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CURRICULUM VITAE

DISTINGUISHED PROFESSOR OF CHEMISTRY AND
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DATE OF BIRTH

February 12, 1951, Rochester, New York

EDUCATION

1969	High School	Aquinas Institute, Rochester, New York
1973	A.B.	State University of New York, College at Fredonia (Biology and Chemistry)
1978	Ph.D.	University of California, San Francisco, CA (Advisor: George L. Kenyon)

POSTDOCTORAL TRAINING

1978-80	Massachusetts Institute of Technology (Advisor: Christopher T. Walsh)
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ACADEMIC APPOINTMENTS

1973-74	Teaching Assistant in Physical Chemistry, University of California, San Francisco
1974-75	Teaching Assistant in Organic Chemistry, University of California, San Francisco
1978-80	NIH Postdoctoral Fellow, Department of Chemistry, M.I.T.
1980-86	Assistant Professor of Toxicology, Department of Applied Biological Sciences, M.I.T.
1986-87	Associate Professor of Toxicology, Department of Applied Biological Sciences, M.I.T.
1987-91	Associate Professor of Medicinal Chemistry, College of Pharmacy, University of Michigan
1989-91	Associate Professor of Biological Chemistry, Medical School, University of Michigan
1991-01	Professor of Medicinal Chemistry, College of Pharmacy, University of Michigan
1991-01	Professor of Biological Chemistry, Medical School, University of Michigan
1991-01	John G. Searle Professor of Medicinal Chemistry, College of Pharmacy, Univ. of Michigan
1997-01	Investigator, Howard Hughes Medical Institute
1997-98	Visiting Research Scientist, Biophysics Research Division, University of Michigan
1998	Visiting Scientist, Brandeis University
2000	Miller Visiting Professor, Department of Chemistry, University of California, Berkeley
2001-11	Professor of Chemistry, Department of Chemistry, University of California, Berkeley
2001-11	Professor of Biochemistry and Molecular Biology, Department of Molecular and Cell Biology, University of California, Berkeley
2001-11	Professor of Cellular and Molecular Pharmacology, Department of Cellular and Molecular Pharmacology, University of California, San Francisco
2001-11	Faculty Scientist, Division of Physical Biosciences, Lawrence Berkeley National Laboratory
2001-11	Co-Director, Chemical Biology Graduate Program, University of California, Berkeley
2002-11	Aldo DeBenedictis Distinguished Professor of Chemistry, UC Berkeley

2005-10 Chair of the Department of Chemistry and Joel Hildebrand Professor, UC Berkeley
 2011 President-elect, The Scripps Research Institute
 2012-14 President and CEO, The Scripps Research Institute
 2011-15 Cecil H. and Ida M. Green Professor of Chemistry, The Scripps Research Institute
 2015- Professor of Chemistry, Department of Chemistry, UC Berkeley
 2015- Professor of Biochemistry, Department of Molecular and Cell Biology, UC Berkeley
 2015-23 CH and Annie Li Chair in the Molecular Biology of Diseases, UC Berkeley
 2024-26 Class of 1936 Chair
 2026- Professor of the Graduate School

CONSULTING AND RELATED ACTIVITIES

1991-93 Warner-Lambert/Parke-Davis, Department of Biochemistry, Ann Arbor, MI
 1993-97 Searle Research and Development, Monsanto Corporate Research, St. Louis, MO
 1998-00 Eli Lilly and Company, Indianapolis, IN
 1994-08 Cayman Chemical Company, Ann Arbor, MI
 1999-05 Scientific Advisory Board, NitroMed, Inc., Bedford MA
 2001-05 Scientific Advisory Board, Oxon Medica, Inc., South San Francisco, CA
 2001-03 EPIX Medical, Cambridge, MA
 2001-02 Transform Pharmaceuticals, Waltham, MA
 2004-07 Pfizer, St. Louis, MO
 2004 Pfizer, Ann Arbor, MI
 2005-06 Guident Corp., Santa Clara, CA
 2006-2015 Scientific Advisory Board, Lycera, Inc., Ann Arbor, MI
 2006 Co-founder, Omniox, Inc.
 2007-present Chair, Science Advisory Board, Omniox, Inc.
 2007-2018 Scientific Review Board, Howard Hughes Medical Institute
 2008-2014 Consultant, Galleon Pharmaceuticals, Horsham, PA
 2008-2010 Scientific Advisory Board, Viamet Pharmaceuticals, Durham, NC
 2009-2015 Scientific Advisory Board, N30 Pharma, Boulder CO
 2009, 2014 Consultant, Ironwood Pharmaceuticals, Inc., Cambridge, MA
 2010-2014 Scientific Advisory Board, Galleon Pharmaceuticals, Horsham, PA
 2018-present Scientific Advisory Board, Cayman Chemical, Ann Arbor, MI
 2021-2022 Science Expert, Hausfeld LLP
 2023-present Science Advisory Board, X-Biotix
 2023 Science Expert, Rakoczy Molino Mazzochi Siwik LLP

