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## A GENOMIC MARKER GUIDED THERAPEUTIC ROADMAP FOR THE TREATMENT OF ADVANCED HEPATOCELLULAR CARCINOMA

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The optimal therapeutic strategy to treat advanced hepatocellular carcinoma (HCC) (Barcelona-Clinic Liver Cancer [BCLC] stage C) is still under debate. Despite that clinical use of the approved targeted drug, sorafenib, could significantly improve overall survival for ~2 months in unresectable HCCs, patients benefit the most from sorafenib are mostly in BCLC stage B but not stage C. Furthermore, only 0-3% of sorafenib-treated patients achieved complete response. Systemic or intra-hepatic arterial infusion chemotherapy thus remains a viable option in some treatment guidelines. Recently, we have discovered an SNP marker, GALNT14-rs9679162, which was associated with outcomes of multiple gastrointestinal cancers. Additionally, it was found that three genomic markers, GALNT14-rs9679162, WWOX-rs13338697, and rs6025211, were tightly associated with chemotherapy responses in BCLC stage C HCC patients. By retrospectively analyzing outcomes of 171 real-world BCLC stage C HCC patients, receiving 5-FU, mitoxantrone, and cisplatin combination chemotherapy as the first-line, followed by other therapeutic modalities, we have developed a genomic-marker-guided therapeutic roadmap. In 17/171 (9.9%) patients who had a complete match of the aforementioned

favorable triple-SNP-signature, 6/17 (35.3%) achieved complete response with no detectable viable HCC tissues remained after chemotherapy. Subsequently, the non-complete responders had received various different regimens, including sorafenib, thalidomide, tamoxifen, TS-1, radiotherapy, and FOLFOX. Of them, only sorafenib ( $P=0.001$ ) and thalidomide ( $P=0.015$ ) could significantly prolong overall survival. As such, we recommended the use of triple-SNP-signature as a pre-therapeutic test to identify patients who could benefit the most from chemotherapy, while others should be provided with sorafenib or thalidomide.

### Biography

Chau Ting Yeh obtained his MD Degree at National Taiwan University (Taiwan) and PhD in the Department of Molecular Microbiology and Immunology, University of Southern California (USA). He is the Director of Liver Research Center at the Chang Gung Memorial Hospital, Taiwan, since 2007. His research interests focuses on (i) HBV antiviral drug-related mutants and their oncogenic potential, and (ii) new strategies to apply genomic markers for precision medicine to treat hepatocellular carcinoma. He has published more than 200 papers in SCI indexed journals.

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