ACTaq™ PCR Enzyme and Mastermix

Real-Time PCR

Real-Time ACTaq™ PCR Mastermix 2x, Regular Level ROX
Real-Time ACTaq™ PCR Mastermix 2x, Low Level ROX
Real-Time ACTaq™ PCR Mastermix 2x, NO ROX

Conventional PCR

ACTaq™ DNA Polymerase
ACTaq™ Blue DNA Polymerase
ACTaq™ Hot-Start DNA Polymerase
ACTaq™ Blue Hot-Start DNA Polymerase
ACTaq™ High Fidelity DNA Polymerase
ACTaq™ Blue High Fidelity DNA Polymerase
ACTaq™ Long DNA Polymerase
ACTaq™ Blue Long DNA Polymerase

ACTaq™ Mastermix
ACTaq™ Blue Mastermix
ACTaq™ Hot-Start Mastermix
ACTaq™ Blue Hot-Start Mastermix
ACTaq™ High Fidelity Mastermix
ACTaq™ Blue High Fidelity Mastermix

dNTPs Set and Mix

2015

Real-Time ACTaq™PCR Mastermix

Product:

Real-Time PCR Mastermix 2x, Regular Level ROX	**P/N: ACT-RT400**
Real-Time PCR Mastermix 2x, Low Level ROX	**P/N: ACT-RT400LR**
Real-Time PCR Mastermix 2x, NO ROX	**P/N: ACT-RT400RF**

Product Description: **Real-Time PCR mastermix 2x (Regular, Low, or NO level ROX) is an optimized ready-to-use mastermix containing unique reaction buffer, dNTP, Hot-Start Taq DNA polymerase, and QPCR dye. The user can easily use todetect adnquantify the expression of target genes via Real-Time PCR Instrument.**

Storage Condition: 20ºC. Stable for 12 months in constant freezer temperature.

Unit Definition: One unit of the amount of enzyme that incorporates 10nmols of dNTPs into acid-insoluble material in 30 minutes at 72ºC.

Quality Control: ACTaq™ DNA Polymerase is highly purified. Free of contaminating endonucleases, exonucleases, and nicking activities. The purity of the enzyme is evaluated by SDS-PAGE at >95% purity.

Real-Time PCR Reagent Instrument Compatibility Chart

Real-Time ACTaq™PCR Mastermix

Product:	**ACTaq™ DNA Polymerase**
Catalog Number:	**E2100**
Product Description:	ACTaq™ DNA Polymerase originates from *Thermus Aquaticus* with molecular weight of 94KDa. For use in DNA fragment extension amplification reactions with DNA having dA overhang on 3' ends; at extension amplification speed of 1200 bases per minute and optimized between 65-75ºC. Optimized for best performance when using dNTP concentration at 100-300mM, 1.5-3.0mM Mg^{2+} concentration, and pH at 8.1-9.2.
Storage Condition:	20ºC. Stable for 12 months in constant freezer temperature.
Concentration:	5 Units/µL
Unit Definition:	One unit of the amount of enzyme that incorporates 10nmols of dNTPs into acid-insoluble material in 30 minutes at 72ºC.
Product Components:	ACTaq™ DNA Polymerase 10x PCR reaction buffer with Mg^{2+} **(Buffer and $MgCl_2$ concentrations are customizable upon request)**
Storage Buffer:	10mM Tris-HCl (pH 8.0), 100mM KCl, 0.1mM EDTA, 1mM DTT, 0.5% Tween® 20, 0.5% NP-40, 50% Glycerol.
PCR Reaction Buffer:	10x PCR buffer with Mg^{2+}. 15mM $MgSO_4$, 100mM KCl, 160mM $(NH_4)_2SO_4$, 200mM Tris-HCl, pH 8.8, 0.5% Triton X100, 1mg/ml BSA.
Quality Control:	ACTaq™ DNA Polymerase is highly purified. Free of contaminating endonucleases, exonucleases, and nicking activities. The purity of the enzyme is evaluated by SDS-PAGE at >95% purity.

