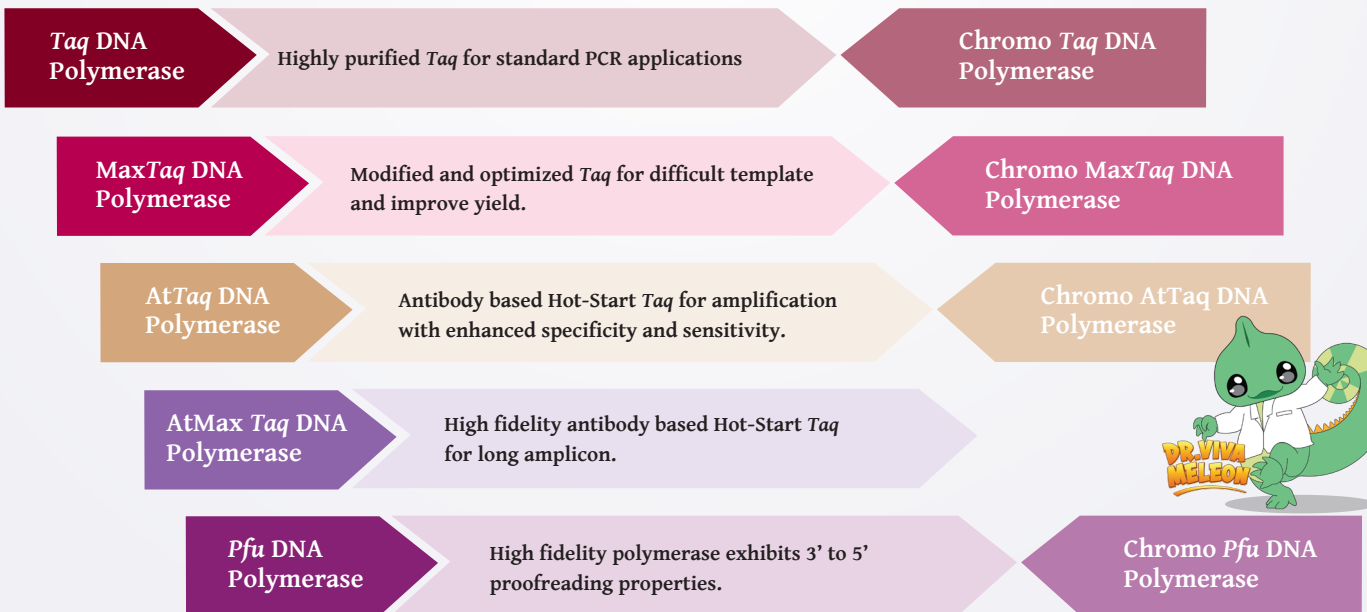




PCR with a smile

LIFE can be SIMPLE PCR too!

PCR is an invaluable tool in molecular biology research, and at the heart of this application is the DNA polymerase. At Vivantis Technologies, we believe that a successful PCR starts with quality Polymerases. You can choose from a premium selection of our polymerases, for standard PCR or Multiplex PCR, to Hot-Start PCR applications. It is our goal to make PCR a simple and easy process for researchers around the world. With Vivantis Technologies, PCR will be a walk in the park.



The Chromo DNA Polymerase series is a blend of polymerase with inert colour tracer dyes for easy visualization of the addition of polymerase to the reaction and serve as tracking dye during PCR.

High Fidelity DNA Polymerases

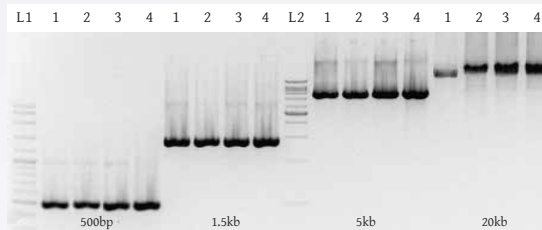
High-Fidelity DNA Polymerases are DNA polymerases which have thermostable properties with 5' to 3' polymerase activity as well as 3' to 5' exonuclease activity which are important for proofreading amplification (the DNA sequence needs to be correct after amplification).

