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Genome-wide CRISPR screen reveals a druggable target of sorafenib in hepatocellular carcinoma

HCC is the most common reasons of cancer related death, due to its resistance to chemotherapy. Sorafenib is currently the only approved systemic drug for patients with advanced HCC. Unfortunately, sorafenib treatment allows only the increase of patients' survival in a few months, new therapeutic targets are urgently needed. Scientists establish CRISPR/Cas9 system as a powerful tool for systematic genetic analysis in mammalian. At present, no clearly predictive biomarkers have been identified to guide sorafenib treatment with advanced hepatocellular carcinoma. Our study demonstrates that CRISPR/Cas9-mediated genome editing in combination with next-generation sequencing (NGS) as a powerful tool to find biomarkers of sorafenib to guide treatment. Our date confirmed *SGOL1* are sorafenib druggable target gene, and a strong expression of *SGOL1* is correlated with a lower overall survival rate of HCC patients after hepatectomy. To our knowledge, this study is the first time to utilize genome-wide CRISPR screens for identify a predictive biomarker that can be used to select patients who are most likely to benefit from sorafenib treatment.

Biography

Weijian Sun is a PhD holder at School of Medicine, Zhejiang University. He is the Associate Chief Physician of the second affiliated hospital and Yuying Children's Hospital of Wenzhou Medical University.

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