PROFESSIONAL ACTIVITIES

Editorial Boards and Related Activities

1995-2000 *Journal of Biological Chemistry*
 1994-present *Chemistry & Biology*
 1994-2010 *Redox Report*
 1995-2010 *Nitric Oxide: Biology & Chemistry Archives of Biochemistry & Biophysics, Part B*
 1992-96 *Journal of Medicinal Chemistry*
 1990-93 *Chemical Research in Toxicology*
 1992-93 Innovative Technology Fund Advisory Committee (ASBMB representative)
 1993-96 Long-range Planning Committee, Division of Medicinal Chemistry, American Chemical Society
 1998-01 Guest Editor (with John Gerlt) *Curr. Opin. Chem. Biol.* **2**, 1998
 1999-01 Executive Committee, Div. Biol. Chem, ACS
 2000 Guest Editor (with John Gerlt) *Curr. Opin. Chem. Biol.* **4**, 2000
 2001-08 Board of Editors, *Free Radical Research*
 2001-11 Section Head, Bioinorganic Chemistry, Chemical Biology, Faculty of 1000
 2001-03 External Advisor, NOCOBRE, University of Wyoming, Laramie, WY
 2001-10 Board of Directors, Fredonia College Foundation
 2011- present Board of Directors, Fredonia College Foundation
 2002-03 Membership Committee, Institute of Medicine, Vice-Chair Section 1: Physical, Mathematical, Computer, Information and Engineering Sciences.

2003-05	Membership Committee, Institute of Medicine, Chair Section 1: Physical, Mathematical, Computer, Information and Engineering Sciences.
2002-14	Chair, External Advisory Committee, Vanderbilt Institute for Chemical Biology, Vanderbilt University
2005-present	<i>Biochemistry</i> , Editorial Advisory Board
2006-2008	Chair-Elect, Chair, Retiring Chair, Section on Chemistry, American Association for the Advancement of Science
2007-2018	Science Review Board, HHMI
2008	Council Member, American Association for the Advancement of Science
2006-11	<i>ACS Chemical Biology</i> , Board of Editors
2008	Chair, External Review Committee, Department of Chemistry and Biochemistry, UCSD
2008	Chair, External Review Committee, Emory University Graduate Division of Biological and Biomedical Sciences
2008	External Review Committee, Department of Chemistry, Georgia Tech
2008-2016	Natural Science Advisory Council, SUNY Fredonia
2008-2016	Chair, Natural Science Advisory Council, SUNY Fredonia
2008-2018	<i>Proc. Natl. Acad. Sci. USA</i> , Editorial Board
2009-2011	Scientific Advisory Committee, Vollum Institute, Portland OR
2010	Class Membership Committee, Class II, National Academy of Sciences
2010-11	Interdisciplinary Committee, World Cultural Council
2010-12	ASBMB Council
2010-2016	External Advisory Board, School of Chemistry and Biochemistry, Georgia Institute of Technology
2012-2014	Chemical & Engineering News Advisory Board
2012-2021	Senior Editor eLIFE
2012-2014	Board of Directors, Sanford Consortium for Regenerative Medicine
2012-2014	Governing Board California Institute for Regenerative Medicine (CIRM)
2013-2014	Board of Directors, California Healthcare Institute
2014-present	Biomedical Science Advisory Board, Vanderbilt University
2014-2017	NAS, Section 21 Chair (3-year term)
2015	NAS Nominating Committee (selection of President, Treasurer and Councilors)
2015-2016	AAAS Committee on Nominations
2015-2019	Advisory Committee, Academia Sinica Institute of Chemistry, Taipei Taiwan
2016-2018	Vice-Chair Board of Directors, Fredonia College Foundation
2018-2020	Chair Board of Directors, Fredonia College Foundation
2016-2025	Intelligence Community Studies Board, Division of Engineering and Physical Sciences, National Academies of Sciences, Engineering and Medicine (co-chair 2022- 2025)
2020-2022	ACS National Awards Selection Committee
2021	Class Membership Committee, Class II, National Academy of Sciences
2021-2025	Advisory Committee, Division of Engineering and Physical Sciences (DEPS), National Academy of Sciences
2024-present	Chair, Basic Sciences External Advisory Council, Vanderbilt School of Basic Sciences, Vanderbilt Medical School
2024-present	Board Member, Chabot Space and Science Center, Oakland CA
2026-present	Advisory Committee, Center for Advancing Science and Technology, National Academy of Sciences

