

PRODUCTS FOR EDUCATION



**USER-FRIENDLY, COST-EFFECTIVE,
AND SAFER FOR STUDENT
EXPERIMENTS**

Designed to meet the needs of education and academia, our extensive range of technologies and products focuses on safety, efficiency, cost-effectiveness, and precision in results.

- **DNA GEL ELECTROPHORESIS**

Explore safer, brighter, and more sensitive DNA stains

- **GEL-BRIGHT™ LASER DIODE GEL ILLUMINATOR**

Safer and more sensitive with brighter results.

- **PROTEIN GEL STAINING**

Faster, easier, and safer than Coomassie blue staining.

- **PCR MASTER MIXES**

Includes 2-color tracking for avoiding costly pipetting mistakes

PRIORITIZE SAFETY IN YOUR DNA GEL ELECTROPHORESIS

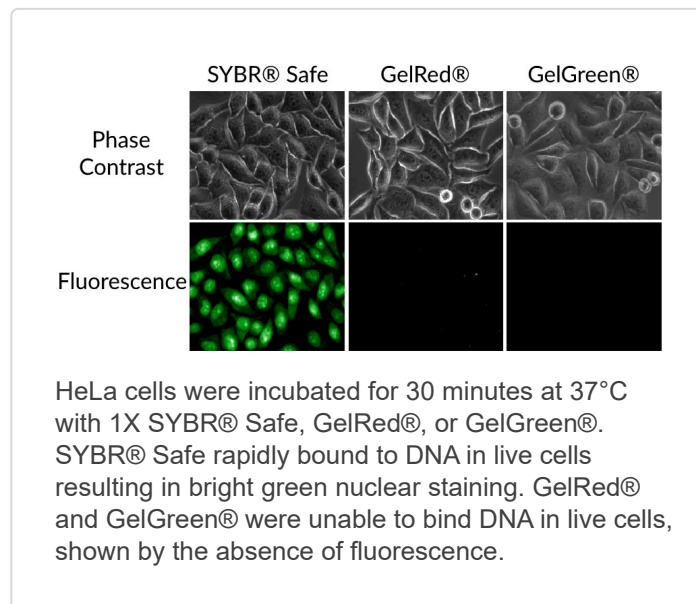
GelRed® & GelGreen® are safer, sensitive, and economical.

Although ethidium bromide (EtBr) has been the predominant dye for nucleic acid staining, its low sensitivity and high mutagenic properties make it suboptimal for research or for educational laboratories. In contrast, our nontoxic GelRed® and GelGreen® fluorescent agarose gel stains are sensitive and significantly safer alternatives for DNA gel staining.

Prepare precast gels more safely with ultrapure molecular biology grade agarose pre-coated in our GelRed® and GelGreen®.

Our GelGreen® and GelRed® Agarose LE offer an ultra-pure molecular biology grade agarose that comes pre-coated with either GelGreen® Nucleic Acid Gel Stain or GelRed® Nucleic Acid Gel Stain, ensuring maximum safety and ease of use, especially for beginners and students. The dye already incorporated into the agarose eliminates the need to handle concentrated fluorescent dye solutions, significantly enhancing safety measures. These pre-coated agarose formats can be used with TAE or TBE buffers for gel concentrations ranging from 0.8% to 2%.

GelRed® & GelGreen® do not readily penetrate living cells.



GelRed® Prestain Plus 6X DNA Loading Dye

Our GelRed® Prestain Plus 6X DNA Loading Dye simplifies gel electrophoresis with its one-step loading and staining process. Featuring two visible blue tracking dyes for reference and an improved formulation to minimize DNA migration shifts, this convenient format eliminates the need to add dye separately to agarose gels while ensuring consistent and reliable results.

