

Lin Liu

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Education Information:

Department of Chemistry and Chemical Engineering, Stanford University: January 2024-Present. Postdoc

Department of Chemistry and Biochemistry, Baylor University: August 2018 – December 2023 PhD in Organic Chemistry

College of Chemistry and Chemical Engineering, Lanzhou University, September 2014 – May 2018
M.S. in Organic Chemistry

Department of Chemistry, Shandong Normal University, September 2010 – June 2014 B.S. in Chemistry

Research Interests:

Total Synthesis and Biosynthesis of Natural Products, Degradation of Protein

Research Experience:

Total synthesis of Phyllantidine and Flueggeacosine B and C
Advisor: John L. Wood, Ph.D., FRSC
Robert A. Welch Distinguished Professor and Department Chair
Co-Director Baylor Synthesis & Drug Lead Discovery Lab
Department of Chemistry and Biochemistry. 08/2018-present

Total synthesis of Ent-chromazonarol, 8-*epi*-chromazonarol, 15-oxopuuphrol. 03/2017-04/2018
Advisor: Associate Professor Xie Xingang & Professor She Xuegong
Served as the team leader and finished the first total synthesis of 8-*epi*-chromazonarol.

Total synthesis of Dasyscyphin B, D, E 03/2016-03/2017
Advisor: Associate Professor Xie Xingang & Professor She Xuegong
Served as the team leader and finished the formal synthesis of (+)-aureol, and got the core of Dasyscyphin B through Heck reaction.

All-Carbon DEF Tricyclic Skeleton of Daphenylline 12/2015 – 03/2016
Advisor: Associate Professor Xie Xingang & Professor She Xuegong
Served as the team leader and finished all-carbon DEF tricyclic skeleton of Daphenylline, through Wittig reaction, hydrogenation, and Fries-Crafts reaction (researched aborted because Fukuyama et al used similar routes to accomplish this molecule)

Concise Total Synthesis of Isospongian (\pm)-Polyrhaphin D 12/2015 – 03/2016

Advisor: Associate Professor Xie Xingang

Served as researcher, mainly responsible for part of the synthesis of raw materials and characterization of intermediate products

Visible-Light-Promoted Dual C–C Bond Formations of Alkynoates via a Domino Radical Addition/Cyclization Reaction: An Efficient Synthesis of Coumarins 12/2015 – 03/2016

Advisor: Associate Professor Xie Xingang

Served as team cooperater, mainly responsible for research references, purification and characterization for reaction products, and report writing

Thermal 1,3-Dipolar Cycloaddition Reaction of Azomethine Imines with active Esters 03/2015 – 12/2015

Advisor: Professor She Xuegong.

Served as team cooperater, mainly responsible for research references, purification and characterization for reaction products, and report writing

An Upstream By-product from Ester Activation via NHC-Catalysis Catalyzes Downstream Sulfonyl Migration Reaction 09/2014 – 03/2015

Advisor: Professor She Xuegong

Served as team cooperater, mainly responsible for the synthesis of NHCs and most substrates, completed purification and characterization for reaction products such as spectrum, IR and HPLC

Relevant Publication:

