2. PCR & RT-PCR

- DNA Polymerases
- Master Mix for PCR
- RT-PCR
- Nucleotides
DNA Polymerases

EuroClone recombinant thermostable DNA Polymerases are produced and purified from E.coli PVG-A1 recombinant strain expressing Thermus aquaticus Polymerase gene. Severe and rigorous production procedures ensure the highest quality and the best batch-to-batch consistency.

Our Polymerases are always supplied with a 10X reaction Buffer and a separate MgCl2 solution to allow reaction optimization. The new ready-to-load formulation includes also a coloured buffer that allows direct loading of the PCR reaction on the gel.

Technical data

<table>
<thead>
<tr>
<th>Polymerase</th>
<th>EuroTaq</th>
<th>@Taq</th>
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<tbody>
<tr>
<td>Resulting DNA ends</td>
<td>3’A</td>
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<tr>
<td>Thermostability, half-life 95 °C min</td>
<td>&gt; 40</td>
<td>&gt; 40</td>
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<tr>
<td>RT activity</td>
<td>weak</td>
<td>-</td>
</tr>
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<td>Longest amplicon</td>
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EuroTaq - Thermostable Taq DNA Polymerase

EuroTaq is a traditional thermostable DNA Polymerase for standard PCR reactions. The enzyme is purified from E.coli PVG-A1 recombinant strain expressing Thermus aquaticus YT1 DNA Polymerase gene.

Features

- Highest purity
- High activity level
- Maximum flexibility for reaction conditions
- Long distance amplification, up to 10 kb
- Higher thermostability

RedyEuroTaq - Ready-to-load Thermostable Taq polymerase

RedyEuro Taq is the new ready-to-load version of classic EuroTaq. The package includes both the standard 10X colorless buffer and the SX Redy Buffer. The Redy buffer can be used in alternative to the standard buffer when direct loading of the PCR reaction is requested. SX Redy Buffer contains a compound that increases sample density, so that samples sink easily into the wells of an agarose gel; it contains also two inert dyes (orange and red) that separate during electrophoresis allowing an easy evaluation of the gel run. The proprietary formulation includes also specific additives that increase the polymerase thermostability giving higher yield. This buffer is MgCl2 free.

@Taq (atTaq) - Hot Start Thermostable DNA Polymerase

@Taq (atTaq) is a recombinant Hot Start Taq DNA Polymerase purified from E.coli PVG-A1. This enzyme is complexes with a monoclonal antibody blocking the Polymerase activity at Room Temperature. Obtain the best result in DNA amplification through mAb technology Hot Start PCR.

Features

- Hot Start Taq Polymerase blocked with mAb - The mAb is released > 70°C, during the first denaturation step
- Dramatic artefact decrease
- No primer-dimer polymerization
- No mispriming
- No need for wet ice incubation during master mix assembling
- qPCR grade

Redy@Taq - Ready-to-load Hot Start Thermostable DNA Polymerase

Redy@Taq is the new ready-to-load version of the classic @Taq. The package includes both the standard 10X colorless buffer and the SX Redy Buffer. The Redy buffer can be used in alternative to the standard buffer when direct loading of the PCR reaction is requested. SX Redy Buffer contains a compound that increases sample density, so that samples sink easily into the wells of an agarose gel; it contains also two inert dyes (orange and red) that separate during electrophoresis allowing an easy evaluation of the gel run. The proprietary formulation includes also specific additives that increase the polymerase thermostability giving higher yield. This buffer is MgCl2 free.

Features

- Higher yield
- No need of gel loading Buffer
- Direct load on the gel after PCR reaction

Storage and Stability

- Three years at -20°C
- Shipping
- Blue Ice

RedyEuroTaq, Redy@Taq and a competitor HotStart Ready-to-load Taq Polymerase where used to amplify a fragment of 312 bp

| Lane 7: | blank |
| Lane 8 and 9: | competitor (s) hot-start ready-to-load DNA Polymerase |
| Lane 10: | blank |
Red@Taq - Red Hot Start Thermostable DNA Polymerase

Red@Taq (aTaq) is EuroClone Hot-Start Taq antibody-blocked Polymerase, containing a red inher dye that enables the user to simply verify the addition of the enzyme to the reaction mix.

Master Mix for PCR

@Taq Master Mix - Hot Start PCR Master Mix

Master mix for Hot Start PCR including @Taq, the immuno-blocked Taq from EuroClone. It comes in a convenient format of 4 x 50 reactions vials, 2X concentrated, for a better handling of the amplification solution. @Taq Master Mix includes all the reagents needed for PCR (Taq Polymerase, reaction Buffer, dNTPs, MgCl2), not including the specific primers. This master mix combines the advantages of @Taq.

