Jianfeng Cai

jianfengcai@usf.edu
Associate Professor
Department of Chemistry
University of South Florida
Tampa, FL 33620
(Office) 813-974-9506

EDUCATION

- **Postdoctoral Associate,** Bioorganic Chemistry, **Yale University**, **2007-2009**
  Advisor: **Professor Andrew D. Hamilton**
- **PhD**, Bioorganic Chemistry, **Washington University in St. Louis**, **2006**
  Advisor: **Professor John-Stephen Taylor**
  Thesis Title: *Design and Synthesis of Nucleic Acid Templated and Targeted Drugs and Probes*
- **MS**, **Nanjing University**, **China**, **2000**
- **BS**, **Nanjing University**, **China**, **1997**

POSITIONS AND EMPLOYMENT

- 2007-2009 Postdoctoral Associate, Yale University, New Haven, CT
- 2009-2015 Assistant Professor, University of South Florida, Tampa, FL
- 2009-present Member, Drug Discovery Program, Moffitt Cancer Center, Tampa, FL
- 2015-Present Associate Professor, University of South Florida, Tampa, FL

AWARDS AND RECOGNITIONS

2016 Outstanding reviewer, Journal of Medicinal Chemistry
2015 Outstanding reviewer, Journal of Medicinal Chemistry
2015 USF Faculty Outstanding Research Achievement Award
2015 Biomatik Distinguished Junior Faculty Award, the Chinese-American Chemistry & Chemical Biology Professors Association (CAPA)
2014 Excellence in reviewing, European Journal of Medicinal Chemistry
2014 NSF Career Award
2014 ChemComm Emerging Investigator
2012 New Investigator award, Florida Bankhead Coley Cancer Research Program
2011 Ralph E. Powe Junior Faculty Enhancement Award, Oak Ridge Associated Universities (ORAU)

PROFESSIONAL MEMBERSHIPS

Member, American Chemical Society (Organic Chemistry and Medicinal Chemistry Division)
Member, American Peptide Society

PROFESSIONAL SERVICES

2015.4 Panelist, CHEM-CLP, National Science Foundation
2015.6 Ad hoc member, BMBI, National Institute of Health
2015- Editorial Board member, *ChemistrySelect*
2016- Editorial Advisory Board member, *ChemistryOpen*
2017.2 Ad hoc member, SBCB, National Institute of Health

RESEARCH INTEREST

Research Area: Bioorganic, Chemical Biology, Medicinal Chemistry, Biomaterials, and Biophysics

Research Focus: Design, synthesis and investigation of bioactive peptidomimetics; development of novel biomaterials

PUBLICATIONS

Work from Independent Career at University of South Florida:

84. Peng Teng, Ning Ma, Darrell Cole Cerrato, Fengyu She, Timothy Odom, Xiang Wang, Li-June Ming, Arjan van der Vaart, Lukasz Wojtas, Hai Xu,* and **Jianfeng Cai**.* Right-Handed Helical Foldamers Consisting of de novo D-AApeptides, *J. Am. Chem. Soc.*, **2017**, Accepted

83. Jianjun Pan,* Prasana K. Sahoo, Annalisa Dalzini, Zahra Hayati, Chinta M. Aryal, Peng Teng, **Jianfeng Cai**, Humberto Rodriguez Gutierrez, Likai Song.* Membrane Disruption Mechanism of a Prion Peptide (106-126) Investigated by Atomic Force Microscopy, Raman and Electron Paramagnetic Resonance Spectroscopy, *J. Phys. Chem. B.*, **2017**, Accepted.

82. Hai Xu,* Siqi Zhao, Xiang Xiong, Jinzhi Jiang, Wei Xu, Daoben Zhu, Yi Zhang, Wenjie Liang, **Jianfeng Cai.*** Atomic Force Microscope characterization of self-assembly behaviors of cyclo[8] pyrrole on solid substrates, *Chem. Phys. Lett.*, **2017**, 647,151.

81. Nawal K Khadka; Peng Teng, **Jianfeng Cai**, and Jianjun Pan.* Modulation of Lipid Membrane Structural and Mechanical Properties by a Peptidomimetic Derived from Reduced Amide Scaffold. *Biochim. Biophys. Acta.*, **2017**, 1859,734-744.

80. Alekhya Nimmagadda, Yan Shi and **Jianfeng Cai**.* γ-AApeptides as a new strategy for therapeutic development. *Curr. Med. Chem.*, **2017**, Accepted.

79. Olapeju Bolarinwa, Alekhya Nimmagadda, Ma Su, and **Jianfeng Cai**.* Structure and Function of AApeptides. *Biochemistry***, 2017**, 445-457.

