

# Taq II Polymerase and PCR Master Mix

**Superior Performance on Fidelity, Stability and Specificity.**

**Taq II** polymerase is an enhanced *Taq* DNA polymerase optimised for routine PCR applications. The enzyme provides a higher sensitivity, yields and longer PCR amplification as compared to conventional *Taq* DNA polymerase. It is supplied with optimised **Taq II** Polymerase 10X buffer and 25mM MgCl<sub>2</sub>, minimising the need for optimisation.

Robust Amplification

Higher Sensitivity

Amplification of Targets up to 6kb

High Efficiency & PCR Yields

Faster Processivity

## Polymerase for Everyday Applications

- ✔ DNA sequencing
- ✔ Routine PCR
- ✔ DNA labelling
- ✔ Colony PCR
- ✔ PCR for cloning
- ✔ PCR amplification of DNA fragments up to 6kb

## Specifications

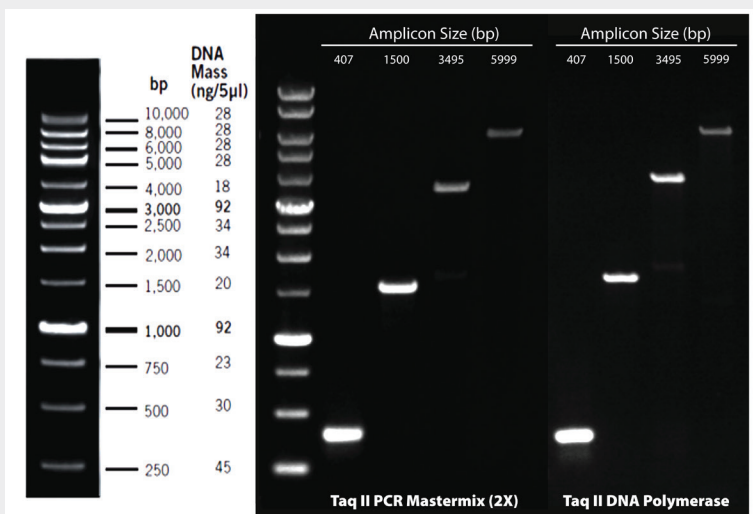
<b>Fidelity</b>	1X
<b>Amplification length</b>	Up to 6 kb
<b>Overhang</b>	Sticky ends/ 3'-A
<b>Polymerase</b>	Taq II DNA Polymerase
<b>Amplification Speed</b>	30s-60s/kb

## Robust & Efficient Amplification

Reliable amplification from various sample type and amplification length. Improved yield with optimal buffer system and amplification of long DNA up to 6kb.

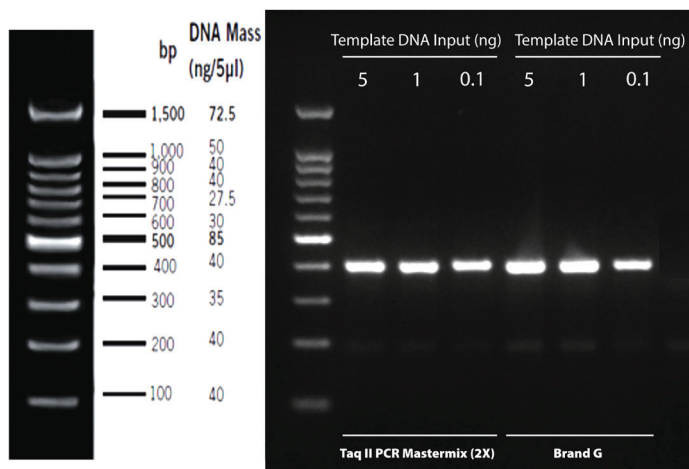
### DNA fragments across different targets and length were amplified from

- (1) plasmid with an expected amplicon size of 407bp
- (2) bacteria sample with expected size of 1500bp
- (3) human gDNA with expected size of 3495bp
- (4) human gDNA with expected size of 5999bp.