Features

- Hot Start effect - Complete activation of the polymerization activity after the first incubation at 70°C
- Excellent specificity
- High activity level with the benefits of a ready-to-use amplification solution:
  - Highly reproducible PCR
  - Strong reduction of pipetting errors and miscalculation
  - Minimum hands-on time

Redy@Taq - Master Mix Ready-to-load Master Mix for Hot Start PCR

Redy@Taq Master Mix is a 5X ready-to-load master mix for Hot Start PCR. The master mix contains @Taq Hot-Start polymerase and the Redy buffer. The buffer includes a dense compound for easy loading and two inher dyes for the evaluation of the sample run during electrophoresis. The buffer proprietary formulation includes also specific additives that increase the polymerase thermostability giving higher yield.

Features

- Higher yield
- No need of gel loading Buffer
- Direct load on the gel after PCR reaction

Redy@Taq Master Mix and 3 different competitors Ready-to-load master mix were used to amplify a fragment of 312 bp

1. Lane 1: marker Sharpmass 50 bp
2. Lane 3 and 4: Redy@Taq Master Mix
3. Lane 5: blank
4. Lane 6 and 7: competitor (S) HS ready-to-load master mix
5. Lane 8: blank
6. Lane 9 and 10: competitor (P) HS ready-to-load master mix
7. Lane 11: blank
8. Lane 12 and 13: competitor (P) ready-to-load master mix
9. Lane 14: blank

Storage and Stability

- Three years at -20°C
- Shipping
  - Blue Ice

Redy@Taq Master Mix and 3 different competitors Ready-to-load master mix were used to amplify a fragment of 312 bp

<table>
<thead>
<tr>
<th>Cat. Description Format</th>
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<tbody>
<tr>
<td>EME014500 Red@Taq 2 x 250 units</td>
</tr>
</tbody>
</table>

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<th>Cat. Description Format</th>
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<tbody>
<tr>
<td>EMX013200 @Taq Master Mix 200 rxns</td>
</tr>
<tr>
<td>EMX016100 Redy@Taq Master Mix 100 rxns</td>
</tr>
</tbody>
</table>

* MgCl2 Buffer included

Shipping
- Blue Ice
RT-PCR

EuroScript - M-MLV Reverse Transcriptase (RNase H -) NOT FOR USA MARKET

EuroScript is a genetically modified M-MuLV RT. The enzyme possesses an RNA-dependent and DNA-dependent Polymerase activity, but lacks RNase H activity due to point mutation in the RNase H domain. It does not degrade RNA in RNA-DNA hybrids during synthesis of the first strand cDNA and therefore high yields of full-length cDNA from long templates are obtained. EuroScript maintains activity over a wide temperature range (42-55°C), which makes the enzyme an ideal tool for reverse transcription of RNAs having a high degree of secondary structure. The enzyme is available also in the kit format including oligo dT primer (EMR4332000), random hexamers (EMR4282000), RNase inhibitor (EMR4360500) and dNTP mix (EMR4162000).

Features
- High yields of full-length first strand cDNA up to 13 kb
- Optimum activity at 42-45°C
- Active up to 55°C
- Incorporates modified nucleotides (e.g., Cy3-, Cy5-, rhodamine-, aminooallyl-, fluorescein-labeled nucleotides)

Cat. Description Format
EMR437050 EuroScript 10,000 units (50 µl)
EMR437250 EuroScript 50,000 units (5x50 µl)
EMR435050 EuroScript RT-PCR Kit RT-PCR kit 50 rxn
EMR435200 EuroScript RT-PCR Kit RT-PCR kit 200 rxn

Storage and Stability
One year at -20°C
Shipping
Blu Ice

EuroRT - M-MLV Reverse Transcriptase

EuroRT - M-MLV is a genetically modified M-MLV RT. It differs from the M-MLV RT by its structure and catalytic properties. The enzyme possesses an RNA-dependent and DNA-dependent polymerase activity and a RNase H activity specific to RNA in RNA-DNA hybrids which is significantly lower than that of Avian Myeloblastosis Virus (AMV) reverse transcriptase.

Features
- Efficient synthesis of full-length first strand cDNA up to 13 kb
- Optimum activity at 42°C
- Active up to 50°C
- Incorporates modified nucleotides (e.g., Cy3-, Cy5-, rhodamine-, aminooallyl-, fluorescein-labeled nucleotides)

Cat. Description Format
EMR438050 EuroRT 10,000 units (50 µl)
EMR438250 EuroRT 50,000 units (5x50 µl)

Storage and Stability
One year at -20°C
Shipping
Blu Ice

RNase Inhibitor

RNase Inhibitor completely inhibits the activity of RNases A, B and C by non-covalent binding. It binds the RNases in a 1:1 ratio. It does not inhibit the RNases I, T1, T2, H, U1, U2 and CL3.