78. Alekhya Nimmagadda, Xuan Liu, Peng Teng, Ma Su, Yaqiong Li, Qiao Qiao, Nawal K Khadka, Xiaoting Sun, Jianjun Pan, Hai Xu,* Qi Li,* and **Jianfeng Cai**.* Polycarbonates with Potent and Selective Antimicrobial Activity toward Gram-Positive Bacteria. *Biomacromolecules*, **2017**, 18, 87-95.

77. Peng Sang, Yan Shi, Peng Teng, Annie Cao, Hai Xu, Qi Li, and **Jianfeng Cai.*** Antimicrobial AApeptides. *Curr. Top. Med. Chem*., **2017**, 17, 1266-1279.

76. Peng Teng, Da Huo, Alekhya Nimmagadda, Jianfeng Wu, Fengyu She, Ma Su, Xiaoyang Lin, Jiyu Yan, Annie Cao, Chuanwu Xi,* Yong Hu,* and **Jianfeng Cai**.* Small antimicrobial agents based on acylated reduced amide scaffold. *J. Med. Chem***., 2016**, 59, 7877-7887.

75. Fengyu She, Alekhya Nimmagadda, Peng Teng, Ma Su, Xiaobing Zuo, and **Jianfeng Cai**.* Helical 1:1 α/sulfono-γ-AA heterogeneous peptides with antibacterial activity. *Biomacromolecules*, **2016**, 17, 1854–1859.

74. Fengyu She, Olapeju Oyesiku, Peiguang Zhou, Shiming Zhuang, David W. Koenig, and **Jianfeng Cai**.* The development of Antimicrobial γ-AApeptides. *Future Med. Chem.*, **2016**, 8, 1101.

73. Chian Sing Ho, Nawal K. Khakda, Fengyu She, **Jianfeng Cai**, and Jianjun Pan.* Influenza M2 Transmembrane Domain Senses Membrane Heterogeneity and Enhances Membrane Curvature. *Langmuir*, **2016**, 32, 6730-6738.

72. Pavanjeet Kaur, Yaqiong Li, **Jianfeng Cai**,* and Likai Song.* Selective Membrane Disruption Mechanism of an Antibacterial γ-AApeptide Defined by EPR Spectroscopy. *Biophys. J.*, **2016**, 110, 1789-1799.

71. Peng Teng, Yan Shi, Peng Sang, and **Jianfeng Cai**.* γ-AApeptides as a new class of peptidomimetics. *Chem. Eur. J.*, **2016**, 22, 2-11.

70. Yan Shi, Peng Teng, Peng Sang, Fengyu She, Lulu Wei, and **Jianfeng Cai**.* γ-AApeptides: design, structure, and applications. *Acc. Chem. Res.*, **2016**, 49, 428-441.

69. Hai Xu,* Siqi Zhao, Yang Ren, Wei Xu, Daoben Zhu, Jinzhi Jiang and **Jianfeng Cai**.* Primary Investigation of optical limiting performance of Cyclo [8] pyrrole with wide optical limiting window. *RSC Advances*, **2016**, 6, 21067-21071.

68. Chian Sing Ho, Nawal K Khakda, Fengyu She, **Jianfeng Cai**, and Jianjun Pan.* Polyglutamine Aggregates Impair Lipid Membrane Integrity and Enhance Lipid Membrane Rigidity. *Biochim. Biophys. Acta.*, **2016**, 1858, 661-670.

67. Yan Wang, Frankie Costanza, Alekhya Nimmagadda, Daqian Song, **Jianfeng Cai,*** and Qi Li.* PEG-poly (amino acid)s/MicroRNA complex nanoparticles effectively arrest the growth and metastasis of colorectal cancer, *J. Biomed. Nanotechnol.*, **2016**, accepted.

66. Xiaoyang Lin, Ge Bai, Kyle Sutherland, Frankie Costanza, Kurt Breitenkamp, Kevin Sill, **Jianfeng Cai**,* and Chuanhai Cao.* Polymer-Encapsulated Aβ Peptide Fragments as an Oligomeric-Specific Vaccine for Alzheimer's disease" *J. Biomed. Nanotechnol.*, **2016**, 12, 1-10.

65. Haifan Wu, Jinzhi Jiang, Hai Xu, Qi Li, **Jianfeng Cai**.* RGD mimetic γ-AApeptides and methods of use us 20140004039 a1: a patent evaluation. *Expert Opin. Ther. Pat.***, 2016**, 26, 131-137.

64. Fan Chao, Lu Chen, Qingling Huang, Tao Shen, Eric A. Welsh, Jamie K. Teer, **Jianfeng Cai**, W. Douglas Cress, and Jie Wu.* Overexpression of major CDKN3 transcripts is associated with poor survival in lung adenocarcinoma. *Br. J. Cancer*, **2015**, ASAP.

