



# PCR Product Guide

2021 EDITION

Whether it's for research or diagnostic product development, we are confident our premium enzymes will meet all your project needs.

	PAGE
PCR Polymerases & MasterMixes .....	01
Reverse Transcription & cDNA Synthesis .....	04
qPCR MasterMixes .....	06
Nucleic Acid Staining Dyes .....	07

# 1. PCR Polymerases & MasterMixes

Meet the Next Generation of PCR Enzymes

**abm** is constantly evolving and so is our product line. Our pursuit of next generation PCR enzymes has led to intensive R&D and significant upgrades to our PCR products. The result - a new collection of world leading PCR enzymes and formulations with performances far beyond the current leading brands. Best of all - at the same discount prices we always offer.



## MegaFi™ Fidelity

1300X lower error rates compared to regular Taq



## BlasTaq™

Blast through a routine 2 hour PCR run in only 20 minutes



## BlasTaq™ HotStart

Eliminate non-specific amplification and primer-dimer formation



Standard Taq is also available in enzyme-only or MasterMix with dye formats.

## Polymerase Comparison Table

Characteristic	MegaFi™ Fidelity	BlasTaq™	BlasTaq™ HotStart	Taq
Proofreading	Yes	No	No	No
Fidelity (vs. Native Taq)	1300X	1X	1X	1X
Specificity	....	...	....	...
Extension Speed	20-30 sec/kb	15 sec/kb	15 sec/kb	60 sec/kb
Max Target Length	15-20 kb	10-15 kb	10-15 kb	6.5 kb
Suitable for TA cloning	No	Yes	Yes	Yes
Special Feature	Fidelity & Sensitivity	Fast & Robust	High Specificity	For routine PCR



### ISO 13485:2016 MDSAP Certified




Our PCR Products are manufactured under a Quality Management System conforming with ISO 13485:2016 as certified by Intertek (a MDSAP recognized auditing organization).

Intertek

# MegaFi™ DNA Polymerase

1300X lower error rates compared to regular Taq

## FEATURES

-  1300X higher fidelity than Taq
-  Amplifies difficult templates
-  Effective in long-range PCR

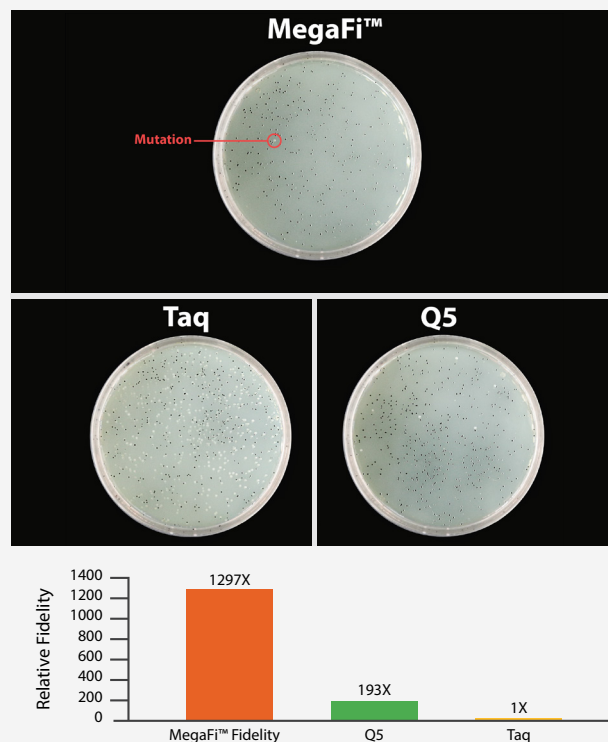
## PRODUCT DETAILS

Product	Size	Cat. No.
MegaFi™ Fidelity DNA Polymerase	400 rxn	G896
MegaFi™ Fidelity 2X PCR MasterMix	800 rxn (10.0 ml)	G897
MegaFi™ One-Step RT-PCR*	100 rxn	G597

\*Contains OneScript® Hot Reverse Transcriptase (Cat. No. G593)

Earn 2X the rewards points!

