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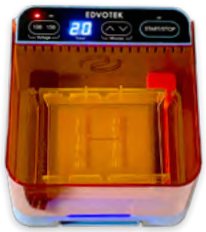
Cat #500

Agarose Gel Electrophoresis Using the EDGE™



The EDVOTEK® EDGE™ Integrated Electrophoresis System combines an electrophoresis apparatus, power supply, and blue light transilluminator into a single, user-friendly unit.

A built-in power supply allows users to select between 100V and 150V, producing results in as little as 10 minutes. The integrated timer can be set between 1 and 99 minutes to automatically turn off the power. Gels can be cast with one or two combs, providing up to 16 wells in a single run.

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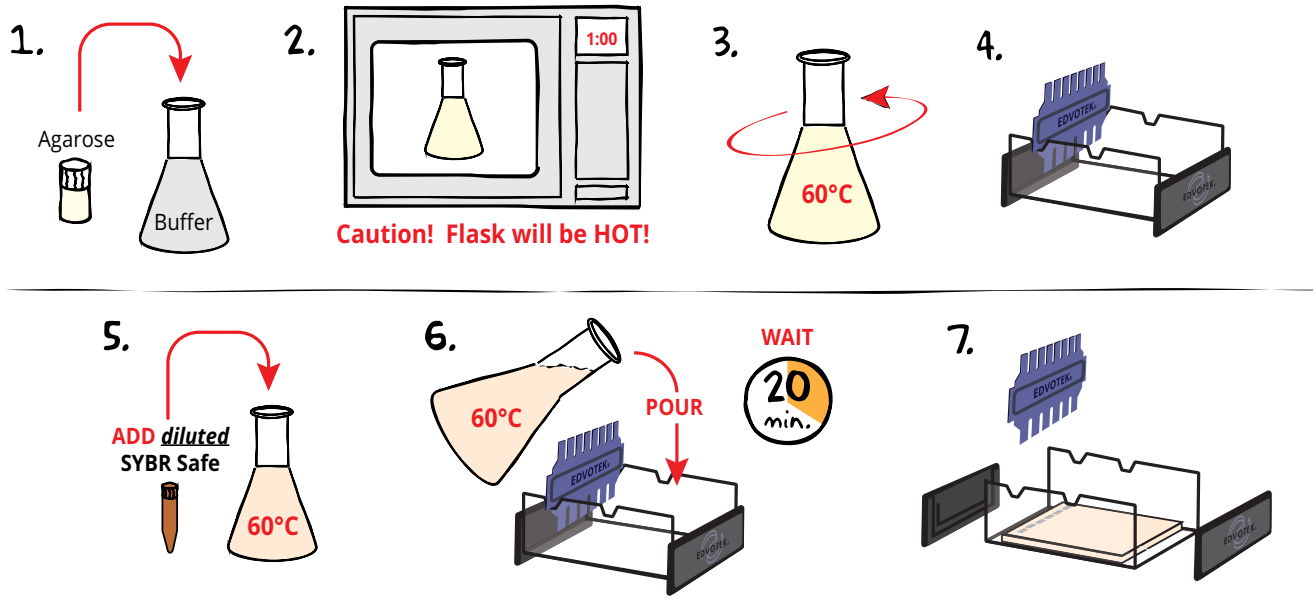
Agarose Gel Electrophoresis Using the EDGE™

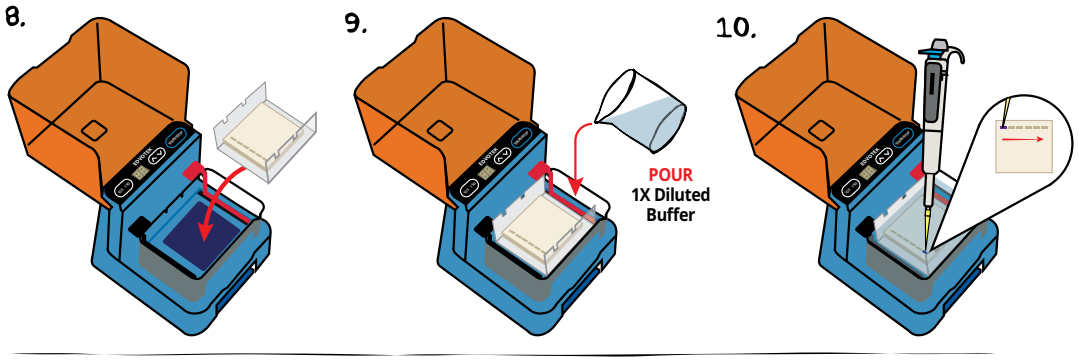


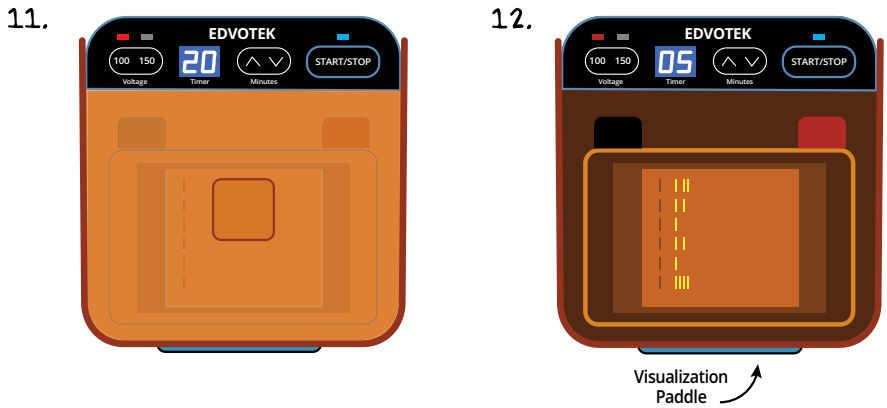
CASTING AN AGAROSE GEL

NOTE: Always follow the instructions for your experiment to determine the concentration of agarose required for your specific samples.

