Jinjin Chen Resume

PERSONAL INFORMATION

Name: Jinjin Chen **M/F:** Female
Date of Birth: Dec 6, 1983 **Nationality:** China
Tel: 6475617097
E-mail: jinjin.chen@utoronto.ca; chenjinjin11@outlook.com
Google scholar:
https://scholar.google.com/citations?user=YOxyltIAAAAJ&hl=en

CORE COMPETENCIES

I am a highly self-motivated and experienced scientist with PhD degree in synthetic biology. Proficient in genetics, microbiology, metabolic engineering, enzyme engineering, molecular biology, dynamic circuits design and analytical chemistry. I master the skills like CRISPR/CRISPRi, RT-qPCR, protein expression and purification, directed evolution, western blotting, mutational library development, HPLC, GC-FID, GC-MS, and am familiar with databases like NCBI, KEGG, Ecocyc, Patric, SnapGene and Benchling. I am a hard-working female scientist, and have outstanding skills in trouble shooting and excellent teamwork.

EDUCATION AND WORK EXPERIENCE

1. **2019.05-now** **Postdoc**
   Department of Chemical Engineering and Applied Chemistry, University of Toronto, CA
2. **2018.08-2019.04** **Research Assistant**
   Department of Chemical Engineering and Applied Chemistry, University of Toronto, CA
3. **2017.10-2018.05** **Research Technician**
   Department of Food Science and Technology, University of Nebraska-Lincoln, NE, USA.
4. **2016.02-2017.02** **Researcher Associate**
   Institute of Process Engineering, Chinese Academy of Sciences, Beijing, China.
5. **2011.09-2016.01** **Ph. D**
   Institute of Process Engineering, Chinese Academy of Sciences, Beijing, China.

PUBLICATIONS

Under review paper:

1. **Chen JJ***, Liu YL*, Abo-Hashesh M, Mahadevan R✉. Genetic engineering of *Acidithiobacillus ferridurans* using CRISPR systems for enhanced biomining. Environmental Science & Technology (IF 11.357) (Under review).(* co-first author)

Published papers:

1. Liu Y*✉, **Chen JJ***, Raj K, Baerg L, Nathan N, Philpott DJ✉, Mahadevan R✉. Program secretion of bacterial membrane vesicles and its applications in bacterial communication and IBD disease. ACS synthetic biology, 2023, 12, 1, 319–328. (IF 5.249) (* co-first author)
2. **Chen JJ**, Liu. YL, Diep. P, Mahadevan R. Genetic engineering of extremely acidophilic Acidithiobacillus species for biomining: progress and perspectives. Journal of Hazardous Materials, 2022, 129456. (Co-first authors).
3. **Chen JJ**, Liu. YL, Diep. P, Mahadevan R. Harnessing synthetic biology for sustainable biomining

with Fe/S-oxidizing microbes. Frontiers in Bioengineering and Biotechnology, 2022, 1551. (Co-first authors).

4. **Chen JJ**, Liu. YL, Mahadevan R. Genetic engineering of *Acidithiobacillus ferridurans* with CRISPR-Cas9/dCas9 systems. BioRxiv, 2022. doi: https://doi.org/10.1101/2022.03.14.484339. (Co-first authors)

5. **Chen JJ**, Liu YL, Diep P, Mahadevan R. Genomic analysis of a newly isolated *Acidithiobacillus ferridurans* JAGS strain reveals its genetic adaptation to acidic metal-rich environments. Minerals, 2021, 11(1): 74.

6. **Chen JJ**, Liu Y, Diep P, Jo A, Nesbø C, Edwards E, Papangelakis V, Mahadevan R. Complete Genome Sequence of *Acidithiobacillus ferridurans* JAGS, Isolated from Acidic Mine Drainage. Microbiology Resource Announcements 2020, 9: e00033-20.

7. **Chen JJ**, Gong PF, Liu YL, Liu BY, Eggert D, Guo YH, Zhao MX, Zhao QS, Zhao B. Postharvest Ultrasound-Assisted Freeze-Thaw Pretreatment Improves the Drying Efficiency, Physicochemical Properties, and Macamide Biosynthesis of Maca (*Lepidium meyenii*). Journal of Food Science, 2018.

8. **Chen JJ**, Zhao QS, Liu YL, Gong PF, Cao Lili, Wang XD & Zhao B*. Macamides present in the commercial maca (*Lepidium meyenii*) products and the macamide biosynthesis affected by postharvest conditions. International Journal of Food Properties, 2017, 12: 3112-3123.

9. **Chen JJ**, Zhao QS, Wang LW, Zha SH, Zhang LJ & Zhao B*. Physicochemical and functional properties of dietary fibre from maca (*Lepidium meyenii* Walp.) liqour residue. Carbohydrate Polymers, 2015, 132: 509-512.

10. **Chen JJ**, Zhao QS, Liu YL, Zha SH & Zhao B*. Identification of maca (*Lepidium meyenii* Walp.) and its adulterants by a DNA-barcoding approach based on the ITS sequence. Chinese Journal of Natural Medicines, 2015, 13(9): 653-659.