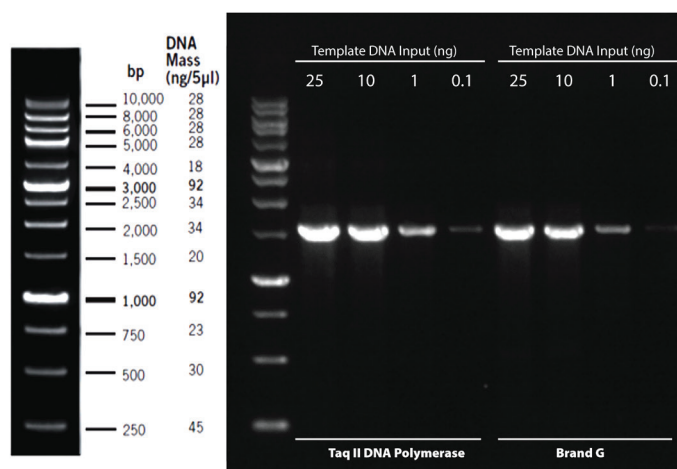


# Higher Sensitivity

**Taq II** displayed a much higher sensitivity as compared to conventional *Taq* as well as other competitive polymerases.



(A) Amplification of a 407bp fragment from plasmid DNA on different amount of DNA templates starting from 5ng to 0.1ng is shown above.



(B) Amplification of 1500bp fragment from bacteria DNA on different amount of DNA templates starting from 25ng to 0.1ng.

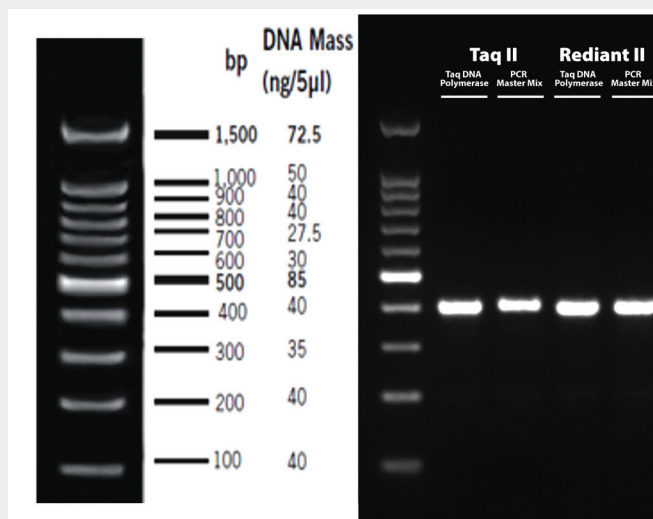
# Faster Processivity

Improved **Taq II** was optimised to work under fast thermal cycling conditions of 30s/kb with consistency.

### Amplification of 407bp DNA fragment from plasmid DNA using different Taq II formulated product:

- (1) Taq II DNA polymerase
- (2) REDiant II Taq DNA polymerase
- (3) Taq II PCR master mix
- (4) REDiant II PCR master mix

Based on extensions at 30s/kb.



# Product Information

Product	Product Description	Product No.
Taq II	Taq II DNA Polymerase (recombinant), 500U	BIO-5111-500U
	Taq II DNA Polymerase (recombinant), 2500U	BIO-5111-2500U
	Taq II PCR Master Mix, 200 reactions	BIO-5181-200
	Taq II PCR Master Mix, 1000 reactions	BIO-5181-1000



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## REDiant II DNA Polymerase and PCR Master Mix

*Formulated with Density Reagents and Inert Tracking Dyes to Enable Easy Visual Control*

**REDiant II** PCR Master Mix is a premixed, ready-to-use solution which contains *Taq* DNA polymerase, dNTPs, MgCl<sub>2</sub> and reaction buffer for amplification of DNA templates by PCR. This pre-mixed formulation saves time and reduces contamination by reducing the number of pipetting steps required for usual PCR set up. The mix is optimised for efficient and reproducible PCR. It also includes a red, inert tracking dye which migrates at the same rate as 1kb DNA fragment in a 1% agarose gel.

