Electrophoresis

TOPIC CATALOG

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EDVOTEK®

Designed for the Classroom
SINCE 1987

THE BIOTECHNOLOGY EDUCATION COMPANY®

EDVOTEK®

The Biotechnology Education Company®

Edvotek® was the world's ***first company*** dedicated to demystifying biotechnology for young people. In 1987, we envisioned how the emerging area of biotechnology could ***inspire*** students to choose a career in science.

Since then, Edvotek® has ***expanded*** to become the world's ***leading supplier*** of safe, affordable and easy-to-use ***biotechnology kits and equipment*** designed specifically for education.

Let us help you bring the exciting world of biotechnology into your classroom!

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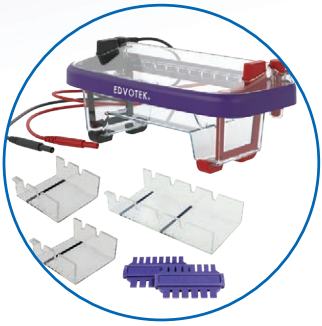
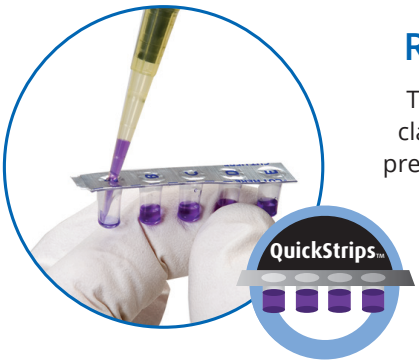
Innovations in Electrophoresis

Electrophoresis has been around for a long time, but at Edvotek® we're reimagining electrophoresis to make it fun and easy to fit into your classroom and curriculum.

Electrophoresis Equipment

Our equipment is the same as the equipment used in real scientific laboratories, but with safety features for the classroom. Running at 150 V, most results can be seen in 10-15 minutes! Highly adaptable, this equipment can be used for many different experiments to satisfy your entire classroom's needs.





Ready-to-Load™ QuickStrips™

Tired of aliquoting all of your samples for the class? With our new QuickStrips™, samples are pre-aliquoted and ready to load! Simply puncture through the aluminum topping and load samples directly into the gel.

Practice Gel Loading

All kits from Edvotek® include practice gel loading solutions, so your students can practice loading gels before trying their own samples!

Dryzymes®
No Ice Shipment

Lyophilized Reagents

It can be frustrating to work with enzymes that are not stable at room temperature. With our new Dryzymes®, your restriction enzymes are stable until diluted! No more worrying about storage and timings.

Introduction to Electrophoresis

Scientists use a wide variety of biotechnology techniques to analyze biomolecules. One of the most common techniques to study complex biomolecules is agarose gel electrophoresis. Agarose gel electrophoresis works by separating molecules based upon charge, size and shape. It is particularly useful in separating charged biomolecules such as DNA, RNA and proteins. Agarose gel electrophoresis possesses great resolving power, yet is relatively simple and straightforward to perform. It includes casting an agarose gel, preparing the samples, and running an electrical current through the gel.

An agarose gel is made by dissolving agarose powder in boiling buffer solution. The solution is then cooled to approximately 55° C and poured into a gel tray where it solidifies. The tray is submerged in a buffer-filled electrophoresis apparatus which contains electrodes.

Samples are prepared for electrophoresis by mixing them with components that will give the mixture density, such as glycerol or sucrose. This makes the samples denser than the electrophoresis buffer. These samples can then be loaded with a micropipette or transfer pipet into wells that were created in the gel by a template during casting. The dense samples sink through the buffer and remain in the wells.

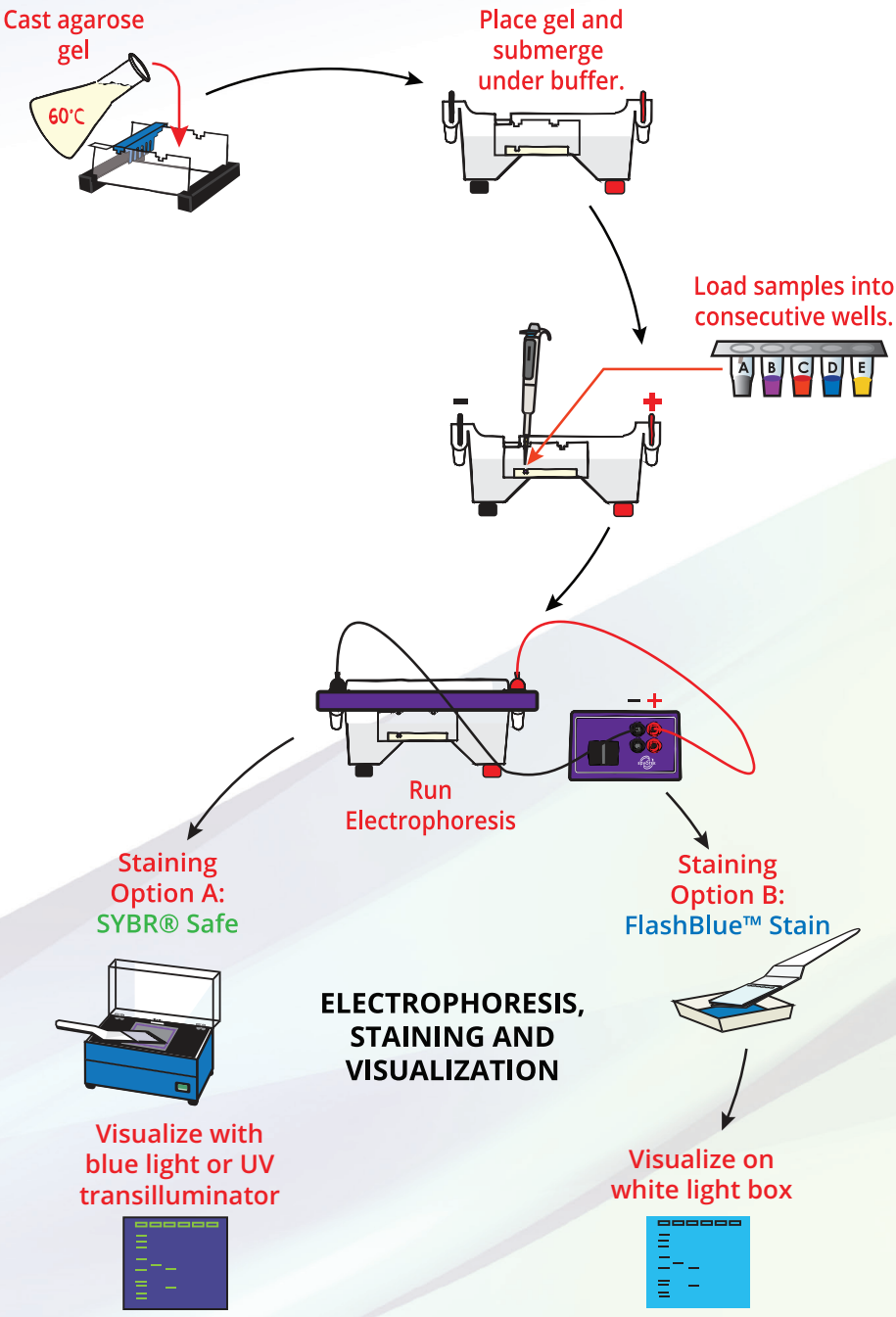
A direct current power supply is connected to the electrophoresis apparatus and current is applied. Charged molecules in the sample enter the gel through the walls of the wells. Molecules having a net negative charge migrate towards the positive electrode (anode) while net positively charged molecules migrate towards the negative electrode (cathode). Within a range, the higher the applied voltage, the faster the samples migrate. The buffer serves as a conductor of electricity and controls the pH. The pH is important to the charge and stability of biological molecules.