GelRed® Features:

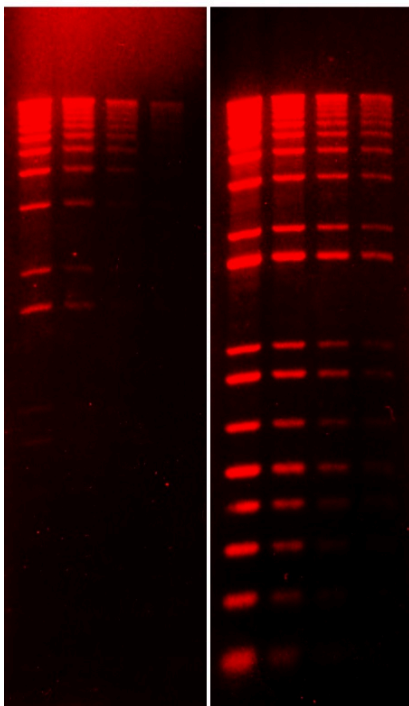
- Visualized with UV light boxes and the safer Gel-Bright™ Imager using ethidium bromide detection settings
- Most sensitive fluorescent red DNA gel stain
- Safer and more environmentally friendly than EtBr, as well as other so-called “safe” gel stains
- Can be used pre-cast, as a post-stain, or in pre-coated agarose
- Available as a 10,000X stock, ready-to-use 3X solution, in 6X loading buffer, and pre-coated agarose formats

GelGreen® Features:

- Visualized with blue light boxes or UV light box using SYBR® green detection settings
- More sensitive than SYBR® Safe
- Safer for users & the environment than SYBR® Safe & other so-called “safe” gel stains
- Can be used pre-cast, as a post-stain, or in pre-coated agarose
- Available in a concentrated 10,000X stock and pre-coated agarose formats

EtBr

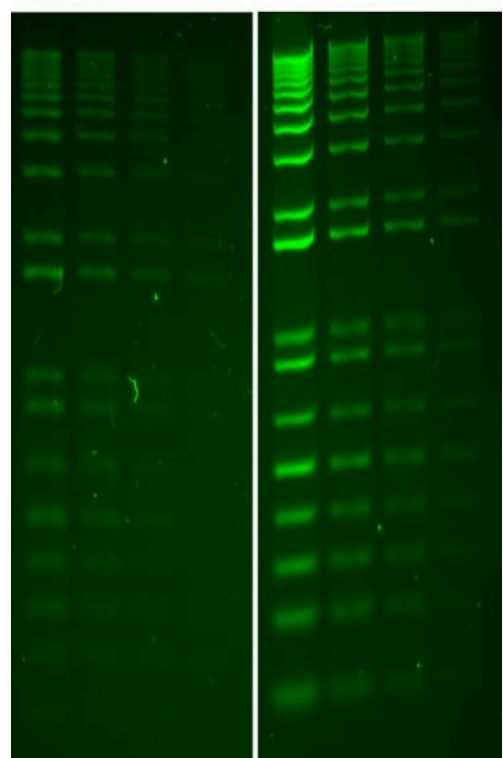
GelRed®



Comparison of ethidium bromide (EtBr) and GelRed® in precast gel staining using 1% agarose gel in TBE buffer. Two-fold serial dilutions of 1 kb Plus DNA Ladder were loaded in the amounts of 200 ng, 100 ng, 50 ng and 25 ng from left to right. Gels were imaged using 300 nm transilluminator and photographed with an EtBr filter.

SYBR® Safe

GelGreen®



Comparison of GelGreen® and SYBR Safe in post-electrophoresis staining of 1% agarose/TBE gels. Two-fold serial dilutions (200 ng, 100 ng, 50 ng and 25 ng) of 1 kb Plus DNA Ladder (Invitrogen). Gels were imaged using 254-nm UV transilluminator and photographed with a SYBR filter.

