miniOne® SYSTEMS

US Product Catalog 2023

NO WEAK BANDS.

+1 (858) 684-3190 theminione.com info@theminione.com

The Legacy of Winston Walker

Winston Walker dedicated his life to serving his country and finding solutions, whether it be on his aircraft or in industry after his extensive military service. His drive to make science education more accessible led to the development of the MiniOne® Electrophoresis and PCR Systems. His final contribution is The Winston viewer, which helps students of all ages answer various questions around molecules. His impact on science education is global, bringing equality to teachers and students worldwide.

MiniOne® The Winston™

M1050

$59

See the GLOW! Use fluorescence to detect and see your samples glow in colors you won't believe!

Molecules are hard to see with the naked eye– they can be colorless, too small, or not abundant enough. Fluorescence to the rescue! Fluorescence helps you study the invisible. The Winston allows you and your students to investigate phenomena such as: "Does your sample have DNA? Prove it!", "Where is the DNA?", or "What color is chlorophyll"?

Place up to 4 samples on the base and cover with the MiniOne® Photo Hood to reveal the GLOW! Each unit includes:

- One MiniOne® The Winston™ Platform
- One MiniOne® Photo Hood
- One built-in rechargeable battery
- USB charging cable

MiniOne® The Winston™ Platform

M1051

$39

Includes the base component and charging cable. Great add-on if you already have a MiniOne Photo Hood.

PCR Tube Adapter for The Winston™, set of 2

M1053

$12

Each adapter holds up to four 0.2 ml PCR tubes.

Table of Contents

Schedule your order to ship when you need it!
Simply let us know future ship dates when you place your order.

Orders must be made out to Embi Tec, and can be placed by:
Email orders@theminione.com
Telephone 1 (858) 684-3190 **or** 1 (800) 255-1777 (U.S. and Canada)
Fax 1 (858) 684-3195
Online theminione.com **(US only)**

All prices are in US dollars and are subject to change. We accept PO and credit card payments in US dollars for purchases and shipments to USA addresses. For purchases and shipments to outside of USA, please contact us by phone or email.

MiniOne® Electrophoresis System

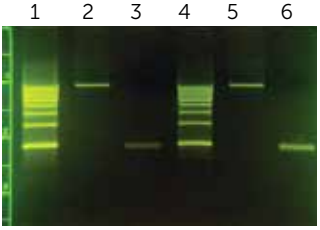
M1002-US

$349

Integrated, real-time electrophoresis system for running DNA labs in one classroom period.

Includes one each of the following items:
(See pages 6 to 9 for complete product details)

- MiniOne® Carriage with blue LED illumination and magnet-activated safety switch
- Gel tank with graphite electrodes
- 42V power supply, 100–240V input
- Amber photo hood for real-time viewing and capturing gel image
- Casting system with casting stand, two gel trays, two reversible combs for six and nine wells, and lid
- **FREE** 2–20 µL variable volume micropipette ($69 value!)
- Validation kit: Two GreenGel™ Cups, three DNA samples and TBE buffer concentrate (one per order)



Lanes 1 & 4
DNA ladder

Lanes 2 & 5
4 kb PCR fragment

Lanes 3 & 6
500 bp PCR fragment

Example results from Electrophoresis System validation kit ~20 min. run time

MiniOne® Electrophoresis Classroom Package of 10 Systems in Cases

M1012-US

$3,349

One classroom package is for a class of ten student groups,
two to three students per group.

Includes:

- Ten sets of MiniOne® Electrophoresis System (**M1000-US**)
- Ten **FREE** 2–20 µL variable volume micropipette
- Validation kit: Two GreenGel™ Cups, three DNA samples and
  TBE buffer concentrate (one per order)

MiniOne® Electrophoresis Carrying Case

M2024

$49

Organize, store and even transport your MiniOne® in this custom carrying case

Includes:

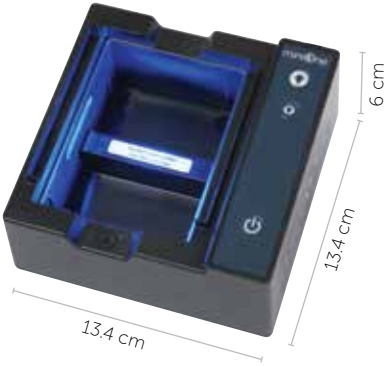
- Outer case and high density foam with custom cut outs (equipment not included)

Catalog Number	Description	Price
M1000-US	MiniOne Electrophoresis System Includes MiniOne Electrophoresis Carriage, Gel Tank, Casting System, Power supply, 2-20 uL pipette, for 1 workstation	$334
M1002-US	MiniOne Electrophoresis System in the MiniOne Electrophoresis Carrying Case Includes MiniOne Electrophoresis Carriage, Gel Tank, Casting System, Power supply, 2-20 uL pipette, packed in the MiniOne Electrophoresis Carrying Case, for 1 workstation	$349
M1010-US	MiniOne Electrophoresis System Classroom Package of 10 Systems Includes MiniOne Electrophoresis Carriage, Gel Tank, Casting System, Power supply, 2-20 uL pipette, for 10 workstations	$2999
M1012-US	MiniOne Electrophoresis System Classroom Package of 10 Systems Includes MiniOne Electrophoresis Carriage, Gel Tank, Casting System, Power supply, 2-20 uL pipette, packed in the MiniOne Electrophoresis Carrying Case, for 10 workstations	$3349

MiniOne® Carriage

M2007

$299



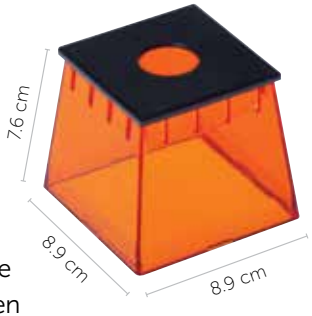
Housing and control unit with sealed LED lights and power controls.

- + and – electrical contacts for carbon electrodes of gel tank
- Design ensures correct orientation fit
- Two rows of blue LEDs illuminate the gel from the sides
- Choose from two intensities–low light for loading, bright light for DNA viewing
- Built-in, magnet-activated on/off power switch

MiniOne® Photo Hood

M2005

$34



Molded photo hood for 360° viewing with ventilation slots and black imaging platform.

- Four embedded magnets activate power carriage
- Amber filter blocks blue light and transmits green light showing bright fluorescent DNA bands against a dark background
- Ventilation slots prevent condensation inside the hood

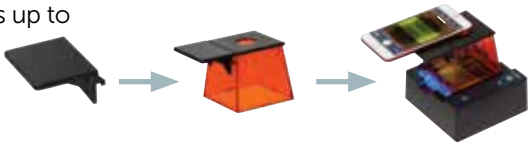
MiniOne® Photo Hood Phone Platform

M2017 (Set of 5)

$29

Molded adapter allows you to place a phone on top of the MiniOne Photo Hood to easily take videos, time lapses, or still images of your electrophoresis run. (Photo Hood not included)

- Latches into the photo hood vents
- Can support mobile devices up to 6.2" (L) x 3.0" (W)" long
- Hands-free documentation



MiniOne® 42V Power Supply

M2006

$24

- Input voltage: 100–240 V, 50/60 Hz, 0.5A
- Output voltage: 42V, 0.19A
- Certifications: CE, FC, c UL us, RoHS compliant

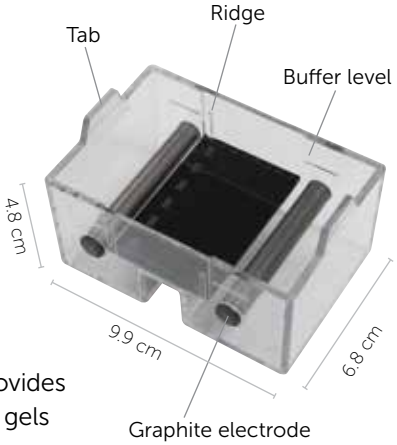
MiniOne® Gel Tank

M2001

$59

Molded polycarbonate tank with graphite electrodes.

- Three ridges on walls of tank to guide correct orientation of gel tray
- Durable 1 cm graphite electrodes replace standard fragile platinum wires for easy cleaning
- Black and silver gray gel platform provides contrasting background for imaging gels

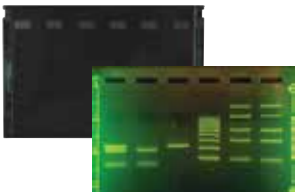


MiniOne® Gel Tray Platforms

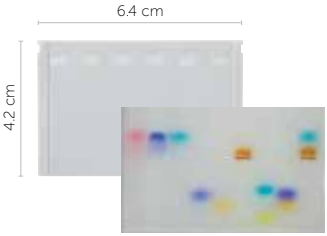
M2014 Black gel tray platform (10 per pack)
M2015 Silver gray gel tray platform (10 per pack)

$24 per pack

Slots on the sides of the platform ensure that it only fits into the tank in the correct orientation.



Use with DNA separation. Black color plastic plate printed with a fluorescent green ruler on the edge, texture on well area.



Use with color dyes separation. Silver gray color plastic plate with texture on well area.