Cat. Description Format
EMR436050 RNase Inhibitor 2,000 units (50 µl)
EMR436250 RNase Inhibitor 10,000 units (250 µl)

Storage and Stability
One year at -20°C
Shipping
Blu Ice

Oligo (dT)20 Primer

Oligo (dT) Primer hybridizes to the poly(A) tail of mRNA and is used as primer for first stand cDNA synthesis with reverse transcriptases.

Cat. Description Format
EMR433200 Oligo (dT) Primer 100 µM 200 µl
EMR433001 Oligo (dT) Primer 100 µM 1 ml

Storage and Stability
One year at -20°C
Shipping
Blu Ice

Random Hexamers

Random Hexamers are a mixture of oligonucleotides representing all possible sequences for an hexamer. Random Hexamers are used in DNA labelling by PCR (DOP-PCR) or cDNA synthesis by RT-PCR.

Cat. Description Format
EMR428200 Random Hexamers 100 µM 200 µl
EMR428001 Random Hexamers 100 µM 1 ml

Storage and Stability
One year at -20°C
Shipping
Blu Ice
Nucleotides

dNTPs

EuroClone’s enzymatic dNTP manufacturing process and refined purification protocols ensure the highest quality of deoxynucleotides. All our dNTPs are ultrapure (> 99%) and quality checked by a set of PCR, RT-PCR and Klenow reactions.

EuroClone dNTPs are available as single bases, set or as dNTPs mix. Individual nucleotides are supplied as single ready-to-use 100 mM solutions or as a 4 x 250 μl set. The dNTP mix consist of a mixture of dATP, dCTP, dGTP and dTTP (final concentration of each nucleotide 10 or 25 mM).

<table>
<thead>
<tr>
<th>Cat.</th>
<th>Description</th>
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</tr>
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<tbody>
<tr>
<td>EMR272025</td>
<td>dATP 100 mM Solution</td>
<td>250 μl (25 μmol)</td>
</tr>
<tr>
<td>EMR273025</td>
<td>dCTP 100 mM Solution</td>
<td>250 μl (25 μmol)</td>
</tr>
<tr>
<td>EMR274025</td>
<td>dGTP 100 mM Solution</td>
<td>250 μl (25 μmol)</td>
</tr>
<tr>
<td>EMR275025</td>
<td>dTTP 100 mM Solution</td>
<td>250 μl (25 μmol)</td>
</tr>
<tr>
<td>EMR276425</td>
<td>dNTP set</td>
<td>4 x 250 μl (4 x 25 μmol)</td>
</tr>
<tr>
<td>EMR276001</td>
<td>dNTP mix 25 mM solution</td>
<td>500 μl (12.5 μmol)</td>
</tr>
<tr>
<td>EMR414025</td>
<td>dNTP mix 10 mM solution</td>
<td>1 ml (25 μmol)</td>
</tr>
<tr>
<td>EMR416001</td>
<td>dNTP mix 10 mM solution</td>
<td>1 ml (10 μmol)</td>
</tr>
</tbody>
</table>

Storage and Stability
One year at –20 °C
Shipping
Blue Ice

Storage and Stability
One year at –20 °C
Shipping
Blue Ice

Storage and Stability
One year at –20 °C
Shipping
–20 °C

dNTP Mix with dUTP

dNTP mix including dUTP, is a mixture of 10 mM ultrapure dATP, dCTP, dGTP and 20 mM dUTP.

<table>
<thead>
<tr>
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<tr>
<td>EMR414025</td>
<td>dNTPs/dUTPs Set</td>
<td>200 μl</td>
</tr>
</tbody>
</table>

Storage and Stability
One year at –20 °C
Shipping
Blue Ice

Storage and Stability
One year at –20 °C
Shipping
–20 °C

NTPs

Nucleotide Triphosphates (NTPs) are available as 100 mM ready-to-use solution. Our NTP solutions are optimized for in vitro transcription with the common Polymerases and the major commercially available transcription kits.

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<thead>
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<tbody>
<tr>
<td>EMR423001</td>
<td>ATP 100 mM solution</td>
<td>1 ml (100 μmol)</td>
</tr>
<tr>
<td>EMR424001</td>
<td>CTP 100 mM solution</td>
<td>1 ml (100 μmol)</td>
</tr>
<tr>
<td>EMR425001</td>
<td>GTP 100 mM solution</td>
<td>1 ml (100 μmol)</td>
</tr>
<tr>
<td>EMR426001</td>
<td>UTP 100 mM solution</td>
<td>1 ml (100 μmol)</td>
</tr>
</tbody>
</table>