

Curriculum Vitae
Janet R. Morrow

4/5/08

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Education

1980 B.S., Chemistry, University of California, Santa Barbara
1985 Ph.D., Inorganic Chemistry, University of North Carolina at Chapel Hill
1986 Diplome D'Etudes Supérieures de Sciences Physiques, University of Bordeaux

Professional Experience

1985-1986 Postdoctoral Fellow, University of Bordeaux, France
1986-1988 Postdoctoral Fellow, University of California, San Diego
1988-present Assistant, Associate, Professor of Chemistry, University at Buffalo
2005-2008 Director of "Interfacing the Chemical Sciences, REU site"
2006-present Associate Chair of Chemistry

Awards and Honors

1985-1986 National Science Foundation Postdoctoral Fellowship - U.S.-Industrialized Countries Exchange of Scientists and Engineers
1994-1996 Alfred P. Sloan Fellow
1996-97 National Science Foundation Visiting Professor (Univ. of Rochester, Professor Doug Turner, sponsor)
2007-2009 National Science Foundation Special Award for Creativity

Recent Professional Memberships and Service

January 2008 NSF CRC review panel
October 2006 Session chair on inorganic and biological sensors, ACS NERM, Binghamton, NY
May 2006 NSF IGERT program evaluation meeting
October 2005 NSF chemistry instrumentation panel
2005-2008 Editorial Board, Journal of Biological Inorganic Chemistry
2005-present Member, Society of Biological Inorganic Chemistry
2005-2006 Chair, Bioinorganic chemistry section of the Inorganic division of the ACS
2001-2005 NIH metallobiochemistry study section member
2001-2003 American Chemical Society canvassing committee for the Alfred Bader Award in Bioorganic or Bioinorganic chemistry
2004- NSF career panel
2001-present Member of Faculty of 1000 (online research service) chemical biology division
June 2000 NSF-DOE Environmental Molecular Science Institutes review panel
1999-2000 Advisory board, *Inorganic Chemistry*
1993-2000 Consulting Editor, *Main Group Chemistry News*
1985-present American Chemical Society - inorganic division and bioinorganic subdivision

Research Interests: Artificial ribonucleases, metal ion and metallodrug binding sites in nucleic acids, PARACEST MRI contrast agents, lanthanide luminescence

Selected Recent Publications

1. Morrow, J. R.; Amyes, T. Richard, J. P. "Phosphate Binding and Catalysis by Small and Large Molecules" *Acc. Chem. Res.* **2008**, ASAP 2/23/08.
2. Nwe, K., Richard, J. P., Morrow, J. R., "Direct excitation luminescence spectroscopy of Eu(III) complexes of 1,4,7-tris(carbamoylmethyl)-1,4,7,10-tetraazacyclododecane derivatives and kinetic studies of their catalytic cleavage of an RNA analog" *Dalton Trans.* **2007**, 5171-5178.
3. Farquhar, E.; Richard, J.P. ; Morrow, J. R. "Formation and Stability of Mononuclear and Dinuclear Eu(III) Complexes and Their Catalytic reactivity toward Cleavage of an RNA Analog" *Inorg. Chem.* **2007**, *46*, 7169-7177.
4. Rossiter, C.; Mathews, R., Morrow, J. R. "Cleavage of an RNA analog by Zn(II) Macrocyclic Catalysts Appended with a Methyl or an Acridine Group." *J. Inorg. Biol. Chem.* **2007**, *101*, 925-934.
5. Mathews, R.; Rossiter, C.; Richards, J. P.; Morrow, J. R. "A Minimalist Approach to Understanding the Efficiency of Mononuclear Zn(II) Complexes for Catalysis of Phosphodiester Cleavage" *Dalton Trans.* **2007**, 3804-3811.
6. Yang, M.Y.; Morrow, J.R.; Richard, J. P. "A Transition State Analog for Phosphate Diester Cleavage Catalyzed by a Metal ion Complex" *Bioorg. Chem.* **2007**, *35*, 366-374.
7. Woods, M.; Woessner, D. E.; Zhao, P.; Pasha, A; Yang, M.-Y.; Huang, C. H.; Vasality, O.; Morrow, J. R.; Sherry, A. D. "Europium(III) Macrocyclic Complexes with Alcohol Pendant Arms as Chemical Exchange Saturation Transfer (CEST) Agents" *J. Am. Chem. Soc.* **2006**, *128*, 10155-10162.
8. O' Donoghue, A. M.; Pyun, S. Y.; Yang, M.-Y.; Morrow, J. R. ; Richard, J. P. "Substrate Specificity of an Active Dinuclear Zn(II) Catalyst for Cleavage of RNA Analogs and a Dinucleoside" *J. Am. Chem. Soc.* **2006**, *128*, 1615-1621.
9. Rossiter, C.; Mathews, R.; Morrow, J. R. "Uridine Binding by Zn(II) Macrocyclic Complexes: Diversion of RNA Cleavage Catalysts" *Inorg. Chem.* **2005**, *44*, 9307-9404
10. Yang, M.Y.; Iranzo, O.; Richard, J. P ; Morrow, J. R. "Solvent Deuterium Isotope Effects on Phosphodiester Cleavage Catalyzed by an Extraordinarily Active Zn(II) Complex" *J. Am. Chem. Soc.* **2005**, *127*, 1064-1065.
11. Iranzo, O.; Khalili, H.; Epstein, D. M.; Morrow, J. R. "Recruitment of Divalent Metal ions by Incorporation of 4-Thio-2'-deoxythymidine or 4-Thio-2'-deoxyuridine into DNA" *J. Biol. Inorg. Chem.*, **2004**, *9*(4), 462-470.
12. Morrow, J. R. ; Iranzo, O. "Synthetic Metallonucleases for RNA Cleavage" *Current. Opinion. Chemical Biology* **2004**, *8*, 192-200.
13. Iranzo, O.; Richard, J. P.; Morrow, J. R. "Structure-Activity Studies on the Cleavage of an RNA Analog by a Potent Dinuclear Metal ion Catalyst. The Effect of Changing the Metal ion" *Inorg. Chem.* **2004**, *43*, 1743-1750.