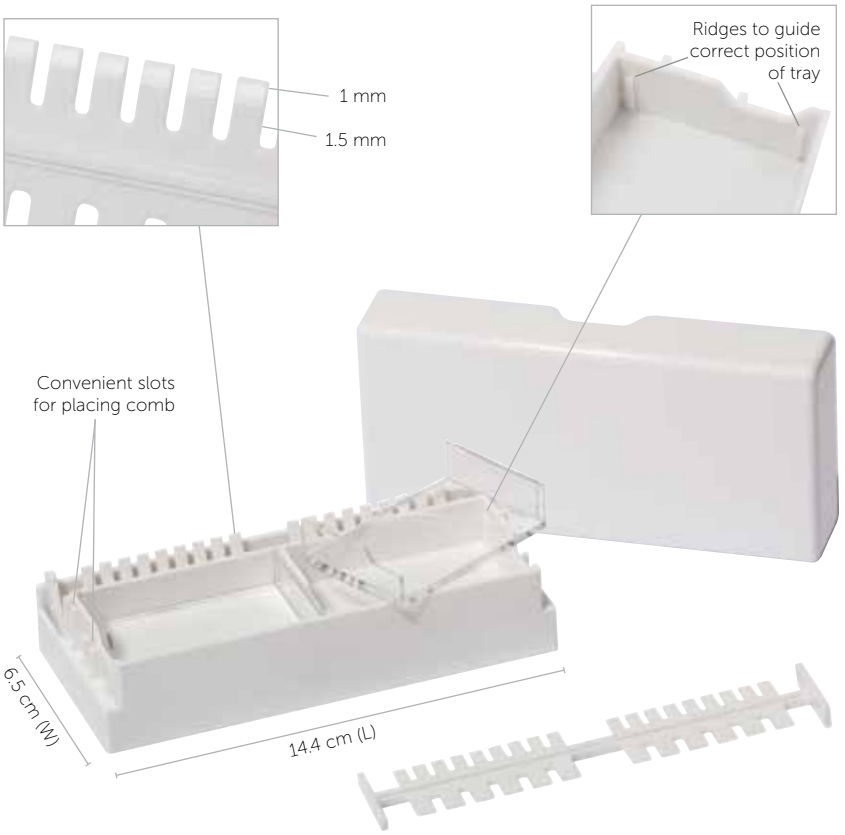
MiniOne® Gel Casting System

M2002

$59

A compact and self-contained unit with two clear gel trays and two gel combs that fit inside a casting stand with lid.

- Molded casting stand eliminates leakage–no tape needed
- Gel tray guides create a one-way fit for the gel trays when casting, ensuring the proper positioning of the wells for use in the gel tank
- Dual reversible comb with one beveled side, 1.5 mm max. thickness, six and nine wells, and white lid for overnight storage of pre-poured gels
- Beveled comb for easy comb removal and sample loading
- White cover blocks light so you can keep the gels you pour ahead of time safe from light exposure



MiniOne® Gel Trays

M2013 (10 per pack)

$59

M2013-Bulk (50 per pack)

$234

New gel tray design, clear acrylic trays with one orientation fit feature.

- Use in MiniOne tank and casting stand

MiniOne® Casting Stand Cover

M2018 (5 per pack)

$39

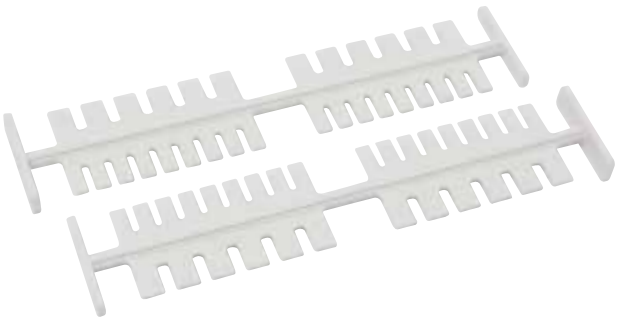
- Fits MiniOne Gel Casting Stand
- Blocks light for advanced gel prep

MiniOne® Gel Combs

M2004 (Set of 2)

$24

- Dual reversible gel comb with one beveled side
- 1.5 mm max. thickness, 6+6 / 9+9 wells



Colorful MiniOne® T-Rack™ System

The modular MiniOne T-Racks are designed to give you the most flexibility with how you set up your lab stations.

MiniOne® T-Rack™ MicrotubeRack - 1.5 and 2.0 mL

M3181 (Set of 5 racks)

$59

Five assorted colors, holds 3 x 4 of 1.5 or 2.0 mL microtubes per rack.
(Tubes not included)

Capacity and configuration guide

Colors may vary

MiniOne® T-Rack™ PCR Tube Rack - 0.2 and 0.5 mL

M3180 (Set of 5 racks)

$59

Five assorted colors, each rack holds 2 x 5 of 0.2 mL PCR tubes and 3 x 4 of 0.5 mL microtubes.
(Tubes not included)

Capacity and configuration guide

Colors may vary

MiniOne® T-Rack™ Micropipette Tip Rack and Cover

M3139 (Set of 5 racks)

$59

Five assorted rack colors with clear lids, pre-racked with 2–200 µL Universal tips, low binding, 36 tips/rack.

Capacity and configuration guide

Colors may vary

MiniOne® T-Rack™ System Tray

M3182 (Set of 5 trays)

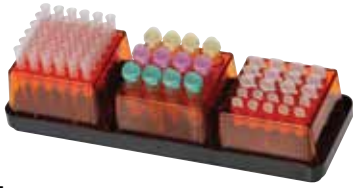
$19

Trays for holding up to three T-Rack modules per platform for easy workstation organization.

MiniOne® T-Rack Combo Pack

M3143 (Set of 5)

$179



Assorted colors (5), complete set of racks for 0.2 mL/0.5 mL PCR tubes, 1.5/2.0 mL microtubes, and 2–200 µL universal tips, with convenient tray to hold up to 3 racks at a time. Combo pack contains one set each of M3139, M3180, M3181, M3182, to make 5 complete sets.

MiniOne® Mini Erlenmeyer Flasks

M2019 (Set of 5)

$29

Safer than traditional glass, this affordable set of 5 polypropylene 170 mL Erlenmeyer flasks is ideal for the biology classroom. They're light, rugged, autoclavable, and feature a pour spout, making them perfect for storing and pouring buffer. Minimize spills and breakage in the lab with MiniOne Mini Erlenmeyer Flasks. Non-microwavable, do not freeze.

- 170 mL (6 oz) graduated every 25 mL (1 oz)
- Polypropylene
- Autoclavable *(remove sticker before autoclaving)*

MiniOne® Micropipettes

M2008, M2010, M2011, M2012

Best Classroom Pipette at the Best Price!

$69

One micropipette per pack; comes with inspection certificate, calibration tool, operation manual and sample pipette tips.

Features:

- Adjustable volume micropipette with durable and reliable quality
- Ergonomic design provides comfortable operation for small or large hands
- Two 'stops' on the plunger to allow for accurate and complete sample dispensation
- Ultra-affordable for educational use
- Can be self-calibrated

MiniOne® Micropipette Set

M2016

$219

This set of three lab-quality micropipettes comes protected in a case constructed of durable, easy-to-clean, waterproof-coated Lycra, ensuring your pipette set stays safe, organized, and clean.

Includes one of each variable volume micropipettes:
M2008 2–20 µL
M2010 20–200 µL
M2011 100–1000 µL

MiniOne® Micropipette Stand

M2021

$89

Keep your bench organized!
Holds up to nine MiniOne Micropipettes.

Cat. No.	MiniOne® Micropipette Volume Range	Accuracy	Repeatability	Price
M2008	2–20 µL (H20)	± 2.5-1.0%	≤ 1.50–0.30%	$69
M2010	20–200 µL (H200)	± 1.8-0.6%	≤ 0.50–0.15%	$69
M2011	100–1000 µL (H1000)	± 1.5-0.6%	≤ 0.30–0.15%	$69
M2012	1–10 µL (H10)	± 2.5-1.0%	≤ 1.50–0.40%	$69
M2016	Set of 3 MiniOne® Micropipettes, 2–20 µL, 20–200 µL and 100–1000 µL adjustable volume micropipettes (one each) in a protective carrying case			$219
M2021	Pipette stand for the MiniOne® micropipettes; hold 9 micropipettes			$89

All micropipettes are manufactured according to the standards ISO13485. QC inspection and test are complying with standard ISO8655.

Micropipette Tips - See page 55 for specifications		
M3112	1-10 µL, pk of 250 tips	$13
M3111	2–200 µL, pk of 250 tips	$13
M3134	2–200 µL, pk of 1,000 tips	$36
M3118	100–1,000 µL, pk of 250 tips	$13
M3139	Micropipette Tip Rack and Cover, set of 5 assorted colors • 36 x 2–200 µL Universal tips per rack • See page 10 for details	$59

ONE Series™ Micropipettes

EA-1001 to EA-1006

$99

One micropipette per pack; comes with inspection certificate, calibration tool, operation manual and sample pipette tips.

Features:

- Adjustable volume micropipette combines all the features of accuracy, reliability, and ergonomic design in one
- Great value for scientific research and educational uses
- Autoclavable
- Can be self-calibrated

ONE Series™ Micropipette Stand

EA-1011

$100

Keep your bench organized!
Holds up to nine ONE Series Micropipettes.