HONORS AND AWARDS

1972-73	Undergraduate Research Assistant, SUNY at Fredonia
1978-80	NIH Postdoctoral Fellow, M.I.T.
1981-83	Mitsui Career Development Chair, M.I.T.
1991-01	John G. Searle Professor of Medicinal Chemistry
1991	George H. Hitchings Award for Innovative Methods in Drug Discovery & Design
1992	Faculty Recognition Award, University of Michigan
1993	F.E. Bartell Memorial Lecture, University of Michigan
1993	Outstanding Achievement Award, State University of New York College at Fredonia

- 1993 Second Annual Harold C. Hodge Lecture, University of Rochester
- 1994 Twenty-Second Peter Anthony Leermakers Symposium, Wesleyan University
- 1995 MacArthur Foundation Fellowship
- 1996 Commencement Address, State University of New York, College at Fredonia
- 1996 Senior Fellow, Michigan Society of Fellows, University of Michigan
- 1996 State University of New York, Alumni Honor Roll
- 1997 Cynthia Ann Chan Memorial Lecture, College of Chemistry, University of California, Berkeley
- 1997 Investigator of the Howard Hughes Medical Institute
- 1999 Elected to the Institute of Medicine (now National Academy of Medicine)
- 2000 Distinguished Faculty Lectureship Award in Biomedical Research University of Michigan Medical School
- 2000 State of Michigan Scientist of the Year
- 2000 Chautauqua Institution, Lecture Platform Speaker
- 2000 Distinguished Faculty Achievement Award, University of Michigan
- 2001 Elected to the American Academy of Arts and Sciences
- 2001 Fellow, American Association for the Advancement of Science
- 2002 Aldo DeBenedictis Distinguished Professor of Chemistry
- 2004 Harrison Howe Award, Rochester Section of the American Chemical Society
- 2006 Elected to the National Academy of Sciences
- 2007 Repligen Award in the Chemistry of Biological Processes, Division of Biological Chemistry of the American Chemical Society
- 2007 Gustavus John Esselen Award for Chemistry in the Public Interest, Northeastern Section, American Chemical Society
- 2007 Emil Thomas Kaiser Award, The Protein Society
- 2008 Murray Goodman Memorial Prize
- 2009 Fellow of the Royal Society of Chemistry
- 2012 K.T. Wang Bioorganic Lectureship, Taiwan
- 2013 Presidents' Lecture, Memorial Sloan Kettering Cancer Center, New York
- 2013 Elected to the National Academy of Inventors
- 2014 American Association of State Colleges and Universities AASCU Distinguished Alumnus
- 2015 Alfred Bader Award in Bioorganic or Bioinorganic Chemistry
- 2015 UCSF 150th Anniversary Alumni Excellence Award
- 2016 Elected to the American Philosophical Society
- 2018 Honorary Doctor of Science, State University of New York
- 2024 Elected to American Institute for Medical and Biological Engineering

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

American Association for the Advancement of Science
 American Society for Biochemistry and Molecular Biology
 American Chemical Society, Divisional Affiliation in Biological Chemistry and Medicinal Chemistry
 National Academy of Medicine
 American Academy of Arts and Sciences
 National Academy of Inventors
 National Academy of Sciences
 American Philosophical Society

BIBLIOGRAPHY

Peer Reviewed Publications

1. Marletta, M.A. and Kenyon, G.L. (1979). Affinity labeling of creatine kinase by *N*-(2,3-epoxypropyl *N*-amidinoglycine (epoxycreatine). *J. Biol. Chem.* **254**: 1879-1886.
2. Goldstein, J.A., Cheung, Y.F., Marletta, M.A. and Walsh, C.T. (1979). Fluorinated substrate analogues as stereochemical probes of enzymatic reaction mechanisms. *Biochemistry* **17**: 5567-5575.

