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Agar plate storage in the fridge

Posted by Anonymous on Thu, 2018-09-06 16:31

Agar plate storage in the fridge: Is it necessary to store the agar plates upside down in the fridge? As in the school we are attending to so many things that we are sometimes in a hurry to check if all the agar plates have gelled but stack and seal and put them in fridge for further use. Yes we placing definitely siting them in the incubator upside down so that condensation doesn't fall on the agar plates.

Another question is how long can we store the agar plates in the fridge?

Voting:



No votes yet

Year Level:

9

10

Senior Secondary

Laboratory Technicians:

Laboratory Technicians

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Agar plate storage in the fridge

Submitted by sat on 06 September 2018

Correct aseptic preparation and storage of agar plates away from light and heat is necessary

to protect them from contamination, dehydration and degradation of chemical constituents.

Setting of agar plates: Agar plates when poured should be allowed to set undisturbed at room temperature. It is best practice that when completely set and cooled to room temperature that they should be stored stacked upside down in sealed plastic bags in the fridge at 4 °C. It is a good idea to reuse the plastic bags from which the sterile Petri dishes came from for storage. Storage this way will prevent:

- Condensation that develops on the lid from dripping onto the agar surface which is a potential source of contamination.
- Moisture loss which leads to the agar drying out and
- Protection from light and heat that can lead to chemical degradation.

Minimising condensation: It is also important to minimise the amount of condensation that is produced. Excess accumulation of condensation on the lids of agar plates occurs when steam is trapped inside the Petri dish when the lid has been replaced when agar is poured at high temperatures. A significant reduction in the amount of condensation can be achieved by allowing the sterilized agar to cool to 50°C–55°C before pouring. A water bath set at 50°C is useful to store bottles of molten agar to maintain the optimal temperature prior to pouring plates. Remember agar solidifies at around 42°C. When pouring molten agar from a bottle held in a water bath at 50°C the moisture adhering to the outside of the bottle must be wiped off before pouring the agar as it is not sterile and if left may drip into the sterile agar.

Storage of prepared agar plates: The type of agar used will determine the length of time that it can be stored in the fridge¹. The recommended media for use in schools is a general-purpose nutrient media such as Nutrient agar. This type of agar plate should be stored at 4 °C and used within a month of preparation. Any longer and the agar can begin to dry out. Thinner plates will dry out faster. Any loss of moisture can be visually detected by the appearance of shrinkage away from the plate and macroscopic cracks that develop in the agar.

Storage of inoculated agar plates: Inoculated agar plates are also incubated and stored upside down to prevent condensation dropping onto the agar surface (a potential source of contamination) and causing isolated colonies to spread into each other. Following incubation storage of inoculated plates at 4 °C will slow down the growth of cultures allowing you to show students a 1-2 day growth if lessons are a week apart.

Science ASSIST has developed a guideline for best practice for microbiology in Australian school see: [GUIDELINES for best practice for microbiology in Australian schools](#)

References and further reading:

¹ 'Storage of Reconstituted Sterile Media and Poured Plates', Thermo Scientific Oxoid website,

<http://www.oxoid.com/au/blue/techsupport/its.asp?itsp=faq&faq=tsfaq007&cat=culture+media%2C+supp>
(Accessed August 2018)

Science ASSIST. 2017. *GUIDELINES for best practice for microbiology in Australian schools*, Science ASSIST website, <https://assist.asta.edu.au/resource/4196/guidelines-best-practice-microbiology-australian-schools>

Society for General Microbiology. 2006. *Basic Practical Microbiology – A Manual*. Microbiology Online website, <http://www.microbiologyonline.org.uk/file/ca2189fba3b39d24c5a44c1285d008...>

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