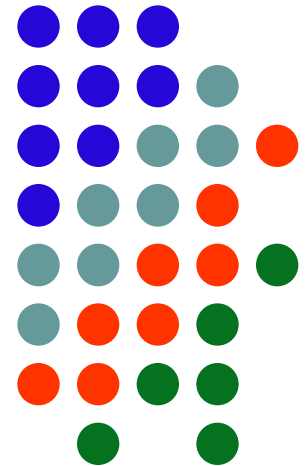
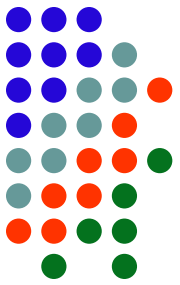


AAT Bioquest Inc

January 2022
Violeta Jordan, MBA
Global Director of Sales and Business Development
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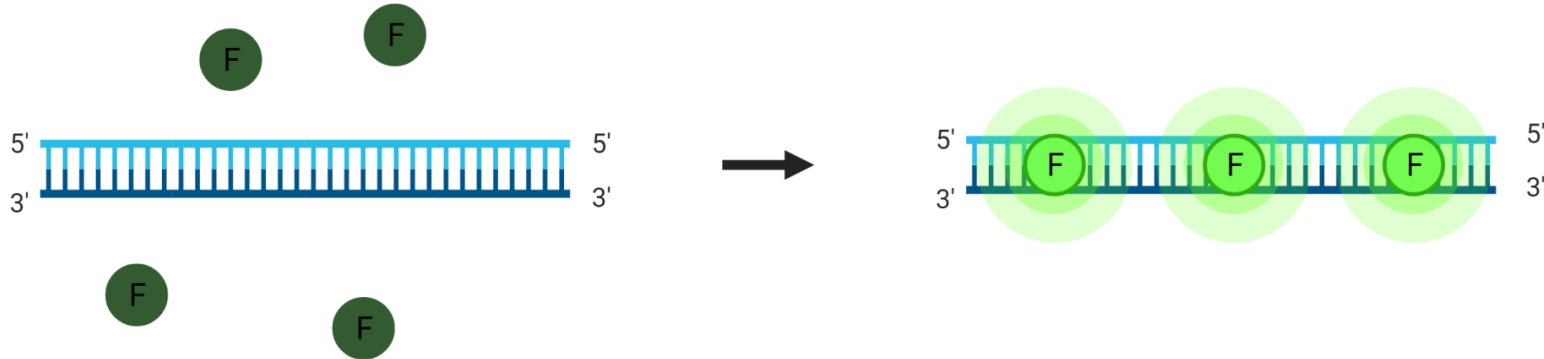
Gelite™ Safe DNA Gel Stain in Molecular Biology Research



- Gel electrophoresis is a technique used to separate proteins and nucleic acids that are different in size
- The gel is composed of:
 - Polyacrylamide: for proteins and smaller DNA fragments
 - Agarose: for separating DNA fragments in size range of a few hundred base pairs to 20kb
- After separation by electrophoresis, nucleic acid fragments can be visualized using several different methods:
 - Staining with ethidium bromide (EtBr): highly carcinogenic, cytotoxic, and mutagenic (environmentally hazardous)
 - Safer alternatives to EtBr include novel gel stains, such as **Gelite™ Safe DNA Gel Stain**

