

GUOJUN WANG

Assistant Research Professor

Harbor Branch Oceanographic Institute, Florida Atlantic University

5600 U.S. 1 North, Fort Pierce, Florida, 34946

Tel: 772-242-2423; Fax: 772-242-2332; E-mail: guojunwang@fau.edu

Lab page: <http://www.fau.edu/hboi/mbr/biosynth.php>

EMPLOYMENT

2015. 03 ~ present Principle Investigator, Assistant Research Professor, Harbor Branch Oceanographic Institute, Florida Atlantic University, Fort Pierce, FL, USA

2014. 10 ~ 2015. 03 Research Associate, College of Pharmacy, University of Kentucky, Lexington, KY, USA.

EDUCATION AND TRAINING

2014. 09 Postdoctoral scholar, College of Pharmacy, University of Kentucky, Lexington, USA.

2009. 02 Postdoctoral researcher, National Food Research Institute, Tsukuba, Japan.

2004. 03 Ph.D, Institute of Microbiology, Chinese Academy of Sciences, Beijing, China.

2000. 07 M.S., National Key Laboratory of Crops Genetic Improvement, Huazhong Agricultural University, Wuhan, China.

1997. 07 B.S., Huazhong Agricultural University, Wuhan, China.

RESEARCH INTERESTS

Marine Natural Product Biosynthesis and Drug Discovery, Microbial Genetics, Genome Mining, Metagenomics, Single Cell Genomics, Enzyme Function and Engineering, Metabolic Engineering, Medicinal Chemistry

TEACHING INTERESTS

Microbial Genetics, Microbiology and Biotechnology, Natural Product and Drug Discovery, Biochemistry, and/or Chemical Biology

PROFESSIONAL MEMBERSHIP AND ACTIVITIES

- American Chemical Society;
- American Society for Microbiology;
- American Society of Pharmacognosy;
- Reviewer for journals such as *Appl. Environ. Microbiol.*, *BioMed. Res. Int.*, *Appl. Microbiol. Biotechnol.*, *Microbiology*, *Steriods*, *Sci. Rep.*, *PLOS ONE*, *J. Appl. Microbiol.*, and *Lett. Appl. Microbiol.*, *Oncotarget*.

FUNDINGS

Current:

2, NCI R21 award R21CA209189 07/08/2016 – 06/30/2018

Identifying the biosynthesis of a potent cytotoxic agent Lasonolide A

Role: PI

1, Faculty Start-up Package Florida Atlantic University 03/02/2015 – 02/28/2018

Role: PI

Pending:

- 1, NIAID R21 proposal 07/01/2017 – 06/30/2019
Genome mining of *Actinokineospora* spp., targeted identification of natural products and biosynthetic pathways
 Role: PI
- 2, NIEHS/NSF P01 Proposal 4/1/2018 – 3/31/2023
Center for Oceans and Human Health: Addressing the impacts of climate change on the health of Florida coastal ecosystems and communities
 Role: Co-I

PRESENTATIONS

- 2, **Invited talk.** Targeting new marine natural products by the activation of cryptic gene clusters. 2016 Florida Annual Meeting and Exposition (FAME), Tampa, FL, 05/05/2016-05/07/2016.
- 1, Identifying the biosynthesis of a potent cytotoxic agent Lasonolide A. 2016 Marine Natural Products, the Gordon Research Conference, Ventura, CA, 03/06/2016-03/11/2016.

