miniOne® SYSTEMS

2025 CATALOG

MADE TO
educate
INTERNATIONAL

10th Birthday - Story of the MiniOne®

Time flies when you're having fun and getting great results – the MiniOne Electrophoresis System turned 10 years old in 2024! Our game-changing set-up was first launched at the 2014 NSTA annual convention in Boston.

At NSTA 2014, the inventor Winston Walker (June 12, 1923 – August 31, 2019) was present in the booth, showing how teachers can use the affordable MiniOne System to teach and do electrophoresis with students in a single 45 minute classroom period. Inspired by educators who used his RunOne Electrophoresis System, he'd set out to make electrophoresis safer, faster, and more affordable – and was successful in his mission. The MiniOne was an instant hit with teachers and students alike, and continues to be a favorite of life science educators from Syracuse to Sydney.

Winston and his team went on to complete the development of the world's first BLE (Bluetooth® Low Energy) PCR system controlled by either iOS or Android apps in 2016.

Winston was a native Californian but in his later years lived half of the year in Littleton, CO while spending winters in San Diego, CA. Winston was completing a product for looking at fluorescence when he passed away at the age of 96 in 2019.

The Winston Fluorescence Reader is named in recognition of Winston's unwavering determination to develop revolutionary educational biotech products from the ground up, improving access to hands-on science.

Ten years later, at NSTA 2024 in Denver, CO, our team exhibited products that we hope continue with Winston's vision: to make life easier for our hard-working science educators, while inspiring the next generation of STEM leaders.

Thanks to all the teachers who have supported us in the past ten years. We look forward to working with you for a decade more!

Table of Contents

For regional ordering information, please contact us at info@theminione.com.
Email: orders@theminione.com
Telephone: 1 (858) 684-3190 **or** 1 (800) 255-1777 (U.S. and Canada)
Fax: 1 (858) 684-3195

For prices, purchases and shipments to outside of USA, please contact us by phone or email. Online prices are for educators in the US only.

For the most up-to-date product information please visit us at theminione.com or scan this QR code:

MiniOne® Electrophoresis System

M1002

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

Includes one each of the following items:

- 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 MiniOne® micropipette ($69 value!)
- Validation kit: Two GreenGel™ Cups, three DNA samples and TAE buffer concentrate (one per order)
- Packed in the MiniOne® Electrophoresis Carrying Case

*Available with US, EU or UK power plug

MiniOne® Electrophoresis Classroom Package of 10 Systems in Cases

M1012

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

Includes:

- Ten MiniOne® Electrophoresis Systems (**M1002**)
- Ten **FREE** 2–20 µL MiniOne® variable volume micropipette
- Validation kit: Two GreenGel™ Cups, three DNA samples and TAE buffer concentrate (one per order)

*Available with US, EU or UK power plug

MiniOne® Electrophoresis Carrying Case

M2024

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

Includes:

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

MiniOne® Electrophoresis System for Distance Learning

M1003

Rugged carrying case and included essential lab tools provide all that's needed to teach gel electrophoresis in the classroom lab or in a remote learning environment.

Includes:

- One MiniOne® Electrophoresis System (see page 2) (**M1002**)
- One SpiniOne™ Centrfuge base
- One T-Rack™ for micropipette tips
- One T-Rack™ for 0.65/0.2 mL tubes
- One Gel Loading Practice for a single workstation
- Packed in MiniOne® Electrophoresis Carrying Case

*Available with US, EU or UK power plug

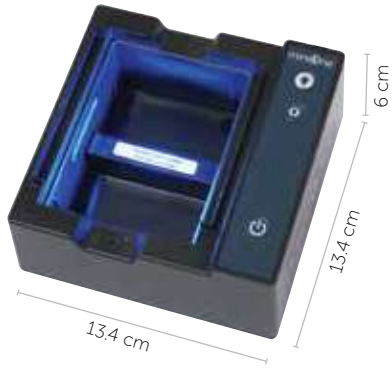
Catalog Number	Description
M1000	MiniOne Electrophoresis System Includes MiniOne Electrophoresis Carriage, Photo Hood, Gel Tank, Casting System, Power supply, 2-20 µL pipette, for 1 workstation
M1002	MiniOne Electrophoresis System in the MiniOne Electrophoresis Carrying Case Includes MiniOne Electrophoresis Carriage, Photo Hood, Gel Tank, Casting System, Power supply, 2-20 µL pipette, packed in the MiniOne Electrophoresis Carrying Case, for 1 workstation
M1003	MiniOne Electrophoresis System for Distance Learning Includes MiniOne Electrophoresis Carriage, Photo Hood, Gel Tank, Casting System, Power supply, SpiniOne Centrifuge base, T-Rack for 2-20 µL tips, T-Rack for 0.65ml/0.2ml tubes, 2-20 µL pipette, packed in the MiniOne Electrophoresis Carrying Case, for 1 workstation
M1010	MiniOne Electrophoresis System Classroom Package of 10 Systems Includes MiniOne Electrophoresis Carriage, Photo Hood, Gel Tank, Casting System, Power supply, 2-20 µL pipette, for 10 workstations
M1012	MiniOne Electrophoresis System Classroom Package of 10 Systems Includes MiniOne Electrophoresis Carriage, Photo Hood, Gel Tank, Casting System, Power supply, 2-20 µL pipette, packed in the MiniOne Electrophoresis Carrying Case, for 10 workstations
M1013	MiniOne Electrophoresis System Classroom Package of 10 Systems for Distance Learning Includes MiniOne Electrophoresis Carriage, Photo Hood, Gel Tank, Casting System, Power supply, SpiniOne Centrifuge base, T-Rack for 2-20 µL tips, T-Rack for 0.65ml/0.2ml tubes, 2-20 µL pipette, packed in the MiniOne Electrophoresis Carrying Case, for 10 workstations

*Available with US, EU or UK power plug

MiniOne® Carriage
M2007

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

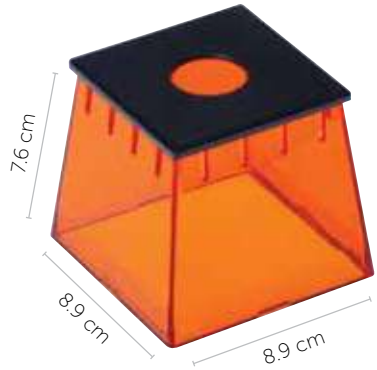
- + and – electrical contacts for graphite electrodes of gel tank
- Design ensures correct orientation fit
- Two rows of blue LEDs illuminate the gel from the sides
- Choose from two intensities–low light for loading, bright light for DNA viewing
- Built-in, magnet-activated on/off power switch



MiniOne® Photo Hood
M2005

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

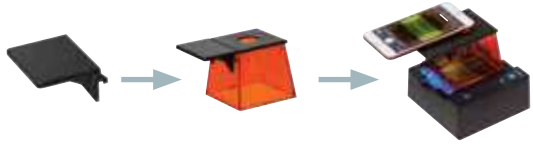
- Four embedded magnets activate power carriage
- Amber filter blocks blue light and transmits green light showing bright fluorescent DNA bands against a dark background
- Ventilation slots prevent condensation inside the hood



MiniOne® Photo Hood Phone Platform
M2017 (Set of 5)

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)"
- Hands-free documentation



MiniOne® 42V Power Supply

M2006

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

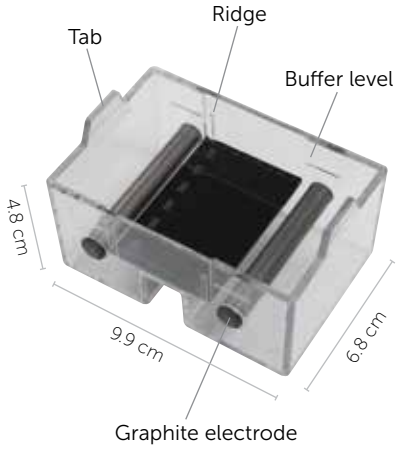
*Available with US, EU or UK power plug

MiniOne® Gel Tank

M2001

Molded polycarbonate tank with graphite electrodes.

