Curriculum Vitae

Name: Io Nam Wong
Position: Assistant Professor
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Biography

Dr. Io Nam Wong has been an assistant professor in the Faculty of Medicine at MUST since July 2019. He earned his B.Sc. in Biology from Beijing Normal University in 2006, followed by his M.Sc. in Molecular Medicine (Genetics) at the University of Sheffield where he graduated as the top-ranked student in 2007. He successfully completed his Ph.D. in Medicine at the University of Sheffield in 2012 without any revisions to his thesis. Prior to joining MUST, Dr. Wong held positions as a postdoctoral researcher at both the University of Sheffield and Oxford. He has utilized advanced techniques in protein biochemistry, structural biology, cell biology, and proteomics to discover new DNA replication and repair factors in viruses and humans. These findings were published in well-recognized journals, i.e., *Nucleic Acid Res., eLife, Sci. Rep*.

Currently, Dr. Wong focuses on identifying natural compounds with potential clinical applications in cancer treatment, neurodegenerative diseases, and immunoregulation, while also investigating the underlying mechanisms involved in these disorders. His recent discoveries have been published in journals like *Pharmacol. Res.*, *Biomark Res.*, *Food Chem.:X* and *Int. J. Biol. Macromol*. Most recently, he was appointed as a member of the ethics commission for life sciences and the talent development committee's task force on “Big Health” by the Macao SAR government.

Qualifications

Jun 2012: PhD in Medicine, University of Sheffield (Outright Pass)

Nov 2007: MSc in Molecular Medicine (Genetics) with Distinction (Rank: 1st), University of Sheffield

Jul 2006: BSc in Biology, Beijing Normal University

Positions

Jul 2019 – present: Assistant Professor, Macau University of Science and Technology

Sep 2013 – May 2019: Postdoctoral Research Fellow, University of Oxford

May 2012 – Sep 2013: Postdoctoral Research Fellow, University of Sheffield

Feb 2007 – Aug 2008: Graduate Technician, University of Sheffield

Selected Awards and Honours

2008-2012: Sheffield University Doctoral Fellowship

2006-2007: Macau Postgraduate Scholarship

2002-2006: Macau Tertiary Scholarship

2002: Macau Lotus award

1999: Macau Governor's award

Current Professional and Social Activities

Feb 2025 – present: Member of the ethics commission for life sciences (Macao SAR government)

Jul 2023 – Jun 2025: Member of the task force on "Big Health" of the talent development committee (Macao SAR government)

Mar 2025 – present: ：Member of medical ethics committee (MUST)

Aug 2024 – present: Member of clinical research IRB committee (MUST)

Aug 2019 – present: Member of academic integrity committee (MUST)

Aug 2019 – present: Member of student disciplinary committee (MUST)

Jul 2019 – Aug 2020: Member of interdisciplinary teaching laboratory committee (MUST)

Research Project Grants

1. Mar 2025 – Mar 2028: FDCT, **Wong Io Nam (PI)**, Investigating the mechanism by which sulfated polysaccharide from Caulerpa racemosa modulates DNA damage repair pathways to enhance the treatment efficacy of microsatellite stable (MSS) gastric cancer, Project No. 0133/2024/RIA2, MOP$ 1,700,900
2. Sep 2021 – Sep 2024: FDCT-NSFC, **Wong Io Nam (PI)**, Molecular mechanism

of Caulerpa sulfated polysaccharides on immunometabolic reprogramming by targeting COX-2-induced ferroptosis, Project No. 0069/2021/AFJ, MOP$ 1,600,000

3. Feb 2022 – Aug 2023: FRG, **Wong Io Nam (PI)**, Characterization of potential novel pro- and anti-viral host factors from proximity-dependent biotin idenfication (BioID) screen for SV40 host restriction factor FAM111A, Project No. FRG-22-022-FMD, MOP $100,000
4. Jun 2024 – Jun 2027: FDCT-AKP, Paul Kwong-Hang Tam (PI), Chen Yan (Co-PI), **Wong Io Nam (Member)**, Integrating regenerative medicine, multi-omics and artificial intelligence platforms to improve the target discovery for new diagnosis and precision intervention of chronic liver fibrosis, Project No. 0011/2023/AKP, MOP$ 11,917,000
5. Dec 2022 – Jun 2025: FDCT-ITP, Simon Wing Fai Mok (PI), **Wong Io Nam (Co-PI)**, Vincent Kam Wai Wong (Co-PI), To unveil the modulatory role of p53 aggregates in the progression of Rheumatoid Arthritis, Project No. 0037/2022/ITP, MOP $425,000
6. Apr 2022 – Apr 2025: FDCT, Olivia Monteiro (PI), **Wong Io Nam (Co-PI)**, Brian Tomlinson (Co-I), Christopher Wai Kei Lam (Co-I), Effects of Sinopharm BBIBP-CorV and BioNTech mRNA primary vaccine series with homologous and heterologous boosters against SARS-CoV2 variants of concern in a local population in Macao, Project No. 0106/2021/A, MOP $644,000
7. Sep 2020 – Sep 2023: FDCT-NSFC, Zhang Kang (PI), **Wong Io Nam (Co-PI)**, Simon Wing Fai Mok (Co-I), Induction of conjunctival stem cells into limbal-like stem cells and corneal reconstruction, Project No. 0007/2020/AFJ, MOP$ 2,000,000