Robust Amplification

Higher Sensitivity

Amplification of Targets up to 6kb

Minimum Pipetting Steps Required

Faster Processivity

High Efficiency & PCR Yields

### Polymerase for Everyday Applications

- ✔ DNA sequencing
- ✔ DNA labelling
- ✔ PCR for cloning
- ✔ Routine PCR
- ✔ Colony PCR
- ✔ PCR amplification of DNA fragments up to 6kb

### Specifications

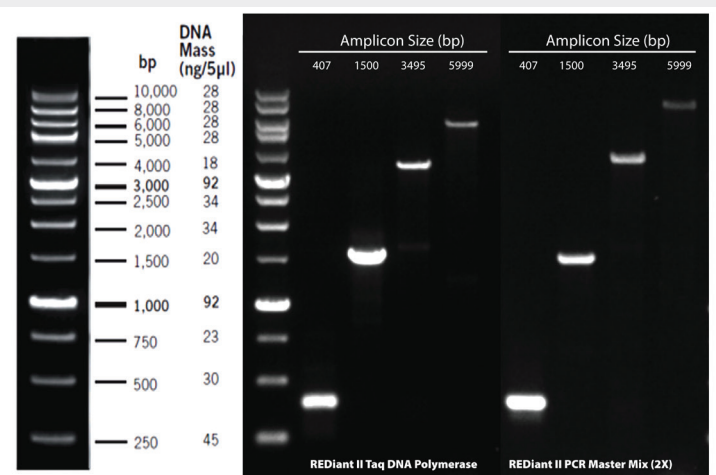
<b>Fidelity</b>	1X
<b>Amplification length</b>	Up to 6 kb
<b>Overhang</b>	Sticky ends/ 3'-A
<b>Polymerase</b>	Taq II DNA Polymerase
<b>Amplification Speed</b>	30s-60s/kb

### Robust & Efficient Amplification

Reliable amplification from various sample types and amplification length. Improved yield with optimal buffer system and amplification of long DNA up to 6kb.

#### DNA fragments across different targets and length were amplified from

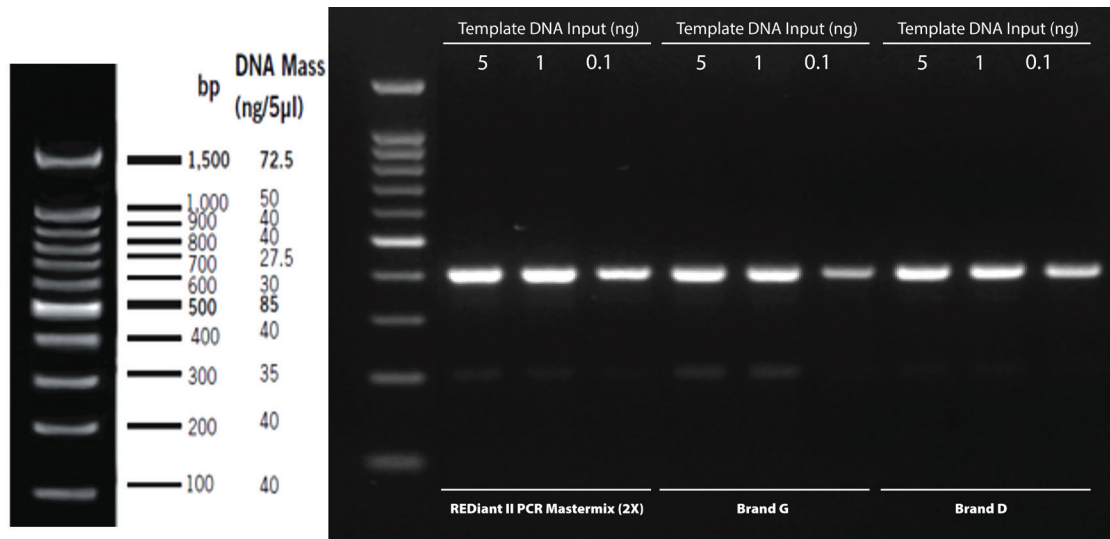
- (1) plasmid with an expected amplicon size of 407bp
- (2) bacteria sample with expected size of 1500bp
- (3) human gDNA with expected size of 3495bp
- (4) human gDNA with expected size of 5999bp.