3. Dietrich, R.F., Marletta, M.A. and Kenyon, G.L. (1979). Carbon-13 nuclear magnetic resonance studies of creatine, creatinine and some of their analogues. *Organic Magnetic Resonance* **13**: 79-88.
4. Marletta, M.A., Srere, P.A. and Walsh, C.T. (1981). Stereochemical outcome of processing of fluorinated substrates by ATP citrate lyase and malate synthase. *Biochemistry* **20**: 3719-3723.
5. Light, D.F., Walsh, C.T. and Marletta, M.A. (1980). Analytical and preparative HPLC separation of flavin and flavin analog coenzymes. *Anal. Biochem.* **109**: 87-93.
6. Marletta, M.A., Cheung, Y.F. and Walsh, C.T. (1982). Stereochemical studies of fumarase-catalyzed hydration of monofluorofumarate, 2,3-difluorofumarate and acetylene dicarboxylate. *Biochemistry* **21**: 2637-2644.
7. Klibanov, A.M., Alberti, B.N. and Marletta, M.A. (1982). Stereospecific oxidation of aliphatic alcohols catalyzed by galactose oxidase. *Biochem. Biophys. Res. Commun.* **108**: 804-808.
8. Tauber, A.I., Fay, J.R. and Marletta, M.A. (1984). Flavonoid inhibition of the human neutrophil NADPH oxidase. *Biochem. Pharmacol.* **33**: 1367-1369.
9. Collins, S. and Marletta, M.A. (1984). Carcinogen-binding proteins: high affinity binding sites in mouse liver distinct from the Ah receptor. *Mol. Pharmacol.* **26**: 353-359.
10. Stuehr, D.J. and Marletta, M.A. (1985). Superoxide-promoted oxidation reactions of aniline and *N*-methylaniline in dimethylsulfoxide. *J. Org. Chem.* **50**: 694-696.
11. Crespi, C.L., Altman, J. and Marletta, M.A. (1985). Xenobiotic metabolism and mutation in a human lymphoblastoid cell line. *Chem.-Biol. Interact.* **53**: 257-272.
12. Sousa, R.L. and Marletta, M.A. (1985). Inhibition of cytochrome P-450 activity in rat liver microsomes by the naturally occurring flavonoid quercetin. *Arch. Biochem. Biophys.* **240**: 345-357.
13. Roush, W.R., Marletta, M.A., Russo-Rodriguez, S. and Recchia, J. (1985). Trichothecene metabolism studies: isolation and structure determination of 15 acetyl-3 α -(1' β -D-glucopyranosiduronyl)-scirpen-3,4 β ,15-triol. *J. Amer. Chem. Soc.* **107**: 3354-3355.
14. Friedman, F.K., Robinson, R.C., Song, B.-J., Park, S.S., Crespi, C.L., Marletta, M.A. and Gelboin, H.V. (1985). Monoclonal antibody -directed analysis of cytochrome P-450 expression in a human lymphoblastoid cell line. *Mol. Pharmacol.* **27**: 652-655.
15. Collins, S., Altman, J.D. and Marletta, M.A. (1985). Development of an affinity chromatography resin for the purification of carcinogen binding proteins from mouse liver. *Biochem. Biophys. Res. Commun.* **129**: 155-162.
16. Friedman, F.K., Pastewka, J.V., Robinson, R.C., Park, S.S., Marletta, M.A. and Gelboin, H.V. (1985). Monoclonal antibodies to cytochrome P-450 immunopurify a 45 kDa protein from a human lymphoblastoid cell line. *FEBS Letters* **185**: 67-70.
17. Leong, K.W., D'Amore, P., Marletta, M.A. and Langer, R. (1986). Bioerodible polyanhydrides as drug carrier matrices II: biocompatibility and chemical reactivity. *J. Biomed. Materials Res.* **20**: 51-64.
18. Stuehr, D.J. and Marletta, M.A. (1985). Mammalian nitrate biosynthesis: mouse macrophages produce nitrite and nitrate in response to *Escherichia coli* lipopolysaccharide. *Proc. Natl. Acad. Sci. USA* **82**: 7738-7742.

