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Research Focus

We have developed a novel liver cancer model in rodents by combination of diethyl nitrosamine (DEN) and 2-acetyl amino fluorine (2-AAF). This model avoids the need of widely used procedure of partial hepatectomy which is very painful and causes high mortality. High throughput and advanced techniques were used for the accomplishment of this project. Further, by employing proteomic and bioinformatics tools, we identified that complement C3, apolipoprotein A-I precursor and transthyretin precursor have potential as early biomarkers for liver cancer. This observation was subsequently validated in human sera samples also. We have Patented one of the novel protein as "A Novel Biomarker for Detection of Hepatocellular Carcinoma (**Patent no: 424/Del/2013**)". In Dr. Jaggi's lab, we are investigating the anticancer and chemo-sensitizing activity of natural/derived bioactive agents. We have shown the potential anticancer effects of novel analogue of Cucurbitacin D in HPV16 positive cervical cancer cells *in vitro* and *in vivo* via inhibiting key oncogenic signaling pathways and inducing tumor suppressor miRNAs. In addition, we have studied the anti-tumor effects of ormeloxifene against prostate cancer using cell lines and preclinical mouse models. Ormeloxifene efficiently targets β -catenin and EMT-related signaling pathways to repress prostate tumor growth and metastatic phenotypes.