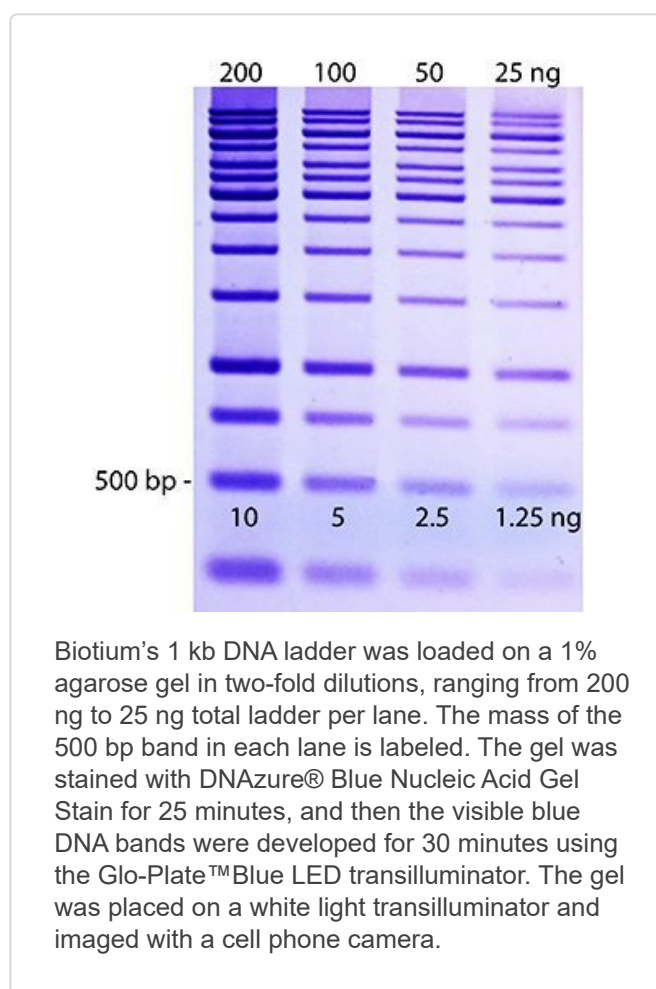
SENSITIVE COLORIMETRIC STAINING FOR DNA

DNAzure® Visible DNA Gel Stain

Our DNAzure® Visible DNA Gel Stain is ideal for educational lab settings with its convenient and sensitive colorimetric detection that eliminates the need for expensive gel imaging systems. Simply stain and develop bands in two steps with only a white light lamp to develop the color.

DNAzure® Features:

- Vivid blue bands after 30 min stain and 5-30 min light exposure
- Bands can be developed with inexpensive commercial light sources
- Visible blue bands with no need for expensive gel imaging systems
- Long-lasting stable bands after color development



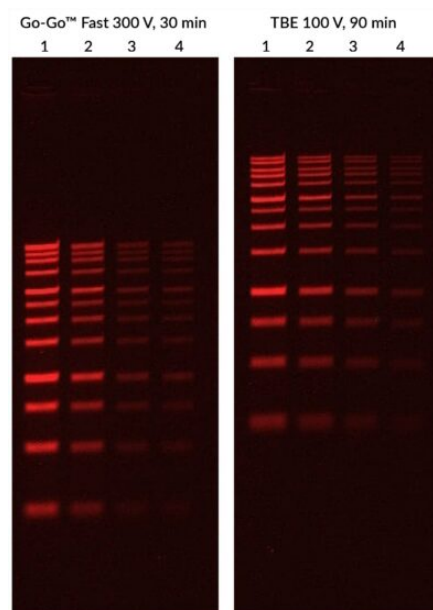
SAVE TIME BY RUNNING DNA GELS 3X FASTER

Go-Go™Fast DNA Gel Running Buffer

Have a tight lab schedule? Get faster DNA gel analysis results with Biotium's Go-Go™Fast DNA Gel Running Buffer. This innovative low ionic strength buffer enables faster DNA agarose gel runs, up to 3X quicker than TAE or TBE buffers.

