

# HiScript II One Step qRT-PCR SYBR Green Kit

Q221

Version 22.2



## Product Description

One Step qRT-PCR SYBR Green Kit is specially designed for qPCR detection using RNA (e.g., RNA virus) as templates. Reverse transcription and qPCR can be finished in one tube in the presence of Gene Specific Primers (GSP). There is no additional opening/pipetting operations are required, which greatly increasing assay throughput and reducing the risk of contamination. Intergrating the superior performance of HiScript II Reverse Transcriptase and Champagne Taq plus DNA Polymerase with the optimized buffer, the lowest RNA template for detection of this kit is 0.1 pg. The specificity-enhancing factor existing in the buffer can effectively reduce the formation of primer dimers and improve the specificity of product. The kit is provided as the formation of master mix, which is convenient to use.

## Components

Components	Q221-01 250 rxns (20 µl/rxn)
<input type="checkbox"/> RNase-free ddH <sub>2</sub> O	2 × 1.25 ml
<input checked="" type="checkbox"/> 2 × One Step SYBR Green Mix <sup>a</sup>	2 × 1.25 ml
<input checked="" type="checkbox"/> One Step SYBR Green Enzyme Mix <sup>b</sup>	250 µl
50 × ROX Reference Dye 1 <sup>c</sup>	100 µl
50 × ROX Reference Dye 2 <sup>c</sup>	100 µl

a. It contains dNTP Mix, Mg<sup>2+</sup>, specificity-enhancing factor, SYBR Green I.

b. It contains HiScript II Reverse Transcriptase, RNase inhibitor, Champagne Taq DNA Polymerase.

c. It is used to correct the error of fluorescence signals between wells. Use 50 × ROX Reference Dye 1 for ABI 7900HT/7300 Real-Time PCR System and StepOnePlus; Use 50 × ROX Reference Dye 2 for ABI 7500, 7500 Fast Real-Time PCR System, and Stratagene Mx3000P. Don't use ROX for Roche and Bio-Rad Real-Time PCR instruments.

## Storage

Store at -30 ~ -15°C and transport at ≤0°C.

Store 2 × One Step SYBR Green Mix at -30 ~ -15°C and protect from light.

## Applications

It is applicable for detection of various RNA nucleic acids of animals, plants and microorganisms (viruses, etc.).

## Notes

For research use only. Not for use in diagnostic procedures.

1. The One Step SYBR Green Enzyme Mix contains high concentration of glycerol. Please centrifuge briefly and mix gently before use.
2. When using 2 × One Step SYBR Green Mix, please mix thoroughly and pipett accurately, avoid strong light exposure, and protect from light.
3. To avoid contamination, please use RNase-free tips and EP tubes.



## Experiment Process (Using ABI StepOne Plus)

### 1. Mix the following components in an RNase-free centrifuge tube:

RNase-free ddH <sub>2</sub> O	to 20 µl	<input type="checkbox"/>
2 × One Step SYBR Green Mix	10 µl	<input checked="" type="checkbox"/>
One Step SYBR Green Enzyme Mix	1 µl	<input checked="" type="checkbox"/>
50 × ROX Reference Dye 1	0.4 µl	
Primer 1 (10 µM)	0.4 µl	
Primer 2 (10 µM)	0.4 µl	
Template RNA	Total RNA: 1 pg - 1 µg	

The volume of each component in the reaction can be adjusted according to the following principles:

- ▲ Generally, a good result can be obtained when the final concentration of primer in the reaction system is 0.2 µM. If the result is not as expected, the primer concentration can be adjusted between 0.1 - 1.0 µM.
- ▲ Due to the high sensitivity of qPCR, the accuracy of template volume has a significant impact on qPCR results. In order to effectively improve the repeatability of the experiment, it is recommended to dilute the template (e.g., dilute to 2 - 5 µl/sample).
- ▲ The length of the amplification product should be within the range of 100 - 500 bp, especially 100 - 200 bp.

### 2. Run the One Step qRT-PCR program as follows:

Stage 1	Reverse Transcription	Rep: 1	50°C <sup>a</sup>	3 min <sup>b</sup>
Stage 2	Initial Denaturation	Rep: 1	95°C	30 sec
Stage 3	Cycling Reaction	Reps: 40	95°C	10 sec
			60°C	30 sec <sup>c</sup>
			95°C	15 sec
Stage 4	Melting Curve	Rep: 1 <sup>d</sup>	60°C	60 sec
			95°C	15 sec

- a. For templates with complex secondary structure or high GC content, the temperature of reverse transcription can be increased to 55°C, which will improve the amplification efficiency and sensitivity.
- b. Reverse transcription can be extended to 15 min, which will increase the yield of cDNA.
- c. Please adjust the extension time according to the minimum time limit of data acquisition required by the Real-time PCR instrument: For ABI 7700 and 7900HT, the extension time should be ≥30 sec; for ABI 7000 and 7300, the extension time should be ≥31 sec; for ABI 7500, the extension time should be ≥34 sec.
- d. Different instruments have different melting curve acquisition procedures. Just use the default melting curve acquisition program.

### 3. Confirm the amplification curve and melting curve of Real-Time PCR and draw a standard curve, etc.