19. Roush, W.R., Marletta, M.A., Russo-Rodriguez, S. and Recchia, J. (1985). Trichothecene metabolism studies 2. Structure of 3 α -(1' β -D- glycopyranosyl)-8-isovaleryloxy-scirpen-3,4 β ,15-triol,15-acetate. *Tetrahedron Letters* **26**: 5231-5234.
20. Dordick, J.S., Klibanov, A.M. and Marletta, M.A. (1986). Horseradish peroxidase catalyzed hydroxylation of aromatic compounds: mechanistic studies. *Biochemistry* **25**: 2946-2951.
21. Collins, S. and Marletta, M.A. (1986). Purification of a benzo[a]pyrene binding protein by affinity chromatography and photoaffinity labeling. *Biochemistry* **25**: 4322-4329.
22. Dordick, J.S., Marletta, M.A. and Klibanov, A.M. (1986). Peroxidases depolymerize lignin in organic media but not in water. *Proc. Natl. Acad. Sci. USA* **83**: 6255-6257.
23. Dordick, J.S., Marletta, M.A. and Klibanov, A.M. (1987). Polymerization of phenols catalyzed by peroxidase in non-aqueous media. *Biotech. Bioeng.* **30**: 31-35.
24. Stuehr, D.J. and Marletta, M.A. (1987). Induction of nitrite/nitrate synthesis in murine macrophages by BCG infection, lymphokines or interferon- γ . *J. Immunol.* **139**: 518-525.
25. Miwa, M., Stuehr, D.J., Marletta, M.A., Wishnok, J.S. and Tannenbaum, S.R. (1987). Nitrosation of amines by stimulated macrophages. *Carcinogenesis* **8**: 955-958.
26. Iyengar, R., Stuehr, D.J. and Marletta, M.A. (1987). Macrophage synthesis of nitrite and nitrate: precursors and role of the respiratory burst. *Proc. Natl. Acad. Sci. USA* **84**: 6369-6373.
27. Stuehr, D.J. and Marletta, M.A. (1987). Synthesis of nitrite and nitrate in murine macrophage cell lines. *Cancer Res.* **47**: 5590-5594.
28. Wu, S.-E. and Marletta, M.A. (1988). Carboxylesterase isoenzyme specific deacylation of diacetoxyscirpenol (anguidine). *Chem. Res. Toxicol.* **1**: 69-73.
29. Barton, H.A. and Marletta, M.A. (1988). Kinetic and immunochemical studies of a receptor-like protein that binds aromatic hydrocarbons. *J. Biol. Chem.* **263**: 5825-5832.
30. Marletta, M.A. (1988). Mammalian synthesis of nitrite, nitrate, nitric oxide, and *N*-nitrosating agents. *Chem. Res. Toxicol.* **1**: 249-257.
31. Marletta, M.A., Yoon, P.S., Iyengar, R., Leaf, C.D., and Wishnok, J.S. (1988). Macrophage oxidation of L-arginine to nitrite and nitrate: nitric oxide is an intermediate. *Biochemistry* **27**: 8706-8711.
32. Tayeh, M.A. and Marletta, M.A. (1989). Macrophage oxidation of L-arginine to nitric oxide, nitrite and nitrate. Tetrahydrobiopterin is required as a cofactor. *J. Biol. Chem.* **264**: 19654-19658.
33. Marletta, M.A. (1989). Nitric oxide: biosynthesis and biological significance. *Trends Biochem. Sci.* **14**: 488-492.
34. Boulu, L.G., Crippen, G.M., Barton, H.A., Kwon, H. and Marletta, M.A. (1990). Voronoi binding site model of a polycyclic aromatic hydrocarbon-binding protein. *J. Med. Chem.* **33**: 771-775.
35. Forkert, P.G., Barton, H.A., Costantini, M.G. and Marletta, M.A. (1990). The 4S polycyclic aromatic hydrocarbon-binding protein: immunohistochemical localization in mice. *Carcinogenesis* **11**: 831-835.
36. Marletta, M.A., Tayeh, M.A. and Hevel, J.M. (1990). Unraveling the biological significance of nitric oxide. *Biofactors* **2**: 219-225.

