



人才队伍

您现在的位置: 首页 > 中文 > 人才库 > 研究员

- 概况
- 研究员
- 兼职研究员
- 产业研究员
- 副研究员、高级工程师

研究员

姓名	刘君	性别	男
专家类别	N/A	职称	研究员
学历	博士研究生	电话	N/A
传真	N/A	电子邮件	liu_jun@tib.cas.cn
地址	天津空港经济区西七道32号	邮编	300308



简历

- 1994.9-1998.6, 南开大学, 微生物学专业, 学士学位
- 1999.9-2002.6, 南开大学, 生物化学和分子生物学专业, 硕士学位
- 2002.9-2006.1, 中国科学院微生物研究所, 微生物学专业, 博士学位
- 2006.3-2010.6, 美国西奈山医学院, 博士后
- 2010.7-2013.12, 美国西奈山医学院, 研究助理教授
- 2014.2-目前, 中国科学院天津工业生物技术研究所, 研究员

研究方向:

研究组定位于重要工业微生物的应用基础研究, 围绕微生物生理和代谢工程开展以下研究:

- 1、系统解析重要工业微生物对环境胁迫的生理机制, 在此基础上构建具有抗逆性能的工业菌种。
- 2、阐明重要工业微生物合成特定代谢产物的分子基础和调控机制, 并利用代谢工程和系统生物学等技术实现工业菌种的遗传改造。

代表论著:

[1] Wang X, Yang H, Zhou W, Liu J, Xu N.2019. Deletion of cg1360 affects ATP synthase function and enhances the production of L-valine in *Corynebacterium glutamicum*. **J Microbiol Biotechnol**. Jul 30. doi: 10.4014/jmb.1904.04019.

[2] Wei L, Wang Q, Xu N, Cheng J, Zhou W, Han GQ, Jiang HF\*, Liu J\*, Ma YH.2019. High-level o-acetylhomoserine production in *Escherichia coli* through protein and metabolic engineering. **ACS Synthetic Biology**, 8(5):1153-1167.

[3] Xu N, Wei L, Liu J\*. 2019. Recent advances in the applications of promoter engineering for the optimization of metabolite biosynthesis. **World J Microbiol Biotechnol**, 35: 33. (Invited review)

[4] Wu Z, Wang J, Liu J, Wang Y, Bi C, Zhang X.2019. Engineering an electroactive *Escherichia coli* for the microbial electrosynthesis of succinate from glucose and CO<sub>2</sub>. **Microb Cell Fact**. 18(1):15. doi: 10.1186/s12934-019-1067-3.

[5] Xu N<sup>#</sup>, Lv HF<sup>#</sup>, Wei L, Ju JS, Liu J\*, Ma YH. 2019. Impaired oxidative stress and sulfur assimilation contribute to acid tolerance of *Corynebacterium glutamicum*. **Appl Microbiol Biotech**, doi: 10.1007/s00253-018-09585-y.

[6] Wei L<sup>#</sup>, Wang H<sup>#</sup>, Xu N, Zhou W, Ju JS\*, Liu J\*, Ma YH. 2019. Metabolic engineering of *Corynebacterium glutamicum* for L-cysteine production. **Appl Microbiol Biotech**, doi: 10.1007/s00253-018-9547-7.