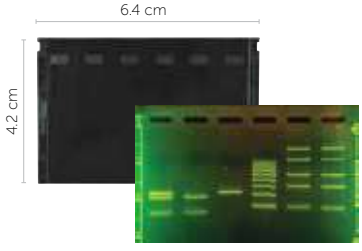
- Three ridges on walls of tank to guide correct orientation of gel tray
- Durable 1 cm graphite electrodes replace standard fragile platinum wires for easy cleaning
- Black and silver gray gel platforms provide contrasting background for imaging gels



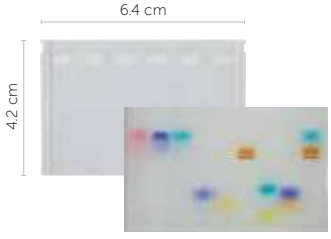
MiniOne® Gel Tray Platforms

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

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.



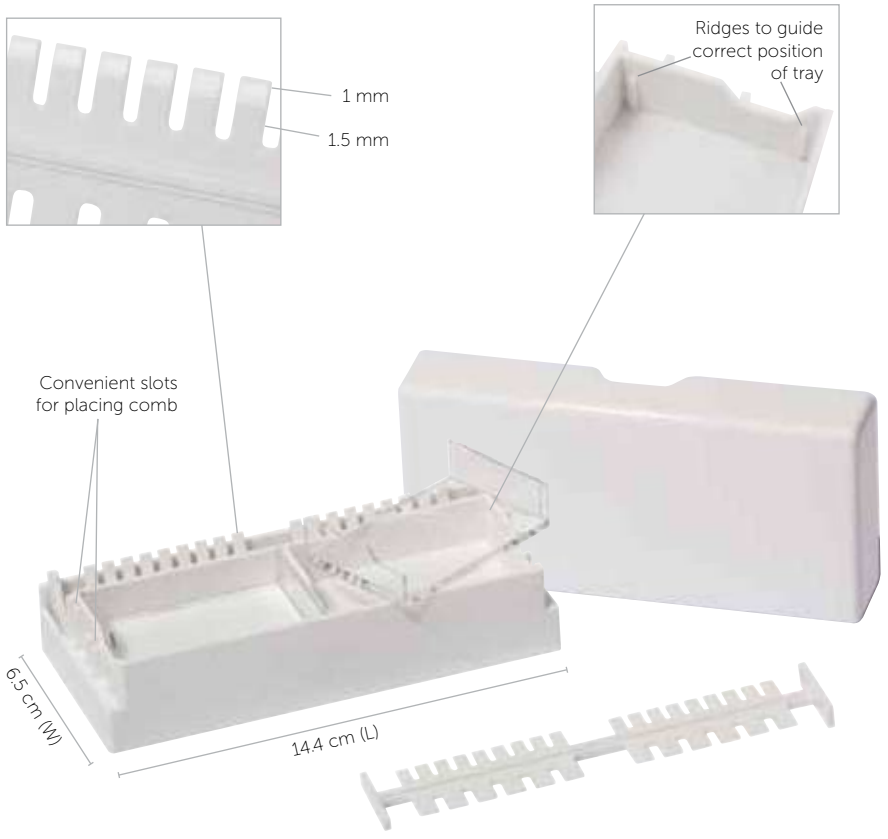
Use with color dyes separation. Silver gray color plastic plate with texture on well area.

MiniOne® Gel Casting System

M2002

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)

M2013-Bulk (50 per pack)

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

- For use in MiniOne® Gel tank and casting stand

MiniOne® Casting Stand Cover

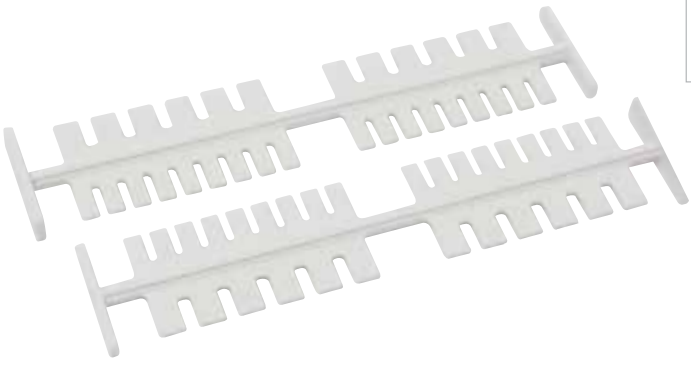
M2018 (5 per pack)

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

MiniOne® Gel Combs

M2004 (Set of 2)

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



MiniOne® Micropipettes

M2008, M2010, M2011, M2012

Best Classroom Pipette at the Best Price!

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

Decimal place is color-coded in red for P10 and P20

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 delivery
- Ultra-affordable for educational use
- Can be self-calibrated

MiniOne® Micropipette Set
M2016

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

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

Cat. No.	MiniOne® Micropipette Volume Range	Accuracy	Repeatability
M2008	2–20 µL (H20)	± 2.5–1.0%	≤ 1.50–0.30%
M2010	20–200 µL (H200)	± 1.8–0.6%	≤ 0.50–0.15%
M2011	100–1000 µL (H1000)	± 1.5–0.6%	≤ 0.30–0.15%
M2012	1–10 µL (H10)	± 2.5–1.0%	≤ 1.50–0.40%
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		
M2021	Pipette stand for the MiniOne® micropipettes; hold 9 micropipettes		

