-in, visual pipetting control: Never lose track aliquoting again!
- Incredibly reliable room temperature reaction set-up ideally suited for automation

Unmatched reliability with built-in controls

Easily verify master mix dispensing and template addition – preventing pipetting errors during reaction set-up, with our built-in, visual pipetting control (Figure 1). Combining with our QuantiNova Reverse Transcription Kit for cDNA synthesis allows inclusion of QuantiNova internal control RNA allowing simple, integrated verification of successful reverse transcription and amplification in your two-step RT-qPCR. The IC RNA detects any Cq shifts caused by inhibitors or other factors. IC assays are available as accessories with the choice of two different labels.

Figure 1. Accurate reaction set-up indicated by the built-in pipetting control. The master mix contains an inert blue dye, which when combined with the QuantiNova yellow template dilution buffer, turns the resulting solution green. This visual confirmation indicates that the reaction was set-up correctly.

True room temperature reaction set-up with our unique hot-start mechanism

Our highly stringent antibody-mediated, hot-start mechanism prevents extension of nonspecifically annealed primers and formation of primer–dimers. This ensures outstanding specificity and hours of room temperature stability! This makes room temperature set-up incredibly reliable and is ideally suited for automated workflows.

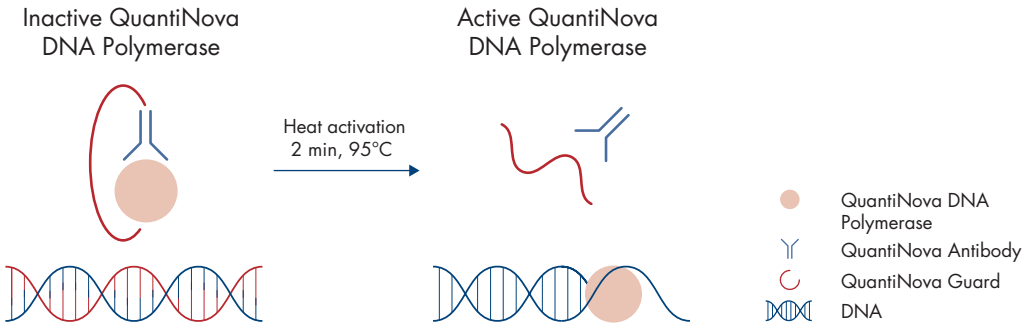

Figure 2. Highly stringent antibody-mediated, hot-start mechanism. The QuantiNova DNA Polymerase is kept inactive by the QuantiNova Antibody and QuantiNova Guard until the initial heat activation step. With 2 minutes at 95°C, the QuantiNova Antibody and QuantiNova Guard are denatured and the QuantiNova DNA Polymerase is activated, enabling the PCR amplification.

Accurately quantitate low and high amounts of input DNA

Increase efficiency and minimize handling errors by analyzing multiple targets in the same reaction. Accurate multiplex analysis relies on efficient amplification of all targets within the reaction without any competitive effects. Our unique PCR buffer includes a balanced combination of K^+ and NH^{4+} ions and our unique, synthetic Factor MP – promoting stable and efficient annealing of primers and probes to your templates. Get high efficiency amplification of all targets, regardless of abundance.

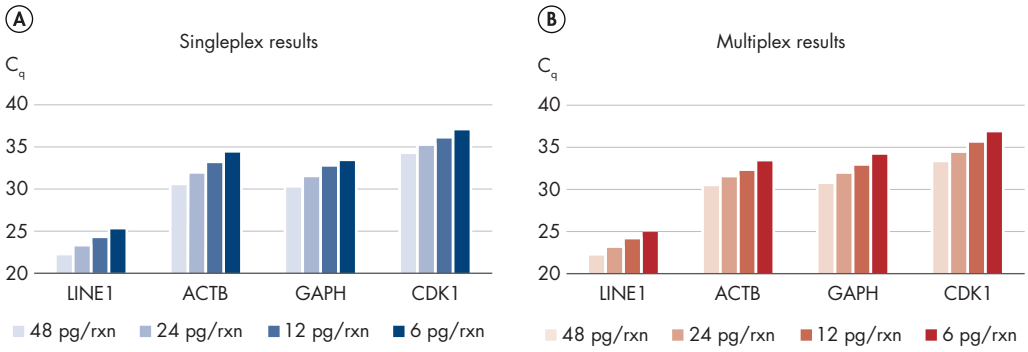

Figure 3. Sensitive detection in singleplex and 4-plex PCR with low amounts of input gDNA. Singleplex and 4-plex PCR was performed using TaqMan assays for LINE1, ACTB, GAPDH and CDK1. 48, 24, 12 and 6 pg (corresponding to the amount of a single cell) of gDNA were used as template. **A** Singleplex reactions and **B** 4-plex detection. The diagrams demonstrate the comparability and sensitivity of the results for singleplex and 4-plex amplification using the QuantiNova Multiplex PCR Kit, even for very low template input amounts.