63. Hua Sui, Hanchen Xu, Qing Ji, Xuan Liu, Lihong Zhou, Haiyan Song, Xiqiu Zhou, Yangxian Xu, Zhesheng Chen, **Jianfeng Cai**, Guang Ji, Qi Li.* 5-hydroxytryptamine receptor (5-HT1DR) promotes colorectal cancermetastasis by regulating Axin1/β-catenin/MMP-7 signaling pathway. *Oncotarget.* **2015**, 25975-25987.

62. Haifan Wu, Qiao Qiao, Peng Teng, Yaogang Hu, Dimitrios Antoniadis, Xiaobing Zuo, and **Jianfeng Cai.*** A new class of heterogeneous helical peptidomimetics. *Org. Lett.*, **2015**, 17 (14), 3524–3527.

61. Yaqiong Li, Haifan Wu, Peng Teng, Ge Bai, Xiaoyang Lin, Xiaobing Zuo, Chuanhai Cao, **Jianfeng Cai**.* Helical antimicrobial sulfono-γ-AApeptides. *J. Med. Chem*., **2015**, 58, 4802-4811.

60. Yuxia Hao, Ge Bai, Junping Wang, Longfeng Zhao, Kyle Sutherland, **Jianfeng Cai** and Chuanhai Cao.* Identifiable biomarker and treatment development using HIV-1 long term non-progressor sera. *BMC Immunol*, **2015**, 16:25.

59. Shruti Padhee, Yaqiong Li, **Jianfeng Cai**.* Activity of lipo-cyclic γ-AApeptides against biofilms of staphylococcus epidermidis and pseudomonas aeruginosa. *Bioorg. Med. Chem. Lett.***, 2015**, 25, 2565–2569.

58. Haifan Wu, Fengyu She, Wen-Yang Gao, Austin Prince, Yaqiong Li, Lulu Wei, Allison Mercer, Lukasz Wojtas, Shengqian Ma, and **Jianfeng Cai.*** The Synthesis of Head-to-Tail Cyclic Sulfono-γ-AApeptides. *Org. Biomol. Chem.,* **2015**, 13, 672-676.

57. Haifan Wu, Qiao Qiao, Yaogang Hu, Peng Teng, Wenyang Gao, Xiaobing Zuo, Lukasz Wojtas, Randy W. Larsen, Shengqian Ma, and **Jianfeng Cai.*** Sulfono-γ-AApeptides as a new class of unnatural helical foldamer. *Chem. Eur. J.***, 2015**, 21, 2501-2507.

56. Qing Ji, Xuan Liu, Zhifen Han, Lihong Zhou, Hua Sui, Linlin Yan, Haili Jiang, Jianlin Ren, **Jianfeng Cai**, and Qi Li.* Resveratrol suppresses epithelial-to-mesenchymal transition in colorectal cancer through TGF-β1/Smads signaling pathway mediated Snail/E-cadherin expression. *BMC Cancer***, 2015**, 15:97.

55. Xuan Liu, Qing, Ji, Naijing Ye, Hua Sui, Lihong Zhou, Huirong Zhu, Zhongze Fan, **Jianfeng Cai**, and Qi Li.* Berberine Inhibits Invasion and Metastasis of Colorectal Cancer Cells via COX-2/PGE2 Mediated JAK2/STAT3 Signaling Pathway. *PLoS One***, 2015**, 10(5): e0123478.

54. Kenneth E. Ugen, Xiaoyang Lin, Ge Bai, Zhanhua Liang, **Jianfeng Cai**, Kunyun Li, Shijie Song, Chuanhai Cao* and Juan Sanchez-Ramos. Evaluation of an alpha synuclein sensitized dendritic cell based vaccine in a transgenic mouse model of Parkinson's disease. *Hum. Vaccin. Immunother.*, **2015**, 11, 922-930.

53. Peng Teng, Haifan Wu, Lili Lin and Jianfeng Cai.* Antimicrobial γ-AApeptides (WO2013112548)-a patent evaluation. *Expert Opin. Ther. Pat.***, 2015**, 25, 111-118.

52. Yaogang Hu, Ni Cheng, Haifan Wu, Samuel Kang, Richard D. Ye,* and **Jianfeng Cai.*** Design, synthesis and characterization of fMLF-mimicking AApeptides. *ChemBioChem*, **2014**, 15, 2420-2426.

51. Yaqiong Li, Christina Smith, Haifan Wu, Peng Teng, Yan Shi, Shruti Padhee, Torey Jones, Anh-My Nguyen, Chuanhai Cao, Hang Yin,* and **Jianfeng Cai***. Short antimicrobial lipo-α/γ-AA hybrid peptides. *ChemBioChem*, **2014**, 2074-2280.

50. Peng Teng, Xiaolei Zhang, Haifan Wu, Qiao Qiao, Said M Sebti* and **Jianfeng Cai***. Identification of novel inhibitors that disrupt STAT3/DNA interaction from γ-AApeptide OBOC combinatorial library. *Chem. Commun.* **2014**, 50, 8739 - 8742.

