



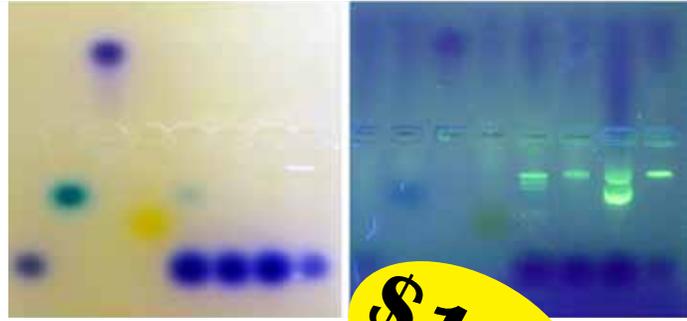
BIOTECHNOLOGY BASICS™

by Ellyn Daugherty

GEL BOX SCIENCE (BBED-4J)

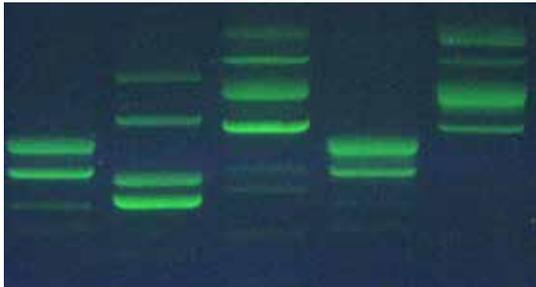
Teach the basic principles of a gel box, specifically horizontal agarose gel electrophoresis. Supplied with all the reagents necessary to conduct 4 gel box science experiments, each using a gel box (not supplied).

- Introduce students to the equipment used in electrophoresis
- Highlight the key elements of a standard gel box
- Explore the science by comparing running buffers with and without salt ions
- Understand the relationship between volts and milliamps
- Explore how molecules behave during electrophoresis.
 - Four samples use differently charged dyes so students can see the difference in migration of charged molecules.
 - Four DNA samples, featuring a DNA ladder, a plasmid, genomic DNA and Lambda DNA. These combined with a fluorescent stain (UV transilluminator or BLUE LED light box required) allow the migration of DNA to be monitored and size of DNA to be estimated.



CRIME SCENE DNA ANALYSIS USING RFLP TECHNOLOGY (BBED-4M)

Teach students about RFLP (restriction fragment length polymorphisms) and its use in crime scene investigations. Students will use restriction enzyme digestions of victim, suspect and crime scene DNA and then visualize the digested fragments using horizontal electrophoresis. Students will practice loading samples and then load the restriction digests and visualize the DNA fragments using G-Biosciences LabSafe™ Nucleic Acid Stain.



Features

- Understand RFLP (restriction fragment length polymorphisms)
- Perform restriction digestions
- Perform horizontal agarose gel electrophoresis
- Visualize and compare DNA fragments
- Conduct pseudo crime scene investigation

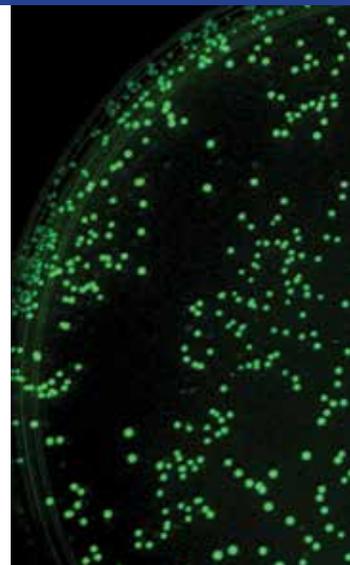


GFP GENETIC ENGINEERING OF BACTERIA (BBED-8H)

Can E. coli cells be transformed into cells that have two new characteristics (ampicillin-resistance and green fluorescent protein production)? TDesigned to teach students the basic principles of plasmids, antibiotic resistance, competent cells and bacterial transformation providing an excellent introduction to genetic engineering.



A Thermo Fisher Scientific Brand





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CHEESE PRODUCTION: THE EVOLUTION OF CHEESE-MAKING TECHNOLOGY (BTNM-1C)

Introduce students to the evolution of cheese making as the kit is supplied with natural and fermentation produced chymosins. Allow them to determine which curdling agent produces the cheese at the fastest rate (mass/time)?

The kit contains the reagents to allow students to set up a controlled experiment & collect numerical data.

Features

- For 8 groups of 4 students
- Optional requirement for 37C waterbath
- Requires a balance

Applications

- HS-LS1: From Molecules to Organisms: Structures and Processes
- HS-ETS1-2, 3, 6: Engineering Design



\$81



DNA SPOOLING WITH A TWIST: GENOMIC DNA SPOOLING (BTNM-4B)

Don't just spool DNA, be biotechie with it! Our Genomic DNA Spooling kit allows for 8 groups of 2-4 students to spool salmon testes DNA onto a spooling rod. This lab module allows students to precipitate the DNA from solution before spooling (winding) onto a rod. The recovered DNA is returned to solution and the students then use G-Biosciences' NUCLEIC dotMETRIC kit to estimate the amount of DNA recovered.

Applications

- Precipitate genomic DNA
- Spool DNA
- Use a DNA assay to check recovery of DNA

\$99



MICROPIPETTING MASTERY: MICROPIPETTING: MEASURING SMALL VOLUMES IN BIOTECHNOLOGY (BBED-3B)

Teach students the basic principles of measuring small volumes (<500µl) using micropipettes. The kit is supplied with all the reagents to allow 8 groups of 4 students to learn about P-1000, P-200 or P-100 and P-20 or P-10 micropipettes and undertake a micropipetting challenge. Pipettes not included.

\$85