Gelite™ Safe

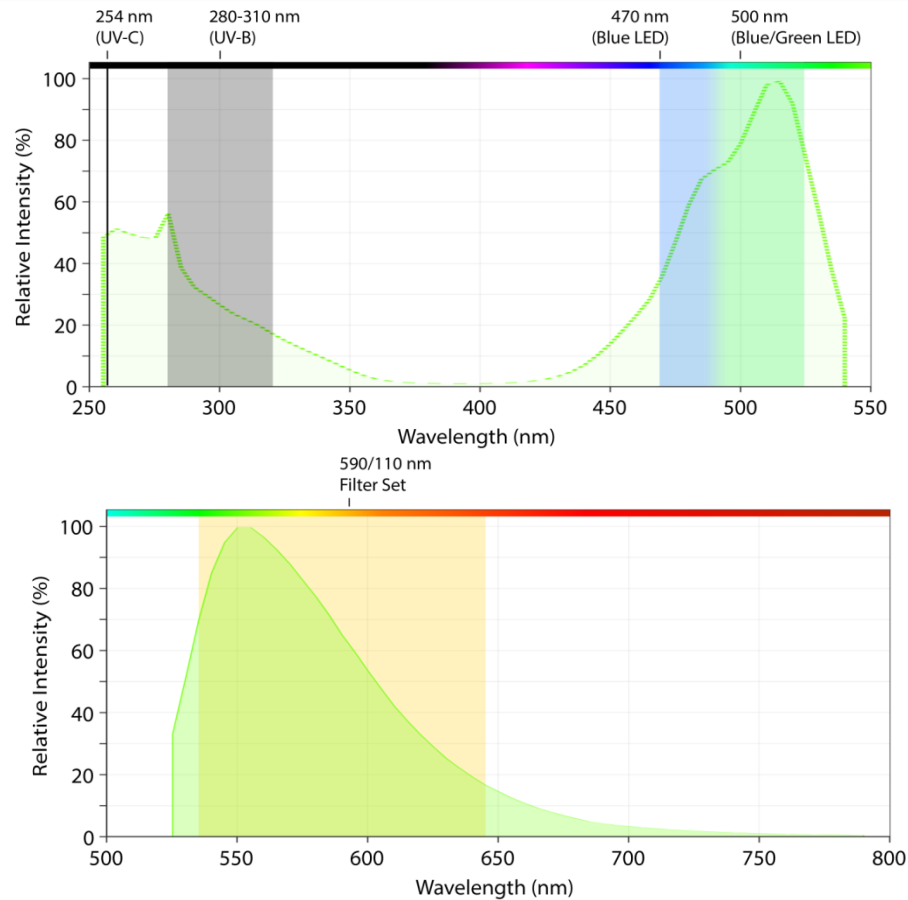
- A safer, low-cost, ultra sensitive DNA detection in gels
- Based on internal testing, both formulations perform similarly



Product	Size	Cat No.
Gelite™ Safe DNA Gel Stain *10,000X Water Solution*	100 µL	17700
Gelite™ Safe DNA Gel Stain *10,000X Water Solution*	500 µL	17701
Gelite™ Safe DNA Gel Stain *10,000X Water Solution*	1 mL	17702
Gelite™ Safe DNA Gel Stain *10,000X Water Solution*	10 mL	17703
Gelite™ Safe DNA Gel Stain *10,000X DMSO Solution*	100 µL	17704
Gelite™ Safe DNA Gel Stain *10,000X DMSO Solution*	500 µL	17705
Gelite™ Safe DNA Gel Stain *10,000X DMSO Solution*	1 mL	17706
Gelite™ Safe DNA Gel Stain *10,000X DMSO Solution*	10 mL	17707

