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My research focuses on mechanisms of antimicrobial resistance and bacterial pathogenesis in several important microorganisms.

For antimicrobial resistance, I have collaborated with Dr. Jing-Jou Yan, a pathologist at NCKU, with an emphasis on carbapenem-resistance and fluoroquinolone resistance in Enterobacteriaceae.

For bacterial pathogenesis, I have collaborated with Dr. Bor-sheng Sheu, a gastroenterologist at NCKU, with an emphasis on the pathogenesis of *Helicobacter pylori*. We found that all the *H. pylori* isolates in Taiwan had a positive babA2 genotype and patients who expressed

Lewis b had a higher *H. pylori* density than those who did not express Lewis b. However, for the patients without gastric Lewis b expression, *H. pylori* density was positively correlated with Lewis x and Lea expression. In addition to *H. pylori*, I have studied group A streptococcus (GAS) for many years. We found that streptococcal erythrogenic toxin B (SpeB) is associated with invasive group A streptococcal disease. We also demonstrated that SpeB not only enhances GAS invasion but also enhances apoptosis in U-937 and A549 cells. Furthermore, an animal study demonstrated SpeB is a very important virulence factor. Currently, the GAS project has been organized into a team. There are many PIs involved, which include a physician, cell biologist, protein chemist, immunologist, and microbiologist.

Education

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| 1985-1989 | Ph.D., Department of Microbiology & Immunology, Temple University |
| 1983-1985 | M.S., Department of Microbiology, Thomas Jefferson University |
| 1981-1983 | B.S., Department of Medical Technology, Thomas Jefferson University |