



Australian Government

MSL975036 Perform haematological tests

Release: 1

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Modification History

Release	Comments
Release 1	This version was released in <i>MSL Laboratory Operations Training Package Release 2.0</i>. Supersedes and equivalent to MSL975002 Perform haematological tests. Changes to elements and performance criteria. Foundation skills information added. Range of conditions removed. Assessment requirements amended.

Application

This unit of competency describes the skills and knowledge to determine levels, function, activity and interactions of cellular and plasma components of blood using tests and procedures identified with the discipline of laboratory haematology.

This unit applies to laboratory technicians and technical officers working in the biomedical industry sector. While this unit focuses on the laboratory investigation of human physiology and pathology, it reasonably describes aspects of work performed in veterinary settings. The unit of competency assumes that technical personnel would perform tests and procedures under close supervision. The results of their work would also normally be integrated, interpreted and reported on by supervising scientists and medical pathologists. Although a supervisor may not always be present, the technician will follow standard operating procedures (SOPs) that will clearly describe the scope of permitted practice in modifying testing procedures, interpreting data and for communicating test results to people outside the laboratory. People performing haematology tests will meet the requirements of the laboratory that they are working in regarding the education and training they must have to perform the tests.

No licensing or certification requirements exist at the time of publication. However, regulations and/or external accreditation requirements for laboratory operations exist, so local requirements should be checked. Relevant legislation, industry standards and codes of practice within Australia must also be applied.

Pre-requisite Unit

MSL973019 Perform microscopic examination

Competency Field

Testing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | | |
|---|---|--|
| 1 | Process samples and associated request details | 1.1 Identify specimens and request forms that do not comply with minimum industry requirements for labelling, identification and test requests |
| | | 1.2 Record any discrepancies or sample quality issues and indicate what action is required |
| | | 1.3 Log samples, applying required document tracking mechanisms |
| | | |
| 2 | Perform tests | 2.1 Conduct individual tests according to documented standard operating procedures, applying required quality control |
| | | 2.2 Prepare blood films |
| | | 2.3 Use appropriate manual haematological techniques |
| | | 2.4 Identify normal and abnormal morphological characteristics of red blood cells, white blood cells and platelets |
| | | 2.5 Classify and count cell populations |
| | | 2.6 Calculate red cell indices and white blood cells absolute counts |
| | | 2.7 Interpret automated analyser results and correlate with blood film morphology |
| | | 2.8 Record results in accordance with workplace procedures using correct terminology |
| | | |
| 3 | Maintain laboratory records | 3.1 Record entries on report forms or into computer systems, accurately calculating, recording or transcribing required data |

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 3.2 Ensure samples and associated paperwork maintain traceability throughout testing

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

- Oral communication skills to interact effectively with supervisors and managers (laboratory, quality and customer service), personnel in other laboratories in the workplace or in other workplaces to which work may be referred, customers, patients and clients, external auditors and accreditation agencies, such as National Association of Testing Authorities (NATA)
- Planning and organising skills to manage own work and ensure the timely completion of tasks.

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Equivalent to MSL975002 Perform haematological tests, Release 1.

Links

Training Package Companion Volumes -

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

Assessment Requirements for MSL975036 Perform haematological tests

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and:

- safely and accurately performed and interpreted at least 3 haematological tests or procedures from the list below:
 - packed cell volume (PCV)
 - erythrocyte sedimentation rate (ESR)
 - platelet estimation
 - reticulocyte count
 - haemoglobin (Hb) measurement
 - coagulation tests including prothrombin time
- accurately performed and interpreted the following tests, recording results for at least 3 samples, including 1 normal and 2 abnormal, for each of the following:
 - calculate red cell indices including mean cell volume (MCV), mean cell haemoglobin (MCH), and mean cell haemoglobin concentration (MCHC)
 - white blood cell (WBC) differential
 - red blood cell (RBC), WBC and platelet morphology
- used accurate terminology
- visually differentiate a variety of sample conditions including clotted, lipemic, haemolysed and inadequate samples.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- scientific, medical, clinical, technical and workplace terminology relevant to normal and abnormal haematology, including anatomy, physiology, genetics, biochemistry and immunology
- basic structure and function of red blood cells, white blood cells and platelets
- structure, function and metabolic variants of Hb
- basic principles of haemostasis and the effects of therapeutic drugs on coagulation mechanisms
- routine test performed in haematology laboratories and their purpose including:
 - full blood count
 - routine haematological stains
 - blood film examination
 - ESR
 - coagulation tests
 - haemoglobin measurement
- morphological variation of red blood cells, white blood cells and platelets and their significance as a diagnostic indicator
- key diagnostic laboratory findings used to identify common haematological disorders including:
 - anaemias and the common subtypes including macrocytic, microcytic and normocytic
 - acute leukaemias
 - mature lymphoproliferative disorders
 - myeloproliferative disorders
 - myelodysplastic syndromes
 - microbiological infections including malaria
 - coagulopathies
- importance of identifying immature cells including nucleated red blood cells (NRBC) and blasts
- actions required when abnormal parameters are identified
- importance of further testing to confirm diagnosis
- technological advances in haematology including automation of full blood counts, coagulation assays and point of care testing:
 - advantages and limitation of automation
 - importance of equipment maintenance and use of controls
- relationships that exist between the sample and the test result, including:
 - sample collection
 - the preservation and timely testing of samples
 - sample transport and storage conditions and issues of fixation/staining artefact
- trouble shooting of common sample quality issues
- 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 clinical 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:
 - a standard haematology laboratory with relevant equipment, samples and reagents, laboratory information system, databases and record/filing system
 - instruments for the semi-automated or automated electronic counting and partial characterisation of blood cells, the measurement of haemoglobin and the computation of red cell indices
 - workplace procedures, test methods and equipment manuals.

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

Links

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