Go-Go™Fast DNA Gel Running Buffer Features:

- Time-saving: Allows gels to be run 3X faster than with TAE or TBE
- Clear results: Provides crisp band resolution
- Versatile: Excellent results with GelRed®, GelGreen®, and other popular gel stains



GelRed® Prestain Plus 6X DNA Loading Dye was used to load 1 kb DNA ladder 1% agarose gels cast in 1X Go-Go™Fast DNA Gel Buffer (left) or 1X TBE (right). The Go-Go™Fast gel was run at 300 V (27 V/cm) for 30 minutes, while the TBE gel was run at 100 V (9 V/cm) for 90 minutes. Lanes 1-4: 1 kb DNA Ladder from 200 ng to 25 ng per lane.

GEL IMAGING MADE SAFER AND MORE SENSITIVE

Gel-Bright™ Laser Diode Gel Illuminator

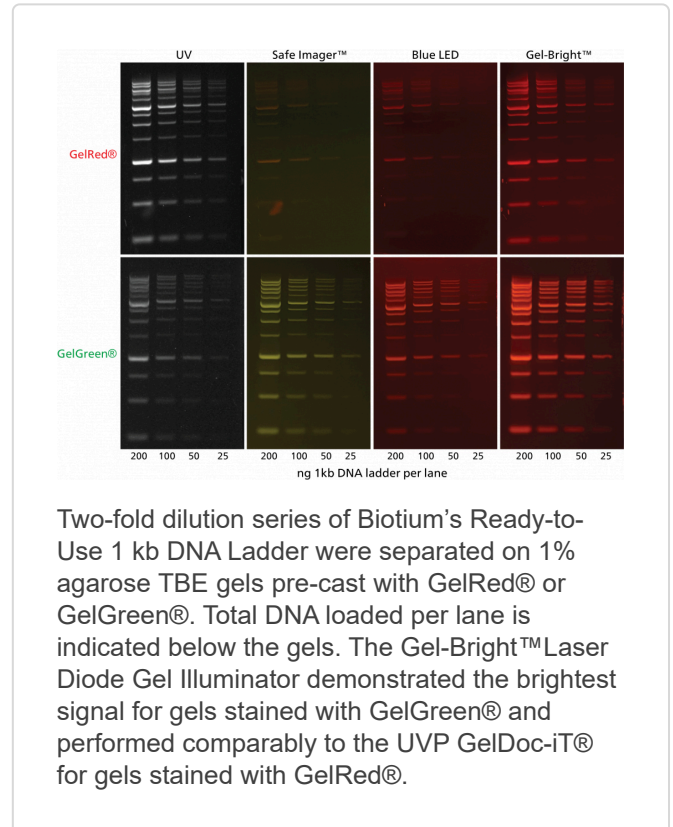
The Gel-Bright™ Laser Diode Gel Illuminator, using laser diodes (LDs) instead of UV, ensures brighter and clearer results without harming skin, eyes, or DNA samples. The device offers superior sensitivity to green dyes like GelGreen® or SYBR® Green and outperforms blue LED illuminators for red dyes such as GelRed®, EtBr, and One-Step Lumitein™ Protein Gel Stain.



Gel-Bright™ Laser Diode Gel Illuminator Features:

- Superior sensitivity: Compatible with both green and red dyes unlike blue LED illuminators
- Versatile: Adjustable light intensity and filter angle. Imaging hood included for taking pictures with cell phone
- Safer: Eliminates UV light hazards