Agarose is a polysaccharide derivative of agar. In most experiments, Ultra-Spec Agarose™ is used. This material is a mixture of agarose and hydrocolloids which renders the gel to be both clear and resilient. The gel contains microscopic pores which act as a molecular sieve. The sieving properties of the gel influences the rate at which a molecule migrates. Smaller molecules move through the pores faster than larger ones. Molecules can have the same molecular weight and charge but different shapes. Molecules having a more compact shape (a sphere is more compact than a rod) can move faster through the pores. Factors such as charge, size and shape, together with buffer conditions, gel concentrations and voltage, affect the mobility of molecules in gels. Given two molecules of the same molecular weight and shape, the one with the greater amount of charge will migrate faster. In addition, different molecules can interact with agarose to varying degrees. Molecules that bind more strongly to agarose will migrate more slowly.

From examining traits between different people, solving crimes, detecting disease, and sequencing DNA, agarose gel electrophoresis is one of the most widely used biotechnology processes. With kits and equipment from Edvotek®, you can bring this exciting technology directly into your classroom!

Getting Started

Want to introduce electrophoresis to your classroom but not sure how to get started? Try one of our Introductory Electrophoresis Kits! These come with Ready-to-Load™ QuickStrips™ and FlashBlue™ stain, for quick visualization that doesn't require any additional equipment.



Introductory Electrophoresis Experiments

What kinds of experiments can you do with electrophoresis? From solving crimes to studying Martians, Edvotek® offers a wide variety of experiments for your classroom. With Ready-to-Load™ QuickStrips™, these experiments are fast, easy, and fun!

Principles and Practice of Agarose Gel Electrophoresis

Demonstrate to your class how electrophoresis separates molecules on the basis of size and charge. Students will separate dyes in a safe, colorful, fast and simple experiment to teach a technique that will engage your students. R

Cat# 101 *For 8 Gels*

Linking STEM to Agarose Gel Electrophoresis

Help your students learn about the technique and application of gel electrophoresis. These dyes can be separated in agarose gels and students will use core STEM tools to determine band size and utilize critical thinking and reasoning skills. Four unique module options are supplied: crime scene simulation, paternity simulation, GMO detection simulation, and cancer gene detection simulation.

Cat# S-46 *For 10 gels*

Linking Food Science to Biotechnology: Unlock the Color of Candies

Investigate how agarose gel electrophoresis unlocks the color code used by food scientists to make colorful candies! Students will extract color from common candies and separate the dyes on agarose gel electrophoresis. A fun lab extension involves the use of candy to build a DNA model.

Cat# S-47 *For 10 lab groups*

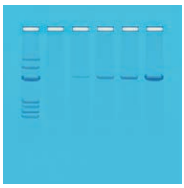
What is PCR and How Does it Work?

How do scientists get enough DNA to separate by agarose gel electrophoresis? Before running a gel, scientists need to amplify DNA using the Polymerase Chain reaction (PCR). This dye simulation experiment demonstrates the process of DNA amplification by PCR and how the amplified product is detected by separating the reaction mixture with agarose gel electrophoresis.

Cat# S-48 *For 10 lab groups*

Principles of PCR

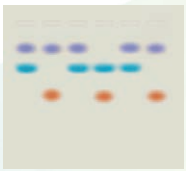
Want to teach PCR using real DNA samples? This experiment comes with DNA amplified to different amounts to introduce students to the principles and applications of Polymerase Chain Reaction (PCR). This simulation experiment does not require a thermal cycler. R



Cat# 103 *For 8 gels*

Whose DNA Was Left Behind

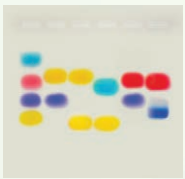
DNA obtained from just a single hair left behind at a crime scene can be used to identify a criminal! In this experiment, your students will compare simulated crime scene DNA with that of two suspects.



Cat# S-51 *For 10 lab groups*

In Search of My Father

Your class will enjoy discovering the true identity of two boys who were separated from their parents a decade ago. Their mothers are identified by mitochondrial DNA and their fathers from chromosomal DNA. Will there be a happy ending to the story?



Cat# S-49 *For 10 lab groups*

R This icon indicates that Kit Replenishers are available for this experiment. See page 21 for details.

The Secret of the Invisible DNA: A Genetics Exploration

Explore genetics with our "out of this world" experiment! In this lesson, we explore how DNA technology can be used to investigate the relationship between genotype and phenotype using one of two exciting scenarios (alien genetics or medical diagnostics). Fluorescent dyes simulate DNA fragments, eliminating post-electrophoresis staining and saving you valuable classroom time!

Cat# S-52 *For 10 lab groups*

Why Do People Look Different?

