Protocol for Preparing 1M IPTG Stock Solution (0.5 mL Aliquots)

Materials:

- IPTG (Isopropyl β-D-1-thiogalactopyranoside) powder
- Deionized water (DI water)
- Sterile 1.5 mL microcentrifuge tubes
- 0.22 µm sterile syringe filter or 0.22 µm sterile filter unit
- Pipettes and sterile tips
- Scale for weighing

Steps:

1. **Weigh the IPTG:**
    - Measure **2.38 g** of IPTG powder (molecular weight: 238.3 g/mol) using a clean, calibrated scale. This amount will make 10 mL of a 1M solution.
2. **Dissolve in deionized water:**
    - Transfer the IPTG powder into a sterile container.
    - Add **10 mL** of deionized water.
    - Gently mix by pipetting up and down or using a vortex until the IPTG is fully dissolved.
3. **Sterilize the solution:**
    - Use a **0.22 µm sterile filter** to sterilize the IPTG solution. Draw the solution into a syringe, attach the filter, and expel the solution into a sterile container.
4. **Aliquot the solution:**
    - Pipette **0.5 mL** of the sterilized 1M IPTG solution into each sterile 1.5 mL microcentrifuge tube.
5. **Label the aliquots:**
    - Clearly label each tube with "1M IPTG," the date, and your initials.
6. **Storage:**
    - Store the aliquots at **-20°C** for long-term use. Aliquots can be thawed as needed.

Note:

- IPTG is stable for several months at -20°C. Avoid repeated freeze-thaw cycles by only thawing the aliquot needed for use.