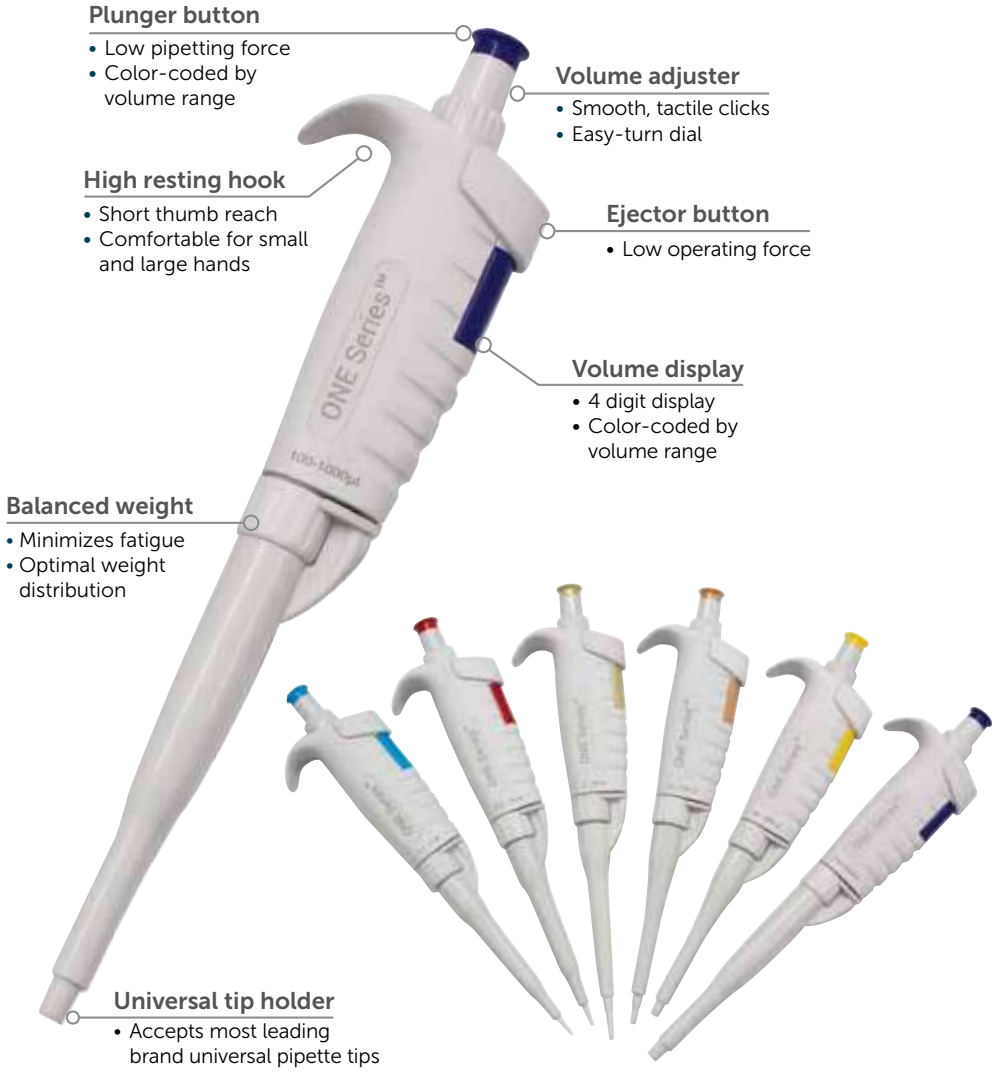
All micropipettes are manufactured according to the standards ISO13485. QC inspection and test are complying with standard ISO8655.

Micropipette Tips - See page 47 for specifications	
M3112	0.1–10 µL, pk of 250 tips
M3111	2–200 µL, pk of 250 tips
M3134	2–200 µL, pk of 1,000 tips
M3118	100–1,000 µL, pk of 250 tips
M3139	MiniOne® T-Rack™ Micropipette Tip Rack and Cover, set of 5 assorted colors • 36 x 2–200 µL Universal tips per rack • See page 26 for details

ONE Series™ Micropipettes

EA-1001 to EA-1006

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

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

Cat. No.	ONE Series™ Micropipette Volume Range	Accuracy	Repeatability
EA-1001	0.1–2 µL	± 12.0–1.5%	≤ 6.00–0.70%
EA-1002	2–20 µL	± 2.5–1.0%	≤ 1.50–0.30%
EA-1003	20–200 µL	± 1.8–0.6%	≤ 0.50–0.15%
EA-1004	10–100 µL	± 1.8–0.8%	≤ 0.50–0.15%
EA-1005	100–1000 µL	± 1.5–0.6%	≤ 0.30–0.15%
EA-1006	0.5–10 µL	± 2.5–1.0%	≤ 1.50–0.40%
EA-1011	Pipette Stand for the ONE Series Micropipettes;holds 9 micropipettes		
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		

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

Micropipette Tips - See page 47 for specifications	
M3112	0.1–10 µL, pk of 250 tips
M3111	2–200 µL, pk of 250 tips
M3134	2–200 µL, pk of 1,000 tips
M3118	100–1,000 µL, pk of 250 tips
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 (M3111 or M3134)

MiniOne® PCR System

M4000

Teach and Do PCR Labs in 45 minutes!

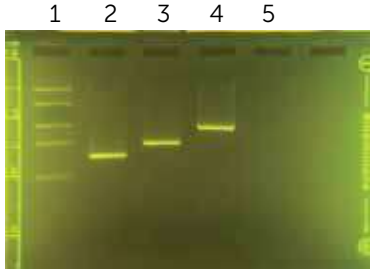
Fast PCR thermal cycler controlled by App on Bluetooth® LE mobile device (see page 18-19). Amplify DNA in one classroom period.

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

*Available with US, EU or UK power plug

CE marked

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



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

Lane 1: MiniOne DNA marker (see page 46)
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
- Run protocols that require temperatures below ambient

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, including the quick cold/hot/cold temperature transitions needed in common bacterial transformation heat shock protocols.

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.

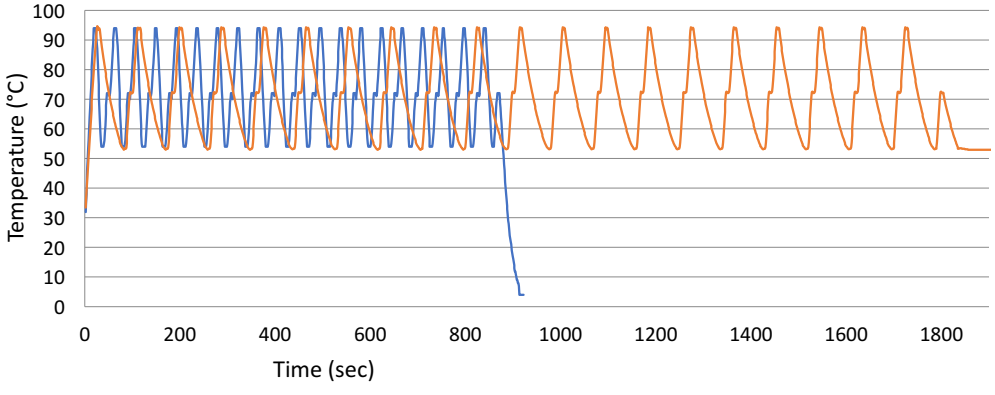
Heated Lid

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:

- Tap and type user interface leads 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!

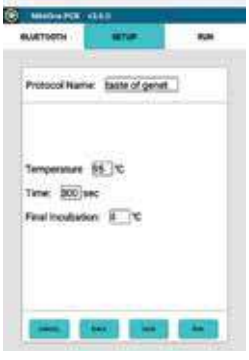
2 Setup

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

3 Protocol

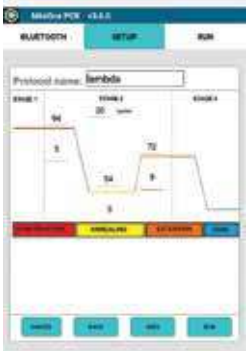
Select constant temperature mode for restriction digests, transformation and DNA extractions, or PCR mode for DNA amplification.

