

Curriculum Vitae

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Education

1979	BS (Chemistry)	College of Chinese Culture, Taipei, Taiwan
1981	MS (Inorganic)	National Tsing Hua University, Hsinchu, Taiwan
1988	Ph.D. (Bioinorganic/NMR)	University of California at Los Angeles, LA, CA

Research Employment and Experience

1979-1981	Research Assistant, National Tsing Hua University, Taiwan
1981-1983	Second Lieutenant, Matériel Identification and Evaluation, Military Service, Taiwan
1983-1988	Research/Teaching Assistant, University of California at Los Angeles, Los Angeles, CA
1988-1991	Postdoctoral Associate, University of Minnesota, Minneapolis, MN
1991-1997	Assistant Professor of Chemistry, University of South Florida, Tampa, FL
1997-present	Associate Professor of Chemistry, University of South Florida, Tampa, FL

Honors and Awards

Research & Creative Scholarship Award, University of South Florida, 1993, 1995, 2000

Teaching Incentive Program (TIP) Award, Florida State University System, 1995

Presidential Young Faculty Award, University of South Florida, 1996

Publications

- Ming, L.-J.; Valentine, J. S. "Preparation and Characterization of Cu_2Ni_2 and Ag_2Ni_2 Superoxide Dismutase, Two New Metal-Substituted Derivatives" *J. Am. Chem. Soc.* **1987**, *109*, 4426–4428.
- Ming, L.-J.; Banci, L.; Luchinat, C.; Bertini, I.; Valentine, J. S. "NMR Study of Cobalt(II)-Substituted Yeast and Human Copper-Zinc Superoxide Dismutase" *Inorg. Chem.* **1988**, *27*, 728–733.
- Ming, L.-J.; Banci, L.; Luchinat, C.; Bertini, I.; Valentine, J. S. "Characterization of Copper-Nickel and Silver-Nickel Bovine Superoxide Dismutase by ^1H NMR Spectroscopy" *Inorg. Chem.* **1988**, *27*, 4458–4463.
- Ming, L.-J.; Valentine, J. S. "NMR Studies of Cobalt(II)-Substituted Derivatives of Bovine Copper-Zinc Superoxide Dismutase. Effects of pH, Phosphate, and Metal Migration" *J. Am. Chem. Soc.* **1990**, *112*, 4256–4264.
- Ming, L.-J.; Valentine, J. S. "NMR Studies of Nickel(II)-Substituted Derivatives of Bovine Copper-Zinc Superoxide Dismutase with Nickel(II) bound in the Copper Site" *J. Am. Chem. Soc.* **1990**, *112*, 6374–6383.

