



Yu-Chieh Liao, PhD

Associate Investigator

+886-37-246166 ext. 36178

jade@nhri.org.tw

Education

- 2005
Ph.D. in Chemical Engineering,
National Cheng Kung University, Taiwan
- 1999
B.S. in Chemical Engineering,
National Cheng Kung University, Taiwan

Professional Experiences

- 2018/1-present
Associate Investigator, Institute of Population Health Sciences,
National Health Research Institutes, Taiwan
- 2011/7-2017/12
Assistant Investigator, Institute of Population Health Sciences,
National Health Research Institutes, Taiwan
- 2010/4-2010/8
Visiting research scholar, Department of Bioengineering, University of
California, San Diego, CA, USA
- 2009/1/2009/6
Visiting research scholar, Department of Bioengineering, University of
California, San Diego, CA, USA
- 2005/8-2011/7
Postdoctoral Fellow, Institute of Population Health Sciences, National
Health Research Institutes, Taiwan

Research Interests

Bioinformatics, Infectious Diseases, Systems Biology

Research Activities & Accomplishment

National Health Research Institutes-Institutional Repository:

<http://211.76.174.198/handle/3990099045/5773>

Selected Publications

- Yu- Ping Hong, You-Wun Wang, I-Hsiu Huang, **Yu-Chieh Liao**, Hung-Chih Kuo, Yen-Yi Liu, Yueh-Hua Tu, Bo-Han Chen, Ying-Shu Liao, Chien-Shun Chiou*, **Genetic Relationships among Multidrug-Resistant Salmonella enterica Serovar Typhimurium Strains from Humans and Animals**. *Antimicrobial Agents and Chemotherapy* **62**, e00213-18 (2018). Impact factor: 4.255
- Izumi Mashima, **Yu-Chieh Liao**, Hiroshi Miyakawa, Citra F. Theodorea, Boonyanit Thawboon, Srosiri Thaweboon, Frank A. Scannapieco, Futoshi Nakazawa*, **Veillonella infantium sp. nov., an anaerobic, Gram-stain-negative coccus isolated from tongue biofilm of a Thai child**. *International Journal of Systematic and Evolutionary Microbiology* **68**,

1101-1106 (2018). Impact factor: 1.932

- Shih-Ying Huang, Jia-Ru Chang, **Yu-Chieh Liao**, Horng-Yunn Dou*, Min-Chieh Chuang*, **Simultaneous detections of genetic fragment and single nucleotide mutation with a three-tiered output for tuberculosis diagnosis**. *Analytica Chimica Acta* **1007**, 1-9 (2018). Impact factor: 5.123
- Izumi Mashima*, **Yu-Chieh Liao**, Amarpreet Sabharwal, Elaine M. Haase, Futoshi Nakazawa, Frank A. Scannapieco, **Draft Genome Sequences of Four Strains of Recently Established Novel Veillonella Species Isolated from Human Oral Cavities**. *Genome announcements* **6**, (2018).
- A. Sczyrba*, P. Hofmann, P. Belmann, D. Koslicki, S. Janssen, J. Droge, I. Gregor, S. Majda, J. Fiedler, E. Dahms, A. Bremges, A. Fritz, R. Garrido-Oter, T. S. Jorgensen, N. Shapiro, P. D. Blood, A. Gurevich, Y. Bai, D. Turaev, M. Z. DeMaere, R. Chikhi, N. Nagarajan, C. Quince, F. Meyer, M. Balvociute, L. H. Hansen, S. J. Sorensen, B. K. H. Chia, B. Denis, J. L. Froula, Z. Wang, R. Egan, D. Don Kang, J. J. Cook, C. Deltel, M. Beckstette, C. Lemaitre, P. Peterlongo, G. Rizk, D. Lavenier, Y. W. Wu, S. W. Singer, C. Jain, M. Strous, H. Klingenberg, P. Meinicke, M. D. Barton, T. Lingner, H. H. Lin, **Yu-Chieh Liao**, G. G. Z. Silva, D. A. Cuevas, R. A. Edwards, S. Saha, V. C. Piro, B. Y. Renard, M. Pop, H. P. Klenk, M. Goker, N. C. Kyrpides, T. Woyke, J. A. Vorholt, P. Schulze-Lefert, E. M. Rubin, A. E. Darling, T. Rattei, A. C. McHardy*, **Critical Assessment of Metagenome Interpretation-a benchmark of metagenomics software**. *Nature Methods* **14**, 1063-1071 (2017). Impact factor: 26.919
- Hsin-Hung Lin, **Yu-Chieh Liao***, **drVM: a new tool for efficient genome assembly of known eukaryotic viruses from metagenomes**. *GigaScience* **6**, 1-10 (2017). Impact factor: 7.267
- Ola Kamar, Sin-Cih Sun, Chieh-Hua Lin, Wan-Yu Chung, Min-Shi Lee, **Yu-Chieh Liao***, Dmitry M. Kolpashchikov*, Min-Chieh Chuang*, **A mutation-resistant deoxyribozyme OR gate for highly selective detection of viral nucleic acids**. *Chemical communications* **53**, 10592-10595 (2017). Impact factor: 6.290
- Elaine M. Haase*, Yurong Kou, Amarpreet Sabharwal, **Yu-Chieh Liao**, Tianying Lan, Charlotte Lindqvist, Frank A. Scannapieco, **Comparative genomics and evolution of the amylase-binding proteins of oral streptococci**. *BMC Microbiology* **17**, 94 (2017). Impact factor: 2.829
- Jhen-Wei Ruan, Sarah Statt, Chih-Ting Huang, Yi-Ting Tsai, Cheng-Chin Kuo, Hong-Lin Chan, **Yu-Chieh Liao**, Tse-Hua Tan, Cheng-Yuan Kao*, **Dual-specificity phosphatase 6 deficiency regulates gut microbiome**

