**Lithium Acetate Borate (LAB) Media for Gels**

Lithium Acetate Borate (LAB) buffer is an agarose gel electrophoresis media for DNA gels. It has low conductivity and allows for less heat buildup and thus higher voltage and faster runs. Compared to [TAE](https://openwetware.org/wiki/TAE) and [TBE](https://openwetware.org/wiki/TBE), gels can run faster in this media and this media is easier to prepare and costs less. This media is compatible with commercial gel extraction kits.

**Protocol**

The formula for a 1 L 1x solution of LAB media is:

* 1 g lithium acetate
* 0.62 g boric acid

So to fill a carboy in our gel room (~9 liters), you will need:

* 9 g lithium acetate
* 5.58 g boric acid
* 9 L DI H2O

*It is easiest to make a concentrated volume of buffer and then add to DI to dilute to 1X.*

1. Measure out 8.5 liters of water using an Erlenmeyer flask or a beaker, adding to the carboy.
2. Add 500 mL DI H2O to a 1000 mL Erlenmeyer flask.
3. Weigh out 9 g of lithium acetate and then 5.58 g boric acid, adding each to the 500 mL.
   1. Note: Boric acid and lithium acetate are toxic. Wear gloves and use caution.
4. Gently drop a stir bar into the solution and place on the stir plate.
5. Slowly ramp to max speed, being careful to avoid any spillover. Heat is not necessary.
6. Allow the lithium acetate and boric acid to completely dissolve.
7. Add the concentrated solution (500 mL) to the 8.5 L DI H2O in the carboy. Close the carboy and gently homogenize by shaking. Initial and date the buffer on a piece of tape before returning to the gel room.
8. Be careful not to drop the stir bar down the drain when emptying and rinsing glassware.