

TEACHER'S GUIDE – PART 3

DNA FINGERPRINTING SIMULATION

Staining and Photographing Gels

DNA is invisible; therefore, you will need to stain the DNA in order to see it. You will use a fluorescent dye called ethidium bromide (EBr). EBr intercalates between the bases of the DNA double helix. When excited by ultraviolet (UV) light, the EBr absorbs some of the energy and emits orange (visible) light.

Equipment and Supplies used in the Lab

For each group

- plastic trays for staining and de-staining
- plastic tray for hold gels when moving them
- plastic wrap
- container for waste
- disposable gloves

For the class

- Polaroid camera with shield to keep out room light
- Film
- UV transilluminator

Reagents used in the Lab

- Ethidium bromide staining solution**
Purchase at 1 µg/ml.
- Destain** – water in a tray is all that is needed to destain an agarose gel stained with ethidium bromide.

NOTE: Ethidium bromide intercalates into ALL DNA. Therefore, students MUST wear gloves while using this stain. Then all waste from staining and de-staining must be taken care of properly by you. Instruct all students to put all solutions containing ethidium bromide in a special container that you will take care of after class. Tell students NEVER to look directly into an unshielded UV light source since UV light can damage unprotected eyes and skin. FOTODYNE transilluminators are safe, since they will not turn on unless the acrylic safety shield is lowered over the gel.