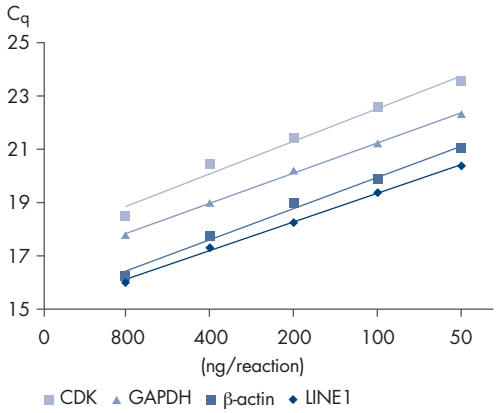

Figure 4. Linear multiplex detection of high cDNA input amounts. Four-plex detection of CDK1, GAPDH, β-actin and LINE-1 was performed using 800, 400, 200, 100 and 50 ng of cDNA in triplicate. The QuantiNova Multiplex PCR Kit delivers accurate results for all targets and input amounts.

Exploit the full multiplexing capacity of your equipment

Real-time PCR instruments with advanced optics and analysis software, like the Rotor-Gene Q, will allow for even more multiplexed reactions, letting you fully exploit the multiplexing capability of the QuantiNova Multiplex PCR Kit.

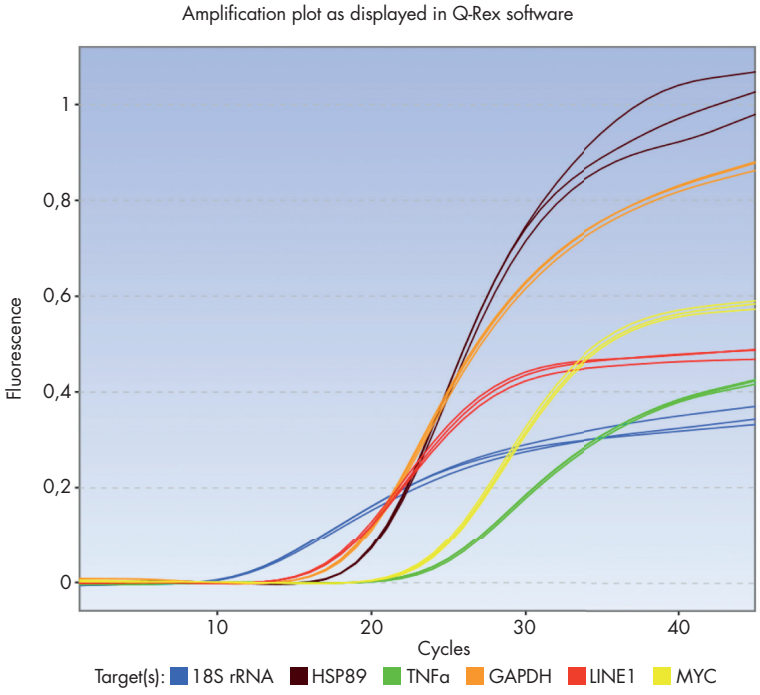

Figure 5. Reliable detection of 6 targets in one reaction. 18S rRNA, LINE1, GAPDH, MYC, HSP89 and TNFa were detected simultaneously in 20 ng cDNA on the Rotor-Gene Q. 6-plex Multiplex PCR was run in triplicate. The image shows the overlay of the amplification curves for all 6 targets, as displayed in the Q-Rex software. The QuantiNova Multiplex PCR Kit reliably detected all 6 targets simultaneously, demonstrating its outstanding multiplex capabilities.

Ordering Information

Product	Contents	Cat. no.
QuantiNova Multiplex PCR Kit (100)	For 100 x 20 µl reactions: 500 µl QuantiNova Multiplex PCR Master Mix, 500 µl QuantiNova Yellow Template Dilution Buffer, 250 µl ROX Reference Dye, 1.9 µl RNase-Free Water	208452
QuantiNova Multiplex RT-PCR Kit (100)	For 100 x 20 µl reactions: 0.5 ml 4x QuantiNova Multiplex RT-PCR Master Mix, 20 µl QuantiNova Multiplex RT-Mix, 20 µl QuantiNova IC RNA, 500 µl QuantiNova Yellow Template Dilution Buffer, 250 µl QN ROX Reference Dye, 1.9 ml RNase-Free Water	208552
QuantiNova IC Probe Assay (200)	For 200 reactions: 400 µl primer/probe mix (10x)	205813
QuantiNova IC Probe Assay Red 650 (500)	For 500 reactions: 1000 µl IC Probe Assay Red (Cy5 analog label, available as an accessory only)	205824
QuantiNova Reverse Transcription Kit (10)	For 10 x 20 µl reactions: 20 µl 8x gDNA Removal Mix, 10 µl Reverse Transcription Enzyme, 40 µl Reverse Transcription Mix (containing RT primers), 20 µl Internal Control RNA, 1.9 ml RNase-Free Water	205410
QuantiNova Probe PCR Kit (100)	For 100 x 20 µl reactions: 1 ml 2x QuantiNova Probe PCR Master Mix, 250 µl QN ROX Reference Dye, 500 µl QuantiNova Yellow Template Dilution Buffer, 1.9 ml Water	208252
QuantiNova Probe RT-PCR Kit (100)	For 100 x 20 µl reactions: 1 ml QuantiNova Probe RT-PCR Master Mix, 20 µl QuantiNova Probe RT Mix, 20 µl Internal Control RNA, 500 µl Yellow Template Dilution Buffer, 250 µl ROX Reference Dye, 1.9 µl RNase-Free Water	208352
Rotor-Gene Q 6-plex System	Real-time PCR instrument with 6 channels (blue, green, yellow, orange, red, crimson), including laptop computer, software, accessories: includes 1-year warranty on parts and labor, installation and training	9001660

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services or your local distributor.