PerfectStart® IV Visual Green qPCR SuperMix

Please read the manual carefully before use

Cat. No. AQ641

Version No. Version 1.0

Storage: at -18℃ or below for two years

Description

This product contains a *PerfectStart*® IV Taq hot-start Polymerase (Three monoclonal antibodies efficiently bind to the Taq DNA Polymerase, effectively blocking DNA polymerase activity and inhibiting non-specific amplification at low temperature.), optimized dual-cation buffer, SYBR Green I, dNTPs, PCR enhancer, PCR stabilizer, tracking dye, and Universal Passive Reference Dye. The qPCR SuperMix is provided at 2× concentration and can be used at a 1× working concentration by adding template, primers and nuclease-free water. This product uses the principle of a light purple and bright blue mixture turning into a deep purple-blue to enable tracking of the pipetting process. The qPCR SuperMix contains a purple dye, while the 10× Sample Buffer contains a blue dye. As the pipetting steps proceed sequentially, adding the more vividly colored Sample Buffer-diluted template (bright blue) to the qPCR SuperMix (light purple) produces an obvious color change from light purple to deep purple-blue or even deep blue. This color change is highly visible to the naked eye, thereby more effectively avoiding pipetting errors.

Features

- Blocking by 3 antibodies, enabling high specificity, high sensitivity, high amplification efficiency, and a wide range of species.
- Dual-cation buffer enhances specificity and reduces primer-dimer formation, ensuring accurate data.
- This product is premixed with Universal Passive Reference Dye to correct differences in fluorescence detection between wells, without the addition of Passive Reference Dye.
- Tracking dye included to avoid pipetting errors.

Kit Contents

Component	AQ641-01	AQ641-02	AQ641-03	AQ641-04
2×*PerfectStart*® IV Visual Green qPCR SuperMix	1 ml	5×1 ml	15×1 ml	25×1 ml
10×Sample Buffer	200 µl	1 ml	3×1 ml	5×1 ml
Nuclease-free Water	1 ml	5 ml	3×5 ml	5×5 ml

Recommended Sample Dilution

Add 10× Sample Buffer to the template at a volume ratio of 1:9. For example, 9 µl template + 1 µl 10× Sample Buffer, resulting in a 1× final concentration of Sample Buffer in the template.

Recommended qPCR System and Conditions (taking 20 µl reaction system as an example)

Component	Volume	Final Concentration
Template	3-5 µl*	as required**
Forward Primer (10 µM)	0.4 µl	0.2 µM
Reverse Primer (10 µM)	0.4 µl	0.2 µM
2×*PerfectStart*® IV Visual Green qPCR SuperMix	10 µl	1×
Nuclease-free Water	Variable	-
Total volume	20 µl	-

Note: *For a 20 µl qPCR reaction, the recommended template volume is 3–5 µl.

**Recommended template amounts:

- Genomic DNA: 10 pg–1 µg
- Plasmid DNA: 10–10^7 copies

qPCR (two-step)

95°C	1 min	
95°C	5 sec	40-45 cycles
60°C	30 sec★	
Dissociation Stage		

Note: ★Fluorescence signal is acquired during the annealing/extension stage.

Compatible Instruments

- Instruments requiring passive reference dye

ABI Prism 7000/7300/7700/7900, ABI StepOne, ABI StepOne Plus, ABI 7900HT, ABI 7900HT Fast; ABI Prism 7500, ABI Prism 7500 Fast, ABI QuantStudio 3/5, ABI QuantStudio 6/7/12K Flex, ABI ViiA 7, Stratagene Mx3000P/Mx3005P/Mx4000

- Instruments not requiring passive reference dye

Roche LightCycler 480, Roche Light Cycler 96, MJ Research Chromo4, MJ Research Opticon 2, Takara TP-800, Bio-Rad iCycler iQ, Bio-Rad iCycler iQ5, Bio-Rad CFX96, Bio-Rad C1000 Thermal Cycler, Thermo Scientific Pikoreal 96, Qiagen Corbett Rotor-Gene 6000, Qiagen Corbett Rotor-Gene Q,Qiagen Corbett Rotor-Gene 3000, Mastercycler ep realplex

- For instruments requiring passive reference dye, calibrate using the passive reference channel; for those not requiring it, use default settings without adjustment.

Notes

- Thaw completely and mix thoroughly before use. Centrifuge briefly before use.
- Avoid repeated freeze-thaw cycles. Aliquotting is recommended.
- Wear gloves and use nuclease-free consumables.
- Prevent aerosol contamination from amplified products (perform operations in separate areas).
- For better visual contrast, use a white base plate with transparent qPCR tubes to enhance color contrast and make pipetting tracking easier.

For research use only, not for clinical diagnosis.

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