Ting-Jen Rachel Cheng (鄭婷仁)

The Genomics Research Center, Academia Sinica
128 Sec 2 Academia Road, Nangang, Taipei 115, Taiwan Email: tingjenc@gate.sinica.edu.tw

SPECIALTIES

Development of target- and cell-based assay platforms for high-throughput screening and activity evaluation

EDUCATION

Ph.D., Life Sciences, *National Tsing Hua University, Taiwan*
B. Eng., Chemical Engineering, *National Tsing Hua University, Taiwan*

PROFESSIONAL EXPERIENCE

Assistant to Associate to Research Specialist 2005-present
Chemical BIology, the Genomics Research Center, Academia Sinica, Taipei, Taiwan

- Supervising high-throughput screening core facility at Academia Sinica
- Developing and conducting HTS assays
- Developing target-based assays for identifying new antibiotics that target bacterial cell wall synthesis
- Developing target- and cell-based assays for influenza virus
- Establishing assay systems for vaccine evaluation
- Developing technologies for high-throughput enzyme evolution
- Establishing expression systems for glycoproteins

Postdoctoral Fellow 2000-2005
Keck Graduate Institute of Applied Life Sciences, Claremont, California, USA

- Developed target-based assays in a high-throughput format to facilitate anti-cancer drug screening
- Developed a model system for the screening of novel HIV protease inhibitor(s)
- Identified novel HIV protease inhibitors by using high-throughput screening of chemical libraries
- Established drug resistance profiles of HIV protease variants using target-based and cell-based systems
- Participated in developing and optimizing an algorithm for the integration of HIV-antiviral drug actions and sequence information of HIV virus strains

Project Manager 1999-2000
Maxigen Biotech Inc., Taipei, Taiwan

- Successfully conducted the technology transfer of collagen extraction and purification for wound healing products
- Coordinated research resources and facilities

PROFESSIONAL AFFILIATION

American Society of Microbiology 2003-present
Society of Lab Automation and Screening 2006-present

PUBLICATIONS

(¶: equal contribution; *: corresponding authors)

1. Lo, J. M.; Kung, C.-C.; Cheng, T.-J. R.; Wong, C.-H.;* Ma, C.* Structure-Based Mechanism and Specificity of Human Galactosyltransferase β3GalT5. *J. Am. Chem. Soc.* **2025**, *147*, 10875-10885. (PMID: 40130308)
2. Chang, Y.-C.; Hsieh, M.-L.; Lee, H.-L.; Hee, S.-W.; Chang, C.-F.; Yen, H.-Y.; Chen, Y.-A.; Chen, Y.-R.; Chou, Y.-W.; Li, F.-A.; Ke ,Y.-Y.; Chen, S.-Y.; Hung, M.-S.; Hung, A.-F.; Huang, J.-Y.; Chiu, C.-H.; Lin, S.-Y.; Shih, S.-F,; Hsu, C.-N.; Hwang, J.-J.; Yeh, T.-K.; Cheng, T.-J. R., Liao, K.-C.; Laio, D.; Lin, S.-W., Chen, T.-Y.; Hu, C.-M.; Vogel, U.; Saar, D.; Kragelund, B. B.; Tsou, L.-K.; Tseng, Y.-H.; Chuang, L.-M.* Identification of PTGR2 inhibitors as a new therapeutic strategy for diabetes and obesity. *EMBO Mol. Med.* **2025**, doi: 10.1038/s44321-025-00216-4. (PMID: 40119175)

