Australian Government

Assessment Requirements for MSL975029 Perform histological tests

Release: 1

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Modification History

Release	Comments
Release 1	This version was released in *MSL Laboratory Operations Training Package Release 2.0.* Supersedes and equivalent to *MSL975003 Perform histological tests*. Prerequisites changed. Change to elements and performance criteria. Foundation skill information added. Range of conditions removed. Assessment requirements amended.

Performance Evidence

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

- registered at least 10 samples into a laboratory information management system (LIMS), (or simulated to reflect an actual LIMS) with 100 % accuracy. identifying specimens and request forms that do not comply with minimum industry requirements for labelling, identification and test requests
  - entered at least 8 samples into the LIMS within five minutes
  - recorded sample and request form discrepancies and indicated what level of action is required, i.e. record only, contact submitter, continue testing or halt testing or return sample to their source with reasons for non-acceptance
- embedded at least 6 tissue types that are flat, correctly orientated and in a single layer of wax, including one of each of the following:
  - large tissues
  - small tissues
  - multiple small biopsies in a single block
  - epithelial tissue such as skin or tongue
  - tissue prone to distortion
  - bone
- inspected and re-embedded blocks that do not meet quality control standards
- cut at least 40 paraffin embedded sections, from at least 5 different tissue types free of wrinkles, scores and folds, at the specified thickness (the complete surface of the tissue must be present on all slides with the remaining tissue in the block conserved for future testing) to industry standard

- produced stained sections that consistently pass industry quality control standards, on separate occasions, that allow for diagnosis and results to be issued, including:
  - stained at least 5 routine paraffin embedded sections from at least 5 different tissue types to demonstrate tissue structure using a regressive Haematoxylin and Eosin stain
  - performed the Periodic Acid Schiffs (PAS) technique using positive control tissue
  - performed at least 5 different specialised/histochemical stains using positive control tissues, to demonstrate at least 5 of the following:
    - connective tissue
    - muscle striations
    - central nervous system
    - basement membrane
    - microorganisms
    - pigments
    - deposits
    - carbohydrates and/or mucins
    - amyloid
- using specialised techniques, including polarising microscopy and use of heat or microwave ovens in histopathology
- consistently produced cover slipped slides, ensuring that no air bubbles are formed and material is preserved for the life of the slide

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- terminology used to describe tissue components being stained, these may be anatomical, physiological, biochemical or immunological, depending on the expected staining outcomes
- interrelationship between the quality of each individual histological step and the impact on subsequent steps and final outcomes, including:
  - fixation and all subsequent steps
  - cut-up and all subsequent steps
  - processing and all subsequent steps
  - embedding and all subsequent steps
  - microtomy and all subsequent steps
  - staining and all subsequent steps
- purpose of and processes involved in surgical cut-up and the factors involved that directly impact on ability to perform histology work
- requirements for ensuring uninterrupted efficient operation of a cut-up area
- basic principle and purpose of decalcification
- importance of recognising the uniqueness of patient histological tissues (a non-renewable resource)
- purpose of and processes for frozen sections

- functions of the components of a rotary microtome
- relationship of the anatomy and morphology of tissue types and the macroscopic and microscopic appearance of stained sections
- advantages and disadvantages of different types of fixatives
- labile nature of histological chemicals and the importance of correct preparation and storage
- effects of the presence of artefacts in sections on microscopic examination of tissues
- purpose of and processes involved in tissue processing and routine Haematoxylin and Eosin staining methods
- purpose of staining procedures implemented (why they are used and what components they demonstrate)
- basic biological principles and concepts behind the steps involved in immunohistochemical staining procedures
- relationship between correct differentiation, and the ability to produce quality stained slides and troubleshoot staining issues
- appropriate storage of specimens
- technological advances that include automation
- 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 histology laboratory with relevant equipment, samples and reagents; and computer information systems, databases, record and filing systems, including specimen accessioning
  - workplace procedures, test methods and equipment manuals.

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

Links

MSL Laboratory Operations Companion Volume Implementation Guide is available from VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5c63a03b-4a6b-4ae5-9560-1e3c5f462baa