The Laboratory Services Reform Programme

ADVICE NOTE

Additional Stains and Conservation of Tissue in Lung Cancer Histopathology

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Clinical Practice Guidance Document Cover Sheet

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The Laboratory Services Reform Programme offers the following advice:

1 Advice for Laboratories

With respect to lung biopsies for tumour

a. Initial sectioning should go no further than 30% of the way into the sample, and sufficient unstained spares may be taken for potential Immunohistochemistry, both diagnostic and related to treatment guidance.

b. If the biopsy is positive and shows morphological evidence of **adenocarcinoma (ADC) or squamous cell carcinoma (SQCC)**, then diagnostic immunohistochemistry need not be undertaken. Note this should normally represent 50–60% of cases unless there is a question regarding the primary site.

c. If the sample is **a non-small cell lung carcinoma (NSCLC)** and shows no morphological evidence of ADC or SQCC, then a panel of, **at least one but no more than two***, ADC-specific and SQCC-specific markers should routinely be used on the unstained sections. Double staining, if available, can save tissue.

d. TTF1 is generally the best single marker for ADC. It provides the added value of being able to confirm a primary lung origin in 75-85% of lung ADCs. One of DPAS, mucicarmine or Napsin A can be used as a second marker for ADC.

e. P40 or p63 are reliable markers for SQCC.

f. The proportion of NSCLC reported as not otherwise specified (NSCLC-not otherwise specified [NOS]) should be around 10% at this point and no more than 15%.

g. If the tissue is morphologically a small cell carcinoma, this can be confirmed by a panel of MNF116, neuroendocrine markers (synaptophysin, CD56, chromogranin) and TTF-1 using the unstained sections. Use of NSE is not recommended.

h. If there is no evidence of tumour on initial sectioning, then further sectioning should be undertaken

* Royal College of Pathologists recommendation

2 Background

Pathologists should be conscious at all times that over the course of a patient's illness it may be necessary to revisit a sample for additional analysis by staining or molecular methods. Tissue blocks are therefore a precious and irreplaceable asset for patient care. The laboratory is the custodian of this precious asset and must at all times act in the patient's interest to ensure that the material is conserved to the greatest possible extent for ancillary (molecular / PDL1) tests and balance this against the need for other ancillary investigations used in diagnosis. This requires that Pathologists avoid overuse of immunohistochemistry and excessive levelling. This document is intended to support laboratories in appropriate selection of additional stains and tissue conservation in lung cancer.

3 References

1. Standards and datasets for reporting cancers Dataset for histopathological reporting of lung cancer September 2018 The Royal College of Pathologists.

Developed by the Laboratory Services Reform Programme Incorporating The National Clinical Pathology Programme.

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