PUBLICATIONS (*: corresponding author)

- 24, **Guojun Wang***, Nolan Barrett and Peter McCarthy (2017) Draft genome sequence of a deep-sea *Alteromonas* sp. V450 isolated from marine sponge *Leiodermatium* sp. **Genome Announcements** **5** (5): e01508-16.
- 23, **Guojun Wang***, Jing Chen, Haining Zhu, and Jürgen Rohr* (2017) One-pot total synthesis of presteffimycinone, an early intermediate of the anthracycline antibiotic steffimycin biosynthesis. **Organic Letters** **19** (3): 540–543.
- 22, **Guojun Wang**, Masami Izawa, Xiaoge Yang, Dongbo Xu, Yukinori Tanaka, and Kozo Ochi. (2017) Identification of a novel lincomycin resistance mutation linked with activation of antibiotic production in *Streptomyces coelicolor* A3(2). **Antimicrobial Agents and Chemotherapy** **61** (2): e02247-16.
- 21, **Guojun Wang**, Ting Zhang, Haifeng Huang, Shurong Hou, Xiabin Chen, Fang Zheng and Chang-Guo Zhan. (2016) Plant expression of cocaine hydrolase-Fc fusion protein for treatment of cocaine abuse. **BMC Biotechnology** **16**: 72, DOI: 10.1186/s12896-016-0302-9.
- 20, David Jackson, Xia Yu, **Guojun Wang**, Avinash Patel, Jesus Barajas, Eita Sasaki, Mikko Metsä-Ketala, Jürgen Rohr, Shiou-Chuan (Sheryl) Tsai (2016) Insights into complex oxidation during BE-7585A biosynthesis: structural determination and analysis of the polyketide monooxygenase BexE. **ACS Chemical Biology** **11** (4): 1137–1147.
- 19, Jhong-Min Chen, Caixia Hou, **Guojun Wang**, Oleg V. Tsodikov, Jürgen Rohr. (2015) Structural insight into MtmC, a bifunctional ketoreductase-methyltransferase involved in the assembly of the mithramycin trisaccharide chain. **Biochemistry** **54** (15): 2481–2489.
- 18, Heng K. Tam, Johannes Härle, Stefan Gerhardt, Jürgen Rohr, **Guojun Wang**, Jon S. Thorson, Aurélien Bigot, Monika Lutterbeck, Wolfgang Seiche, Bernhard Breit, Andreas Bechthold, and Oliver Einsle. (2015) Structural characterization of *O*- and *C*-glycosylating variants of the landomycin glycosyltransferase LanGT2. **Angewandte Chemie International Edition** **54**