Cat. No.	ONE Series™ Micropipette Volume Range	Accuracy	Repeatability	Price
EA-1001	0.1–2 µL	± 12.0–1.5%	≤ 6.00–0.70%	$99
EA-1002	2–20 µL	± 2.5–1.0%	≤ 1.50–0.30%	$99
EA-1003	20–200 µL	± 1.8–0.6%	≤ 0.50–0.15%	$99
EA-1004	10–100 µL	± 1.8–0.8%	≤ 0.50–0.15%	$99
EA-1005	100–1000 µL	± 1.5–0.6%	≤ 0.30–0.15%	$99
EA-1006	0.5–10 µL	± 2.5–1.0%	≤ 1.50–0.40%	$99
EA-1011	Pipette Stand for the ONE Series Micropipettes;holds 9 micropipettes			$100
EA-1014	Set of 4 ONE Series Micropipettes: 0.1-2 µL, 2–20 µL, 20–200 µL and 100–1000 µL adjustable volume micropipettes (one each), w/Holder			$461

All micropipettes are manufactured according to the standards ISO13485. QC inspection and test are complying with standard ISO8655.

Micropipette Tips - See page 55 for specifications		
M3112	1-10 µL, pk of 250 tips	$13
M3111	2–200 µL, pk of 250 tips	$13
M3134	2–200 µL, pk of 1,000 tips	$36
M3118	100–1,000 µL, pk of 250 tips	$13
M3136	2–200 µL, ten racks • Tips packed in racks of 96 micropipette tips for easy use and storage • Has all features of the bulk packaging version	$69

MiniOne® Centrifuges

Portable mini centrifuges ideal for bringing small droplets to the bottom of tubes, for micro-filtrations, or basic separations. Brushless motor for low noise level. CE marked.

MiniOne® Multi Speed Centrifuge

M2031

$419

Features:

- Adjustable speed from 1,000 to 10,000 RPM
- One combi-rotor with positions for varied sizes of microcentrifuge tubes and PCR tubes—no need to change rotors

Specifications	
Input Voltage	100-240V AC, 50-60Hz
Rotor Capacity	2 x 8 x 0.2 mL PCR tubes and 6 x 1.5/2.0 mL and 6 x 0.5 mL microcentrifuge tubes
Speed Range	Adjustable speed: 1,000 to 10,000 RPM, max 3,200 x g
Timer	15 sec to 99 minutes or continuous operation
Dimensions	20 x 16 x 13 cm
Weight	1.05 kg

MiniOne® Single Speed Centrifuge

M2032

$179

Features:

- Easy operation: one button to control ON or OFF
- Fixed speed at 10K RPM providing 4,800 x g (RCF) when using the microcentrifuge tube rotor

Specifications	
Input Voltage	100–240V AC, 50–60Hz
Rotor Capacity	PCR tube rotor: 2 x 8 x 0.2 mL PCR tubes, Microcentrifuge tube rotor: 6 x 1.5/2.0 mL or 6 x 0.5 mL with adaptors or 6 x 0.2 mL with adaptors
Speed Range	Fixed speed, 10,000 RPM
Dimensions	17 x 15 x 13 cm
Weight	0.95 kg

SpiniOne™ Centrifuges

Centrifuge samples anywhere! Ultra compact rechargeable micro centrifuges allows for spinning samples in the lab, at home or in the field.

Features:

- Cordless, no need to be near an outlet
- Rechargeable battery
- Modular MiniOne Photohood serves as the cover and activates the safety switch
- Affordable and portable

SpiniOne 2020
M2036

SpiniOne
M2033

Specifications	SpiniOne	SpiniOne 2020
Input Voltage	100-240V AC, 50-60 Hz	100-240V AC, 50-60 Hz
Rotor Capacity	4 x 0.2 mL PCR tubes or 4 x 0.5 mL microcentrifuge tubes	4 x 1.7 mL PCR tubes or 4 x 0.5 mL microcentrifuge tubes 4 x 0.2 mL PCR tubes
Dimensions	3.625" x 3.625 x 3.75	4.5" x 4.5" x 5.375"
Weight	225 g	375 g
Spin Colulmn Compatible?	No	Yes

Catalog No.	Description	Price
M2033	SpiniOne Centrifuge, set of 5 complete sets Includes five SpiniOne bases with assorted color rotors, five USB charging cables and five MiniOne Photohoods	$539
M2034	SpiniOne Centrifuge, set of 1 Includes one SpiniOne base with clear rotor, one USB charging cable and one MiniOne Photohood	$114
M2035	SpiniOne Centrifuge, set of 5 centrifuge bases and rotors only Includes five SpiniOne bases with assorted color rotors, five USB charging cables	$479
M2036	SpiniOne 2020 Centrifuge, set of 1 Includes one SpiniOne 2020 base with clear rotor, one USB charging cable and one MiniOne Photohood	$149

MiniOne® PCR System

M4000-US

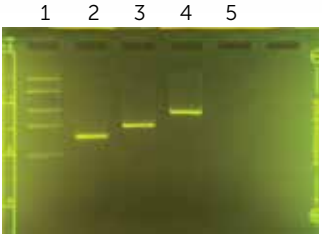
Teach and Do PCR Labs in 45 minutes!

$959

Fast PCR thermal cycler controlled by App on Bluetooth® LE mobile device (see page 22). Amplify DNA in one classroom period.

- One MiniOne thermal cycler for PCR with 16 sample wells
- One 12V, 100W power supply, 100–240 VAC
- One **FREE** validation kit
- Temperature range **4°C (below ambient) to 99°C**
- Ability to pause run to evaluate cycle number

Validation kit provides enough reagents for two PCR runs, each amplifying three different size fragments, then visualizing the results with MiniOne® Electrophoresis



Example results from PCR System validation kit ~ 20 min. amplification and ~ 20 min. run time

Lane 1: MiniOne DNA marker (see page 52)
Lane 2: PCR fragment 1
Lane 3: PCR fragment 2
Lane 4: PCR fragment 3
Lane 5: negative control

Features:

- Peltier cooling technology and custom algorithm drives **fast thermal** cycling
- **Mobile App** for programming and monitoring via **Bluetooth® LE**
- Indicator lights on front show status of the run
- Fully compatible with standard reagents, consumables, and protocols
- Constant temperature mode allows for incubation of samples

Benefits:

- Complete a PCR protocol in a single class period
- Intuitive programming interface for students
- Keep your samples at 4°C when done

Specifications

Sample capacity	16 x 0.2 mL standard PCR tubes
Temperature range	4°–99°C
Heated lid	Yes, with safety interlock
Communications	Bluetooth® Low Energy wireless technology
Software	Graphical programming interface; Real-time protocol monitoring
Weight	1.9 lb (860 g) approx.
Dimensions	12 x 12 x 12 cm (4.7 x 4.7 x 4.7 in) approx.
Operating voltage	100–240 VAC

MiniOne® PCR System (continued)

16 sample capacity

Perfect for two to four student groups or a small class.

For larger classes, add more systems to maintain student exposure and participation.

Active heating and cooling

The Peltier element drives rapid temperature transitions and faster protocols. Keeps your samples at 4°C at the end of the run or run protocols that require temperatures below ambient.

Specialized algorithm

Custom control algorithm is the key for fast cycling and precise thermal control.

Visual indicators

Bright LEDs show the state of the machine and progress of the protocol.

Denature

Anneal

Extend

Done,
hold at 4°C

Compact

The MiniOne® PCR System takes up minimal space on your bench, stores easily, and can be moved wherever it's needed.

Safe

Fully enclosed system for safe operation in the classroom.

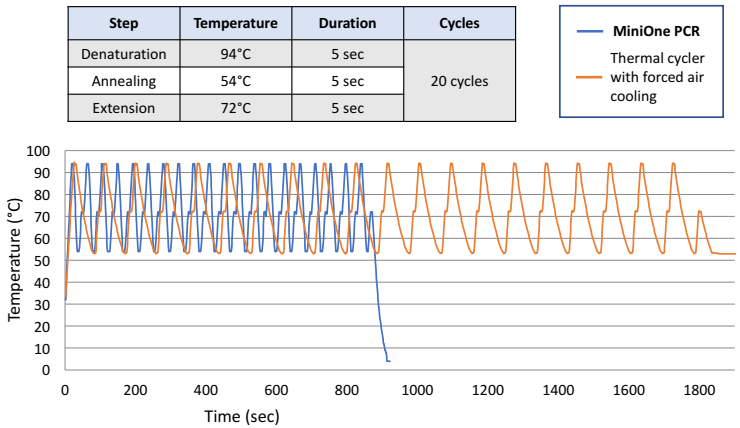
Heated Lid

No condensation or messy mineral oil. Safety switch keeps protocol from starting until the lid is closed.

How fast is it?

A typical fast protocol - MiniOne® PCR System is done in **50%** of the time.

Step	Temperature	Duration	Cycles
Denaturation	94°C	5 sec	20 cycles
Annealing	54°C	5 sec	
Extension	72°C	5 sec	



MiniOne® PCR App

Intuitive, student-centered app for programming and monitoring your PCR protocols.

Features:

- Interactive screens lead students through each step of setting up the PCR protocol
- **Pause** feature stops the protocol at the end of the extension step for convenient cycle number analysis
- Graphical output **displays real-time temperature data** that can be saved or emailed at the end of the run
- **Linked protocol** to automatically run consecutive protocols

1
Bluetooth® LE connection

View and connect to available PCR Systems with a wireless Bluetooth® LE connection. No cables or wifi needed!