4 Constant Temperature



Set up constant temperature protocols to incubate samples at 4-99°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.

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

Android Mobile Controller
M4050

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

- One MiniOne® PCR System - CE marked
- One Android Mobile Controller with MiniOne® PCR App installed
- One FREE PCR validation kit (one per order)

*Available with US, EU or UK power plug

MiniOne® PCR System
M4000

Android Mobile Controller
M4050

MiniOne® PCR/Electrophoresis Package I
M4011

- One MiniOne® PCR System - CE marked
- One MiniOne® Electrophoresis System, includes one FREE 2–20 µL variable volume MiniOne® micropipette - CE marked
- One FREE PCR validation kit (one per order)

*Available with US, EU or UK power plug

MiniOne® PCR System
M4000

MiniOne® Electrophoresis System
M1000

For a group of two to three students

MiniOne® Electrophoresis and PCR Carrying Case
M4011CASE

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
M4211BASIC

- One MiniOne® PCR System - CE marked
- One MiniOne® Electrophoresis System, includes one FREE 2–20 µL variable volume MiniOne® micropipette - CE marked
- One FREE PCR validation kit (one per order)

*Available with US, EU or UK power plug

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

MiniOne® PCR, Electrophoresis and SpiniOne 2020 Biotech Essentials Set

M4211

- One MiniOne® Electrophoresis System, which includes one FREE 2–20 µL variable volume MiniOne® micropipette
- One MiniOne® PCR System
- One 20-200 µL variable volume micropipette, MiniOne® series
- One 1-10 µL variable volume micropipette, MiniOne® series
- One SpiniOne™ 2020 centrifuge base
- One individual T-Rack™ Microtube Rack, 1.5 and 2.0 mL tubes
- One individual T-Rack™ Microtube Rack, 0.2 and 0.65 mL tubes
- One individual T-Rack™ Micropipette Tip Rack and Cover for 2–200 µL tips
- One individual Photohood Phone Platform
- One FREE PCR validation kit (one per order)

*Available with US, EU or UK power plug

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

MiniOne® PCR/Electrophoresis - Package II

M4012

- One MiniOne® PCR System - CE marked
- Two MiniOne® Electrophoresis Systems, which includes two FREE 2–20 µL variable volume MiniOne® micropipettes - CE marked
- One FREE PCR validation kit (one per order)

*Available with US, EU or UK power plug

For two groups of students

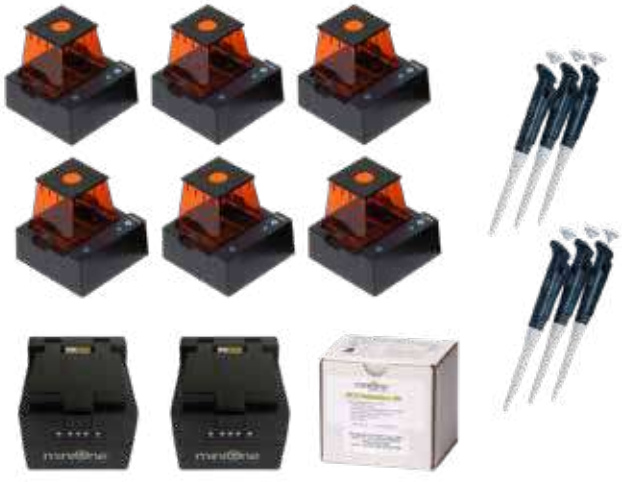
MiniOne® PCR/Electrophoresis - Package III

M4026

- Two MiniOne® PCR Systems - CE marked
- Six MiniOne® Electrophoresis Systems, which include six FREE 2–20 µL variable volume MiniOne® micropipettes - CE marked
- One FREE PCR validation kit (one per order)

*Available with US, EU or UK power plug

For six groups of students



MiniOne® PCR/Electrophoresis Package IV

M4039

- Three MiniOne® PCR Systems - CE marked
- Nine MiniOne® Electrophoresis Systems, which include nine FREE 2–20 µL variable volume MiniOne® micropipettes - CE marked
- One FREE PCR validation kit (one per order)

*Available with US, EU or UK power plug

For nine groups
of students

MiniOne® Bioscience Classroom Starter Package V

M4040

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
- Nine MiniOne® Electrophoresis Systems, which include nine FREE 2–20 µL variable volume MiniOne® micropipettes - 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 MiniOne® micropipettes
- One FREE PCR validation kit (one per order)

*Available with US, EU or UK power plug

Includes micropipette set for teacher prep!

For nine groups of students

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™ Microtube Rack - 1.5 and 2.0 mL

M3181 (Set of 5 racks)

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

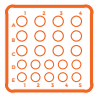
Capacity and configuration guide

Colors may vary

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

M3180 (Set of 5 racks)

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

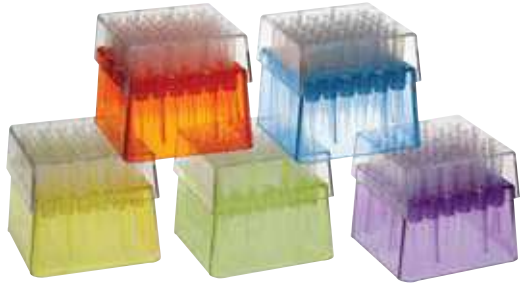
Colors may vary

MiniOne® T-Rack™ Micropipette Tip Rack and Cover

M3139 (Set of 5 racks)

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

Capacity and configuration guide



Colors may vary

MiniOne® T-Rack™ System Tray

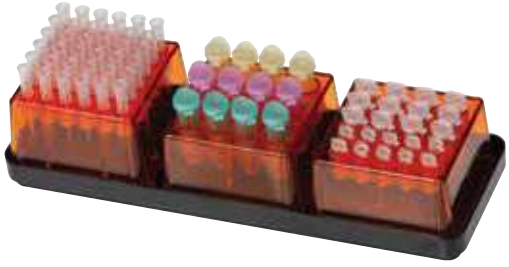
M3182 (Set of 5 trays)

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

MiniOne® T-Rack™ Combo Pack

M3143 (Set of 5)

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 rack cover and 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. Tips included, tubes not included.



MiniOne® Mini Erlenmeyer Flasks

M2019 (Set of 5)

Safer than traditional glass, this affordable set of 5 polypropylene 100 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.