## PERFORMANCE DATA






A lacZa-containing sequence was amplified using various DNA polymerases, subcloned, and plated on X-gal-containing media. Colonies without PCR amplified lacZa mutations appear dark blue, while those that have PCR introduced frameshift mutations appear white. Blue vs. white colonies were counted and relative fidelity was calculated relative to Taq DNA Polymerase.

# BlasTaq™ HotStart DNA Polymerase

Eliminate non-specific amplification and primer-dimer formation

## FEATURES

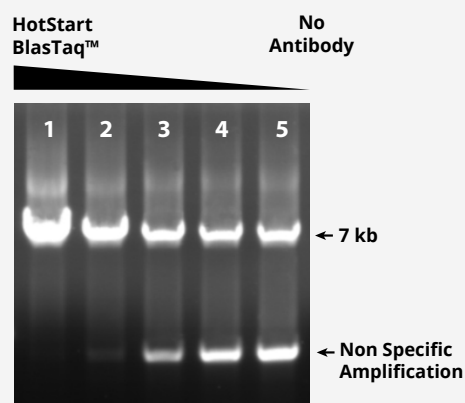
-  No non-specific amplification or primer dimers
-  Improves yield of desired product
-  Simplifies reaction setup

## PRODUCT DETAILS

Product	Size	Cat. No.
BlasTaq™ HotStart DNA Polymerase	400 rxns	G595

Earn 2X the rewards points!

## PERFORMANCE DATA



BlasTaq™ HotStart DNA Polymerase eliminates non-specific amplification. abm's BlasTaq™ HotStart DNA Polymerase (Cat. No. G595) was used to amplify a 7 kb target. The antibody concentration was decreased incrementally from lanes 1-5. Lane 1 is our BlasTaq™ HotStart formulation and lane 5 contains no antibody.

# BlasTaq™ DNA Polymerase

Blast through a routine 2 hour PCR run in only 20 minutes

## FEATURES



6 kb/min extension speed



40-70% less time than Taq



Superior sensitivity

## PRODUCT DETAILS

Product	Size	Cat. No.
BlasTaq™ DNA Polymerase	400 rxns	G894
BlasTaq™ 2X PCR MasterMix	800 rxns (10.0 ml)	G895
BlasTaq™ 2X qPCR MasterMix	500 rxns (4 x 1.25 ml)	G891
	2,500 rxns (25.0 ml)	G892
BlasTaq™ Probe 2X qPCR MasterMix	500 rxns (4 x 1.25 ml)	G890
BlasTaq™ Probe One-Step RT-qPCR*	100 rxns	G596

\*Contains OneScript® Plus Reverse Transcriptase (Cat. No. G237)

Earn 2X the rewards points!

# Taq DNA Polymerase

Your affordable choice for routine PCR

## FEATURES



Consistent results over a range of templates



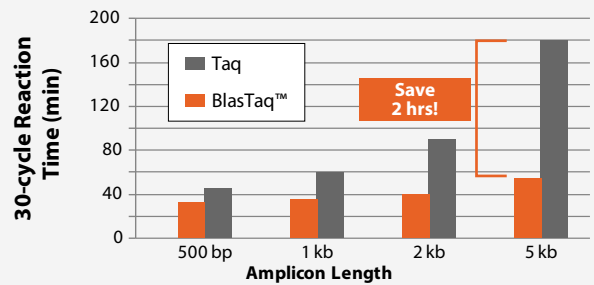
Ready-to-use MasterMix contains gel loading dye

## PRODUCT DETAILS

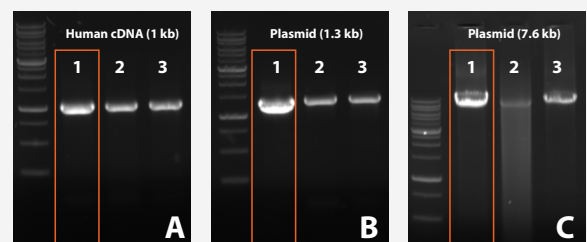
Product	Size	Cat. No.
Taq DNA Polymerase	200 rxns	G009
Taq 2X PCR MasterMix	400 rxns	G888

Earn 2X the rewards points!