2
Setup

Create a new protocol, access your last protocol or browse the library of saved protocols from the Setup menu.

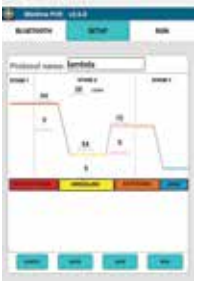
3
Protocol

Select constant temperature mode for restriction digests, transformation and DNA extractions, or PCR mode for DNA amplification.

4
Constant Temperature

Set up constant temperature protocols to incubate samples at 0-99°C using a simple, intuitive interface.

5
PCR



Graphic PCR programming interface allows students to enter time and temperatures directly on the PCR overview graph.

6
Cycling

The run screen shows a continuously updated, real-time readout of the temperature, current cycle, current step, and elapsed time.

iPhone
(iOS 9 or
higher)

Android phone
(Lollipop or
higher)

iPad/Mini iPad

MiniOne® PCR

Android controller

MacBook or PC Laptop*

Chromebook
(Bluetooth 4.1 or above)

*Requires MiniOne® Bluetooth® LE Dongle **M4060** $119

Android Mobile Controller

M4050

$119

Android mobile controller with MiniOne® PCR App pre-loaded.

- 7-inch, full color graphic display for a modern, student-centered interface
- Bluetooth® LE connectivity for programming and monitoring your MiniOne® PCR System

MiniOne® PCR with Android Mobile Controller

M4001

$1,078

- One MiniOne® PCR System with one validation kit - CE marked
- One Android Mobile Controller with MiniOne® PCR App installed

MiniOne® PCR/Electrophoresis Package I

M4011

$1,194

- One MiniOne® PCR System with one validation kit - CE marked
- One MiniOne® Electrophoresis System - CE marked
- One **FREE** 2–20 µL variable volume micropipette

For a group of two to three students

MiniOne® Electrophoresis and PCR Carrying Case

M4011CASE

$104

Carrying case to pack a MiniOne PCR and Electrophoresis System, with accessory pouch for up to 3 pipettes, a mobile tablet and power supplies. Additional compartments for MiniOne T-Racks, SpiniOne Centrifuge and reagents. (Equipment, accessories, reagents not included.)

MiniOne® PCR and Electrophoresis Biotech Basics Set

M4211USBASIC

$1,296

1 x MiniOne Electrophoresis
1 x MiniOne PCR System

All items are packed in the MiniOne Systems Carrying Case (**M4011CASE**)

MiniOne® PCR, Electrophoresis and SpiniOne 2020 Biotech Essentials Set

M4211US

$1,590

1 x MiniOne Electrophoresis System
1 x MiniOne PCR System
1 x 20-200 microliter variable volume micropipette, H-series
1 x 1-10 microliter variable volume micropipette, H-series
1 x SpiniOne 2020 centrifuge base
1 x Individual T-Rack Microtube Rack, 1.5 and 2.0 mL tubes
1 x Individual T-Rack Microtube Rack, 0.2 and 0.65 mL tubes
1 x Individual T-Rack Micropipette Tip Rack and Cover for 2-200 uL tips
1 x Individual Photohood Phone Platform

All items are packed in the MiniOne Systems Carrying Case **(M4011CASE)**. Tablet not included.

Package II
M4012

$1,511

- One MiniOne® PCR System with one validation kit - CE marked
- Two MiniOne® Electrophoresis Systems - CE marked
- Two **FREE** 2–20 µL variable volume micropipettes

For two groups of students

Package III
M4026

$3,594

- Two MiniOne® PCR Systems with two validation kits - CE marked
- Six MiniOne® Electrophoresis Systems - CE marked
- Six **FREE** 2–20 µL variable volume micropipettes

For six groups of students

MiniOne® PCR/Electrophoresis Package IV

M4039

$5,369

- Three MiniOne® PCR Systems - CE marked
- One PCR validation kit
- Nine MiniOne® Electrophoresis Systems - CE marked
- Nine **FREE** 2–20 µL variable volume micropipettes

For nine groups of students

MiniOne® Bioscience Classroom Starter Package V

M4040

$5,988

This bioscience classroom starter package includes the essential equipment for teaching hands-on molecular biology concepts using DNA amplification and separation in the classroom. The starter package is ideal for nine groups of two to three students, and includes:

- Three MiniOne® PCR Systems - CE marked
- One PCR validation kit
- Nine MiniOne® Electrophoresis Systems - CE marked
- Three MiniOne® Single Speed Microcentrifuges - CE marked
- One MiniOne® Micropipette Set with Case, includes one of each: 2–20, 20–200, 100–1000 µL variable volume micropipettes
- Nine **FREE** 2–20 µL variable volume micropipettes

For nine groups of students

Includes micropipette set for teacher prep!

MiniOne® MiniLabs

Our hands-on MiniLabs are a fun and engaging series of modules that take students from mastery of basic biotech skills, through popular applications of electrophoresis in forensics, DNA fingerprinting, and human genetics, and finally, to a challenging, real-world investigation of a foodborne outbreak.

Gel Loading Practice MiniLab

M3002

$59

Teach your students how to read, adjust, and use a micropipette. Practice pipetting and loading samples into the wells of a real gel before handling valuable DNA samples.

For middle school students and any first-time micropipette users (grades 4–12).

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation. Materials include:

Twenty precast agar plates with 3 rows of 8 wells per row
Twenty practice pipetting cards
Two tubes of dye samples (10 mL each)
One bag of 1.7 mL microcentrifuge tubes
One bag of 2–200 µL micropipette tips
Teacher's Guide

Practice Pipette Cards

M2025 (Set of 20)

$30

Reusable pipette card allows for practicing dialing, and dispensing for building confidence with accuracy and precision.

Laminated Gel Annotation and Photo Template

M2023 (Set of 10)

$19

Place your gel on these laminated cards make the color dyes POP after your electrophoresis run! Dual sided for 6- or 9-well dye electrophoresis activities.

Each MiniLab is an all-inclusive science lab kit. The ready-to-pour gel cups greatly simplify steps to make agarose gels. The buffer concentrate and easy-to-load DNA/color dye samples assure good results, minimize teacher prep work, and maximize student success in the lab.

Pipette Pointillism Junior MiniLab

M3017JR

$54

Introduce pipetting by having students make pictures from drops of color dye! Future scientists can use the pre-made design or use their imagination in creating their own artwork. Tracking how many dots of certain sizes helps to practice counting and organizing information.

Ideal for elementary and middle school students..

Each MiniLab contains enough materials for 20 workstations.
Materials include:

Four color dyes (red, blue, green, yellow)
20 plain stock cards for free form art
20 stock cards with pre-printed designs
One student worksheet with dot tracker and task guide
Plastic portion cups, enough for 6 per student, 20 students
25 plastic cups for water rinsing transfer pipettes
45 0.2 mL transfer pipettes

Pipette Pointillism MiniLab

M3017

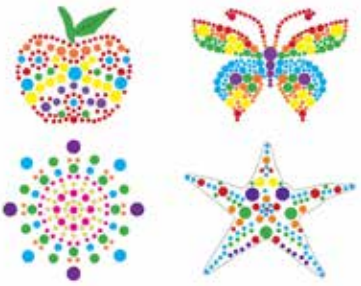
$54

Students will make art using drops of color dye – similar to the pointillism art technique. They can either use a pre-made design or create their own design, using different colors and appropriate drop sizes to make the dots.

Ideal for middle and high school students. Adjustable volume pipettes required, not included.

Each MiniLab contains enough materials for 20 students.
Materials include:

Four color dyes (red, blue, green, yellow)
20 plain stock cards for free form art
20 stock cards with pre-printed designs
One student worksheet with dot tracker and task guide
Plastic portion cups, enough for 6 per student, 20 students
One bag of 2-200 µL pipette tips



MiniOne® MiniLabs (continued)

Candy Color Electrophoresis MiniLab

M3009

$74

Investigate the phenomenon of food dyes using candy to illustrate the effect of mass and charge during electrophoresis.

Appropriate for middle school and beginning high school students (grades 7–10).

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation.
Materials include:

Ten 1% agarose gel cups
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 1.7 mL microcentrifuge tubes
One bag of 2–200 µL micropipette tips
Dye extraction buffer
Candies in six colors
Ten 10-well dye extraction trays
Access to Teacher's Guide

Determining the Genetics of a Ca$H Cow MiniLab

M3011

$74

Using an understanding behind cheese production, genetic inheritance, and gel electrophoresis, students will determine genotype of two bulls and three cows, and recommend which combination a dairy farmer should purchase to produce more valuable offspring.

Appropriate for middle school life science classes, genetics classes, and agriculture courses (grades 7–12).

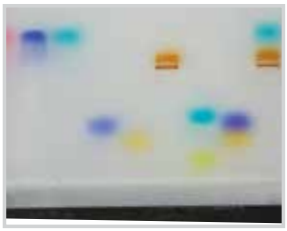
Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation.
Materials include:

Eight color dye samples
Ten 1.5 % agarose gel cups
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2–200 µL micropipette tips
Access to Teacher's Guide

Colorful Dye Electrophoresis MiniLab

M3007

$74



This fun and colorful lab introduces students to gel electrophoresis principles, including the basics of electricity and macromolecules. Predict how molecular size and electrical charge affect a molecule's migration in a separation matrix.

