



Australian Government

Assessment Requirements for MSL975003 Perform histological tests

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MSL975003A Perform histological 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:

- performing tests and procedures associated with processing and staining tissues for examination of tissue structure to assist with disease diagnosis
- registering at least fifteen (15) samples into a laboratory information management system (LIMS), (or simulated to reflect an actual LIMS) with 100 % accuracy identifying specimens and requesting forms that do not comply with minimum industry requirements for labelling, identification and test requests
- entering each sample to the LIMS within five minutes
- recording discrepancies and indicating 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
- performing manual and automated histological tests and procedures
- preparing, safely storing and disposing of stains and reagents
- embedding tissue types to meet quality control standards with correct orientation and characteristics that minimise tissue loss in microtomy
- embedding at least six (6) tissue types, including:
 - large tissues
 - small tissues
 - multiple core biopsies in a single block
 - epithelial tissue such as skin or tongue
 - trachea
 - bone
- inspecting and re-embedding blocks that do not meet quality control standards
- cutting at least forty (40) paraffin embedded sections, from at least five (5) different tissue types free of wrinkles, scores and folds, at the specified thickness to demonstrate tissue and cellular structures, granules, inclusions and organelles. The complete surface of the tissue must be present on all slides with the remaining tissue in the block conserved for future testing
- staining at least five (5) routine paraffin embedded sections from at least five (5) different tissue types to demonstrate tissue structure using a regressive Haematoxylin and Eosin stain over at least three (3) separate occasions. All stained sections must pass industry quality control standards that would allow for diagnosis and results to be issued
- using at least four (4) different specialised stains over at least two (2) occasions using positive control tissues, for example, to demonstrate connective tissue, muscle striations, central nervous system, glands, basement membrane, microorganisms, pigments and deposits
- using at least two (2) different histochemical stains over at least two (2) occasions using positive control tissues, stains, for example to demonstrate carbohydrates, amyloid and mucins
- performing specialised techniques, including polarising microscopy and use of microwave ovens in histopathology
- cover slipping slides, ensuring that no air bubbles are formed and material is preserved for the life of the slide
- labelling slides clearly with case, specimen and stain details

- approving or preventing the release of patient stained slides to pathologists based on an assessment of quality control sections
- recognising problems whilst performing procedures and troubleshooting under direction
- using the workplace LIMS efficiently
- reviewing workplace documentation to identify errors or procedural gaps and suggesting improvements
- preparing documentation that is accurate, concise and in accordance with workplace requirements
- managing tasks and organising work to ensure the timely completion of tasks
- using samples, reagents and materials economically and disposing of wastes safely
- using equipment safely.

Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- terminology used to describe tissue components being stained, these may be anatomical, physiological, biochemical or immunological, depending on the expected staining outcomes
- the relationship between strict adherence to workplace procedures during each step and the maintenance of specimen integrity
- workplace and legal traceability requirements
- 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
- 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
- types of fixatives and their role in retaining size and spatial relationships in tissues and in preventing autolysis and putrefaction
- relationship between the tissue types and components to be demonstrated and the choice of fixation procedures, processing schedules and staining techniques
- relationship between correct orientation of the tissue during embedding and microtomy and ability to cut quality sections and conserve the tissue
- correlation between poorly maintained processing reagents and resultant tissue blocks being difficult to cut or unsuitable for cutting
- properties of embedding mediums
- labile nature and chemistry of stains and the importance of correct preparation and storage to ensure required staining outcome
- 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, including histochemical and immunohistochemical procedures (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
- equipment maintenance requirements and consequences if maintenance is not done
- work health and safety (WHS) and environment requirements, particularly those related to labelling, handling, storing and spill clean-up of irritating, volatile, flammable and potentially carcinogenic substances.

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 systems and continuous improvement processes
- Holistic assessment methods include:
 - inspection of stained tissue sections/slides prepared by the candidate
 - feedback from supervisors
 - observation of candidate performing tests and procedures, such as:
 - preparation of microtome for cutting, cutting blemish free sections, successful flotation and pick-up of section
 - staining tissues to demonstrate tissue structures and cell components as required
 - morphological identification of tissues, such as epithelial, muscle, central nervous and glandular
 - oral and/or written tests to assess required knowledge.
- Access is required to instruments, equipment, materials, workplace documentation, procedures and specifications associated with this unit, including, but not limited to:
 - 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.
- 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.
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Links

MSA Training Package Implementation Guides - <http://mskills.org.au/training-packages/info/>