

Modi WANG, Ph.D.

Department of Chemistry and Biochemistry, University of South Carolina

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Professional Experience

Instructor, Department of Chemistry and Biochemistry, University of South Carolina, US	2025 – present
Assistant Professor, Department of Chemistry and Biochemistry, Clarkson University, US	2023 – 2025
Visiting Assistant Professor, Department of Chemistry and Biochemistry, Clarkson University, US	2021 – 2023
Postdoctoral Fellow, Department of Chemistry, Purdue University, US	2017 – 2021
Graduate Research, Department of Chemistry, Hong Kong Baptist University, HK	2013 – 2016
Undergraduate Research, Department of Chemistry, Hong Kong Baptist University, HK	2012 – 2013

Education

Ph.D., Department of Chemistry, Hong Kong Baptist University	2013 – 2016
B.S., Department of Chemistry, Hong Kong Baptist University	2009 – 2013
First-class honors	

Scholar profile (Aug 16, 2025)

Total citation	2111
h-index	26
Google scholar	Modi Wang (link)
ORCID	0000-0001-7877-7408
Web of Science ResearcherID	ABG-9659-2021 (link)

Honors and awards

2014/15	University of Shanghai John Yuen Memorial Fellowship
2012/13	C.V. Starr Scholarship Fund
2012/13	Dr. M. H. Mok Scholarship
2011/12	The Chinese Manufacturers' Association of Hong Kong and Donors Scholarship
2011/12	C.V. Starr Scholarship Fund

Peer-Reviewed Publications

<https://www.ncbi.nlm.nih.gov/myncbi/modi.wang.1/bibliography/public/>

43. J. Morse, D. Wang, S. Mei, D. Whitham, C. Hladun, C. C. Darie, H. O. Sintim, **M. Wang**, K. Leung, "Chloride homeostasis regulates cGAS-STING signaling" *bioRxiv*, **2024**, doi.org/10.1101/2024.04.08.588475.
42. K.I. Onyedibe, R. Mohallem, **M. Wang**, U.K. Aryal, H.O. Sintim, "Proteomic and phosphoproteomic analyses of Jurkat T-cell treated with 2' 3' cGAMP reveals various signaling axes impacted by cyclic dinucleotides" *Journal of Proteomics*, **2023**, 279, 104869.
41. **M. Wang**, R. Chaudhuri, W.W.S. Ong, H.O. Sintim, "c-di-GMP induces COX-2 expression in macrophages in a STING-independent manner" *ACS Chemical Biology*, **2021**, 16, 1663.
40. N. Dayal, **M. Wang**, and H. O. Sintim. "HSD1787, a Tetrahydro-3H-Pyrazolo[4,3-f]Quinoline Compound Synthesized via Povarov Reaction, Potently Inhibits Proliferation of Cancer Cell Lines at Nanomolar Concentrations" *ACS Omega*, **2020**, 5, 23799
39. U. K. Aryal, V. H. Kenneth, I. Onyedibe, T. J. P. Sobreira, M. A. Soorshjani, **M. Wang**, U. K. Gürsoy, H. O. Sintim. "Global Proteomic Analyses of STING-Positive and-Negative Macrophages Reveal STING and Non-STING Differentially Regulated Cellular and Molecular Pathways" *Proteomics Clin. Appl.*, **2020**, 14, 1900109.