3. Tseng, Y.-W.; Yang, T.-J.; Hsu, Y.-L.; Liu, J.-H.; Tseng, Y.-C., Hsu, T.-W., Lu, Y.; Pan, S.-H.;* Cheng, T.-J.R.;* Fang, J.-M.* Dual-targeting compounds possessing enhanced anticancer activity via microtubule disruption and histone deacetylase inhibition. *Eur. J. Med. Chem.* **2024**, *265,* 1106042. (PMID: 38141287) (IF = 6.514, Rank by IF in Chemistry, Medicinal: 5/63, 92.86%)
4. Tseng, Y.-L.; Lu, P.-C.; Lee, C.-C.; He, R.-Y.; Huang, Y.-A.; Tseng, Y.-C.; Cheng, T.-J.R.; Huang, J. J.;* Fang, J.-M. Degradation of neurodegenerative disease-associated TDP-43 aggregates and oligomers via a proteolysis-targeting chimera. *J Biomed Sci.* **2023,** *30,* 27. (PMID: 37101169) (IF = 12.771, Rank by IF in Biochemistry, Genetics and Molecular Biology - Cell Biology: 26/274, 90%)
5. Li, J.; Hsiung, S.-Y.; Kao, M.-R.; Xing, X.; Chang, S.-C.; Wang, D.; Hsieh, P.-Y.; Liang, P.H.; Zhu, Z.; Cheng, T.J.R.; Shie, J.J.; Liou, J.P.; Abbott, D.W.; Kwon, S.W.; Hsieh, Y.S.Y.* Structural compositions and biological activities of cell wall polysaccharides in the rhizome, stem, and leaf of Polygonatum odoratum (Mill.) Druce. *Carbohydr. Res.* **2022,** *521,* 108662. (PMID: 36099721) (IF = 2.975, Rank by IF in Chemistry - Analytical Chemistry: 60/130, 54%)
6. Tseng, K.-Y.; Tzeng, Z.-H.; Cheng, T.-J. R.; Liang, P.-H.;* Hung, S.-C.* Design and synthesis of 1-*O*- and 6'-*C*-modified heparan sulfate trisaccharides as human endo-6-*O*-sulfatase 1 inhibitors. *Frontiers in Chem*. **2022,** *10,* 947475. (PMID: 35910734) (IF = 5.221, Rank by IF in Chemistry, Multidisciplinary: 53/178, 70.51%)
7. Chen, W.-A.; Chen, Y.-H.; Hsieh, C.-Y.; Hung, P.-F.; Chen, C.-W.; Chen, C.-H.; Lin, J.-L,; Cheng, T.-J. R.; Hsu, T.-L.; Wu, Y.-T.; Shen, C.-N.;* Cheng, W.-C.* Harnessing natural-product-inspired combinatorial chemistry and computation-guided synthesis to develop N-glycan modulators as anticancer agents. *Chem. Sci.* **2022,** *13,* 6233-6243. (PMID: 35733906) (IF = 9.825, Rank by IF in Chemistry, Multidisciplinary: 22/178, 87.92%)
8. Chuang, H.-C.; Liu, M.-F.; Wu, H.-Y.; Wu, Y.-T.; Cheng, T.-J. R.; Fang, J.-M.* Photoaffinity labeling of benzophenone-containing salicylanilide compounds to give an insight into the mechanism in disrupting peptidoglycan formation. *Bioorg. Med. Chem.* **2022,** *67,* 116819. (PMID: 35635930) (IF = 3.641, Rank by IF in Chemistry, Medicinal: 29/62, 54.03%)
9. Huang, H.-Y.; Liao, H.-Y.; Chen, X.; Wang, S.-W.; Cheng, C.-W.; Shahed-Al-Mahmud, M.; Liu, Y.-M.; Mohapatra, A.; Chen, T.-H.; Lo, J.-M.; Wu, Y.-M.; Ma, H.-H.; Chang, Y.-H.; Tsai, H.-Y.; Chou, Y.-C.; Hsueh, Y.-P.; Tsai, C.-Y.; Huang, P.-Y.; Chang, S.-Y.; Chao, T.-L.; Kao, H.-C.; Tsai, Y.-M.; Chen, Y.-H.; Wu, C.-Y.; Jan, J.-T.; Cheng, T.-J. R.; Lin, K.-I.;* Ma, C.;* Wong, C.-H.* Vaccination with SARS-CoV-2 pike protein lacking glycan shields elicits enhances protective responses in animal models. *Sci. Transl. Med.* **2022,** *14,* eabm0899. (PMID: 35230146) (IF = 17.992, Rank by IF in Medicine, Research & Experimental: 2/140, 98.93%)
10. Shivatare, S.S.; Cheng, T.-J.R.; Cheng, Y.-Y.; Shivatare, V.S.; Tsai, T.-I.; Chuang, H.-Y.; Wu, C.-Y.; Wong, C.-H.* Immunogenicity evaluation of N-glycans recognized by HIV broadly neutralizing antibodies. *ACS Chem. Biol.* **2021**, *16,* 2016-2025. (PMID: 34649433) (IF = 5.1, Rank by IF in Biochemistry & Molecular Biology: 87/295, 70.68%)
11. Ko, Y.-A.; Yu, Y.-H.; Wu, Y.-F.; Tseng, Y.-C.; Chen, C.-L.; Goh, K.-S.; Liao, H.-Y.; Chen, T.-H.; Cheng, T.-J. R.; Yang, A.-S.; Wong, C.-H.; Ma, C.; Kuo, K.-I.* A non-neutralizing antibody broadly protects against influenza infection by engaging effector cells. *PLoS Pathogens* **2021,** *17,* e1009724. (PMID: 34352041) (IF = 6.823, Rank by IF in Virology: 7/36, 81.94%)
12. Chang, S.-Y.; Huang, K.-Y.; Chao, T.-L.; Kao, H.-C.; Pang, Y.-H.; Lu, L.; Chiu, C.-L.; Huang, H.-C.; Cheng, T.-J. R.; Fang, J.-M.;* Yang, P.-C.* Nanoparticle composite TPNT1 is effective against SARS-CoV-2 and influenza viruses. *Sci. Rep.* **2021,** *11,* 8692. (PMID: 33888738) (IF = 4.379, Rank by IF in Multidisciplinary Sciences: 17/73, 77.4%)
13. Jan, J.-T.; Cheng, T.-J. R.; Juang, Y.-P.; Ma, H.-H.; Wu, Y.-T.; Yang, W.-B.; Cheng, C.-W.; Chen, X.; Chou, T.-H.; Shie, J.-J.; Cheng, W.-C.; Chein, R.-J.; Mao, S.-S.; Liang, P.-H.;* Ma, C.;* Hung, S.-C.;* Wong, C.-H.* Identification of existing pharmaceuticals and herbal medicines as inhibitors of SARS-CoV-2 infection. *Proc. Natl. Acad. Sci. U. S. A.* ***2020,*** *118,* e2021579118**.** (PMID: 33452205) (IF = 11.205, Rank by IF in Multidisciplinary Sciences: 8/73, 89.73%)
14. Liao, H.-Y.; Wang, S.-C.; Ko, Y.-A.; Lin, K.-I.; Ma, C.; Cheng, T.-J. R.; Wong, C.-H.* Chimeric hemagglutinin influenza virus vaccine with monoglycosylation induces cross-strain and cross-subtype protection. *Proc. Natl. Acad. Sci. U. S. A.* **2020,** *117,* 17757-17763. (PMID: 32669430) (IF = 11.205,

Rank by IF in Multidisciplinary Sciences: 8/73, 89.73%)