## Higher Sensitivity

**REDiant II** displayed high sensitivity against competitor products. A strong band was yield even with dilution to 0.1ng.



Amplification of a 407bp fragment from plasmid DNA on different amount of DNA templates starting from 5ng to 0.1ng is shown above.

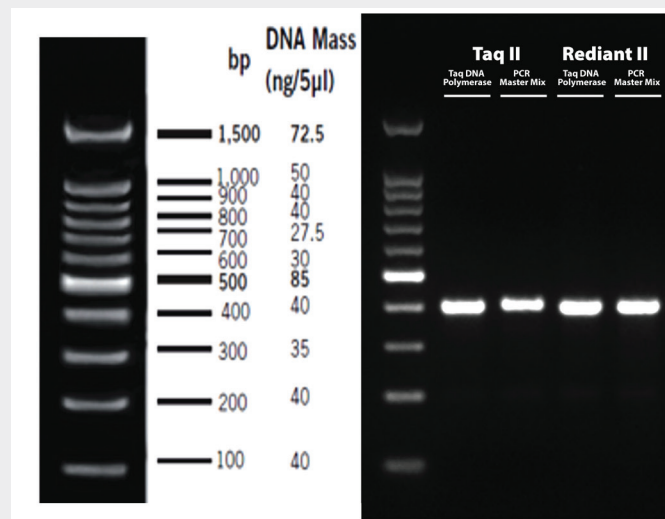
## Faster Processivity

**REDiant II** was optimised to work under fast thermal cycling conditions of 30s/kb with consistency.

**Amplification of 407bp DNA fragment from plasmid DNA using different Taq II formulated product:**

- (1) Taq II DNA polymerase
- (2) REDiant II Taq DNA polymerase
- (3) Taq II PCR master mix
- (4) REDiant II PCR master mix

Based on extensions at 30s/kb.



## Convenient & Ease of Handling

**REDiant II** contains red tracking dye to save time and prevent cross contamination between samples. The red tracking dye does not interfere with the PCR and serves as a loading dye for gel electrophoresis to monitor the progress of a running gel. The dye migrates at similar rate to a 500bp-800bp DNA fragment in a 1% agarose gel.

## Product Information

Product	Product Description	Product No.
REDiant II	REDiant II DNA Polymerase (recombinant), 500U	BIO-5116-500U
	REDiant II DNA Polymerase (recombinant), 2500U	BIO-5116-2500U
	REDiant II PCR Master Mix(2x), 200 reactions	BIO-5187-200
	REDiant II PCR Master Mix(2x), 1000 reactions	BIO-5187-1000



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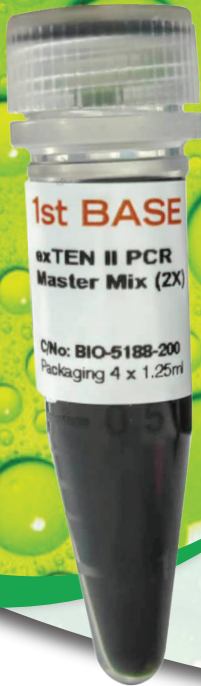
## exTEN II PCR Master Mix

### exTENSively Amplifies Up to 10kb

**exTEN II** is a unique premixed blend of *Taq* DNA polymerase, a proof reading enzyme, dNTPs, MgCl<sub>2</sub> and reaction buffer for amplification of DNA templates by PCR. With the addition of a 3' 5' exonuclease (proofreading) ability, the amplification efficiency is enhanced through a lower rate misincorporated nucleotides compared to just *Taq* DNA Polymerase.