49. Xiaoyang Lin, Ge Bai, Linda Lin, Hengyi Wu, **Jianfeng Cai**, Kenneth E Ugen*, Chuanhai Cao*. Vaccination induced changes in pro-inflammatory cytokine levels as an early putative biomarker for cognitive improvement in a transgenic mouse model for Alzheimer disease. *Hum. Vaccin. Immunother.* **2014**, 10(7), 2024-2031.

48. Chuanhai Cao*, Yaqiong Li, Hui Liu, Ge Bai, Xiaoyang Lin, Kyle Sutherland, Jonathan Myal, Neel Nabar, **Jianfeng Cai***. The potential therapeutic effects of THC on Alzheimer's disease. *J. Alz. Dis.* **2014**, 973-984.

47. Yan Wang, Frankie Costanza, Haifan Wu, Daqian Song, **Jianfeng Cai*** and Qi Li*. PEG-poly (amino acid)s-encapsulated Tanshinone IIA as potential therapeutics for the treatment of hepatoma. *J. Mat. Chem. B.* **2014**, 3115-3112.

46. Yan Wang, Daqian Song, Frankie Costanza, Huirong Zhu, Zhongze Fan,* **Jianfeng Cai*** and Qi Li.* Targeted Delivery of Tanshinone IIA-conjugated mPEG-PLGA-PLL-cRGD Nanoparticles to Hepatocellular Carcinoma. *J. Biomed. Nanotechnol.* **2014**, 3244-3252.

45. Wen-Yang Gao, Yao Chen, Youhong Niu, Kia Williams, Lindsay Cash, Pastor Perez, Lukasz Wojtas , **Jianfeng Cai,** Yu-Sheng Chen and Shengqian Ma*. Crystal engineering of an nbo topology MOF for chemical fixation of CO2 under ambient conditions. *Angew Chem. Int. Ed.*, **2014**, 53, 2615-2619.

44. Shruti Padhee, Christina Smith, Haifan Wu, Yaqiong Li, Namitha Manoj, Qiao Qiao, Zoya Khan, Chuanhai Cao, Hang Yin,* and **Jianfeng Cai.*** The development of antimicrobial γ-AApeptides that suppress pro-inflammatory immune responses. *ChemBioChem*, **2014**, 688-694.

43. Haifan Wu, Peng Teng and **Jianfeng Cai.*** Quick access to multiple classes of peptidomimetics from common γ-AApeptide building blocks. *Eur. J. Org.*, **2014**, 1760-1765.

42. Yaqiong Li, Christina Smith, Haifan Wu, Shruti Padhee, Namitha Manoj, Joseph Cardiello, Qiao Qiao, Chuanhai Cao, Hang Yin,* and **Jianfeng Cai.*** Lipidated cyclic γ-AApeptides display both antimicrobial and anti-inflammatory activity. *ACS Chem. Biol.*, **2014**, 9, 211-217.

41. Haifan Wu, Yaqiong Li, Ge Bai, Youhong Niu, Qiao Qiao, Jeremiah Tipton, Chuanhai Cao,* **Jianfeng Cai.*** γ-AApeptide-based small-molecule ligands that inhibit Aβ aggregation. *Chem. Commun.*, **2014**, 50, 5206-208.

40. Frankie Costanza, Shruti Padhee, Haifan Wu, Yan Wang, Jesse Revenis, Chuanhai Cao, Qi Li* and **Jianfeng Cai.*** Investigation of antimicrobial PEG-poly(amino acid)s. *RSC Advances*, **2014**, 4, 2089-2095.

39. Rongsheng E. Wang,* Yin Zhang, Ling Tian, Weibo Cai* and **Jianfeng Cai**. Antibody-Based Imaging of HER-2: Moving into the Clinic. *Curr. Mol. Med.*, **2013**, 13, 1523-1537.

38. Qing Ji, Xuan Liu, Xiaoling Fu, Long Zhang, Hua Sui, Lihong Zhou, Jian Sun, **Jianfeng Cai**, Jianmin Qin, Jianlin Ren*, Qi Li*. Resveratrol Inhibits Invasion and Metastasis of Colorectal Cancer Cells via MALAT1 Mediated Wnt/β-Catenin Signal Pathway. *PLOS One*, **2013**, 8, 11, e78700.

37. Yaqiong Li, Haifan Wu, Youhong Niu, Yaogang Hu, Qi Li, Chuanhai Cao, **Jianfeng Cai.*** Development of RNA Aptamer-Based Therapeutic Agents. *Curr. Med. Chem.*, **2013**, 20, 3655-3663.

36. Haifan Wu, Peng Teng, Youhong Niu, Qi Li, **Jianfeng Cai**.* Polymyxin derivatives: a patent evaluation (WO2012168820). *Expert Opin. Ther. Pat.*, **2013**, 1075-81.