DNA Polymerases available:

- **Pfu DNA Polymerase**
- **MaxTaq DNA Polymerase**
- **AtMax Taq DNA Polymerase**



Comparison of amplification using Vivantis Taq DNA Polymerase and Vivantis High-Fidelity DNA Polymerases (Pfu DNA Polymerase, MaxTaq DNA Polymerase & AtMax Taq DNA Polymerase)



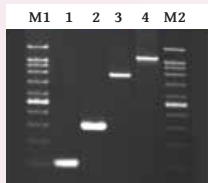
- Lane L1** : VC 100bp Plus DNA Ladder
- Lane 1** : Taq DNA Polymerase (1U/reaction)
- Lane 2** : Pfu DNA Polymerase (1U/reaction)
- Lane 3** : Max Taq DNA Polymerase (1U/reaction)
- Lane 4** : AtMax Taq DNA Polymerase (1U/reaction)
- Lane L2** : VC 1kb DNA Ladder

Pfu DNA Polymerase (*Pyrococcus furiosus*)

Pfu DNA Polymerase is an extremely thermostable proofreading DNA polymerase, suitable for applications requiring high temperatures synthesis of DNA. Pfu DNA Polymerase catalyzes the polymerization of nucleotides into duplex DNA in the 5' to 3' direction with the presence of Mg²⁺. It exhibits the 3' to 5' proofreading activity.



Amplification Using Vivantis Pfu DNA Polymerase



0.7% TAE agarose gel

- Lane M1** : VC 1kb DNA Ladder
- Lane 1** : 0.5kb amplicon
- Lane 2** : 1.5kb amplicon
- Lane 3** : 5.0kb amplicon
- Lane 4** : 8.0kb amplicon
- Lane M2** : VC Lambda / Hind III Marker

Features

- Ultra pure recombinant protein allows amplification up to 8kb
- 5X ViBuffer Pfu provided for amplification of more than 5kb amplicon

Ordering information:

Catalogue No.	Description	Pack Size
PL5201	Pfu DNA Polymerase	100u, 5u/μl
PL5202	Pfu DNA Polymerase	500u, 5u/μl

MaxTaq DNA Polymerase

MaxTaq DNA Polymerase is a modified and optimized thermostable enzyme blend containing Taq DNA Polymerase, Pfu DNA Polymerase and enhancing factors. It exhibits the 3' to 5' proofreading activity, resulting in considerably higher amplification fidelity than possible with unmodified Taq DNA Polymerase. Recommended for use in amplification to obtain DNA products up to 20kb.



Amplification Using Vivantis MaxTaq DNA Polymerase



0.7% TAE agarose gel

- Lane M1** : VC Lambda / Hind III Marker
- Lane 1** : 8kb amplicon
- Lane 2** : 10kb amplicon
- Lane 3** : 12kb amplicon
- Lane 4** : 15kb amplicon
- Lane 5** : 20kb amplicon
- Lane 6** : 30kb amplicon
- Lane 7** : 40kb amplicon
- Lane M2** : Lambda DNA

Features

- Ultra pure recombinant protein allows amplification up to 20kb
- 10X ViBuffer S provided for amplification of more than 5kb amplicon
- Excellent for multiplex amplification as it exhibits wider tolerance for Mg²⁺ and salt concentrations
- Improves amplification result with critical templates, such as those containing GC-rich regions, palindromes or multiple repeats
- Increased amplification product yields and purity
- Generates a mixture of blunt end and 3' dA overhang amplification products, majority of the products are blunt ended

Ordering information:

Catalogue No.	Description	Pack Size
PL2201	MaxTaq DNA Polymerase	200u, 5u/μl
PL2202	MaxTaq DNA Polymerase	500u, 5u/μl

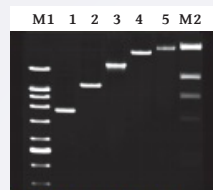


AtMax Taq DNA Polymerase (Hot Start Long Amplification)

AtMax Taq DNA Polymerase is a mixture of thermostable Taq DNA Polymerase, proofreading Pfu DNA Polymerase, anti-Taq DNA Polymerase antibodies, reversible inhibitors and enhancers for automatic "Hot Start" amplification. It exhibits the 3' to 5' proofreading activity, resulting in considerably higher amplification fidelity than possible with unmodified Taq DNA Polymerase. Recommended for use in amplification to obtain DNA products up to 20kb with stringent amplification specificity, sensitivity, fidelity and yield.



