DNA Forensics: DNA Fingerprinting Procedure

Student Laboratory Procedure

1. If a centrifuge is available, pulse spin your colored microtubes to bring the contents to the bottom of the tube. Otherwise, gently tap the tubes on the table top.

2. Place the casting tray with the solidified gel in it, into the platform in the electrophoresis chamber. The wells should be at the (-) cathode end of the chamber, where the black lead is connected. If necessary, very carefully, remove the comb from the gel by gently pulling it straight up.

3. Pour ~ 275 ml of electrophoresis buffer into the electrophoresis chamber. Pour buffer in the chamber until it just covers the wells of the gel by 1–2 mm.
   Add 5 microliters of Loading Dye to each of your tubes (use a different tip for each tube)

4. Using a fresh pipet tip load 10 µl of the DNA size marker (M) from the clear tube into lane 1 of your agarose gel. Gels are read from left to right. The first sample is loaded in the well at the top left hand corner of the gel.

5. Then using a fresh pipet tip for each sample load 20 µl of each of the samples from the crime scene and suspects into the other lanes in the following order:

   Lane 2: CS, green, 20 µl
   Lane 3: S1, blue, 20 µl
   Lane 4: S2, orange, 20 µl
   Lane 5: S3, violet, 20 µl
   Lane 6: S4, red, 20 µl
   Lane 7: S5, yellow, 20 µl

6. Secure the lid on the electrophoresis chamber. The lid will attach to the base in only one orientation: red to red and black to black. Connect electrical leads to the power supply.Turn on the power supply. Set it for 100 V and electrophorese the samples for 30–40 minutes. NOTE: Change: 200 Volts for 20 minutes

7. When the electrophoresis is complete, turn off the power supply and remove the lid from the chamber. Carefully remove the gel tray and the gel from the electrophoresis chamber. Be careful, the gel is very slippery!

8. Instructions for staining your gel will be given by your instructor.