Why do some people have blue eyes and some brown? Why are some tall and some short? Teach your students how an individual's physical traits are a reflection of one's genes. In this simulation, your students will use electrophoresis to separate dyes which represent genetic traits.

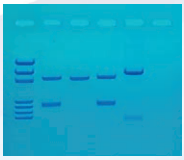
Cat# S-50 *For 10 lab groups*

Mystery of the Crooked Cell

Transform your class into a biomedical laboratory! This simple lab allows your students to detect the mutation that causes Sickle Cell Anemia. In this simulation, your students will use electrophoresis to separate dyes that represent patient samples and controls.

Cat# S-53 *For 10 lab groups*

DNA Fingerprinting by PCR Amplification



Forensic DNA fingerprinting has become a universally accepted crime-fighting tool. Recent advances use the polymerase chain reaction (PCR) to amplify human DNA obtained from crime scenes and examine it using gel electrophoresis. This experiment, based on a crime scene scenario, has a true inquiry-based component. R

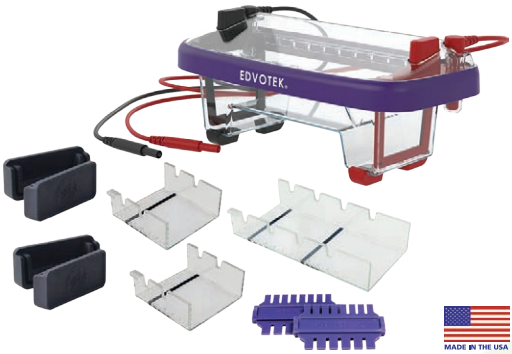
Cat# 130 *For 8 gels*

M12 Complete™ Electrophoresis Package

Run the full spectrum of horizontal electrophoresis experiments with this versatile package! Our newly reimagined M12 Complete™ supports one or two student groups in two standard length gel trays for experiments that require less separation, or one long gel tray for experiments that require more. Produces excellent results in 10-20 minutes and includes a lifetime warranty.

Features:

- Sleek New Design Speeds Electrophoresis
- Complete Set of Electrophoresis Accessories Included
- Contoured Lid for Enhanced Gel Visualization
- Large Color Coded Push Tabs for Easy Lid Insertion & Removal
- Pour Spout for Buffer Disposal
- Improved Ventilation Reduces Lid Condensation
- User Replaceable Electrodes
- Reverse Compatible with Previous Edvotek® Accessories
- Ability to Run at High Voltage Saves Time
- US Design Patent No. D749,235
- Made in USA



MADE IN THE USA

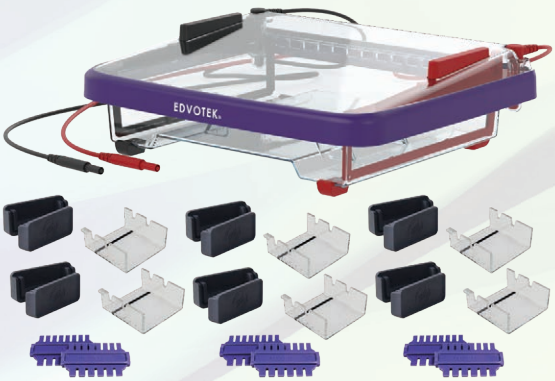
Cat# 502-504 ***For 1 or 2 lab groups***

M36 HexaGel™ Electrophoresis Apparatus

The latest in electrophoresis design! Our newly reengineered M36 Electrophoresis Apparatus supports up to six student groups. Produces excellent results in 10-20 minutes and includes a lifetime warranty.

Features:

- Sleek New Design Speeds Electrophoresis
- Contoured Lid for Enhanced Gel Visualization
- Large Color Coded Push Tabs for Easy Lid Insertion & Removal
- Pour Spout for Buffer Disposal
- Improved Ventilation Reduces Lid Condensation
- User Replaceable Electrodes
- Reverse Compatible with Previous Edvotek® Accessories
- Ability to Run at High Voltage Saves Time
- US Design Patent No. D749,235
- Made in USA

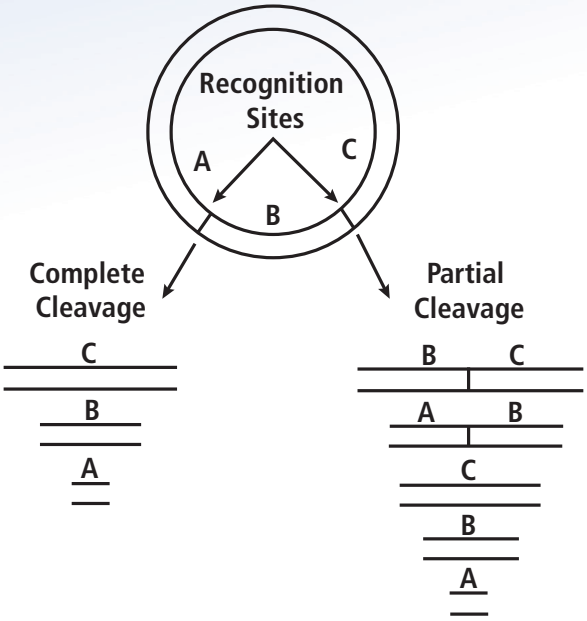


Cat# 515 ***For 6 lab groups***

MADE IN THE USA

Studying DNA Using Restriction Enzymes

One of the most significant discoveries of molecular biology is a class of enzymes known as restriction endonucleases (restriction enzymes). Restriction enzymes act as molecular scissors, cutting double-stranded DNA at specific sequences. These enzymes can be used to map sites in plasmids, insert genes for genetic engineering, and are even used in forensics to create DNA fingerprints!



DNA Fingerprinting by Restriction Enzyme Patterns

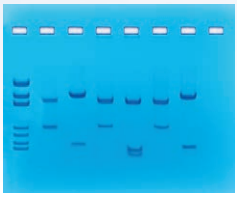
Basic concepts of DNA fingerprinting are featured in this lab by comparing crime scene DNA with suspect DNA. Fingerprint patterns are separated by agarose gel electrophoresis and the students determine who may have done it! The crime scene and criminal DNA have been pre-digested with restriction enzymes and are ready for your classroom! R

Cat# 109 *For 8 gels*

R This icon indicates that Kit Replenishers are available for this experiment. See page 21 for details.