Appropriate for middle school and beginning high school students (grades 7–10)

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation. Materials include:

Ten 1% agarose gel cups
Nine color dye samples
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2–200 µL micropipette tips
Access toTeacher's Guide

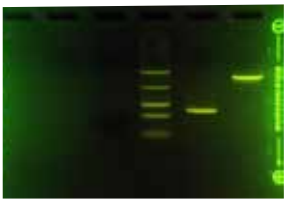
Electrophoresis 101 MiniLab

M3001

$54

Students are introduced to the principles of gel electrophoresis by separating colorful dyes and DNA samples on an agarose gel. Challenge your students' analytical and mathematical skills as they construct a standard curve to determine the sizes of unknown DNA fragments.

Appropriate for high school students (grades 9–12).



Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation. Materials include:

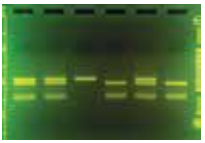
Ten 1% agarose GreenGel™ Cups
Three color dye samples and three DNA samples
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2–200 µL micropipette tips
Access to Teacher's Guide

MiniOne® MiniLabs (continued)

PTC Genetics MiniLab

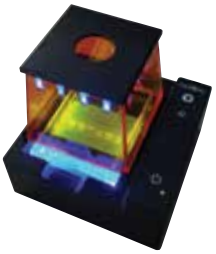
M3003

$84



Solve a genetic mystery using gel electrophoresis. Students develop a hypothesis about the inheritance of a trait in a family, then test their hypotheses by running restriction fragments on a gel, analyzing a Punnett square, and constructing a family tree.

Appropriate for high school students (grades 9–12).



Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation. Materials include:
Ten 2% agarose GreenGel™ Cups
Six pre-digested DNA samples
Forty pieces of PTC tasting and taste control papers
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2–200 µL micropipette tips
Access to Teacher's Guide

Sickle Cell MiniLab

M3050

$119

Sickle cell disease is a debilitating genetic condition where symptoms include pain, fatigue, shortness of breath and anemia. Sickle cell testing can be done as part of a newborn screening panel immediately after birth. Students will run and evaluate the results of several high risk newborns for their sickle cell genotype.

Ideal for courses that teach Anatomy and Physiology.

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation. Materials include:
Ten 1.5% agarose GreenGel™ Cups
Eight DNA samples
MiniOne® DNA Marker
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2 – 200 µL micropipette tips
Access to Teacher's Guide

Hypercholesterolemia MiniLab

M3051

$119

How can a 7-year old then have elevated LDL levels, is it her lifestyle or her genetics? Investigate the inheritance of Familial Hypercholesterolemia in a family to see who is a carrier and who has the rare form for this disease.

Ideal for courses that teach Anatomy and Physiology.

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation. Materials include:
Ten 0.8% agarose GreenGel™ Cups
Seven DNA samples
MiniOne® Universal Marker
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2 – 200 µL micropipette tips
Access to Teacher's guide

DNA Fingerprinting MiniLab

M3004

$84

How is DNA used to trace the history and heritage of an individual? Students help scientists identify the father of a baby humpback whale using DNA fingerprinting technology. Engage your students with a real-world application of genetics as they analyze a complex array of DNA bands to arrive at a logical solution.

Appropriate for high school students (grades 9–12).

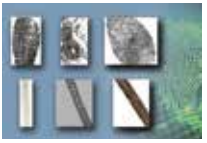
Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation. Materials include:
Ten 1% agarose GreenGel™ Cups
Five DNA samples
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2–200 µL micropipette tips
Access to Teacher's Guide

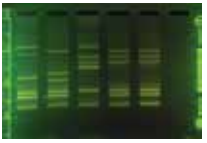
MiniOne® MiniLabs (continued)

CSI Forensics MiniLab

M3005

$84





Explore a crime scene investigation in the classroom. Learn an exciting real-world application of gel electrophoresis and the statistical principles of human genetic identification. Students will logically integrate multiple lines of evidence, including fingerprints, hair samples, and DNA fingerprinting to connect an individual to a crime scene and solve the mystery of "Who Killed Dr. Ward?"

Appropriate for high school students (grades 9–12).

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation.
Materials include:
Ten 1% agarose GreenGel™ Cups
Five DNA samples
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2–200 µL micropipette tips
Access to Teacher's Guide

Analyzing a Crime Scene with DNA

M3053

$119

See how DNA can reveal a unique profile, more unique than blood type. Use DNA electrophoresis to develop DNA profiles of the blood found at the scene, the murder victim and 2 suspects, both who have a motive. See how DNA evidence can be used to rule suspects in or out.

Ideal for courses that teach Forensics and biomedical sciences.

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation.
Materials include:
Ten 1% agarose GreenGel™ Cups
Five Ready-to-Load DNA samples
MiniOne® Universal Marker
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2 – 200 µL micropipette tips
Access to Teacher's Guide

Molecular Ladder to Freedom - DNA Exoneration

M3018TAE

Price - Inquire!

Imagine spending years in prison for a crime you did not commit. DNA from older cases is proving to be a crucial component to helping exonerate the wrongfully convicted. This MiniLab has students review the original cases, prior evidence and information, then re-analyze the case using DNA evidence to see if they can finally bring justice and restore freedom.

Ideal for courses that teach Forensics.

Created in partnership with the SEP program at Fred Hutch Cancer Center

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation.

Materials include:

Ten 1% agarose GreenGel™ Cups
Five Ready-to-Load DNA samples
MiniOne® 500bp Marker
100 mL Tris-Acetate-EDTA (TAE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2–200 µL micropipette tips
Access to Teacher's Guide

DNA Detectives Reagent Pack

M3052

$149

1 skeleton, 2 missing people. Use restriction enzymes to digest the DNA of the missing individuals and compare the resulting electrophoresis pattern to that of the skeleton to see if you can put a name to the bones!

Ideal for courses that teach Forensics and biomedical sciences.

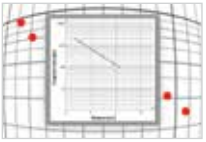
Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation.

Materials include:

Ten 1% agarose GreenGel™ Cups
Two Ready-to-Load DNA samples
Two Undigested DNA samples
Two restriction enzymes and enzyme dilution buffer
MiniOne® DNA Marker
MiniOne® Sample Loading Dye (5X)
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2 – 200 µL micropipette tips
Access to Teacher's Guide

MiniOne® MiniLabs (continued)

PTC Inheritance and Graphical Analysis MiniLab



M3012

$119

Explore Mendelian genetic inheritance, use Punnett Squares to make a claim, and see your evidence with DNA electrophoresis. This lab also features DNA fragment size analysis and demystifies why the standard curve is plotted as Log-Y!

Appropriate for AP Biology, Honors and Advanced Biology (grades 9-12).

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation.
Materials include:

Ten 2% agarose GreenGel™ Cups
Six pre-digested DNA samples
MiniOne® DNA Marker
Forty pieces of PTC tasting and taste control papers
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2–200 µL micropipette tips
Access to Teacher's Guide

Hunting the Inheritance of Huntington's Disease MiniLab

M3010

$119

In this lab, students will examine family history to construct a pedigree and will assess molecular data to make predictions about inheritance of the disease in fraternal twins. Students will then perform gel electrophoresis to confirm genotype.

Appropriate for high school life science, genetics classes and AP Biology.

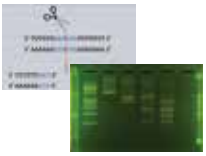
Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation.
Materials include:

Ten 2% agarose GreenGel™ Cups
Four Ready-to-Load DNA samples
100 bp DNA Ladder
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2–200 µL micropipette tips
Access to Teacher's Guide

Restriction Digest Basics MiniLab

M6050

$84



Cells have mechanisms for cutting long strands of nucleic acid into shorter strands—a type of molecular scissors. There are several reasons why cells need to cut their DNA or RNA. In this lab students will explore what restriction enzymes do and determine electrophoresis fragment sizes by comparing bands to a molecular weight standard.

Appropriate for high school students (grades 9-12).

Each MiniLab contains enough materials for 10 workstations, 2-3 students per workstation.
Materials include:

Ten 1.5% agarose GreenGel™ Cups
Four DNA samples (three pre-digested, one undigested)
MiniOne® Universal DNA Marker
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2–200 µL micropipette tips
Access to Teacher's Guide

Restriction Analysis of DNA MiniLab

M6053

$149

"Molecular scissors" for cutting DNA or RNA are used by cells for many reasons, including defense against an invading host, or genetic recombination. These restriction enzymes allow researchers to study smaller pieces of DNA more thoroughly. In this restriction digestion lab, students will explore what restriction enzymes do, perform a single and double digest of a synthetic piece of DNA, predict fragment sizes and compare to fragment size of the actual digested DNA run on an agarose gel.

Appropriate for AP Biology, Honors and Advanced Biology (grades 9-12).

