

ViPrimePLUS One Step At *Taq* RT-qPCR Green Master Mix II (EvaGreen® Dye)

Product code:

QLMM08

Packsize:

150 reactions

Lot No.: Expiry Date:

DESCRIPTION

ViPrimePLUS One Step At*Taq* RT-qPCR Green Master Mix II is next generation first choice mix designed for fast and easy one step real-time PCR reaction set up. The improved formulation of master mix contains unique thermostable M-MULV enzyme, Hot Start *Taq* DNA Polymerases, EvaGreen® dye, as well as MgCl₂ and buffer components at optimal concentrations. The M-MULV enzyme has an optimal operating temperature and higher affinity for primer template duplexes which allows very rapid processing during RT step. EvaGreen® dye in master mix is environmentally safe and highly stable which can be formulated with relative high dye concentration to maximize fluorescence signal without PCR inhibition.

ViPrimePLUS One Step At*Taq* RT-qPCR Green Master Mix II can be used to amplify any RNA template including mRNA, total RNA and viral sequences. The improved formulation of RT-qPCR master mix can detect extremely low copy number targets very specifically with high efficiency that gives CT values close to the theoretical time of detection. The ViPrimePLUS One Step At*Taq* RT-qPCR Green Master Mix II is a complete system for use in one step real-time PCR, the removal of a separate reverse transcription step reduces handling errors as well as the time taken to obtain results. The formation of primer dimers and non-specific products is prevented leading to optimum sensitivity and specificity.

ViPrimePLUS One Step At *Taq* RT-qPCR Green Master Mix II has several formulations optimized to be used with most of real-time PCR instruments. The improved sensitivity and consistency of ViPrimePLUS One Step At *Taq* RT-qPCR Green Master Mix II in standard cycling conditions gives the industry leading performance in fast cycling conditions.

APPLICATIONS

All kinds of RNA sample material suited for RT-qPCR amplification can be used.

FEATURES

- One step real time RT-qPCR reaction set up
- Equipped with thermostable M-MULV enzyme and Hot Start Taq DNA Polymerases
- Contain EvaGreen® dye highest dye stability and safety
- Minimal PCR inhibition
- Reliable quantification of extremely low copy number targets
- Optimal performance for highly sensitive and specific RT-qPCR reaction
- Compatible with most of the real-time PCR platforms

COMPONENTS

3 x 0.6ml aliquots of master mix 0.6ml aliquots of "no RT control master mix standard"

STORAGE

Stable at -20°C up to the expiry date stated. Store all components at -20°C upon arrival. Keep in aliquot to reduce freeze-thaw cycles.

QUALITY CONTROL

As part of the ISO9001:2008 quality assurance systems, each lot of ViPrimePLUS One Step At*Taq* RT-qPCR Green Master Mix II has been tested against predetermined specifications to ensure consistent product quality and highest levels of performance and reliability.

LIMITATION OF USE

For research use only. Not recommended or intended for diagnosis of disease in humans or animals. Do not use internally or externally in humans or animals.

INSTRUMENTS

To calibrate a real-time PCR reaction, various formulations of master mixes are available for most of the platforms.

Master Mixes with Compatible Hardware

QLMM08

ViPrimePLUS One Step At Taq RT-qPCR Green Master Mix II (EvaGreen® Dye)

Biometra qTower, BioRad iCycler, BioRad IQ4, BioRad IQ5, Cepheid SmartCycler®, Eppendorf Mastercycler, Fluidigm BioMark™, Illumina Eco, MJ Chromo4, Opticon, PCRMax Eco™, Roche lightcycler® 480, lightcycler® LC96 and lightcycler® Nano Platforms, RotorGene, Roche Capillary Lightcycler 1.0-2.0, Stratagene MX MX4000P®, MX3000P®, MX3005®, Thermo PikoReal™

QLMM08-LR

ViPrimePLUS One Step At Taq RT-qPCR Green Master Mix II with Low ROX (EvaGreen® Dye)

Applied Biosystems 7500 and 7500 FAST platform, QuantStudio™, ViiA7

QLMM08-R

ViPrimePLUS One Step At Taq RT-qPCR Green Master Mix II with ROX (EvaGreen® Dye)