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38. N. Dayal, C. Opoku-Temeng, H. Mohammad, N. S. Abutaleb, D. Hernandez, K. I. Onyedibe, **M. Wang**, M. Zeller, M. N. Seleem, H. O. Sintim. "Inhibitors of Intracellular Gram-Positive Bacterial Growth Synthesized via Povarov–Doebner Reactions" **ACS Infect. Dis.**, **2019**, 5, 1820.
37. **M. Wang**, N. Naganna, H. O. Sintim. "Identification of nicotinamide aminonaphthyridine compounds as potent RET kinase inhibitors and antitumor activities against RET rearranged lung adenocarcinoma" **Bioorg. Chem.**, **2019**, 90, 103052.
36. **M. Wang**, H. O. Sintim. "Discriminating cyclic from linear nucleotides – CRISPR/Cas- related cyclic hexaadenosine monophosphate as a case study" **Anal. Biochem.**, **2019**, 567, 21.
35. N. Naganna, C. Opoku-Temeng, E. Y. Choi, E. Larocque, E. T. Chang, B. A. Carter-Cooper, **M. Wang**, S. E. Torregrosa-Allen, B. D. Elzey, R. G. Lapidus, H. O. Sintim. "Amino alkynylisoquinoline and alkynyl naphthyridine compounds potently inhibit acute myeloid leukemia proliferation in mice" **EBioMedicine**, **2019**, 40, 231.
34. C. G. Mikek, **M. Wang**, M. Soorashjani, H. O. Sintim. "Interrupting cyclic dinucleotide-cGAS-STING axis and other inflammatory pathways with small molecules" **MedChemComm**, **2019**, 10, 1999.
33. K. I. Onyedibe, **M. Wang**, H. O. Sintim. "ENPP1, an Old Enzyme with New Functions, and Small Molecule Inhibitors—A STING in the Tale of ENPP1" **Molecules**, **2019**, 24, 4192.
32. **M. Wang**, M. Soorashjani, C. Mikek, C. Opoku-Temeng, H. O. Sintim. "Suramin potently inhibits cGAMP synthase, cGAS, in THP1 cells to modulate IFN- β levels" **Future Med. Chem.**, **2018**, 10, 1301.
31. **M. Wang**, W. Wang, C. Liu, J. Liu, T.-S. Kang, C.-H. Leung, D.-L. Ma. "A luminescent switch-on assay for the detection of specific gene deletion using G-quadruplex DNA and silver nanoclusters" **Mater. Chem. Front.**, **2017**, 1, 128.
30. **M. Wang**, Z. Mao, T.-S. Kang, J.-L. Mergny, C.-H. Leung, D.-L. Ma. "Conjugating a groove-binding motif to Ir(III) complex for the enhancement of G-quadruplex probe behavior" **Chem. Sci.**, **2016**, 7, 2516.
29. Z. Mao, **M. Wang**, J. Liu, L.-J. Liu, S. M.-Y. Lee, C.-H. Leung, D.-L. Ma. "A long lifetime switch-on iridium(III) chemosensor for the visualization of cysteine in live zebrafish" **Chem. Commun.**, **2016**, 52, 4450.
28. D.-L. Ma, **M. Wang**, Z. Mao, C. Yang, C.-T. Ng, C.-H. Leung. "Rhodium complexes as therapeutic agents" **Dalton Trans.**, **2016**, 45, 2762.
27. W. Wang, Z. Mao, **M. Wang**, L.-J. Liu, D.W.J. Kwong, C.-H. Leung, D.-L. Ma. "A long lifetime luminescent iridium(III) complex chemosensor for selective switch-on detection of Al³⁺ ions" **Chem. Commun.**, **2016**, 52, 3611.
26. T.-S. Kang, Z. Mao, C.-T. Ng, **M. Wang**, W. Wang, C. Wang, Simon M.-Y. Lee, Y. Wang, C.-H. Leung, D.-L. Ma. "Identification of an Iridium(III)-Based Inhibitor of Tumor Necrosis Factor- α " **J. Med. Chem.**, **2016**, 59, 4026.
25. L. Lu, W. Wang, **M. Wang**, T.-S. Kang, J.-J. Lu, Q.-B. Han, C.-H. Leung, D.-L. Ma. "A luminescent G-quadruplex-selective iridium(III) complex for the label-free detection of lysozyme" **J. Mater. Chem. B**, **2016**, 4, 2407.
24. L. Lu, **M. Wang**, Z. Mao, T.-S. Kang, X.-P. Chen, J.-J. Lu, C.-H. Leung, D.-L. Ma. "A novel dinuclear iridium(III) complex as a G-quadruplex-selective probe for the luminescent switch-on detection of transcription factor HIF-1 α " **Sci. Rep.**, **2016**, 6, 22458.
23. D.-L. Ma, **M. Wang**, C. Liu, X. Miao, T.-S. Kang, C.-H. Leung. "Metal complexes for the detection of disease-related protein biomarkers" **Coord. Chem. Rev.**, **2016**, 324, 90.