6. Mota de Freitas, D.; Ming, L.-J.; Ramasamy, R.; Valentine, J. S. “ ^{35}Cl and ^1H NMR Study of Anion Binding to Reduced Bovine Copper-Zinc Superoxide Dismutase” *Inorg. Chem.* **1990**, *29*, 3512–3518.
7. Ming, L.-J.; Que, L., Jr.; Kriauciunas, A.; Frolik, C. A.; Chen, V. J. “The Coordination Chemistry of the Metal Binding Site of Isopenicillin N Synthase” *Inorg. Chem.* **1990**, *29*, 1111–1112.
8. Ming, L.-J.; Lauffer, R. B.; Que, L., Jr. “Proton Nuclear Magnetic Resonance Studies of Iron(II/III)-Amide Complexes, Spectroscopic Models for Non-Heme Iron Proteins” *Inorg. Chem.* **1990**, *29*, 3060–3064.
9. Jian, F.; Peisach, J.; Ming, L.-J.; Que, L., Jr.; Chen, V. J. “Electron Spin Echo Envelope Modulation Studies of the Cu(II)-Substituted Derivative of Isopenicillin N Synthase, a Structural and Spectroscopic Model” *Biochemistry* **1991**, *30*, 11437–11445.
10. Ming, L.-J.; Que, L., Jr.; Kriauciunas, A.; Frolik, C. A.; Chen, V. J. “NMR Studies of Isopenicillin N Synthase, a Non-heme Iron(II) Enzyme” *Biochemistry* **1991**, *30*, 11653–11659.
11. Ming, L.-J.; Jang, H. G.; Que, L., Jr. “2D NMR Studies of Paramagnetic Diiron Complexes” *Inorg. Chem.* **1992**, *31*, 359–364.
12. Wang, Z., Ming, L.-J.; Que, L., Jr.; Vincent, J. B.; Crowder, M. W.; Averill, B. A. “ ^1H NMR and NOE Studies of the Purple Acid Phosphatase from Porcine Uterus and Bovine Spleen” *Biochemistry* **1992**, *31*, 5263–5268.
13. Holz, R. C.; Que, L., Jr.; Ming, L.-J. “NOESY Studies on the Fe(III)Co(II) Active Site of the Purple Acid Phosphatase Uteroferrin” *J. Am. Chem. Soc.* **1992**, *114*, 4434–4436.
14. Bertini, I.; Luchinat, C.; Ming, L.-J.; Piccioli, M.; Sola, M., Valentine, J. S. “Two-Dimensional ^1H NMR Studies of the Paramagnetic Metalloenzyme Copper-Nickel Superoxide Dismutase” *Inorg. Chem.* **1992**, *28*, 4433–4435.
15. Ming, L.-J. “Two-Dimensional ^1H NMR Studies of Ca(II)-Binding Site in Proteins Using Paramagnetic Lanthanides(III) as Probes and Yb(III)-Substituted Bovine α -Lactalbumin as an Example” *Magn. Reson. Chem.* **1993**, *31*, S104–S109.
16. Ming, L.-J.; Lynch, J. B.; Holz, R. C.; Que, L., Jr. “One- and Two-Dimensional ^1H NMR Studies of the Active Site of Iron(II) Superoxide Dismutase from *Escherichia coli*” *Inorg. Chem.* **1994**, *33*, 83–87.
17. Elgren, T. E.; Ming, L.-J.; Que, L. Jr. “Spectroscopic Studies of Co(II)-Reconstituted Ribonucleotide Reductase R2 from *E. coli*” *Inorg. Chem.* **1994**, *33*, 891–894.
18. Ming, L.-J.; Wei, X. “An Ytterbium(III) Complex of Daunomycin, a Model Metal Complex of Anthracycline Antibiotics” *Inorg. Chem.* **1994**, *33*, 4617–4618.
19. Ming, L.-J. “Paramagnetic Lanthanide(III) Ions as NMR Probes for Biomolecular Structure and Function” In La Mar, G. N.; Ed. *Nuclear Magnetic Resonance of Paramagnetic Molecules*, NATO-ASI, Kluwer: Dordrecht, Netherlands, **1995**.
20. Ming, L.-J. “Dinuclear Metalloenzymes, Structure, Function, and NMR Spectroscopy” *Chemistry (Taiwan)*, **1996**, *54*, 69–79. (A review article)
21. Bertolucci, C.; Ming, L.-J.; Gonzalez, G.; Gilles-Gonzalez, M. A. “Assignment of Hyperfine-Shifted ^1H NMR Signals of the Heme in the Oxygen Sensor FixL Kinase from *Rhizobium meliloti*” *Chem. Biol.* **1996**, *3*, 561–566.
22. Lehmann, T. E.; Ming, L.-J.; Rosen, M. E.; Que, L., Jr. “NMR Studies of the Paramagnetic Complex Fe(II)-Bleomycin” *Biochemistry* **1997**, *36*, 2807–2816.
23. Lin, L.-Y.; Park, H. I.; Ming, L.-J. “Metal Binding and Active Site Structure of Di-Zinc *Streptomyces griseus* Aminopeptidase” *J. Biol. Inorg. Chem.* **1997**, *2*, 744–749.
24. Wei, X.; Ming, L.-J.; Cannons, A. C.; Solomonson, L. P. “ ^1H and ^{13}C NMR Studies of a Truncated Heme Domain from *Chlorella vulgaris* Nitrate Reductase: Signal Assignment of the Heme Moiety” *Biochim. Biophys. Acta* **1998**, *1382*, 129–136.