Spectra of Gelite™ Safe DNA Gel Stain Bound to DNA in TE Buffer

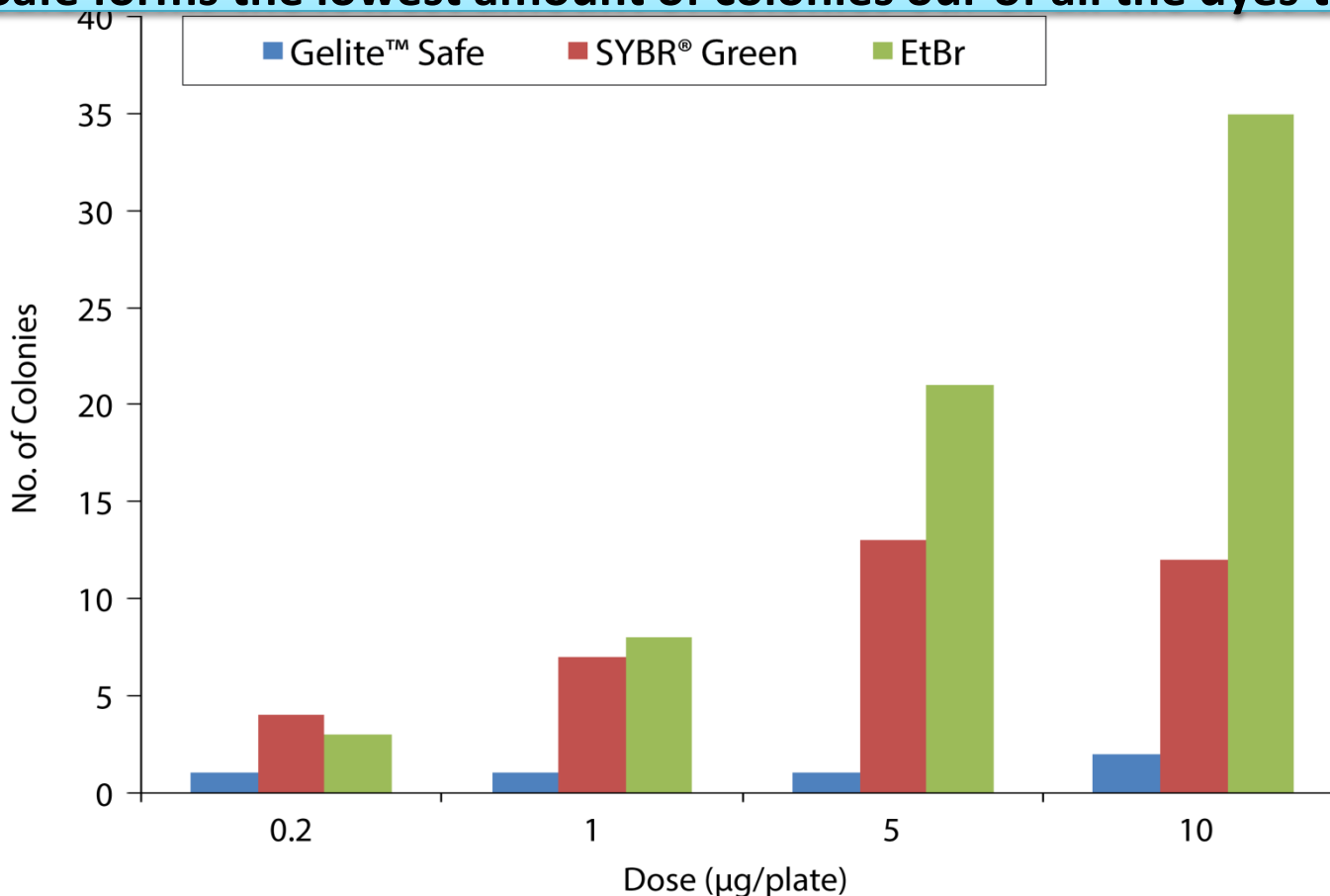
- Excitation (Upper panel) and Emission (Lower panel)
- Gelite™ significant features: broad excitation and emission profiles
- Gelite™ has excitation maxima in UV region at 280 nm and in visible region at 513 nm



