STERILIZATION OF SOLUTIONS

OBJECTIVE: To sterilize solutions for laboratory use.

SCOPE: This procedure applies to all Massachusetts Human Stem Cell Bank laboratory personnel responsible for sterilizing solutions.

RESPONSIBILITY: It is the responsibility of the Laboratory Operations Manager and Quality Assurance Officer to ensure all required personnel are properly trained in and follow this Standard Operating Procedure (SOP).

SAFETY: All laboratory personnel should be in compliance with UMASS Employee Health and Safety regulations when working in the laboratory. Specifically, personnel should wear heat resistant gloves when working with a steam sterilizer. Personnel should always use caution when operating the device, especially when opening the door. Steam and liquids from the sterilizer can be extremely hot, always use caution!

ABBREVIATIONS AND DEFINITIONS
SOP: Standard Operating Procedure
UMASS: University of Massachusetts Medical School

REFERENCES
GETINGE manual

1. MATERIALS REQUIRED

1.1 EQUIPMENT
• Steam sterilizer (GETINGE Model 533LS)

1.2 SUPPLIES
• Autoclave steam indicator tape (Fisher autoclave tape 11-889-14)
• Autoclave gloves (Fisher 11-394-298, 11-394-299)
• Aluminum foil (Fisher 01-213-101)
• Sterilizing trays specific to the articles being sterilized (Fisher NC9286458, 14-460-14 or 13-359-20B)

2. PREPARATION
1. Cover the top of each item generously with aluminum foil (Ex. beaker, flask, bottle).
2. Be sure to loosen any bottle caps. Make sure they are loose enough to allow steam to escape, but not enough for the caps to pop off when venting.

   Note: Pressure build-up can cause bottles to explode if caps are not loosened.

3. Place a strip of autoclave steam indicator tape on top of each item. For items without aluminum foil, place 2 pieces of tape on sides or top of item.
4. Place items securely in sterilizing trays for ease and safety of handling into and out of the sterilizer. Add 1-inch tap water to bottom of the tray.

3. PROCEDURE
   1. Open sterilizer door and place the sterilizer trays inside.
   2. Close sterilizer door completely.
   3. Select the “Liquids” program appropriate for the volume of liquids being sterilized.
   4. There are 4 liquid programs:
      
      | Program  | Recommended Volume |
      |----------|--------------------|
      | Liquid 30| <1 L               |
      | Liquid 45| 1 L                |
      | Liquid 60| >1 L               |
      | Liquid 75| >1 L               |

   5. The program settings are:
      - Conditioning: Preparing the chamber
      - Heat-Up: Temperature is brought up to 121°C
      - Dwell: Allows liquid loads to reach temperature
      - Exposure: Chamber stays at 121°C for 30, 45, 60 or 75 minutes
      - Exhaust: Chamber is vented
      - Cycle Complete: Tone to alert cycle completion

   6. **Caution: steam will be released when door is opened.** Open sterilizer door. Set aside the bottles from their sterilizing trays, being careful not to pick up containers by their lids. Pour liquid from sterilizing trays slowly and carefully into the sink. **Be sure to wear autoclave gloves and use caution. Sterilizer and its contents will be hot!**
   7. Tighten bottle caps once bottles are cool to the touch.