Applied Biosystems 7000, 7300, 7700, 7900 and 7900HT FAST platforms, GeneAmp® 5700, StepOne™, StepOne™ PLUS

PROTOCOL

- 1. Keep the RT-qPCR master mix protected from light before and after use.
- 2. Aliquot the RT-qPCR master mix to minimize freezethaw cycles and light exposure.
- 3. Reserve plate positions for positive (control RNA) and negative (water or buffer) controls.
- 4. When preparing mixes, always calculate the volume according to the number of reactions that needed plus one extra.
- 5. After the mixture is prepared and aliquoted into tubes, place them into RT-qPCR platform.

SUGGESTED MIXTURE

a. When using ViPrimePLUS gene detection kits:

Components	Reaction (1X)
At Taq One Step RT-qPCR Green	10µl
Master Mix II	
Primer/Probe Mix	1µl
Template (25ng)	5µl
Nuclease free water	4µl
Final Volume	20µl

b. When using user's supplied primers and probe:

Components	Reaction (1X)
At Taq One Step RT-qPCR Green	10µl
Master Mix II	-
Primers (6pmols Forward & Reverse)	Xμl
Probe (3pmols)	Xμl
Template (25ng)	Xμl
Nuclease free water	Xμl
Final Volume	20µl

CYCLING PROGRAM

a. For Tagman® gene detection kits

Step	Cycles	Temp	Time
Reserve Transcription	1	55°C	10mins
Enzyme activation	1	95°C	8mins
Denaturation	40**	95°C	10secs
Data Collection*		60°C	60secs

^{*}Fluorogenic data should be collected during this step through the FAM channel.

b. For EvaGreen® detection kits

Step	Cycles	Temp	Time
Reverse Transcription	1	55°C	10mins
Enzyme activation	1	95°C	8mins
Denaturation	40***	95°C	10secs
Data Collection*		60°C	60secs
Melt Curve**			

^{*}Fluorogenic data should be collected during this step through the EvaGreen® channel.

PREVENTION OF CONTAMINATION

RT-qPCR amplification is a very sensitive RNA amplification reaction; therefore extra care should be taken to eliminate the possibility of contamination with any foreign RNA templates.

- Use separate clean areas for preparation of samples, reaction mixture and for cycling.
- Clean lab bench and equipments periodically with 3% hydrogen peroxide or 70% ethanol.
- Wear fresh gloves. Change gloves whenever suspect that they are contaminated.
- Use sterile tubes and pipette tips with aerosol filters for PCR reaction set up.
- With every PCR reaction set up, perform a contamination control reaction without template RNA.

TROUBLESHOOTING

Possibility	Suggestion
Problem: Negative con gives positive result	ntrol / no template control
Carry over contamination	Change nuclease-free water. Use fresh aliquots of reagents. Use filtered tips. Load positive control last.
Problem: No signal de	tected
Incorrect programming of instrument	Check program.
2. Reagents expired	Check the expiry date of reagents before repeat.
Storage condition not complying with instructions	Check storage condition properly and store at correct storage condition to avoid the degradation of reagents.
Problem: Early / late s	ignal detected than expected
Genomic DNA/RNA contamination or	DNase or RNase treatment of template before qPCR; redesign primers to increase
multiple products 2. Unspecific products or primer dimers detected	specificity Re-design primers to increase specificity

master mix
4. Poor efficiency

during PCR reaction
5. Unanticipated variants within

target seguence

3. Limiting reagents

reagents such as

or degraded

Check calculations for master mix; repeat experiment using fresh stock solutions

Re-design primers to a different region of the target sequence

Keep the GC content to between 30-50%

LEGAL DISCLAIMER

Purchase of product does not include a license to perform any patented applications; therefore it is the sole responsibility of users to determine whether they may be required to engage a license agreement depending upon the particular application in which the product is used.

WARRANTY AND LIMITED LIABILITY

The performance characteristics stated were obtained using the assay procedures in the insert. Failure to comply with the instructions may derive inaccurate results. In such event, manufacturer disclaims all warranty expressed, implied or statutory including the implied warranty of merchantability and the fitness of use.