Gelite™ Safe DNA Gel Stain Ames Mutagenicity Test vs Competition

Gelite™ Safe DNA Gel Stain is the best and most robust

Gelite™ Safe forms the lowest amount of colonies out of all the dyes tested

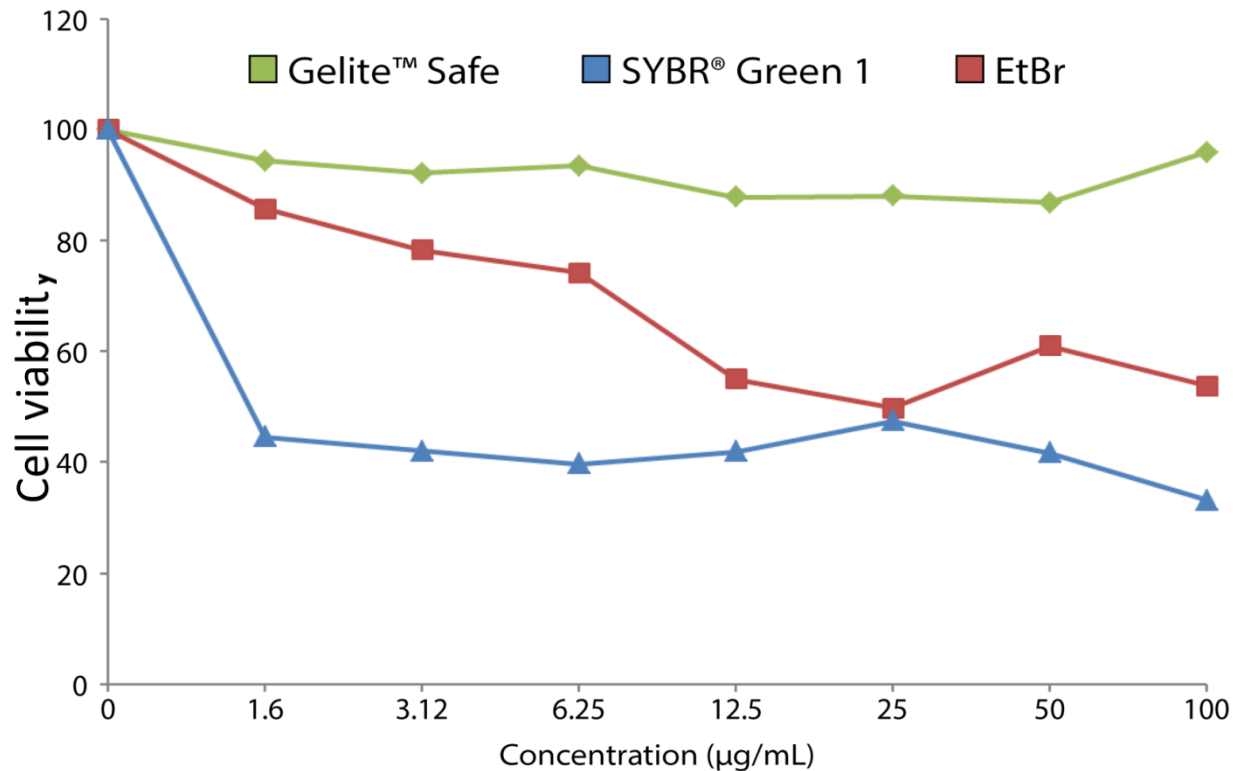


Ames mutagenicity test was performed in a dose-dependent manner for Gelite™ Safe, SYBR® Green, and EtBr. Samples were pretreated with an S9 fraction liver extract and then tested. With *S. Typhimurium* strain TA1538, an increase in revertants of more than two-fold over the background indicates a positive result for mutagenicity

Cell Cytotoxicity tests

WST-8 assay

With Gelite™ Safe we don't observe any cell death even at as high as 100ug/mL dose



WST-8 is bio-reduced by cellular dehydrogenases to an orange formazan product that is soluble in tissue culture medium. The amount of formazan produced is directly proportional to the number of living cells