- 100 mL (graduated every 25 mL)
- Polypropylene
- Autoclavable *(remove sticker before autoclaving)*

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

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

*Available with US, EU or UK power plug

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

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
- Microcentrifuge and PCR tube rotors included

*Available with US, EU or UK power plug

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 microcentrifuges 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™ M2033

SpiniOne™ 2020 M2036

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
M2033	SpiniOne Centrifuge, set of 5 complete sets Includes five SpiniOne bases with assorted color rotors, five USB charging cables and five MiniOne® Photohoods
M2034	SpiniOne Centrifuge, set of 1 Includes one SpiniOne base with clear rotor, one USB charging cable and one MiniOne® Photohood
M2035	SpiniOne Centrifuge, set of 5 centrifuge bases and rotors only Includes five SpiniOne bases with assorted color rotors, five USB charging cables
M2036	SpiniOne 2020 Centrifuge, set of 1 Includes one SpiniOne 2020 base with clear rotor, one USB charging cable and one MiniOne® Photohood

MiniOne® MiniLabs

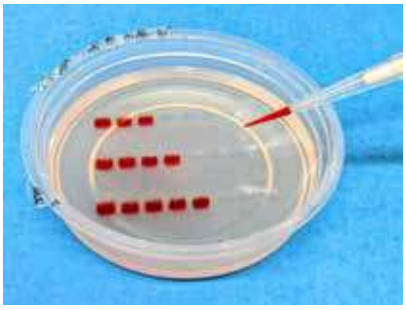
Our hands-on MiniLabs are a fun and engaging series of modules that take students from mastery of basic biotech skills, through popular applications of electrophoresis in forensics, DNA fingerprinting, and human genetics, and finally, to a challenging, real-world investigation of a foodborne outbreak.

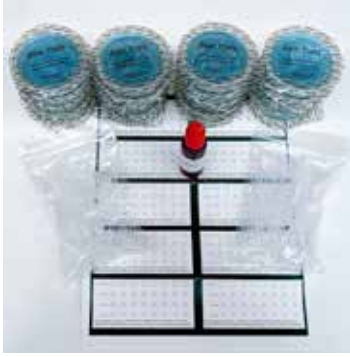
Gel Loading Practice MiniLab

M3002

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 (primary, secondary, university).

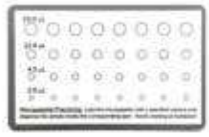
Materials include:
20 precast agar plates with 3 rows of 8 wells
20 practice pipetting cards
Tube of dye sample (20 mL)
0.65 mL microcentrifuge tubes
2–200 µL micropipette tips
Access to Teacher's Guide





Practice Pipette Cards

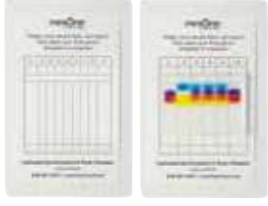
M2025 (Set of 20)



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)



Place your gel on these laminated cards to 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 for electrophoresis MiniLabs greatly simplify steps to make agarose gels. The buffer concentrate and Ready-to-Load DNA or color dye samples assure consistent results, minimize teacher prep work, and maximize student success in the lab.

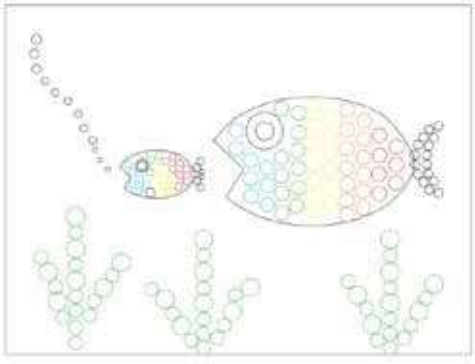
Pipette Pointillism Junior MiniLab

M3017JR

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

Ideal for primary 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
Plastic portion cups, enough for 6 per student, 20 students
25 plastic cups for water rinsing transfer pipettes
45 transfer pipettes (0.2 mL)
One student worksheet with dot tracker and task guide



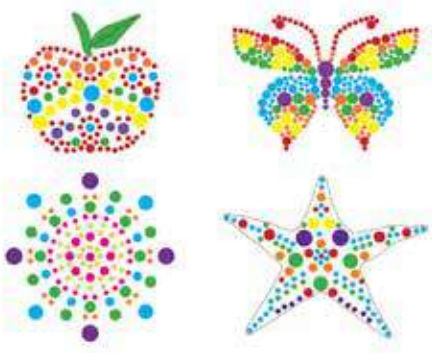
Pipette Pointillism MiniLab

M3017

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. Connect to math by having students graph their art by making graphs to compare how much volume of each color was used, sizes of the dots, or calculate ratios when mixing colors to create new colors.

Ideal for upper primary and secondary 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
Bag of 2-200 µL pipette tips



Dye Electrophoresis Labs

A great introduction to gel electrophoresis, dye electrophoresis labs from MiniOne are fast, intuitive, and engaging, helping early learners conceptualize the effects of mass and charge before moving to more advanced DNA separation labs.

Each MiniLab contains enough materials for 10 MiniOne® Electrophoresis workstations, 2–3 students per workstation.
Materials Include:

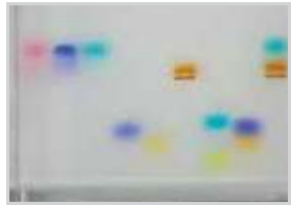
Ten GelCups
100 mL of TAE buffer concentrate
Bag of 0.65 mL centrifuge tubes
Bag of 2–200 µL pipette tips
Access to Teacher's Guide

Candy Color Electrophoresis MiniLab

M3009TAE

Investigate the phenomenon of food dyes using candy to illustrate the effect of mass and charge during electrophoresis. Includes a dye extraction buffer, six colors of candies, and ten 10-well dye extraction trays, and uses a 1% GelCup (included). Appropriate for upper primary school and beginning secondary school students (grades 7–10).

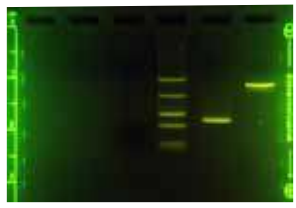
Colorful Dye Electrophoresis MiniLab



M3007TAE

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 using the included nine color dye samples. This lab uses a 1% agarose gel (included). Appropriate for upper primary school and beginning secondary school students (grades 7–10).

Electrophoresis 101 MiniLab



M3001TAE

Students are introduced to the principles of gel electrophoresis by separating three color dye samples and three 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. This lab uses a 1% agarose gel (included). Appropriate for secondary school students (grades 9–12).

Determining the Genetics of a Ca$H Cow MiniLab

M3011TAE

Based on the principles of cheese production, genetic inheritance, and gel electrophoresis, students screen eight color dye samples to determine k-casein genotype of two bulls and three cows, and recommend which combination a dairy farmer should purchase to produce more valuable offspring. This lab uses a 1.5% agarose gel (included). Appropriate for upper primary school life science classes, genetics classes, and agriculture courses (grades 7–12).

NGSS-Aligned Color Dyes and Gel Electrophoresis MiniLab

M3008TAE

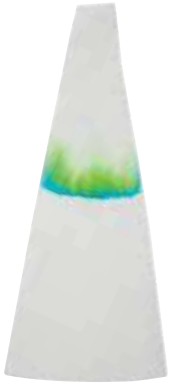
A comprehensive, 5E inquiry, week-long lesson plan that introduces students to separation science in a variety of contexts. Student-driven inquiry activities impart the scientific background needed to understand gel electrophoresis. The curriculum culminates in a gel electrophoresis experiment using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

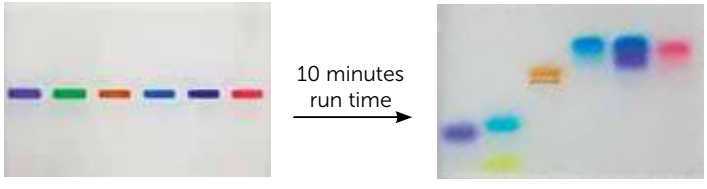
The curriculum is provided as a hard copy format, which includes comprehensive background readings, student worksheets, and teacher support materials.