The manufacturer will not be liable for any damage caused by misuse, improper handling and storage; non-compliance with precautions and procedures, and damages caused by events occurring after the product is released.

EvaGreen® is a registered trademark of Biotium, Inc.

^{**}A further 10 cycles can be added to generate the complete amplification plot for low copy number targets which giving late detection.

^{**}A post PCR run melt curve can be used to prove the specificity of primers. See the manufactures instructions for your hardware platform.

^{***}A further 10 cycles can be added to generate the complete amplification plot for low copy number targets which giving late detection.



ViPrimePLUS One Step At Taq RT-qPCR Green Master Mix II with Low ROX(EvaGreen® Dye)

Product code: QLMM08-LR Packsize: 150 reactions

Lot No.: Expiry Date:

DESCRIPTION

ViPrimePLUS One Step At *Taq* RT-qPCR Green Master Mix II is next generation first choice mix designed for fast and easy one step real-time PCR reaction set up. The improved formulation of master mix contains unique thermostable M-MULV enzyme, Hot Start *Taq* DNA Polymerases, EvaGreen® dye, ROX dye as well as MgCl₂ and buffer components at optimal concentrations. The M-MULV enzyme has an optimal operating temperature and higher affinity for primer template duplexes which allows very rapid processing during RT step. EvaGreen® dye in master mix is environmentally safe and highly stable which can be formulated with relative high dye concentration to maximize fluorescence signal without PCR inhibition.

ViPrimePLUS One Step At*Taq* RT-qPCR Green Master Mix II can be used to amplify any RNA template including mRNA, total RNA and viral sequences. The improved formulation of RT-qPCR master mix can detect extremely low copy number targets very specifically with high efficiency that gives CT values close to the theoretical time of detection. The ViPrimePLUS One Step At*Taq* RT-qPCR Green Master Mix II is a complete system for use in one step real-time PCR, the removal of a separate reverse transcription step reduces handling errors as well as the time taken to obtain results. The formation of primer dimers and non-specific products is prevented leading to optimum sensitivity and specificity.

ViPrimePLUS One Step At *Taq* RT-qPCR Green Master Mix II has several formulations optimized to be used with most of real-time PCR instruments. The improved sensitivity and consistency of ViPrimePLUS One Step At *Taq* RT-qPCR Green Master Mix II in standard cycling conditions gives the industry leading performance in fast cycling conditions.

APPLICATIONS

All kinds of RNA sample material suited for RT-qPCR amplification can be used.

FEATURES

- One step real time RT-qPCR reaction set up
- Equipped with thermostable M-MULV enzyme and Hot Start Taq DNA Polymerases
- Contain EvaGreen® dye highest dye stability and safety
- Minimal PCR inhibition
- Reliable quantification of extremely low copy number targets
- Optimal performance for highly sensitive and specific RT-qPCR reaction
- Compatible with most of the real-time PCR platforms

COMPONENTS

3 x 0.6ml aliquots of master mix 0.6ml aliquots of "no RT control master mix standard"

STORAGE

Stable at -20°C up to the expiry date stated. Store all components at -20°C upon arrival. Keep in aliquot to reduce freeze-thaw cycles.

QUALITY CONTROL

As part of the ISO9001:2008 quality assurance systems, each lot of ViPrimePLUS One Step At*Taq* RT-qPCR Green Master Mix II has been tested against predetermined specifications to ensure consistent product quality and highest levels of performance and reliability.

LIMITATION OF USE

For research use only. Not recommended or intended for diagnosis of disease in humans or animals. Do not use internally or externally in humans or animals.

INSTRUMENTS

To calibrate a real-time PCR reaction, various formulations of master mixes are available for most of the platforms.

