OptiGene
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LAMP User Guide - Polymerases

Using our readymade and optimised master mix is the most convenient way of running LAMP, however, if more flexibility is required then there is an option to buy the individual polymerases.

	5-3' Exo	3'-5' Exo	Strand Displacement	Reverse transcriptase	Thermal Stability	Primary Applications
GspSSD DNA Polymerase I, Large fragment			***	**	*	Fast isothermal amplification of DNA and RNA
GspSSD2.0 DNA Polymerase I, Large fragment			****	****	*	Fastest isothermal amplification of DNA and RNA
GspM3.0 DNA Polymerase I, Large Fragment			****	**	*	Fast isothermal amplification of DNA a direct replacement for Bst DNA Polymerase (Large fragment).
Tin(exo-) DNA Polymerase I, Large fragment			*		****	Highly thermostable enzyme suitable for isothermal amplification of DNA.

Enzymes are available in various pack sizes and concentrations. They are supplied with 50mM Mg and their optimised 10x iBuffer. Please see our website for the full range of isothermal polymerases available for purchase

http://www.optigene.co.uk/products-reagents/

Reaction setup

Reagent	Final concentration
10x supplied iBuffer	1x
OptiGene Isothermal DNA Polymerase	8U
$MgSO_4$	3-8mM[1]
dNTP mix	0.4-1mM each[1]
FIP/BIP primers	0.8-2.0µM
F3/B3 primers	0.2µM
LoopF/LoopB primers	0.4-1.0µM
DNA or RNA[2] sample	>10 copies
Betaine[3]	0.5-1M
Nuclease free water	to 25µl

[1]Concentrations have been optimised for real-time fluorescence based detection. Additional $MgSO_4$ and dNTPs are required for turbidometric or agarose gel detection. However, OptiGene strongly discourage opening the amplified reaction tube due to the extremely high risk of contamination

[2]The addition of 0.5U AMV-RT is recommended for optimum RT-LAMP reaction sensitivity

[3]The addition of betaine is highly recommended to achieve consistent amplification and to improve the sensitivity and specificity of low copy detection and is especially recommended for RT-LAMP reactions

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Reaction Conditions

Run isothermal reactions on a Genie® or a qPCR instrument in combination with a dsDNA intercalating fluorescent dye to enable real time detection.

Amplification: 65°C for 20-30mins
Anneal: 98-80°C (0.01°C/sec)

Additional Support

Please see our other user guides for help with assay design, primer mixes and optimisations

http://www.optigene.co.uk/support/