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22. **M. Wang**, W. Wang, T.-S. Kang, C.-H. Leung, D.-L. Ma. "Development of an iridium(III) complex as a G-quadruplex probe and its application for the G-quadruplex-based luminescent detection of picomolar insulin" **Anal. Chem.**, **2015**, *88*, 981.
21. **M. Wang**, B. He, C.-H. Leung, J.-L. Mergny, D.-L. Ma. "Label-free luminescent detection of LMP1 gene deletion using an intermolecular G-quadruplex-based switch-on probe" **Biosens. Bioelectron.**, **2015**, *70*, 338.
20. D.-L. Ma, **M. Wang**, B. He, C. Yang, W. Wang, C.-H. Leung. "A luminescent cocaine detection platform using a split G-quadruplex-selective iridium(III) complex and a three-way DNA junction architecture" **ACS Appl. Mater. Interfaces**, **2015**, *7*, 19060.
19. L. Lu, **M. Wang**, L.-J. Liu, C.-H. Leung, D.-L. Ma. "A label-free luminescent switch-on probe for ochratoxin A detection using a G-quadruplex-selective iridium(III) complex" **ACS Appl. Mater. Interfaces**, **2015**, *7*, 8313.
18. L. Lu, **M. Wang**, L.-J. Liu, C.-Y. Wong, C.-H. Leung, D.-L. Ma. "A luminescence switch-on probe for terminal deoxynucleotidyl transferase (TdT) activity detection by using an iridium(III)-based i-motif probe" **Chem. Commun.**, **2015**, *51*, 9953.
17. D.-L. Ma, **M. Wang**, S. Lin, Q.-B. Han, C.-H. Leung. "Recent development of G-quadruplex probes for cellular imaging" **Curr. Top. Med. Chem.**, **2015**, *15*, 1957.
16. D.-L. Ma, Z Zhang, **M. Wang**, L. Lu, H.-J. Zhong, C.-H. Leung. "Recent developments in G-quadruplex probes" **Cell Chemical Biology.**, **2015**, *22*, 812.
15. D.-L. Ma, S. Lin, L. Lu, **M. Wang**, C. Hu, L.-J. Liu, K. Ren, C.-H. Leung. "G-quadruplex-based logic gates for Hg^{II} and Ag^I ions employing a luminescent iridium(III) complex and extension of metal-mediated base pairs by polymerase" **J. Mater. Chem. B**, **2015**, *3*, 4780.
14. Z. Zhong, L.-J. Liu, Z.-Q. Dong, L. Lu, **M. Wang**, C.-H. Leung, D.-L. Ma, Y.-T. Wang. "Structure-based discovery of an immunomodulatory inhibitor of TLR1-TLR2 heterodimerization from a natural product-like database" **Chem. Commun.**, **2015**, *51*, 11178.
13. L. Lu, H.-J. Zhong, **M. Wang**, S.-L. Ho, H.-W. Li, C.-H. Leung, D.-L. Ma. "Inhibition of beta-amyloid fibrillation by luminescent iridium(III) complex probes" **Sci. Rep.**, **2015**, *5*, 14619.
12. L. Lu, L.-J. Liu, W. Chao, H.-J. Zhong, **M. Wang**, X.-P. Chen, J.-J. Lu, R. Li, D.-L. Ma, C.-H. Leung. "Identification of an iridium(III) complex with anti-bacterial and anti-cancer activity" **Sci Rep**, **2015**, *5*, 14544.
11. K.-H. Leung, L.-J. Liu, S. Lin, L. Lu, H.-J. Zhong, D. Susanti, W. Rao, **M. Wang**, W. I. Che, D. S.-H. Chan, C.-H. Leung, P. W. H. Chan, D.-L. Ma. "Discovery of a small-molecule inhibitor of STAT3 by ligand-based pharmacophore screening" **Methods**, **2015**, *71*, 38.
10. D.-L. Ma, **M. Wang**, W. Wang, L. Lu, D. H.-M. Wang, C.-H. Leung. "A label-free oligonucleotide-based "OR" logic gate using an Ir(III) complex as a luminescent switch-on probe" **Sci. Lett. J.**, **2015**, *4*, 180.
9. **M. Wang**, K.-H. Leung, S. Lin, D. S.-H. Chan, C.-H. Leung, D.-L. Ma. "A G-quadruplex-based, label-free, switch-on luminescent detection assay for Ag⁺ ions based on the exonuclease III-mediated digestion of C-Ag⁺-C DNA" **J. Mater. Chem. B**, **2014**, *2*, 6467.
8. **M. Wang**, K.-H. Leung, S. Lin, D. S.-H. Chan, D.W.J. Kwong, C.-H. Leung, D.-L. Ma. "A colorimetric chemosensor for Cu²⁺ ion detection based on an iridium(III) complex" **Sci. Rep.**, **2014**, *4*, 6794.
7. H.-J. Zhong, L.-J. Liu, C.-M. Chong, L. Lu, Z. Ai, **M. Wang**, D. S.-H. Chan, P. W.H. Chan, S. M.-Y Lee, D.-L. Ma, C.-H. Leung. "Discovery of a natural product-like iNOS inhibitor by molecular docking with potential neuroprotective effects *in vivo*." **Plos One**, **2014**, *4*, e92905.