Safer and Sensitive Gel Imaging



OTHER USEFUL DNA GEL ELECTROPHORESIS REAGENTS

Product	Catalog No.	Supplied as	Pros
Ready-to-Use 100 bp DNA ladders	BIO31032	150 applications (1.5 mL)	<ul style="list-style-type: none"> • Contains 11 double-stranded DNA fragments • Bands range from 100 bp to 1500 bp • 500 bp and 1500 bp bands are higher concentration, for orientation
Ready-to-Use 1 kb DNA ladders	BIO31022	150 applications (1.5 mL)	<ul style="list-style-type: none"> • Contains 13 double-stranded DNA fragments • Bands range from 250 bp to 10 kb • 1 kb and 3 kb bands are higher concentration, for orientation
DNA Gel Extraction Kit	BIO31030-50	50 assays	<ul style="list-style-type: none"> • Purify DNA fragments from 40 bp to 40 kb • Maximum binding capacity of each column is 10 ug DNA • Purify DNA from agarose gels made with TAE or TBE buffer
	BIO31030-250	250 assays	
TBE Buffer 5X	BIO41006	4 L	<ul style="list-style-type: none"> • 4L Cubitainer® with detachable spigot for easy dispensing • Non-glug design for a continuous, uninterrupted stream • Opening can be raised or depressed for pouring
6X DNA Loading Dye (Blue)	BIO99962-1	4 x 1.5 mL	<ul style="list-style-type: none"> • Density agents for easy sample loading • Visible blue or orange dyes for tracking gel electrophoresis • Compatible with agarose and polyacrylamide gels • No fluorescent DNA stains
6X DNA Loading Dye (Orange)	BIO99859-1	4 x 1.5 mL	
Agarose LE	BIO41028-25G	25g	<ul style="list-style-type: none"> • High performance agarose for nucleic acid electrophoresis (analytical or preparative) and blotting. • Validated for use with Biotium's GelRed®, GelGreen®, and DNAzure® gel stains.
	BIO41028-100G	100g	
	BIO41028-500G	500g	

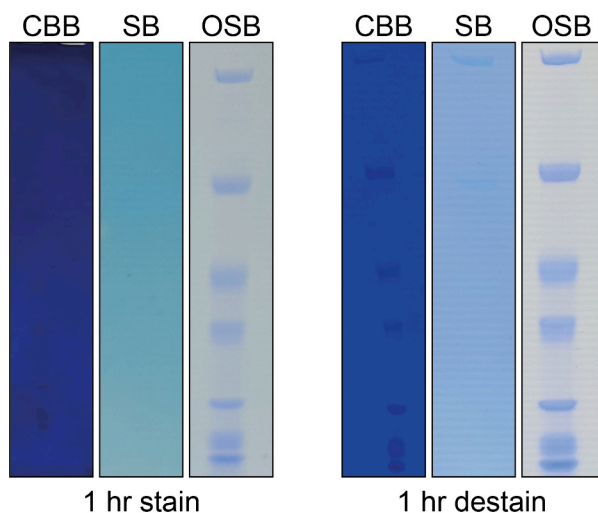
STAIN SAFER & QUICKER THAN COOMASSIE BLUE

One-Step Blue® Protein Gel Staining

One-Step Blue® stands out as a safer and easier alternative to traditional Coomassie blue staining, ideal for students and beginners. This ready-to-use protein gel staining solution does not require light exposure to develop color and eliminates fixation and washing steps while offering improved sensitivity. Staining takes as little as 5 minutes and is non-toxic to the environment, making it suitable for drain disposal after pH neutralization.

One-Step Blue® Features

- Environmentally-Conscious: Aqueous-based, non-toxic, and suitable for drain disposal after pH neutralization.
- Timely Visible Results: Blue bands visible within 5-30 minutes.
- Enhanced Safety: No toxic ingredients or solvents.