**exTEN II** PCR Master Mix produces higher yield and amplifies longer fragments up to 10kb. Most of the amplified DNA fragments have 3'A overhang, while a small percentage are blunt-end. This premix formulation saves times and reduces contamination by reducing the number of pipetting steps for PCR setup.

**exTEN II** PCR Master Mix consists of a density reagent and 2 tracking dyes which migrates at the same rate as a 4000bp and 50bp DNA fragment in a 1% agarose gel.



High Yield & Robust Amplification

Greater Sensitivity

Minimum Pipetting Steps Required

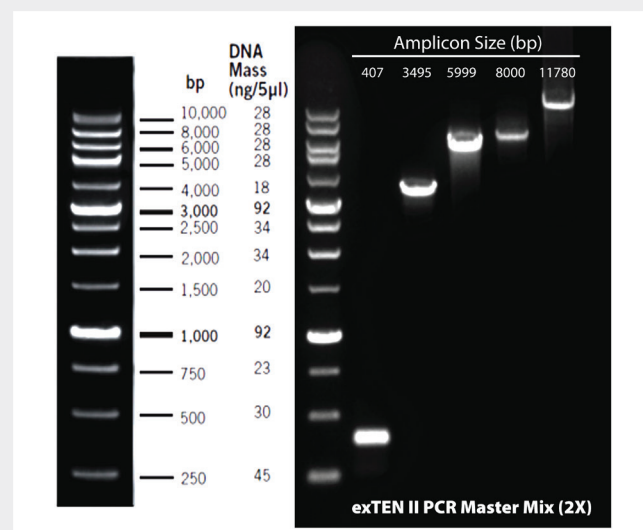
## Specifications

<b>Fidelity</b>	1X
<b>Amplification length</b>	Up to 10 kb
<b>Overhang</b>	Mix of sticky & blunt ends
<b>Polymerase</b>	Taq II DNA Polymerase & proof-reading enzyme
<b>Amplification Speed</b>	30s-60s/kb

## Superior Yield & Robust Amplification of DNA Fragments Up to 10kb

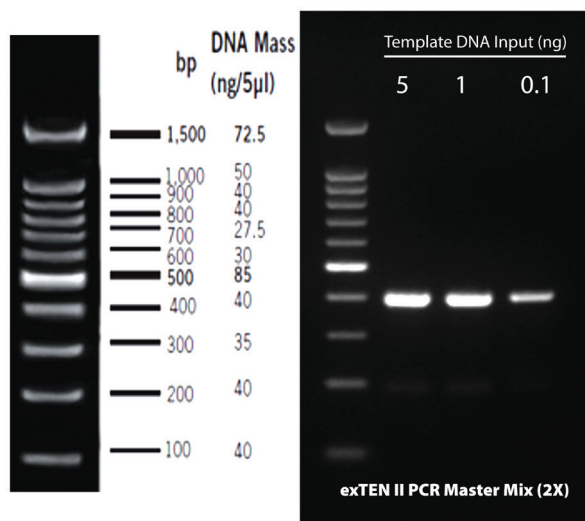
DNA Fragments across different targets from a human genomic DNA were amplified with **exTEN II** PCR Master Mix and other commercial polymerases.

In comparison to the other polymerases, amplification of target at 10kb and beyond with **exTEN II** was still achievable with superior yield.

