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## Professor Shu-Chu Shiesh

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There are several aspects to the research in my laboratory. The primary thrust of the research has been in understanding the molecular mechanism of hepatobiliary diseases with the ultimate aim of developing strategies for treatment and prevention. We have studied the role of oxidative stress on the biliary disease, and initiated a study using a metabonomic approach for targeting. In addition to the disease targeting studies, we are investigating the aptamer-based biosensing devices. We have developed SELEX-chip and aimed to determine the sensitivity and selectivity of the artificial antibody on the target molecule and compare the performance characteristics with current assays.

### Education

M.S., University of California, San Francisco, USA

### Research

#### Selected publications:

Shiesh SC, Chen CY, Lin XZ, Liu ZA, Tsao HC. 2000. Melatonin prevents pigment gallstone formation induced by bile duct ligation in guinea pigs. *Hepatology* 2000;32:455-460.

Chen CY, Shiesh SC\*, Wu SJ. Rapid detection of K-ras gene mutation in bile by peptide nucleic acid-mediated PCR clamping and melting curve analysis- comparison with RFLP method. *Clin Chem* 2004;50:481-489

Shiesh SC\*, Chou TC, Lin XZ, Kao PC. An In-house ultra-sensitivity immunochemiluminometric assay for the determination of C-reactive protein. *J Immunol Methods* 2006;311:87-95

Chuang CC, Shiesh SC, Chi CH. Serum total antioxidant capacity reflects severity of illness in patients with severe sepsis. *Crit Care* 2006;10:R36

Chen CY, Tsai WL, Wu HC, Syu MJ, Wu CC, Shiesh SC\*. Diagnostic Role of Biliary Pancreatic Elastase for Cholangiocarcinoma in Patients with Cholestasis. *Clin Chim Acta* 2008; 390:82-89

Yang YN, Lin HI, Wang JH, Shiesh SC\*, Lee GB\*. An integrated microfluidic system for C-reactive protein measurement. *Biosensors & Bioelectronics* 2009; 24:3091-3096

Shiesh SC\*, Wiedmeyer HM, Kao JT, Vasikaran SD, Lopez JB. Proficiency Testing of HbA1c: a 4-year experience in Taiwan and the Asian Pacific Region. *Clin Chem* 2009;55:1876-1880

Huang CJ, Lin HI, Shiesh SC\*, Lee GB\*. Integrated Microfluidic System for Rapid Screening of CRP Aptamers Utilizing Systematic Evolution of Ligands by Exponential Enrichment (SELEX). *Biosensors & Bioelectronics* 2010;25:1761-1766

Lin JT, Hsiao KJ, Chen CY, Wu CC, Lin SJ, Chou YY, Shiesh SC\*. High Resolution Melting Analysis for the Detection of SLC25A13 Gene Mutations in Taiwan. *Clin Chim Acta* 2011;412:460-465