15. Lin, C.-Y.; Wu, H.-Y.; Hsu, Y.-L.; Cheng, T.-J.R.; Liu, J.-H.; Huang, R.-J.; Hsiao, T.-H.; Wang, C.-J.; Hung, P.-F.; Lan, A.; Pan, S.-H.;* Chein, R.-J.;* Wong, C.-H.; Yang, P.-C. Suppression of drug-resistant non-dmall-cell lung cancer with inhibitors targeting minichromosomal maintenance protein. *J. Med. Chem.* **2020**, *63,* 3172-3187. (PMID: 32125853) (IF = 7.446, Rank by IF in Chemistry, Medicinal: 3/63, 96.03%)
16. Chiu, L.-T.; Sabbavarapu, N. M.; Lin, W.-C.; Fan, C.-Y.; Wu, C.-C.; Cheng, T.-J. R.; Wong, C.-H.;* Hung, S.-C.* A Trisaccharide Sulfate and its Sulfonamide as Effective Substrate and Inhibitor of Human Endo-O-sulfatase-1. *J. Am. Chem. Soc.* **2020,** *142,* 5282-5292. (PMID: 32083852) (IF = 15.419, Rank by IF in Chemistry, Multidisciplinary: 15/179, 91.9%)
17. Wang, W.-F.; Lu, M.-Y. J.; Cheng, T.-J. R.; Tang, Y.-C.; Teng, Y.-C.; Hwa, T.-Y.; Chen, Y.-H.; Li, M.-Y.; Wu, M.-H.; Chuang, P.-C.; Jou, R.; Wong, C.-H.; Li, W.-H.* Genomic analysis of Mycobacterium tuberculosis isolates and construction of a Beijing lineage reference genome. *Genome Biol. Evol.* **2020**, *12,* 3890-3905. (PMID: 31971587) (IF = 3.416, Rank by IF in Evolutionay Biology: 20/50, 61%)
18. Woodring, J.; Lu, S.H.; Krasnova, L.; Wang, S.-C.; Chen, J.-B.; Chou, C.-C.; Huang, Y.-C.; Cheng, T.-J.; Wu, Y.-T.; Chen, Y.-H.; Fang, J.-M.; Tsai, M.-D.; Wong, C.-H.* Disrupting the conserved salt bridge in the trimerization of influenza A nucleoprotein. *J. Med. Chem.* **2020**, *63,* 205-215. (PMID: 31769665) (IF = 7.446, Rank by IF in Chemistry, Medicinal: 3/63, 96.03%)
19. Chen, M.-H.; Huang, M.-T.; Wu, W.-K.; Lee, S.-S.; Wang, J.-H.; Cheng, T.-J.R.; Bowman, M.R.; Lin, L.-L.; Hsieh, S.-L.* Antibody blockade of Dectin-2 suppresses house dust mite-induced Th2 cytokine production in dendritic cell- and monocyte-depleted peripheral blood mononuclear cell co-cultures from asthma patients. *J. Biomed. Sci.* **2019***, 26*, 97. (PMID: 31861989) (IF = 8.410, Rank by IF in Medicine, Research & Experimental: 15/140, 89.64%)
20. Huang, M.-R.; Hsu, Y.-L.; Lin, T.-C.; Cheng, T.-J.R.; Li, L.-W.; Kiu, J.-H.; Tseng, Y.-W.; Chou, Y.-S.; Liu, J.-H.; Pan, S.-H.; Fang, J.-M.;* Wong, C.-H. Structure-guided development of purine amide, hydroxamate, and amidoxime for non-small cell lung cancer inhibition. *Eur. J. Med. Chem.* **2018***, 181,* 111551. (PMID: 31376567) (IF = 6.514, Rank by IF in Chemistry, Medicinal: 5/63, 92.86%)
21. Lin, M.-S.; Hong, T.-M.; Chou, T.-H.; Yang, S.-C.; Chung, W.-C.; Weng, C. W.; Tsai, M.-L.; Cheng, T.-J.R.; Chen, J. J. W.; Lee, T.-C.; Wong, C.-H.; Chein R.-J.*; and Yang, P.-C.* 4(1H)-quinolone derivatives overcome acquired resistance to anti-microtubule agents by targeting the colchicine site of β-tubulin. *Eur. J. Med. Chem.* **2019***, 181,* 111584. (PMID: 31419740) (IF = 6.514, Rank by IF in Chemistry, Medicinal: 5/63, 92.86%)
22. Li, J.; Wang, D.; Xing, X.; Cheng, T.-J.R.; Liang, P.-H.; Bulone, V.; Park, J. H.; Hsieh, Y. Structural analysis and biological activity of cell wall polysaccharides extracted from Panax ginseng marc. *Int. J. Biol. Macromol.* **2019**, *135, 29-37.* (PMID: 31121231) (IF = 6.953, Rank by IF in Polymer Science: 6/88, 93.75%)
23. Hong, B.-T.; Cheng, Y.-S.E.; Cheng, T.-J.; Fang, J.-M.* Boronate, Trifluoroborate, Sulfone, Sulfinate and Sulfonate Congeners of Oseltamivir Carboxylic Acid: Synthesis and Anti-influenza Activity. *Eur. J Med. Chem.* **2019**, *163,* 710-721. (PMID: 30576902) (IF = 6.514, Rank by IF in Chemistry, Medicinal: 5/63, 92.86%)
24. Wang, S.-C.; Liao, H.-Y.; Zhang, J.Y.; Cheng, T.-J.R.;* Wong, C.-H.* Development of a universal influenza vaccine using hemagglutinin stem protein produced from Pichia Pastoris. *Virology* **2019***, 526,* 125-137. (PMID: 30388628) (IF = 3.616, Rank by IF in Virology: 19/36, 48.61%)
25. Hsu, P.-H.; Chiu, D.-C.; Wu, K.-L.; Lee, P.-S.; Jan, J.-T.; Cheng, Y.-E.; Tsai, K.-C.; Cheng, T.-J.; Fang, J.-M.* Acylguanidine derivatives of zanamivir and oseltamivir: Potential orally available prodrugs against influenza viruses. *Eur. J. Med. Chem.* **2018***, 154,* 314-323. (PMID: 29843102) (IF = 6.514, Rank by IF in Chemistry, Medicinal: 5/63, 92.86%)
26. Wang, X.; Krasnova, L.; Wu, K.B.; Wu, W.-S.; Cheng, T.-J.R.; Wong, C.-H.* Towards new antibiotics targeting bacterial transglycosylase: synthesis and evaluation of Lipid II analog as stable transition-state mimic inhibitor. *Bioorg. Med. Chem. Lett.* **2018**, *28,* 2708-2712. (PMID: 29602080) (IF = 2.823, Rank by IF in Chemistry, Organic: 25/57, 57.02%)
27. Yu, J.-Y.; Cheng, H.-J.; Wu, H.-R.; Wu, W.-S.; Lu, J.-W.; Cheng, T.-J.R.; Wu, Y.-T.; Fang, J.-M.* Structure-based design of bacterial transglycosylase inhibitors incorporating biphenyl, amine linker and