EDVOTEK®

DNA Fingerprinting Using Restriction Enzymes

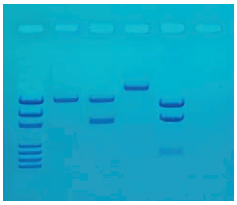


Dryzymes® No Ice Shipment

Teach your students about restriction enzyme digests in the context of forensic science! Your students will cut DNA with restriction enzymes and then compare the banding pattern of the crime scene DNA versus that of two suspects using agarose gel electrophoresis. The restriction enzymes come as lyophilized Dryzymes®, eliminating worry about loss of enzymatic activity with time! R

Cat# 225 *For 6 gels*

Restriction Enzyme Mapping

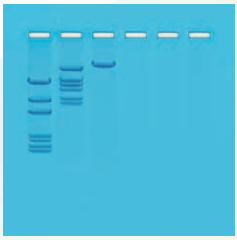


Dryzymes® No Ice Shipment

In this experiment, your students will cleave a plasmid DNA with different combinations of restriction enzymes. By determining the fragment size and using agarose gel electrophoresis, the relative positions of the restriction sites can be mapped. R

Cat# 206 *For 6 sets of Restriction Digestions*

Cleavage of Lambda DNA with *Eco*RI Restriction Enzyme

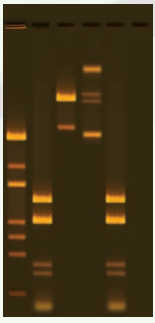


Dryzymes® No Ice Shipment

The DNA from bacteriophage lambda is a well-characterized linear molecule containing six recognition sites for *Eco*RI (generating 5 fragments with distinct sizes and 2 fragments that are very close in size). In this experiment, Lambda DNA is digested by the *Eco*RI endonuclease. The digestion products are analyzed by agarose gel electrophoresis. R

Cat# 212 *For 10 restriction digests and 5 gels*

NEW! Analysis of DNA Methylation Using Restriction Enzymes



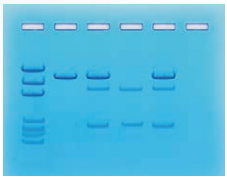
In this experiment, students explore the effects of DNA methylation on restriction enzyme activity. Plasmid DNA will be digested with the restriction enzymes *Dpn*I and *Dpn*II. When digested with these enzymes, methylated and unmethylated DNA will produce restriction fragments that are distinct from one another. The restriction fragments are then analyzed using agarose gel electrophoresis. After visualizing the gel, students determine which sample is methylated. R

Cat# 205 *For 6 sets of Restriction Digestions*

Investigating Human Health

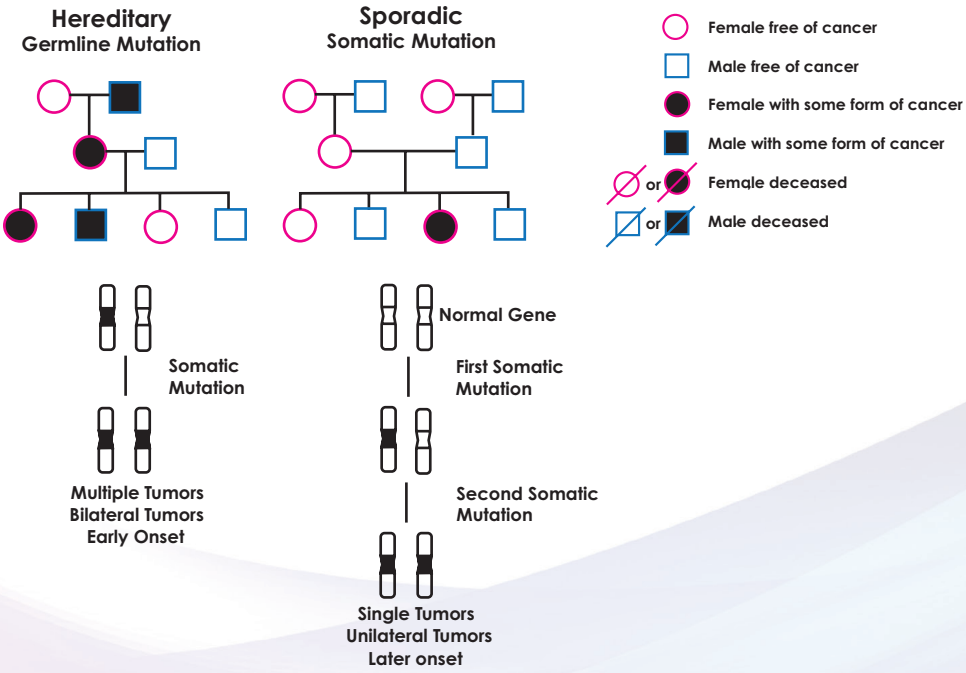
What can our genes tell us about our family or our health? By studying DNA, we can do paternity testing, detect genes that cause disease, and test our food for contamination! With Edvotek®, your classroom can be transformed into a biomedical laboratory.

Cancer Gene Detection



Immortality through uncontrolled cell division is a characteristic of cancer cells. The p53 gene is a tumor suppressor which prevents this. Mutations in this gene are present in more than 50% of cancers. Testing people for mutations in their p53 gene can indicate an increased risk of developing cancer. These tests raise intriguing ethical questions for both the individual tested and the family of an individual who chooses to be tested. In this experiment, students determine a pedigree for a family suspected to be carriers of mutations in their p53 genes. A DNA test indicates their likelihood of developing cancer. R

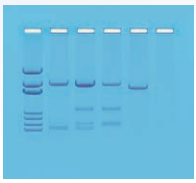
Cat# 115 *For 8 gels*



DNA Paternity Testing Simulation

Who is the father? This experiment introduces students to the use of DNA fingerprinting in a simulated paternity determination. A child's DNA fingerprint is compared with his parents. R

