



Australian Government

Assessment Requirements for MSL974006 Perform biological procedures

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MSL974006A Perform biological procedures

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 performing at least five (5) routine biological techniques that involve several steps to classify cell types, species and biologically active compounds by analysing their biological and chemical characteristics
- accurately interpreting work requirements and following test procedures and safe work practices
- safely preparing samples and using separation techniques
- conducting pre-use and calibration checks on equipment
- safely operating test equipment and instruments for qualitative and quantitative analysis in accordance with workplace procedures and manufacturer specifications
- maintaining and evaluating reagents
- processing data, estimating uncertainties, preparing calibration graphs and calculating results in appropriate units and precision
- applying basic theoretical knowledge to interpret gross features of data and making relevant conclusions
- troubleshooting obvious departures from standard procedures
- identifying atypical results as out-of-normal range or an artefact using reference material or quality control sera
- tracing and sourcing obvious causes of an artefact
- communicating problems to a supervisor or outside service technician
- recording and communicating results according to workplace procedures
- maintaining security, integrity, traceability and identity of samples, sub-samples and documentation
- safely collecting, storing and disposing of biohazardous wastes.

Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- biological principles and concepts underpinning tests and procedures associated with job role, such as:
 - chemical and biochemical characteristics of lipids, carbohydrates, nucleic acids and proteins influencing structure, function and reactivity both in vitro and in vivo

- molecular interactions within the compounds of nucleic acids and nucleotides, proteins and amino acids, carbohydrates, lipids and vitamins, influencing structure, activity, chemical reactivity and physical properties, including solubility, energy levels and emission/absorption spectra
- chemical significance of biologically significant ions, such as calcium, zinc, iron, magnesium, sodium, potassium, chloride and phosphate
- basic structure and function of organelles, cells, plant and animal tissue and organs relevant to the testing requirements
- interrelationships of biological systems (carbon cycle, energy cycle, eutrophication and the web of life)
- classification and taxonomy of organisms, such as bacteria, viruses, yeasts, single cell, multi-cellular, plants, animals, prions, helminths, prokaryotes and eukaryotes
- phases of the cell cycle
- Mendelian genetics, such as inheritance, meiosis, karyotypes, dominant and recessive traits, genotypes and phenotypes, and pedigrees
- significance of the genetic code and transcription and translation
- cell membrane activity, including diffusion (passive, facilitated and active), osmosis, tonicity and plasmolysis
- staining reactions involving acid/base, redox, complex ion formation, solubility and equilibrium
- operating principles and function of key components of the equipment and instruments used as part of job role
- effects of modifying equipment and instrument variables
- basic equipment and method troubleshooting procedures
- calculation steps to give results in appropriate units and precision
- sources of uncertainty in measurement and methods for control
- importance and appropriate use of controls and certified reference materials
- workplace and legal requirements for traceability
- relevant hazards and risks in biological laboratories, work health and safety (WHS) and environmental 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:
 - MSL924001 Process and interpret data
 - MSL974003 Perform chemical tests and procedures
- Holistic assessment methods include:
 - review of results obtained by the candidate over a period of time to ensure accuracy, consistency and timeliness
 - review of testing records and workplace documentation completed by the candidate
 - feedback from peers and supervisors about the candidate's ability to perform biological procedures safely and reliably
 - observation of candidate conducting a range of biological procedures
 - oral or written questioning of biological concepts and principles, techniques and methods and workplace procedures relevant to candidate's job role.
- Access is required to instruments, equipment, materials, workplace documentation, procedures and specifications associated with this unit, including, but not limited to:
 - a standard laboratory equipped with appropriate test equipment and instruments, safety equipment, reagents and materials
 - standard operating procedures (SOPs) and testing methods
 - records, including:
 - test calibration results
 - equipment use, maintenance and servicing history
 - faulty or unsafe equipment
 - batch number, catalogue number and use-by-date for analytical kits.
- 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>