35. Youhong Niu, Haifan Wu, Yaqiong Li, Yaogang Hu, Shruti Padhee, Qi Li, Chuanhai Cao and **Jianfeng Cai**.* AApeptides as a new class of antimicrobial agents. *Org. Biomol. Chem.* **2013**, 11, 4283-4290.

34. Long Zhang, Qing Ji, Xuan Liu, Xingzhu Chen, Zhaohua Chen, Yanyan Qiu, Jian Sun, **Jianfeng Cai**, Huirong Zhu, and Qi Li. Norcantharidin inhibits tumor angiogenesis via blocking VEGFR2/MEK/ERK signaling pathways. *Cancer Sci.*, **2013**, 104, 604-610.

33. Neel R. Nabar, Fang Yuan, Xiaoyang Lin, Li Wang, Ge Bai, Jonathan Mayl, Yaqiong Li, Shu-Feng Zhou, Jinhuan Wang, **Jianfeng Cai**, Chuanhai Cao*. Cell Therapy: A Safe and Efficacious Therapeutic Treatment for Alzheimer's Disease in APP+PS1 Mice. *PLoS One*, **2012**, 7, 12, e49468.

32. Youhong Niu, Haifan Wu, Rongfu Huang, Qiao Qiao, Frankie Costanza, Xi-Sen Wang, Yaogang Hu, Mohamad Nassir Amin, Anh-My Nguyen, James Zhang, Edward Haller, Shengqian Ma, Xiao Li, and **Jianfeng Cai***. Nanorods formed from a new class of peptidomimetics. *Macromolecules*, **2012**, 45, 7350–7355.**31.** Yaogang Hu, Mohamad Nassir Amin, Shruti Padhee, Rongsheng E. Wang, Qiao Qiao, Ge Bai, Yaqong Li, Archana Mathew, Chuanhai Cao, and **Jianfeng Cai***. Lipidated Peptidomimetics with Improved Antimicrobial Activity. *ACS Med. Chem. Lett.* **2012**, *55*, 4003-4009.

30. Youhong Niu, Rongsheng E. Wang*, Haifan Wu, **Jianfeng Cai***. Recent development of small antimicrobial peptidomimetics**.** *Future Med. Chem.* **2012**, 4, 14, 1853-1862.

29. Haifan Wu, Mohamad Nassir Amin, Youhong Niu, Qiao Qiao, Nassier Harfouch, Abdelfattah Nimer, **Jianfeng Cai***. Solid Phase Synthesis of γ-AApeptides Using a Novel Submonomeric Approach. *Org. Lett.* **2012**, *14*, 3446-3449.

28. Yunan Yang, Youhong Niu, Hao Hong, Haifan Wu, Yin Zhang, Jonathan W. Engle, Todd E. Barnhart, **Jianfeng Cai***, and Weibo Cai*. Radiolabeled γ-AApeptides: A New Class of Tracers for Positron Emission Tomography. *Chem. Commun.* **2012**, *48*, 7850-7852.

27. Haifan Wu, Youhong Niu, Shruti Padhee, Rongsheng E Wang, Yaqiong Li, Qiao Qiao, Ge Bai, Chuanhai Cao, and **Jianfeng Cai***. Design and synthesis of unprecedented cyclic γ-AApeptides for antimicrobial development. *Chem. Sci.***, 2012**, *3*, 2570-2575.

26. Zhongqiu Luo, Jialin Li, Neel R. Nabar, Xiaoyang Lin, Ge Bai, **Jianfeng Cai**, Shu-Feng Zhou, Chuanhai Cao*, Jinhuan Wang*. Efficacy of a Therapeutic Vaccine Using Mutated β-amyloid Sensitized Dendritic Cells in Alzheimer's Mice. *J. Neuroimmune Pharmacol.*, **2012**, 7, 640-645.

25. Wen-Yang Gao , Youhong Niu , Yao Chen , Lukasz Wojtas , **Jianfeng Cai** , Yu-Sheng Chen and Shengqian Ma*. Porous Metal-Organic Framework Based on a Macrocyclic Tetracarboxylate Ligand Exhibiting Selective CO2 Uptake. *CrystEngComm*, **2012**, 14, 6115-6117.

24. Youhong Niu, Shruti Padhee, Haifan Wu, Ge Bai, Qiao Qiao, Yaogang Hu, Lacey Harrington, Whittney N. Burda, Lindsey N. Shaw, Chuanhai Cao, and **Jianfeng Cai***. Lipo-γ-AApeptides as a new class of potent and broad-spectrum antimicrobial agents. *J. Med. Chem.* **2012**, *55*(8), 4003–4009.