and transcriptome response against diet-induced obesity in mice. *Nature Microbiology* **2**, 16220 (2016). Impact factor: 14.174

- Hsin-Hung Lin and **Yu-Chieh Liao***, **Accurate binning of metagenomic contigs via automated clustering sequences using information of genomic signatures and marker genes.** *Scientific Reports* **6**, 24175 (2016). Impact factor: 4.259
- Hsin-Hung Lin and **Yu-Chieh Liao***, **Evaluation and Validation of Assembling Corrected PacBio Long Reads for Microbial Genome Completion via Hybrid Approaches.** *PLoS One*, **10**, e0144305 (2015). Impact factor: 3.057
- **Yu-Chieh Liao**, Tze-Tze Liu, Jia-Ru Chang, Yih-Yuan Chen, Hsin-Hung Lin, Chih-Hao Hsu, Ching-Yen Lin, Ying-Chih Lo, Horng-Yunn Dou*, **Draft Genome Sequences of Mycobacterium tuberculosis Clinical Strain W06, a prevalent Beijing Genotype isolated in Taiwan.** *Genome Announcements*, **3**(6):e01460-15. (2015)
- Amarpreet Sabharwal, **Yu-Chieh Liao**, Hsin-Hung Lin, Elaine M. Haase and Frank A. Scannapieco*, **Draft genome sequences of 18 oral streptococcus strains that encode amylase-binding proteins,** *Genome Announcements*, **3** (2015)
- **Yu-Chieh Liao***, Hsin-Hung Lin, Amarpreet Sabharwal, Elaine M. Haase and Frank A. Scannapieco, **MyPro: A seamless pipeline for automated prokaryotic genome assembly and annotation,** *Journal of Microbiological Methods*, **113** (2015), 72-74. Impact factor: 2.096
- Chun-Ching Lee, **Yu-Chieh Liao**, Yu-Hsuan Lai, Chang-Chun Lee, and Min-Chieh Chuang*, **Recognition of dual targets by molecular beacon-based sensor: subtyping of influenza A virus,** *Analytical Chemistry*, **87**, 5410-5416 (2015). Impact factor: 5.886
- **Yu-Chieh Liao***, Shu-Hung Lin and Hsin-Hung Lin, **Completing bacterial genome assemblies: strategy and performance comparisons,** *Scientific Reports*, **5** (2015). Impact factor: 5.228
- **Yu-Chieh Liao**, Yih-Yuan Chen, Hsin-Hung Lin, Jia-Ru Chang, Ih-Jen Su, Tsi-Shu Huang, Horng-Yunn Dou*, **Draft genome sequences of the Mycobacterium tuberculosis clinical strains A2 and A4, isolated from a relapse patient in Taiwan.** *Genome Announcements*, **2** (2014).
- Feng-Chi Chen*, **Yu-Chieh Liao**, Jei-Mao Huang, Chieh-Hua Lin, Yih-Yuan Chen, Horng-Yunn Dou, Chao A. Hsiung*, **Pros and cons of the Tuberculosis drugome approach - an empirical analysis,** *PLoS One*, **9** (2014), e100829. Impact factor: 3.234