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation.
Materials include:

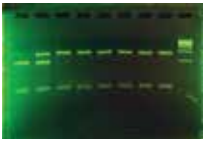
Ten 1.5% agarose GreenGel™ Cups
Undigested DNA Sample
Four pre-digested DNA controls
MiniOne® Universal DNA marker
Enzyme dilution buffer
Two restriction enzymes
MiniOne® 5X Sample Loading Dye
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2–200 µL micropipette tips
One bag of 0.2 mL PCR tubes
Access to Teacher's Guide

MiniOne® MiniLabs (continued)

Foodborne Outbreak Investigation MiniLab

M3006

$144



This MiniLab is a student-driven discovery process based on a real *Shigella* outbreak in 2000. Students use scientific reasoning and forensic science principles to analyze epidemiological data, develop a hypothesis, and test their hypothesis with gel electrophoresis. They will tabulate data expressed as text to systematically analyze the case and evaluate experimental approaches used by their team and others in the class. Along the way they will develop an understanding of foodborne outbreaks and foodborne illness, topics that are frequently in the news and relevant to students' lives.

Appropriate for high school students (grades 9–12), AP, honors, and advanced biology students.

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation.
Materials include:

Ten 1% agarose GreenGel™ Cups
Eleven DNA samples
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 2–200 µL micropipette tips
Two bags of 0.65 mL microcentrifuge tubes
Access to Teacher's Guide and Quiz question bank with answers

What's in the Trunk? An Elephant Ivory Expedition

M3016TAE

$134

Explore how genetics can be used in modern conservation efforts in this lab that turns students into Wildlife Crime Scene Investigators. Using electrophoresis and an elephant database, students analyze and look up DNA profiles from confiscated ivory tusks to identify where the elephant tusk poaching is happening.

Ideal for AP Environmental Sciences, AP Biology.

Created in partnership with the SEP program at Fred Hutch Cancer Center

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation.
Materials include:

Ten 1% agarose GreenGel™ Cups
Four DNA samples
MiniOne Universal Marker
100 mL Tris-Acetate-EDTA (TAE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2 – 200 µL micropipette tips
Access to Teacher's Guide

NGSS-Aligned Color Dyes and Gel Electrophoresis MiniLab

M3008

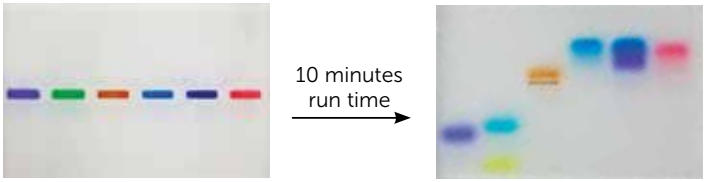
$249

A comprehensive, 5E inquiry, week-long lesson plan that introduces students to separation science in a variety of contexts. Student-driven inquiry activities impart the scientific background needed to understand gel electrophoresis. The curriculum culminates in a gel electrophoresis experiment using colorful dyes.

The curriculum is provided as a downloadable PDF manual which includes comprehensive background readings,
student worksheets, and teacher support materials. Lab materials and a PowerPoint presentation are also included.

Recommended for middle school students (grades 6-9).

Each MiniLab contains enough materials for 10 workstations, 2-3 students per workstation.
Materials include:
Ten 1% agarose gel cups
Six color dye samples
One set of filter papers and green food coloring for exploring paper chromatography
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 2–200 µL micropipette tips
One copy of the curriculum



Start Finish

Bundle and Save!

M3008 3-Pack Reagents for 30 workstations, 1 copy of the curriculum	$409
M3008 5-Pack – Reagents for 50 workstations, 1 copy of the curriculum	$659

Let it Glow!

Take the Mess and Stress Out of Bacterial Transformation!

Get growing and get glowing in as little as two classroom periods by upgrading a classic central dogma lab activity that reduces your prep and integrates technology to take the mess out of transformation. This hands-on bacterial transformation MiniLab illustrates the basics of genetic engineering, where students use a heat shock transformation to introduce plasmid DNA into a safe strain of E. coli.

Prepped for You!

- One gloTray™ replaces four Petri dishes, and comes pre-poured, ready to use.
- Media formulations
  - Lane 1 - LB
  - Lane 2 & 3 - LB/Amp
  - Lane 4 - LB/Amp/Lactose
- Reagents are pre-aliquoted for individual workstations, reducing precious prep time for busy teachers.

Kick the Ice Bucket!

- The MiniOne PCR System provides precision temperature and timing for the heat shock step.

Clear and Positive Results!

- Visualize 4 conditions side by side in The Winston Fluorescence Reader and document results with a mobile device.

Let it Glow Bacterial Transformation MiniLab

M6300

$174

Explore how genetics can be used in modern conservation efforts in this lab that turns students into Wildlife Crime Scene Investigators.
Using electrophoresis and an elephant database, students analyze and look up DNA profiles from confiscated ivory tusks to identify where the elephant tusk poaching is happening.

Ideal for AP Biology.

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation.
Materials include:

11 MiniOne gloTrays with LB medium
1 BL21 stock culture on gloTray
2 tubes of LB broth medium
1 Bag of 0.65 mL microcentrifuge tubes
11 tubes of CaCl2 solution
11 tubes of eGFP plasmid DNA solution
11 tubesSterile dH2O
Plastic inoculating loops
11 packs of Sterile wooden spreaders

Let it Glow Bacterial Transformation MiniLab and 3 Winston Fluorescence Readers

M6301

$339

Includes (1) M6300 and (3) M1050

Let it Glow Bacterial Transformation MiniLab, 3 Winston Fluorescence Readers and 1 MiniOne PCR system

M6302

$1,274

Includes (1) M6300 and (3) M1050 and (1) M4000

MiniOne® MiniLabs (continued)

PCR 101 MiniLab: Amplification from the Lambda Phage Genome

M6001

$119

In this hands-on PCR MiniLab, students use polymerase chain reaction (PCR) to amplify three segments of the Lambda phage genome. They will look at sequence data, predict the fragment sizes of the PCR products, then compare their predictions to the PCR products they amplify and run on an agarose gel. Complete amplification in 17 minutes with the MiniOne® PCR system and the FastTaq™ Master Mix.

Appropriate for high school students (grades 9–12), AP, honors, and advanced biology students.

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation. Materials include:

Ten 2% agarose GreenGel™ Cups
FastTaq™ PCR MasterMix (2X)
Three primer sets, both forward and reverse primers included in each set
Lambda phage genomic DNA
Sterile nuclease-free water
MiniOne® DNA marker
MiniOne® 5X Sample Loading Dye
One bag of 0.2 mL thin-wall PCR tubes
One bag of 0.65 mL microcentrifuge tubes
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
Access to Teacher's Guide

COMPLETE PACKAGE!

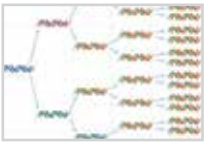
Bundle and Save!	M6001 $119	M6002 $104	M6003 $169
M6002 - PCR 101 MiniLab, PCR Reagents (no electrophoresis reagents)	✓	✓	✓
M3103TBE - Ten 2% agarose GreenGel™ Cups with TBE buffer concentrate (see page 50)	✓		✓
M3136 - 10 racks of micropipette tips (2–200 µL) (see page 55)			✓

Need some racked tips? or PCR tube racks?

Try the MiniOne® T-Rack Micropipette Tip Rack and Cover (**M3139**) or the MiniOne T-Rack™ PCR Tube Rack - 0.2 and 0.5 mL (**M3180**)

(see pg. 10 for details)

PCR Cycle Number Analysis MiniLab



M6005

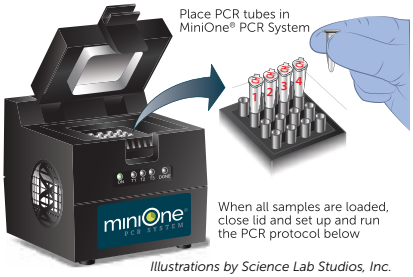
$119

Visualize the power of exponential growth with PCR! Students will set up PCR reactions and analyze the products after a variable number of cycles. Students will estimate the minimum number of cycles needed to detect a PCR product on an agarose gel, and visualize and appreciate exponential growth.

Appropriate for high school students (grades 9–12), AP, honors, and advanced biology students.

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation. Materials include:

Ten 1% agarose GreenGel™ Cups
MiniOne® DNA marker
MiniOne® 5X Sample Loading Dye
FastTaq™ PCR MasterMix (2X)
One primer set, forward and reverse
Lambda phage genomic DNA
One bag of 0.65 mL microcentrifuge tubes
One bag of 0.2 mL thin-wall PCR tubes
100 mL TBE buffer concentrate
Access to Teacher's Guide



Illustrations by Science Lab Studios, Inc.

Who Has the Flu? Tracing Transmission with ELISA and PCR MiniLab

M6030

$159

A student who recently traveled to an away game has come down with a highly transmissable flu. PCR and ELISA provide clues into who is sick and who was sick to help inform what stage of an outbreak we are in. In this lab your students will run PCR to test students for active flu, and compare to the amount of antibodies detected by ELISA. Who has the flu and who had the flu?

Ideal for advanced high school students and beginning college students in biology and biomedical programs. Created in partnership with Shoreline Community College Biotech Program.