Master Mixes with Compatible Hardware

ViPrimePLUS One Step At*Taq*QLMM08 RT-qPCR Green Master Mix II
(EvaGreen® Dye)

Biometra qTower, BioRad iCycler, BioRad IQ4, BioRad IQ5, Cepheid SmartCycler®, Eppendorf Mastercycler, Fluidigm BioMark™, Illumina Eco, MJ Chromo4, Opticon, PCRMax Eco™, Roche lightcycler® 480, lightcycler® LC96 and lightcycler® Nano Platforms, RotorGene, Roche Capillary Lightcycler 1.0-2.0, Stratagene MX MX4000P®, MX3000P®, MX3005®, Thermo PikoReal™

QLMM08-LR

ViPrimePLUS One Step At Taq RT-qPCR Green Master Mix II with Low ROX (EvaGreen® Dye)

Applied Biosystems 7500 and 7500 FAST platform, QuantStudio™, ViiA7

QLMM08-R

ViPrimePLUS One Step At Taq RT-qPCR Green Master Mix II with ROX (EvaGreen® Dye)

Applied Biosystems 7000, 7300, 7700, 7900 and 7900HT FAST platforms, GeneAmp® 5700, StepOne™, StepOne™ PLUS

PROTOCOL

- 1. Keep the RT-qPCR master mix protected from light before and after use.
- 2. Aliquot the RT-qPCR master mix to minimize freezethaw cycles and light exposure.
- 3. Reserve plate positions for positive (control RNA) and negative (water or buffer) controls.
- 4. When preparing mixes, always calculate the volume according to the number of reactions that needed plus one extra.
- 5. After the mixture is prepared and aliquoted into tubes, place them into RT-qPCR platform.

SUGGESTED MIXTURE

a. When using ViPrimePLUS gene detection kits:

Components	Reaction (1X)
At Taq One Step RT-qPCR Green	10µl
Master Mix II	
Primer/Probe Mix	1µl
Template (25ng)	5µl
Nuclease free water	4µl
Final Volume	20µl

b. When using user's supplied primers and probe:

Components	Reaction (1X)
At Taq One Step RT-qPCR Green	10µl
Master Mix II	
Primers (6pmols Forward & Reverse)	Xμl
Probe (3pmols)	Xμl
Template (25ng)	Xμl
Nuclease free water	Xμl
Final Volume	20µl

CYCLING PROGRAM

a. For Tagman® gene detection kits

Step	Cycles	Temp	Time
Reserve Transcription	1	55°C	10mins
Enzyme activation	1	95°C	8mins
Denaturation	40**	95°C	10secs
Data Collection*		60°C	60secs

^{*}Fluorogenic data should be collected during this step through the FAM channel.

b. For EvaGreen® detection kits

Step	Cycles	Temp	Time
Reverse Transcription	1	55°C	10mins
Enzyme activation	1	95°C	8mins
Denaturation	40***	95°C	10secs
Data Collection*		60°C	60secs
Melt Curve**			

^{*}Fluorogenic data should be collected during this step through the EvaGreen® channel.

PREVENTION OF CONTAMINATION

RT-qPCR amplification is a very sensitive RNA amplification reaction; therefore extra care should be taken to eliminate the possibility of contamination with any foreign RNA templates.

- Use separate clean areas for preparation of samples, reaction mixture and for cycling.
- Clean lab bench and equipments periodically with 3% hydrogen peroxide or 70% ethanol.
- Wear fresh gloves. Change gloves whenever suspect that they are contaminated.
- Use sterile tubes and pipette tips with aerosol filters for PCR reaction set up.
- With every PCR reaction set up, perform a contamination control reaction without template RNA.

TROUBLESHOOTING	
Possibility	Suggestion
Problem: Negative cor gives positive result	ntrol / no template control
Carry over contamination	Change nuclease-free water. Use fresh aliquots of reagents. Use filtered tips. Load positive control last.
Problem: No signal de	tected
Incorrect programming of instrument	Check program.
2. Reagents expired	Check the expiry date of reagents before repeat.
Storage condition not complying with instructions	Check storage condition properly and store at correct storage condition to avoid the degradation of reagents.
Problem: Early / late si	ignal detected than expected
Genomic DNA/RNA contamination or multiple products Unspecific	DNase or RNase treatment of template before qPCR; re- design primers to increase specificity Re-design primers to
products or primer dimers detected	increase specificity
Limiting reagents or degraded reagents such as master mix	Check calculations for master mix; repeat experiment using fresh stock solutions

4. Poor efficiency during PCR reaction 5. Unanticipated

Re-design primers to a different region of the target sequence Keep the GC content to

between 30-50%

LEGAL DISCLAIMER

variants within target sequence

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WARRANTY AND LIMITED LIABILITY

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The manufacturer will not be liable for any damage caused by misuse, improper handling and storage; noncompliance with precautions and procedures, and damages caused by events occurring after the product is released.