Publications

1. Xia X, Wu Y, Chen Z, Du D, Chen X, Zhang R, Yan J, **Wong IN***, Huang R, An edible green algae polysaccharide CRVP from Caulerpa racemosa var. peltate induced apoptosis of liver cancer cells Hepa1-6 by regulating glutathione metabolism. Food Sci Hum Wellness (2025). DOI: 10.26599/FSHW.2024.9250300. (* corresponding author, IF 5.6, SCI Q1)
2. Qu L, Tang Y, Wu J, Yun X, Lo HH, Song L, Wang X, Wang H, Zhang R, Liu M, Wang C, Ng JPL, Fu X, **Wong IN***, Wong VKW, Law BYK, FBXL16: a new regulator of neuroinflammation and cognition in Alzheimer's disease through the ubiquitination-dependent degradation of amyloid precursor protein (2024). Biomark Res., 12, 144. (* corresponding author, IF 9.5, SCI Q1)
3. **Wong IN**, Monteiro O, Baptista-Hon DT, Wang K, Lu W, Sun Z, Nie S, Yin Y,

Leveraging foundation and large language models in medical artificial intelligence (2024). Chin Med J. DOI:10.1097/ CM9.0000000000003302. (first author, IF 7.5, SCI Q1)

4. Zeng J, Liu J, Zhao N, **Wong IN***, Huang R, Caulerpa chemnitzia polysaccharide exerts immunomodulatory activity in macrophages by mediating the succinate/PHD2/HIF-1α/IL-1β pathway, (2024). Int J Biol Macromol., 2024 Oct: 134450. (* corresponding author, IF 7.7, SCI Q1)
5. Qin B, Fu S, Xu X, Yang J, Wang Y, Wang L, Huang B, Zhang J, Wu W, Lu H, Law BYK, Wang N, **Wong IN***, Wong VKW, Far-infrared radiation and its therapeutic parameters: A superior alternative for future regenerative medicine? (2024). Pharmacol Res., 208 : 107349. (* corresponding author, IF 9.1, SCI Q1)
6. Wang XX, Ji X, Lin J, **Wong IN**, Lo HH, Wang J, Qu L, Wong VKW, Chung SK, Law BYK, GPCR-mediated natural products and compounds: Potential therapeutic targets for the treatment of neurological diseases (2024). Pharmacol Res., 208: 107395. (second author, IF 9.1, SCI Q1)
7. Zhang J, Tang Y, Feng S, **Wong IN***, Guo Y, Zhang J, Chen J, Yang D, Zhang K, Yao W, Li R, Bai Y, Ding S, Kuang M, Xiao H, Xu D, Collaborative Teaching and Curricular Integration in Pre-Intern Clinical Placements: Insights from the Greater Bay Area (2024). Adv medical educ pract., 15, 1027-1037. (* first author, IF 1.8, ESCI Q2)
8. Yu H, Xie Y, Lan L, Ma S, Mok SWF, **Wong IN**, Wang Y, Zhong G, Yuan L, Zhao H, Macrae VE, He S, Chen G, Zhu D, Sirt7 protects against vascular calcification via modulation of reactive oxygen species and senescence of vascular smooth muscle cells (2024). Free Radic Biol Med., 223: 30-41. (fourth author, IF 7.1, SCI Q1)
9. Xia X, Wu Y, Chen Z, Du D, Chen X, Zhang R, Yan J, **Wong IN***, Huang R, Colon cancer inhibitory properties of Caulerpa lentillifera polysaccharide and its molecular mechanisms based on three-dimensional cell culture model (2024). Int J Biol Macromol., 2024 Apr 12:131574. (* corresponding author, IF 7.7, SCI Q1)
10. Yang J, Liu J, Kuang W, Lin Y, Zhong S, Kraithong S, Zhang X, **Wong IN***, Huang R. Structural characterization and ferroptosis-related immunomodulatory of a novel exopolysaccharide isolated from marine fungus Aspergillus medius (2024). Int J Biol Macromol., 2024 Mar 6:130703. (* corresponding author, IF 7.7, SCI Q1)
11. Wijesekara T, Huang R, **Wong IN***, Xu B, Insights into immunoregulatory effects of bioactive polysaccharides derived from seaweeds through gut microbiota (2024). Food Biosci., 58: 103800. (* corresponding author, IF 4.8, SCI Q1)
12. Wang HM, Lai HJ, Wu AG, Tong Y, Song LL, Lo HH, **Wong IN**, Wong VKW,