25. Wei, X.; Ming, L.-J. "Comprehensive 2D ^1H NMR Studies of Paramagnetic Lanthanide(III) Complexes of Anthracycline Antitumor Antibiotics" *Inorg. Chem.* **1998**, *37*, 2255–2262.
26. Colpas, G. J.; Brayman, T. G.; McCracken, J.; Pressler, M. A.; Babcock, G. T.; Ming, L.-J.; Colangelo, C. M.; Scott, R. A.; Hausinger, R. P. "Spectroscopic Characterization of Metal Binding by *Klebsiella aerogenes* UreE Urease Accessory Protein" *J. Biol. Inorg. Chem.* **1998**, *3*, 150–160.
27. Holz, R. C.; Bennett, B.; Chen, G.; Ming, L.-J. "Proton NMR Spectroscopy as a Probe of Dinuclear Copper(II) Active Sites in Metalloproteins. Characterization of the Hyperactive Copper(II)-Substituted Aminopeptidase from *Aeromonas proteolytica*" *J. Am. Chem. Soc.* **1998**, *120*, 6329–6335.
28. Wei, X.; Ming, L.-J. "NMR Studies of Metal Complexes and DNA Binding of the Quinone-Containing Antibiotic Streptonigrin" *J. Chem. Soc. Dalton Trans.* **1998**, 2793–2798.
29. Park, H. I.; Ming, L.-J. "The Mechanistic Role of the Coordinated Tyrosine in Astacin" *J. Inorg. Biochem.* **1998**, *72*, 57–62.
30. Ming, L.-J. "NMR Studies of Paramagnetic Multinuclear Metalloproteins" *Trends Inorg. Chem.* **1998**, *5*, 205–236. (An invited review article)
31. Colpas, G. J.; Brayman, T. G.; Ming, L.-J.; Hausinger, R. P. "Identification of Metal-Binding Residues in the *Klebsiella aerogenes* Urease Nickel Metallochaperon, UreE" *Biochemistry* **1999**, *38*, 4078–4088.
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33. Park, H. I.; Ming, L.-J. "A 10^{10} Rate Enhancement of Phosphodiester Hydrolysis by a Dinuclear Aminopeptidase—Transition State Analogues as Substrates?" *Angew. Chem. Int. Ed. Engl.* **1999**, *38*, 2914–2916; *Angew. Chem.* **1999**, *111*, 3097–3100.
34. Epperson, J. D.; Ming, L.-J.; Woosley, B. D.; Baker, G. R.; Newkome, G. R. "NMR Study of Dendrimer Structure Using Paramagnetic Cobalt(II) as a Probe" *Inorg. Chem.* **1999**, *38*, 4498–4502.
35. Ming, L.-J. "Nuclear Magnetic Resonance of Paramagnetic Metal Centers in Proteins and Synthetic Complexes" In *Physical Methods in Bioinorganic Chemistry, Spectroscopy and Magnetism*, Que, L., Jr., Ed.; University Science Books; **2000**.
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37. Ercan, A.; Park, H. I.; Ming, L.-J. "Enormous Enhancement of the Hydrolyses of Phosphoesters by dinuclear centers: *Streptomyces* Aminopeptidase as a "Natural Model System"" *Chem. Commun.* **2000**, 2501–2502.
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39. Harris, M. N.; Madura, J. D.; Ming, L.-J.; Harwood, V. J. "Kinetic and Mechanistic Studies of the Prolyl Oligopeptidase from the Hyperthermophile *Pyrococcus furiosus*" *J. Biol. Chem.* **2001**, *276*, 19310–19317.
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41. Epperson, J. D.; Ming, L.-J. "Cobalt(II) and Copper(II) Binding of *Bacillus cereus* Trinuclear Phospholipase C— A Novel ^1H NMR Spectrum of a "Tri-Cu(II)" Center in Protein" *J. Inorg. Biochem.* **2001**, *87*, 149–156.