Amplification Using Vivantis AtMax Taq DNA Polymerase



Lane M1 : VC 1kb DNA Ladder
 Lane 1 : 5.0kb amplicon
 Lane 2 : 8.0kb amplicon
 Lane 3 : 10.0kb amplicon
 Lane 4 : 15.0kb amplicon
 Lane 5 : 20.0kb amplicon
 Lane L2 : VC Lambda / Hind III Marker

0.5% TAE agarose gel

Ordering information:

Catalogue No.	Description	Pack Size
PL4201	AtMax Taq DNA Polymerase	200u, 5u/µl
PL4202	AtMax Taq DNA Polymerase	500u, 5u/µl

Features

- Ultra pure recombinant protein is reversibly complexed with an anti-Taq monoclonal antibody that blocks replication activity of the enzyme at moderate temperatures
- Excellent for multiplex amplification as it exhibits wider tolerance for Mg²⁺ and salt concentrations
- Improves amplification results with critical templates, such as those containing GC-rich regions, palindromes or multiple repeats
- 10X ViBuffer S provided for amplification of more than 5kb amplicon



Selection Chart

DNA Polymerases Selection Chart					
Properties	Taq DNA Polymerase	MaxTaq DNA Polymerase	AtTaq DNA Polymerase	AtMax Taq DNA Polymerase	Pfu DNA Polymerase
Half Life	50 cycles	> 50 cycles	50 cycles	> 50 cycles	50 cycles
Target Length	Up to 8kb	Up to 40kb	Up to 15kb	Up to 20kb	Up to 8kb
Error Rate	1-2 x 10 ⁻⁵	1 x 10 ⁻⁶	1-2 x 10 ⁻⁵	1 x 10 ⁻⁶	5 x 10 ⁻⁶
Units / 50µl Reaction	2.0U	0.5-2.0U	2.0U	0.5-2.0U	0.5-1.0U
Hot Start			Yes	Yes	
Proofreading Activity		Yes		Yes	Yes
Fidelity vs Taq	1X	8-10X	1X	8-10X	2-3X
PCR Product End	3'A	Blunt / 3'A	3'A	Blunt / 3'A	Blunt
High Yield		Yes		Yes	
High Fidelity		Yes		Yes	Yes
High Throughput				Yes	
Applications					
Routine PCR	Yes	Yes	Yes	Yes	Yes
Long PCR		Yes		Yes	
Colony PCR	Yes		Yes		
TA Cloning	Yes		Yes		
GC-rich Targets	Yes	Yes		Yes	
Long Amplicon		Yes		Yes	
DNA-labeling			Yes		
Palindrome / Multiple Repeats		Yes		Yes	
Multiplex Amplification		Yes	Yes	Yes	
Ordering Information					
Catalog No / Pack size	PL1202 - 500u	PL2201 - 200u	PL3201 - 200u	PL4201 - 200u	PL5201 - 100u
Catalog No / Pack size	PL1204 - 2 x 1000u	PL2202 - 500u	PL3202 - 500u	PL4202 - 500u	PL5202 - 500u
Chromo DNA Polymerases Selection Chart					
Ordering Information					
Catalog No / Pack size	PL1205 - 200u	PL2205 - 200u	PL3205 - 200u		PL5205 - 100u
Catalog No / Pack size	PL1206 - 500u	PL2206 - 500u	PL3206 - 500u		PL5206 - 500u

2X ViRed Taq Master Mix

Features

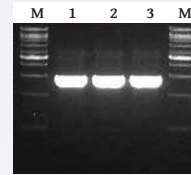
- Suitable for all routine DNA amplification applications
- Stable at 4°C for 6 months, allowing immediate reaction setup without the time-consuming thawing of reagents
- Reduces set-up time and buffer-dye mixing
- Minimizes potential contamination by eliminating several pipetting steps
- Easy confirmation of complete mixing
- No additional loading dye needed – direct loading of final products onto gels
- Generates mostly 3'dA overhang PCR products which are suitable for TA cloning



Ordering information:

Catalogue No.	Description	Pack Size
CLMM01	2X ViRed Taq Master Mix	100 applications

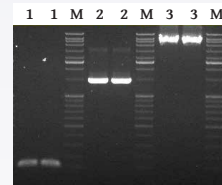
Amplification of 1.5kb DNA fragment from pTZ region DNA using Vivantis 2X ViRed Taq Master Mix



1.0 % TBE agarose gel

- Lane M** : VC 1kb DNA Ladder
- Lane 1** : DNA amplification product generated with 1.25U of Taq DNA Polymerase
- Lane 2** : DNA amplification product generated with 2X ViRed Taq Master Mix (stored at -20°C)
- Lane 3** : DNA amplification product generated with 2X ViRed Taq Master Mix (after 20 freeze-thaw cycles)

