



Australian Government

Assessment Requirements for MSL974011

Prepare tissue and cell cultures

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MSL974011A Prepare tissue and cell cultures

Performance Evidence

Evidence of competence in this unit must satisfy all of the requirements of the elements and performance criteria, and include demonstration of:

- safely preparing at least three (3) different primary tissue cultures that are free of contamination using tissue culture and basic subculture procedures
- manipulating equipment and materials and samples to prevent contamination at all preparation stages
- preparing, diluting and sterilising reagents and culture media that are fit for purpose
- 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
- monitoring cell growth, checking growth rates and recognising problems, such as contamination of media by bacteria (e.g. Mycoplasma), fungi and other plant or animal tissue
- identifying expected cell types and recognising normal and abnormal cells using an inverted microscope
- accurately counting total and viable cells
- maintaining chain of custody and traceability to the worker, of all cell lines, tissues, logs of work completed and procedures/methods used
- working safely and satisfying all legal and regulatory requirements, including the use and care of biohazard cabinets.

Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- basic classes and classification of culturable material, such as organisms, plants, animals, bacteria, viruses, tissues, cells and prions
- structure and function of 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
- quality control checks and quality assurance procedures
- workplace and/or legal traceability requirements
- hazards and risks in biological laboratories and relevant work health and safety (WHS) and environment requirements.

Assessment Conditions

- Judgment of competence must be based on holistic assessment of the evidence. Assessment methods must confirm consistency of performance over time, rather than a single assessment event.
- This unit of competency is to be assessed in the workplace or a simulated workplace environment. A simulated workplace environment must reflect realistic operational workplace conditions that cover all aspects of workplace performance, including the environment, task skills, task management skills, contingency management skills and job role environment skills.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Knowledge evidence may be collected concurrently with performance evidence or through an independent process such as workbooks, written assessments or interviews (provided a record is kept in each case).
- This unit of competency may be assessed with:
 - MSL933001 Maintain the laboratory/field workplace fit for purpose
 - MSL973003 Prepare culture media
 - MSL973007 Perform microscopic examination
- Holistic assessment methods include:
 - examination of tissue and cell cultures prepared by the candidate
 - review of work records and results obtained by candidate
 - feedback from supervisors and peers on adherence to workplace/technical procedures
 - observation of the candidate preparing a range of tissue and cell cultures
 - oral and/or written questioning covering workplace procedures and technical aspects of preparing tissue and cell cultures,
- Access is required to instruments, equipment, materials, workplace documentation, procedures and specifications associated with this unit including, but not limited to:
 - 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 assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competence and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience.

Currency can be demonstrated through:

- performing the competency being assessed as part of current employment OR
- having consulted with a laboratory about performing the competency being assessed within the last twelve months.

Links

Companion Volume implementation guides are found in VETNet -

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