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6. H.-Z. He, **M. Wang**, D. S.-H. Chan, C.-H. Leung, J.-W. Qiu, D.-L. Ma. "A label-free G-quadruplex-based luminescent switch-on assay for the selective detection of histidine" **Methods**, **2013**, 64, 205.
5. H.-Z. He, **M. Wang**, D. S.-H. Chan, C.-H. Leung, X. Lin, J.-M. Lin, D.-L. Ma. "A parallel G-quadruplex-selective luminescent probe for the detection of nanomolar calcium(II) ion" **Methods**, **2013**, 64, 212.
4. K.-H. Leung, L. Lu, **M. Wang**, T.-Y. Mak, D. S.-H. Chan, F.-K. Tang, C.-H. Leung, H.-Y. Kwan, Z. Yu, D.-L. Ma. "A label-free luminescent switch-on assay for ATP using a G-quadruplex-selective iridium(III) complex" **PLoS ONE**, **2013**, 10, e77921.
3. D. S.-H. Chan, W.-C. Fu, **M. Wang**, C.-H. Leung, D.-L. Ma. "A highly selective and non-reaction based chemosensor for the detection of Hg²⁺ ions using a luminescent iridium(III) complex" **PLoS ONE**, **2013**, 8, e60114.
2. H.-Z. He, W.-I. Chan, T.-Y. Mak, L.-J. Liu, **M. Wang**, D. S.-H. Chan, D.-L. Ma, C.-H. Leung. "Detection of 3' → 5' exonuclease activity using a metal-based luminescent switch-on probe" **Methods**, **2013**, 64, 218.
1. C.-H. Leung, H.-Z. He, L.-J. Liu, **M. Wang**, D. S.-H. Chan, D.-L. Ma. "Metal complexes as inhibitors of transcription factor activity" **Coord. Chem. Rev.**, **2013**, 257, 3139.

Book Chapters

2. D.-L. Ma, L.-J. Liu, S. Lin, **M. Wang**, D. S.-H. Chan, C.-H. Leung. "Recent advances in the discovery and development of protein-protein interaction modulators by virtual screening." eBook Series: Frontiers in computational chemistry, Bentham Science Publishers. **2015**, 1, Chap. 4, 121.
1. D.-L. Ma, **M. Wang**, L.-J. Liu, S. Lin, L. Lu, Z. Ai, F.-K. Tang, D. S.-H. Chan, C.-H. Leung. "G-quadruplex DNA for the construction of sensing platforms." eBook Chapter: DNA G-quadruplexes as new anticancer targets. Future Science Ltd. **2015**, July, 230.

Presentation

Mar, 2025	ACS Spring 2025, San Diego
Nov, 2024	"Influence of non-canonical DNA secondary structures on cGAS-STING pathway" – Oral presentation Binghamton University, US
Mar, 2024	"Cyclic Dinucleotide Signaling in Mammalian Cells" – Oral presentation (invited) Science Café – Potsdam, NY
Mar, 2024	"Studying Cyclic Dinucleotide Signaling in Mammalian Cells" – Oral presentation (invited) ACS Spring 2024, New Orleans
Feb, 2024	"c-di-GMP Induces COX-2 Expression in Macrophages in a STING-Independent Manner" David A Walsh '67 Seminar Series – Clarkson University, US
Dec, 2023	"Cyclic Dinucleotide Signaling in Mammalian Cells" – Oral presentation (invited) Biology Seminar – Clarkson University, US
Nov, 2022	"Cyclic Dinucleotide Signaling in Mammalian Cells" – Oral presentation (invited) CAMP Catalyst Discussion, Clarkson University, US
April, 2016	The 23 rd Symposium on Chemistry Postgraduate Research in HK, Hong Kong "Conjugating a groove-binding motif to Ir(III) complex for the enhancement of G-quadruplex probe behavior" – Oral presentation
April, 2015	The 22 nd Symposium on Chemistry Postgraduate Research in HK, Hong Kong
April, 2014	The 21 st Symposium on Chemistry Postgraduate Research in HK, Hong Kong

Teaching experience

Chem Equilibrium & Dynam	Fall 2021–2024
General Chemistry II	Fall 2021–2024
General Chemistry II Laboratory	Fall 2021–2024
Chemistry Laboratory II	Spring 2023
Biochemistry II	Spring 2022–2025
Organic Chemistry Laboratory I	Fall 2021 – Spring 2022

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Manuscript Referee

- *Scientific reports* – Springer Nature
- *Open Chemistry*