

## Jerome Pak Lam NG



**Position:** Assistant Professor

**Faculty:** State Key Laboratory of Quality Research in Chinese Medicine, Dr. Neher's Biophysics Laboratory for Innovative Drug Discovery

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Dr. Jerome Ng obtained the Higher Diploma in Applied and Analytical Chemistry (Distinction) from Hong Kong Institute of Vocational Education (Sha Tin) in 2011. In the same year, he was awarded Alistair Harvey Foundation Scholarship to pursue his BSc studies at the University of Sheffield in United Kingdom, where he achieved First Class Honors in Chemistry in 2013. He then continued his doctoral studies in the Department of Chemistry at the University of Hong Kong, focusing on organic synthesis and cycloaddition reactions. Following his graduation in 2019, he worked as a postdoctoral fellow at State Key Laboratory of Quality Research in Chinese Medicine, Macau University of Science and Technology. In January 2024, Dr. Ng assumes the position of Assistant Professor in the same institute.

Dr. Ng's research focuses on Organic and Medicinal Chemistry, with a particular emphasis on the discovery and development of anti-cancer, anti-arthritic and anti-inflammatory agents. This includes structural modifications of natural products derived from traditional Chinese medicine, the synthesis of bio-inspired compounds, exploring structure-activity relationships of derivatives and elucidating their mechanisms of action. He has held two FDCT grants and published more than 30 papers in various SCI journals, including European Journal of Medicinal Chemistry, Bioorganic Chemistry, Organic Chemistry Frontiers and Pharmaceuticals. He has also obtained 1 granted patent. These research efforts have led to the discovery of several novel TCM-derived semi-synthetic derivatives as lead compounds with promising anti-cancer and anti-arthritic activities.

**Teaching:** Fundamental Chemistry-Laboratory, Chinese Medicines Analysis, Instrumental Analysis

**Research Area and Interest:** Organic synthesis; Medicinal Chemistry; Developing anti-cancer and anti-arthritic agents, etc.

### Education

2013 – 2019      PhD in Chemistry, The University of Hong Kong, Hong Kong SAR, China

- 2011 – 2013      BSc in Chemistry (First Class Honours), The University of Sheffield, United Kingdom
- 2009 – 2011      Higher Diploma in Applied and Analytical Chemistry (Distinction), Hong Kong Institute of Vocational Education (Sha Tin), Hong Kong SAR, China

## Work Experience

- Jan 2024 – Present      Assistant Professor, State Key Laboratory of Quality Research in Chinese Medicine, Macau University of Science and Technology
- Oct 2019 – Dec 2023      Postdoctoral Fellow, State Key Laboratory of Quality Research in Chinese Medicine, Macau University of Science and Technology

