

Computer-Aided Pathological Diagnosis System

Researchers at the University of South Florida have developed a computer-aided pathological diagnosis (CAPD) method for the classification of cancer cells in a tissue specimen.

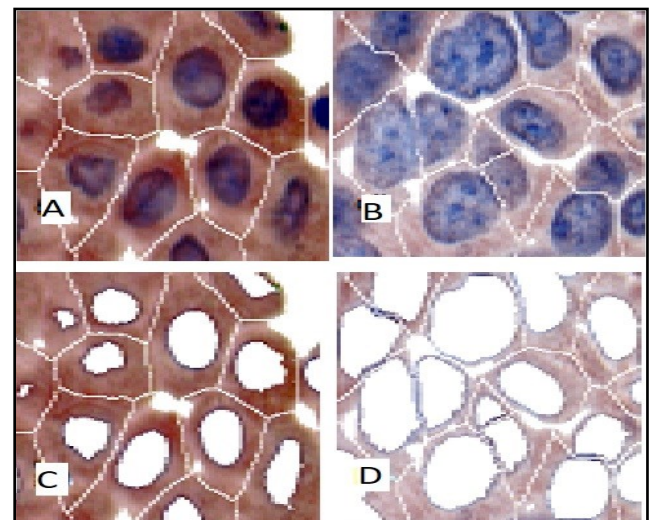
Clinical lung cancer diagnosis depends upon the pathologist's interpretation of morphological features of histological and cytological specimens. These interpretations may be assisted by detection of cancer cell related moleculars to improve sensitivity and specificity of the diagnostic techniques. Molecular methods, including application of cancer-specific markers, may prove to be complementary to cytology diagnosis. Quantitative evaluation of lung carcinomas with cytoplasmic markers has been successfully investigated. Imaging technology provides an objective way for the quantitative analysis of tumor cells morphology. Current imaging practices are mostly manual, time-consuming, and tedious, yielding subjective and imprecise results. Accordingly, there is a need of an improved computer-aided pathological diagnosis system and method for the classification of cancer cells in a tissue specimen that overcomes the deficiencies of the previous systems and methods.

Researchers at USF have developed a computer-aided pathological diagnosis (CAPD) method for the classification of cancer cells in a tissue specimen based on a digital cellular image of the tissue specimen. The CAPD system offers speed and accuracy as well as an objective analysis for improved cytology and pathology evaluations. The new CAPD system features an advanced strategy and multi-resolution techniques with modules that adapt detection parameters based on the image content requirements. The system provides high quality images and minimizes the rate of false-positive and false-negative diagnosis.

ADVANTAGES:

- Highly accurate and objective results
- Computer-Aided
- Multi-resolution technology
- High image quality

Computer-Aided Pathological Diagnosis System for Classification of Cancer Cells



*Cell Segmentation Result of Normal Cell Image (A) & Cancer Cell Image (B)
Segmented Cytoplasm Tissues of Normal Cell Image (C) & Cancer Cell Image (D)*

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