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# Differential expression of proteins in lung cancer using difference in gel electrophoresis (DIGE)

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Lung cancer remains the leading cause of cancer-related mortality worldwide. Early detection of lung cancer is problematic due to the lack of a marker with high diagnosis sensitivity and specificity. The purpose of this study was to develop techniques to identify the differential expression protein profiles between tumor and tumor-free of lung cancer tissues. 2-dimensional differential in-gel electrophoresis (2D-DIGE) and matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF-MS) was used to analyze four samples of lung cancer tissue (3 replicates each). From optimized 2DE image, A total of 2561 spots were detected and 427 spots of these were differentially expressed ($p<0.01$). 40 spots were subjected to mass spectrometry including overexpressed proteins and underexpressed proteins. Some proteins were the products of oncogenes and others were involved in the regulation of cell cycle and signal transduction such as Annexin III, Selenium binding protein. These data are valuable for mass identification of differentially expressed proteins involved in lung carcinogenesis, establishing human lung cancer proteome database and screening molecular marker to further study human lung cancer. Using the DIGE approach, we were able to find many proteins that were expressed differently due to the disease state (tumor and tumor-free).

## Biography

Dr. Masri has completed his Ph.D at the age of 29 years from Cleveland State University, Ohio and postdoctoral studies from Cleveland Clinic, Cancer biology Department. He is an Associate Professor of Biochemistry and Chairman of Biochemistry Department at the faculty of pharmacy, university of kalamoon, Syria. He has published more than 10 papers in reputed journals and received several research awards.

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