42. Park, H. I.; Ming, L.-J. "Mechanistic Studies of the Astacin-Like Serratia Metalloendopeptidase Serralyisin: Highly Active (>2,000%) Co(II)- and Cu(II)-Substituted Derivatives for Further Corroboration of a "Metallotriad" Mechanism" *J. Biol. Inorg. Chem.* **2002**, *7*, 600–610.
43. Ming, L.-J.; Epperson, J. D. "Metal Binding and Structure–Activity Relationship of the Metalloantibiotic Peptide Bacitracin" *J. Inorg. Biochem.* **2002**, *91*, 46–58 (A focus review).
44. Harris, M. N.; Bertolucci, C.; Ming, L.-J. "Paramagnetic Cobalt(II) as a Probe for Kinetic and NMR Relaxation Studies of Phosphate Binding and the Catalytic Mechanism of *Streptomyces* Dinuclear Aminopeptidase" *Inorg. Chem.* **2002**, *41*, 5582–5588.
45. Ming, L.-J. "Structure and Function of Metalloantibiotics" *Med. Res. Rev.* **2003**, *23*, 697–762.
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47. Hanafy, A. I.; Lykourinou-Tibbs, V.; Bisht, K. S.; Ming, L.-J. "Effective heterogeneous hydrolysis of phosphodiester by pyridine-containing metallopolymers" *Inorg. Chim. Acta* **2005**, *358*, 1247–1252.
48. da Silva, G. F. Z.; Tay, W. M.; Ming L.-J. "Catechol Oxidase-Like Oxidation Chemistry of the 1–20 and 1–16 Fragments of Alzheimer's Disease-Related β -Amyloid Peptide: Their Structure-Activity Correlation and the Fate of Hydrogen Peroxide" *J. Biol. Chem.* **2005**, *280*, 16601–16609.
49. Elder, I.; Tu, C.; Ming, L.-J.; McKenna, R.; Silverman, D. N. "Proton Transfer from Exogenous Donors in Catalysis by Human Carbonic Anhydrase II" *Arch. Biochem. Biophys.* **2005**, *437*, 106–114. (*Accepted without revision and is the cover story of the issue*)
50. da Silva, G. F. Z.; Ming, L.-J. "Alzheimer's Disease-Related Copper(II)- β -Amyloid Peptide Exhibits Phenol Monooxygenase and Catechol Oxidase Activities" *Angew. Chem.* **2005**, *44*, 5501–5504. (*Accepted without alterations*)
51. da Silva, G. F. Z.; Ming, L.-J. "Catechol Oxidase Activity of Di-Cu²⁺-Substituted Aminopeptidase from *Streptomyces griseus*" *J. Am. Chem. Soc.* **2005**, *127*, 16380–16381.

Students with Dissertations/Thesis

Ph.D. Students

- Xiangdong (David) Wei, "Two-Dimensional NMR Studies of Paramagnetic Metallo-Biomolecules: Metal-Antibiotic Drug Complexes and Protein Structure Determination", 1996. (*A recipient of the Departmental Ashford Award*)
- Hyun Ik Park, "The Mechanistic Studies of Mononuclear and Dinuclear Metalloproteases, Astacin and Aminopeptidase", 1999. (*A recipient of the Departmental Ashford Award*)
- Jon D. Epperson, "Paramagnetic Cobalt(II) as a Nuclear Magnetic Resonance Probe for the Study of Metallo-Macromolecules: from Peptides and Proteins to Dendrimers", 1999. (*A recipient of the University Graduate Council Outstanding Dissertation Award*)
- Jason D. Palcic, "Proton and Phosphorus NMR Studies of Paramagnetic Metallo-Biomolecules: from Metalloantibiotics to Metalloenzymes", 2000.
- Craig M. Bertolucci, "¹H Nuclear Magnetic Resonance Investigations of the Paramagnetic Derivatives of the Metalloproteins Parvalbumin, FixL, and Aminopeptidase", 2001. (*A recipient of the Departmental Ashford Award*)
- Michael N. Harris, "Mechanistic and Structural Studies of Aminopeptidase from *Streptomyces griseus* and Prolyl Oligopeptidase from *Pyrococcus furiosus*", 2001.
- Altan Ercan, "Mechanistic Investigation of Dinuclear Peptidases from *Streptomyces griseus* and *Alteromonas sp.* Prolidase: Transition-State Analogues as Probes", 2003

M.S. Students

Lung-Yu (Victor) Lin, "Di-Zinc Aminopeptidase from *Streptomyces griseus*, a new Member of Dinuclear Metalloprotease", 1996.

Undergraduate/Honors Thesis

Catrin Hasselgren, "Cadmium(II) Binding and Catalysis in *Streptomyces griseus* Aminopeptidase. Kinetic and Thermodynamic Studies of the Cadmium(II) Derivative", Visiting student, Uppsala University, Uppsala, Sweden, 1997.

Rosemary M. Keene, "Kinetic and Metal Binding Studies of Zinc(II) and Cobalt(II) with *Streptomyces griseus* Aminopeptidase", 1998.

Kashmir Singh Juneja, "Synthetic Metallohydrolases: Hydrolysis of Phosphodiester by Iron (III) Complexes of 4-Vinylpyridine Methylmethacrylate Investigated with Kinetic and Thermodynamic Methods", 2004.

Regina Maldonado, "Hydrolytic Chemistry of Metallopolymers", 2005.