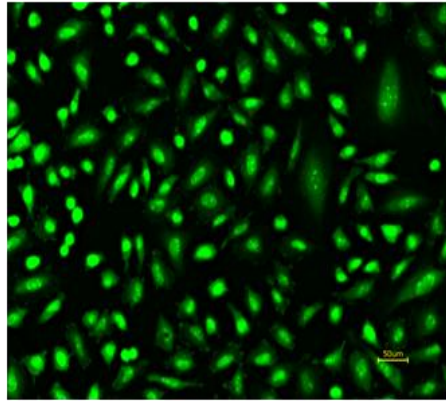
Cell Permeability of Different DNA Dyes

Gelite™ Safe wasn't cell permeable, unlike many other dyes

Gelite™ Safe

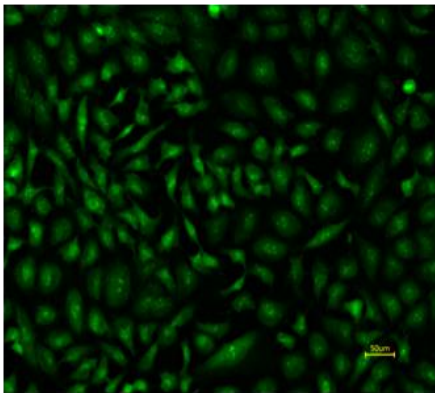


SYBR® Green

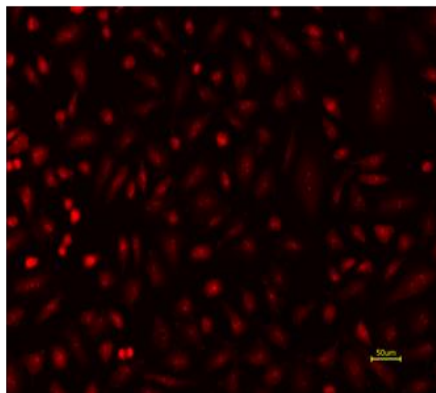


SYBR® based nucleic acid gel stains rapidly penetrates live cells to stain nucleus, increasing their likelihood of causing damage to living cells