11. **Chen JJ**, Zhao Mx, Jiang X, Cao LL, Zhao QS, Zhao B, Wang XD. Identification, Phylogenetic Relationship Analysis of Lycium Based on rbcL-a and ITS Sequence and the Discovery of ITS Pseudogene. Biotechnology Bulletin, 2017, 33(5): 123-130.

12. 陈金金，赵兵．玛咖酰胺研究进展．中草药, 2015, 46 (21): 3284-3288.

13. Liu Y, **Chen JJ**, et.al. Program secretion of bacterial membrane vesicles and its applications in bacterial communication and IBD disease. ACS synthetic biology, 2022 (accepted).

14. Liu Y, Khusnutdinova A, **Chen JJ**, et.al. Systems engineering of Escherichia coli for n-butane production. Metabolic Engineering 2022, 74, 98-107.

15. Liu Y, Benitez M, **Chen JJ**, Harrison E, Khusnutdinova N, Mahadevan R. Opportunities and challenges for microbial synthesis of fatty acid derived chemicals (FACs). Frontiers in bioengineering and biotechnology 9 (2021):

16. Liu Y. **Chen JJ**, Crisante D, Lopez JMJ, Mahadevan R. Dynamic Cell Programming with Quorum Sensing-Controlled CRISPRi Circuit. ACS Synthetic Biology, 2020, 1284-1291.

17. Liu Y. **Chen JJ**, Khusnutdinova A, Correia K, Yakunin AF, Mahadevan R. A novel C-terminal protein degron identified in bacterial aldehyde decarbonylases using directed enzyme evolution. Biotechnology for Biofuels Biotechnology for biofuels, 2020: 1-11.

18. Liu YL, Thygesen A, **Chen JJ**. Efficient One-Step Fusion PCR Based on Dual-Asymmetric Primers and Two-Step Annealing. Molecular Biotechnology, 2018, 60: 92-99.

19. Liu YL, Yang MH, **Chen JJ**, Yan DJ, Cheng WW, Wang YY, Thygesen A, Chen RN, Xing JM* Wang QH* & Ma YH. PCR-based seamless genome editing with high efficiency and fidelity in *Escherichia coli*. PloS One, 2016, 11(3): e0149762.

20. Liu YL, Chen S, **Chen JJ**, Yang MH, Zhou JM, Qi X, Xing JM*, Wang QH* & Ma YH. High

production of fatty alcohols by metabolically engineered *Escherichia coli* with fatty acid starvation. Microbial cell factories, 2016, 15:129.
21. Zha SH, Zhao QS, Zhao B*, OuYang J, Mo JL, **Chen JJ**, Cao LL & Zhang H. Molecular weight controllable degradation of *Laminaria japonica* polysaccharides and its antioxidant properties. Journal of Ocean University of China, 2016, 15(4): 637-642.
22. Guo YH, Cao Lili, Zhao QS, Zhang LJ, **Chen JJ**, Liu Boyan & Zhao Bing*. Preliminary characterizations, antioxidant and hepatoprotective activity of polysaccharide from *Cistanche deserticola*. International Journal of Biological Macromolecules, 2016, 93: 678-685.
23. Zha SH, Zhao QS*, **Chen JJ**, Wang LW, Zhang GF, Zhang H & Zhao B. Extraction, purification and antioxidant activities of the polysaccharides from maca (*Lepidium meyenii*). Carbohydrate Polymers, 2014, 111: 584-587.
24. Zhao QS, Dong BT, **Chen JJ**, Zhao B*, Wang XD, Wang LW, Zha SH, Wang YC, Zhang JH & Wang YL. (2015). Effect of drying methods on physicochemical properties and antioxidant activities of wolfberry (*Lycium barbarum*) polysaccharide. Carbohydrate Polymers 127: 176–181.
25. Liu YL, Chen T, Yang MH, Wang CX, Huo WY, Yan DJ, **Chen JJ**, Zhou JM & Xing, J.M*. Analysis of mixtures of fatty acids and fatty alcohols in fermentation broth. Journal of Chromatography A, 2014, 1323: 66-72.

Authorized Patents:

[1] 赵兵、陈金金、王丽卫、赵庆生、王晓东、袁晓凡。一种鉴别正品玛咖、伪品玛咖及掺杂玛咖的ITS序列及方法。专利号CN102952878B。

[2] 赵兵、陈金金、赵庆生，一种脂肪酸酰胺在药物中的用途。专利号CN104510728B。

[3] 赵兵、陈金金、赵庆生，一种玛咖酰胺的合成方法及其用途。专利号CN104513171B。

[4] 赵兵、陈金金、赵庆生、董贝涛，一种玛咖提取物、其制备方法及其用途。 专利号CN104513173B。

[5] 赵兵、陈金金、赵庆生，一种玛咖膳食纤维及其制备方法和应用。 专利号CN105192723B。

[6] 赵兵，王丽卫，张利军，陈金金，赵庆生。 一种硒化玛咖多糖及其制备方法和用途. CN: CN106279461B。