Recommended for upper primary and beginning primary 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 TAE 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

Forensic Science

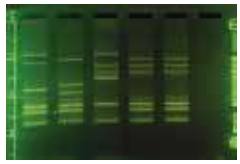
Forensic science is a rapidly growing field – with a wide range of careers falling under its umbrella. Whether students are interested in becoming crime scene investigators or forensic scientists, or simply love a good mystery, they'll enjoy solving biological puzzles using DNA electrophoresis.

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

Materials Include:

Ten GreenGel™ GelCups
100 mL of TAE buffer concentrate
Bag of 0.65 mL centrifuge tubes
Bag of 2–200 µL pipette tips
Access to Teacher's Guide

CSI Forensics MiniLab



M3005TAE

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 using five DNA samples to connect an individual to a crime scene and solve the mystery of "Who Killed Dr. Ward?". This lab uses a 1% agarose gel (included). Appropriate for secondary school students (grades 9–12).

Analyzing a Crime Scene with DNA

M3053TAE

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 victim and 2 suspects, both who have a motive. Using five Ready-to-Load DNA samples, and the MiniOne® Universal Marker, students will see how DNA evidence can be used to rule suspects in or out. This lab uses a 1% agarose gel (included). Ideal for courses that teach forensics and biomedical sciences.

Molecular Ladder to Freedom - DNA Exoneration MiniLab

M3018TAE

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

Imagine spending years in prison for a crime you did not commit. DNA from older cases is proving to be a crucial component in helping exonerate the wrongfully convicted. Students will review the original cases, prior evidence, and information about the case. Then they will re-analyze the case using DNA evidence (five Ready-to-Load DNA samples and the MiniOne® Universal Marker) to help restore justice and freedom. This lab uses a 1% agarose gel (included). Ideal for courses that teach forensic science.

Urine Trouble MiniLab

M3021TAE

Is cheating afoot? Or has someone has been horsing around with samples at the racetrack? Students learn about phylogeny and electrophoresis with this fun, hands-on activity that can be completed in a class period. Kit includes four Ready-to-Load samples and MiniOne® Universal Marker, and uses a 1% agarose gel (included). Ideal for courses that teach forensic science.

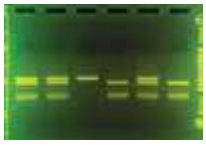
Inheritance and Human Conditions

From eye color to taste preferences, earlobe shape to certain diseases, so much of what makes us who we are is inherited from our parents. These hands-on MiniLabs make learning about heredity, genetics, and the biology of inherited conditions fun and engaging.

Each MiniLab contains enough materials for 10 MiniOne® Electrophoresis workstations, 2–3 students per workstation. **Materials Include:**

Ten GreenGel™ GelCups
100 mL of TAE buffer concentrate
Bag of 0.65 mL centrifuge tubes
Bag of 2–200 µL pipette tips
Access to Teacher's Guide

PTC Genetics MiniLab



M3003TAE

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 secondary school students (grades 9–12).
Includes six pre-digested DNA samples and forty pieces each of PTC tasting and taste control papers, and uses a 2% agarose gel (included).

Sickle Cell MiniLab

M3050TAE

Sickle cell disease is a debilitating genetic condition with symptoms including 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 using eight DNA Samples and the MiniOne® DNA marker. Ideal for courses that teach Anatomy and Physiology. This lab uses a 1.5% agarose gel (included).

Hypercholesterolemia MiniLab

M3051TAE

How can a 7-year old have elevated LDL levels? Is it her lifestyle or her genetics? Investigate the inheritance of Familial Hypercholesterolemia in a family using seven DNA samples and the MiniOne® Universal marker, to discover who is a carrier and who has the rare form of the disease. This lab uses a 0.8% agarose gel (included). Ideal for courses that teach Anatomy and Physiology.

DNA Fingerprinting MiniLab

M3004TAE

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, using five DNA samples, to arrive at a logical answer. This lab uses a 1% agarose gel (included). Appropriate for secondary school students (grades 9–12).

BCRA Chronicles MiniLab

M3054TAE

Students explore the world of breast cancer markers, investigating both the scientific and bioethical considerations associated with genetic testing. They will perform gel electrophoresis and can analyze the fragment sizes by graphing out a standard curve. Includes five Ready-to-Load DNA samples and MiniOne® Marker, and uses a 1.2% agarose gel (included). Ideal for secondary school life science courses, including Anatomy and Physiology.

AP Labs

In AP Biology, students cultivate their understanding of biology through inquiry-based investigations as they learn about topics like heredity, ecology, and cell communication. MiniOne® is proud to have developed several hands-on, inquiry-based labs that use science practices to reinforce content in Units 1, 4, 5, 6, 7, and 8.

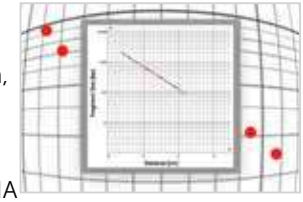
Each MiniLab contains enough materials for 10 MiniOne® Electrophoresis workstations, 2–3 students per workstation.

Materials Include:

Ten GreenGel™ GelCups
100 mL of TAE buffer concentrate
Bag of 0.65 mL centrifuge tubes
Bag 2–200 µL pipette tips
Access to Teacher's Guide

PTC Inheritance and Graphical Analysis MiniLab

M3012TAE



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). Includes six pre-digested, Ready-to-Load DNA samples, MiniOne® DNA Marker, forty pieces of PTC tasting and taste control papers. This lab uses a 2% agarose gel (included).

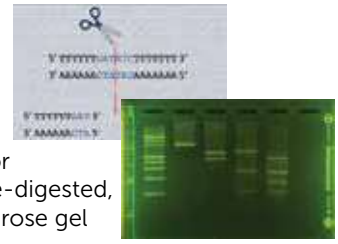
Hunting the Inheritance of Huntington's Disease MiniLab

M3010TAE

In this lab, students examine family history to construct a pedigree and assess molecular data to make predictions about inheritance of Huntington's disease in fraternal twins. They then perform gel electrophoresis to determine genotype. Appropriate for high school life science, genetics classes and AP Biology. Includes four Ready-to-Load DNA samples and 100 bp DNA ladder. This lab uses a 2% agarose gel (included).

Restriction Digest Basics MiniLab

M6050TAE



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 explore how restriction enzymes work and and determine electrophoresis fragment sizes by comparing bands to a molecular weight standard. Appropriate for high school students (grades 9-12). Includes four DNA samples (three pre-digested, one undigested), and MiniOne® Universal Marker. This lab uses a 1.5% agarose gel (included).

The Fungus Among Us, Valley Fever MiniLab

M3020TAE

Students learn about the role of fungi in nature, signs and symptoms of Valley Fever, and how certain groups of people are genetically predisposed to getting extremely ill from Valley Fever, then use gel electrophoresis to test samples and identify fungus hot spots. Includes ten pre-aliquoted Ready-to-load DNA strips, each with 8 regional samples, and the MiniOne® Universal Marker. This lab uses a 1% agarose gel (included). Also ideal for AP Environmental Science.

