

Curriculum Vitae

**Name**

Tsung-Lin Li

Current Position

Professor and Division Director of Chemical Biology
Genomics Research Center, Academia Sinica
Taipei, Taiwan

Email address

tlli@as.edu.tw

Education & Professional Experiences (Times New Roman, 11 point)

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|----------------|---|
| 2009.8-present | Joint Appointment Professor, National Chung-Hsing, National Sun Yat-Sen, National Taiwan Normal Universities |
| 2007.2-present | Assistant-/Associate-/Professor, Division Director of Chemical Biology, Genomics Research Center, Academia Sinica, Taipei, Taiwan |
| 2004.9-2007.2 | Assistant Professor, National Taiwan Ocean University |
| 2000-2003 | PhD in Chemistry, University of Cambridge, Cambridge, UK |

Research Interests (Times New Roman, 11 point)

Natural products chemistry; small molecule chemoenzymatic synthesis; secondary metabolite pathway engineering; mechanistic structural enzymology; synthetic biology; drug discovery and development; microbial pathogenesis

Selected Publications (※3-5 major papers)

1. Wang YL, Chang CY, Hsu NS, Lo IW, Lin KH, Chen CL, Chang CF, Wang ZC, Ogasawara Y, Dai R, 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. 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.
2. 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.
3. 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.
4. 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.

Lecture Title

Biosynthesis and regioselective alkylation for glycopeptide antibiotic avoparcin

Abstract (500 words maximum)

Glycopeptide antibiotics (GPAs) are the choice of natural products for developing more effective antibiotics to treat drug-resistance infections. Avoparcin, a GPA containing five sugars on residues 1, 2, 4, 6, appears to be an ideal

candidate/scaffold for the regio-selective lipoglycosylation modifications. To extend GPA therapeutic effectiveness on MRSA/VRSA, the biosynthesis of avoparcin was elucidated, in which the biosynthetic enzymes determined were applied to act as synthetic tools. Lipidation is a proven strategy in the expansion of GPA biological effectiveness against drug-resistant pathogens, upon which new functionalities and/or resistant profiles were examined. New lipoglycopeptides with enhanced biological activity against drug-resistant pathogens were underscored and can be ladled out to the product pipelines of pharma-/bio-industries.