## Publications (# Co-first author)

1. **Jerome P. L. Ng**<sup>#</sup>, Yun Xiao Yun<sup>#</sup>, Ali Adnan Nasim, Alessandra Gianoncelli, Betty Yuen Kwan Law, Giovanni Ribaud<sup>\*</sup>, Vincent Kam Wai Wong<sup>\*</sup>, Paolo Coghi<sup>\*</sup>. Synthesis, docking studies and biological evaluation of 1*H*-1,2,3-triazole-7-chloroquinoline derivatives against SARS-CoV-2. *Bioorganic Chemistry*, **2023**, 141, 106882, doi: 10.1016/j.bioorg.2023.106882.
2. **Jerome P. L. Ng**<sup>#</sup>, Mohit K. Tiwari<sup>#</sup>, Ali Adnan Nasim, Rui Long Zhang, Yuanqing Qu, Richa Sharma, Betty Yuen Kwan Law, Dharmendra K. Yadav, Sandeep Chaudhary, Paolo Coghi, Vincent Kam Wai Wong. Biological Evaluation in Resistant Cancer Cells and Study of Mechanism of Action of Arylvinyl-1,2,4-Trioxanes. *Pharmaceuticals*, **2022**, 15, 360, doi: 10.3390/ph15030360.
3. **Jerome P. L. Ng**, Yu Han, Li Jun Yang, Lyn-Marie Birkholtz, Dina Coertzen, Ho Ning Wong, Richard K. Haynes<sup>\*</sup>, Paolo Coghi<sup>\*</sup>, Vincent Kam Wai Wong<sup>\*</sup>. Antimalarial and antitumour activities of the steroidal quinone-methide celastrol and its combinations with artemiside, artemisone and methylene blue. *Frontiers in Pharmacology*, **2022**, 13, 988748, doi: 10.3389/fphar.2022.988748.
4. Paolo Coghi<sup>#</sup>, **Jerome P. L. Ng**<sup>#</sup>, Onat Kadioglu, Betty Yuen Kwan Law, Alena Congling Qiu, Mohamed E.M. Saeed, Xi Chen, Chi Kio Ip, Thomas Efferth, Liang Liu, Vincent Kam Wai Wong. Synthesis, computational docking and biological evaluation of celastrol derivatives as dual inhibitors of SERCA and P-glycoprotein in cancer therapy. *European Journal of Medicinal Chemistry*. **2021**, 224, 113676, doi: 10.1016/j.ejmech.2021.113676.
5. **Jerome P. L. Ng**, Paolo Coghi, Betty Yuen Kwan Law, Liang Liu, Vincent Kam Wai Wong. The present and future synthetic strategies of structural modifications of sinomenine. *Organic Chemistry Frontiers*, **2020**, 7, 4089-4107, doi: 10.1039/D0QO00785D.
6. Yu, Xiaoman, Zimo Ren, Paolo Coghi<sup>\*</sup>, **Jerome P. L. Ng**<sup>\*</sup>. Structural Modification of Epigallocatechin-3-gallate to (2*R*,3*R*)-5,7-dimethoxy-2-(3,4,5-trimethoxyphenyl)chroman -3-yl

l-valinate in Four Steps. *Molbank*, **2024**, M1826, doi: 10.3390/M1826.

7. Yoke Mooi Ng<sup>#</sup>, Paolo Coghi<sup>#</sup>, **Jerome P. L. Ng<sup>#</sup>**, Fayaz Ali, Vincent Kam Wai Wong, Carmine Coluccini. Synthesis and Coordination Properties of a Water-Soluble Material by Cross-Linking Low Molecular Weight Polyethyleneimine with Armed Cyclotrimeratrilene. *Polymers*, **2021**, 13, 4133, doi: 10.3390/polym13234133.
8. Jiu Jie Yang, Zhi Li, Lin Na Wang, Bai Xiong Huang, **Jerome P.L. Ng**, Xiong Fei Xu, Yu Ping Wang, David Wei Zhang, Bo Qin, Ding Qi Zhang, Chang-Liu, Wei Dan Luo, Betty Yuen Kwan Law, Hui Miao Wang, Meng Han Liu, Xiao Yun Yun, Joyce Tsz Wai Chan, Wan Yu Wu, Yi Ting Li, Peter Kam Fai Cheung, Man Chon Pou, Kat Sang Ha, Wang Fai Ao Ieong, Chi Hou Leong, Kit Ieng Leong, Chan Wang Lei, Lek Hang Cheang, Vincent Kam Wai Wong. X-chromosome-linked miR-542-5p as a key regulator of sex disparity in rheumatoid arthritis by promoting Th17 differentiation, *Biomarker Research*, Accepted.
9. Wang, M., Qu, L., Du, X., Song, P., **Ng, J.P.L.**, Wong, V.K., Law, B.Y., Fu, X. Natural Products and Derivatives Targeting Metabolic Reprogramming in Colorectal Cancer: A Comprehensive Review. *Metabolites*, **2024**, 14, doi: 10.3390/metabo14090490.
10. Qu, L., Tang, Y., Wu, J., Yun, X., Lo, H.H., Song, L., Wang, X., Wang, H., Zhang, R., Liu, M., Wang, C., **Ng, J.P.L.**, Fu, X., Wong, I.N., Wong, V.K.W., Law, B.Y.K. FBXL16: a new regulator of neuroinflammation and cognition in Alzheimer's disease through the ubiquitination-dependent degradation of amyloid precursor protein. *Biomarker Research*, **2024**, 12, 144, doi: 10.1186/s40364-024-00691-w.
11. Ruihong Chen, Hang Hong Lo, Chenxu Yang, Betty Yuen Kwan Law, Xi Chen, Calista Chi In Lam, Charles Ho, Hio Lam Cheong, Qianzi Li, Chenyu Zhong, **Jerome Pak Lam Ng**, Cheung Kam Fai Peter, Vincent Kam Wai Wong\*. Natural small-molecules reverse Xeroderma Pigmentosum Complementation Group C (XPC) deficient-mediated drug-resistance in renal cell carcinoma. *Phytomedicine*, **2024**, 124, 155310, doi: 10.1016/j.phymed.2023.155310.
12. Yaling Zeng, **Jerome P. L. Ng**, Linna Wang, Xiongfei Xu, Betty Yuen Kwan Law, Guobing Chen, Hang Hong Lo, Lijun Yang, Jiujie Yang, Lei Zhang, Liquan Qu, Xiaoyun Yun, Jing Zhong, Ruihong Chen, Dingqi Zhang, Yuping Wang, Weidan Luo, Congling Qiu, Baixiong Huang, Wenfeng liu, Liang Liu\*, Vincent Kam Wai Wong\*. Mutant p53<sup>R211\*</sup> ameliorates inflammatory arthritis in AIA rats via inhibition of TBK1-IRF3 innate immune response. *Inflammation Research*, **2023**, 72, 2199-2219, doi: 10.1007/s00011-023-01809-w.
13. Linna Wang, Baixiong Huang, Yaling Zeng, Jiujie Yang, Zhi Li, **Jerome P. L. Ng**, Xiongfei Xu1, Lu Su, Xiaoyun Yun1, Liquan Qu, Ruihong Chen, Weidan Luo, Yuping Wang, Chang Chen1, Lijun Yang, Yuanqing Qu, Wei Zhang, Joyce Tsz Wai Chan, Xingxia Wang, Betty Yuen Kwan Law, Simon Wing Fai Mok, Sookja Kim Chung, Vincent Kam Wai Wong. N-Acetylcysteine overcomes epalrestat-mediated increase of toxic 4-hydroxy-2-nonenal and potentiates the anti-arthritic effect of epalrestat in AIA model. *International Journal of*

