Agarose Gel Electrophoresis

Materials:

1. Agarose
2. TAE buffer
3. 6X sample loading buffer
4. DNA ladder standard
5. Electrophoresis chamber
6. Power supply
7. Gel casting tray and combs
8. DNA stain
9. Pipette and tips
10. Gloves

Instructions:

A. Preparing the 1% agarose gel

**This preparation will be done for you!*

1. Measure 1g agarose powder and add it to a 500mL flask.
2. Add 100mL 1X TAE buffer to the flask.
3. Melt the agarose in a microwave (~90 seconds) or hot water bath until the solution becomes clear. (If using a microwave, heat the solution for several short intervals - do not let the solution boil for long periods as it may boil out of the flask)
4. Let the solution cool to about 50-55°C or until it can be handled safely, swirling the flask occasionally to cool evenly.
5. Add 4µL SYBR safe.
6. Seal the ends of the casting tray with two layers of tape.
7. Place the combs in the gel casting tray.
8. Pour the melted agarose solution into the casting tray and let cool until it is solid. (It should appear milky white)
9. Carefully pull out the combs and remove the tape.
10. Store in sealed plastic wrap. May need to rehydrate if dry.

B. Loading the gel

1. Mix 4µL DNA (sample), 5µL ddH2O and 1µL 10X loading dye.
2. Record the order each sample will be loaded on the gel, including who prepared the sample, the DNA template - what organism the DNA came from, controls and ladder.
3. Carefully pipette sample mixture into separate wells in the gel.
4. Pipette 4µL of the DNA ladder standard in 8µL ddH2O.