

Standard Operating Procedures

Laboratory Specific – UCLA-DOE Institute Protein Expression Technology Center

Avestin Emulsiflex C-3 high pressure homogenizer (Boyer Hall 123)

Department: UCLA-DOE Institute

Date when SOP was written: May 3, 2016

Date when SOP was approved by the lab supervisor: May 3, 2016

Supervisor Name and Signature: Mark Arbing _____  _____

Internal Laboratory Safety Coordinator/Lab Manager: Same as above

Phone: 310-206-2871 (lab/office)

Emergency contact: Mark Arbing/Sum Chan

Location(s) covered by this SOP: Boyer Hall 123

Type of SOP: Process

Purpose

The Avestin Emulsiflex C-3 high pressure homogenizer is used to lyse suspensions of bacterial or fungal cells. Cells are pushed via high pressure through a small orifice and lyse via cavitation. The primary hazard associated with the Emulsiflex is unintended contact with cell suspensions.

Potential Hazards/Toxicity

Inhalation – N/A

Skin – Potential irritation of skin through contact with bacterial/yeast cells and associated chemical components of cell suspensions.

Eyes – Potential irritation of skin through contact with bacterial/yeast cells and associated chemical components of cell suspensions.

Ingestion – N/A

Additional – Standard Electrical Hazard for all instruments - avoid touching electrical junctures and mind liquid spills which could damage electrical components.

Basic Training Requirements

- Lab personnel working with the any facility instrument must have attended the 'Laboratory Safety Fundamental Concepts' classroom training course offered by EH&S and have read and signed the PETC User Agreement.
- Lab personnel must have attended an instrument specific training session with a Facility staff member prior to any use, covering general use and safe practices of the instrument in question.

Personal Protective Equipment (PPE)

No additional PPE is required beyond what is stipulated in the PETC User Agreement.

Respiratory protection

None required.

Hand protection

Latex/nitrile gloves.

Eye protection

Standard goggles.

Skin and body protection

Lab coat, long pants, closed-toed shoes.

Hygiene measures

Wipe instruments with 20% EtOH dampened towel following use. NEVER TOUCH Computer surfaces (mouse, keyboard etc) with gloved hands.

Engineering Controls

None required.

First Aid Procedures

Treat if possible in accordance with the type of injury, consult a physician or seek emergency care if necessary.

Spill and Accident Procedure

Clean any spill according to the demands of the chemical nature of the experiment being conducted. See the PETC User Agreement.

Medical Emergency Dial 911 or x52111

Life Threatening Emergency, After Hours, Weekends And Holidays – Dial **911** (or **310-825-1491** from cell phone) or contact the Ronald Reagan UCLA Medical Center (emergency room) directly at **x52111** (located at 757 Westwood Plaza, enter from Gayley Avenue). Note: All serious injuries must be reported to EH&S at **x59797** within 8 hours.

Non-Life Threatening Emergency– Go to the Occupational Health Facility (OHF), **x56771**, CHS room 67-120 (This is on the 6th floor, 7th corridor, room 120. Enter through the School of Dentistry on Tiverton Drive and proceed to the “O” elevator to the 6th floor.) Hours: M - F, 7:30 a.m. to 4:30 p.m. At all other times report to Ronald Regan UCLA Medical Center (emergency room) at **x52111**. Note: All serious injuries must be reported to EH&S at **x59797** within 8 hours.

Needle stick/puncture exposure

N/A

Decontamination/Waste Disposal Procedure**Label Waste**

N/A

Store Waste

NO WASTE STORAGE ALLOWED IN FACILITY

Dispose of Waste

CHEMICAL WASTE TO BE DISPOSED OF BY USER OUTSIDE OF FACILITY

Gloves and towels free from exposure to Hazardous chemicals may be disposed of in provided trash cans.

Safety Data Sheet (SDS) Location

Copies Located in the “MSDS Binders” in Boyer Hall 113 above the staff desk. Electronic versions accessible via the internet – a link to the webpage is located on the desktops of all Facility computers.

Protocol/Procedure

*Please refer to the Avestin Emulsiflex C-3 operating manual for complete instructions on use of the Emulsiflex. An introductory description of use is given below.

- 1) The cooling coil on the outlet of the instrument is placed in an ice water bath to cool the sample as it exits the instrument.
- 2) 70% isopropanol in the sample path is removed from the instrument by turning the instrument on – turn the red stop button clockwise and allow it to “pop up” and then push the green start button. Rinse the sample path by rinsing with DI water and then stop the instrument by depressing the red stop button.
- 3) The sample (well mixed, typically by stirring on a magnetic stir plate) is poured into the sample reservoir.
- 4) Start the instrument as before.
- 5) Once sample begins to exit the outlet increase the homogenizing pressure, monitored by the small gauge, by turning the regulator (small grey knob) CLOCKWISE. The pressure of the filtration/extrusion process can be monitored by the large gauge – E. coli cells lyse at 15-18k psi. The machine will automatically turn off if the maximum operating pressure (~35K psi) is exceeded. If the machine stops reset it by turning the main power supply on and off (red knob on back of instrument) – wait thirty seconds after turning it off before turning it back on..
- 6) After use wash the sample path with DI water and then with 70% isopropanol. The sample path is left “wet” in 70% isopropanol.
- 7) RECORD USAGE IN LOG BOOK.

NOTE

Any deviation from this SOP requires approval from the Facility Manager.

Documentation of Training (signature of all users is required)

I have read and understand the content of this SOP and have undergone training by an approved Facility staff member. I also attest that I have read and signed the PETC User Agreement prior to this instrument specific training.