AP Labs (continued)

What's in the Trunk? An Elephant Ivory Expedition MiniLab

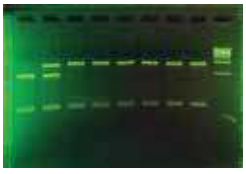
M3016TAE

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

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. Also ideal for AP Environmental Science. Includes four Ready-to-Load DNA Samples and MiniOne® Universal Marker. This lab uses a 1% agarose gel (included).

Foodborne Outbreak Investigation MiniLab

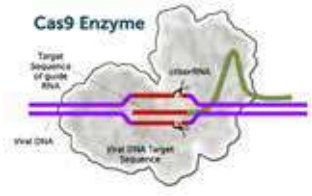
M3006TAE



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 then 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 secondary school students (grades 9–12), AP, honors, and advanced biology students. This lab uses a 1% agarose gel (included).

Molecular Masterpieces: Crafting Genetics with CRISPR MiniLab

M3019TAE



Students delve into the history of CRISPR by exploring the inner workings of CRISPR-Cas9 complex in prokaryotes. They simulate CRISPR-Cas9 action and DNA repair mechanisms to edit genomes using a paper model, then perform gel electrophoresis to demonstrate evidence of gene editing. Appropriate for secondary school students (grades 9–12), AP, honors, and advanced biology students. This lab uses a 1% agarose gel (included).

Show Me the Moo-ney! MiniLab

M3022TAE

Go from gene to protein! The fluid milk you drink and solid milk products (like cheese) are different and the casein milk protein plays a vital role in quality cheese production. This means that while some cows are ideal for cheese production, others can not produce milk that will make cheese at all! Farmers use their knowledge of casein proteins and genetics to design breeding programs that ensure they produce milk that will make for the highest quality cheese possible– and bring the highest return on investment. Includes 5 Ready-to-Load DNA samples and MiniOne® Marker, and uses a 1% agarose gel (included).

AP Labs (continued)

Bacterial Transformation MiniLab

Take the Mess and Stress Out of Bacterial Transformation!

Get growing and start 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 and 4 - LB/Amp*
- Reagents are pre-aliquoted for individual workstations, reducing precious prep time for busy teachers.

* Students will add lactose to lane 4 to create the environment to induce the plasmid

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

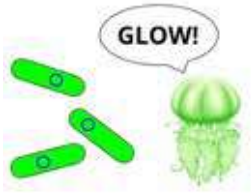
M6300

A bacterial transformation lab made for the busy teacher! Pre-poured gloTrays and pre-aliquoted reagents allow you to focus on teaching the content. This lab allows you to teach transformation and gene regulation, and see results side by side.

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
One BL21 stock culture on gloTray
Two tubes of LB broth medium
Bag of 0.65 mL microcentrifuge tubes
11 tubes of $CaCl_2$ solution
11 tubes of eGFP plasmid DNA solution
11 tubes sterile dH_2O
Plastic inoculating loops
11 packs of Sterile wooden spreaders
11 tubes of lactose
Supplemental ampicillin and lactose



Let it Glow Bacterial Transformation MiniLab and 3 Winston Fluorescence Readers

M6301

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

M6302

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, a fluorescence viewer that allows students to visualize and study molecular interactions, making complex scientific concepts more tangible. His impact on science education is global, bringing equality and accessibility to teachers and students worldwide.

MiniOne® The Winston™ Fluorescence Reader

M1050

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

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

Each adapter holds up to four 0.2 ml PCR tubes.
The Winston™ sold separately.

Taking Macromolecules to Micro! MiniLab

M3014

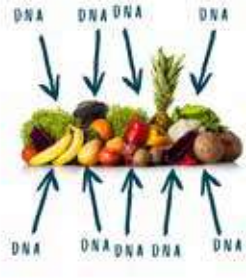
In this microscaled lab activity, students can test for starch and glucose in addition to proteins, lipids, and DNA, without the need for large volumes of reagents, cleaning test tubes, or boiling reagents. Finally a simple way to test DNA and view it on the Winston Fluorescence Reader (sold separately).

Ideal for primary 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, Biuret, Protein powder, GelGreen, DNA
Bag of 0.65 mL microcentrifuge tubes
Bag of 2 – 200 µL micropipette tips
5 Exploratory Activity test samples
Access to Teacher's Guide

DNA Extraction Toolbox MiniLab

M3015



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

Ideal for college, secondary 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 Stain
5 ml tubes and caps for aliquoting reagents
Access to Teacher's Guide

The Dilution Solution MiniLab

M3013

Students will perform the calculations needed to 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 chemistry or biotechnology courses.

Each MiniLab contains enough materials for 10 workstations, 2–3 students per workstation.
Materials include:
Fluorescein Concentrate
1 mL Transfer Pipettes
Access to Teacher's Guide
1.75 mL microcentrifuge tubes
Tube Labels for Fluorescein Concentrate

PCR 101 MiniLab: Amplification from the Lambda Phage Genome

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 secondary school students (grades 9–12), AP, honors, and advanced biology students.

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

M6001TAE Includes:

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
Bag of 0.2 mL thin-wall PCR tubes
Bag of 0.65 mL microcentrifuge tubes
100 mL TAE buffer concentrate
Access to Teacher's Guide

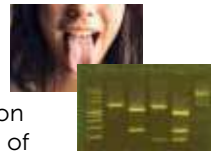
M6002 Includes:

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
Bag of 0.2 mL thin-wall PCR tubes
Bag of 0.65 mL microcentrifuge tubes

M6003TAE Includes:

Everything in M6001 PLUS 10 racks of micropipette tips (2–200 µL), M3136 (see page 47)

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



M6010TAE

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

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

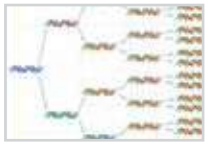
Each MiniLab contains contains enough materials to genotype up to 40 individuals. Materials include:

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
Bag of 0.2mL thin-walled PCR tubes
Bag of 0.65 mL microcentrifuge tubes
Forty pieces of PTC taste paper and taste control papers
Ten 2% agarose GreenGel™ Cups
100 mL TAE buffer concentrate
Two grams table salt
Access to Teacher's Guide

M6013TAE Includes:

Everything in M6010 PLUS 10 racks of micropipette tips (2–200 µL), M3136 (see page 47)

PCR Cycle Number Analysis MiniLab



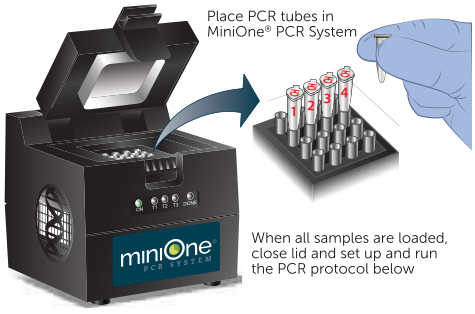
M6005TAE

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 secondary 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
Bag of 0.65 mL microcentrifuge tubes
Bag of 0.2 mL thin-wall PCR tubes
100 mL TAE buffer concentrate
Access to Teacher's Guide



Illustrations by Science Lab Studios, Inc.

