

简 历

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教育及工作经历:

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| 2013年7月-至今 | 中国科学院上海巴斯德研究所, 研究员, 博士生导师, “百人计划”获得者 (2014) |
| 2011年7月-2013年6月 | 美国加州大学旧金山分校微生物和免疫学系, 助理研究员 (UCSF, Assistant Specialist) |
| 2005年7月-2011年6月 | 美国加州大学旧金山分校, 博士后
从师生物化学家 Hiten D. Madhani 博士及真菌病理学家 Suzanne M. Noble 博士 |
| 2004年9月-2005年6月 | 美国内布拉斯加州立大学林肯分校植物病理系, 研究助理(The University of Nebraska-Lincoln, Research Assistant) |
| 1998年8月-2004年8月 | 美国内布拉斯加州立大学林肯分校, 博士
从师著名植物病理学家 Martin B. Dickman 博士 |
| 1995年9月-1998年6月 | 中国科学院上海植物生理生态研究所分子遗传学, 硕士
从师俞冠翹研究员 |
| 1990年9月-1995年6月 | 上海复旦大学生命科学院植物学, 学士 |

研究方向及内容:

研究方向: 揭示人类条件性致病真菌(例如念珠菌, 其中以白色念珠菌为主要对象)共生和感染的分子机制, 新型隐球菌毒力基因表达调控机制以及宿主细胞在其由不致病的共生菌向致病菌转变过程中的免疫应答机理, 以期为控制和预防真菌感染提供理论依据, 并在此基础上发现抗真菌药物的新作用靶点。

主要开展以下四个方面的研究内容:

1. 白色念珠菌铁吸收调控系统：基于我们先期的研究发现，进一步阐明铁吸收调控系统(包括3个重要的转录因子 Sfu1, Sef1 和 Hap43)在白色念珠菌共生生长及致病感染过程中的重要作用，同时探索在高铁或低铁环境下宿主如何对白色念珠菌共生或感染作出相应的免疫应答；
2. 白色念珠菌共生一致病转化关键因子基因调控网络：以小鼠为研究模型，通过筛选突变体文库寻找决定白色念珠菌在宿主胃肠道内共生生长的关键因子 (commensal factor)，并通过研究这些因子的基因调控网络来揭示其在白色念珠菌由共生菌向致病菌转变过程中的重要作用。
3. 白色念珠菌感染与宿主免疫：我们先期的工作发现了白色念珠菌的一个新的致病基因家族，其编码的分泌蛋白与宿主免疫相关蛋白高度同源。我们的研究主要集中于认识白色念珠菌是如何通过分泌这些蛋白到宿主细胞来改变其同源宿主蛋白的免疫功能，从而最终破坏或抑制宿主免疫系统达到感染致病的目的。另外，我们建立了小鼠肠道共生模型 (Gut commensal model)，并以此模型来研究宿主免疫系统与白色念珠菌的相互作用机制。这项工作将主要研究宿主免疫系统在白色念珠菌从共生菌转变为致病菌过程中的表达机制，在细胞和分子水平上进一步了解肠道免疫稳态的调控。
4. 人类条件性致病真菌与宿主相互作用的分子机制及其临床应用：通过研究白色念珠菌与宿主相互作用的分子机制，将白色念珠菌研究体系应用到其它人类条件性致病真菌，比如新型隐球菌的致病机制。同时将病原性致病真菌共生感染机制应用到临床检验，通过比较健康人群和患病人群临床分离株在共生感染机制的共性和差异性，发掘真正决定真菌毒性的关键基因及其调控途径。我们的研究将为新型抗真菌药物的开发提供关键的药物作用靶点，同时对如何预防和控制病原真菌感染提供更深层的认识。

已发表学术论文19余篇，包括国际学术期刊 *Cell*, *Nature Genetics*, *Cell Host & Microbe*, *PLOS Pathogens*, *PNAS*, *Nature Immunology*, *Autophagy*, *Journal of Immunology*, *Molecular Microbiology*, *Eukaryotic cell* 等。

主要研究成果：

1. Gao, N., and **Chen, C.** (2016) *Candida* Infections: an update on host immune defenses and anti-fungal drugs. *IDTM*. Review.
2. Pande, K., **Chen, C.** and Noble, S. M. (2013) Passage through the mammalian gut triggers a phenotypic switch required for *Candida albicans* commensalism. *Nature Genetics*. 45(9): 1088-91
3. **Chen, C.** and Noble, S. M. (2012) Post-transcriptional regulation of the Sef1 transcription factor controls the virulence of *Candida albicans* in its mammalian host. *PLOS Pathogens*, 8(11): e1002956.
4. **Chen, C***, Pande, K*, French, S. D., Tuch, B. B. and Noble, S. M. (2011) A unique iron homeostasis regulatory circuit with reciprocal roles in *Candida albicans* commensalism and pathogenesis. *Cell Host & Microbe*. 10(2): 118-35. (*equal contribution)
5. Dumesic, P., Natarajan, P., **Chen, C.**, Drinnenberg, A., Schiller, B., Moresco, J., Thompson, J.,