Real-Time ACTaq™PCR Mastermix

Product:	**ACTaq™ Blue / Red DNA Polymerase**
Catalog Number:	**E2100B (blue), E2100R (red)**
Product Description:	ACTaq™ Blue / Red DNA Polymerase originates from *Thermus Aquaticus* with molecular weight of 94KDa. ACTaq™ Blue or Red differs from ACTaq™ DNA Polymerase in that it contains blue / red dye added to the enzyme used as tracking and loading dye purposes as no loading buffer is required.
Storage Condition:	-20ºC. Stable for 12 months in constant freezer temperature.
Concentration:	1 Units/µL
Unit Definition:	One unit of the amount of enzyme that incorporates 10nmols of dNTPs into acid-insoluble material in 30 minutes at 72ºC.
Product Components:	ACTaq™ Blue / Red DNA Polymerase 10x PCR reaction buffer with Mg^{2+} **(Buffer and $MgCl_2$ concentrations are customizable upon request)**
Storage Buffer:	10mM Tris-HCl (pH 8.0), 100mM KCl, 0.1mM EDTA, 1mM DTT, 0.5% Tween® 20, 0.5% NP-40, 50% Glycerol.
PCR Reaction Buffer:	10x PCR buffer with Mg^{2+}. 15mM $MgSO_4$, 100mM KCl, 160mM $(NH_4)_2SO_4$, 200mM Tris-HCl, pH 8.8, 0.5% Triton X100, 1mg/ml BSA.
Quality Control:	ACTaq™ Blue / Red DNA Polymerase is highly purified. Free of contaminating endonucleases, exonucleases, and nicking activities. The purity of the enzyme is evaluated by SDS-PAGE at >95% purity.

Real-Time ACTaq™PCR Mastermix

Product:	**ACTaq™ Hot-Start DNA Polymerase**
Catalog Number:	**E3500**
Product Description:	ACTaq™ Hot-Start DNA Polymerase originates from *Thermus Aquaticus* with molecular weight of 94KDa. ACTaq™ Hot-Start DNA Polymerase differs from ACTaq™ DNA Polymerase such that it contains antibody binding Taq which enables the activation of Taq only at 95ºC. $The activation step eliminates the presence of non-specifics such as primer-dimer formation and mis-primed products, by ensuring the enzyme is inactive at temperature below 95ºC. ACTaq™ Hot-Start DNA Polymerase reduces risk of contamination, making reaction preparation at ease when carried out in room temperature.
Hot-Start Activation Step:	Pre-incubate 5 minutes at 95ºC prior to thermal cycling.
Storage Condition:	-20ºC. Stable for 12 months in constant freezer temperature.
Concentration:	5 Units/µL
Unit Definition:	One unit of the amount of enzyme that incorporates 10nmols of dNTPs into acid-insoluble material in 30 minutes at 72ºC.
Product Components:	ACTaq™ Hot-Start DNA Polymerase (Antibody bound recombinant Taq DNA Polymerase), 10x PCR reaction buffer with Mg^{2+} **(Buffer and $MgCl_2$ concentrations are customizable upon request)**
Storage Buffer:	10mM Tris-HCl (pH 8.0), 100mM KCl, 0.1mM EDTA, 1mM DTT, 0.5% Tween® 20, 0.5% NP-40, 50% Glycerol.
PCR Reaction Buffer:	10x PCR buffer with Mg^{2+}. 15mM $MgSO_4$, 100mM KCl, 160mM $(NH_4)_2SO_4$, 200mM Tris-HCl, pH 8.8, 0.5% Triton X100, 1mg/ml BSA.
Quality Control:	ACTaq™ Hot-Start DNA Polymerase is highly purified. Free of contaminating endonucleases, exonucleases, and nicking activities. The purity of the enzyme is evaluated by SDS-PAGE at >95% purity.

