



Australian Government

Assessment Requirements for MSL975033 Perform tissue and cell culture techniques

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 <i>MSL975013 Perform tissue and cell culture techniques</i>. Changed prerequisites. Changes to performance criteria. 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 prepared and maintained 3 different cell cultures to preserve cells and cell lines that are fit for purpose without contaminating the original sample, including:
 - passaging cell cultures by subculturing
 - preserving cell lines by freezing and cryopreservation
- confirmed the identity of the cell lines and identified abnormalities/contamination if present
- maintained accurate, traceable records of cell lines and tissues and logs of procedures and work completed.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- terminology, including cell lines, growth media, primary culture, passaging, passage number, subculture, anchorage dependent cells, suspension culture, monolayer, confluent, cell line, cell strain, contact inhibition, diploid and viability
- cell biology, including structure, physiology, function, physiological cell growth requirements, nutrient requirements, respiration, temperature and growth cycle
- general purpose of cell lines
- normal and abnormal cell morphology
- critical components of the cell environment and their effects on cell growth, including pH, temperature, buffering, atmosphere, osmotic pressure, osmolarity and viscosity
- types of tissue/cells used as source material

- techniques for characterising a cell line
- selection criteria for media, materials and equipment, including:
 - costs
 - ease of cleaning or sterilisation
 - maintenance of cell growth
- the differences between finite and continuous cell lines
- characteristics of cell culture media and substrates
- nature of substrates including solid, semi-solid, gel or sponge, glass, disposable plastics and three-dimensional matrices
- chemical treatment techniques for pre-treating substrates relevant to the job role
- role of common ingredients in media including salts, carbohydrates, amino acids, vitamins, growth factors, serum and antimicrobial
- contaminants, including endotoxins, bacteria, yeast, fungi and mycoplasma
- typical requirements, problems and procedures associated with the production of specific cell lines relevant to the job role
- tissue culture and continuous culture systems
- methods to prepare primary cultures
- principles and purpose of techniques implemented
- methods to monitor growth of tissue and cell lines
- 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 including traceability, confidentiality and security requirements of all client information, and laboratory data and records.

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:
 - laboratory equipped with appropriate tissue culture equipment and facilities, test equipment, instruments, standards and reagents
 - workplace procedures and standard methods, test results and records.

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

Links

Training Package Companion Volumes -

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