EvaGreen® is a registered trademark of Biotium, Inc. ROX™ is a registered trademark of Applara Corporation, US.

^{**}A further 10 cycles can be added to generate the complete amplification plot for low copy number targets which giving late detection.

^{**}A post PCR run melt curve can be used to prove the specificity of primers. See the manufactures instructions for your hardware platform.

^{***}A further 10 cycles can be added to generate the complete amplification plot for low copy number targets which giving late detection.



ViPrimePLUS One Step At Taq RT-qPCR Green Master Mix II with ROX(EvaGreen® Dye)

Product code: QLMM08-R **Packsize:** 150 reactions

Lot No.: Expiry Date:

DESCRIPTION

ViPrimePLUS One Step At *Taq* RT-qPCR Green Master Mix II is next generation first choice mix designed for fast and easy one step real-time PCR reaction set up. The improved formulation of master mix contains unique thermostable M-MULV enzyme, Hot Start *Taq* DNA Polymerases, EvaGreen® dye, ROX dye as well as MgCl₂ and buffer components at optimal concentrations. The M-MULV enzyme has an optimal operating temperature and higher affinity for primer template duplexes which allows very rapid processing during RT step. EvaGreen® dye in master mix is environmentally safe and highly stable which can be formulated with relative high dye concentration to maximize fluorescence signal without PCR inhibition.

ViPrimePLUS One Step At*Taq* RT-qPCR Green Master Mix II can be used to amplify any RNA template including mRNA, total RNA and viral sequences. The improved formulation of RT-qPCR master mix can detect extremely low copy number targets very specifically with high efficiency that gives CT values close to the theoretical time of detection. The ViPrimePLUS One Step At*Taq* RT-qPCR Green Master Mix II is a complete system for use in one step real-time PCR, the removal of a separate reverse transcription step reduces handling errors as well as the time taken to obtain results. The formation of primer dimers and non-specific products is prevented leading to optimum sensitivity and specificity.

ViPrimePLUS One Step At *Taq* RT-qPCR Green Master Mix II has several formulations optimized to be used with most of real-time PCR instruments. The improved sensitivity and consistency of ViPrimePLUS One Step At *Taq* RT-qPCR Green Master Mix II in standard cycling conditions gives the industry leading performance in fast cycling conditions.

APPLICATIONS

All kinds of RNA sample material suited for RT-qPCR amplification can be used.

FEATURES

- One step real time RT-qPCR reaction set up
- Equipped with thermostable M-MULV enzyme and Hot Start Taq DNA Polymerases
- Contain EvaGreen® dye highest dye stability and safety
- Minimal PCR inhibition
- Reliable quantification of extremely low copy number targets
- Optimal performance for highly sensitive and specific RT-qPCR reaction
- Compatible with most of the real-time PCR platforms

COMPONENTS

3 x 0.6ml aliquots of master mix 0.6ml aliquots of "no RT control master mix standard"

STORAGE

Stable at -20°C up to the expiry date stated. Store all components at -20°C upon arrival. Keep in aliquot to reduce freeze-thaw cycles.

QUALITY CONTROL

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LIMITATION OF USE

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INSTRUMENTS

To calibrate a real-time PCR reaction, various formulations of master mixes are available for most of the platforms.