- (9): 2811-2815.
- 17, Shanteri Singh, Jianjun Zhang, Tyler D. Huber, Manjula Sunkara, Katherine Hurley, Randa D. Goff, **Guojun Wang**, Wen Zhang, Chunming Liu, Jürgen Rohr, Steven G. Van Lanen, Andrew J. Morris, Jon S. Thorson. (2014) Facile strategies for the synthesis and utilization of *S*-adenosyl-L-methionine analogs. *Angewandte Chemie International Edition* **53** (15): 3965-3969.
 - 16, Yosi Nindita, Tomoya Nishikawa, Kenji Arakawa, **Guojun Wang**, Kozo Ochi, Zhongjun Qin, Haruyasu Kinashi. (2013) Chromosomal circularization of the model *Streptomyces* species, *Streptomyces coelicolor* A3(2). *FEMS Microbiology Letters* **347** (2): 149-155.
 - 15, **Guojun Wang**, Pallab Pahari, Madan K. Kharel, Jing Chen, Haining Zhu, Steven G. Van Lanen and Jürgen Rohr (2012) Cooperation of two bifunctional enzymes in the biosynthesis and attachment of deoxysugars of the antitumor antibiotic mithramycin. *Angewandte Chemie International Edition* **51** (42): 10638–10642.
 - 14, Nidhi Tibrewal, Pallab Pahari, **Guojun Wang**, Madan K. Kharel, Caleb Morris, Theresa Downey, Jon S. Thorson, and Jürgen Rohr (2012) Elucidation of the key C-C bond cleavage during the biosynthesis of antitumor antibiotics gilvocacin and jadomycin. *Journal of the American Chemical Society* **134** (44):18181-18184.
 - 13, Madan K. Kharel, Pallab Pahari, Khaled A. Shaaban, **Guojun Wang**, and Jürgen Rohr (2012) Elucidation of post-PKS redox reactions involved in the biosynthesis of landomycins. *Organic Biomolecular Chemistry* **10** (21): 4256-4265.
 - 12, **Guojun Wang**, Madan K. Kharel, Pallab Pahari, and Jürgen Rohr (2011) Investigating mithramycin deoxysugar biosynthesis: large scale enzymatic preparation of TDP-D-olivose. *ChemBioChem*. **12** (17): 2568-2571.
 - 11, **Guojun Wang**, Yukinori Tanaka, and Kozo Ochi. (2010) The G243D Mutation (*afsB* mutation) in the principal sigma factor σ^{HrdB} alters intracellular ppGpp level and antibiotic production in *Streptomyces coelicolor* A3(2). *Microbiology* **156** (8): 2384-2392.
 - 10, **Guojun Wang**, Takashi Inaoka, Susumu Okamoto, and Kozo Ochi. (2009) A novel insertion mutation (92::G) in ribosomal S12 protein results in paromomycin resistance and antibiotic overproduction in *Streptomyces coelicolor* A3(2). *Antimicrobial Agents and Chemotherapy* **53** (3): 1019-1026.
 - 9, Takashi Inaoka, **Guojun Wang**, and Kozo Ochi (2009) ScoC regulates bacilysin production at the transcription level in *Bacillus subtilis*. *Journal of Bacteriology* **191** (23): 7367-7371.
 - 8, Adelfia Tala, **Guojun Wang**, Martina Zemanova, Susumu Okamoto, Kozo Ochi, and Pietro Alifano (2009) Activation of dormant bacterial genes by *Nonomuraea* sp. ATCC 39727 “mutant type” RNA polymerase. *Journal of Bacteriology* **191** (3): 805-814.
 - 7, Kozo Ochi, Ji-Yun Kim, Yukinori Tanaka, **Guojun Wang**, Kenta Masuda, Hideaki Nanamiya, Susumu Okamoto, Shinji Tokuyama, Yoshikazu Adachi, and Fujio Kawamura (2009) Inactivation of KsgA, a 16S rRNA methyltransferase, causes a vigorous emergence of high-level kasugamycin-resistant mutants. *Antimicrobial Agents and Chemotherapy* **53** (1): 193–201.
 - 6, **Guojun Wang**, Takeshi Hosaka, and Kozo Ochi. (2008) Dramatic activation of antibiotic

- production in bacteria by cumulative drug-resistance mutations. *Applied and Environmental Microbiology* **74** (9): 2834-2840.
- 5, Hongbo Ling, **Guojun Wang**, Jin-E Li, and Huarong Tan. (2008) *sanN* encoding a dehydrogenase is essential for nikkomycin biosynthesis in *Streptomyces ansochromogenes*. *Journal of Microbiology Biotechnology* **18** (3), 397–403.
 - 4, Hongbo Ling, **Guojun Wang**, Yuqing Tian, Gang Liu, and Huarong Tan. (2007) SanM catalyzes the formation of 4-pyridyl-2-oxo-4-hydroxyisovalerate in nikkomycin biosynthesis by interacting with SanN. *Biochemical and Biophysical Research Communications* **361** (1):196-201.
 - 3, Keiichi Kawai, **Guojun Wang**, Susumu Okamoto, and Kozo Ochi. (2007) The rare earth, scandium, causes antibiotic overproduction in *Streptomyces* spp. *FEMS Microbiology Letters* **274** (2):311-315.
 - 2, **Guojun Wang** and Huarong Tan (2004) Enhanced production of nikkomycin X by over-expression of SanO, a non-ribosomal peptide synthetase in *Streptomyces ansochromogenes*. *Biotechnology Letters* **26** (3): 229-233.
 - 1, **Guojun Wang**, Liping Nie and Huarong Tan (2003) Cloning and characterization of *sanO*, a gene involved in nikkomycin biosynthesis of *Streptomyces ansochromogenes*. *Letters in Applied Microbiology* **37** (6): 452-457.