



## Separation and identification of *Musa acuminata* Colla (banana) leaf proteins by two-dimensional gel electrophoresis and mass spectrometry

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**ABSTRACT.** To establish a proteomic reference map of *Musa acuminata* Colla (banana) leaf, we separated and identified leaf proteins using two-dimensional polyacrylamide gel electrophoresis (2D-PAGE) and mass spectrometry (MS). Tryptic digests of 44 spots were subjected to peptide mass fingerprinting (PMF) by matrix-assisted laser desorption/ionization time-of-flight (MALDI-TOF) MS. Three spots that were not identified by MALDI-TOF MS analysis were identified by searching against the NCBI nr, SwissProt, and expressed sequence tag (EST) databases. We identified 41 unique proteins. The majority of the identified leaf proteins were found to be involved in energy metabolism. The results indicate that 2D-PAGE is a sensitive and powerful technique for the separation and identification of *Musa* leaf proteins. A summary of the identified proteins and their putative

functions is discussed.

**Key words:** *Musa acuminata* Colla; Proteomics; Two-dimensional gel electrophoresis; MALDI-TOF MS