2-alkoxy-3-phosphoryl- propanoate moieties. *Eur. J. Med. Chem.* **2018**, *150,* 729-741. (PMID: 29574202) (IF = 6.514, Rank by IF in Chemistry, Medicinal: 5/63, 92.86%)

28. Huang, S.-F.; Lin, C.-H.; Lai, Y.-T.; Tsai, C.-L.; Cheng, T.-J.R.; Wang, S.-K.* (2018) Development of Pseudomonas aeruginosa lectin LecA inhibitors using bivalent galactosides supported on polyproline peptide scaffolds. *Chem. Asian J.* **2018**, *13*, 686-700. (PMID: 29380519) (IF = 4.568, Rank by IF in Chemistry, Multidisciplinary: 60/179, 66.76%)
29. Wu, W.-S.; Cheng, W.-C.; Cheng, T.-J.R.;* Wong, C.-H.* Affinity-based screen for inhibitors of bacterial transglycosylase. *J. Am. Chem. Soc.* **2018**, *140*, 2752-2755. (PMID: 29411975) (IF = 15.419, Rank by IF in Chemistry, Multidisciplinary: 15/179, 91.9%)
30. Wang, P.-C.; Chiu, D.-C.; Jan, J.-T.; Huang, W.-I.; Tseng, Y.-C.; Li, T.-T.; Cheng, T.-J.R.; Tsai, K.-C.; Fang, J.-M.* (2018) Peramivir conjugates as orally available agents against influenza H275Y mutant. *Eur. J. Med. Chem.* **2018***, 145*, 224-234. (PMID: 29324342) (IF = 6.514, Rank by IF in Chemistry, Medicinal: 5/63, 92.86%)
31. Cheng, H.-W.; Chein, R.-J.; Cheng, T.-J.R.; Wu, P.-S.; Wu, H.-Y.; Hung, P.-F.; Wang, C.-J.; Hsu, Y.-L.; Wong, J.-M.; Yuan, A.; Wong, C.-H.; Yang, P.-C.; Pan, S.-H.* The 2-anilino-4-amino-5-aroylthiazole-type compound AS7128 inhibits lung cancer growth through decreased iASPP and p53 interaction. *Cancer Sci.* **2017**, *109*, 832-842. (PMID: 29285847) (IF = 6.716, Rank by IF in Oncology: 50/242, 79.55%)
32. Chiu, D.-C.; Lin, T.-C.; Huang, W.-I.; Cheng, T.-J.R.; Tsai, K.-C.; Fang, J.-M.* Peramivir analogues bearing hydrophilic side chains exhibit higher activities against H275Y mutant than wild-type influenza virus. *Org. Biomol. Chem.* **2017**, *15*, 9910-9922. (PMID: 29159346) (IF = 3.876, Rank by IF in Chemistry, Organic: 13/57, 78.07%)
33. Huang, L.-Y.; Wang, S.-C.; Cheng, T.-J.R.;* Wong, C.-H.* Undecaprenyl phosphate phosphatase activity of undecaprenol kinase regulates the lipid pool in gram-positive bacteria. *Biochemistry* **2017**, *56*, 5417-5427. (*Recommended in F1000Prime as being of special significance*). (PMID: 28872301) (IF = 3.162, Rank by IF in Biochemistry & Molecular Biology: 193/298, 35.4%)
34. Chen, K.-T.; Lin, C.-K.; Guo, C.-W.; Chang, Y.-F.; Hu, C.-M.; Lin, H.-H.; Lai, Y.; Cheng, T.-J.R.; Cheng, W.-C.* Effect of the lipid II sugar moiety on bacterial transglycosylase: the 4-hydroxy epimer of lipid II is a TGase inhibitor. *Chem. Commun. (Camb)* **2017**, *53*, 771-774. (PMID: 27999831) (IF = 6.222, Rank by IF in Chemistry, Multidisciplinary: 44/179, 75.7%)
35. Kuo, T.-C.; Li, L.-W.; Pan, S.-H.;* Fang, J.-M.;* Liu, J.-H.; Cheng, T.-J.R.; Wang, C.-J.; Hung, P.-F.; Chen, H.-Y.; Houng, T.-M.; Hsu, Y.-L.; Wong, C.-H.; Yang, P.-C. Purine-type compounds induce microtubule fragmentation and lung cancer cell death through interaction with katanin. *J. Med. Chem.* **2016**, *59*, 8521-8534. (PMID: 27536893) (IF = 7.446, Rank by IF in Chemistry, Medicinal: 3/63, 96.03%)
36. Chen, K.-T.; Chen, P.-T., Lin, C.-K., Huang, L.-Y., Hu, C.-M., Chang, Y.-F., Hsu, H.-T., Wu, Y.-T.; Cheng, T.-J.R.; Cheng, W.-C.* Structural investigation of park's nucleotide on bacterial translocase MraY: discovery of unexpected MraY inhibitors. *Sci. Rep.* **2016**, *6*, 31579. (PMID: 27531195) (IF = 6.514, Rank by IF in Chemistry, Medicinal: 5/63, 92.86%)
37. Wang, P.-C.; Fang, J.-M.;* Tsai, K.-C.; Wang, S.-Y.; Huang, W.-I.; Tseng, Y.-C.; Cheng, Y.-S.; Cheng, T.-J.R.; Wong, C.-H. Peramivir phosphonate derivatives as influenza neuraminidase inhibitors. *J. Med. Chem.* **2016**, *59*, 5297-5310. (PMID: 27167096) (IF = 7.446, Rank by IF in Chemistry, Medicinal: 3/63, 96.03%)
38. Lin, M.-I.;¶ Su, B.-H.;¶ Lee, C.-H.; Wang, S.-T.; Wu, W.-C.; Dangate, P.; Wang, S.-Y.; Huang, W.-I.; Cheng, T.-J.R.; Lin, O.-A.; Cheng, Y.-S.E.;* Tseng, Y.-J.;* Sun, C.-M.* Synthesis and inhibitory effects of novel pyrimido-pyrrolo- quinoxalinedione analogues targeting nucleoproteins of influenza A virus H1N1. *Eur. J. Med. Chem.* **2015** *102,* 477-486. (PMID: 26310893) (IF = 6.514, Rank by IF in Chemistry, Medicinal: 5/63, 92.86%)
39. Zuegg, J.; Muldoon, C.; Adamson, G.; McKeveney, D.; Thanh, G.L.; Premraj, R.; Becker, B.; Cheng, M.; Elliott, A.; Huang, J.; Butler, M.; Bajaj, M.; Seifert, J.; Singh, L.; Galley, N.; Roper, D.; Lloyd, A.; Dowson, C.; Cheng, T.-J.R.; Cheng, W.-C.; Demon, D.; Meyer, E.; Meutermans, W.; Cooper, M.* Carbohydrate scaffolds as glycosyltransferase inhibitors with in vivo antibacterial activity. *Nat. Commun.* **2015***, 6,* 7719-7729. (PMID: 26194781) (IF = 14.919, Rank by IF in Multidisciplinary Sciences: 4/73,

