

Nutrient Agar

AGAR (MEDIA) Teaching & Learning Tips

- It is easier to use the prepared media than the powdered media.
- The Microbe Hunting Kit from Flinn Scientific uses 3M™ Petrifilm Aerobic Count Plates in place of petri dishes. For more information about 3M™ Petrifilm, see *Edmodo folder — 2017 Train-the-Trainer Resources/Supplies*. Also see below for other sources of 3M™-Petrifilm.
- Use microwave to prepare agar – see directions in the *Edmodo folder – 2017 Train-the-Trainer Resources/Supplies*.
- For firmer agar, use more powder or less water.
- Make sure the agar is clear – pour plates a day or two before the lab; refrigerate to prevent the growth of mold. Use a slow cooker (crock-pot) as a water bath for agar.
- Agar is safe to use in kitchens – work with science lab teachers.
- Remember to use a control dish.
- Students could practice pouring dishes using jello.
- Have students pour their own dishes.
- Splitting the petri dishes into quarters works well.
- Have students share Petri dishes.
- Use smaller Petri dishes – each student has his/her own and uses less agar.
- Swabbing can be difficult for some students – they sometimes 'plow' the agar.
- If you contact hospitals and high schools for agar donations, make sure donated agar is suitable for the particular lab you are doing.
- Contact doctors' and dentists' offices for donations of gloves, agar and Petri dishes.

SOME COMMERCIAL SOURCES

Prepared Plates

Teknova - <http://www.teknova.com/Plates-for-Bacterial-Growth-s/95.htm>

Carolina - <http://www.carolina.com/prepared-biological-media/nutrient-agar-prepared-media-plates-100-x-15-mm-pack-10/821862.pr>

Flinn - <http://www.flinnsci.com/store/Scripts/prodView.asp?idproduct=18504>

3 M Petrifilm Aerobic Count Plates

http://www.carolina.com/prepared-biological-media/petrifilm-aerobic-count-plate-pack-50/824000.pr?s_cid=ppc_gl_entire_website&gclid=Cj0KEQIAq_SkBRc3jLvJ1IPt2eIBeiQASUzy1xE3HON5tDP5gqtzfm_M_S_hJJj680EeOilrp-5JQAQaAatk8P8HAQ

Flinn - <https://www.flinnsci.com/store/Scripts/prodView.asp?idproduct=18778>

Easygel

Wards - https://www.wardsci.com/store/catalog/product.jsp?catalog_number=175024

Micrology - <https://www.micrologylabs.com/page/84/Our-Methods>

BioPaddles

LaMotte - <http://www.lamotte.com/en/microbiological/biopaddles>

Microwavable Agar

Yield: 20 plates

Materials:

Coffee Filter
Kitchen Scale
Glass 4 c. Liquid Measuring Cup
Popsicle Stick
20 Petri Dishes

Ingredients:

10 g Nutrient Agar
250 ml Distilled Water

Directions:

1. Using the coffee filter as a bowl, weigh out 10 g of nutrient agar on the kitchen scale.
2. Measure 250 ml of distilled water using the glass 4 c. liquid measuring cup.
3. Add the agar in to the water and stir well using the Popsicle stick.
4. Microwave 1 minute at a time stirring carefully after each minute until the agar becomes a deep amber color. ****Watch carefully because it will quickly boil over towards the end****
5. Carefully lift the lid of a Petri dish just enough to pour a thin layer of agar onto the bottom and then replace the lid immediately to prevent contamination.
6. Pour the remaining plates.
7. Once the plates have slightly cooled and are solid they should be stored upside-down and in the fridge to prevent condensation from pooling on the agar.
8. Dispose of the coffee filter and Popsicle stick and thoroughly wash and sanitize the measuring cup.

Note:

You can make up to a double batch in the glass 4 c. liquid measuring cup. Start with 2 ½ minutes when doing a double batch and then 1 minute intervals from there.