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EDUCATION

2000-2003 PhD in Chemistry, University of Cambridge, Cambridge, UK

EXPERIENCE/ POSITION HELD

2009.8-present Professor (Joint Appointment), National Chung-Hsing University, National Sun Yat-sen University, National Taiwan Normal University

2007.2-present Assistant-/Associate-/Professor, Genomics Research Center, Academia Sinica, Taipei, Taiwan

RESEARCH INTEREST

Natural products chemistry; Small molecule chemoenzymatic synthesis; Secondary metabolite pathway engineering; Mechanistic structural biology (protein x-ray crystallography); Synthetic biology (medicine & biofuel); Microbial pathogenesis (KP)

SELECTED PUBLICATION (*: corresponding author)

- Wang YL, Chang CY, Hsu NS, Lo IW, Lin KH, Chen CL, Chang CF, Wang ZC, Ogasawara Y, Dairi T, Maruyama C, Hamano Y*, **Li TL***, *N-Formimidoylation/iminoacetylation modification in aminoglycosides requires FAD-dependent and ligand-protein NOS bridge dual chemistry*, 2023 **Nat Commun.** 14:2528, 1-14.
- Zadeh SM, Chen MH, Wang ZC, Astani EK, Lo IW, Lin KH, Hsu NS, Adhikari K, Lyu SY, Tsai HY, Terasawa Y, Yabe M, Yamamoto K, Ichikawa S, **Li TL***, *β -Hydroxylation of α -amino- β -hydroxybutanoyl-glycyluridine catalyzed by a nonheme hydroxylase ensures the maturation of caprazamycin*, 2022 **Commun Chem.** 5, 87, 1-16.
- Chen MH, Li YS, Hsu NS, Lin KH, Wang YL, Wang ZC, Chang CF, Lin JP, Chang CY, **Li TL***, *Structural and mechanistic bases for StnK3 and its mutants-mediated Lewis-acid-dependent epimerization and retro aldol reactions*, 2022 **ACS Catal.** 12, 1945-1956.
- Lin KH, Lyu SY, Yeh HW, Li YS, Hsu NS, Huang CM, Wang YL, Shih HW, Wang ZC, Wu CJ, **Li TL***, *Structural and chemical trapping of short-lived flavin-oxide intermediates reveals substrate-directed reaction multiplicity*, 2020 **Protein Sci.** 29, 1655-1666.
- Hsu NS, Wang YL, Lin KH, Chang CF, Lyu SY, Hsu LJ, Liu YC, Chang CY, Wu CJ, **Li TL***, *The Mesomeric effect of thiazolium on non-Kekulé diradicals in Pichia stipitis transketolase*, 2018 **Angew Chem Int Ed.** 57(7): 1802-1807.
- Lyu SY, Liu YC, Chang CY, Huang CJ, Hsu NS, Lin KH, Huang CM, Wu CJ, Tsai MD, **Li TL***, *Multiple complexes of long aliphatic n-acyltransferases lead to synthesis of 2,6-diacylated/2-acyl-substituted glycopeptide antibiotics, effectively killing vancomycin-resistant enterococcus*, 2014 **J Am Chem Soc.** 136(31): 10989-10995.
- Wang KC, Lyu SY, Liu YC, Chang CY, Wu CJ, **Li TL***, *Insights into the binding specificity and catalytic mechanism of N-acetylhexosamine 1-phosphate kinases through multiple-reaction complexes*, 2014 **Acta Cryst D.** 70(5): 1401-1410.
- Zou XW, Liu YC, Hsu NS, Huang CJ, Chan HC, Lin KH, Lyu SY, Wu CJ, **Li TL***, *The first crystal structures of non-heme iron/SAM dependent methyltransferase*, 2014 **Acta Cryst. D.** 70(6): 1549-1560.
- Chang CY, Lyu SY, Liu YC, Hsu NS, Wu CC, Lin KH, Tang CF, Ho JY, Wu CJ, Tsai MD, **Li TL***, *Biosynthesis of Streptolidine Involved Two Unexpected Intermediates Produced by a Dihydroxylase and a Cyclase through Unusual Mechanisms*, 2014 **Angew Chem Int Ed.** 53: 1943-1948.
- Li TL***, Liu YC, Lyu SY, *Combining biocatalysis and chemoselective chemistries for glycopeptide antibiotics modification*, 2012 **Curr Opin Chem Biol.** 16: 170-178.
- Wu HC, Li YS, Liu YC, Lyu SY, Wu CJ, **Li TL***, *Chain elongation and cyclization in type III PKS DpgA*, 2012 **ChemBioChem.** 13(6): 862-871.
- Chen SH, Hwang DR, Chen GH, Hsu NS, Wu YT, **Li TL***, Wong CH*, *Enhanced bioethanol production of Pichia stipitis on xylose by directed-evolution of the rate-limiting transaldolase*, 2012 **ACS Chem Biol.** 7(3): 481-486.
- Liu YC, Li YS, Lyu SY, Hsu LJ, Chen YH, Huang YT, Chan HC, Huang CJ, Chen GH, Chou CC, Tsai MD, **Li TL***, *Interception of teicoplanin oxidation intermediates yields new antimicrobial scaffolds*, 2011 **Nat Chem Biol.** 7(5): 304-309.
- Chan HC, Huang YT, Lyu SY, Huang CJ, Li YS, Liu YC, Chou CC, Tsai MD*, **Li TL***, *Regioselective deacetylation based on teicoplanin-complexed Orf2* crystal structures*, 2011 **Mol Biosyst.** 7(4):1224-123.
- Huang YT, Lyu SY, Chuang PH, Hsu NS, Li YS, Chan HC, Huang CJ, Liu YC, Wu CJ, Yang WB, **Li TL***, *In vitro characterization of enzymes involved in the synthesis of nonproteinogenic residue (2S,3S)- α -methylphenylalanine in glycopeptide antibiotic mannopeptimycin*, 2009 **ChemBioChem.** 10(15): 2480-2487.
- Li TL***, Spitteller D, Spencer JB, *Identification of a pentaketide stilbene produced by a type III polyketide synthase from Pinus sylvestris and characterisation of free coenzyme A intermediates*, 2009 **ChemBioChem.** 10(5): 896-901.
- Li YS, Ho JY, Lee CY, Hsu PH, Huang YT, Huang CC, Lyu SY, Chan HC, Huang CJ, Tsai MD, **Li TL***, *A unique flavin mononucleotide-linked primary alcohol oxidase for glycopeptide A40926 maturation*. 2007 **J Am Chem Soc.** 129(44): 13384-13385.
- Ho JY, Huang YT, Wu CJ, Li YS, Tsai MD, **Li TL***, *Three homologous proteins are novel deacetylases and thymidyltransferase in biosynthetic pathways of three clinically important glycopeptide antibiotics*, 2006 **J Am Chem Soc.** 128(42): 13694-13695.

PATENT

- 1-3. Structural and mechanistic basis for novel compounds biosynthesis using a 4-electron hexose oxidase, **Li TL**, Liu YC, Li YS, Lyu SY, USA (US Patent No: 8,507,427 B2); TAIWAN (Issued No: I 462743); USA (US Patent No: 8,951,961 B2)
4. Teicoplanin analogs and uses thereof, **Li TL**, Lyu SY, Liu YC, Chang CY, TAIWAN (Issued No: 104102911)
5. Glycopeptide antibiotic compounds, methods for production the same, and uses thereof, **Li TL**, Huang CM, Lin KH, USA (US Patent No: 16/731,084)