SYBR® Safe



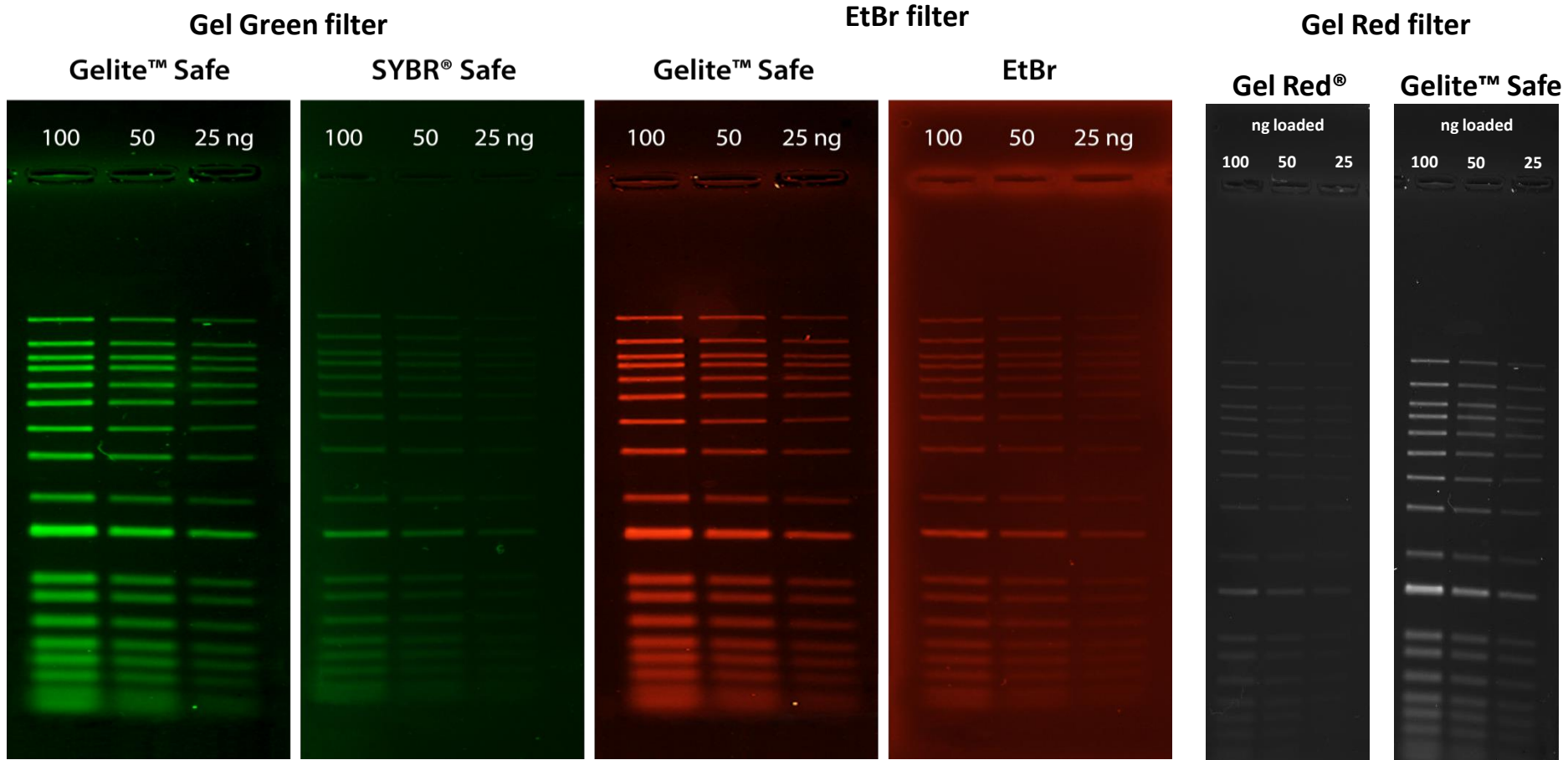
EtBr



Gelite™ Safe DNA gel stain does NOT penetrate live cells, making it much safer to use

Comparison Tests Between Different DNA Dyes With Different Filters

We compared the post gel staining

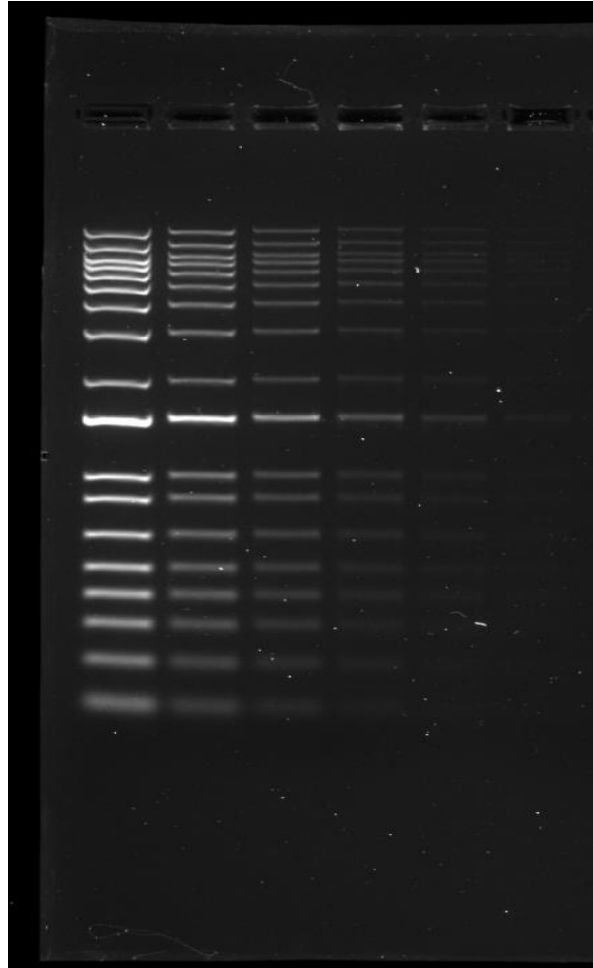


Two-fold serial dilutions of 1 kb DNA ladder were loaded in amounts of 100 ng, 50 ng, and 25 ng from left to right. Gels were stained for 60 minutes with Gelite™ Safe, EtBr, Gel Red® and SYBR® Safe according to the manufacturer's recommended concentrations and imaged using the ChemiDoc™ Imaging System (Bio-Rad®). Gels were illuminated using a 300 nm transilluminator fitted with GelGreen (Images 1 and 2), EtBr filters (Images 3 and 4) and GelRed filters (Images 5 and 6).

