Making and running a gel

1. Place cast in the appropriate orientation in a gel box. Choose either 10 or 12 tooth combs depending on your needs – if you need run a lot of product on your gel, use the side of the combs with wider teeth.

2. Use the graduated cylinder marked "TAE or water only" with red tape. If you are running a small gel, 50 mL of TAE buffer is sufficient.

3. Using a weigh boat, weigh out an appropriate amount of agarose. For a 1% gel with 50 mL of TAE, this would be 0.5 grams of agarose. For a 2% gel, use 1 gram of agarose. Use higher percentages of agarose for more precision and smaller products. Higher agarose percentages correspond to longer running times. (The nucleic acid must fight its way through a thicker matrix.)

4. Microwave for ~20 seconds, watching boiling. When you see boiling, remove the flask with the rubber mitt and swirl. Return flask to microwave and continue to heat until the solution is completely clear upon removal from the microwave.

5. Cool off the flask by running it under cool water while still holding it with the mitt and being careful to not get any water in the flask. When the bottom part of the flask (with the gel) is comfortably warm to touch, add ethidium bromide. For a 50 mL gel, add 1.7 μL of EthBr.

6. Carefully pour gel into cast. If there are bubbles in the gel at this point, you can pop them using a pipette tip.

7. Cool for about 20 minutes, until the gel is firm(ish) to the touch. You can leave gels out at room temperature for an hour or two. If you leave a gel at room temperature for too long (overnight), it will get gross and unusable. That's why we keep gels in the refrigerator for long term storage.