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

M6030TAE

Created in partnership with Shoreline Community College Biotech Program

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 provided student samples 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 secondary school students and beginning college students in biology and biomedical programs.

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® 5X Sample Loading Dye
MiniOne® DNA Marker
100 mL TAE buffer concentrate
Bag of 0.65 mL microcentrifuge tube
Bag of 0.2 mL thin wall PCR tubes

MiniOne® GreenGel™ Cups

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

- Each cup contains a pre-weighed amount of agarose, pre-dissolved, and mixed with GelGreen™ DNA stain*
- One gel cup makes enough for one gel for MiniOne® Electrophoresis System (10 mL in volume)
- Making agarose gels becomes easy, convenient, and fast

* 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 - Ten GreenGel™ Cups with GelGreen™ DNA stain mixed in buffer and pre-dissolved agarose for up to 10 gels for the MiniOne Electrophoresis System, and 100 mL buffer concentrate, enough to make 2L of running buffer.

Agarose Gel Concenration	TAE GelCup Catalog Number	TBE GelCup Catalog Number
1%	M3202TAE	M3102TBE
1.5%	M3242TAE	M3142TBE
2%	M3203TAE	M3103TBE
3%	M3223TAE	M3123TBE
0.6%	M3241TAE	M3141TBE
0.8%	M3240TAE	M3140TBE
No Stain GelCups (For color dye samples, no DNA stain needed)		
1%	M3251TAE	M3151TBE

Electrophoresis Reagents

MiniOne® Gel Electrophoresis Starter Kit

M3200TAE

This kit includes all the 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:

10 g Agarose, electrophoresis grade, low EEO
500 mL TAE buffer concentrate at 20X concentration
50 µL GelGreen™ DNA stain at 10,000X stock
1 mL sample loading dye at 5X concentration, with Orange G and Xylene Cyanol tracking dyes
Instruction manual
500 µL MiniOne® DNA Marker for 50 loads, with 100, 300, 500, 1,000 and 2,000 bp bands in a ready-to-use format
2 mL 1X TE buffer for DNA sample dilution
15 reusable plastic gel cups for making your own GreenGel™ Cups

Agarose Electrophoresis grade, low EEO

M3105 (5 grams)

M3106-25g (25 grams)

M3106-100g (100 grams)

M3106-500g (500 grams)

Loading Dye

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.

M3115 5X Sample Loading Dyes with Orange G and Xylene Cyanol (10 mL)

M3119 5X Sample Loading Dye with Orange G (10 mL)

GelGreen DNA Stain (10,000X concentration)

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.

M3113 GelGreen™ DNA Stain (concentration) (50 µL)

M3114 GelGreen™ DNA Stain (concentration) (500 µL)

Electrophoresis Buffers

TBE is suitable for separation of smaller size DNA fragments or PCR products (≤ 2 kb), while TAE is suitable for separation of larger size DNA fragments (5–20 kb), example: restriction digests of Lambda DNA.

M3101TAE TAE Buffer Concentrate (10X) (500 mL)

M3101TBE TBE Buffer Concentrate (20X) (500 mL)

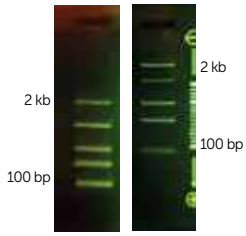
DNA Size Markers

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.

MiniOne® DNA Marker

M3104 500 µL for 50 loads (10 µL per load)

A DNA size marker that consists of five double-stranded DNA fragments with sizes of 2K, 1K, 500, 300, and 100 base pairs (bp). Suitable for 1% and 2% agarose gels. All DNA bands will be well separated within 25 minutes.



MiniOne® Universal DNA Marker

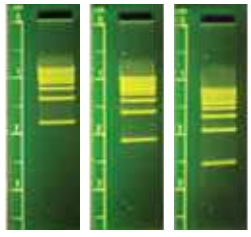
M3144 500 µL for 50 loads (10 µL per load)

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. ll 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 1,000 µL for 100 loads (10 µL per load)

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. Can be used as a size marker for restriction digestions of genomic DNA, large dsDNA fragments.

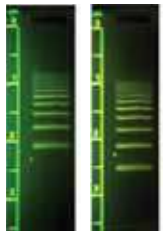


1% agarose gel,
1 kb DNA ladder

100 bp DNA Ladder

M3117 1,000 µL for 100 loads (10 µL per load)

Consists of ten double-stranded DNA fragments, sizes ranging from 100 bp to 1,000 bp in exact 100 bp increments. A size marker for most PCR products smaller than 1,000 bp.



2% agarose gel,
100 bp DNA ladder

500 bp DNA Ladder

M3145 500 µL for 50 loads (10 µL per load)

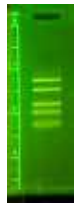
MiniOne 500 bp DNA Ladder is uniquely designed for fast DNA sizing on agarose gels. It is supplied in ready-to-use format and consists of seven double-strand DNA fragments with sizes of 10K, 5K, 2.5K, 2K, 1.5K, 1K and 500 base pairs (bp).

1% agarose gel,
500 bp DNA ladder

MiniOne® PCR Marker

M3146 500 µL for 50 loads (10 µL per load)

Consists of five double-stranded DNA fragments, with sizes of 50, 150, 250, 500 and 750 bp. An ideal size marker for PCR products smaller than 1 kb.



PCR Reagents

MiniOne® FastTaq™ PCR MasterMix (2X)

M6201 (5 x 1 mL)

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. The mastermix includes FastTaq™ DNA polymerase, dNTPs, Mg2+ ions and buffer, just add primers and template DNA to complete the reaction setup.

MiniOne® Taq PCR MasterMix (2X)

M6208 (5 x 1 mL)

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. The mastermix includes Taq DNA polymerase, dNTPs, Mg2+ ions and buffer, just add primers and template DNA to complete the reaction setup.

Nuclease free water for PCR

M6204 (5 x 1 mL)

Nuclease free water

M6205 (50 mL)

Molecular biology grade. For DNA sample dilution, or general use.

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

M6206 (50 mL)

Molecular biology grade. For DNA sample dilution.

Consumables and Plastics

Microcentrifuge Tubes

Molecular biology grade. For DNA sample dilution, or general use non-sterile pack of 200.

M3107 (0.65 mL, natural color)

M3108 (0.65 mL, rainbow colors)

M3109 (1.7 mL, natural color)

M3110 (1.7 mL, rainbow colors)

0.2 mL PCR Tubes

M6100

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

Micropipette Tips– Bulk package

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

M3112 (0.1-10 µL, pk of 250 tips)

M3134 (2–200 µL, pk of 1,000 tips)

M3111 (2–200 µL, pk of 250 tips)

M3118 (100–1,000 µL, pk of 250 tips)

Racked Micropipette Tips

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

M3122 0.1 – 10 µL Micropipette Tips – Racked package 96 tips per rack, 2 racks

M3128 100 – 1000 µL Micropipette Tips – Racked package 100 tips per rack, 2 racks

M3136 2– 200 µL Micropipette Tips– Racked package 96 tips per rack, 10 racks

miniOne®
SYSTEMS

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CAT-09-0425-INTL

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