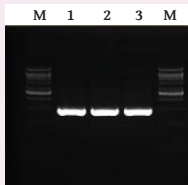
Efficiency analysis of Vivantis 2X ViRed Taq Master Mix – minimum & maximum base pair sizes of PCR products generated



1.0 % TBE agarose gel

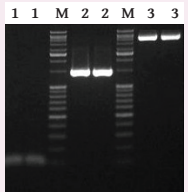
- Lane M** : VC DNA Ladder Mix
- Lane 1** : DNA amplification product at 100bp generated with 2X ViRed Taq Master Mix
- Lane 2** : DNA amplification product at 1.5kb generated with 2X ViRed Taq Master Mix
- Lane 3** : DNA amplification product at 5kb generated with 2X ViRed Taq Master Mix

Amplification of 1.5kb DNA fragment from pTZ region using Vivantis 2X AtTaq Master Mix



- Lane M** : VC 1kb DNA Ladder
- Lane 1** : DNA amplification product generated with 1.25U of AtTaq DNA Polymerase
- Lane 2** : DNA amplification product generated with 2X AtTaq Master Mix (stored at -20°C)
- Lane 3** : DNA amplification product generated with 2X AtTaq Master Mix after 20 freeze-thaw cycles)

Efficiency analysis of Vivantis 2X AtTaq Master Mix - minimum and maximum base pair size of PCR product generated



- Lane M** : VC DNA Ladder Mix
- Lane 1** : DNA amplification 100bp product generated with 2X AtTaq Master Mix
- Lane 2** : DNA amplification 1.5kb product generated with 2X AtTaq Master Mix
- Lane 3** : DNA amplification 5kb product generated with 2X AtTaq Master Mix

2X AtTaq Master Mix (Hot Start)

Features

- Saves time and reduces contamination due to reduced number of pipetting steps
- Stable at 4°C for 6 months, allowing immediate reaction setup without the time consuming thawing of reagents
- Suitable for all routine DNA amplification applications
- Amplification with enhanced specificity, sensitivity and yield
- Amplification with reduced artifacts, such as primer-dimer formation and mispriming in multiplex amplification

Ordering information:

Catalogue No.	Description	Pack Size
PLMM02	2X AtTaq Master Mix	100 applications

2X Taq Master Mix

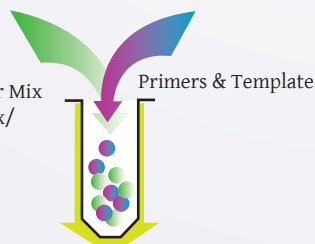
Features

- **Convenient:** Ready to Use
- **TA Cloning Compatible:** Generates 3'dA overhangs
- **Saves time:** Reduced number of pipetting steps
- **Stable:** Freeze-thaw up to 20 cycles
- **Reproductive:** Decreases contamination & error rate

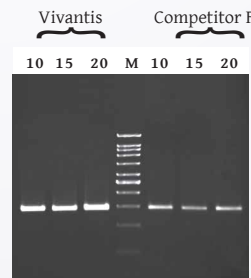
Ordering information:

Catalogue No.	Description	Pack Size
PLMM01	2X Taq Master Mix	100 applications

Vivantis
2X ViRed Taq Master Mix
2X AtTaq Master Mix/
2X Taq Master Mix



Comparison of Efficiency between Vivantis 2X Taq Master Mix with Supplier F after Freeze-thaw cycles



- Lane M** : VC 1kb DNA Ladder
- Lane 1** : DNA amplification product generated with 2X Taq Master Mix (after 10 freeze-thaw cycles)
- Lane 2** : DNA amplification product generated with 2X Taq Master Mix (after 15 freeze-thaw cycles)
- Lane 3** : DNA amplification product generated with 2X Taq Master Mix (after 20 freeze-thaw cycles)

Amplification of 5Kb DNA Fragment from lambda DNA Using Vivantis 2X Taq Master Mix



- Lane M** : VC 1kb DNA Ladder
- Lane 1** : DNA amplification product generated with 1.25u of Taq DNA Polymerase
- Lane 2** : DNA amplification product generated with 2X Taq Master Mix (stored at -20°C)
- Lane 3** : DNA amplification product generated with 2X Taq Master Mix (after 20 freeze-thaw cycles)