

# Jade™ qPCR MasterMix

(Catalog # M1510-500; 500 Rxns; Store at -20 °C)

03/21

## I. Introduction:

BioVision's Jade™ qPCR MasterMix provides a convenient, reliable and robust setup for performing quantitative real-time analysis of DNA samples. This ready-to-use 2X qPCR MasterMix contains BioVision's strategically-engineered, next generation Taq Polymerase, **ExpressTaq™ DNA Polymerase**, which provides rapid extension rates and robust performance. ExpressTaq™ DNA Polymerase has 5'-3' polymerase and 5'-3' exonuclease activities, lacks 3'-5' exonuclease activity, and produces 3'-dA-tailed amplicons. With specialized reaction conditions, this polymerase provides increased processivity, yields, and sensitivity, while shortening reaction times by up to 70%, compared to wild-type **Taq DNA polymerase**. qPCR products made with ExpressTaq™ can be used with TA cloning vectors.

## II. Key Features:

- Simple reaction set-up
- Decrease in reaction times by 70%
- High Sensitivity and Superior Performance
- Accurate quantification of different gene targets
- Dye based qPCR

## III. Applications:

- gene expression analysis and TA cloning

## IV. Contents:

Components	M1510-500 (500 Rxns)	Part Number
Jade™ 2X qPCR MasterMix	4 x 1.25 ml	M1510-500-1
ROX Reference Dye	50 $\mu$ l	M1510-500-2

## V. User Supplied Reagents and Equipment:

- Pipettes, Pipette tips
- PCR tubes
- Nuclease free water
- Primers (forward and reverse)
- DNA Template
- QPCR instrument

## VI. Shipping and Storage Conditions:

The MasterMix is shipped in dry ice. All the components should be stored at -20 °C.

## VII. Protocol:

The recommended amount of ROX Reference Dye to be added into the MasterMix may vary depending on the qPCR machine type. Please refer to the table in the selection guide for information on ROX and qPCR machine type.

- No ROX equipment: Not needed.
- Low ROX equipment: 1  $\mu$ l/1.25 ml MasterMix or 22.5  $\mu$ l/25 ml MasterMix.
- High ROX equipment: 11  $\mu$ l/1.25 ml MasterMix or 225  $\mu$ l/25 ml MasterMix.

1. Mix the individual components before use and **assemble the reaction** on ice.

Component	Volume
Jade™ 2X qPCR MasterMix *	10 $\mu$ l
Forward Primer (10 $\mu$ M)	0.5 $\mu$ l
Reverse Primer (10 $\mu$ M)	0.5 $\mu$ l
Template DNA	Variable (100 ng genomic DNA)
Nuclease-free water	up to 20 $\mu$ l

\*The reaction buffer contains 1.5 mM Mg<sup>2+</sup>

2. Gently mix the reaction components and briefly centrifuge. Use **thermocycling conditions** below:

Step	Temperature	Duration		Cycles
		Standard	Fast	
Enzyme Activation	95 °C	3 min	20 sec	1
Denaturation	95 °C	15 sec	1 sec	40
Annealing/Extension	60 °C	1 min	10 sec	
Melting curve	Refer to specific guidelines for the instrument used			

3. The Specialized buffer gives higher yields, sensitivity and specificity compared to wild-type Taq polymerase.
4. Start qPCR as soon as the reaction mixture is prepared and always keep the reaction mixture chilled on ice until starting the qPCR.
5. Use the fast thermocycling condition with miRNA cDNA templates or any other appropriate applications.

FOR RESEARCH USE ONLY!

**VIII. Selection Guide For ROX and qPCR Machine Type:**

MACHINE TYPE	qPCR MACHINE
High ROX Machines	<ul style="list-style-type: none"> <li>• ABI® 7000, 7300, 7700, 7900, 7900HT, StepOnePlus™, StepOne™, OpenArray, PRISM™ Sequencing Detection Series</li> <li>• Biometra TOptical</li> <li>• Fluidigm BioMark™</li> <li>• Wafergene SmartChip System</li> <li>• TianLong TL998 System</li> </ul>
Low ROX Machines	<ul style="list-style-type: none"> <li>• ABI® 7500, 7500 Fast, Viia™ 7, QuantStudio, QuantStudio 3/5/6/7</li> <li>• BioGene InSyte™</li> <li>• Illumina Eco</li> <li>• Analytikjena qTower Series</li> <li>• Stratagene® Mx3000, Mx3005, Mx4000</li> </ul>
No ROX machines	<ul style="list-style-type: none"> <li>• BioRad® CFX96, CFX384, Chromo4™, CFX Connect™, Opticon 2, MiniOpticon™</li> <li>• Roche LightCycler® (480, 1536, Nano)</li> <li>• MJ Research Opticon™, Opticon™ 2, Chromo® 4</li> <li>• Eppendorf™ Realplex 4</li> <li>• BioGene SynChron™</li> <li>• Corbett Rotor-gene® (3000, 6200, 62H0, 6500, 65H0, 6600)</li> <li>• Eppendorf Mastercycler® realplex (s, 4, 4s), Pro (S, 384), Nexus (gradient, eco, flat)</li> <li>• Cepheid SmartCycler, GeneXpert</li> <li>• Enigma™ ML</li> <li>• Idaho LightScanner® (24, 32), RapidCycler®2, R.A.P.I.D (LT, LT Food), RAZOR EX, JBAIDS</li> <li>• Qiagen Rotor-Gene™ (Q, 6000)</li> <li>• Takara Dice™</li> <li>• Thermo Scientific PikoReal</li> <li>• DNA-Technology DT96, DTlite, DT-322</li> <li>• Bioer LineGene (3310/3320, K FQD-48A, I, II, 9620, 9640, 9660, 9680)</li> <li>• Bioneer Exicycler™</li> </ul>

**IX. Related Products:**

BioVision Product Name	Cat. No.	Sizes
HiFidelity™ 2X PCR MasterMix	M1507	800 Rxns
ExpressTaq™ DNA Polymerase	M1504	400 Rxns
HiFidelity™ DNA Polymerase	M1505	400 Rxns
FireTaq™ DNA Polymerase	M1506	400 Rxns
ExpressTaq™ 2X PCR MasterMix	M1508	800 Rxns
HiFidelity™ One Step RT Kit	M1503	100 Rxns
ExpressTaq™ qPCR MasterMix	M1509	500 Rxns

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