**DNA Electrophoresis with Agarose Gel**

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1. For a 75 mL 2% gel (10 lanes), melt 1.5 g agarose in 75 mL of 1X SBE or 1X TBE (7.5 mL SBE/TBE and 67.5 mL water). For a 250 mL gel, melt 5.0 g agarose in 250 mL of 1X SBE/TBE.
2. Loosely plug the top with a KimWipe. Microwave in 30 second intervals, swirling to mix.
3. Wait until the solution comes to a rolling boil and the solution is clear (no white froth around the side), then remove to cool.
4. Cool to 55°C, then add 7.5 µL (small gel) or 25.0 µL (large gel) of SYBR Safe and swirl to mix.
5. Pour mixture into the gel cast, add combs, and allow it to harden until the gel is milky white. If there are bubbles when the gel is still liquid, use a pipette tip to pop them or move them toward the sides.
6. Carefully remove the comb(s) when gel has hardened. Orient the gel so the samples migrate towards the red electrode (Run towards red).
7. Add 1X SBE or 1X TBE buffer on top of the gel so there is approx. 2-3 mm of buffer covering the gel.
8. Add 2 µL loading dye as dots on a piece of Parafilm, enough for each DNA sample and ladders on both ends.
9. Add 2 µL low-range DNA ladder to the ladder dots and pipet on to the ends of the gel. Add 5 µL DNA to each of the remaining dye dots and load on to the gel.
10. Close gel box lid and turn on the power supply to ~100 V. Check to make sure the current is running through the buffer by looking for bubbles forming on each electrode.
11. Let the gel run until the dye fronts have moved about ⅔ across the gel.
12. Image gel on imager under UV set to ~380 nm.