14. Xingxia Wang, Wei Hu, Liqun Qu, Jian Wang, Anguo Wu, Hang Hong Lo, **Jerome P. L. Ng**, Yong Tang, Xiaoyun Yun, Jianhui Wu, Vincent Kam Wai Wong, Sookja Kim Chung, Linna Wang, Weidan Luo, Xiang Ji, Betty Yuen Kwan Law\*. Tricin promoted ATG-7 dependent autophagic degradation of  $\alpha$ -synuclein and dopamine release for improving cognitive and motor deficits in Parkinson's disease. *Pharmacological Research*, **2023**, 196, 106874, doi: 10.1016/j.phrs.2023.106874.
15. Fang Ren<sup>#</sup>, Ming Tan<sup>#</sup>, **Jerome P. L. Ng**, An Guo Wu, Si Yu Yuan, Hui Zhang, Ji Hua Ren, Sheng Tao Cheng, Juan Zhang, Hang Hong Lo, Vincent Kam Wai Wong\*, Betty Yuen Kwan Law\*, Juan Chen\*. Ciliatocide A, isolated from *Peristrophe japonica*, inhibits HBsAg expression and cccDNA transcription by inducing autophagy. *Antiviral Research*, **2023**, 209, 105482, doi: 10.1016/j.antiviral.2022.105482.
16. Giovanni Ribaud, Xiaoyun Yun, Alberto Ongaroa, Erika Oselladorea, **Jerome P. L. Ng**, Richard K. Haynes, Betty Yuen Kwan Law, Maurizio Memo, Vincent Kam Wai Wong\*, Paolo Coghi\* and Alessandra Gianoncellia\*. Combining computational and experimental evidence on the activity of antimalarial drugs on papain-like protease of SARS-CoV-2: A repurposing study. *Chemical Biology & Drug Design*, **2023**, 101, 809-1018, doi: 10.1111/cbdd.14187.
17. Jiujiu Yang<sup>#</sup>, Zhi Li<sup>#</sup>, Linna Wang, Xiaoyun Yun, Yaling Zeng, **Jerome P. L. Ng**, Kaixi Zhang, Hanghong Lo, Yan Wang, Kaixi Zhang, Betty Yuen Kwan Law, Vincent Kam Wai Wong\*. The role of non-coding RNAs (miRNA and lncRNA) in the clinical management of rheumatoid arthritis. *Pharmacological Research*, **2022**, 186, 106549, doi: 10.1016/j.phrs.2022.106549.
18. Paolo Coghi, Ivan A. Yaremenko, Parichat Prommana, Jia Ning Wu, Rui Long Zhang, **Jerome P. L. Ng**, Yulia Yu Belyakova, Betty Yuen Kwan Law, Peter S. Radulov, Chairat Uthaiipibull\*, Vincent Kam Wai Wong\*, Alexander O. Terent'ev\*. Antimalarial and Anticancer Activity Evaluation of Bridged Ozonides, Aminoperoxides, and Tetraoxanes. *ChemMedChem*, **2022**, 17, e202200328, doi: 10.1002/cmdc.202200328.
19. Paolo Coghi, Xiao Yun Yun, **Jerome P. L. Ng**, Betty Yuan Kwan Law, Maurizio Memo, Alessandra Gianoncelli, Vincent Kam Wai Wong\*, Giovanni Ribaud\*. Exploring SARS-CoV-2 Delta variant spike protein receptor-binding domain (RBD) as a target for tanshinones and antimalarials. *Natural Product Research*, **2022**, 36, 6150-6155, doi: 10.1080/14786419.2022.2057492.
20. Si-Yu Yuan, Hai-Bo Yu, Zhen Yang, Yi-Ping Qin, Ji-Hua Ren, Sheng-Tao Cheng, Fang Ren, Betty Yuen Kwan Law, Vincent Kam Wai Wong, **Jerome P. L. Ng**, Yu-Jiao Zhou, Xin He, Ming Tan, Zhen-Zhen Zhang\*, Juan Chen\*. Pimobendan Inhibits HBV Transcription and Replication by Suppressing HBV Promoters Activity, *Frontiers in Pharmacology*, **2022**, 13, 837115, doi: 10.3389/fphar.2022.837115.