- Yates, J., Bartel, D., and Madhani H. (2013) Stalled spliceosomes are a signal for RNAi-mediated genome defense. *Cell*: 152(5):957-968.
6. Liu, O. W., Chun, C. D., Chow, E. D., **Chen, C.**, Madhani, H. D. and Noble, S. M. (2008) Systematic gene deletion and analysis of virulence in the human fungal pathogen *Cryptococcus neoformans*. *Cell* 135(1): 174-188.
 7. **Chen, C.** and Dickman, M. B. (2005) Proline suppresses apoptosis in the fungal pathogen *Colletotrichum trifolii*. *PNAS* 102(9): 3459-3464
 8. Deng Z., Ma S., Zhou H., Zang A., Fang Y., Li T., Shi H., Liu M., Du M., Taylor P., Zhu H., Chen J., Meng G., Li F., **Chen C.**, Zhang Y., Jia X., Lin X., Zhang X., Pearlman E., Li X., Feng G., and Xiao H. (2015) Shp2 mediates C-type lectin receptor-induced Syk activation and anti-fungal Th17 responses. *Nature Immunology*. 16(6):642-52.
 9. Xie X., Li F., Wang Y., Lin Z., Cheng X., Liu J., **Chen C.**, and Pan L. (2015) Molecular basis of ubiquitin recognition by the autophagy receptor CALCOCO2. *Autophagy*. 11(10):1775-89.
 10. Chen M., Xing Y., Lu A., Fang W., Sun B., **Chen C.**, Liao W., and Meng G. (2015) Internalized *Cryptococcus neoformans* activates the canonical Caspase-1 and the noncanonical Caspase-8 inflammasomes. *J. Immunol.* 195(10):4962-72.
 11. Guo C, Chen M, Fa Z, Lu A, Fang W, Sun B, **Chen C.**, Liao W, Meng G. (2014) Acapsular *Cryptococcus neoformans* activates the NLRP3 inflammasome. *Microbes Infect.* 16(10): 845-54.
 12. Georgette, C., **Chen, C.**, Shih, S., et al., (2011) A site specific acetylation mark on the essential RSC chromatin remodeling complex promotes resistance to replication stress. *PNAS* 108(26):10620-10625
 13. **Chen, C.** and Dickman, M. B. (2005) cAMP blocks MAPK activation and sclerotial development via Rap-1 in a PKA-independent manner in *Sclerotinia sclerotiorum*. *Molecular Microbiology* 55(1): 299-311.
 14. **Chen, C.**, and Dickman, M. B. (2004) Dominant active Rac and dominant negative Rac revert the dominant active Ras phenotype in *Colletotrichum trifolii* by distinct signaling pathways. *Molecular Microbiology* 51: 1493-1507.
 15. **Chen, C.**, Ha, Y-S., Min, J-Y., Memmott, S. D., and Dickman, M. B.. (2006) Cdc42 is required for proper growth and development in the fungal pathogen *Colletotrichum trifolii*. *Eukaryotic Cell* 5(1): 155-166.
 16. Scheffer, J., **Chen, C.**, Heidrich, P., Dickman, M. B., and Tudzynski, P. (2005) A CDC42 homologue in *Claviceps purpurea* is involved in vegetative differentiation and is essential for pathogenicity. *Eukaryotic Cell* 4(7): 1228-1238.
 17. **Chen, C.**, and Dickman, M. B. (2002) *Colletotrichum trifolii* TB3 kinase, a COT1 homolog, is light inducible and becomes localized in the nucleus during hyphal elongation. *Eukaryotic Cell* 1: 626-633.
 18. **Chen, C.**, Harel, A., Gorovoits, R., Yarden, O., and Dickman, M. B. (2004) MAPK regulation

of sclerotial development in *Sclerotinia sclerotiorum* is linked with pH and cAMP sensing. *Molecular Plant-Microbe Interactions* 17: 404-413.

19. Kim, H.J., **Chen, C.**, Kabbage, M. and Dickman, M.B. (2011) Identification and Characterization of *Sclerotinia sclerotiorum* NADPH Oxidases. *Applied and Environmental Microbiology* 77(21):7721-9.
20. **Chen, C.**, Wanduragala, S., Becker, D. F., and Dickman, M. B. (2006) A tomato QM-like protein protects *Saccharomyces cerevisiae* cells against oxidative stress by regulating intracellular proline levels. *Applied and Environmental Microbiology* 72(6): 4001-6.