95.21%)

40. Patil, P.S.; Cheng, T.-J.R.; Zulueta, M.M.; Yang, S.-T.; Lico, L.; Hung, S.-C.* Total synthesis of tetraacylated phosphatidylinositol hexamannoside and evaluation of its immunomodulatory activity. *Nat. Commun.* ***2015***, *6,* 7239-7247. (PMID: 26037164) (IF = 14.919, Rank by IF in Multidisciplinary Sciences: 4/73, 95.21%)
41. Lee, H.-Y.; Chen, C.-Y.; Tsai, T.-I.; Li, S.-T.; Lin, K.-H.; Cheng, Y.-Y.; Ren, C.-T.; Cheng, T.-J.R.; Wu, C.-Y.;* Wong, C.-H.* Immunogenicity study of globo H analogues with modification at the reducing or nonreducing end of the tumor antigen. *J. Am. Chem. Soc.* **2014**, *136*, 16844-16853. (PMID: 25371992) (IF = 15.419, Rank by IF in Chemistry, Multidisciplinary: 15/179, 91.9%)
42. Hsu, C.-H.; Schelwies, M.; Enck, S.; Huang, L.-Y.; Huang, S.-H.; Chang, Y.-F.; Cheng, T.-J.R.; Cheng, W.-C.; Wong, C.-H.* Iminosugar *C*-glycoside analogues of alpha-D-GlcNAc-1-phosphate: synthesis and bacterial transglycosylase inhibition. *J. Org. Chem.* **2014,** *79*, 8629-8637. (PMID: 25137529) (IF = 4.354, Rank by IF in Chemistry, Organic: 12/57, 79.82%)
43. Huang, L.-Y.; Huang, S.-H.; Chang, Y.-C.; Cheng, W.-C.; Cheng, T.-J.R.;* Wong, C.-H.* Enzymatic synthesis of lipid II and analogues. *Angew. Chem. Int. Ed. Engl.* **2014***, 53*, 8060-8065. (PMID: 24990652) (IF = 15.336, Rank by IF in Chemistry, Multidisciplinary: 16/179, 91.34%)
44. Chen, Y.-S.; Yu, H.-M.; Shie, J.-J.; Cheng, T.-J.R.; Wu, C.-Y.; Fang, J.-M.; Wong, C.-H.* Chemical constituents of Plectranthus amboinicus and the synthetic analogs possessing anti-inflammatory activity. *Bioorg. Med. Chem.* **2014**, *22*, 1766-1772. (PMID: 24491635) (IF = 3.641, Rank by IF in Chemistry, Medicinal: 29/63, 54.76%)
45. Huang, S.-H.; Wu, W.-S.; Huang, L.-Y.; Huang, W.-F.; Fu, W.-C.; Chen, P.-T.; Fang, J.-M.; Cheng, W.-C.;* Cheng, T.-J.R.;* Wong, C.-H.* A new continuous fluorometric assay for bacterial transglycosylase using Förster resonance energy transfer. *J. Am. Chem. Soc.* **2013***, 135*, 17078-17089. (PMID: 24131464) (IF = 15.419, Rank by IF in Chemistry, Multidisciplinary: 15/179, 91.9%)
46. Cheng, T.-J.R.; Chan, T.-H.; Tsou, E.-L.; Chang, S.-Y.; Yun, W.-Y.; Yang, P.-J.; Wu, Y.-T.; Cheng, W.-C.* From natural product-inspired pyrrolidine scaffolds to the development of new human golgi α-mannosidase II inhibitors. *Chem. Asian. J.* **2013***, 8*, 2600-2604. (PMID: 23943613) (IF = 4.568, Rank by IF in Chemistry, Multidisciplinary: 60/179, 66.76%)
47. Wang, C.-H.; Li, S.-T.; Lin, T.-L.; Cheng, Y.-Y.; Sun, T.-H.; Wang, J.-T.; Cheng, T.-J.R.; Mong, K.-K.; Wong, C.-H.;* Wu, C.-Y.* Synthesis of Neisseria meningitidis serogroup W135 capsular oligosaccharides for immunogenicity comparison and vaccine development. *Angew. Chem. Int. Ed. Engl.* **2013***, 52*, 9157-9161. (PMID: 23843313) (IF = 15.336, Rank by IF in Chemistry, Multidisciplinary: 16/179, 91.34%)
48. Chuang, H.-Y.; Ren, C.-T.; Chao, C.-A.; Wu, C.-Y.; Shivatare, S.S.; Cheng, T.-J.R.; Wu, C.-Y.;* Wong, C.-H.* Synthesis and vaccine evaluation of the tumor-associated carbohydrate antigen RM2 from prostate cancer. *J. Am. Chem. Soc.* **2013**, *135*, 11140-11150. (PMID: 23819648) (IF = 15.419, Rank by IF in Chemistry, Multidisciplinary: 15/179, 91.9%)
49. Ohara, K.; Lin, C.-C.; Yang, P.-J.; Hung, W.-T.; Yang, W.-B.; Cheng, T.-J.R.; Fang, J.-M.;* Wong, C.-H.* Synthesis and bioactivity of β-(1→4)-linked oligomannoses and partially acetylated derivatives. *J. Org. Chem.* **2013**, *78*, 6390-6411. (PMID: 23745711) (IF = 4.354, Rank by IF in Chemistry, Organic: 12/57, 79.82%)
50. Huang, Y.-L.; Hung, J.-T.; Cheung, S.-K.; Lee, H.-Y.; Chu, K.-C.; Li, S.-T.; Lin, Y.-C.; Ren, C.-T.; Cheng, T.-J.R.; Hsu, T.-L.; Yu, A. L.; Wu, C.-Y.;* Wong, C.-H.* Carbohydrate-based vaccines with a glycolipid adjuvant for breast cancer. *Proc. Natl. Acad. Sci. U. S. A.* **2013**, *110*, 2517-2522. (PMID: 23355685) (IF = 11.205, Rank by IF in Multidisciplinary Sciences: 8/73, 89.73%)
51. Chen, K.-T.; Kuan, Y.-C.; Fu, W.-C.; Liang, P.-H.; Cheng, T.-J.R.; Wong, C.-H.; Cheng, W.-C.* Rapid preparation of mycobacterium N-glycolyl lipid I and lipid II derivatives: a biocatalytic approach. *Chem. Eur. J.* **2012***, 19*, 834-838. (PMID: 23229320) (IF = 5.236, Rank by IF in Chemistry, Multidisciplinary: 52/179, 71.23%)
52. Cheng, T.-J.R.;¶ Wang, S.-Y.;¶ Wen, W.-H.; Su, C.-Y.; Lin, M.; Huang, W.-.I.; Liu, M.-T.; Wu, H.-S.; Wang, N.-S.; Cheng, C.-K.; Chen, C.-L.; Ren, C.-T.; Wu, C.-Y.; Fang, J.-M.;* Cheng, Y.-S.E.;* Wong, C.-H.* Chemical probes for drug resistance assessment by binding competition (RABC): oseltamivir susceptibility evaluation. *Angew. Chem. Int. Ed. Engl.* **2013***, 52*, 366-370. (PMID: 23150231) (IF =

