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(Associate Professor, Programme Leader of BSc(Hons)MLS)



**QUALIFICATIONS:** PhD (Microbiology), University of Hong Kong, 2004  
MPhil (Pathology), University of Hong Kong, 1994  
BSc (Microbiology), University of New South Wales, 1990  
Registered (Part I) Medical Laboratory Technologist (HK), since 1991

**BRIEF OUTLINE OF EXPERIENCE AND POSTS HELD:**

2012- Associate Professor, Department of Health Technology and Informatics, The Hong Kong Polytechnic University, Hong Kong  
2005-2012 Assistant Professor, Department of Health Technology and Informatics, The Hong Kong Polytechnic University, Hong Kong  
1995-2005 Lecturer, Department of Nursing & Health Sciences, The Hong Kong Polytechnic University, Hong Kong  
1994-1995 Assistant Lecturer, Department of Nursing & Health Sciences, The Hong Kong Polytechnic University, Hong Kong  
1991-1991 Medical Laboratory Technician II, Dept. of Pathology, Queen Mary Hospital, University of Hong Kong  
1985-1989 Medical Laboratory Technician II, Dept. of Microbiology, Queen Mary Hospital, University of Hong Kong

**RESEARCH INTERESTS:**

Microbiota in colorectal cancer  
Biofilm microbiome and ecology of Legionella pneumophila  
Anti-viral responses against dengue virus  
Novel molecular technologies for detection of microbial pathogens

**SERVICES TO PROFESSIONAL & SCIENTIFIC BODIES, CONSULTANCIES:**

Professional body

2013-2018 Chairperson, Examination Committee, Hong Kong Medical Laboratory Technologists Board, Supplementary Medical Professions Council  
2012- 2018 Board Member, Hong Kong Medical Laboratory Technologists Board, Supplementary

Medical Professions Council

Scientific Body

- 2018- President, Hong Kong Society for Molecular Diagnostic Science  
2010- Council Member, Hong Kong Society for Molecular Diagnostic Science

Consultancy

- 2011 Antimicrobial activity of TiO<sub>2</sub>-coated air filter (PI)  
Client: Nano and Advanced Materials Institute Limited (NAMI)  
2009 Consultancy study on the use of Air-cooled Air Conditioning Systems (AACS) and  
Water-cooled Air Conditioning Systems (WACS)  
Client: The Hospital Authority of Hong Kong

AWARDS AND PATENTS:

- 2016 Departmental Teaching Award  
2009 Gold Award in 56th World Exhibition of Innovation, Research and Industrial  
Innovation for the project “Biosensor for Food Safety” (Co-investigator)  
2004 Bronze Award in the Fifth China International Invention Expo held in Shanghai for the  
project “Hospital bed for SARS ward with special air curtain protection for  
medical workers” (Team member)  
2003 Faculty Award for Outstanding Performance/Achievement in Services

REPRESENTATIVE PUBLICATIONS:

- Leung PHM, Subramanya R, Mou Q, Lee KT, Islam F, Gopalan V, Lu CT, Lam AK. (2019) Characterization of Mucosa-Associated Microbiota in Matched Cancer and Non-neoplastic Mucosa From Patients With Colorectal Cancer. *Frontiers in Microbiology*, 10:1317. doi: 10.3389/fmicb.2019.01317.
- Eddie Chi-man Leung, Polly Hang-mei Leung, Raymond Wai-man Lai. (2019) Emergence of Carbapenem-resistant *Acinetobacter baumannii* ST195 Harboring bla<sub>oxa</sub>-23 Isolated from Bacteremia in Hong Kong. *Microbial Drug Resistance*. doi.org/10.1089/mdr.2018.0433.
- Ma L, Zhang Z, Li J, Yang X, Fei B, Leung PH, & Tao X. (2019). A New Antimicrobial Agent: Poly (3-hydroxybutyric acid) Oligomer. *Macromolecular Bioscience*, 19:1800432.
- Qianqian Mou, Polly HM Leung. (2018) Differential expression of virulence genes in *Legionella pneumophila* growing in *Acanthamoeba* and human monocytes. *Virulence*, 9:185-196.
- Cheung KT, Sze DM, Chan KH, Leung PH. (2018) Involvement of caspase-4 in IL-1 beta production and pyroptosis in human macrophages during dengue virus infection. *Immunobiology*, 223:356-364.
- Shuihong Li, Polly H.M. Leung, Xinya Xu, Chunhui Wu. (2017) Homogentisic acid  $\gamma$ -lactone suppresses the virulence factors of *Pseudomonas aeruginosa* by quenching its quorum sensing signal molecules. *Chinese Chemical Letters*, 29:313-316.
- Zhi Li, Xuan Liu, Yi Li, Xiqian Lan, Polly Hangmei Leung, Jiashen Li, Gang Li, MaobinXie, Yanxia Han & Xiaofen Lin. (2016) Composite Membranes of Recombinant Silkworm

Antimicrobial Peptide and Poly (L-lactic Acid) (PLLA) for biomedical application. *Scientific Reports*, 6:31149. DOI: 10.1038/srep31149.