Pre Staining

Gelite™ Safe is compatible with pre-stain as well

Gelite™ Safe
added in the gel



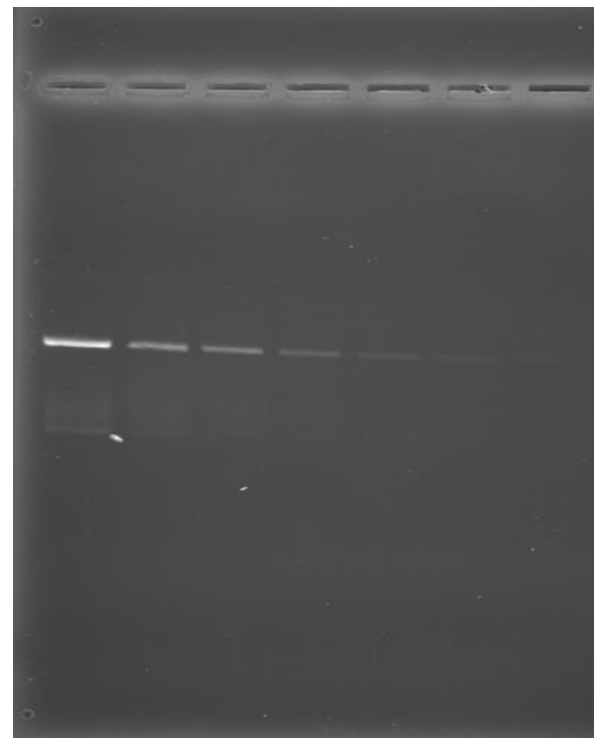
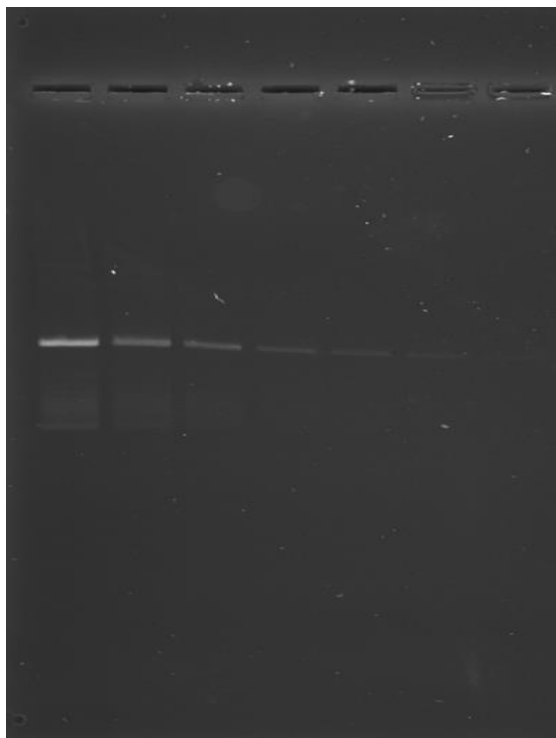
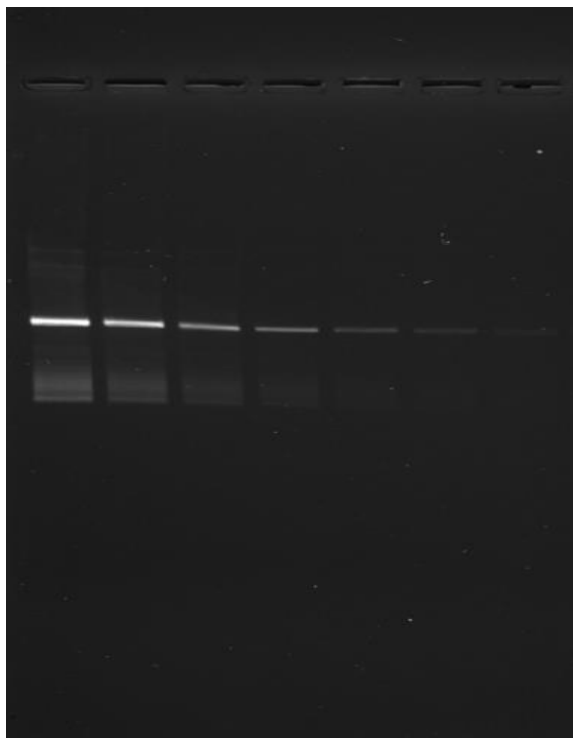
Post Staining