- [7] Xu N, Zheng YY, Wang XC, Krulwich TA, Ma YH, Liu J\*. 2018. The lysine 299 residue endows the multisubunit Mrp1 antiporter with dominant roles in Na<sup>+</sup>-resistance and pH homeostasis in *Corynebacterium glutamicum*. **Appl Environ Microbiol**, 84: e00110-18.
- [8] Vaish M, Price-Whelan A, Reyes-Robles T, Liu J, Jereen A, Christie S, Alonzo F 3rd, Benson MA, Torres VJ, Krulwich TA. 2018. Roles of *Staphylococcus aureus* Mnh1 and Mnh2 Antiporters in Salt Tolerance, Alkali Tolerance, and Pathogenesis. **J Bacteriol**. 200(5). pii: e00611-17. doi: 10.1128/JB.00611-17.
- [9] Wei L<sup>#</sup>, Xu N<sup>#</sup>, Cheng HJ, Wang YR, Han GQ, Ma YH, Liu J\*. 2018. Promoter library-based module-combination (PLMC) technology for optimization of threonine biosynthesis in *Corynebacterium glutamicum*. **Appl Microbiol Biotech**, 102: 4117-30.
- [10] Xu N, Wei L, Liu J\*. 2017. Biotechnological advances and perspectives of gamma-aminobutyric acid production. **World J Microbiol Biotechnol**, 33: 64. (Invited review)
- [11] Liu QD, Ma XQ, Cheng HJ, Xu N, Liu J\*, Ma YH. 2017. Co-expression of L-glutamate oxidase and catalase in *Escherichia coli* to produce alpha-ketoglutaric acid by whole-cell biocatalyst. **Biotechnol Lett**, 39 (6):913-9.
- [12] Xu N, Wang L, Cheng HJ, Liu Qd, Liu J\*, Ma YH. 2016. In vitro functional characterization of the Na<sup>+</sup>/H<sup>+</sup> antiporters in *Corynebacterium glutamicum*. **FEMS Microbiol Lett**, 363: fnv237.
- [13] Liu QD, Cheng H, Ma X, Xu N, Liu J\*, Ma YH. 2016. Expression, characterization and mutagenesis of a novel glutamate decarboxylase from *Bacillus megaterium*. **Biotechnol Lett**, 38(7): 1107-13.
- [14] Preiss L, Langer JD, Hicks DB, Liu J, Yildiz O, Krulwich TA, Meier T. 2014. The c-ring ion binding site of the ATP synthase from *Bacillus pseudofirmus*? OF4 is adapted to alkaliphilic lifestyle. **Mol Microbiol**. 92(5):973-84.
- [15] Liu J, Ryabichko S, Bogdanov M, Fackelmayer OJ, Dowhan W, Krulwich TA. 2014. Cardiolipin is dispensable for oxidative phosphorylation and non-fermentative growth of alkaliphilic *Bacillus pseudofirmus* OF4. **J Biol Chem**. 289(5):2960-71.
- [16] Preiss L, Klyszejko AL, Hicks DB, Liu J, Fackelmayer OJ, Yildiz O, Krulwich TA, Meier T. 2013. The c-ring stoichiometry of ATP synthase is adapted to cell physiological requirements of alkaliphilic *Bacillus pseudofirmus* OF4. **Proc. Natl. Acad. Sci. USA**. 110(19):7874-9.
- [17] Liu J, Hicks DB, Krulwich TA. 2013. Roles of Atpl and two YidC-type proteins from alkaliphilic *Bacillus pseudofirmus* OF4 in ATP synthase assembly and non-fermentative growth. **J. Bacteriol**. 195(2): 220-30.
- [18] Janto B, Ahmed A, Ito M, Liu J et al. 2011. The genome of alkaliphilic *Bacillus pseudofirmus* OF4 reveals adaptations that support the ability to grow in an external pH range from 7.5 to 11.4. **Environmental Microbiology**. 13(12): 3289-3309.
- [19] Liu J, Fackelmayer OJ, Hicks DB, Preiss L, Meier T, Sobie EA, Krulwich TA. 2011. Mutations in a helix-1 motif of the ATP synthase c-subunit of *Bacillus pseudofirmus* OF4 cause functional deficits and changes in the c-ring stability and mobility on sodium dodecyl sulfate-polyacrylamide gel electrophoresis. **Biochemistry**. 50(24):5497-5506.
- [20] Fujisawa M, Fackelmayer OJ, Liu J, Krulwich TA, Hicks DB. 2010. The ATP synthase a-subunit of extreme alkaliphiles is a distinct variant: mutations in the critical alkaliphile-specific residue Lys-180 and other residues that support alkaliphile oxidative phosphorylation. **J. Biol. Chem**. 15; 285(42):32105-15.
- [21] Hicks DB, Liu J, Fujisawa M, Krulwich TA. 2010. F1Fo-ATP synthases of alkaliphilic bacteria: lessons from their adaptations. **Biochim. Biophys. Acta**. 1797(8):1362-1377.
- [22] Guo Y, Xue Y, Liu J, Wang Q, Ma Y. 2009. Characterization and function analysis of a Halo-alkaline-adaptable Trk K<sup>+</sup> uptake system in *Alkalimonas amyolytica* strain N10. **Sci China C Life Sci**. 52(10):949-57.
- [23] Liu J, Fujisawa M, Hicks DB, Krulwich TA. 2009. Characterization of the functionally critical AXAXXA and PXXEPP motifs of the ATP synthase c-subunit from an alkaliphilic *Bacillus*. **J. Biol. Chem**. 284(13):8714-25.
- [24] Liu J, Krulwich TA, Hicks DB. 2008. Purification of two putative type II NADH dehydrogenases with different substrate specificities from alkaliphilic *Bacillus pseudofirmus* OF4. **Biochim. Biophys. Acta**. 1777(5):453-61.
- [25] Wei Y, Liu J, Ma Y, Krulwich TA. 2007. Three putative cation/proton antiporters from the soda lake alkaliphile *Alkalimonas amyolytica* N10 complement an alkali-sensitive *Escherichia coli* mutant. **Microbiology**. 153:2168-2179.
- [26] Yuan S, Ren P, Liu J, Xue Y, Ma Y, Zhou P. 2007. *Lentibacillus halodurans* sp. nov., a moderately halophilic bacterium isolated from a salt lake in Xin-Jiang, China. **Int. J. Syst. Evol. Microbiol**. 57(3):485-488.
- [27] Wang N, Zhang Y, Wang Q, Liu J, Wang H, Xue Y, Ma Y. 2006. Gene cloning and characterization of a novel  $\alpha$ -amylase from alkaliphilic *Alkalimonas amyolytica*. **Biotechnol. J**. 1(11):1258-65.
- [28] Liu J, Xue Y, Wang Q, Wei Y, Swartz TH, Hicks DB, Ito M, Ma Y, Krulwich TA. 2005. The activity profile of the NhaD-type Na<sup>+</sup>(Li<sup>+</sup>)/H<sup>+</sup> antiporter from the soda lake haloalkaliphile *Alkalimonas amyolytica* is adaptive for the extreme environment. **J. Bacteriol**. 187(22):7589-95.

[29] Krulwich TA, Liu J, Morino M, Fujisawa M, Ito M, Hicks DB, 2010. Adaptive mechanisms of extreme alkaliphiles. In: Extremophiles Handbook. Horikoshi K, Antranikian G, Bull A, Robb F, Stetter K (eds), Springer, Heidelberg, PP. 120-139.

承担科研项目情况:

研究组承担国家合成生物学重点专项2项, 中科院重点部署项目1项, 国家自然科学基金面上项目1项, 青年基金3项, 天津市自然科学基金2项。

获奖及荣誉:



Copyright 2012 All Rights Reserved 中国科学院天津工业生物技术研究所 版权所有

通讯地址: 天津空港经济区西七道32号, 邮编: 300308

电话: 022-84861997/84861977, 传真: 022-84861926, 邮箱: tib\_zh(AT)tib.cas.cn

京ICP备05002857号