Real-Time ACTaq™PCR Mastermix

Product:	**ACTaq™ Blue / Red Hot-Start DNA Polymerase**
Catalog Number:	**E3500B (blue), E3500R (red)**
Product Description:	ACTaq™ DNA Polymerase originates from Thermus Aquaticus with molecular weight of 94KDa. ACTaq™ Blue / Red Hot-Start DNA Polymerase differs from ACTaq™ DNA Polymerase such that it contains antibody binding Taq which enables the activation of Taq only at 95oC. Additionally, it also comes with preloaded blue or red tracking and loading dye. The activation step eliminates the presence of non-specifics such as primer-dimer formation and mis-primed products, by ensuring the enzyme is inactive at temperature below 95ºC. ACTaq™ Blue / Red Hot-Start DNA Polymerase reduces the risk of contamination, making reaction preparation at ease when carried out in room temperature.
Hot-Start Activation Step:	Pre-incubate 5 minutes at 95ºC prior to thermal cycling.
Storage Condition:	-20ºC. Stable for 12 months in constant freezer temperature.
Concentration:	5 Units/µL
Unit Definition:	One unit of the amount of enzyme that incorporates 10nmols of dNTPs into acid-insoluble material in 30 minutes at 72ºC.
Product Components:	ACTaq™ Blue / Red Hot-Start DNA Polymerase (Antibody bound recombinant Taq DNA Polymerase) 10x PCR reaction buffer with Mg^{2+} **(Buffer and $MgCl_2$ concentrations are customizable upon request)**
Storage Buffer:	10mM Tris-HCl (pH 8.0), 100mM KCl, 0.1mM EDTA, 1mM DTT, 0.5% Tween® 20, 0.5% NP-40, 50% Glycerol.
PCR Reaction Buffer:	10x PCR buffer with Mg^{2+}. 15mM $MgSO_4$, 100mM KCl, 160mM $(NH_4)_2SO_4$, 200mM Tris-HCl, pH 8.8, 0.5% Triton X100, 1mg/ml BSA.
Quality Control:	ACTaq™ Blue / Red Hot-Start DNA Polymerase is highly purified. Free of contaminating endonucleases, exonucleases, and nicking activities. The purity of the enzyme is evaluated by SDS-PAGE at >95% purity.

Real-Time ACTaq™PCR Mastermix

Product:	**ACTaq™ High Fidelity DNA Polymerase**
Catalog Number:	**E2000**
Product Description:	ACTaq™ High Fidelity DNA Polymerase is a thermo stable enzyme and exhibits the lower error rate of DNA amplification. For use in DNA fragment extension amplification reactions with 3' to 5' exonuclease proofreading activity; at extension amplification speed of 1000 bases per minute and optimized between 65-75ºC, when using dNTP concentration at 100-300µM, Mg^{2+} concentration at 2.0-3.0mM, and pH at 8.1-9.1. ACTaq™ High Fidelity DNA Polymerase generates blunt-ended fragment.
Storage Condition:	-20ºC. Stable for at least 12 months in constant freezer temperature.
Concentration:	5 Units/µL
Unit Definition:	One unit of the amount of enzyme that incorporates 10nmols of dNTPs into acid-insoluble material in 30 minutes at 72ºC.
Product Components:	ACTaq™ High Fidelity DNA Polymerase 10x PCR reaction buffer with Mg^{2+} **(Buffer and $MgCl_2$ concentrations are customizable upon request)**
Storage Buffer:	10mM Tris-HCl (pH 8.0), 100mM KCl, 0.1mM EDTA, 1mM DTT, 0.5% Tween® 20, 0.5% NP-40, 50% Glycerol.
PCR Reaction Buffer:	10x PCR buffer with Mg^{2+}. 20mM $MgSO_4$, 100mM KCl, 160mM $(NH_4)_2SO_4$, 200mM Tris-HCl, pH 8.8, 0.5% Triton X100, 1mg/ml BSA.
Quality Control:	Activity of PCR for 1Kb fragment. Free of contaminating endonucleases, exonucleases, and nicking activities. The purity of the enzyme is evaluated by SDS-PAGE at >95% purity.

Real-Time ACTaq™PCR Mastermix

Product:	**ACTaq™ Long DNA Polymerase**
Catalog Number:	**E2200**
Product Description:	ACTaq™ Long DNA Polymerase is specialty taq for high processivity and fidelity at extension amplification speed of 1000 bases per minute and optimized between 65-72ºC, when using dNTP concentration at 100-500µM, Mg^{2+} concentration at 1.5-3.0mM, and pH at 8.1-9.2.
Storage Condition:	-20ºC. Stable for 12 months in constant freezer temperature.
Concentration:	5 Units/µL
Unit Definition:	One unit of the amount of enzyme that incorporates 10nmols of dNTPs into acid-insoluble material in 30 minutes at 72ºC.
Product Components:	ACTaq™ Long DNA Polymerase, 10x PCR reaction buffer with Mg^{2+} **(Buffer and $MgCl_2$ concentrations are customizable upon request)**
Storage Buffer:	10mM Tris-HCl (pH 8.0), 100mM KCl, 0.1mM EDTA, 1mM DTT, 0.5% Tween® 20, 0.5% NP-40, 50% Glycerol.
PCR Reaction Buffer:	10x PCR buffer with Mg^{2+}. 15mM $MgSO_4$, 100mM KCl, 160mM $(NH_4)_2SO_4$, 200mM Tris-HCl, pH 8.8, 0.5% Triton X100, 1mg/ml BSA.
Quality Control:	ACTaq™ Long DNA Polymerase are highly purified. Free of contaminating endonucleases, exonucleases, and nicking activities. The purity of each enzyme is evaluated by SDS-PAGE at >95% purity.