## PERFORMANCE DATA

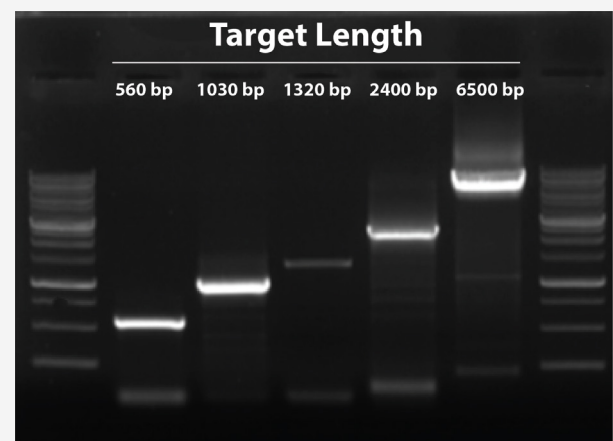


Total reaction times for **abm's** BlasTaq™ DNA Polymerase (Cat. No. G894) and Taq were determined for the amplification of different sized amplicons: 500 bp, 1 kb, 2 kb, and 5 kb. Reaction times are based on a 30-cycle program using the recommended reaction protocol for each enzyme.



PCR amplification using **abm's** BlasTaq™ DNA Polymerase (Cat. No. G894) (column 1) of various targets vs. competitor polymerases (column 2 and 3) followed by electrophoresis on a 1% agarose gel. A) 1 kb target from Human cDNA. B) 1.3 kb target from plasmid DNA. C) 7.6 kb target from plasmid DNA.

## PERFORMANCE DATA



PCR amplification using **abm's** Taq DNA Polymerase (Cat. No. G009) of various target sizes ranging from 560 bp to 6500 bp followed by electrophoresis on a 1% agarose gel.

## 2. Reverse Transcription & cDNA Synthesis

The New Gold Standard in cDNA Synthesis

With improved thermostability, sensitivity, robustness, and resistance to contaminants, **abm's** OneScript® brand of Reverse Transcriptases set a new benchmark for cDNA synthesis. Our OneScript® Hot is the only Reverse Transcriptase in the world that preserves performance at 50-80°C, making it useful for even the most challenging projects.



### OneScript® Hot

The superior choice for challenging RNA templates



### OneScript® Plus

Complete routine cDNA synthesis in 10-15 minutes

## Reverse Transcriptase Comparison Table

Characteristic	OneScript® Hot	OneScript® Plus
Thermostability	50-80°C	50-55°C
Optimal Temperature	60°C	50°C
Maximum cDNA Elongation	15 kb	15 kb
Minimum Sample Input	0.1 pg	0.1 pg
Reaction Time	10-15 min	10-15 min
Inhibitor/Contamination Resistance	•••••	•••
Tolerance to Complex Templates	•••••	•••






### ISO 13485:2016 MDSAP Certified

Our Reverse Transcriptases and associated mastermixes and kits are manufactured under a Quality Management System conforming with ISO 13485:2016 as certified by Intertek (a MDSAP recognized auditing organization).

# OneScript® Hot Reverse Transcriptase

The superior choice for challenging RNA templates

## FEATURES

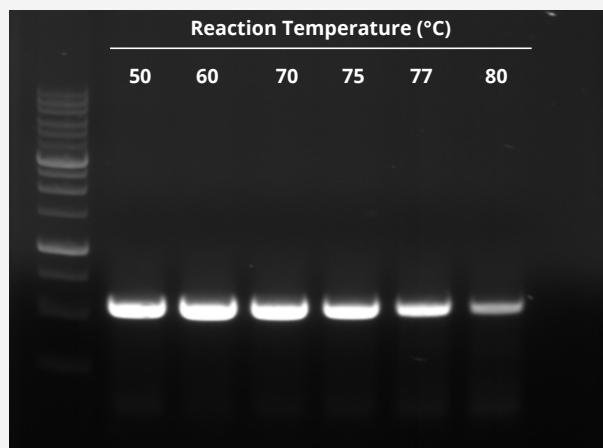
-  Extreme thermostability at 50-80°C
-  Transcribes degraded samples and resists inhibitors/contaminants
-  High cDNA yields from difficult or ultra-low RNA samples

## PRODUCT DETAILS

Product	Size	Cat. No.
OneScript® Hot Reverse Transcriptase	100 rxn	G593
OneScript® Hot cDNA Synthesis Kit	100 rxn	G594
MegaFi™ One-Step RT-PCR	100 rxn	G597
All-in-One 5X RT MasterMix	100 rxn	G592

Earn 2X the rewards points!