Plasmid extracted from bacteria

Gelite™ Safe

Gel Red®

EtBr

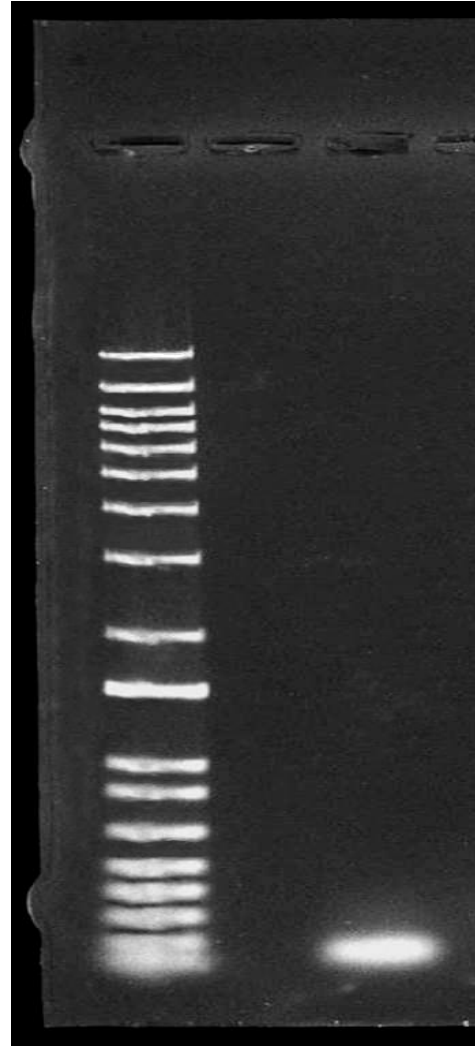


PGL3-Control vector plasmid was extracted and purified from bacteria and 1% agarose gel was run.

Gelite™ Safe DNA Gel Stain

Gelite™ Safe can be used for detection of the PCR product as well

PCR product staining
GAPDH- 170 bps



Gelite™ Safe DNA Gel Stain USD Pricing Comparison

		Gelite Safe (AAT Bioquest)	SYBR Green (Thermo Scientific)	Gel Red (Biotium)
Volume	Description	Cat# and \$	Cat# and \$	Cat# and \$
100 µL	10,000X Water solution	17700 (\$ 75)	N/A	41003-T (\$ 29)
500 µL	10,000X Water solution	17701 (\$ 95)	N/A	41003 (\$ 118)
1 mL	10,000X Water solution	17702 (\$ 145)	N/A	N/A
10 mL	10,000X Water solution	17703 (\$ 950)	N/A	41003-1 (\$ 1909)
100 µL	10,000X DMSO solution	17704(\$ 75)	N/A	N/A
500 µL	10,000X DMSO solution	17705 (\$ 95)	S7563 (\$ 351)	41002 (\$ 113)
1 mL	10,000X DMSO solution	17706 (\$ 145)	S7567 (\$590)	N/A
10 mL	10,000X DMSO solution	17707 (\$ 950)	N/A	41002-1 (\$ 1817)

Thank You



www.aatbio.com

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Questions and Answers