- Zhang J, Sze DM, Yung BY, Tang P, Chen WJ, Chan KH, Leung PH. (2016) Distinct expression of IFIT1/2/3 and other antiviral genes between subsets of dendritic cells induced by DENV2 infection. *Immunology*, 148:363-376. doi: 10.1111/imm.12615.
- Wai-Sing Chan, Bone S. F. Tang, Maureen V. Boost, Chit Chow. Polly H. M. Leung. (2014) Detection of methicillin-resistant *Staphylococcus aureus* using a gold nanoparticle-based colourimetric polymerase chain reaction assay. *Biosensors and Bioelectronics*, 53:105-111.
- Constance LH Lo, Shea Ping Yip and Polly HM Leung. (2013) Seroprevalence of dengue in the general population of Hong Kong. *Tropical Medicine and International Health*, 18:1097-1102.
- Ka Yiu Chan, Wei Wei Ye, Yu Zhang, Li Dan Xiao, Polly H.M. Leung, Yi Lib, Mo Yang. (2013) Ultrasensitive detection of *E. coli* O157:H7 with biofunctional magnetic bead concentration via nanoporous membrane based electrochemical immunosensor. *Biosensors and Bioelectronics*, 41:532-537.
- Sau Hing Chan, Chung Hin Chui, Shun Wan Chan, Stanton Hon Lun Kok, Dessy Chan, Miriam Yuen Tung Tsoi, Polly Hang Mei Leung, Alfred King Yin Lam, Albert Sun Chi Chan, Kim Hung Lam, and Johnny Cheuk On Tang. (2013) Synthesis of 8-Hydroxyquinoline Derivatives as Novel Antitumor Agents. *ACS medicinal chemistry letters*, 4:170 -174.
- Rong-Xiang He, Meng Zhang, Fei Tan, Polly H. M. Leung, Xing-Zhong Zhao, Helen L. W. Chan, Mo Yang, Feng Yan. (2012) Detection of bacteria with organic electrochemical transistors. *Journal of Material Chemistry*, 22:22072-22076.
- Kin Fong Lei, Polly H.M. Leung. (2012) Microelectrode array biosensor for the detection of *Legionella pneumophila*. *Microelectronic Engineering*, 91:174-177.
- Fei Tan, Polly H.M. Leung, Zong-bin Liu, Yu Zhang, Xin Zhang, Li Yi and Mo Yang. (2011) A PDMS microfluidic impedance immunosensor for *E. coli* O157:H7 and *Staphylococcus aureus* detection via antibody- immobilized nanoporous membrane. *Sensors and Actuators B: Chemical*, 159:328-335.
- Leung PH, Chen JH, Wong KH, Chan KC, Lam HY, Cheng VC, Yuen KY, Yam WC. (2010) High prevalence of primary Enfuvirtide (ENF) resistance-associated mutations in HIV-1-infected patients in Hong Kong. *J Clinical Virology*, 47:273-275.
- PHM Leung, M Boost, JTF Lau, A Wong, M Pang, TK Ng, E Tong. (2009) Prevalence and risk factors for *Chlamydia trachomatis* infection among cross-border truck drivers in Hong Kong. *Sexually Transmitted Infections*, 85:27-29.
- Jinjiang Yu, Zongbin Liu, Qingjun Liu, King Tai Yuen, Arthur F.T. Mak, Mo Yang, Polly Leung. (2009) A polyethylene glycol (PEG) microfluidic chip with nanostructures for bacteria rapid patterning and detection. *Sensors and Actuators A: Physical*, 154:288-294.
- Constance LH Lo, Polly HM Leung, Shea Ping Yip, Tony SS To, TK Ng, KM Kam. (2008) Rapid Detection of Pathogenic *Vibrio parahaemolyticus* by a Sensitive and Specific Duplex

PCRHybridization Probes Assay using LightCycler. *Journal of Applied Microbiology*, 105:575-584.

- Kin Cheung, Polly Leung, Yuen-ching Wong, Oi-king To, Yeung-yuet Fong, Mei-wa Chan, Yuenling Yip, Chi-wai Kwok. (2008) Water versus antiseptic periurethral cleansing before catheterization among home care patients: A randomized controlled trial. *American Journal of Infection Control*, 36(5): 375-380.
- Constance L. H. Lo, Shea Ping Yip, Peter K.C. Cheng, Tony S.S. To, Wilina W.L. Lim, Polly H.M. Leung. (2007) One-Step Rapid Reverse Transcription-PCR Assay for Detecting and Typing Dengue Viruses with GC Tail and Induced Fluorescence Resonance Energy Transfer Techniques for Melting Temperature and Color Multiplexing. *Clinical Chemistry*, 53: 594-599.
- Y. Li, P. Leung, L. Yao, Q. W. Song, E. Newton. (2006) Antimicrobial effect of surgical masks coated with functional nanoparticles. *Journal of Hospital Infection*, 62: 58-63.
- Shea Ping Yip, Shing Shun T. To, Polly H.M. Leung, Tsz Shan Cheung, Peter K.C. Cheng, Wilina W.L. Lim. (2005) Use of dual TaqMan probes to increase the sensitivity of one-step quantitative reverse transcription-PCR: Application to the detection of SARS Coronavirus. *Clinical Chemistry*, 51: 1885-1888.
- Polly H Leung, Maureen V Boost, Pauline Cho. (2004) Effect of storage temperatures on the efficacy of contact lens solutions. *Ophthalmic and Physiological Optics*, 24: 218-224.
- PHM Leung, JSM Peiris, WWS Ng, RM Robins-Browne, KA Bettelheim, WC Yam. (2003) A new verotoxin variant isolated from bovine verocytotoxigenic *Escherichia coli*. *Applied and Environmental Microbiology*, 69: 7549-7553.
- Leung PHM, Peiris JSM, Ng WWS, Yam WC. (2002). Polyclonal antibodies to glutathione S-transferase (GST)-verotoxin subunit A fusion proteins neutralise verotoxins. *Clinical and Diagnostic Laboratory Immunology*, 9: 687-692.
- Leung PHM, Yam WC, Ng WWS, Peiris JSM. (2001). The prevalence and characterization of verotoxin-producing *Escherichia coli* isolated from cattle and pigs in an abattoir in Hong Kong. *Epidemiology and Infection*, 126: 173-179.