



Australian Government

Assessment Requirements for MSL974035

Prepare tissue or cell cultures

Release: 1

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Modification History

Release 1. Supersedes and equivalent to MSL974025 Prepare tissue and cell cultures. Minor change to Title and to Title of prerequisite unit. Minor changes to Elements, Performance Criteria and Assessment Requirements to clarify that unit focus is tissue **or** cell cultures. Other minor rewording in Knowledge Evidence.

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 or cell cultures that are free of contamination using tissue or 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 or tissue to specifications without contaminating the original sample and the environment.
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Knowledge Evidence

There must be evidence the candidate has knowledge of:

- basic classes and classification of culturable material including microorganisms, plant or animal cells and tissue
- structure and function of plant or 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 or cell culture
- common applications of animal tissue or cell culture
- typical methods for sterilisation and disposal of biohazardous, including:
 - steam and high-pressure air or steam
 - boiling, microwaving and autoclaving
 - filtration

- gas, chemical and radiation
- methods to prepare a primary culture and subculture, and suitable culture conditions
- quality control checks and quality assurance procedures
- standard methods for preparing culture media
- technological advances in media preparation equipment
- workplace and/or legal traceability requirements
- environmental sustainability issues as they relate to the work task
- legal, ethical and work health and safety (WHS) requirements specific to the work task.
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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
 - 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
 - specifications
 - workplace procedures.

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>