Real-Time ACTaq™PCR Mastermix

Product:	**ACTaq™ Mastermix**
Catalog Number:	**E2110**
Dilution:	25µL of 2X *Taq* Mastermix is required for each 50µL reaction.
Product Description:	ACTaq™ Mastermix is complete “ready-to-go” 2X reaction mix which only requires consumer researcher to add water, template and primers. Taq DNA Polymerase originates from Thermus Aquaticus with molecular weight of 94KDa. For use in DNA fragment extension amplification reactions with DNA having dA overhang on 3’ ends; at extension amplification speed of 1200 bases per minute and optimized between 65-75ºC. Optimized for best performance when using dNTP concentration at 100-300mM, 1.5-3.0mM Mg2+ concentration, and pH at 8.1-9.2.
Storage Condition:	-20ºC. Stable for 12 months in constant freezer temperature.
Unit Definition:	One unit incorporates 10nmol dNTP into acid-insoluble material in 30 minutes at 72ºC.
Product Composition:	2.5 Units of ACTaq™ DNA Polymerase, 20mM Tris-HCl (pH 9.0), 3.0mM $MgCl_2$, 20mM KCl, 16mM $(NH_4)_2SO_4$, 0.1% Triton X-100, 1.6mM dNTP mix (0.4mM each).
Quality Control:	ACTaq™ DNA Polymerase is highly purified. Free of contaminating endonucleases, exonucleases, and nicking activities. The purity of the enzyme is evaluated by SDS-PAGE at >95% purity.

Real-Time ACTaq™PCR Mastermix

Product:	**ACTaq™ Blue / Red Mastermix**
Catalog Number:	**E2110B (blue), E2110R (red)**
Dilution:	25µL of 2X ACTaq™ Blue / Red Mastermix is required for each 50µL reaction.
Product Description:	ACTaq™ Blue / Red Mastermix is complete “ready-to-go” 2X reaction mix which only requires consumer researcher to add water, template and primers. ACTaq™ Blue / Red Mastermix differs from ACTaq™ Mastermix such that it contains blue / red dye added to the enzyme used for tracking and loading dye purposes, and therefore no loading buffer is required. Taq ACTaq™ DNA Polymerase originates from Thermus Aquaticus with molecular weight of 94KDa. For use in DNA fragment extension amplification reactions with DNA having dA overhang on 3’ ends; at extension amplification speed of 1200 bases per minute and optimized between 65-75ºC. Optimized for best performance when using dNTP concentration at 100-300mM, 1.5-3.0mM Mg2+ concentration, and pH at 8.1-9.2.
Storage Condition:	-20ºC. Stable for 12 months in constant freezer temperature.
Unit Definition:	One unit incorporates 10nmol dNTP into acid-insoluble material in 30 minutes at 72ºC.
Product Composition:	2.5 Units of ACTaq™ Blue / Red DNA Polymerase , 20mM Tris-HCl (pH 9.0), 3.0mM $MgCl_2$, 20mM KCl, 16mM $(NH_4)_2SO_4$, 0.1% Triton X-100, 1.6mM dNTP mix (0.4mM each).
Quality Control:	ACTaq™ Blue / Red DNA Polymerase is highly purified. Free of contaminating endonucleases, exonucleases, and nicking activities. The purity of the enzyme is evaluated by SDS-PAGE at >95% purity.

