
Overview

This standard covers the skills you need to maintain cell lines using sub-culture or cryogenic storage. You must work to the relevant standard operating procedures, legislation and organisational policy.

This involves setting up and growing cell lines in batch, continuous, monolayer or suspension culture. It includes choosing the required support medium, harvesting cells, determining cell density and adjusting this for optimum viability after cryopreservation or further culture work. It is important that your work is done to the highest quality and accuracy since meeting laboratory targets is essential

After the procedure you must dispose of any waste appropriately, leave your work area in an acceptable condition and complete all the necessary paperwork and documentation.

Your underpinning knowledge will provide a good understanding of your work which you will undertake with minimum supervision.

Who this standard is for

The standard is recommended for all staff, but particularly more experienced employees.

**Performance
criteria**

- You must be able to:
- P1 ensure that your work is carried out in accordance with workplace procedures to protect yourself and others
 - P2 ensure that samples, media and reagents are stored correctly and maintained at correct temperature during use
 - P3 harvest and prepare cells according to laboratory procedures
 - P4 perform cell counts on a cell suspension, ensuring that clumps of cells are broken up, and adjust the cell count to the pre-determined optimum
 - P5 prepare the appropriate media and re-suspend cells in accordance with requirements
 - P6 transfer cells to appropriate unit/vessel
 - P7 monitor conditions and cell growth and adjust conditions as required
 - P8 communicate the required information about the work done, to authorised people, in accordance with departmental and organisational procedures

Knowledge and understanding**You need to know and understand:**

- K1 the health and safety requirements of the area in which you are carrying out the activities
- K2 the standard operating procedures, as set down in local laboratory manuals
- K3 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
- K4 the types of handling, sorting, recording and tracking system used and the procedures used for transferring specimens/samples within the laboratory while undergoing processing
- K5 the minimum number/size/volume of laboratory samples required for long term storage
- K6 the range of cell lines and containers used for sample storage and analysis and other essential resources required for each laboratory investigation
- K7 the importance of keeping the work area clean and tidy, and avoiding cross contamination of samples
- K8 the main features of the cell line and the underlying action of the media and reagents involved in cell adhesion and disruption and the growth of cells in culture
- K9 the main features of the cryopreservation unit or incubating equipment and the underlying action of the reagents involved in freezing/culturing cells and reaction mixture/growth media
- K10 the function of error messages on the controlled freezing station, and what to do if an error message is displayed
- K11 how to find the correct restart point if the freezing run has stopped before completion of the operation
- K12 the procedures to be followed when dealing with broken or leaking samples and disposing of harmful materials, chemical and contaminated equipment

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