NEVER MISS A PIPETTE WELL WITH OUR PCR MASTER MIXES

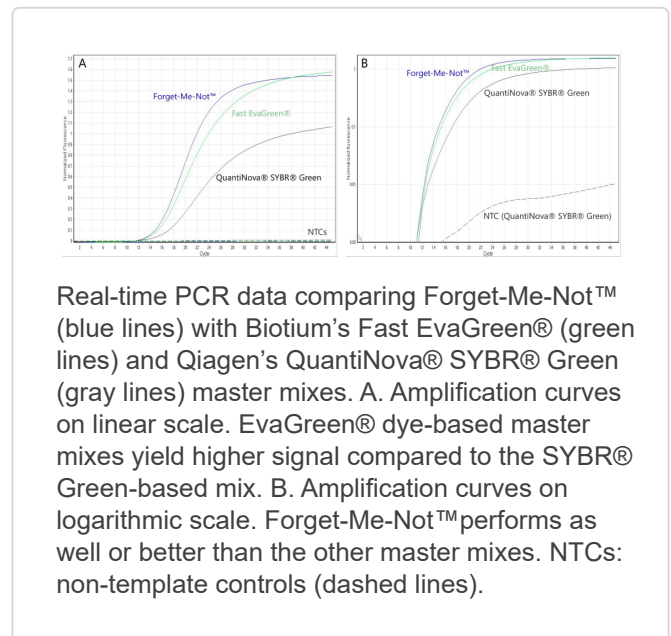
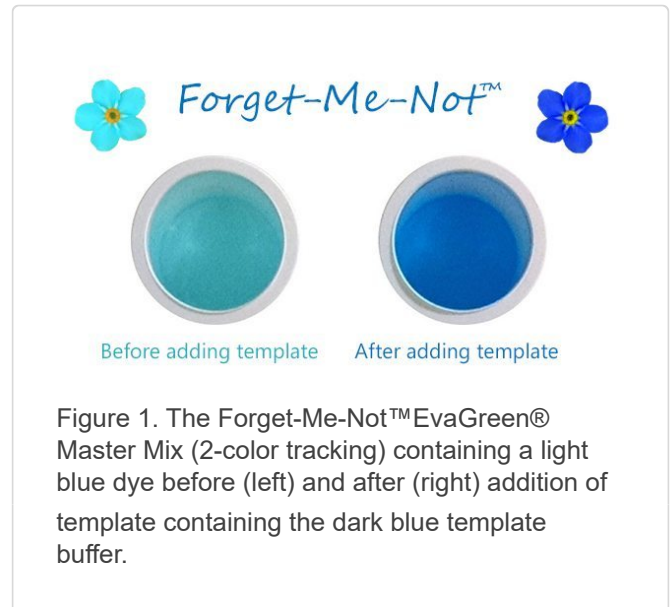
Forget-Me-Not™ EvaGreen® Master Mix (2-Color Tracking)

The 2X Forget-Me-Not™ EvaGreen® qPCR Master Mix offers a user-friendly solution for qPCR and DNA melt curve analysis, ideal for students and newcomers. Combining EvaGreen® Dye, Cheetah™ HotStart Taq DNA Polymerase, dNTPs, and a low concentration of an inert blue dye, it facilitates easy identification of reaction mix wells. Additionally, its inclusion of Forget-Me-Not™ Template Buffer enables 2-color tracking, preventing pipetting errors and minimizing reagent and sample wastage.

This master mix's unique 2-color tracking feature provides visual confirmation of correct reaction setup, enhancing user confidence. Moreover, it delivers PCR performance comparable to established alternatives like Fast EvaGreen® Master Mix and Qiagen's QuantiNova® SYBR® Green PCR Master Mix. With a formulation suitable for fast cycling PCR parameters, it caters to both experienced users and newcomers to qPCR applications, offering versatility and reliability in molecular biology research.

Key Features:

- Ready-to-use: Just add primers and DNA template
- Superior sensitivity: EvaGreen® Dye is more sensitive than SYBR® Green I and is compatible with HRM®
- Directly visualization: Image green fluorescent PCR product in gel, no other dye needed
- 2-color tracking: Prevents wasted samples and costly mistakes



PCR ACCESSORY REAGENTS & RELATED PRODUCTS

Biotium offers a wide range of PCR/qPCR accessory products to assist you in your DNA amplification experiments.

Product Name	Catalog Number	Size
dNTP Mix, 10 mM Each	BIO40054	5 x 1 mL
dNTP Mix, 25 mM Each	BIO40053	1 mL
dNTP Set, 100 mM Each	BIO40052	250 uL Each
ROX Reference Dye	BIO29052	5 x 1 mL
EvaGreen® Dye, 2000X in DMSO	BIO31019	50 uL
EvaGreen® Dye, 20X in water	BIO31000	5 x 1 mL
Cheetah™ Hot-Start Taq Polymerase	BIO9050	500 U



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