Law BYK. Melanogenic effects of 5-demethylnobiletin on mouse model of chemical-induced vitiligo (2024). J. Funct. Foods, 112: 105962. (seventh author, IF 3.8, SCI Q2)

13. Zeng J, Lin Q, Xu J, Xu B, **Wong IN***, Huang R, Oligosaccharides Preparation from Caulerpa racemosa var peltate with Enzymatic Hydrolysis and Its Mechanism of Immunomodulatory Activity (2024).食品科學. (* corresponding author, IF 2.1, CSCD)
14. Qiu C, Chan JTW, Zhang DW, **Wong IN**, Zeng Y, Law BYK, Mok SWF, Dias IRDSR, Liu W, Liu L, Wong VKW. The potential development of drug-resistance in rheumatoid arthritis patients identified with p53 mutations (2023). Genes Dis., 10(6):2252-2255. (second author, IF 6.9, SCI Q1)
15. Tam HH, Zhu D, Ho SSK, Vong HW, Wong VKW, Mok SWF, **Wong IN**. Potential enhancement of post-stroke angiogenic response by targeting the oligomeric aggregation of p53 protein (2023). Front. Cell. Neurosci., 17:1193362. (corresponding author, IF 4.2, SCI Q2)
16. Wu Y, Liu J, Hao H, Hu L, Zhang X, Luo L, Zeng J, Zhang W, **Wong IN**, Huang R. A new polysaccharide from Caulerpa chemnitzia induces molecular shifts of immunomodulation on macrophages RAW264.7 (2022). Food Chem.:X, 14: 100313. (eighth author, IF 6.5, SCI Q2)
17. Yang L, Liu J, Xia X, **Wong IN**, Chung SK, EI-Seedi HR, Wang B, Hunag R. Sulfated heteropolysaccharides from Undaria pinnatifida: Structural characterization and transcript-metabolite profiling of immunostimulatory effects on RAW264. 7 cells (2022). Food Chem.: X, 13:100264. (third author, IF 6.5, SCI Q1)
18. Xia X, Hao H, Zhang X, **Wong IN**, Chung SK, Chen Z, Xu B, Huang R. Immunomodulatory sulfated polysaccharides from Caulerpa racemosa var. peltata induces metabolic shifts in NF-κB signaling pathway in RAW 264.7 macrophages (2021). Int J Biol Macromol., 182:321-332. (third author, IF 7.7, SCI Q1)
19. Monteiro O, Bhaskar A, **Wong IN**, Ng AKM, Baptista-Hon DT. Teaching bioelectricity and neurophysiology to medical students using LabAXON simulations (2021). Adv Physiol Educ., 45(4):702-708. (third author, IF 1.7, SCI Q2)
20. **Wong IN**, Neo JPS, Oehler J, Schafhauser S, Osman F, Carr SB, Whitby MC (2019). The Fml1-MHF complex suppresses inter-fork strand annealing in fission yeast. eLife, 8, e49784. (first author, IF 6.4, SCI Q1)
21. Morrow CA, Nguyen MO, Fower A, **Wong IN**, Osman F, Bryer C, Whity MC (2017). Inter-fork strand annealing causes genomic deletions during the termination of DNA replication. eLife, 6, e25490. (fourth author, IF 6.4, SCI Q1)

22. **Wong IN**, Sayers JR, Sanders CM (2016). Bacteriophage T5 gene D10 encodes a branch-migration protein. Scientific Reports, 6, 39414. (first author, IF 3.8, SCI Q1)
23. **Wong IN**, Sayers JR, Sanders CM (2013). Characterization of an unusual bipolar helicase encoded by bacteriophage T5. Nucleic Acids Res, 41(8), 4587-600. (first author, IF 16.7, SCI Q1)