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ABSTRACT

## **Immunophenotyping of malignancy and MCMII expression in pleural effusion**

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Increasingly, our pathologists are being asked to diagnose malignancy based upon pleural effusion specimens alone. On our histology specimens we routinely use a panel of immunocytochemical markers, with good tumour specificity, to assist the difficult differential diagnosis between a metastatic adenocarcinoma and a malignant mesothelioma- a primary tumour of the pleura. Here we immunophenotype pleural cytology specimens with adenocarcinoma and mesothelioma markers to aid diagnosis. We also use mini-chromosome maintenance protein II (MCMII), an antibody reported to identify atypical cellular proliferation.

In this study we combined the Liqui-prep system and Impress reagents, a novel polymer based detection system (Vector laboratories). Duplicate slides were prepared and stained with a panel of antibodies (Mesothelin, Calretinin, TTF-1, CEA and MCMII). Antigen was then labelled following the manufacturers' protocol and positive expression noted.

We observed positive mesothelin and calretinin expression on malignant mesothelial cells from patients subsequently diagnosed with pleural mesothelioma. Interestingly, strong MCM-II expression was observed in malignant cells and some reactive cells and absent in normal cells.

The combination of Liqui-prep cytology and Impress reagents worked well and gave good results in pleural effusion samples. The accurate immunophenotyping of malignant cells in cytology specimens will greatly aid the diagnostic capacity of our department. The role of MCMII as a marker of increased cellular proliferation is of great interest and is worthy of further investigation.