
WARD'STM

Introduction to Agarose Electrophoresis

REFILL KIT
36 W 6053

WARD'STM

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Introduction:

This refill kit provides all of the consumable components needed to perform the investigation described in WARD'S class-sized lab activity "Introduction to Agarose Electrophoresis," catalog number 36 W 5166.

Lab Objectives:

Students will become familiar with the principles and practice of agarose gel electrophoresis. Students will electrophorese five dye markers and a mixture of dyes instead of actual DNA, and determine their DNA base pair equivalent. Like DNA, these dyes separate into fragments based on their size. In addition, students will demonstrate that not only can fragments be separated according to size, but can also be separated based on their charge.

Refill Kit Contents:

- 1 Set of Agarose Dye Markers
- 1 Bottle of 10X TBE Running Buffer, 250ml
- 1 Bottle of Pre-Cooked Agarose 2.0%, 200ml

Materials Needed but Not Provided:

Description	Catalog Number
Battery-Powered Electrophoresis Apparatus	36 W 5164
Batteries, Pkg. of 5	14 W 5420
Microfuge Tubes, Pkg. of 500	18 W 1361
Micropipets, Pkg. of 30	15 W 3000

Pre Lab Preparation:

Prepare TBE running buffer (1X) by adding 180ml distilled water to 20ml TBE buffer concentrate (10X), making a working buffer solution of 1X. This 200ml quantity is enough to run one gel.

Casting an Agarose Gel:

1. Melt pre-cooked 2.0% agarose using a hotwater bath or a microwave. Be sure to loosen bottle cap prior to heating the agarose. When using a microwave, use low power and heat in one-minute intervals until agarose is melted.

NOTE: The agarose may boil before being completely melted. Stop microwaving and swirl bottle if this occurs.

Liquid agarose temperature should be 55°C or higher.

SAFETY: Always handle bottle with heat-protective gloves—boiling may occur following microwaving.

2. Seal the ends of the gel casting tray with tape. Insert well-forming comb; position and align the gel comb in the center of the casting tray.
3. Pour melted agarose into the gel tray until the gel is approximately 3mm thick.
4. Allow the melted agarose to solidify (about 20 minutes). Do not disturb the gel or the comb during this time.
5. When the agarose has solidified (it will turn opaque), carefully remove the comb and the tape from the ends of the tray. The gel can now be used immediately or stored for later use. Gels may be cast and stored in 1X buffer in a refrigerator for several days.

Personal Protective Equipment:

WARD'S recommends your students wear the following personal protective equipment when working with this exercise.

Description	Catalog Number
Disposable Latex Gloves, Pkg. of 100	15 W 1071
Disposable Aprons, Pkg. of 100	15 W 1050
Lab Safety Goggles	15 W 3046