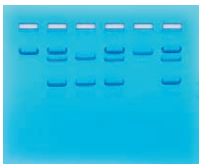
Cat# 114 *For 8 gels*



Sickle Cell Gene Detection

Sickle Cell Anemia is a common genetic disease that causes long rods in red blood cells, giving them a "sickled" appearance. Sickle Cell Anemia is caused by a single point mutation in the hemoglobin gene that results in a faulty protein. In this experiment, your students will investigate the restriction enzyme that discriminates between HbA (normal) and HbS (disease) genes and perform a simulated test on a patient. R

Cat# 116 *For 8 gels*



Cholesterol Diagnostics

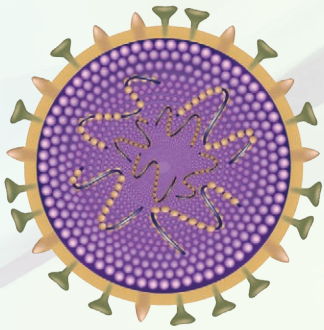
Elevated blood cholesterol has been established as a serious risk factor for coronary heart disease and stroke which are leading causes of death in the United States. The disease familial hypercholesterolemia (FH) causes an increase in blood levels of the "bad" form of cholesterol, known as low density lipoprotein (LDL). In this experiment, a simulated genetic test for FH is demonstrated in which patients are tested for a DNA polymorphism linked to the FH gene. R

Cat# 118 *For 8 gels*

Detection of the Influenza Virus

The influenza virus, or "the flu," is a common contagious disease that affects the respiratory system. In this simulation, students will perform two common tests (RIDT, RT-PCR) used to diagnose the flu in a clinical setting. R

Cat# 122 *For 8 gels*



R This icon indicates that Kit Replenishers are available for this experiment. See page 21 for details.

Detection of Mad Cow Disease

Bovine spongiform encephalopathy (BSE), better known as mad cow disease, is a neurodegenerative, fatal condition in cattle. Consuming BSE-infected beef is believed to be the cause of a similar condition in humans, Creutzfeldt-Jakob disease. In this experiment, students examine simulated PCR products from several feed mills, to determine any possible violations of a 1997 ban which ended the practice of including animal parts in cattle feed. R

Cat# 117 *For 8 gels*

Detection of Genetically Modified Organisms

For centuries, humans have used selective breeding and conventional hybridization to produce desirable qualities and to increase crop yields. Today, scientists use genetic engineering to directly manipulate the DNA, quickly producing these desirable traits. In this experiment, students will use agarose gel electrophoresis to explore the molecular methods used by scientists to identify genetically modified organisms. No thermal cycler is required. R

Cat# 121 *For 8 gels*

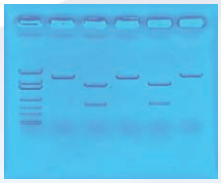
DNA Screening for Smallpox

The objective of this experiment is to develop an understanding of Smallpox and the causative agent of the disease. Students will analyze simulated PCR products to confirm or rule out the presence of the Smallpox virus. This experiment does NOT contain smallpox. R

Cat# 124 *For 8 gels*

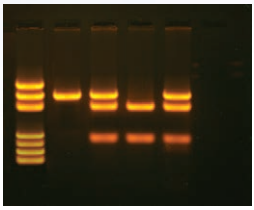
NEW! Using CRISPR to Treat Cystic Fibrosis

In this experiment, students will simulate the use of CRISPR-Cas9 to target a genetic mutation found in a patient suffering from Cystic Fibrosis. Students will develop an understanding of guide RNA (gRNA) design, and use agarose gel electrophoresis to examine prepared DNA samples after CRISPR treatment.



Cat# 135 *For 8 gels*

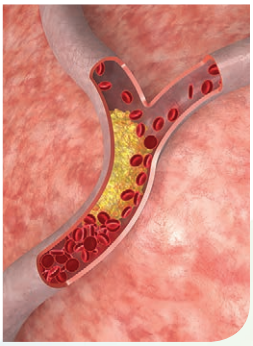
In Search of the Cancer Gene



Suppressor genes such as p53 are essential for cell functions. Mutations in the p53 gene can be correlated to predisposition for certain cancers. Mutations in genes can either be inherited or accumulated due to environmental insults. This experiment investigates a family pedigree, autoradiographs to determine the family's p53 gene sequence, and DNA analysis by gel electrophoresis. R

Cat# 314 *For 6 groups*

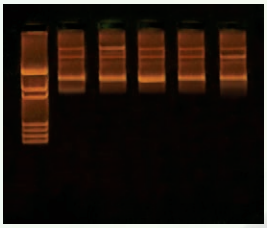
In Search of the Cholesterol Gene



Coronary heart disease and stroke are major causes of death in the Western world. Elevated blood cholesterol levels are a serious risk factor for both conditions. The genetic disease familial hypercholesterolemia (FH) causes an increase in blood levels of the "bad" form of cholesterol, low density lipoprotein (LDL). In untreated patients with the mutant FH gene, the condition can cause premature death. This experiment includes reagents for the colorimetric enzymatic reaction, which is the basis of the clinical cholesterol test. In addition, using agarose gel electrophoresis, students will analyze a simulated genetic screening for the disease. R

Cat# 316 *For 10 groups*

DNA Damage and Repair



According to the World Health Organization, between 2 and 3 million cases of skin cancer occur globally every year. Many of these cancers are caused by preventable damage to DNA by UV light during sunbathing. In this experiment, your students will expose plasmid DNA to shortwave UV light to simulate the effect of sunbathing. The DNA is then analyzed by agarose gel electrophoresis to observe the damage. R

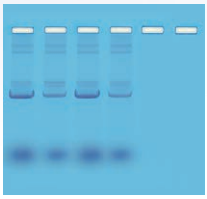
Cat# 957 *For 10 groups*

R This icon indicates that Kit Replenishers are available for this experiment. See page 21 for details.

Cloning & Purification of DNA

How can scientists isolate and manipulate DNA? Your students can learn the answer through our hands-on, inquiry-based labs!

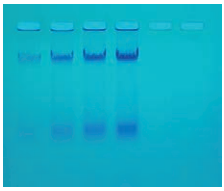
Mini-Prep Isolation of Plasmid DNA



Small-scale rapid isolation of plasmid DNA is a routine procedure used for screening and analysis of recombinant DNAs in cloning and subcloning experiments. In this experiment, students isolate plasmid DNA without the use of toxic chemicals such as phenol or chloroform.