## PERFORMANCE DATA






OneScript® Hot Reverse Transcriptase has exceptional thermostability. OneScript® Hot Reverse Transcriptase (Cat. No. G593) was used in a 10 min. reaction with RNA template at temperatures ranging from 50 and 80°C. The resulting synthesized cDNA was followed by PCR and visualized on a 1% agarose gel.

# OneScript® Plus Reverse Transcriptase

Complete routine cDNA synthesis in 10-15 minutes

## FEATURES

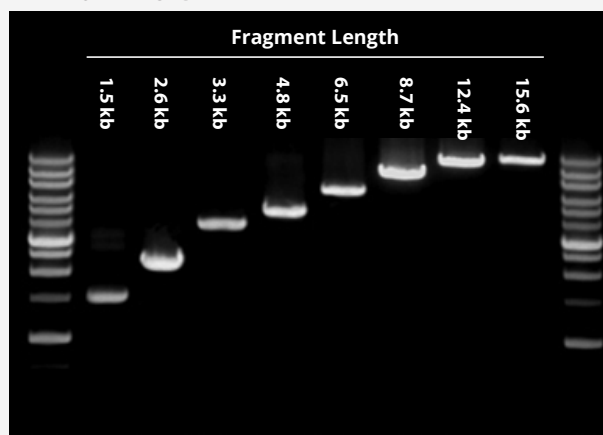
-  High thermostability at 50-55°C
-  Synthesize 15 kb RNA Templates
-  10-15 minutes reaction time

## PRODUCT DETAILS

Product	Size	Cat. No.
OneScript® Plus Reverse Transcriptase	100 rxn	G237
OneScript® Plus cDNA Synthesis Kit	100 rxn	G236

Earn 2X the rewards points!

## PERFORMANCE DATA



OneScript® Plus Reverse Transcriptase can elongate RNA templates up to 15 kb in length. OneScript® Plus Reverse Transcriptase (Cat. No. G237) was used in a reaction with a range of human RNA fragments. The resulting synthesized cDNA was followed by PCR and visualized on a 1% agarose gel.



# 3. qPCR MasterMixes

Enjoy World-Class Standards in Performance

Whether it's for research or diagnostic applications, **abm's** 15+ years of experience in PCR, qPCR, RT-qPCR, and RT-PCR product development have culminated in our world-class, specially formulated collection of MasterMixes and Kits - saving you time and streamlining your experimental set-up.



### ISO 13485:2016 MDSAP Certified

Our qPCR mastermixes and kits are manufactured under a Quality Management System conforming with ISO 13485:2016 as certified by Intertek (a MDSAP recognized auditing organization).



