

## Curriculum Vitae

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### Min Cao, Ph.D.

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### EDUCATION

- Sept. 1997 - Jan. 2002 Cornell University Ph.D. in Microbiology  
Sept. 1990 - June 1994 East China University of Science & Technology B.S. in Biochemistry

### RESEARCH EXPERIENCE

- Nov. 2003 - present Research associate with Dr. Hélène Marquis, Cornell University - College of Veterinary Medicine  
(1) Identification of bacterial factors accessory to the regulation of *Listeria monocytogenes* virulence factor PC-PLC.  
(2) Construction of a *Himar1 mariner*-based transposition system for *Listeria*.  
(3) *L. monocytogenes* responses to reactive oxygen and reactive nitrogen species.
- Jan. 2002 - Oct. 2003 Postdoctoral associate with Dr. John D. Helmann, Cornell University  
(1) Regulation of paraquat resistance in *Bacillus subtilis*.  
(2) *B. subtilis* copper homeostasis.
- Dec. 1997 - Jan. 2002 Graduate research assistant with Dr. John D. Helmann, Cornell University  
(1) Genetic and Genomic study of the extracytoplasmic function (ECF) sigma factors of *B. subtilis*.  
(2) *Bacterial* responses to antimicrobial compounds.

### TEACHING EXPERIENCE

- Jan. 1998 - May 1998 Teaching Assistant for Microbiology Lectures at Cornell University  
Sept. 1997 - Dec. 1997 Teaching Assistant for Microbiology Laboratory at Cornell University  
Jan. 1997 - May 1997 Adjunct Lecturer for Cell Biology Laboratory at City University of New York - Hunter College  
Sept. 1996 - Dec. 1996 Adjunct Lecturer for Principles of Biology Laboratory at City University of New York - Hunter College

**INDUSTRIAL EXPERIENCE**

July 1994 – June 1996 Scientist - protein expression and purification  
Shanghai Promega Biological Products, Inc., China,

**AWARDS AND HONORS**

- “Student Travel Award” for high quality of poster presentation at the ASM 100<sup>th</sup> General Meeting. (Chicago, May, 2000)
- 1993 East China University of Science & Technology (ECUST) Excellent thesis award
- 1993 ECUST Excellent student
- 1993 ECUST Fellowship
- 1992 ECUST Fellowship
- 1991 ECUST Fellowship

**PROFESSIONAL MEMBERSHIPS**

Member of American Society of Microbiology (ASM) since 1998

Member of American Association of the Advancement of Science (AAAS) since 1999

**PEER-REVIEWED PUBLICATIONS**

1. **Min Cao**, Moore, C.M., Helmann, J. D. (2005) *Bacillus subtilis* Paraquat Resistance Is Directed by  $\sigma^M$ , an Extracytoplasmic Function Sigma Factor, and Is Conferred by YqjL and BcrC. *J Bacteriol*, 187(9):2948-2956.
2. **Min Cao** and Helmann, J. D. (2004) The *Bacillus subtilis* extracytoplasmic function  $\sigma^X$  factor regulates modification of the cell envelope and resistance to cationic antimicrobial peptides. *J Bacteriol*, 186(4):1136-1146.
3. Ahmed Gaballa, **Cao, M.** and Helmann, J.D. (2003) Two MerR homologues that affect copper induction of the *Bacillus subtilis* *copZA* operon. *Microbiology*, 149:3413-3421.
4. **Min Cao**, Salzberg, L., Tsai, C. S., Thorsten, M., Bonilla, C., Wang, T., Ye, R. W., Marquez-Magana, L. and Helmann, J. D. (2003) Regulation of the *Bacillus subtilis* Extracytoplasmic Function Protein  $\sigma^Y$  and Its Target Promoters. *J Bacteriol*, 185(16): 4883-4890.
5. **Min Cao** and Helmann, J. D. (2002) Regulation of the *Bacillus subtilis* *bcrC* bacitracin resistance gene by two ECF  $\sigma$  factors. *J. Bacteriol*, 184(22): 6123-6129.
6. **Min Cao**, Wang, T., Ye, R. W. and Helmann, J. D. (2002) Antibiotics that inhibit cell wall biosynthesis induce expression of the *Bacillus subtilis*  $\sigma^W$  and  $\sigma^M$  regulons. *Mol. Microbiol*, 45(5): 1267-1276.
7. **Min Cao**, Kobel, P.A., Morshedi, M.M., Wu, M.F.W., Paddon, C. and Helmann, J.D. (2002) Defining the *Bacillus subtilis*  $\sigma^W$  regulon: a comparative analysis of promoter consensus search, run-

off transcription / macroarray analysis (ROMA), and transcriptional profiling approaches. *J. Mol. Biol.*, 316: 443-457.

8. **Min Cao**, Bernat, B.A., Wang, Z., Armstrong, R.N., Helmann, J.D. (2001) FosB, a cysteine-dependent fosfomycin resistance protein under the control of  $\sigma^W$ , an extracytoplasmic-function sigma factor in *Bacillus subtilis*. *J. Bacteriol.*, 183: 2380-2383.
9. Huang, X., Gaballa, A., **Cao, M.**, Helmann, J.D. (1999) Identification of target promoters for the *Bacillus subtilis* extracytoplasmic function  $\sigma$  factor,  $\sigma^W$ . *Mol. Microbiol.*, 31: 361-371.

## PRESENTATION

“Chemical warfare in the soil: an antibiotic-inducible sigma factor controls an antibiosis regulon in *Bacillus subtilis*” (1998) New England Spores Conference (Harvard University)

## POSTER PRESENTATIONS

1. Thorsten Mascher, **Min Cao** and John D. Helmann (2003) Cell wall stress response of *Bacillus subtilis* in the transcriptome age: regulatory cacophony and crosstalk. 2003 Functional Genomics of Gram-Positive Microorganisms - 12<sup>th</sup> International Conference on Bacilli (Baveno, Italy).
2. **Min Cao** and John D. Helmann (2002) Antibiotic stress response: the roles of *Bacillus subtilis* ECF sigma factors. 2002 Gordon Research Conference on Microbial Stress Response (Salve Regina University, Newport).
3. **Min Cao**, Rania Abou-Kandil, Thorsten Mascher, Andrew Ryder and John D. Helmann (2002) Extracytoplasmic function (ECF) sigma factors of *Bacillus subtilis*: physiologic roles and regulation. Frontiers in bacteriology and antibiotics – Antimicrobial Research Center Spring Symposium (McMaster University, Canada).
4. **Min Cao** and John D. Helmann (2001) From gene to genome: study of the ECF sigma factors in *Bacillus subtilis*. 2001 Functional Genomics of Gram-Positive Microorganisms - 11<sup>th</sup> International Conference on Bacilli (San Diego).
5. **Min Cao** and John D. Helmann (2000) Modification of the cell wall teichoic acids is regulated by an ECF sigma factor in *Bacillus subtilis*. 2000 ASM general meeting (Los Angeles).
6. **Min Cao** and John D. Helmann (1999) Alternative sigma factors controlling antimicrobial drug resistance functions in *Bacillus subtilis*. The Eastern Pennsylvania Branch of ASM meeting “New Technologies Driving Microbiology into 21st Century” (Philadelphia).
7. **Min Cao** and John D. Helmann (1999) SigW, an antibiotic-inducible sigma factor that controls fosfomycin resistance and bacteriocin production in *Bacillus subtilis*. 1999 ASM general meeting (Chicago).