Master Mixes with Compatible Hardware

ViPrimePLUS One Step At*Taq*QLMM08 RT-qPCR Green Master Mix II
(EvaGreen® Dye)

Biometra qTower, BioRad iCycler, BioRad IQ4, BioRad IQ5, Cepheid SmartCycler®, Eppendorf Mastercycler, Fluidigm BioMark™, Illumina Eco, MJ Chromo4, Opticon, PCRMax Eco™, Roche lightcycler® 480, lightcycler® LC96 and lightcycler® Nano Platforms, RotorGene, Roche Capillary Lightcycler 1.0-2.0, Stratagene MX MX4000P®, MX3000P®, MX3005®, Thermo PikoReal™

QLMM08-LR

ViPrimePLUS One Step At Taq RT-qPCR Green Master Mix II with Low ROX (EvaGreen® Dye)

Applied Biosystems 7500 and 7500 FAST platform, QuantStudio™, ViiA7

QLMM08-R

ViPrimePLUS One Step At Taq RT-qPCR Green Master Mix II with ROX (EvaGreen® Dye)

Applied Biosystems 7000, 7300, 7700, 7900 and 7900HT FAST platforms, GeneAmp® 5700, StepOne™, StepOne™ PLUS

PROTOCOL

- 1. Keep the RT-qPCR master mix protected from light before and after use.
- 2. Aliquot the RT-qPCR master mix to minimize freezethaw cycles and light exposure.
- 3. Reserve plate positions for positive (control RNA) and negative (water or buffer) controls.
- 4. When preparing mixes, always calculate the volume according to the number of reactions that needed plus one extra.
- 5. After the mixture is prepared and aliquoted into tubes, place them into RT-qPCR platform.

SUGGESTED MIXTURE

a. When using ViPrimePLUS gene detection kits:

Components	Reaction (1X)
At Taq One Step RT-qPCR Green	10µI
Master Mix II	
Primer/Probe Mix	1µl
Template (25ng)	5µl
Nuclease free water	4µl
Final Volume	20µl

b. When using user's supplied primers and probe:

Components	Reaction (1X)
At Taq One Step RT-qPCR Green	10µl
Master Mix II	
Primers (6pmols Forward & Reverse)	ΧμΙ
Probe (3pmols)	Xμl
Template (25ng)	Xμl
Nuclease free water	Xμl
Final Volume	20µl

CYCLING PROGRAM

a. For Taqman® gene detection kits

Step	Cycles	Temp	Time
Reserve Transcription	1	55°C	10mins
Enzyme activation	1	95°C	8mins
Denaturation	40**	95°C	10secs
Data Collection*		60°C	60secs

^{*}Fluorogenic data should be collected during this step through the FAM channel.

b. For EvaGreen® detection kits

Step	Cycles	Temp	Time
Reverse Transcription	1	55°C	10mins
Enzyme activation	1	95°C	8mins
Denaturation	40***	95°C	10secs
Data Collection*		60°C	60secs
Melt Curve**			

^{*}Fluorogenic data should be collected during this step through the EvaGreen® channel.

PREVENTION OF CONTAMINATION

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- Clean lab bench and equipments periodically with 3% hydrogen peroxide or 70% ethanol.
- Wear fresh gloves. Change gloves whenever suspect that they are contaminated.
- Use sterile tubes and pipette tips with aerosol filters for PCR reaction set up.
- With every PCR reaction set up, perform a contamination control reaction without template RNA.

TROUBLESHOOTING				
Possibility	Suggestion			
Problem: Negative control / no template control gives positive result				
Carry over contamination	Change nuclease-free water. Use fresh aliquots of reagents. Use filtered tips. Load positive control last.			
Problem: No signal detected				
Incorrect programming of instrument	Check program.			
2. Reagents expired	Check the expiry date of reagents before repeat.			
Storage condition not complying with instructions	Check storage condition properly and store at correct storage condition to avoid the degradation of reagents.			
Problem: Early / late signal detected than expected				
Genomic DNA/RNA contamination or multiple products Unspecific products or primer dimers detected	DNase or RNase treatment of template before qPCR; re- design primers to increase specificity Re-design primers to increase specificity			
Limiting reagents or degraded reagents such as master mix	Check calculations for master mix; repeat experiment using fresh stock solutions			

4. Poor efficiency during PCR reaction

Re-design primers to a

5. Unanticipated variants within target sequence different region of the target sequence

Keep the GC content to between 30-50%

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^{**}A further 10 cycles can be added to generate the complete amplification plot for low copy number targets which giving late detection.

^{**}A post PCR run melt curve can be used to prove the specificity of primers. See the manufactures instructions for your hardware platform.

^{***}A further 10 cycles can be added to generate the complete amplification plot for low copy number targets which giving late detection.