23. Chuanhai Cao*, David A. Loewenstein, Xiaoyang Lin, Chi Zhang, Li Wang, Ranjan Duara, Yougui Wu, Alessandra Giannini, Ge Bai, **Jianfeng Cai**, Maria Greig, Elizabeth Schofield, Raj Ashok, Brent Small, Huntington Potter and Gary W. Arendash*. High Blood Caffeine Levels in MCI Linked to Lack of Progression to Dementia. *J. Alz. Dis.* **2012**, *30*, 559-572.

22. Youhong Niu, Ge Bai, Haifan Wu, Rongsheng E. Wang, Qiao Qiao, Shruti Padhee, Robert Buzzeo, Chuanhai Cao*, and **Jianfeng Cai***. Cellular translocation of a γ-AApeptide mimetic of Tat peptide. *Mol. Pharmaceutics*. **2012**, *9*(5), 1529–1534

21. Ge Bai, Shruti Padhee, Youhong Niu, Rongsheng E. Wang, Robert Buzzeo, Chuanhai Cao*, and **Jianfeng Cai***. Cellular uptake of an α-AApeptide. *Org. Biomol. Chem.* **2012**, *10* (6), 1149 - 1153.

20. Rongsheng E. Wang,* Frankie Costanza, Youhong Niu, Haifan Wu, Yaogang Hu, Whitney Hang, Yiqun Sun, **Jianfeng Cai*.** Development of self-immolative dendrimers for drug delivery and sensing. *J. Control. Release.* **2012**, 159, 154-163.

19. Rongsheng E. Wang, Youhong Niu, Haifan Wu, Yaogang Hu, **Jianfeng Cai***. Development of NGR-Based Anti-Cancer Agents for Targeted Therapeutics and Imaging. *Anticancer Agents Med. Chem.* **2012**, *12* (1), 76-86.

18. Youhong Niu, Shruti Padhee, Haifan Wu, Ge Bai, Lacey Harrington, Whitney N. Burda, Lindsey N. Shaw, Chuanhai Cao, and **Jianfeng Cai***. Identification of γ-AApeptides with potent and broad-spectrum antimicrobial activity. *Chem. Commun.* **2011**, *47* (44), 12197 - 12199.

17. Rongsheng E. Wang, Yin Zhang, **Jianfeng Cai**, Weibo Cai, Ting Gao*. Aptamer-Based Fluorescent Biosensors. *Curr. Med. Chem.* **2011**, *18*, 4175-4184.

16. Rongsheng E. Wang,* Haifan Wu, Youhong Niu, and **Jianfeng Cai***. Improving the Stability of Aptamers by Chemical Modification. *Curr. Med. Chem.* **2011**, *18*, 4126-4138.

15. Rongsheng E. Wang, Youhong Niu, Haifan Wu, Mohamad Nassir Amin, and **Jianfeng Cai***. Development of NGR peptide-based agents for tumor imaging. *Am. J. Nucl. Med. Mol. Imaging* **2011**, *1*(1), 36-46.

14. Shruti Padhee, Yaogang Hu, Youhong Niu, Ge Bai, Haifan Wu, Frankie Costanza, Leigh West, Lacey Harrington, Lindsey N. Shaw, Chuanhai Cao, and **Jianfeng Cai***. Non-Hemolytic α-AApeptides as Antimicrobial Peptidomimetics. *Chem. Commun.* **2011**, *47* (34), 9729 - 9731

13. Youhong Niu, Alisha "Jonesy" Jones, Haifan Wu, Gabriele Varani,* and **Jianfeng Cai***. γ-AApeptides bind to RNA by mimicking RNA-binding proteins. *Org. Biomol. Chem.***, 2011**, *9* (19), 6604 - 6609.

12. Youhong Niu, Yaogang Hu, Xiaolong Li, Jiandong Chen, and **Jianfeng Cai***. Gamma-AApeptides: Design, Synthesis and Evaluation. *New J. Chem.* **2011**, *35*, 542-545.

11. Yaogang Hu, Xiaolong Li, Said M. Sebti, Jiandong Chen, and **Jianfeng Cai***. Design and Synthesis of AApeptides: A New Class of Peptide Mimics. *Bioorg. Med. Chem. Lett.*, **2011**, *21*, 1469-1471.

Work from Graduate and Postdoc.

10. Rongsheng E. Wang, Raj K. Pandita, **Jianfeng Cai**, Clayton R. Hunt, John-Stephen Taylor*. Inhibition of Heat Shock Transcription Factor Binding by a Linear Polyamide Binding in an Unusual 1:1 Mode. *ChemBioChem*, **2012**, *13*(1), 97-104.

9. Sourav Saha, **Jianfeng Cai**, Daniel Eiler and Andrew D. Hamilton*. Programing the formation of DNA and PNA quadruplexes by pi-pi stacking interactions. *Chem. Commun.*, **2010**, *46*, 1685-1687.