21. Giovanni Ribaud\*, Paolo Coghi\*, Li Jun Yang, **Jerome P. L. Ng**, Andrea Mastinu, Maurizio Memo, Vincent Kam Wai Wong, Alessandra Gianoncelli. Computational and experimental insights on the interaction of artemisinin, dihydroartemisinin and chloroquine with SARS-CoV-2 spike protein receptor-binding domain (RBD). *Natural Product Research*, **2022**, 36, 5358-5363, doi: 10.1080/14786419.2021.1925894.
22. Hui-Miao Wang, Li Qun Qu, **Jerome P. L. Ng**, Wu Zeng, Lu Yu, Lin Lin Song, Vincent Kam Wai Wong, Cheng Lai Xia\*, Betty Yuen Kwan Law\*. Natural Citrus flavanone 5-demethylnobiletin stimulates melanogenesis through the activation of cAMP/CREB pathway in B16F10 cells. *Phytomedicine*, **2022**, 98, 153941, doi: 10.1016/j.phymed.2022.153941.
23. XiaoYun Yun, Yuhan Xie, **Jerome P. L. Ng**, Betty Yuen Kwan Law, Vincent Kam Wai Wong\*, Paolo Coghi\*,  
2-Bromo-3-((1-(7-chloroquinolin-4-yl)-1H-1,2,3-triazol-4-yl)-methoxy)-benzaldehyde. *Molbank*, **2022**, 2022, M1351, doi: 10.3390/M1351.
24. Nuha Mahmoud, Mona Dawood, Qi Huang, **Jerome P. L. Ng**, Fang Ren, Vincent K.W. Wong\*, Thomas Efferth\*. Nimbolide inhibits 2D and 3D prostate cancer cells migration, affects microtubules and angiogenesis and suppresses B-RAF/p.ERK-mediated *in vivo* tumor growth. *Phytomedicine*, **2022**, 94, 153826, doi: 10.1016/j.phymed.2021.153826.
25. Paolo Coghi, Li Jun Yang, **Jerome P. L. Ng**, Richard K. Haynes, Maurizio Memo, Alessandra Gianoncelli, Vincent K. W. Wong\*, Giovanni Ribaud\*. A Drug Repurposing Approach for Antimalarials Interfering with SARS-CoV-2 Spike Protein Receptor Binding Domain (RBD) and Human Angiotensin-Converting Enzyme 2 (ACE2). *Pharmaceuticals*, **2021**, 14, 954, doi:10.3390/ph14100954.
26. Wu Zeng, An Guo Wu, Xiao-Gang Zhou, Imran Khan, Rui Long Zhang, Hang Hong Lo, Li Qun Qu, Lin Lin Song, Xiao Yun Yun, Hui Miao Wang, Juan Chen, **Jerome P. L. Ng**, Fang Ren, Si Yu Yuan, Lu Yu, Yong Tang, Guo Xin Huang, Vincent Kam Wai Wong, Sookja Kim Chung, Simon Wing Fai Mok, Da Lian Qin, Hua Lin Sun, Liang Liu\*, W.L. Wendy Hsiao\*, Betty Yuen Kwan Law\*. Saponins isolated from *Radix polygalae* extend lifespan by modulating complement C3 and gut microbiota. *Pharmacological Research*, **2021**, 170, 105697, doi: 10.1016/j.phrs.2021.105697.
27. Paolo Coghi\*, **Jerome P. L. Ng**, Ali A. Nasim, and Vincent K.W. Wong\*. *N*-[7-Chloro-4-[4-(phoxymethyl)-1H-1,2,3-triazol-1-yl]quinoline]-acetamide. *Molbank*, **2021**, 2021, M1213, doi: 10.3390/M1213.
28. Li Jun Yang, Rui Hong Chen, Sami Hamdoun, Paolo Coghi, **Jerome P. L. Ng**, David Wei Zhang, Xiaoling Guo, Chenglai Xia, Betty Yuen Kwan Law\*, Vincent Kam Wai Wong\*. Corilagin prevents SARS-CoV-2 infection by targeting RBD-ACE2 binding. *Phytomedicine*, **2021**, 87, 153591, doi: 10.1016/j.phymed.2021.153591.

