

Use of the Centrifuge

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Clinical SOP No. 32

Version 1.0

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DOCUMENT HISTORY

Version number	Detail of purpose / change	Author / edited by	Date edited
1.0	New SOP	Louise Greig	29 June 2015

1 Introduction

Centrifugation is the process of separating two or more liquids in a mixture by rotation in a container so that the lighter density liquid rises to the top. ICH GCP Principle 2.13 states “Systems with procedures that assure the quality of every aspect of the trial should be implemented.” This SOP gives general guidelines, to study personnel, on the use of the centrifuge.

2 Objective

The purpose of this SOP is to ensure that the operation of any centrifuge is performed safely, and to a consistently high standard. It is an essential part of good practice to ensure that each piece of equipment is working within its specified range.

3 Background

It is important that all staff involved in processing samples, for a clinical trial, use the same procedure as specified in the trial protocol, or centrifuge manual.

4 Responsibility

It is the individual responsibility of all users of a centrifuge to ensure that they are suitably trained in its use, and maintenance, in order to ensure it is used correctly. Study personnel should read the manufacturer’s instruction manual before using the centrifuge.

5 Procedure

- Plug the centrifuge into the mains and switch on.
- Open the lid and load the appropriate tubes. (Use only correctly fitting tubes.)
- The minimum number of tubes used is two. (If you wish to centrifuge only one tube then it must be balanced using another tube filled with the same volume of water.)
- Ensure the load is evenly distributed. (If the volume of liquid in the tubes varies then an equal and opposite distribution should be employed.)
- Centrifuge tubes must never be filled above the maximum recommended by the manufacturer.
- Close the lid until you hear a click which means the lid is locked.
- Select the desired centrifuge speed, as indicated in the study protocol, using the up and down arrows. (The containers being centrifuged must be strong enough to withstand the centrifugal forces to which they will be exposed.)
- Select the desired centrifuge time, as indicated in the study protocol, using the up and down arrows.
- If using a chilled centrifuge select the temperature, as indicated in the study protocol, required using the corresponding up and down arrows. Multiple runs may be required to reach the desired temperature.
- Once the timer is set press start. (During the centrifugation run the rotor speed and the remaining time are displayed.)
- Once set and running the timer will display the remaining time until coming to rest.
- Once the run begins the lid cannot be opened but the run settings can be changed (if required) during a run using the up and down arrows and once set the new values become operative.
- After the expiry of the time, or if the centrifugation run is interrupted by pressing the STOP key, the rotor runs down.

- Once the centrifugal run is complete and the speed reaches zero then the centrifuge can be opened.
- Remove all tubes and place in a storage rack beside the centrifuge.

6 Maintenance

- Wipe clean the centrifuge housing and the centrifuge chamber regularly. (It is recommended this is done ideally after every use but at least once a week.)
- The outside of the centrifuge should be cleaned occasionally.
- In the event of condensation / water formation dry the centrifugal chamber with an absorbent cloth.
- Spillages should be dealt with immediately.
- In the event of a sample tube breakage during spinning, press the STOP button and wait 30 minutes for any glass or soluble particles to settle.
- Disconnect the centrifuge from the power supply.
- Wearing gloves open the lid and carefully pipette any remaining sample into a clean labelled tube.
- When a breakage occurs broken container parts and leaked sample material should be completely removed. Use forceps to pick up any broken glass and dispose in a sharps bin.
- The rubber inserts as well as the plastic sleeves or the rotors are to be replaced after a glass breakage. (Remaining glass splinters cause further glass breakage.)
- If infectious material (e.g., blood) penetrates into the centrifugal chamber, or after breakage of glass containers, the plastic sleeves are to be disinfected immediately.
- Dry the rotor and accessories immediately after cleaning and check regularly for corrosion damage.
- Emergency release. The lid cannot be opened during a power failure and an emergency release has to be executed by hand. Switch off at the mains and insert the release pin in to the appropriate hole to release the lid.