15.336, Rank by IF in Chemistry, Multidisciplinary: 16/179, 91.34%)

53. Cheng, T.-J.R.; Weinheimer, S.; Tarbet, E.B.; Jan, J.-T.; Cheng, Y.-S.; Shie, J.-J.; Chen, C.-L.; Chen, C.-A.; Hsieh, W.-C.; Huang, P.-W.; Lin, W.-H.; Wang, S.-Y.; Fang, J.-M.;* Hu, O.-Y.;* Wong, C.-H.* Development of oseltamivir phosphonate congeners as anti-influenza agents. *J. Med. Chem.* **2012**, *55*, 8657-8670. (PMID: 23009169) (IF = 7.446, Rank by IF in Chemistry, Medicinal: 3/63, 96.03%)
54. Liu, K.-C.; Fang, J.-M.;* Jan, J.-T.; Cheng, T.-J.R.; Wang, S.-Y.; Yang, S.-T.; Cheng, Y.-S.; Wong, C.-H.* Enhanced anti-influenza agents conjugated with anti-inflammatory activity. *J. Med. Chem.* **2012**, *55*, 8493-8501. (PMID: 22963087) (IF = 7.446, Rank by IF in Chemistry, Medicinal: 3/63, 96.03%)
55. Shih, H.-W.; Chang, Y.-F.; Li, W.-J.; Meng, F.-C.; Huang, C.-Y.; Ma, C.; Cheng, T.-J.R.; Wong, C.-H.;* Cheng, W.-C.* Effect of the peptide moiety of lipid II on bacterial transglycosylase. *Angew. Chem. Int. Ed. Engl.* **2012**, *51*, 10123-10126. (PMID: 22952114) (IF = 15.336, Rank by IF in Chemistry, Multidisciplinary: 16/179, 91.34%)
56. Huang, C.-Y.; Shih, H.-W.; Lin, L.-Y.; Tien, Y.-W.; Cheng, T.-J.R.; Cheng, W.-C.; Wong, C.-H.;* Ma, C.* Crystal structure of *S. aureus* transglycosylase in complex with a lipid II analog and elucidation of peptidoglycan synthesis mechanism. *Proc. Natl. Acad. Sci. U. S. A.* **2012**, *109*, 6496-6501. (PMID: 22493270) (IF = 11.205, Rank by IF in Multidisciplinary Sciences: 8/73, 89.73%)
57. Meng, F.-C.; Chen, K.-T.; Huang, L.-Y.; Shih, H.-W.; Chang, H.-H.; Nien, F.-Y.; Liang, P.-H.; Cheng, T.-J.R.; Wong, C.-H.; Cheng, W.-C.* Total synthesis of polyprenyl N-glycolyl lipid II as a mycobacterial transglycosylase substrate. *Org. Lett.* **2011***, 13*, 5306-5309. (PMID: 21913698) (IF = 6.005, Rank by IF in Chemistry, Organic: 6/57, 90.35%)
58. Shih, H.-W.; Chen, K.-T.; Cheng, T.-J.R.; Wong, C.-H.;* Cheng, W.-C.* A new synthetic approach toward bacterial transglycosylase substrates, lipid II and lipid IV. *Org. Lett.* **2011***, 13*, 4600-4603. (PMID: 21797279) (IF = 6.005, Rank by IF in Chemistry, Organic: 6/57, 90.35%)
59. Chen, M.-W.; Liao, H.-Y.; Huang, Y.; Jan, J.-T.; Huang, C.-C.; Ren, C.-T.; Wu, C.-Y.; Cheng, T.-J.R.; Ho, D.D.;* Wong, C.-H.* Broadly neutralizing DNA vaccine with specific mutation alters the antigenicity and sugar-binding activities of influenza hemagglutinin. *Proc. Natl. Acad. Sci. U. S. A.* **2011**, *108*, 3510-3515. (PMID: 21321237) (IF = 11.205, Rank by IF in Multidisciplinary Sciences: 8/73, 89.73%)
60. Su, C.-Y.; ¶ Cheng, T.-J.R.; ¶ Lin, M.-I.; Wang, S.-Y.; Huang, W.-I.; Lin-Chu, S.-Y.; Chen, Y.-H.; Wu, C.-Y.; Lai, M.-M.; Cheng, W.-C.; Wu, Y.-T.; Tsai, M.-D.; Cheng, Y.-S.;* Wong, C.-H.* High-throughput identification of compounds targeting influenza RNA-dependent RNA polymerase activity. *Proc. Natl. Acad. Sci. U. S. A.* **2010**, *107*, 19151-19156. (PMID: 20974907) (IF = 11.205, Rank by IF in Multidisciplinary Sciences: 8/73, 89.73%)
61. Shih, H.-W.; Chen, K.-T.; Chen, S.-K.; Huang, C.-Y.; Cheng, T.-J.R; Ma, C.; Wong, C.-H.;* Cheng, W.-C.* Combinatorial approach toward synthesis of small molecule libraries as bacterial transglycosylase inhibitors. *Org. Biomol. Chem.* **2010**, *8*, 2586-2593. (PMID: 20485795) (IF = 3.876, Rank by IF in Chemistry, Organic: 13/57, 78.07%)
62. Shie, J.-J.; Chen, C.-A.; Lin, C.-C.; Ku, A.-F.; Cheng, T.-J.R.; Fang, J.-M.;* Wong, C.-H.* Regioselective synthesis of di-C-glycosylflavones possessing anti-inflammation activities. *Org. Biomol. Chem.* **2010**, *8*, 4451-4462. (PMID: 20725659) (IF = 3.876, Rank by IF in Chemistry, Organic: 13/57, 78.07%)
63. Liu, C.-Y.; Guo, C.-W.; Chang, Y.-F.; Wang, J.-T.; Shih, H.-W.; Hsu, Y.-F.; Chen, C.-W.; Chen, S.-K.; Wang, Y.-C.; Cheng, T.-J.R.; Ma, C.; Wong, C.-H.; Fang, J.-M.;* Cheng, W.-C.* Synthesis and evaluation of a new fluorescent transglycosylase substrate: lipid II-based molecule possessing a dansyl-C20 polyprenyl moiety. *Org. Lett.* **2010**, *12*, 1608-1611. (PMID: 20187630) (IF = 6.005, Rank by IF in Chemistry, Organic: 6/57, 90.35%)
64. Liao, H.-Y.; Hsu, C.-H.; Wang, S.-C.; Liang, C.-H.; Yen, H.-Y.; Su, C.-Y.; Chen, C.-H.; Jan, J.-T.; Ren, C.-T.; Cheng, T.-J.R.;* Wu, C.-Y.;* Wong, C.-H.* Differential receptor binding affinities of influenza hemagglutinins on glycan arrays. *J. Am. Chem. Soc.* **2010**, *132*, 14849-14856. (PMID: 20882975) (IF = 15.419, Rank by IF in Chemistry, Multidisciplinary: 15/179, 91.9%)
65. Cheng, T.-J.R.; Wu, Y.-T.; Yang, S.-T.; Loh, A.; Chen, S.-K.; Chen, Y.-H.; Huang, W.-I.; Yuan, C.-H.; Guo, C.-W.; Chen, K.-T.; Shih, H.-W.; Cheng, Y.-S.E.; Cheng, W.-C.; Wong, C.-H.* High-throughput

