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TITLE: Human Liver Cancer stem cells as a potential target for novel drug therapy and drug discovery.

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ABSTRACT BODY: Hepatocellular carcinoma (HCC) is an aggressive tumor with a poor prognosis. Current therapeutic strategies against this disease target mostly rapidly growing differentiated tumor cells. In the present study we have isolated liver cancer stem cells for screening novel drug candidates for the treatment of patients with liver cancer. The metastatic spread of liver cancer cells from the primary tumors to major vital organs, such as lung, colon, brain, and bone, is responsible for the majority of cancer-related deaths. Liver Cancer stem cells are likely to play essential roles in the metastatic spread of primary liver tumors because of their self-renewal capability and their potential to give rise to differentiated progenies that can adapt to different target organ microenvironments. In the present study we have developed a high throughput cell based assay system with human liver cancer stem cells. This assay system has enabled us to identify 300 novel drug candidates for liver cancer patients. The gene expression and protein expression profiles enable one to constructively conclude the novel drugs safety and efficacy. The current cell based assay system enables one to perform novel drug candidates screening with human Liver parental and cancer stem cells simultaneously.

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