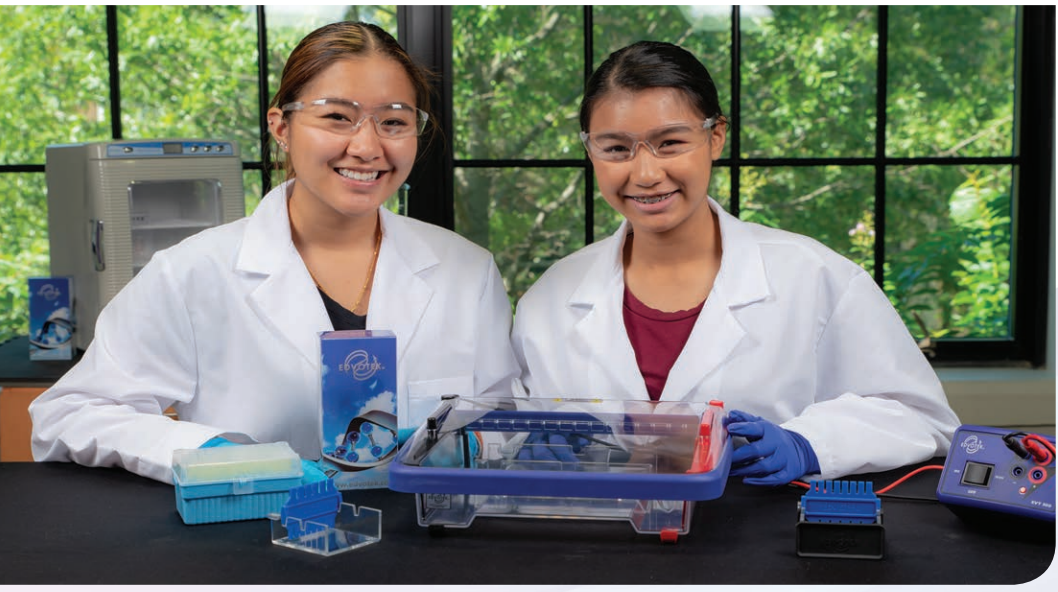
Cat# 202 ***For up to 20 plasmid isolations (12 gels)***

Isolation of *E. coli* Chromosomal DNA



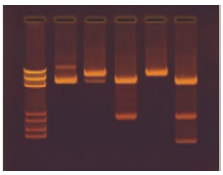
Isolation of high molecular weight chromosomal DNA is the first step in molecular cloning since it is the source of genes in cells. This experiment provides DNA Extraction LyphoCells™ and reagents for isolating chromosomal DNA from *E. coli*. After spooling from solution, the DNA can be dissolved and analyzed by agarose gel electrophoresis as an optional lab extension activity.

Cat# 203 ***For 20 DNA isolations and 5 gels***



EDVOTEK®

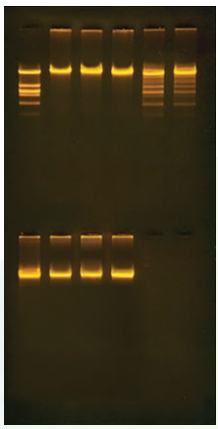
Construction and Cloning of a DNA Recombinant



Cloning is frequently performed to study gene structure and function and to enhance gene expression. This experiment is divided into five modules. Clones are constructed by ligation of a vector and a fragment insert. The constructs are then transformed into competent cells and the cells are grown and selected for resistance. Plasmid DNA is then isolated from the transformants, cleaved with restriction enzymes, and analyzed by agarose gel electrophoresis. Recommended for college level courses. R

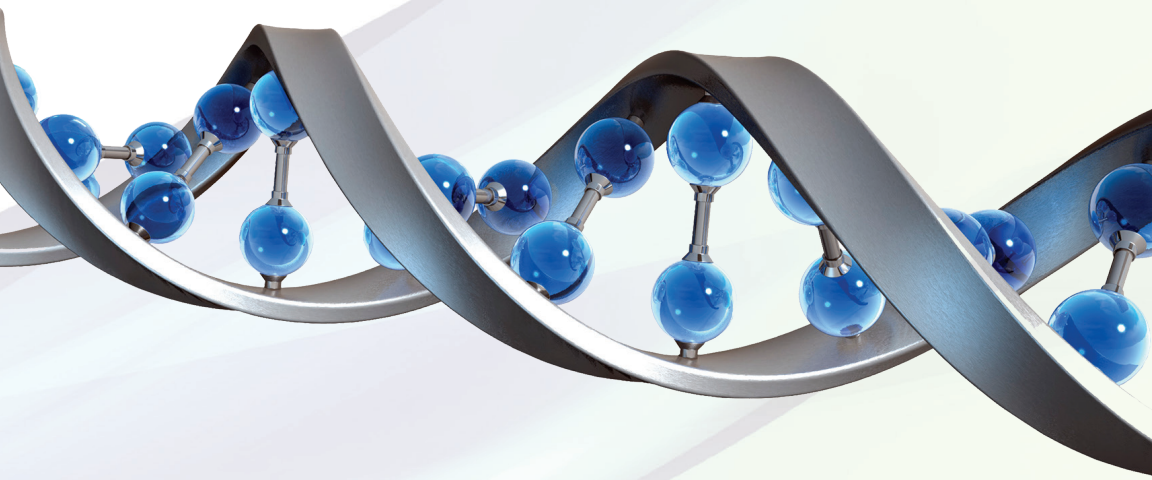
Cat# 301 *For 5 plasmid constructs & analyses*

Purification of the Restriction Enzyme *Eco*RI



In this experiment, students actually purify the restriction enzyme, *Eco*RI! This procedure utilizes an ion exchange chromatography step for *Eco*RI purification. Column fractions are assayed for the enzyme using Lambda DNA and digestion products are identified by agarose gel electrophoresis. Fractions that contain *Eco*RI are identified and pooled. The total and specific activities are calculated. Recommended for college level courses. R

Cat# 302 *For 5 purifications*



R This icon indicates that Kit Replenishers are available for this experiment. See page 21 for details.