获得荣誉及奖励:

- 2014 中国科学院“百人计划”获得者
- 2006 Herbert Boyer Postdoctoral Fellowship, Department of Biochemistry & Biophysics, University of California, San Francisco
- 2006 UCSF Comprehensive Cancer Center/Stewart Trust Research Award
- 2002 Widaman Trust Distinguished Graduate Assistant Award, Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln
- 2004 Goss Memorial Scholarship, Department of Plant Pathology, University of Nebraska-Lincoln
- 2003 Goss Memorial Scholarship, Department of Plant Pathology, University of Nebraska-Lincoln
- 2001 Goss Memorial Scholarship, Department of Plant Pathology, University of Nebraska-Lincoln
- 2000 Goss Memorial Scholarship, Department of Plant Pathology, University of Nebraska-Lincoln

会议学术交流 (Invited speaker):

Chen, C. (2016) East Meets West: Advances in gut microbiome effects on pathophysiology of human diseases, by American Physiological Society. “Gray phenotype: a novel fitness strategy for *Candida albicans* commensalism in the GI tract”. 江苏扬州, 03/16

Chen, C. (2015) 军事医学科学院流行病学研究所. “Immune interactions with *Candida albicans* in gastrointestinal tract: a two-way street”. 北京, 12/15

- Chen, C.** (2015) 第12届海峡两岸真菌学学术研讨会. “*Nmd5: an exportin acts to modulate Sef1 level and prevent inappropriate Sful expression in C. albicans*”. 台湾台中市, 11/15
- Chen, C.** (2015) 第八届中国模式真菌研讨会. “*Carbon Source-dependent morphogenesis requires a functional mitochondrial Complex I in Candida albicans*”. 山东济南, 06/13
- Chen, C.** (2015) 第六届传染病防控基础研究与应用技术论坛. “*Host-Fungus Interplay: Pathogenesis and Host immune responses*”. 吉林延吉, 06/11
- Chen, C.** (2015) The 6th FEBS Advanced Lecture Course. “*Nmd5: an exportin acts to modulate Sef1 level and prevent inappropriate Sful expression in C. albicans*”. La Colle-sur-Loup, France, 05/21
- Chen, C.** (2015) 中国科学院北京动物研究所. “From commensal to pathogen: Regulation complexity and dynamics in *Candida albicans*”. 北京, 04/08
- Chen, C.** (2014) The 10th International Mycological Congress. “Post-transcriptional modification of iron-regulator Sef1 by a novel exportin”. Bangkok, Thailand, 08/04
- Chen, C.** (2014) 第二军医大学药学院. “Post-transcriptional modification of iron-regulator Sef1 by a novel exportin”. 上海, 05/20
- Chen, C.** (2014) 福建农林大学. “Post-transcriptional modification of iron-regulator Sef1 by a novel exportin”. 福建福州, 03/20
- Chen, C.** (2013) 中国微生物学会学术年会(青年科学家论坛). “Iron regulation in the human fungal pathogen *Candida albicans*”. 云南昆明, 10/27
- Chen, C.** (2011) UCSF Microbial Pathogenesis Research Talk. “A unique iron homeostasis regulatory circuit with reciprocal roles in *Candida albicans* commensalism and pathogenesis”. UCSF, 02/2011
- Chen, C.** (2010) UCSF Microbial Pathogenesis Research Talk. “Histone variant H3.3 promotes mRNA accumulation by inhibiting RNAi in *Cryptococcus neoformans*”. UCSF, 03/2010
- Chen, C.** and Madhani, H.D. (2008) ICC 7th International Conference on Cryptococcus & Cryptococcosis. “Expanding the molecular toolbox for *Cryptococcus neoformans*: tandem affinity tagging, biochemical complex purification, chromatin immunoprecipitation, tiling arrays and beyond”. Nagasaki, Japan, 09/2008
- Chen, C.** (2005) Signal transduction pathways regulating fungal virulence and morphogenesis. The University of Hawaii at Manoa, Honolulu, 03/2005
- Chen, C.,** and Dickman, M. B. (2005) The Redox Biology Center Retreat. “A Tomato QM- like Protein Protects Yeast Cells From Oxidative Stress By Regulating Intracellular Proline Levels,” Nebraska City, NE, 04/2005
- Chen, C.,** and Dickman, M. B. (2004) Plant Science Initiative Retreat. “cAMP blocks MAPK

activation and sclerotial development via Rap-1 in a PKA-independent manner in *Sclerotinia sclerotiorum*,” Niobrara, NE, 09/2004

Chen, C., and Dickman, M. B. (2003) 22nd Fungal Genetic Conference. “The pH- and ROS-regulated MAP kinase signal transduction pathway in *Sclerotinia sclerotiorum*.” Asilomar, CA, 03/2003

Chen, C., and Dickman, M. B. (2002) 1st Annual Microbiology Meeting. “Signal transduction pathways regulating growth and development of *Colletotrichum trifolii*,” Microbiology Initiative, University of Nebraska-Lincoln, Lincoln, NE, 08/2002