identification of antibacterials against methicillin-resistant Staphylococcus Aureus (MRSA) and the transglycosylase. *Bioorg. Med. Chem.* **2010**, *18*, 8512-8529. (PMID: 21075637) (IF = 3.641, Rank by IF in Chemistry, Medicinal: 29/63, 54.76%)

66. Wang, S.-Y.; Su, C.-Y.; Lin, M.-I.; Huang, S.-Y.; Huang, W.-I.; Wang, C.-C.; Wu, Y.-T.; Cheng, T.-J.R.; Yu, H.-M.; Ren, C.-T.; Wu, C.-Y.; Wong, C.-H.;* Cheng, Y.-S.* HA-pseudotyped retroviral vectors for influenza antagonist screening. *J. Biomol. Screen.* **2009**, *14*, 294-302. (PMID: 19211776)
67. Wang, C.-C.; Chen, J.-R.; Tseng, Y.-C.; Hsu, C.-H.; Hung, Y.-F.; Chen, S.-W.; Chen, C.-M.; Khoo, K.-H.; Cheng, T.-J.R.; Cheng, Y.-S.; Jan, J.-T.; Wu, C.-Y.; Ma C.;* Wong C.-H.* Glycans on influenza hemagglutinin affect receptor binding and immune response. *Proc. Natl. Acad. Sci. U. S. A.* **2009**, *106*, 18137-18142. (PMID: 19822741) (IF = 11.205, Rank by IF in Multidisciplinary Sciences: 8/73, 89.73%)
68. Tsou, E.-L.; Chen, S.-Y.; Yang, M.-H.; Wang, S.-C.; Cheng, T.-J.R.; Cheng, W.-C.* Synthesis and biological evaluation of a 2-aryl polyhydroxylated pyrrolidine alkaloid-based library. *Bioorg. Med. Chem.* **2008**, *16*, 10198-10204. (PMID: 19008111) (IF = 3.641, Rank by IF in Chemistry, Medicinal: 29/63, 54.76%)
69. Hsieh, Y.-S.; Chien, C.; Liao, S.-K.; Liao, S.-F.; Hung, W.-T.; Yang, W.-B.; Lin, C.-C.; Cheng, T.-J.R.; Chang, C.-C.; Fang, J.-M.;* Wong, C.-H.* Structure and bioactivity of the polysaccharides in medicinal plant Dendrobium huoshanense. *Bioorg. Med. Chem.* **2008**, *16*, 6054-6068. (PMID: 18467102) (IF = 3.641, Rank by IF in Chemistry, Medicinal: 29/63, 54.76%)
70. Cheng, T.-J.R.; Sung, M.-T.; Liao, H.-Y.; Chang, Y.-F.; Chen, C.-W.; Huang, C.-Y.; Chou, L.-Y.; Wu, Y.-D.; Chen, Y.-H.; Cheng, Y.-S.; Wong, C.-H.;* Ma, C.;* Cheng, W.-C.* Domain requirement of moenomycin binding to bifunctional transglycosylases and development of high-throughput discovery of antibiotics. *Proc. Natl. Acad. Sci. U. S. A.* **2008**, *105*, 431-436. (PMID: 18182485) (IF = 11.205, Rank by IF in Multidisciplinary Sciences: 8/73, 89.73%)
71. Chen, M.-W.; Cheng, T.-J.R.; Huang, Y.; Jan, J.-T.; Ma, S.-H.; Yu, A.L.; Wong, C.-H.;* Ho, D.D.* A consensus-hemagglutinin-based DNA vaccine that protects mice against divergent H5N1 influenza viruses. *Proc. Natl. Acad. Sci. U. S. A.* **2008**, *105*, 13538-13543. (PMID: 18765801) (IF = 11.205, Rank by IF in Multidisciplinary Sciences: 8/73, 89.73%)
72. Cheng, T.-J.; Goodsell, D.; Kan, C.-C.* Identification of sanguinarine as a novel HIV protease inhibitor. *Lett. Drug Des. Discov.* **2005**, *2*, 364-371. (IF = 1.15, Rank by IF in Chemistry, Medicinal: 57/63, 10.32%)
73. Cheng, T.-J.; Brik, A.; Wong, C.-H.; Kan, C.-C.* Model system for high-throughput screening of novel human immunodeficiency virus protease inhibitors in Escherichia coli. *Antimicrob. Agents Chemother.* **2004**, *48*, 2437-2447. (PMID: 15215092) (IF = 5.191, Rank by IF in Pharmacology & Pharmacy: 56/275, 79.82%)
