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DYE PRODUCT

Product Datasheet

Viva qGreen I Fluorescent Dye 20X in DMSO

(equivalent to SYBR® Green Dye)

Product No : SD1101
Quantity : 1ml/pack

Lot :
Expiry Date :
Concentration : 20X

Shipped at ambient temperature
Store at 2-8°C or -20°C

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DESCRIPTION

Viva qGreen I Fluorescent Dye (equivalent to SYBR® Green Dye) is a sensitive green fluorescent nucleic acid dye used for detection of double stranded DNA. The dye is widely used in non-specific detection of amplification in quantitative real-time PCR (qPCR) experiments. The detection is monitored by measuring the increase in fluorescence throughout the cycle.

Viva qGreen I fluorescent reporter offers distinct advantages. Besides to be double-strand DNA-specific, the fluorescent reporter is also easy to be used and highly sensitive. Compared to other fluorescent dyes, Viva qGreen I Fluorescent Dye can be used to monitor the amplification of any double-stranded DNA sequence. There is no probe required, which can reduce assay setup time as well as running costs.

Viva qGreen I Fluorescent Dye may have disadvantage to generate false positive signals due to the dye can also bind to any double-stranded DNA sequences. However, the dye can equally good in detecting the non-specific products as well as primer dimer. Therefore, it is very important to have well-designed primers that do not amplify non-target sequences in qPCR reactions to prevent overestimation of the target concentration.

Viva qGreen I Fluorescent Dye has an excitation and emission maxima of 494nm and 521nm, respectively. The dye is compatible with PCR up to a point and it starts to inhibit the PCR reaction at very high concentration.

APPLICATIONS

- Real-time PCR experiments – low level of quantitation
- Melt curve analysis
- Common DNA quantification
- Gene expression analysis
- Mass screening

FEATURES

Easy and affordable

Probes are not required, reduce assay setup and running cost; given that PCR primers are well designed and reaction is well characterized.

High sensitivity

Increased fluorescence when bound to any double-stranded DNA.

Highly stable

Stable during storage and under PCR condition, able to withstand repeated freeze-thaw cycles.

Versatile applications

Can be used as a general double stranded DNA binding dye for common DNA quantification, melt curve analysis, etc.

Compatible with most system

Compatible with major brands of qPCR instruments & enzyme systems.

PROTOCOL

Table 1: Calculate the volumes of reagents required for the reaction.

Reagents	Final concentration
Nuclease Free Water	Adjust to final volume (20µl or 50µl)
10X PCR Buffer *without $MgCl_2$	1X
dNTPs Mix	0.2mM
$MgCl_2$	2.5mM
Viva qGreen I Dye	1X
Taq DNA Polymerase	1 – 5U /reaction
Primers	0.1 – 1µM
Template DNA	Variable

*The suggested protocol is just for reference only.
*Protocol for non-hot-start *Taq* DNA Polymerase.
*Some adjustment of PCR buffer composition might be required if hot-start *Taq* is used. KCl conc. might need to reduce and increase Tris concentration.

1. Prepare 1X master mix, by mixing the components following order sequence as shown in Table 1. Transfer master mix to PCR tubes or plates. Add DNA into tube, suggested 50ng per reaction.
2. Proceed with amplification according to the instrument's suggested protocol. Perform real-time PCR on a thermocycling fluorometer and record the fluorescence signal at the annealing or extension step.

Tips:

1. Warm up the 20X solution to room temperature. Dye absorption onto tube wall during storage may occur. Vortex the tube for a few seconds to make sure the dye is fully dissolved.
2. For the detection step, FAM or FAM/SYBR channel should be used.

*When using ABI Sequence Detection Systems, make sure to select 'NONE' for the passive reference under the tab 'WELL INSPECTOR'.

*To run on a Roche LightCycler, BSA with final concentration of 0.5mg/ml may be required.

*Due to Viva qGreen I Fluorescent Dye is less sensitive to proteins, instrument setting for background fluorescence may need to be adjusted, so that the instrument will start.

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