**STREAMLINED**



### MasterMixes and Kits

Simplified workflows for your routine PCR

## qPCR and One-Step RT MasterMixes

All the ingredients you need to simplify your workflow

### FEATURES



Premixed and ready-to-use



Simple and streamlined for high-throughput use



Reduce handling errors

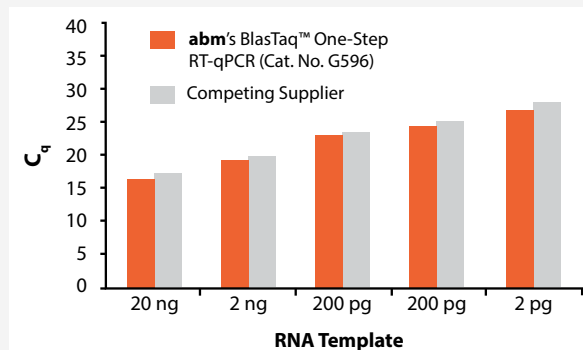
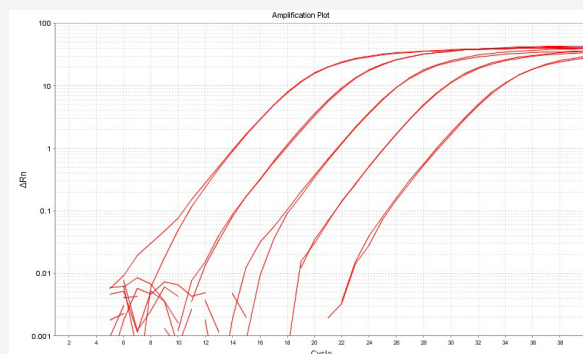
### PRODUCT DETAILS

Dye-based qPCR	Size	Cat. No.
BlasTaq™ 2X qPCR MasterMix	500 rxn (4 x 1.25 ml)	G891
	2,500 rxn (25.0 ml)	G892
Probe-based qPCR	Size	Cat. No.
BlasTaq™ Probe 2X qPCR MasterMix	500 rxn (4 x 1.25 ml)	G890
One-Step RT	Size	Cat. No.
BlasTaq™ Probe One-Step RT-qPCR	100 rxn	G596
MegaFi™ One-Step RT-PCR*	100 rxn	G597

\*Contains OneScript® Hot Reverse Transcriptase (Cat. No. G593)

Earn 2X the rewards points!

### PERFORMANCE DATA



BlasTaq™ Probe One-Step RT-qPCR has superb sensitivity and signal-to-noise ratio. 20 µl One-Step RT-qPCR reactions (20 ng, 2 ng, 200 pg, 20 pg, or 2 pg of RNA per reaction) were carried out with **abm's** BlasTaq™ One-Step RT-qPCR (Cat. No. G596) for GAPDH amplification.

# 4. Nucleic Acid Staining Dyes

Safer alternatives for nucleic acid visualization

Developed to replace toxic Ethidium bromide (EtBr), SafeView™ products are a new class of nucleic acid stains for the visualization of double-stranded DNA, single-stranded DNA, and RNA in both agarose and polyacrylamide gels. Six formulations are available, for compatibility with any experimental setup.

SafeView™ products are non-carcinogenic by the Ames-test. The results are negative in both the mouse marrow chromophilous erythrocyte micronucleus and mouse spermatocyte chromosomal aberration tests.



## Loading Dyes

Select loading dyes are compatible with blue light



## Gel Casting Dyes

All our biosafe stains are non-mutagenic



## Post Staining Dyes

Detect as little as 20-100 pg of DNA

## Product Comparison Table

	Product Name	UV	Blue Light	Excitation Maxima	Emission Maxima	Sensitivity (per band)
Loading Dyes	Safe-Green™	✓	✓	490 nm, ~265 nm	525 nm (green)	0.2 - 0.6 ng
	Safe-Red™	✓		540 nm, ~265 nm	630 nm (red)	0.3 - 0.8 ng
	Safe-White™	✓		370 nm, ~265 nm	470 nm (blue-white)	0.2 - 0.5 ng
Gel Casting Dyes	SafeView™ Classic	✓	✓	490 nm	520 nm (green) 635 nm (red)	0.1 - 0.3 ng
	SafeView™ FireRed	✓	✓	490 nm	630 nm (red)	0.1 - 0.3 ng
Post Staining Dyes	SafeView™ Plus	✓	✓	490 nm	525 nm (green-cyan)	0.02 - 0.1 ng



### ISO 13485:2016 MDSAP Certified





Our nucleic acid staining dyes and associated mastermixes and kits are manufactured under a Quality Management System conforming with ISO 13485:2016 as certified by Intertek (a MDSAP recognized auditing organization).



