Search for the tumor-related proteins of transition cell carcinoma in Taiwan by proteomic analysis

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摘要

Abstract

To better understand the carcinogenesis of bladder cancer in Taiwan, we utilized the proteomic approach to search for potential biomarkers of transitional cell carcinoma (TCC). Analysis by 2-DE and MS/MS indicated that seven proteins are down-regulated and three proteins up-regulated in grade III samples as compared with those of grade II. Of these deregulated proteins, fatty acid binding proteins, annexin V, heat-shock protein 27, and lactate dehydrogenase have been shown to be associated with bladder cancer. Our studies also found altered expression of a group of proteins that have not been documented previously in bladder cancer, including annexin I, 15-hydroxyprostaglandin dehydrogenase, galectin-1, lysophospholipase and mitochondrial short-chain enoyl-coenzyme A hydratase 1 precursor. These results illustrate a pattern of differential protein expression between low- and high-grade tumors and it may be utilized as the molecular fingerprinting of a subset of bladder cancers. In addition, the present study provides a valuable resource in the study of pathological mechanisms in cancers of urothelial origin. The immunohistochemical staining of grade II and III TCC samples with antiserum to annexin I protein was utilized to confirm that the annexin I protein is up-regulated in grade III TCC