37. Smith, D.J., Dunphy, M.J., Strang, L.N., Goble, D.D. and Marletta, M.A. (1991). The influence of wound healing on urinary nitrate levels in rats. *Wounds* **3**: 50-58.
38. Mulligan, M.S, Hevel, J.M., Marletta, M.A. and Ward, P.A. (1991). Tissue injury caused by deposition of immune complexes is l-arginine dependent. *Proc. Natl. Acad. Sci. USA* **88**: 6338-6342.
39. Olken, N.M., Rusche, K.M., Richards, M.K. and Marletta, M.A. (1991). Inactivation of macrophage nitric oxide synthase activity by N^G-methyl-L-arginine. *Biochem. Biophys. Res. Commun.* **177**: 828-833.
40. Shultz, P.J., Tayeh, M.A., Marletta, M.A. and Raji, L. (1991). Synthesis and action of nitric oxide in rat glomerular mesangial cells. *Amer. J. Physiol.* **261**: F600-F606.
41. Hevel, J.M., White, K.A. and Marletta, M.A. (1991). Purification of the inducible murine macrophage nitric oxide synthase. Identification as a flavoprotein. *J. Biol. Chem.* **266**: 22789-22791.
42. Olken, N.M. and Marletta, M.A. (1992). N^G-Allyl- and N^G-cyclopropyl-L-arginine: two novel inhibitors of macrophage nitric oxide synthase. *J. Med. Chem.* **35**: 1137-1144.
43. Pufahl, R.A., Nanjappan, P.G., Woodard, R.W. and Marletta, M.A. (1992). Mechanistic probes of N-hydroxylation of L-arginine by the inducible nitric oxide synthase from murine macrophages. *Biochemistry* **31**: 6822-6828.
44. Hevel, J.M. and Marletta, M.A. (1992). Macrophage nitric oxide synthase: relationship between enzyme-bound tetrahydrobiopterin and synthase activity. *Biochemistry* **31**: 7160-7165.
45. White, K.A. and Marletta, M.A. (1992). Nitric oxide synthase is a cytochrome P-450 type hemoprotein. *Biochemistry* **31**: 6627-6631.
46. Marletta, M.A. (1993). Nitric oxide synthase structure and mechanism. *J. Biol. Chem.* **268**: 12231-12234.
47. Pufahl, R.A. and Marletta, M.A. (1993). Oxidation of N^G-hydroxy-L-arginine by nitric oxide synthase: involvement of the heme in catalysis. *Biochem. Biophys. Res. Commun.* **193**: 963-970.
48. Olken, N.M. and Marletta, M.A. (1993). N^G-methyl-L-arginine functions as an alternate substrate and mechanism-based inhibitor of nitric oxide synthase. *Biochemistry* **32**: 9677-9685.
49. Barton, H. A. and Marletta, M. A. (1994). Comparison of aniline hydroxylation by hemoglobin and microsomal cytochrome P450 using stable isotopes. *Toxicology Letters* **70**: 147-153.
50. Hevel, J. M. and Marletta, M.A. (1994). Nitric oxide synthase assays. Methods in enzymology: oxygen radicals in biological systems, *Methods in Enzymology* **233**: 250-258.
51. Stone, J.R. and Marletta, M.A. (1994). Soluble guanylate cyclase from bovine lung: Activation with nitric oxide and carbon monoxide and spectral characterization of the ferrous and ferric states. *Biochemistry* **33**: 5636-5640.
52. Marletta, M. A. (1994). Approaches toward selective inhibition of nitric oxide synthase. *J. Med. Chem.* **37**: 1899-1907.