1. **PREPARE** the agarose gel solution by combining agarose powder and electrophoresis buffer according to the recipe in your protocol. ***NOTE: The EDGE™ is optimized for 30-50 mL gels.***
2. **MICROWAVE** the solution until fully dissolved.
3. **COOL** the agarose solution to 60 °C with careful swirling to promote even dissipation of heat.
4. While the agarose is cooling, **SEAL** the ends of the EDGE™ gel-casting tray with the rubber end caps. **PLACE** the comb(s) into the appropriate notch. ***NOTE: Please ensure that you are using the proper EDGE™ electrophoresis tray. EDGE™ trays differ from existing EDVOTEK® electrophoresis trays.***
5. Follow the instructions provided with your experiment to **ADD *diluted* SYBR® Safe stain** to the cooled agarose solution. ***NOTE: For general experiments we recommend a 1:10,000 to 1:20,000 dilution of SYBR® Safe.***
6. **POUR** the agarose solution into the EDGE™ gel-casting tray and wait until the gel has solidified. Most gels will be ready to use within 15-20 minutes.
7. **REMOVE** the end caps and comb from the tray. Take care when removing the comb to prevent damage to the wells. The gel is now ready to use.

Agarose Gel Electrophoresis Using the EDGE™, continued





PERFORMING ELECTROPHORESIS

8. **PLACE** gel (on the tray) into electrophoresis chamber.
9. **COVER** the gel with 150 mL 1X electrophoresis buffer. The gel should be completely submerged.
10. **LOAD** each sample into the well in the order indicated by your experiment protocol.
11. **CLOSE** orange safety cover. ***(NOTE: The EDGE™ will not operate while cover is open.)*** **ENSURE** the unit is plugged in and switch is turned ON . **SELECT** desired voltage (100 V or 150 V) and **SET** timer. ***NOTE: Reference your experiment protocol for recommended Voltage Guidelines.*** **PRESS** the START/STOP button to start the current.
12. As you are performing electrophoresis, **TOGGLE** the visualization paddle **ON** to illuminate the blue LED light. **VISUALIZE** the DNA samples migrating in real time. Remember, the DNA samples will migrate toward the positive (red) electrode.

After electrophoresis is complete, **PRESS** the START/STOP button to stop the current, **DOCUMENT** the results of the experiment, and then **OPEN** the lid to dispose of the gel and electrophoresis buffer.

DOCUMENTING YOUR RESULTS

At any point during or after the experiment has completed, the results can be documented by using a camera or smartphone to take an image through the orange safety lid. Dimming the lights in the room can increase the visibility of DNA if needed.

IMPORTANT NOTES

- Use only appropriate electrophoresis buffers in the chamber. Improper buffers can lead to damage to the power supply and electrodes and can risk electric shock to the user.
- DO NOT open the outer housing of the EDGE, modify, or circumvent the safety features of the unit. This product should only be disassembled or serviced by properly trained professionals.
- While the light wavelengths emitted by this product do not require specialized eyewear, the blue light is high intensity. DO NOT stare at the blue lights for a long period without the orange lid in place.
- DO NOT submerge the outer housing of the EDGE™ or pour liquids onto the unit.
- Wear gloves and follow all manufacturer recommendations when working with DNA stains
- At all times, USE COMMON SENSE.

CLEANING

Before cleaning your unit, ALWAYS disconnect the cord to prevent electric shock. The EDGE™ base can be cleaned by wiping with a lightly damp, soapy cloth. Care should be exercised to prevent water from running inside the unit. Do not use abrasive cleaners or strong solvents. The buffer chamber, tray, combs, and endcaps can be fully submerged to clean with mild detergent if necessary. Avoid direct contact with the positive and negative electrodes. Dry everything fully before storage.

TROUBLESHOOTING

The EDGE™ does not power on:
- Check that the power cord is fully plugged into the EDGE™ base and that the cord and outlet are functional.
- Confirm that the power switch on the rear of the EDGE™ base is turned on.
- Inspect the fuse and replace if needed. The fuse is located directly under the power plug on the rear of the EDGE.

The START/STOP indicator LED does not stay lit and/or the experiment does not run:
- Ensure that the lid is fully closed.
- Press firmly on the electrophoresis tank to ensure that it is firmly seated and that both electrodes are making contact with the base.
- Check that the correct buffer has been used and that the gel is fully submerged in buffer.
- Ensure that the timer has not reached zero. Increase the remaining time and try running the experiment again.

The gel tray will not fit into the chamber:
- The tray is designed to fit only one way. Rotate the tray 180° and try again.
- The EDGE™ uses a custom 10 x 7 cm tray that differs from existing Edvotek electrophoresis accessories. Please ensure that you are using the proper EDGE™ electrophoresis trays.

No DNA bands are present on the gel:
- Check that the blue light is turned on by pressing the paddle switch.
- Ensure that SYBR® Safe, or comparable blue light-compatible, DNA stain was added to the gel. Consider a post-electrophoresis stain like EDVOTEK® FlashBlue™ stain.
- Verify that the gel has run properly. This can often be confirmed by the migration of a loading dye included in the experimental samples.

The gel has run crooked, or the DNA samples are at an angle:
- Ensure that the gel tray is aligned properly in the buffer chamber. The tray should sit flush against the bottom of the chamber and against one wall of the chamber to ensure it is straight.
- Check that the electrodes are intact and that there is no visible corrosion on either electrode.