



Australian Government

Assessment Requirements for MSL975057

Perform histological tests

Release: 1

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Modification History

Release 1. Supersedes and equivalent to MSL975029 Perform histological tests. Changes to Performance Criteria. Oral communication removed from Foundation Skills, as this is not a focus in the unit. Performance Evidence changed to add lymph node as an option and remove requirement to use polarising microscopy and heat or microwave ovens. Changes to Knowledge Evidence.

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) with 100% accuracy, identifying specimens and request forms that do not comply with minimum industry requirements for labelling, identification and test requests, including:
 - 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 major 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 quality control standards
- 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 Schiff (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
- used specialised techniques, including heat
- consistently produced cover slipped slides, ensuring that no air bubbles are formed and material is preserved for the life of the slide.
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Knowledge Evidence

There must be evidence the candidate has knowledge of:

- importance of recognising the uniqueness of patient histological tissues (a non-renewable resource)
- purpose and process of frozen sectioning
- purpose and process of surgical cut-up
- advantages and disadvantages of different types of fixatives
- types and purpose of tissue softening techniques
- relationship between correct orientation of the tissue during embedding and ability to cut quality sections
- functions of the components of a rotary microtome
- purpose of each step in tissue processing and routine Haematoxylin and Eosin staining methods
- basic aspects of how incorrect work practices in each histological procedure can impact on subsequent processes including the quality of the final microscopic outcome
- 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 including common artifacts, their cause and how to resolve them
- purpose of polarising microscopy and heat in staining techniques
- terminology used to describe tissue components being stained, these may be anatomical, physiological, biochemical or immunological, depending on the expected staining outcomes
- microscopic anatomy of vascular tissue relevant to stain quality control
- microscopic anatomy of common tissue types to enable quality control assessment of staining techniques and confirmation of tissue and stain type
- 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
- workplace safety procedures and precautions relevant to:
 - handling hazardous chemicals and stains used in the job role, including formaldehyde, xylene/limonene, ethanol
 - embedding and microtomy
 - sharps and broken glassware
- environmental sustainability issues as they relate to the work task
- legal and ethical requirements specific to the work task including traceability, confidentiality and security requirements of all clinical information, and laboratory data and records and legal requirements relating to the use of human tissue.
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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 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>