# Standard Laboratory Operating Procedure #351
# Agar Prep without an Autoclave

**Laboratory:** Biotechnology **Location**: Ag Biotech Academy
**SOP prepared by:** Bev Wolfe and Rachel Sanders **Last Revision:** 07/29/13

**General:** This procedure is for the aseptic preparation of agar plates. The powdered agar medium bottle will have directions for preparing 1 L of agar. The flask that you are using needs to be at least twice the size of the amount of agar that you are preparing. The protocol listed below is for the preparation of 500 ml of agar in a 1000 ml Erlenmeyer flask.

For additional sterilization methods a good resource is located at www.umsl.edu/~microbes/sterilizing.pdf. Flinn Scientific has a video with another method at their website. Log onto flinnsci.com. Click on Teacher Resources across the top. Click on Teacher Resource Videos at the bottom of the page. Click on Minute Videos. Select "Sterilizing without an Autoclave."

**Safety**: PPE—eye protection, gloves, aprons

**Materials:** powdered agar medium, distilled water, cotton plug, 1 L Erlenmeyer flask**,** graduated cylinder, hot gloves, Petri dishes

**Tools & Equipment**: stir rod, hot plate, autoclave, balance

**Procedure:**

1. The powdered agar medium bottle will have directions for preparing 1 L of agar. Divide the number of grams of powdered agar needed by 2 for the preparation of 500 ml. Measure out the powdered agar medium using a balance.
2. Measure 500 ml. of distilled water into a graduated cylinder.
3. Pour the distilled water into the 1 liter flask.
4. Pour the agar into the flask.
5. Swirl the flask to mix.
6. Cover the flask with foil.
7. Heat with repeated stirring on the hot plate on high until the liquid is just boiling. Agar will boil over quickly.
8. Simmer the liquid for 30 minutes on low heat.
9. Allow the agar medium to cool to about $50^0$ C before pouring into agar plates.
10. Pour the agar into the bottom of the Petri dish until 1/3 to ½ full.
11. Place the lid on the petri dish.
12. Agar plates sterilized in this way are good for one to two days.
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