Real-Time ACTaq™PCR Mastermix

Product:	**ACTaq™ Hot-Start Mastermix**
Catalog Number:	**E3510**
Dilution:	25µL of 2X ACTaq™ Hot-Start Mastermix is required for each 50µL reaction.
Product Description:	ACTaq™ Hot-Start Mastermix is complete “ready-to-go” heat-activated 2X reaction mix which only requires the consumer researcher to add water, template and primers, and then pre-heat to 95ºC for reaction activation. It is one of most convenient way to set up PCR reaction. Not only it comes with the advantage of Hot-Start Taq enzyme, it goes further by including all of the “ingredients” required for thermal cycling. Therefore, reduce the risk of contamination with ease and quick PCR setup, and ensuring greater reproducibility.
Hot-Start Activation Step:	Pre-incubate 5 minutes at 95ºC prior to thermal cycling.
Storage Condition:	-20ºC. Stable for 12 months in constant freezer temperature.
Unit Definition:	One unit of the amount of enzyme required to catalyze the incorporation of 1,000 nucleotides per minute at 65-72ºC.
Product Composition:	2.5 units of ACTaq™ Hot-Start DNA Polymerase (Antibody bound recombinant Taq DNA Polymerase), 20mM Tris-HCl (pH 9.0), 3.0mM $MgCl_2$, 20mM KCl, 16mM $(NH_4)_2SO_4$, 0.1% Triton X-100, 1.6mM dNTP mix (0.4mM each).
Quality Control:	ACTaq™ Hot-Start DNA Polymerase is highly purified. Free of contaminating endonucleases, exonucleases, and nicking activities. The purity of the enzyme is evaluated by SDS-PAGE at >95% purity.

Real-Time ACTaq™PCR Mastermix

Product: ACTaq™ Blue / Red Hot-Start Mastermix

Catalog Number:	**E3510B (blue), E3510R (red)**
Dilution:	25µL of 2X ACTaq™ Blue / Red Hot-Start Mastermix is required for each 50µL reaction.
Product Description:	ACTaq™ Blue / Red Hot-Start Mastermix is complete "ready-to-go" heat–activated 2X reaction mix which only requires the consumer researcher to add water, template and primers, and then pre-heat to 95ºC for reaction activation. It is one of most convenient way to set up PCR reaction. Not only it comes with the advantage of Hot-Start Taq enzyme, it goes further by including all of the "ingredients" required for thermal cycling and blue or red tracking and loading dye
Hot-Start Activation Step:	Pre-incubate 5 minutes at 95ºC prior to thermal cycling.
Storage Condition:	-20ºC. Stable for 12 months in constant freezer temperature.
Unit Definition:	One unit of the amount of enzyme required to catalyze the incorporation of 1,000 nucleotides per minute at 65-72ºC.
Product Composition:	2.5 units of ACTaq™ Blue / Red Hot-Start DNA Polymerase (Antibody bound recombinant Taq DNA Polymerase), 20mM Tris-HCl (pH 9.0), 3.0mM $MgCl_2$, 20mM KCl, 16mM $(NH_4)_2SO_4$, 0.1% Triton X-100, 1.6mM dNTP mix (0.4mM each).
Quality Control:	ACTaq™ Blue / Red Hot-Start DNA Polymerase is highly purified. Free of contaminating endonucleases, exonucleases, and nicking activities. The purity of the enzyme is evaluated by SDS-PAGE at >95% purity.

Real-Time ACTaq™PCR Mastermix

Product: **Deoxynucleoside Triphosphate (dNTP)**

Catalog Numbers:

Cat Number	Deoxynucleotide
2013MIX	dNTP Mix
2013SET	dNTP Set
2013A	dATP
2013G	dGTP
2013C	dCTP
2013T	dTTP

Product Description: dNTP Mix (p/n: 2013MIX) is premix solution containing 25mM of each, supplied in one tube, with 100mM total conc. at 1ml.
dNTP Set (p/n: 2013SET) is a set of dNTP consisting of 4 separate tubes (4x1ml) each with 100mM concentration of dATP, dGTP, dCTP, and dTTP.

dATP (p/n: 2013A), dGTP (p/n: 2013G), dCTP (p/n: 2013C), dTTP (p/n: 2013T) is supplied in individual tube containing each at 100mM conc. at 1ml. ***(Customizable concentration and packaging available upon request).***

Storage Condition: -20ºC or -70ºC constant temperature freezer.

Purity: dNTP and dNTP mix are >99% chromatographically pure. Free of DNAse, RNAse, Protease, or Phosphatase activities.

Application: For direct in-vitro synthesis of DNA

Real-Time ACTaq™PCR Mastermix

ACTGene, Inc.
P.O. Box 7011
Piscataway, NJ 08855
Tel: (973) 978-6688