29. Jiayun He, Shuk Mei Lam, **Jerome P. L. Ng**, Wing-Tak Wong, Pauline Chiu\*. Intramolecular (4+3) Cycloadditions of Nitrogen-tethered Epoxy Enosilanes for the Synthesis of Heteropolycycles. *Chinese Chemical Letters*, **2019**, 30, 1523-1526, doi: 10.1016/j.ccllet.2019.04.051.
30. Fan Hu, **Jerome P. L. Ng**, Pauline Chiu\*. Pyrroles as Dienes in (4+3) Cycloadditions. *Synthesis* **2019**, 51, 1073-1086, doi: 10.1055/s-0037-1611660.
31. Elizabeth H. Krenske\*, Sarah Lam, **Jerome P. L. Ng**, Brian Lo, Sze Kui Lam, Pauline Chiu\*, Kendall N. Houk\*. Concerted Ring-Opening and Cycloaddition of Chiral Epoxy Enolsilanes with Dienes. *Angew. Chem. Int. Ed.* **2015**, 54, 7422-7425, doi: 10.1002/anie.201503003.

### Book Chapter Publication

1. JiuJie Yang, **Jerome P. L. Ng**, Kaixi Zhang, Liang Liu and Vincent Kam Wai Wong. "Pathogenic Role of microRNA in Rheumatoid Arthritis" In Rheumatoid Arthritis, edited by Hechmi Toumi. London: *IntechOpen*, **2021**, doi: 10.5772/intechopen.99212.

### Patent

1. Vincent Kam Wai Wong, Liang Liu, Paolo Coghi, Betty Yuen Kwan Law, **Jerome Pak Lam Ng**. Tripterine derivative and preparation method and application thereof. *CN patent*, **2021**, CN111848722B.