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation.
Materials include:

Ten 1.5% agarose GreenGel™ Cups
Patient viral DNA samples
Forward and reverse primers
FastTaq PCR Master Mix (2X)
MiniOne Sample Loading Dye (5X)
MiniOne® DNA Marker
100 mL Tris-Borate-EDTA (TBE) buffer concentrate
One bag of 0.65 mL microcentrifuge tubes
One bag of 0.2 mL thin wall PCR tubes

MiniOne® MiniLabs (continued)

A Taste of Genetics MiniLab: Extract and Amplify the PTC Gene

M6010

$139

This hands-on MiniLab introduces students to the science of human genetic variation through DNA extraction, PCR amplification, restriction digest, and analysis of the TAS2R38 taster gene of their own DNA, and compare genotype to phenotype.

Appropriate for high school biology students, especially honors and advanced placement, and college level biology.

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation. Materials include:

- DNA extraction solution
- Forward and reverse primers for PTC genes
- Taq polymerase master mix (2X)
- HaeIII restriction enzyme
- Restriction enzyme dilution buffer
- MiniOne® 5X Sample Loading Dye
- MiniOne® DNA Marker
- One bag of 0.2mL thin-walled PCR tubes
- One bag of 0.65 mL microcentrifuge tubes
- Forty pieces of PTC taste paper and taste control papers
- Ten 2% agarose GreenGel™ Cups
- 100 mL Tris-Borate-EDTA (TBE) buffer concentrate
- Two grams table salt
- Access to Teacher's Guide

COMPLETE PACKAGE!

Bundle and Save!	M6010 $139	M6012 $119	M6013 $189
M6012 - A Taste of Genetics MiniLab, DNA Extraction and PCR Reagents (no electrophoresis reagents)	✓	✓	✓
M3103TBE - Ten 2% agarose GreenGel™ Cups with TBE buffer concentrate (see page 50)	✓		✓
M3136 - 10 racks of micropipette tips (2–200 µL) (see page 55)			✓

Extension Activities

available at https://theminione.com/free-classroom-activities/

Introduction to NCBI Bioinformatics – Students will learn to navigate NCBI, explore the different types of information available, and apply it to look deeper at the TAS2R38 gene, including sequence, chromosomal location, and associated phenotypes and variants.

Hardy-Weinberg – Students will create a simulation of allele frequencies in a population using principles from the Hardy-Weinberg model and a TI-84 Plus graphing calculator or computer including evaluating classroom results from A Taste of Genetics (**M6012**).

BLAST – Students will use BLAST to investigate the TAS2R38 protein sequences across various species and lineages to determine in which lineage did Type 2 taste receptor evolve, and use that information to construct a phylogenetic tree.

Taking Macromolecules to Micro!

M3014, $109

In this microscaled lab activity, students can test for starch and glucose in addition to proteins, lipids, and DNA, without the need for large volumes of reagents, cleaning test tubes, or boiling reagents. Finally a simple way to test DNA and view it on the Winston Fluorescence Reader (sold separately).

Ideal for middle school through university students.

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation. Materials include:

Test reagents and samples: Benedict, Glucose, Iodine, Starch, Biuet, Protein powder, GelGreen, Lambda DNA
One bag of 0.65 mL microcentrifuge tubes
One bag of 2 - 200 µL micropipette tips
Exploratory Activity test samples
Access to Teacher's Guide

DNA Extraction Toolbox

M3015, $64

In this hands-on lab, students explore DNA extraction and use the Winston fluorescence reader to see how changes in extraction reagent ratios affect the amount of DNA that can be extracted.

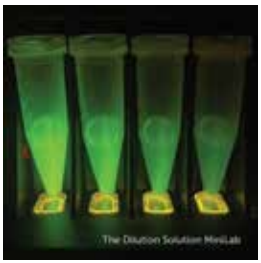
Ideal for college, high school and university students.

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation. Materials include:

Wheat germ
1% Tween-20 detergent
Plastic transfer pipettes
0.1 M Na-Bicarb buffer (pH 9.6)
GelGreen Nucleic Acid
Stain5 ml tubes and caps for aliquoting reagents
Access to Teacher's Guide

The Dilution Solution MiniLab

M3013, $49



Students will perform the calculations needed dilute solutions from stock solutions, determine their dilution factors, and do both direct and serial dilutions. Results can be visualized on The Winston Fluorescence Reader.

Ideal for students taking biotech courses.

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation. Materials include:

Fluorescein Concentrate
1 mL Transfer Pipettes
1 bag of 1.75 mL microcentrifuge tubes
Tube Labels for Fluorescein Concentrate

PrepOne™ Sapphire and Photo Hood

M5000

$659

A blue LED illuminator for smart devices to take gel images with ease. Adapt your current electrophoresis system for safe blue light illumination and non-toxic GelGreen™ stain.

Package includes:

One PrepOne™ Sapphire Blue LED Illuminator

One photo hood for smart devices (assembly required)

One amber filter

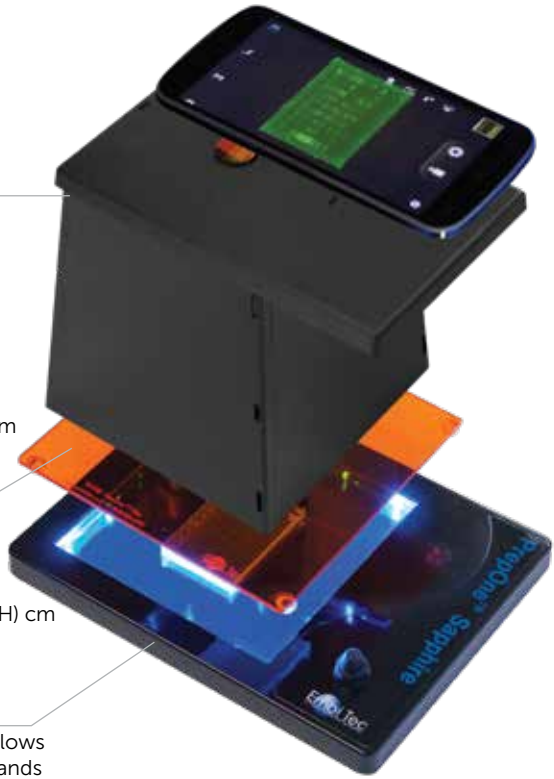


Photo hood

- Compact and collapsible design turns your bench into an instant dark room.
- Wide top platform holds most smart devices
- Height: 15.4 cm, provides a suitable focal length for most phone cameras
- Base DIM: 13.8 (W) x 13.8 (L) cm

Amber filter

- Cuts out excess blue light to enhance the contrast of the DNA signal
- DIM: 15.2 (W) x 15.2 (L) x 0.3 (H) cm

PrepOne™ Sapphire

- Side illuminating blue light allows direct visualization of DNA bands
- 4x4 blue LEDs last over 50,000 hours
- Two built-in light intensities
- DIM: 21.4 (W) x 16.3 (L) x 1.5 (H) cm

MiniOne® Gel Electrophoresis Starter Kit

M3200

$94

This kit includes all supplies your class needs to get started with gel electrophoresis. Includes materials for making and running fifty MiniOne gels (1–2% agarose) - a great value! An exclusive MiniOne® DNA marker for analyzing a wide range of fragment sizes is also included.

Kit contents:

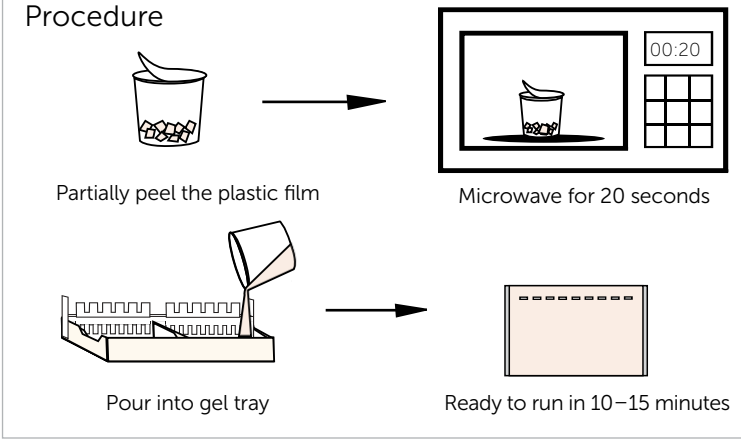
Item	Description
Agarose	10 grams, Electrophoresis Grade, Low EEO
TBE buffer concentrate	500 mL at 20X concentration
GelGreen™ DNA stain	50 µL at 10,000X stock
5X Sample Loading Dye	1 mL at 5X concentration, with Orange G and Xylene Cyanol tracking dyes
MiniOne® DNA Marker	500 µL for 50 loads, with 100, 300, 500, 1,000 and 2,000 bp bands in a ready-to-use format
1XTE buffer	2 mL, for DNA sample dilution
Reusable plastic gel cups	15 pieces, for making your own GreenGel™ Cups
Instruction manual	"How to Make MiniOne® Agarose Gels"

MiniOne® GreenGel™ Cups

A ready to use, microwavable plastic cup with all ingredients to make one MiniOne gel.