53. Marletta, M. A. (1994). Nitric oxide synthase: aspects concerning structure and catalysis. *Cell* **78**: 927-930.
54. Olken, N.M., Osawa, Y. and Marletta, M.A. (1994). Characterization of the inactivation of nitric oxide synthase by N^G-methyl-L-arginine: Evidence for protein modification and heme loss. *Biochemistry* **33**: 14784-14791.
55. Richards, M.R. and Marletta, M.A. (1994). Characterization of neuronal nitric oxide synthase and a C415H mutant purified from a baculovirus overexpression system. *Biochemistry* **33**: 14723-14732.
56. Green, S.J., Scheller, L.F., Marletta, M.A., Seguin, M.C., Klotz, F.W., Nelson, B.J. and Nacy, C.A. (1994). Nitric oxide: cytokine-regulation of nitric oxide in host resistance to intracellular pathogens. *Immunol. Letters* **43**: 87-94.
57. Pufahl, R.A., Wishnok, J.S. and Marletta, M.A. (1995). Hydrogen peroxide supported oxidation of N^G-hydroxy-L-arginine by nitric oxide synthase. *Biochemistry* **34**: 1930-1941.
58. Hurshman, A.R. and Marletta, M.A. (1995). Nitric oxide complexes of inducible nitric oxide synthase: Spectral characterization and effect on catalytic activity. *Biochemistry* **34**: 5627-5634.
59. Klotz, F.W., Scheller, L.F., Seguin, M.C., Kumar, N., Marletta, M.A., Green, S.J. and Azad, A.F. (1995). Co-localization of inducible nitric oxide synthase and *Plasmodium berghei* in hepatocytes from rats immunized with irradiated sporozoites. *J. Immunol.* **154**: 3391-3395.
60. Warner, R.L., Paine III, R., Christensen, P.G., Marletta, M.A., Richards, M.K., Wilcoxon, S.E. and Ward, P.A. (1995). Lung sources and cytokine requirements for in vivo expression of inducible nitric oxide synthase. *Amer. J. Respir. Cell Mol. Biol.* **12**: 649-661.
61. Stone, J.R., Sands, R.H., Dunham, W.R. and Marletta, M.A. (1995). Electron paramagnetic resonance spectral evidence for the formation of a pentacoordinate nitrosyl-heme complex on soluble guanylate cyclase. *Biochem. Biophys. Res. Commun.* **207**: 572-577.
62. Stone, J.R. and Marletta, M.A. (1995). Heme stoichiometry of heterodimeric soluble guanylate cyclase. *Biochemistry* **34**: 14668-14674.
63. Stevens-Truss, R. and Marletta, M.A. (1995). Interaction of calmodulin with the inducible murine macrophage nitric oxide synthase. *Biochemistry* **34**: 15638-15645.
64. Stone, J.R. and Marletta, M.A. (1995). The ferrous heme of soluble guanylate cyclase: formation of hexacoordinate complexes with carbon monoxide and nitrosomethane. *Biochemistry* **34**: 16397-16403.
65. Stone, J.R. and Marletta, M.A. (1996). Spectral and kinetic studies on the activation of soluble guanylate cyclase by nitric oxide. *Biochemistry* **35**: 1093-1099.
66. Deinum, G., Stone, J.R., Babcock, G.T. and Marletta, M.A. (1996). Binding of nitric oxide and carbon monoxide to soluble guanylate cyclase as observed with resonance Raman spectroscopy. *Biochemistry* **35**: 1540-1547.
67. Stone, J.R., Sands, R.H., Dunham, W. R. and Marletta, M.A. (1996). Spectral and ligand-binding properties of an unusual hemoprotein, the ferric form of soluble guanylate cyclase. *Biochemistry* **35**: 3258-3262.
68. Richards, M.K., Clague, M.J. and Marletta, M.A. (1996). Characterization of C415 mutants of neuronal nitric oxide synthase. *Biochemistry* **35**: 7772-7780.

