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qPCRBIO SyGreen 1-Step Go Lo-ROX

Product description:

PCR Biosystems qPCRBIO SyGreen 1-Step Go Kit uses the latest developments in reverse transcriptase technology and buffer chemistry for efficient cDNA synthesis and PCR in a single tube.

Our modified MMLV reverse transcriptase (RTase Go) is both thermostable and extremely active. The enzyme is blended with RNase inhibitor preventing degradation of RNA by contaminating RNase. The RTase is not inhibited by ribosomal and transfer RNAs, making total RNA an ideal substrate.

PCR Biosystems SyGreen Mixes use an intercalating dye which does not inhibit PCR, unlike other popular dyes.

qPCRBIO SyGreen 1-Step Mix uses antibody-mediated hot start technology that prevents the formation of primer-dimers to improve reaction sensitivity and specificity.

High-throughput screening has resulted in a buffer system that allows efficient amplification from GC-rich and AT-rich templates, under fast and standard cycling conditions.

Component	100 rxns	300 rxns	1200 rxns
2x qPCRBIO SyGreen 1-Step Lo-ROX	1 x 1mL	3 x 1ml	12 x 1mL
20x RTase Go (contains RNase inhibitor)	1 x 100µL	3 x 100µL	12 x 100µL

Shipping and storage

On arrival the kit should be stored between -30˚C and -15˚C. Avoid prolonged exposure to light. If stored correctly the kit will retain full activity for 12 months. The kit can be stored at 4˚C for 1 month. The kit can go through 30 freeze/thaw cycles with no loss of activity. Avoid exposure of the stock solution to frequent temperature changes and limit handling at room temperature to the necessary minimum.

Limitations of product use

The product may be used for in vitro research purposes only.

Technical support

Help is available on our website at https://pcrbio.com/resources/ including answers to frequently asked technical questions. For technical support and troubleshooting please email technical@pcrbio.com with the following information:

- Amplicon size
- Reaction setup
- Cycling conditions
- Screen grabs of amplification traces and melting profile

Important considerations

Instrument compatibility: Different real-time PCR instruments require different levels of ROX passive reference. Generally, modern instruments do not require passive reference but include the option to use it for normalisation. Please check our qPCRBIO Selection Table to determine which ROX concentration your instrument requires (https://pcrbio.com/resources/qpcr-selection-tool/).

Primer design: For efficient amplification under fast cycling conditions we recommend amplicon lengths between 80bp and 200bp. With all manufacturers' master mixes the shorter the amplicon length the faster the reaction can be cycled. Amplicon lengths should not exceed 400bp. Primers should have a predicted melting temperature of around 60˚C, using default Primer 3 settings (http://bioinfo.ut.ee/primer3/).

Template concentration: As target copy number will vary, it is important to select the correct template concentration to correctly quantify the target sequence. A good concentration will display clear separation between amplification curves (Fig.1). At lower template concentrations, the amplification curves will begin to group together and Ct values will not fit the standard curve (Fig.2).

qPCRBIO SyGreen 1-Step Go is engineered to give rapid and accurate results from high template concentrations. If you observe grouping at lower template concentrations, try adding more template. Alternatively, try qPCRBIO SyGreen 1-Step Detect Lo-ROX Kit (PB25.11-03), which is engineered for sensitivity.

Fig.1

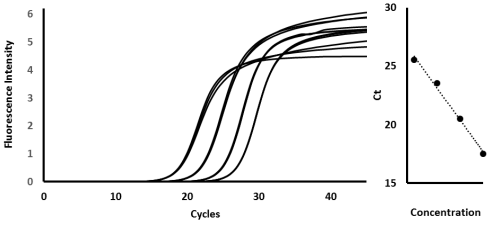
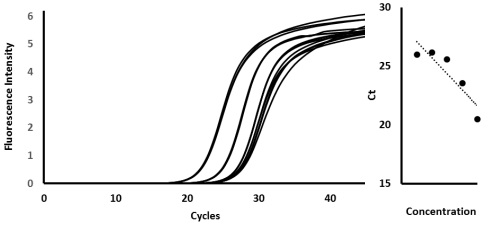


Fig.2



Reaction setup

1. Before starting, briefly vortex 2x qPCRBIO SyGreen 1-Step Mix
2. Prepare a master mix based on the following table. We also recommend setting up a no-RTase control:

Reagent	20µL reaction	Final concentration	Notes
2x qPCRBIO SyGreen 1-Step Mix	10µL	1x	
Forward primer (10µM)	0.8µL	400nM	See above for optimal primer design
Reverse primer (10µM)	0.8µL	400nM	
20x RTase Go (contains RNase inhibitor)	1.0µL	1x	Add before template
Template RNA	10pg to 100ng total RNA, >0.01pg mRNA	Variable	See above for optimal template amounts. Up to 5µg total RNA may be added for increased cDNA yield, however complete reverse transcription of these high amounts is not guaranteed
PCR grade dH_2O	Up to 20µL final volume		

3. Program the instrument using the following conditions, acquiring data on the appropriate channel:

Cycles	Temperature	Time	Notes
1	45˚C to 55˚C	10min	Reverse transcription: 45˚C is recommended for most applications. 55˚C should be used only when amplicon contains regions of high secondary structure
1	95˚C	2min	Polymerase activation
40	95˚C 60˚C to 65˚C	5 seconds 20-30 seconds	Denaturation Anneal/Extension: do not exceed 30 seconds, do not use temperatures below 60˚C
Melt analysis	Refer to instrument instructions		Optional melt profile analysis