DNA Sequencing

Ready-to-Load™ DNA Sequencing

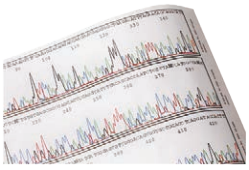
Introduce your students to the exciting science of DNA Sequencing. This kit contains the four Ready-to-Load™ sequenced DNAs (nucleotides A, C, G, & T) in an easy to use, safe format. Students load the four separate reactions into agarose gels, run the gels, stain them, and actually read the DNA sequence. This experiment can be used to introduce genome concepts and help your students gain a better understanding of the science behind DNA sequencing.

Cat# 120 *For 8 gels*

Interested in learning more about genome sequencing? Try these other kits:

Sequencing the Human Genome

Actual data representing important genes from automated DNA Sequencers are provided. Students will determine the DNA sequence, compare and extrapolate database information and identify the gene product and other closely related proteins. Data is discussed within the framework of the Human Genome Project.



Cat# 339 *Sequences for 10 groups*

DNA Bioinformatics

DNA sequence information is being compiled by various genome initiatives and numerous research groups around the world. The management of this data is known as bioinformatics. This information is stored in various DNA sequence databases which can be readily accessed via the internet. In this experiment, students read autoradiographs containing DNA sequences which represent segments of important cellular genes. Using bioinformatics databases, students compare and extrapolate database information and identify the gene product.

Cat# 340 *For 12 lab groups*

Southern Blot Analysis

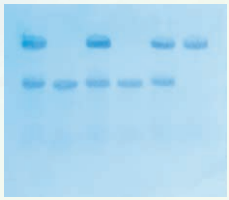
What happens when you have a whole bunch of DNA, but you want to search for just one specific sequence? This happens to scientists all the time, and the technique they use is called a Southern blot. After running DNA on an agarose gel, the samples are transferred to a membrane that's probed with the sequence the scientists are searching for.

Southern Blot Analysis

This experiment introduces your students to Southern blotting as a tool for DNA fingerprinting in a hypothetical paternity determination. DNA fragments are first separated by agarose gel electrophoresis, then transferred to a nylon membrane, and finally visualized by staining. R

Cat# 207 *For 5 groups*

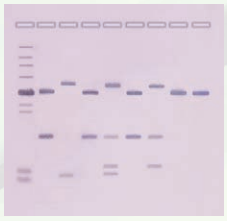
In Search of the Sickle Cell Gene by Southern Blot



Southern blotting is an important technique used widely in clinical genetics and research. By transferring DNA from an agarose gel onto a membrane, the method allows you to analyze and identify the DNA bands on a gel precisely. Your students will use Southern blotting to find a point mutation in the hemoglobin gene indicating Sickle Cell Anemia. R

Cat# 315 *For 5 groups*

DNA Fingerprinting by Southern Blot



In this experiment, students gain experience in non-isotopic DNA detection & the use of Southern blot analysis in DNA fingerprinting for a hypothetical paternity test. Includes three modules: agarose gel electrophoresis, Southern blot transfer, and non-isotopic detection of DNA. R

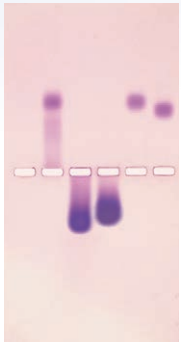
Cat# 311 *For 5 groups*

R This icon indicates that Kit Replenishers are available for this experiment. See page 21 for details.

Protein Electrophoresis on Agarose Gels

Normally, proteins are separated on an SDS-polyacrylamide gel, but horizontal protein gel electrophoresis is a great way to start learning about and exploring the complexities of proteins!

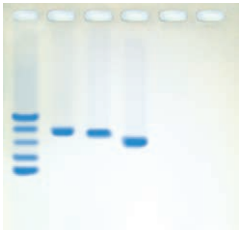
Electrophoretic Properties of Native Proteins (Agarose-based)



Proteins are complex biomolecules with varying charge, size and shape that can be analyzed by agarose gel electrophoresis. Gel analysis of native proteins enables students to evaluate natural charge and shape characteristics of proteins. Following electrophoresis, the protein samples are stained for visualization. R

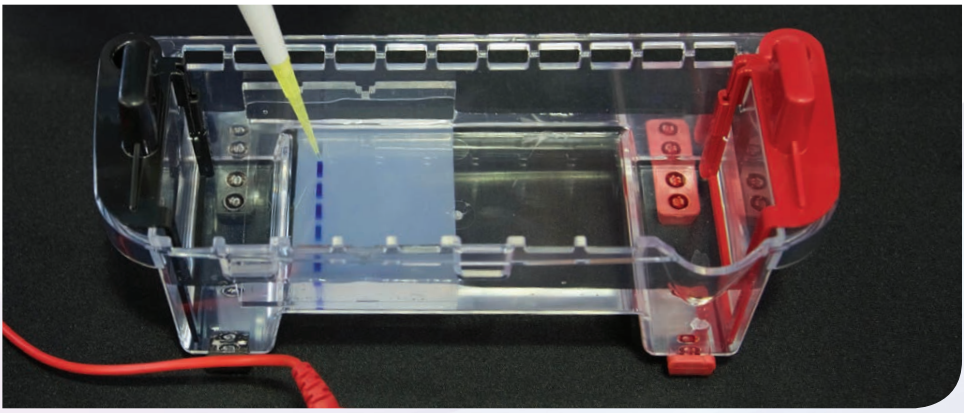
Cat# 111 *For 6 groups*

Molecular Weight Determination of Proteins (Agarose-based)



Introduce a simple method to determine protein subunit molecular weights using horizontal electrophoresis. Because the protein standards and "unknowns" are prestained, the separation of proteins can be observed during electrophoresis. Included in the experiment is protein grade agarose developed by Edvotek®, which provides an alternative to the use of polyacrylamide gels. R

Cat# 110 *For 6 groups*



Kit Replenishers and Reagents for Electrophoresis

Kit Replenishers R

Have everything you need for the experiment except the samples? With these products we provide the samples you need for your class to explore electrophoresis with the kits of your choosing.