8. Yao Cheng, Lun K. Tsou, **Jianfeng Cai**, Toshihiro Aya, Ginger E. Dutschman, Elizabeth A. Gullen, Susan P. Grill, Annie Pei-Chun Chen, Brett D. Lindenbach, Andrew D. Hamilton, Yung-chi Cheng*. A novel class of meso-tetrakis-porphyrin derivatives exhibit potent activities against hepatitis C virus genotype 1b replicons *in vitro*. *Antimicrob. Agents Chemother.* **2010**, *54*(1), 197-206.

7. **Jianfeng Cai**, Dariusz Niedzwiedzki, Harry A. Frank*,and Andrew D. Hamilton*. Ultrafast energy transfer within pyropheophorbide-a tethered to self-assembling DNA Quadruplex. *Chem. Commun.* **2010**, *46*, 544 - 546.

6. **Jianfeng Cai**, Brooke Rosenzweig, and Andrew D. Hamilton*. Inhibition of Chymotrypsin by a self-assembled DNA quadruplex functionalized with cyclic peptide binding fragments. *Chem. Eur. J.*, **2009**, *15*(2), 328-332.

5. **Jianfeng Cai**, Erik M. Shapiro*, and Andew D. Hamilton*. Self-assembled DNA quadruplex conjugated to MRI contrast agent. *Bioconjugate Chem.*, **2009**, *20*(2), 205-208.

4. **Jianfeng Cai**, Xiaoxu Li, and John Stephen Taylor*. Improved nucleic acid triggered probe activation through the use of a 5-thiomethyluracil peptide nucleic acid building block. *Org. Lett .*, **2005**, *7*(5), 751-754.

3. **Jianfeng Cai**, Xiaoxu Li, Xuan Yue, and John Stephen Taylor*. Nucleic acid-triggered fluorescent probe activation by the Staudinger reaction. *J. Am. Chem. Soc.*, **2004**, *126*(50), 16324-16325.

2. Yun Lu*, **Jianfeng Cai** and Gi Xue. Molecular design of a soft interphase and its role in the reinforcement and toughening of aluminum powder-filled polyurethane. *J. Adhes. Sci. Technol.*, **2001**, *15*, 71-82.

1. **Jianfeng Cai**, Yun Lu*, Gi Xue and Wei Zhang. The reinforcement of Al filled Polyurethane system. *Mod. Plastics Proc. Appl.*, **1999**, *11* (6), 10.

PATENTS (ISSUED and APPLICATIONS) (at USF)

10. Jianfeng Cai, Yan Shi. One-Bead-Two-Compound Macrocyclic Library and Methods of Preparation and Use, **2017**, 62/483,038.
9. Vrushank Dave, **Jianfeng Cai.** PTEN Binding Compounds, Formulations, and Uses Thereof, **2017**, 62/460,324.
8. **Jianfeng Cai**, Ma Su, Alekhya Nimmagadda, Peng Teng. Cationic hydantoin compounds and the use

of, **2016**, 62/426,698

7. **Jianfeng Cai**, Youhong Niu, Weibo Cai, and Hao Hong. RGD mimetic γ-AApeptides and methods of use. **2016**, US 9,234,007 B2, **issued**
6. **Jianfeng Cai**, Youhong Niu, Haifan Wu, Shruti Padhee. Identification of γ-AApeptides with potent and broad-spectrum antimicrobial activity. **2016**, US 9,499,587 B2, **issued**
5. Niketa A. Patel, **Jianfeng Cai**. Gas5 binding compounds, formulations, and uses thereof, 62/398,624, **2016**.
4. Said M. Sebti and **Jianfeng Cai**. Stapled peptides designed to inhibit the mutantt KRas/ Raf interaction, **2016**, WO 172,187 A1.
3. **Jianfeng Cai**, Chuanhai Cao, Haifan Wu, Yaqiong Li, and Ge Bai. Methods of Synthesizing γ-AApeptides, γ-AApeptide Building Blocks, γ-AApeptide Libraries, and γ-AApeptide Inhibitors of Abeta40 Aggregates, **2016**, 0209422 A1.
2. Said M. Sebti, and **Jianfeng Cai**. Identification of Novel Inhibitors that Disrupt STAT3/DNA Interaction from γ-peptide OBOC Combinatorial Library, 2014, Application No. 61/984179.
1. Nathan J. Rice, Lennox Hoyte, and **Jianfeng Cai**. Materials and methods for reliable measurement of blood volume. 2011, PCT Int. Appl. WO 2011130304.

