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Low level of PDZ domain containing 1 (PDZK1) predicts poor clinical outcome in patients with clear cell renal cell carcinoma

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Clear cell renal cell carcinoma (ccRCC) is the most lethal neoplasm of the urologic system. Clinical therapeutic effect varies greatly between individual ccRCC patients, so there is an urgent need to develop prognostic molecular biomarkers to help clinicians identify patients in need of early aggressive management. In this study, samples from primary ccRCC tumor and their corresponding non-tumor adjacent tissues (n=18) were analyzed by quantitative proteomic assay. Proteins downregulated in tumors were studied by GO and KEGG pathways enrichment analyses. Six proteins were found both downregulated and annotated with cell proliferation in ccRCC patients. Of these proteins, PDZK1 and FABP1 were also involved in the lipid metabolism pathway. The downregulation of PDZK1 was further validated in TCGA_KIRC dataset (n=532) and independent set (n=202). PDZK1 could discriminate recurrence, metastasis and prognosis between ccRCC patients. Low expressions of PDZK1 in both mRNA and protein were associated with reduced overall survival (OS) and disease–free survival (DFS) in two independent sets. In univariate and multivariate analyses, PDZK1 was defined as an independent prognostic factor for OS and DFS as well. These findings indicated that low level of PDZK1 could predict poor clinical outcome in patients with ccRCC.

Biography

Junfang Zheng has accumulated rich experience in scientific research and formed rigorous research ideas after years of study. Her main research areas are regulation of tumor related signal transduction pathways and biomarker identification via MS-based proteomics and metabolomics. She has a passion for scientific research and has a deep knowledge of oncology. Her research contributes to the progress of oncology research.

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