Samples ONLY for 24 Gels in Microtest Tubes

- *For Cat# 101: 101-C*
- *For Cat# 109: 109-C*
- *For Cat# 114: 114-C*
- *For Cat# 115: 115-C*
- *For Cat# 116: 116-C*
- *For Cat# 117: 117-C*
- *For Cat# 118: 118-C*
- *For Cat# 121: 121-C*
- *For Cat# 124: 124-C*
- *For Cat# 130: 130-C*

Replenishers

- *For Cat# 110: 110 FB*
- *For Cat# 111: 111 FB*
- *For Cat# 205: 205 FB*
- *For Cat# 206: 206 FB*
- *For Cat# 207: 207 FB*
- *For Cat# 212: 212 FB*
- *For Cat# 225: 225 FB*
- *For Cat# 255: 225 FB*
- *For Cat# 301: 205 FB*
- *For Cat# 302: 205 FB*
- *For Cat# 311: 311 FB*
- *For Cat# 314: 314 FB*
- *For Cat# 315: 315 FB*
- *For Cat# 316: 316 FB*
- *For Cat# 957: 957 FB*

Visit our website for detailed information on what is included in each kit's replenisher.

www.edvotek.com

Reagents

Stains and Visualization

- **SYBR® Safe Stain**
  Cat# 608 For 750 mL
- **FlashBlue™ DNA Staining System**
  Cat# 609 For 1.2 L
- **InstaStain® Ethidium Bromide**
  Cat# 2001 For 40 gels, 7x7 cm
- **InstaStain® Blue, 7 x 7 cm**
  Cat# 2003 For 40 gels, 7x7 cm
- **10X Gel Loading Solution**
  Cat# 606 Yields 5 mL

Agarose and Buffer

- **Melt & Pour UltraSpec-Agarose™**
  Cat# 601 400 ml
  Cat# 601-B 5 x 400 ml
- **UltraSpec-Agarose™**
  Cat# 605-3g
  Cat# 605-20g
  Cat# 605-100g
  Cat# 605-500g
- **Electrophoresis Buffer 50x TAE**
  Cat# 607 100 ml
  Cat# 607-XL 500 ml
- **TBE Powdered Electrophoresis Buffer**
  Cat# 607-1 For 5 Liters

Packages

- **Electrophoresis Package with FlashBlue™**
  Includes: UltraSpec-Agarose™ (10 g), 100 ml Electrophoresis Buffer (50x), 0.5 ml Gel Loading (10x) Solution with tracking dye, and FlashBlue™ stain (for 1.2 L).
  Cat. #604

DNA Markers

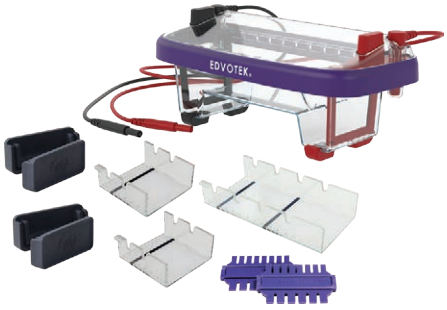
- **DNA Standard Marker**
  Cat. #750-1 For 20 gels
- **100 bp DNA Ladder**
  Cat. #755 For 20 gels
- **200 bp DNA Ladder**
  Cat. #756 For 20 gels

Practice

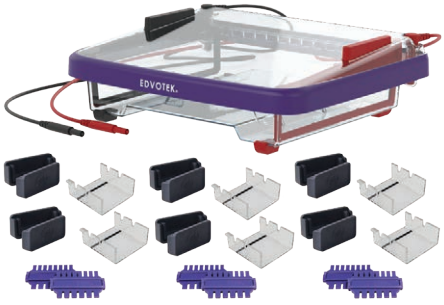
- **Practice Gel Loading Solution**
  Cat# 606-P 5 ml
- **DNA DuraGel™**
  6 reusable DNA DuraGels™, 4 FlashBlue™ & 4 Ethidium Bromide gel images, practice gel loading solution and mini-transfer pipets.
  Cat# S-43 For 12 to 24 students

Equipment

Electrophoresis Equipment

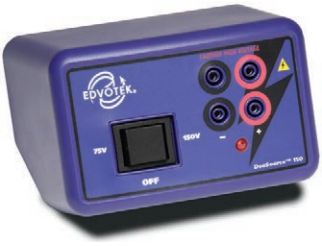


M12 Complete™ Electrophoresis Package
- For 1 or 2 Lab Groups
  Cat# 502-504



M36 HexaGel™ Electrophoresis Apparatus
- For 1 to 6 Lab Groups
  Cat# 515

Power Supplies



DuoSource™ 150
- 75/150 V, for 1 or 2 Units
  Cat# 509

QuadraSource™
- 10-300 V, for 1 to 4 Units
  Cat# 5010

Pipets and Liquid Handling

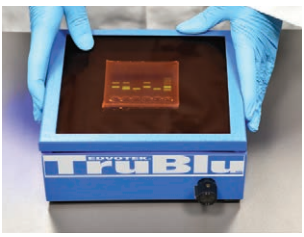
EDVOTEK® Variable Micropipette
- 5-50 µL Micropipette
  Cat. # 590

Yellow Tips, 1-200 µL
- 2 racks of 96 each
  Cat. # 636
- Bag of 1000 tips
  Cat. # 636-B

Micro Transfer Pipets
- 400/pkg, disposable
  Cat. # 632

Fixed Volume MiniPipet™
- 35 µL MiniPipet™
  Cat. # 587-2

Light Sources



TruBlu™ Blue Light LED Transilluminator
Cat# 557

White Light LED Transilluminator
Cat# 552

Midrange UV Transilluminator
Cat# 558

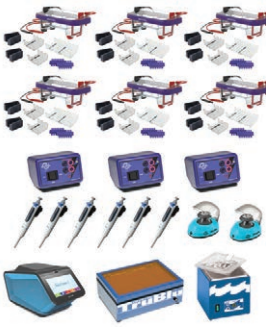
Water Bath

Edvotek® 1.8 L Digital Water Bath
Cat# 539

Details for all these products and MORE can be found on our website!

www.edvotek.com

Comprehensive LabStations™



Classroom PCR LabStation™
For up to 25 Students
Cat# 5067

Comprehensive Biotechnology LabStation™
For up to 48 Students
Cat# 5068

Ultimate Biotechnology LabStation™
For up to 64 Students
Cat# 5069

Contact Us:

Email: info@edvotek.com

Phone: 1.800.338.6835

Fax: 1-202-370-1501

Mail: 1121 5th Street NW, Washington, DC 20001 USA

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