

## Risk Assessment Form

<b>Procedure</b>	Use of Optima-MAX-XP Ultracentrifuge
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<b>Name(s) of person performing the work</b>	Users (Lab manager & Lab Technician & Tenants & Licensee's)		
<b>Name &amp; position of assessor</b>	Khwaja Islam & Laboratory Manager	<b>Signature</b>	
<b>Date of assessment</b>	01/10/2018	<b>RA Number</b>	BioE 0009

### Outline of procedure / activity:

The Optima-MAX-XP Ultracentrifuge benchtop generates high centrifugal forces for a variety of applications. The ultracentrifuge design features a variable-frequency induction drive, thermoelectric temperature controlled system, self-purging vacuum system, rotor over speed identification system, user login feature, program memory that contains multiple five step programs, and a choice of acceleration and deceleration rates.

Use of Optima-MAX-XP Ultracentrifuge benchtop; Loading samples into rotors; installation of rotors into centrifuges for centrifugation; unloading and cleaning of rotors. The Optima-MAX-XP Ultracentrifuge is located in Innovation lab 2 (696.10.22).

Operator must be trained in operating the Optima-MAX-XP Ultracentrifuge to guarantee safe daily use. Untrained Personnel are not be allowed to operate the centrifuges. Users should operate the centrifuges according to instructions in the manual. User must always ensure that power cable is in good condition, no wires exposed.

### Safety precautions:

- Use only the Beckman Coulter rotors and accessories designed for use in the centrifuge.
- Do not exceed the maximum rated speed of the rotor in use.
- NEVER operate the instrument without a rotor installed.
- NEVER attempt to slow or stop the rotor by hand.
- Do not lift or move the ultracentrifuge whilst the rotor is spinning.
- NEVER attempt to override the door interlock system while it is operating.
- In the event of power failure, do not attempt to retrieve the sample from the ultracentrifuge for at least an hour. Then follow the instructions for sample recovery in CHAPTER 4, Troubleshooting.
- Do not place containers holding liquid on or near the chamber door. If they spill, liquid may get into the centrifuge and damage electrical or mechanical components.
- The centrifuge is not designed for use with materials capable of developing flammable or explosive vapours, or hazardous chemical reactions. Do not centrifuge such materials (example chloroform or ethyl alcohol) in the instrument or handle or store them within the 30-cm (1-ft) clearance envelope

surrounding the centrifuge.

- Decontaminate the centrifuge and accessories (refer to manual) before requesting service by Beckman Coulter service engineer.

### Potential hazards

Substance or item handled	Associated Hazard (s)	Existing Control Measures	Risk (L/M/H)	Further Action required	Risk (L/M/H)
Use of Optima-MAX-XP Ultracentrifuge	Vibration due to imbalance load	All operators should be trained on proper operating procedures before operating the centrifuge. Wear PPE (lab coat and gloves and safety specs). Make sure that any rotor lid securing device and any rotor to spindle securing device is fully secured before starting the machine. Never exceed the maximum stated speed for any rotor. If vibrations occur, press the stop button (DO NOT turn power off at mains) on ultracentrifuge immediately and reset tubes. Stay and observe the centrifuge until it reaches the maximum speed set.	L	No further action required if the existing control measures are adhere to.	L
Use of Optima-MAX-XP Ultracentrifuge	Rotor breakage	Before use check the rotor, lids and seals are clean and no damage. A build-up of chemicals from spillages may cause tube to jam in rotor or corrosion which could lead to rotor failure. Damaged rotors must not be used and should be reported to the lab manager. If rotor breaks due to	L	No further action required if the existing control measures are adhere to.	L



		imbalance, or other reasons, <b>do not operate centrifuge</b> , inform the laboratory manager.			
Use of Optima-MAX-XP Ultracentrifuge	Sample leaks causing aerosols, corrosion and contamination	If broken sample tubes, use forceps to retrieve in case of cuts. Decontaminate after any breakages to prevent cross contamination (see manual). Never fill centrifuge tubes above the maximum recommended by manufacturer. (Refer to instruction manual). Check tubes and bottles for cracks and deformities before each use. Wear PPE (lab coat and gloves and safety specs).	L	No further action required if the existing control measures are adhere to.	L
Use of Optima-MAX-XP Ultracentrifuge	Electrical hazard - Electrical shock – danger of death.	Only switch on the device if the device and power cable are undamaged. Only trained personal are allowed to use the machine. Ultracentrifuge is earthed, protective earth connection for the machine is provided using 13A plug fitted to the machine (RCD protected). Make sure it has been PAT tested. Do not place containers holding liquid on or near the chamber door. Regular visual checks of power cords for fault, fraying or wear and regular electrical safety check. Any faults reported and repaired before use. Regularly serviced by Beckman engineer.	L	No further action required if the existing control measures are adhere to.	L

**Persons potentially at risk:**

Only the user or others near by

**Action in event of an accident or emergency:**

1. **Fire:** raise the fire alarm and evacuate the area. Use correct fire extinguisher if you have been trained and it is safe to do so.
2. **If vibration occurs:** switch of centrifuge at the control panel.

**Arrangements for monitoring effectiveness of control:**

Daily inspection of equipment by lab technician.

Annual preventative maintenance carried by external contractor (Beckman Coulter).

Instruction and training given to all operators which is reviewed annually.

Existing operators receive annual refresher training.

Annual pat testing by external contractor.

**Arrangements for monitoring effectiveness of control:****Review of the Risk Assessment:**

Date of review		Name of reviewer	
Date of next review		Signature	

Have the control measures been effective in controlling the risk?

Yes	No
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Have there been any changes in the procedure or in the information available which affect the estimated level of risk from the listed substances

Yes	No
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What changes to the control measures are required?

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**Declaration by Tenant/Licensee/Technician:**

I confirm that I have read this Risk Assessment and that I understand the hazards and risks involved and will follow all of the safety procedures stated. Where PPE has been identified as a control measure, I will ensure that it is worn.

**Declaration by Laboratory Manager (LM):**

I confirm that the tenant/licensee/technician who has signed below is competent to undertake the work. My counter-signature indicates that I am happy for the work to proceed.

Name (Please print)	Signature	LM Countersignature	Date



Name (Please print)	Signature	LM Countersignature	Date