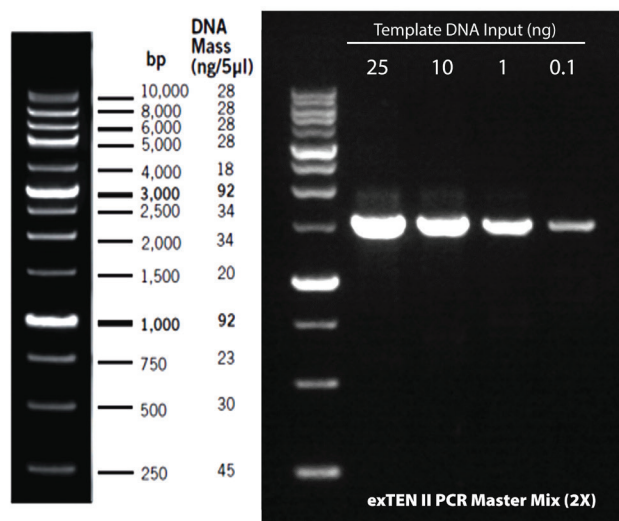


## Greater Sensitivity Achieved even in Low Concentration of DNA Template

Amplification of a 677bp fragment from human genomic DNA on different amount of DNA templates is shown below. **exTEN II** produced better results in terms of sensitivity among the other polymerases.



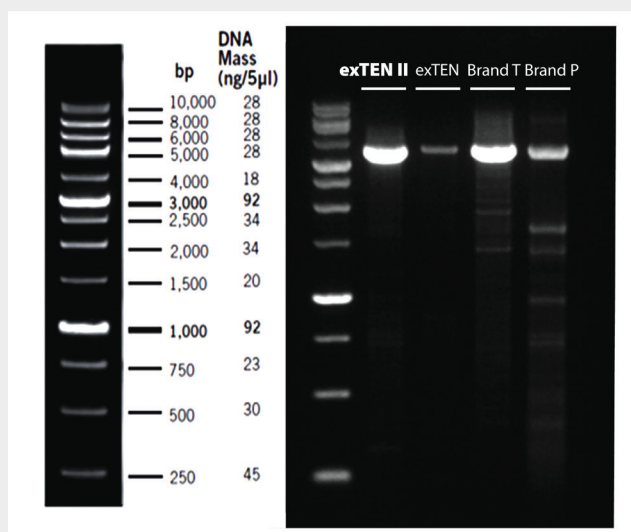
(A) Amplification of a 407bp fragment from plasmid DNA on different amount of DNA templates starting from 5ng to 0.1ng is shown above.



(B) Amplification of 1500bp fragment from bacteria DNA on different amount of DNA templates starting from 25ng to 0.1ng.

## Superior Performance

Amplification showed better yield and efficiency against conventional *Taq* and Comparable with high-fidelity polymerase.

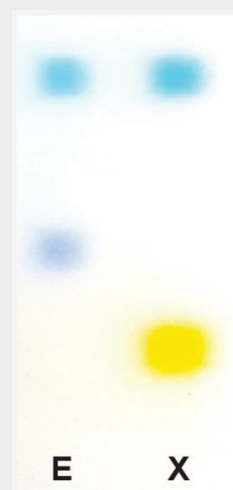


Amplification of a 3495bp fragment from human genomic DNA using

- (1) exTEN II PCR Master Mix
- (2) Conventional *Taq*
- (3) Brand T
- (4) Brand P

## Convenient & Ease of Handling Shortened Preparation Time

**exTEN II** is a premix containing all necessary components including MgCl<sub>2</sub>, buffer, loading dyes & dNTPs in a single tube. It only requires addition of template, primers and water prior to PCR cycling. Direct loading of PCR products onto gel is performed without any additional steps thereafter.



E: ExactMark 1kb DNA Ladder  
X: **exTEN II** PCR Master Mix (2x)

## Product Information

Product	Product Description	Product No.
exTEN II	exTEN II PCR Master Mix, 200 reactions	BIO-5188-200
	exTEN II PCR Master Mix, 1000 reactions	BIO-5188-1000



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Sample Request**