



Australian Government

Assessment Requirements for MSL975001 Perform microbiological tests

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MSL975001A Perform microbiological tests

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) microbiological tests/procedures for the culturing, isolating, identifying and counting microorganisms
- consistently and accurately describing different bacterial colony forms on common media
- preparing and staining thin smears and preparing liquid films
- estimating the number and size of microorganisms in samples
- selecting, inoculating and incubating culture media
- performing biochemical and immunological identification tests on pure cultures to assist in the of microorganisms
- not contaminating self, other people, the work area, equipment or the samples or materials under test
- not contaminating media or reagents during manipulations involving the transfer of cultures
- identifying artefacts or image aberrations attributable to misalignment or obstruction of light paths or condensers used in microscopy, or with other steps in microscopic examinations
- consistently and accurately performing Gram staining of bacteria
- accurately and concisely preparing data and documentation that is in accordance with workplace requirements
- reporting all incidents or accidents
- disinfecting any spillages and safely disposing of all contaminated materials
- decontaminating the work area upon completion of work.

Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- microbiological terminology, including bacteriology, parasitology, virology and mycology
- disinfection and sterilisation as applied to practical aspects of microbiology
- microbial diversity
- microorganisms of importance in medicine, in production of foods and other manufactured goods, and in assessment of the natural environment

- cell biology and chemistry related to laboratory phenomena, such as growth and isolation of organisms for identification
- microbial genetics
- rationale for sample dilution when preparing materials for enumerating organisms and other pure culture work (e.g. Most Probable Number (MPN) technique)
- need for accurate identification of sample source (e.g. body, specimen, process line and field location)
- relevant hazards, 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:
 - MSL934002 Apply quality system and continuous improvement processes
- Holistic assessment methods include:
 - review of results/data/records generated by the candidate
 - feedback from peers and supervisors to confirm that the candidate consistently follows workplace procedures and generates results that meet workplace requirements
 - oral and/or written questions associated with laboratory determinations and record keeping
 - integrated assessment with a case study focus, such as the isolation and identification of bacterial species in a specimen containing two or more species by relating sample, cultural, morphological and biochemical data from other relevant tests and procedures.
- Access is required to instruments, equipment, materials, workplace documentation, procedures and specifications associated with this unit, including, but not limited to:
 - a standard microbiology laboratory with relevant samples; reagents; protective and physical containment equipment; sample preparation and storage equipment; test equipment, such as microscopes and counters; and sterilising equipment, such as autoclaves
 - workplace procedures, test methods and equipment manuals.

- Under duty of care requirements, off-the-job training providers will only use samples and organisms of a risk category compatible with their laboratory as defined in *AS/NZS 2243.3 Set:2006 Safety in laboratories*.
- 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>