# SafeView™ DNA Stains

Non-toxic stains for DNA/RNA gel visualization

## FEATURES

-  Safe visualization of nucleic acids in gels without the need for toxic Ethidium Bromide
-  Easy-to-use and visualize bands using UV or blue light
-  Sensitive detection of as little as 0.02 pg of DNA per gel band
-  Minimizes DNA damage caused by EtBr methods, yielding higher transformation rates and lower mutation rates

## PRODUCT DETAILS

### Loading Dyes

Product Name	Size	Cat. No.
Safe-Green™	1 ml	G108-G
Safe-Red™	1 ml	G108-R
Safe-White™	1 ml	G108-W
Safe-Pack™	1 Pack	G108-P

Contains one each of Safe-Green™, Safe-Red™, and Safe-White™

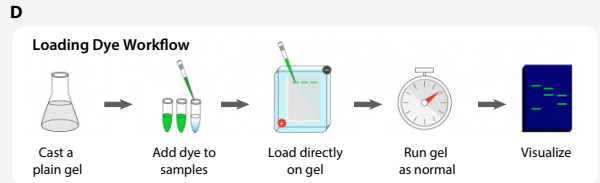
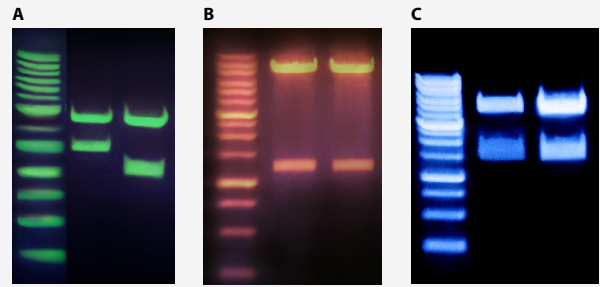
### Gel Casting Dyes

Product Name	Size	Cat. No.
SafeView™ Classic	1 ml	G108
SafeView™ FireRed	1 ml	G926

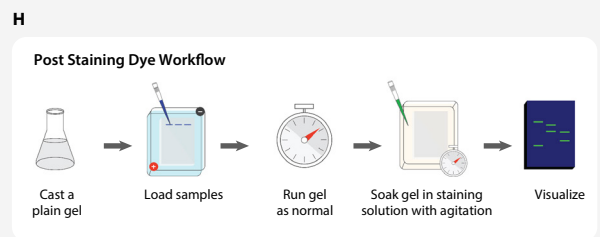
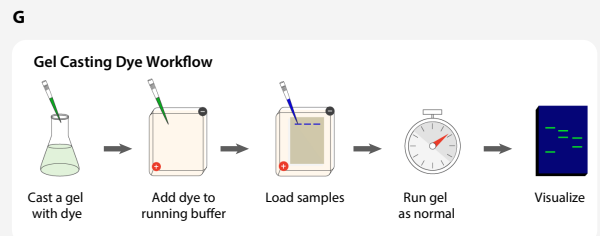
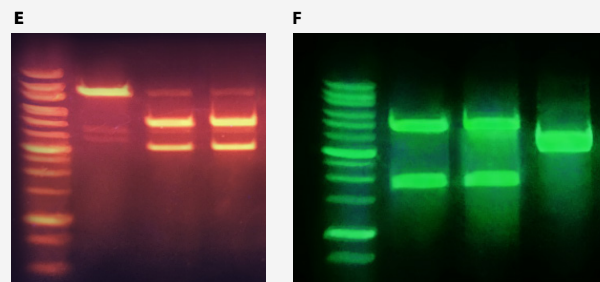
### Post Staining Dyes

Product Name	Size	Cat. No.
SafeView™ Plus	1 ml	G468

## PERFORMANCE DATA



DNA constructs were run on agarose gels and stained with either Safe-Green™ (A), Safe-Red™ (B), or Safe-White™ (C) DNA Stains and visualized under UV light. Typical loading dye workflow using SafeView™ DNA Loading Dyes (D).



DNA constructs were run on agarose gels and stained with either SafeView™ FireRed (E) or SafeView™ Plus (F) DNA Stains and visualized under UV light. Typical gel casting dye workflow using SafeView™ Gel Casting DNA Dyes (G) and SafeView™ Post Staining DNA Dyes (H).

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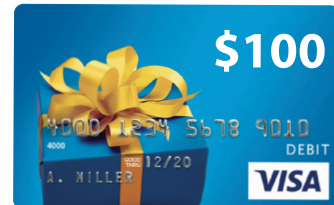
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