74. Cheng, T.-J.; Tseng, Y.-F.; Chang, W.-M.; Chang, M.D.; Lai, Y.-K.* Retaining of the assembly capability of vimentin phosphorylated by mitogen- activated protein kinase-activated protein kinase-2. *J. Cell. Biochem.* **2003**, *89*, 589-602. (PMID: 12761892) (IF = 4.429, Rank by IF in Biochemistry & Molecular Biology: 112/298, 62.58%)
75. Cheng, T.-J.; Rey, P.G.; Poon, T.; Kan, C.-C.* Kinetic studies of human tyrosyl-DNA phosphodiesterase, an enzyme in the topoisomerase I DNA repair pathway. *Eur. J. Biochem.* **2002**, *269*, 3697-3704. (PMID: 12153566) (IF = 3.579, Rank by IF in Biochemistry & Molecular Biology: 81/262)
76. Cheng, T.-J.; Lin, Y.-L.; Chiang, A.-S.; Lai, Y.-K.* Association of protein phosphatase 2A and its substrate vimentin intermediate filaments in 9L rat brain tumor cells. *J. Cell. Biochem.* **2000**, *79*, 126-138. (PMID: 10906761) (IF = 4.429, Rank by IF in Biochemistry & Molecular Biology: 112/298, 62.58%)
77. Hung, J.-J.; Cheng, T.-J.; Lai, Y.-K.; Chang, M.D.* Differential activation of p38 mitogen-activated protein kinase and extracellular signal- regulated protein kinases confers cadmium-induced HSP70 expression in 9L rat brain tumor cells. *J. Biol. Chem.* **1998**, *273*, 31924-31931. (PMID: 9822662) (IF = 5.157, Rank by IF in Biochemistry & Molecular Biology: 86/298, 71.31%)
78. Hung, J.-J.; Cheng, T.-J.; Chang, M.D.; Chen, K.-D.; Huang, H.-L.; Lai, Y.-K.* Involvement of heat shock elements and basal transcription elements in the differential induction of the 70-kDa heat shock protein and its cognate by cadmium chloride in 9L rat brain tumor cells. *J. Cell. Biochem.* **1998**, *71*,

21-35. (PMID: 9736451) (IF = 4.429, Rank by IF in Biochemistry & Molecular Biology: 112/298, 62.58%)

79. Cheng, T.-J.; Lai, Y.-K.* Identification of mitogen-activated protein kinase-activated protein kinase-2 as a vimentin kinase activated by okadaic acid in 9L rat brain tumor cells. *J. Cell. Biochem.* **1998**, *71*, 169-181. (PMID: 9779816) (IF = 4.429, Rank by IF in Biochemistry & Molecular Biology: 112/298, 62.58%)
80. Perng, M.-D.; Cheng, T.-J.; Chen, C.-M.; Lai, Y.-K.* (1994) Induction of aggregation and augmentation of protein kinase-mediated phosphorylation of purified vimentin intermediate filaments by withangulatin A. *Mol. Pharmacol.* **1994**, *46*, 612-617. (PMID: 7969040) (IF = 4.436, Rank by IF in Pharmacology & Pharmacy: 84/275, 69.64%)
81. Cheng, T.-J.; Lai, Y.-K.* Transient increase in vimentin phosphorylation and vimentin-HSC70 association in 9L rat brain tumor cells experiencing heat-shock. *J. Cell. Biochem.* **1994**, *54*, 100-109. (PMID: 8126080) (IF = 4.429, Rank by IF in Biochemistry & Molecular Biology: 112/298, 62.58%)
82. Lai, Y.-K.;* Shen, C.-H.; Cheng, T.-J.; Hou, M.-C.; Lee, W.-C. Enhanced phosphorylation of a 65 kDa protein is associated with rapid induction of stress proteins in 9L rat brain tumor cells. *J. Cell. Biochem.* **1993**, *51*, 369-379. (PMID: 8501139) (IF = 4.429, Rank by IF in Biochemistry & Molecular Biology: 112/298, 62.58%)