14. Voss, D. A., Jr.; Farquhar, E. R.; Horrocks, W. DeW., Jr.; Morrow, J. R. "Lanthanide(III) Complexes of Amide Derivative of DOTA Exhibit an Unusual Variation in Stability Across the Lanthanide Series" *Inorg. Chim. Acta.* **2004**, 357, 859-863.
15. Iranzo, O.; Kovalevsky, A.Y.; Morrow, J. R.; Richard, J. P. "Physical and Kinetic Analysis of the Cooperative Role of Metal ions in Catalysis of Phosphodiester Cleavage by a Dinuclear Zn(II) Complex" *J. Am. Chem. Soc.* **2003**, 1988-1993.
16. Iranzo, O.; Elmer, T.; Richard, J. P. Morrow, J. R. "Cooperativity between Metal ions in the Cleavage of Phosphate Diesters and RNA by Dinuclear Zn(II) Catalysts" *Inorg. Chem.* **2003**, 7737-7746. Featured cover article, December 1, 2003.
17. Yang, M.-Y., Richard, J. P.; Morrow, J.R. "Substrate Specificity for Catalysis of Phosphate Diester Cleavage by a Dinuclear Zn(II) Complex" *Chem. Commun.* **2003**, 2832-2833.

Recent Invited lectures

1. "Interaction of lanthanide ion complexes with RNA and DNA: toward cleavage and recognition of nucleic acid structure", invited lecture at the Inorganic Gordon Research conference in Newport, Rhode Island, July 2007.
2. "Chemical Exchange Saturation Transfer in Lanthanide(III) macrocyclic complexes with hydroxyl proton exchangeable sites: toward new MRI contrast agents" lecture at the Inorganic Discussion Weekend, University of Toronto, Nov. 2-4, 2007.
3. "Synthetic nucleases" lecture at the Universidad Nacional Autonoma de Mexico, November 2007.
4. "Spectroscopic methods for the study of metal ion binding sites in nucleic acids" lecture at the University of Zurich, October 5, 2007.
5. "Spectroscopic methods for the study of metal ion binding sites in nucleic acids" lecture at the University of Lausanne, October 8, 2007.
6. "Spectroscopic methods for the study of metal ion binding sites in nucleic acids" lecture at the University of Bern, October 9, 2007.
7. "Spectroscopic methods for the study of metal ion binding sites in nucleic acids" lecture at the University of Basel, October 11, 2007.
8. "Lanthanide(III) ion Luminescence Spectroscopy for Mapping Metal ion Binding Sites in RNA and DNA" lecture at the European Science Foundation conference: Metal ions and Nucleic Acids, Athens, Greece November 2006.
9. "Identifying lanthanide ion nucleic acid binding sites: toward structure specific interactions and cleavage" lecture at the University of North Carolina, Chapel Hill, October 22, 2006

Current Grant Support Janet Morrow

“Studies on RNA cleavage: catalyst design and mechanism” Special Award for Creativity, National Science Foundation 7/1/07 to 6/30/09., J Morrow, PI.

“Interfacing the chemical sciences: An REU summer site at the University of Buffalo” National Science Foundation, 6/1/05 – 6/2/08, J. Morrow, PI, co-PI: S. Chemler.

Luminescence studies of lanthanide(III) contrast agents” National Institutes of Health, 8/1/05 7/31/08, J. Morrow, PI.