- 1) Total Synthesis of (-)-Flueggeacosine C: Lin Liu, Trevor Olson, John L. Wood. The manuscript is being prepared.
- 2) Total Synthesis of (\pm)-Phyllantidine: Development and Mechanistic Evaluation of a Ring Expansion for Installation of Embedded Nitrogen- Oxygen Bonds. Dr. Kyle M. Lambert, Dr. Joshua B. Cox, Lin Liu, Amy C. Jackson, Dr. Sam Yruegas, Prof. Kenneth B. Wiberg, Prof. John L. Wood *Angew. Chem., Int. Ed.* **2020**, *59*, 9757-9766.
- 3) Total synthesis of (-)-8-epi-chromazonarol enabled by a unique N₂H₄·H₂O promoted intramolecular oxa-Michael cyclization reaction. Lin Liu, Huayue Song, Peng Chen, Ziyun Yuan, Shangbiao Feng, Weiwei Zhang, Bowen Fang, Xingang Xie, Xuegong She *Org. Chem. Front.*, **2018**, *5*, 3013-3017.
- 4) Total syntheses of (-)-15-oxopuupehenol and (+)-puupehenone and formal syntheses of (-)-puupehenol and (+)-puupehedione. Huayue Song, Lin Liu, Mingyang Yang, Guangmiao Wu, Peng Chen, Xingang Xie, Xuegong She *Org. Chem. Front.*, **2020**, *7*, 35-42.
- 5) Rapid construction of the 6/6/5 tricyclic framework via a tandem radical cyclization reaction and its application to the synthesis of 5-epi-7-deoxyisoabietenin A. Hao Zhang, Shiqiang Ma, Zhimin Xing, Lin Liu, Bowen Fang, Xingang Xie, Xuegong She *Org. Chem. Front.*, **2017**, *4*, 2211-2215.
- 6) Rapid Construction of Complex Tetracyclic Frameworks via a Gold (I) -Catalyzed Tandem 1,2-Acyloxy Migration/[3+2] Cycloaddition/ Friedel-Crafts Type Cyclization Reaction of Linear Enynyl Esters. Haiyu Sun, Shiyan Xu, Zhimin Xing, Lin Liu, Shangbiao Feng, Bowen Fang, Xingang Xie, Xuegong She *Org. Chem. Front.*, **2017**, *4*, 2109-2113.
- 7) Bioinspired total synthesis of (-)-gymnothelignan L. Peng Chen, Liang Huo, Huilin Li, Lin Liu, Ziyun Yuan, Hao Zhang, Shangbiao Feng, Xingang Xie, Xiaolei Wang, Xuegong She *Org. Chem. Front.*, **2018**, *5*, 1124-1128.
- 8) Concise Total Synthesis of Isospongian (\pm)-Polyrhaphin D. Zemin Wang, Zhimin Xing, Lin Liu, Hao Zhang, Zhuliang Zhong, Dr Xingang Xie, Xuegong She *ChemistrySelect* **2016**, *1*, 2225-2227.
- 9) Thermal 1, 3-Dipolar Cycloaddition Reaction of Azomethine Imines with Active Esters. Liwenze He, Lin Liu, Runfeng Han, Weiwei Zhang, Xingang Xie, Xuegong She *Org. Biomol. Chem.*, **2016**, *14*, 6757-6761.
- 10) An Upstream By-product from Ester Activation via NHC-Catalysis Catalyzes Downstream Sulfonyl Migration Reaction. Runfeng Han, Liwenze He, Lin Liu, Xingang Xie, Xuegong She *Chem.Asian. J.* **2015**, *11*, 193-197.
- 11) Total synthesis of conosilane A via a site-selective C–H functionalization strategy. Ziyun Yuan, Xiaojun Hu, Hao Zhang, Lin Liu, Peng Chen, Min He, Xingang Xie, Xiaolei Wang, Xuegong She *Chemical Communications* **2018**, *54*, 912-915.
- 12) Visible-light-promoted dual C–C bond formations of alkynoates via a domino radical addition/cyclization reaction: A synthesis of coumarins. Shangbiao Feng, Xingang Xie, Weiwei Zhang, Lin Liu, Zhuliang Zhong, Dengyu Xu, Xuegong She *Organic letters* **2016**, *18*, 3846-3849.
- 13) Visible-light promoted dithioacetalization of aldehydes with thiols under aerobic and photocatalyst-free conditions. Zhimin Xing, Mingyang Yang, Haiyu Sun, Zemin Wang, Peng Chen, Lin Liu, Xiaolei Wang, Xingang Xie, Xuegong She *Green Chemistry*, **2018**, *20*, 5117-5122.

14) Asymmetric Total Synthesis of the Possible Structure 1b of 15-Oxopuupehenoic Acid. Huayue Song, Lin Liu, Xingang Xie
CHINESE JOURNAL OF ORGANIC CHEMISTRY, **2020**, *40*, 3420-3425.