



Department of Medical Laboratory Science and Biotechnology,
College of Medicine, National Cheng Kung University
Tainan, 70101, Taiwan
TEL:886-6-2353535-5781 FAX:886-6-2363956

Professor Shu-Chu Shiesh

E-mail: hsieh@mail.ncku.edu.tw



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

Yang YN, Lin HI, Wang JH, Shiesh SC*, Lee GB*. An integrated microfluidic system for C-reactive protein measurement. *Biosens Bioelectron* 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 SELEX.. *Biosens Bioelectron* 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

Lin HI, Wu CC, Yang CH, Chang KW, Lee GB*, Shiesh SC*. Selection of aptamers specific for glycosylated hemoglobin and total hemoglobin using on-chip SELEX. *Lab Chip* 2015;15:486-494

Li JL, Chang KW, Wang CH, Yang CH, Shiesh SC*, and Lee GB*. On-chip, aptamer-based sandwich assay for detection of glycosylated hemoglobins via magnetic beads. *Biosens Bioelectron* 2016; 79:887-893.

Sinha A, Gopinathan P, Chung YD, Lin HY, Li KH, Ma HP, Huang PC, Shiesh SC*, Lee GB*. An integrated microfluidic platform to perform uninterrupted SELEX cycles to screen affinity reagents specific to cardiovascular biomarkers. *Biosens Bioelectron* 2018;122:104-112.