BOOK CHAPTERS

5. Olapeju Oyesiku and **Jianfeng Cai.*** Peptidomimetic agents targeting bacteria. Comprehensive Supramolecular Chemistry II. Elsevier, 2016.
4. Peng Teng, Haifan Wu and **Jianfeng Cai***. Peptidomimetics as antimicrobial agents. Novel Antimicrobial Agents and Strategies. Wiley, 2014.
3. Haifan Wu and **Jianfeng Cai***. Engineering AApeptides for Translational Medicine. *Engineering in Translational Medicine*, 2013, ISBN: 978-1-62703-651-1.
2. Youhong Niu, Yaogang Hu, Haifan Wu, and **Jianfeng Cai***. Synthesis of AApeptides. *Peptide Modifications to Increase Metabolic Stability and Activity*, 2013, ISBN: 978-1-62703-651-1.
1. Youhong Niu, Yaogang Hu, Rongsheng E. Wang, Xiaolong Li, Haifan Wu, Jiandong Chen* and **Jianfeng Cai***. AApeptides as a New Class of Peptidomimetics to Regulate Protein-Protein Interactions. *Protein Interactions*, 2012, ISBN: 978-953-51-0244-1.

ORAL TALKS AND SEMINARS

1. Florida Organic Day, Florida Southern College, 03/12/2012
2. Florida ACS meeting, Tampa, FL, 05/09/2012
3. Kimberly-Clark, Appleton, WI, 06/02/2012
4. Department of Chemistry, University of Oxford, Oxford, England, 06/07/2012
5. Interventional Cancer Institute of Integrative Medicine, Putuo Hospital, Shanghai, China, 12/12/2012
6. Department of Chemistry, University of Florida, Gainesville, FL, 11/15/2013
7. Department of Chemistry and Biochemistry, University of California-Santa Barbara, Santa Barbara, CA, 2/27/2014
8. Department of Chemistry, University of California-Irvine, Irvine, CA, 2/28/2014
9. Department of Chemistry and Biochemistry, Georgia Institute of Technology, GA, 3/10/2014
10. Department of Chemistry, Georgia State University, Atlanta, GA, 3/11/2014
11. Department of Chemistry, University of South Florida, GA, 3/13/2014
12. 247th ACS national meeting, Organic section, Dallas, TX, 3/17/2014
13. Department of Chemistry, Florida State University, Tallahassee, FL, 3/27/2014
14. Department of Chemistry, University of Wisconsin-Madison, Madison, WI, 4/3/2014
15. Kimberly-Clark, Appleton, WI, 4/4/2014
16. Department of Chemistry, Scripps Florida, Jupiter, FL, 4/17/2014
17. Innovative Drug Research Center, Chongqing University, Chongqing, China, 5/6/2014
18. Department of Chemistry, Nanjing University, Nanjing, China, 5/7/2014
19. College of Pharmacy, Shanghai Jiaotong University, Shanghai, China, 5/8/2014

20. Department of Medical Oncology, Shuguang Hospital, Shanghai University of Traditional Chinese Medicine, Shanghai, China, 5/9/2014
21. Bioorganic Gordon Conference, Andover, NH, 6/11/2014
22. Department of Chemistry, Washington University in St. Louis, MO, 4/23/2015
23. Department of Chemistry, University of Missouri-St. Louis, 4/24/2015
24. Department of Chemistry, Southeast University, China, 6/25/2015
25. College of Pharmacy, Zhejiang University, China, 6/26/2015
26. Department of Chemistry, Central South University, China, 7/1/2015
27. Lawrence Berkeley National Laboratory, San Francisco, 8/6/2015
28. College of Medicine, University of South Florida, 9/16/2015
29. Department of Chemistry, UC-Riverside, 2/25/2016
30. Department of Chemistry, Dartmouth College, 4/14/2016
31. FAME 2016-Florida Annual meeting and Exposition, FL, 5/6/2016
32. Department of Chemistry, University of South Carolina, 3/30/2017
33. Department of Chemistry, University of South Dakota, 4/11/2017

ACTIVE GRANTS

1. PI, NSF CAREER award (1351265). 07/01/2014-06/30/2019, $500,000. CAREER: Lipo-Cyclic Antimicrobial Peptidomimetics that Disrupt Bacterial Membrane.
2. PI, NIH 1R01GM112652-01A1, $1,475,750, 07/01/2015-04/30/2020, Alpha-AApeptides as a novel class of antimicrobial biomaterials.
3. PI, NIH 1R56AI105099-01A1, $363,509, 09/01/2015-08/31/2017, Novel non-natural oligomers that mimic the structure and function of bioactive peptides.
4. Co-I, NIH 1R15GM117531-01 (PI: Jianjun Pan), $112,125 to J. Cai, 12/01/2015-11/31/2018, Characterizing Interactions between Bacterial Membranes and Peptidomimetics for the Development of Antibiotics Targeting Multidrug Resistant Bacteria
5. Co-I, NIH NCI 1R35CA197731-01 (PI: Said Sebti), $453,600 to J. Cai, 03/01/2016 -02/28/2023. Targeting Mutant KRas for Cancer Therapy.