- **Yu-Chieh Liao**, Yih-Yuan Chen, Hsin-Hung Lin, Jia-Ru Chang, Ih-Jen Su, Tsi-Shu Huang, Horng-Yunn Dou*, **Draft genome sequence of the *Mycobacterium tuberculosis* clinical isolate C2, belonging to the Latin American-Mediterranean family**, *Genome Announcements*, **2** (2014).
- Yu-Hsan Lai, **Yu-Chieh Liao**, Jung-Jung Mu, Tsui-Ming Kuo, Yuan-Hao Hsu, Min-Chieh Chuang*, **Biomolecular logic gate for analysis of the New Delhi metallo-beta-lactamase (NDM)-coding gene with concurrent determination of its drug resistance-encoding fragments**, *Chemical Communications*, **50** (2014), 12018-12021. Impact factor: 6.834
- **Yu-Chieh Liao**, Ying-Hsiang Chen, Hsin-Hung Lin, Jung-Jung Mu, Ho-Sheng Wu, Feng-Chi Chen*, and Chao Agnes Hsiung*, **Draft genome sequence of NDM-1-producing *Klebsiella pneumoniae* clinical isolate 303K**, *Genome Announcements*, **1** (2013).
- **Yu-Chieh Liao***, Hsin-Hung Lin, Chieh-Hua Lin, and Wen-Bin Chung, **Identification of cytotoxic T lymphocyte epitopes on Swine viruses: multi-epitope design for universal T cell vaccine**, *PLoS ONE*, **8** (2013), e84443. Impact factor: 3.534
- **Yu-Chieh Liao***, Hsin-Hung Lin, and Chieh-Hua Lin, **Monitoring the antigenic evolution of human influenza A viruses to understand how and when viruses escape from existing immunity**, *BMC Research Notes*, **6**:227 (2013).
- Shin-Hong Lin and **Yu-Chieh Liao***, **CISA: contig integrator for sequence assembly of bacterial genomes**, *PLoS One*, **8** (2013), e60843. Impact factor: 3.534
- **Yu-Chieh Liao***, Ming-Hsin Tsai, Feng-Chi Chen, Chao A. Hsiung, **GEMSiRV: a software platform for GENome-scale metabolic model simulation, reconstruction and visualization**, *Bioinformatics*, **28** (2012), 1752-1758. Impact factor: 4.621
- **Yu-Chieh Liao**, Julie Chih-Yu Chen, Ming-Hsin Tsai, Yueh-Hsia Tang, Feng-Chi Chen and Chao A. Hsiung*, **MrBac: A web server for draft metabolic network reconstructions for bacteria**, *Bioengineered Bugs*, **2** (2011), 284-287.
- **Yu-Chieh Liao**, Tzu-Wen Huang, Feng-Chi Chen, Pep Charusanti, Jay S.J. Hong, Hwan-You Chang, Shih-Feng Tsai, Bernhard O. Palsson and Chao A. Hsiung*, **An experimentally validated genome-scale metabolic reconstruction of *Klebsiella pneumoniae* MGH 78578, iYL1228**, *Journal of Bacteriology*, **193** (2011), 1710-1717. Impact factor: 2.688

- Ines Thiele, Daniel R. Hyduke, Benjamin Steeb, Guy Fankam, Douglas K. Allen, Susanna Bazzani, Pep Charusanti, Feng-Chi Chen, Ronan M.T. Fleming, Chao A. Hsiung, Sigrid C.J. De Keersmaecker, **Yu-Chieh Liao**, Kathleen Marchal, Monica L. Mo, Emre Ozdemir, Anu Raghunathan, Jennifer L. Reed, Sook-Il Shin, Sara Sigurbjornsdottir, Jonas Steinmann, Suresh Sudarsan, Neil Swainston, Inge M. Thijs, Karsten Zengler, Bernhard O. Palsson, Joshua N. Adkins Dirk Bumann*, **A community effort towards a knowledge-base and mathematical model of the human pathogen *Salmonella Typhimurium* LT2**, *BMC Systems Biology*, 5:8 (2011). Impact factor: 2.85

Patent