69. Kim, S., Deinum, G., Gardner, M.T., Marletta, M.A. and Babcock, G.T. (1996). Distal pocket polarity in the unusual ligand binding site of soluble guanylate cyclase: implications for the control of NO-binding. *J. Amer. Chem. Soc.* **118**: 8769-8770.
70. Stevens-Truss, R., Beckingham, K. and Marletta, M.A. (1997). Differential effects of the calcium binding sites of calmodulin on electron transfer by neuronal nitric oxide synthase. *Biochemistry* **36**: 12337-12345.
71. Silverman, R.B., Huang, H., Marletta, M.A. and Martasek, P. (1997). Selective inhibition of neuronal nitric oxide synthase by N^ω-nitroarginine- and phenylalanine-containing dipeptides and dipeptide esters. *J. Med. Chem.* **40**: 2813-2817.
72. Zhang, H.Q., Dixon, R.P., Marletta, M.A. and Silverman, R.B. (1997). Mechanism of inactivation of neuronal nitric oxide synthase by N^ω-allyl-L-arginine. *J. Am. Chem. Soc.* **119**: 10888-10902.
73. Fast, W., Levsky, M.E., Marletta, M.A. and Silverman, R.B. (1997). N^ω-propargyl-L-arginine and N^ω-hydroxy-N^ω-propargyl-L-arginine are inhibitors, but not inactivators, of neuronal and macrophage nitric oxide synthases. *Bioorg. Med. Chem.* **5**: 1601-1608.
74. Clague, M.J., Wishnok, J.S. and Marletta, M.A. (1997). The formation of N^δ-cyanoornithine from N^G-hydroxy-L-arginine and hydrogen peroxide by neuronal nitric oxide synthase: Implications for mechanism. *Biochemistry* **36**: 14465-14473.
75. Zhang, H.Q., Fast, W., Marletta, M.A., Martasek, P. and Silverman, R.B. (1997). Potent and selective inhibition of neuronal nitric oxide synthase by N^ω-propyl-L-arginine. *J. Med. Chem.* **40**: 3869-3870.
76. Zhao, Y. and Marletta, M.A. (1997). Localization of the heme-binding region in soluble guanylate cyclase. *Biochemistry* **36**: 15959-15964.
77. Zhao, Y., Schelvis, J.P.M., Babcock, G.T. and Marletta, M.A. (1998). Identification of histidine 105 in the β1 subunit of soluble guanylate cyclase as the heme proximal ligand. *Biochemistry* **37**: 4502-4509.
78. Stone, J.R. and Marletta, M.A. (1998). Synergistic activation of soluble guanylate cyclase by YC-1 and carbon monoxide: implications for the role of cleavage of the iron-histidine bond during activation by nitric oxide. *Chemistry & Biology* **5**: 255-261.
79. Zhao, Y., Hoganson, C., Babcock, G.T. and Marletta, M.A. (1998). Structural changes in the heme proximal pocket induced by nitric oxide binding to soluble guanylate cyclase. *Biochemistry* **37**: 12458-12464.
80. Perry, J.M., Moon, Y., Zhao, Y., Dunham, W.R. and Marletta, M.A. (1998). The high-potential flavin and heme of nitric oxide synthase are not magnetically linked: implications for electron transfer. *Chem. & Biol.* **5**: 355-364.
81. Perry, J.M. and Marletta, M.A. (1998). Effects of transition metals on nitric oxide synthase catalysis. *Proc. Natl. Acad. Sci. USA* **95**: 11101-11106.
82. Marletta, M.A., Hurshman, A.R. and Rusche, K.M. (1998). Catalysis by nitric oxide synthase. *Curr. Opin. Chem. Biol.* **2**: 656-663.
83. Gerlt, J.A. and Marletta, M.A. (1998). Mechanisms research highlights at the chemistry/biology interface. Editorial overview. *Curr. Opin. Chem. Biol.* **2**: 605-606.

84. Rusche, K.A., Spiering, M.M. and Marletta, M.A. (1998). Reactions catalyzed by tetrahydrobiopterin-free nitric oxide synthase. *Biochemistry* **37**: 15503-15512.
85. Brandish, P.E., Buechler, W. and Marletta, M.A. (1998). Regeneration of the ferrous heme of soluble guanylate cyclase from the nitric oxide complex: Acceleration by thiols and oxyhemoglobin. *Biochemistry* **37**: 16898-16907.
86. Schelvis, J.P.M., Zhao, Y., Marletta, M.A. and Babcock, G.T. (1998). Resonance Raman characterization of the heme domain of soluble guanylate cyclase. *Biochemistry* **37**: 16289-16297.
87. Ludwig, M.L. and Marletta, M.A. (1999). A new decoration for nitric oxide synthase -- a Zn(cys)₄ site. *Structure* **7**: R73-R79.
88. Denninger, J.W. and Marletta, M.A. (1999). Guanylate cyclase and the NO/cGMP signaling pathway. *Biochim. Biophys. Acta* **1411**: 334-350.
89. Busby, R.W., Schelvis, J.P.M., Yu, D.S., Babcock, G.T. and Marletta, M.A. (1999). Lipoic acid biosynthesis: LipA is an iron-sulfur protein. *J. Amer. Chem. Soc.* **121**: 4706-4707.
90. Barker, S.L.R., Zhao, Y., Marletta, M.A. and Kopelman, R. (1999). Development and cellular applications of fiber optic nitric oxide selective biosensors based on the heme domain of soluble guanylate cyclase. *Anal. Chem.* **71**: 2071-2075.
91. Lee, Y., Marletta, M.A., Martasek, P., Roman, L.J., Masters, B.S.S. and Silverman, R.B. (1999). Conformationally-restricted arginine analogues as alternative substrates and inhibitors of nitric oxide synthase. *Bioorg. Med. Chem.* **7**: 1097-1104.
92. Cordelier, P., Esteve, J.-P., Rivard, N., Marletta, M.A., Vaysse, N., Susini, C. and Buscail, L. (1999). The activation of neuronal NO synthase is mediated by G protein $\beta\gamma$ subunit and the tyrosine phosphate SHP-2. *FASEB J.* **13**: 2037-2050.
93. