

Dr Maoluo Gan, researcher in Medicinal Chemistry

Maoluo Gan

Date of Birth:18.11.1976 Nationality: Chinese

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My research work focused on the natural products chemistry, including the isolation and structure determination of new bioactive natural, genome mining, and genetic manipulation of bioactive natural product biosynthesis. I have developed skills in the isolation and purification, structure elucidation, organic synthesis of natural products through my MSc and PhD. After that, my research centres on the screening of new antibiotics with the activity against drug-resistant-pathogens, particularly against tuberculosis, discovering new antibiotics from marine derived microbes, especially water-soluble antibiotics. As the traditional process of discovering new bioactive natural products is generally long and laborious, I am interested in the methodology of dereplication of microbial natural products by combing chemical LC-UV-MS and bioinformatics methods. In addition, I have a deep interest in the genetics and genetic manipulation of bioactive natural product biosynthesis.

Employment Record

Visiting Scholar, School of Chemistry, University of St Andrews, supervisor Dr Rebecca Goss

October 2014- October 2015 (expected date)

Associate Professor, Institute of Medicinal Biotechnology, Chinese Academy of Medical Sciences and Peking Union Medical College, 2012-2014

Research Associate, Institute of Medicinal Biotechnology, Chinese Academy of Medical Sciences and Peking Union Medical College, supervisor Chunling Xiao, 2008-2011

Education

PhD in Medicinal Chemistry, Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Advisor: Prof Jiangong Shi
September 2005- July 2008

MSc in Medicinal Chemistry, Jiangxi University of Traditional Chinese Medicine
September 2002-July 2005

BSc in Pharmacy, Jiangxi University of Traditional Chinese Medicine
September 1996-July 2000

Funding and Awards

- 2014: Visiting Scholarship awarded by State Scholarship Fund of China
- 2014-2016: The National Science and Technology Project of China: Development for NDM-1 inhibitors

- 2013-2016: National Natural Sciences Foundation of China (NNSFC), Antibiotics against drug-resistant pathogens from marine-derived actinomycetes
- 2012-2014: Beijing Natural Sciences Foundation, Discovery of new water-soluble streptothricins against drug-resistant bacteria and their structure-activity relationship
- 2011-2013: NNSFC, New water-soluble antibiotics against tuberculosis from *Streptomyces* sp. 1776
- 2007: The Excellent PhD Postgraduate award by Peking Union Medical College

Relevant Skills

- Expertise in chromatographic isolation and purification of natural products
- Experienced in spectroscopic and chemical determination of natural products structures
- Proficient in the TDDFT calculation of Electronic Circular Dichroism to elucidate the absolute configuration of chiral natural products.
- Organic synthesis of natural products

Selected Publications

1. Wu, C.; Tan, Y.; Gan, M.*; Wang, Y.; Guan, Y.; Hu, X.; Zhou, H.; Shang, X.; You, X.; Yang, Z.; Xiao, C., Identification of Elaiophylin Derivatives from the Marine-Derived Actinomycete *Streptomyces* sp. 7-145 Using PCR-Based Screening. *J. Nat. Prod.* 2013, 76, 2153-2157.
2. Gan, M.; Liu, Y.; Bai, Y.; Guan, Y.; Li, L.; Gao, R.; He, W.; You, X.; Li, Y.; Yu, L.; Xiao, C., Polyketides with New Delhi Metallo- β -lactamase 1 Inhibitory Activity from *Penicillium* sp. *J. Nat. Prod.* 2013, 76, 1535-1540.
3. Gan, M.; Zheng, X.; Liu, Y.; Guan, Y.; Xiao, C., Three new 12-carbamoylated streptothricins from *Streptomyces* sp. I08A 1776. *Bioorg. Med. Chem. Lett.* 2012, 22, 6151-6154.
4. Gan, M.; Guan, Y.; Zheng, X.; Yang, Y.; Hao, X.; Liu, Y.; Yu, L.; Xiao, C., Two streptothricins with a cis-streptolidine lactam moiety from *Streptomyces* sp. I08A 1776. *J. Antibiot.* 2012, 65, 513-516.
5. Gan, M.; Liu, M.; Gan, L.; Lin, S.; Liu, B.; Zhang, Y.; Zi, J.; Song, W.; Shi, J., Dammarane Glycosides from the Root of *Machilus yaoshansis*. *J. Nat. Prod.* 2012, 75, 1373-1382.
6. Gan, M.; Zheng, X.; Gan, L.; Guan, Y.; Hao, X.; Liu, Y.; Si, S.; Zhang, Y.; Yu, L.; Xiao, C., Streptothricin derivatives from *Streptomyces* sp. I08A 1776. *J. Nat. Prod.* 2011, 74, 1142-1147.
7. Gan, M.; Liu, M.; Liu, B.; Lin, S.; Zhang, Y.; Zi, J.; Song, W.; Ye, F.; Chen, X.; Shi, J., Cucurbitane Glucosides from the Root of *Machilus yaoshansis*. *J. Nat. Prod.* 2011, 74, 2431-2437.
8. Gan, M.; Zhang, Y.; Lin, S.; Liu, M.; Song, W.; Zi, J.; Yang, Y.; Fan, X.; Shi, J.; Hu, J.; Sun, J.; Chen, N., Glycosides from the Root of *Iodes cirrhosa*. *J. Nat. Prod.* 2008, 71, 647-654.