- Each cup contains GelGreen™ DNA stain* mixed in a pre-weighed amount of agarose gel cubes
- One gel cup makes one MiniOne gel (10 mL in volume)
- Making agarose gels becomes easy, convenient, and fast
- 6 month shelf life

Procedure



*Features of GelGreen™ DNA stain:

- Safety: a non-cytotoxic, non-mutagenic substitute for ethidium bromide (EtBr)
- Stability: stable at room temperature for long-term storage and microwavable
- Simplicity: binds to dsDNA, fluoresces when exposed to blue light enabling instant visualization of DNA bands

GreenGel™ Cups with GelGreen™ DNA stain for gel electrophoresis with DNA samples

Cat. No.	Buffer Type	Agarose Gel Concentration	Content	List Price
M3102TBE	TBE	1%	Ten GreenGel™ Cups with GelGreen™ DNA stain mixed in agarose, and **100 mL TBE buffer concentrate, enough to make 2L of running buffer** (Makes ten MiniOne® TBE gels)	$30.00
M3142TBE	TBE	1.5%		$30.00
M3103TBE	TBE	2%		$30.00
M3123TBE	TBE	3%		$31.00
M3141TBE	TBE	0.6%		$30.00
M3140TBE	TBE	0.8%		$30.00
M3202TAE	TAE	1%	Ten GreenGel™ Cups with GelGreen™ DNA stain mixed in agarose and **100 mL TAE buffer concentrate, enough to make 2L of running buffer** (Makes ten MiniOne® TAE gels)	$30.00
M3242TAE	TAE	1.5%		$30.00
M3203TAE	TAE	2%		$30.00
M3223TAE	TAE	3%		$31.00
M3241TAE	TAE	0.6%		$30.00
M3240TAE	TAE	0.8%		$30.00

Agarose gel cups without DNA stain for gel electrophoresis with color dye samples

Cat. No.	Buffer Type	Agarose Gel Concentration	Content	List Price
M3151TBE	TBE	1%	Ten agarose gel cups with preweighed agarose gel cubes, and one bottle of 100 mL TBE buffer concentrate (Makes ten MiniOne® TBE gels)	$25
M3251TAE	TAE	1%	Ten GreenGel cups with GelGreen DNA stain mixed in agarose gel, and one bottle of 100 mL TAE buffer concentrate (Makes ten MiniOne® TAE gels)	$25

DNA Size Markers

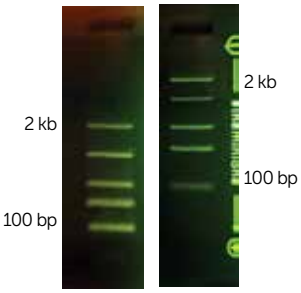
MiniOne® DNA Marker

M3104

$43

A DNA size marker that consists of five double-stranded DNA fragments with sizes of 2K, 1K, 500, 300, and 100 base pairs (bp).

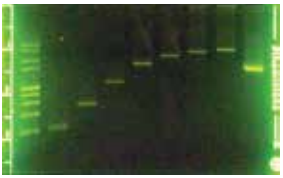
- 500 µL for 50 loads (10 µL per load)
- Suitable for 1% and 2% agarose gels
- All DNA bands will be well separated within 25 minutes



MiniOne® Universal DNA Marker

M3144

$43



A DNA size marker uniquely designed for fast band separation on agarose gels. It is composed of nine double-stranded DNA fragments with sizes of 10K, 6K, 3K, 2K, 1K, 800, 600, 400, and 200 base pairs (bp), reference band at 1 kb.

- 500 µL for 50 loads (10 µL per load)
- All DNA bands will be well separated within 25 minutes in a 1% agarose gel
- Suitable to be used as a size marker for most PCR products and recombinant plasmids and inserts

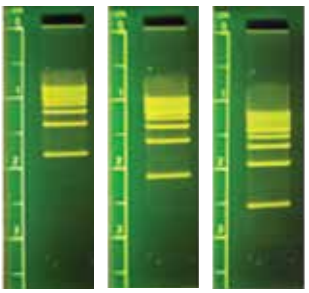
1 kb DNA Ladder

M3116

$79

Consists of fifteen double-strand DNA fragments, size ranging from 1 kb to 15 kb in exact 1 kb increments, reference band at 5 kb.

- 1,000 µL for 100 loads (10 µL per load)
- Can be used as a size marker for restriction digestions of genomic DNA, large dsDNA fragment



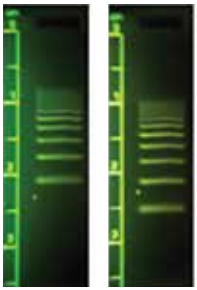
100 bp DNA Ladder

M3117

$79

Consists of ten double-stranded DNA fragments, sizes ranging from 100 bp to 1,000 bp in exact 100 bp increments.

- 1,000 µL for 100 loads (10 µL per load)
- A size marker for most PCR products smaller than 1000 bp



25 min 30 min

2% agarose gel,
100 bp DNA ladder

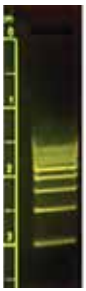
500 bp DNA Ladder

M3145

$43

Consists of ten double-stranded DNA fragments, sizes ranging from 500 bp to 5,000 bp in exact 500 bp increments, reference band at 2.5 kb.

- 500 µL for 50 loads (10 µL per load)
- An ideal size marker for PCR products smaller than 5 kb



30 min

1% agarose gel,
500 bp DNA ladder

All DNA markers are supplied in ready-to-load format with Xylene Cyanol FF and Orange G tracking dyes, stable for six months at room temperature.

Consumables and Plastics

TBE Buffer Concentrate (20X)

M3101TBE

$22 (500 mL)

- Suitable for separation of smaller size DNA fragments or PCR products (≤ 2 kb)

TAE Buffer Concentrate (10X)

M3101TAE

$22 (500 mL)

- Suitable for separation of larger size DNA fragments (5-20 kb), example: restriction digests of Lambda DNA

5X Sample Loading Dyes with Orange G and Xylene Cyanol

M3115

$13 (10 mL)

5X Sample Loading Dyes with Orange G

M3119

$13 (10 mL)

- Mix with DNA sample for easy loading
- Tracking dyes give a green color to samples which can be seen easily with the blue light on
- Other commonly used sample loading dyes are dark blue color which makes the DNA sample invisible when the blue light is on

GelGreen™ DNA Stain

(10,000X concentration)

M3113

$25 (50 µL)

M3114

$121 (500 µL)

M3120

$218 (1 mL)

M3121

$1,029 (5 mL)

- Simple to use: just add 1 µL per 10 mL agarose solution to make one MiniOne gel
- Safe: a non-cytotoxic, non-mutagenic, and environmentally safe substitute for ethidium bromide (EtBr)
- Stable at room temperature
- Microwavable

Agarose

Electrophoresis grade, low EEO

M3105

$19 (5 grams)

M3106

$55 (25 grams)

M3106-100g

$121 (100 grams)

M3106-500g

$484 (500 grams)

Microcentrifuge Tubes

M3107

$13 (0.65 mL, natural color)

M3109

$13 (1.7 mL, natural color)

M3108

$13 (0.65 mL, rainbow colors)

M3110

$13 (1.7 mL, rainbow colors)

- Pack of 200 tubes
- Non-sterile

FastTaq™ DNA Polymerase

A specially engineered Taq DNA polymerase with a very fast PCR extension rate at 100 bp/second. Also possesses moderate 3'–5' proofreading activity, making this enzyme well suited for high-throughput PCR.

MiniOne® FastTaq™ PCR MasterMix (2X)

M6201

$109 (5 x 1 mL)

- The mastermix includes FastTaq™ DNA polymerase, dNTPs, Mg^{2+} ions and buffer
- Just add primers and template DNA to complete the reaction setup
- Sufficient for 500x10 uL reactions

Taq DNA Polymerase

A regular Taq DNA polymerase suitable for a wide range of DNA assays with excellent yield and sensitivity. Routine PCR amplification of DNA templates up to 6 kb with a fast PCR extension rate at 1,000 bp/minute.

MiniOne® Taq PCR MasterMix (2X)

M6208

$85 (5 mL)

- The mastermix includes Taq DNA polymerase, dNTPs, Mg^{2+} ions and buffer
- Just add primers and template DNA to complete the reaction setup

PCR Reagents

You may find the following items handy when doing PCR:

Nuclease free water for PCR

M6204

$10 (5 mL)

Nuclease free water

M6205

$19 (50 mL)

- Molecular biology grade
- For DNA sample dilution or general use

1X Tris-EDTA (TE) Buffer, pH8.0

M6206

$19 (50 mL)

- Molecular biology grade
- For DNA sample dilution

0.2 mL PCR Tubes

M6100

$13

- Thin-walled with attached flat cap, optically clear, non-sterile, natural color
- Pack of 100 tubes
- Nuclease free

Micropipette Tips– Bulk package

M3112 1-10 µL, pk of 250 tips

$13

M3111 2–200 µL, pk of 250 tips

$13

M3134 2–200 µL, pk of 1,000 tips

$36

M3118 100–1,000 µL, pk of 250 tips

$13

- Fine tip with standardization marks
- Universal fit
- Autoclavable
- Non-sterile

Micropipette Tips in a Case – 0.5 – 10 µL (Racked Package, X2)

M3122 96 tips per rack, 2 racks

$17

Micropipette Tips in a Case – 100 – 1000 µL (Racked Package, X2)

M3128 100 tips per rack, 2 racks

$19

Micropipette Tips– Racked package

M3136 2–200 µL, ten racks

$69

- Tips packed in racks of 96 micropipette tips for easy use and storage
- Has all features of the bulk packaging version

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SYSTEMS

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