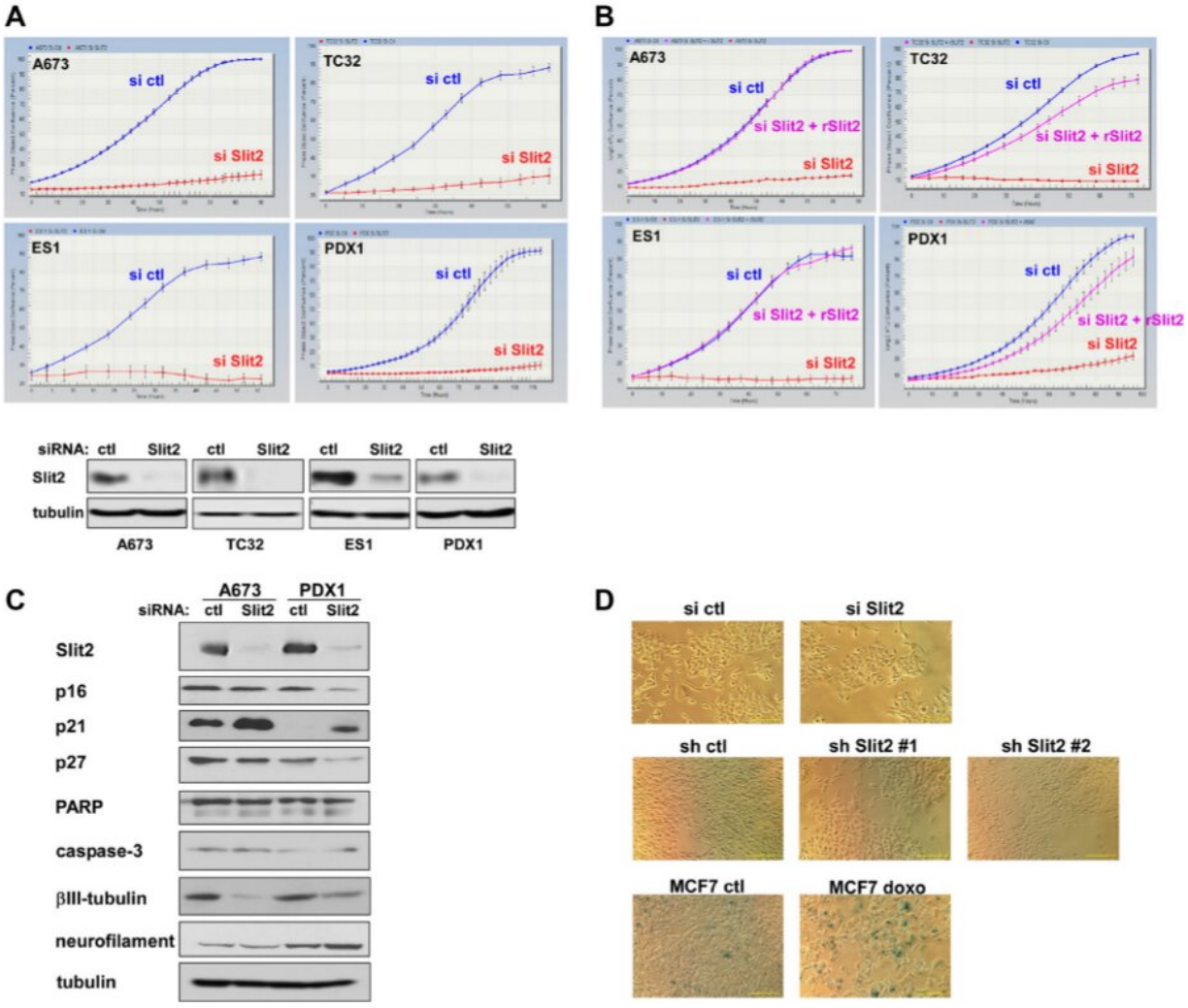
# Pathogenesis to management of hepatocellular carcinoma

January 6 2023




Molecular pathways and targeted therapeutics in hepatocellular carcinoma. Abbreviations: APC: antigen presenting cell; AXL is a cell surface receptor tyrosine kinase, part of the TAM family of kinases; CD: cluster differentiation; CTLA4: cytotoxic T-lymphocyte–assoc+iated antigen 4; ERK: extracellular

signal-regulated kinase; FGFR: Fibroblast growth factor receptors; KIT: tyrosine-protein kinase; MEK: mitogen-activated protein kinase; MET: Mesenchymal Epithelial Transition; PDGFR: platelet-derived growth factor receptor; PD-L1: Programmed cell death ligand 1; RAF: rapidly accelerated fibrosarcoma; Tie2 is a receptor tyrosine kinase; VEGF: Vascular endothelial growth factor. Credit: *Genes & Cancer* (2022). DOI: 10.18632/genesandcancer.226

A new review was published in *Genes & Cancer* on December 13, 2022, entitled, "Pathogenesis to management of hepatocellular carcinoma." In this review, researchers from multiple universities and medical centers across the U.S. discussed hepatocellular carcinoma (HCC)—the most common primary liver cancer, whose incidence continues to rise in many parts of the world due to a concomitant rise in many associated risk factors, such as alcohol use and obesity.

Hepatocellular carcinoma (HCC) is the sixth most common cancer worldwide and the third most common cause of cancer death. Although early-stage HCC can be potentially curable through liver resection, liver-directed therapies, or transplantation, patients usually present with intermediate to advanced disease, which continues to be associated with a poor prognosis. This is because HCC is a cancer with significant complexities, including substantial clinical, histopathologic, and genomic heterogeneity. However, the scientific community has made a major effort to better characterize HCC in those aspects via utilizing tissue sampling and histological classification, whole genome sequencing, and developing viable animal models.

These efforts ultimately aim to develop clinically relevant biomarkers and discover molecular targets for new therapies. For example, until recently, there was only one approved systemic therapy for advanced or metastatic HCC in the form of sorafenib. Through these efforts, several

additional targeted therapies have gained approval in the United States, although much progress remains to be desired.

**More information:** Ben L. Da et al, Pathogenesis to management of hepatocellular carcinoma, *Genes & Cancer* (2022). DOI: 10.18632/genesandcancer.226