



Australian Government

Assessment Requirements for MSL974025

Prepare tissue and cell cultures

Release: 1

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Modification History

Release	Comments
Release 1	<p>This version was released in <i>MSL Laboratory Operations Training Package Release 2.0</i>.</p> <p>Supersedes and equivalent to MSL974011 Prepare tissue and cell cultures. Foundation skill information added. Range of conditions removed. Assessment requirements amended.</p>

Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and:

- safely preparing at least 3 different primary tissue/cell cultures that are free of contamination using tissue/cell culture and basic subculture procedures, including:
 - manipulating equipment and materials and samples to prevent contamination at all preparation stages
 - performing routine maintenance and checks on raw materials and consumables, including use-by-date, possible contamination and storage conditions
 - growing cell lines and tissue to specifications without contaminating the original sample and the environment.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- basic classes and classification of culturable material including microorganisms, plant/animal cells and tissue
- structure and function of plant/animal cells and organelles
- cell structure, physiology and processes, including simple and facilitated diffusion, plasmolysis, osmosis, tonicity, active transport, energy production, mitosis, motility, phagocytosis and pinocytosis
- concepts and principles of cell growth, including the need for nutrients, the role of growth regulators and the removal of wastes
- types and sources of contamination
- importance of strict aseptic techniques and cleaning procedures
- common applications of plant tissue/cell culture
- common applications of animal tissue/cell culture

- typical methods for sterilisation and disposal of biohazardous:
 - steam and high-pressure air or steam
 - boiling, microwaving and autoclaving
 - filtration
 - gas, chemical and radiation
- typical methods to preparing a primary culture
- suitable culture conditions
- subculture
- quality control checks and quality assurance procedures
- standard methods for preparing culture media, and operation and maintenance manuals for automated media preparation equipment
- workplace and/or legal traceability requirements
- awareness of environmental sustainability issues as they relate to the work task
- legal, ethical and work health and safety (WHS) requirements specific to the work task.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - a laboratory equipped with appropriate equipment, samples, cell lines and reagents
 - tissue culture equipment and facilities, including:
 - growth cabinets
 - culture vessels, growth chambers, sterile containers, culture plates, flasks and bottles
 - autoclaves
 - positive filtration apparatus
 - auto pipettes and pipette pumps
 - cell counting chambers and a haemocytometer
 - incubators, including specialised atmosphere carbon dioxide
 - binocular light inverted microscopes
 - centrifuges
 - workplace procedures and standard methods.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

Links

MSL Laboratory Operations Companion Volume Implementation Guide is available from VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5c63a03b-4a6b-4ae5-9560-1e3c5f462baa>

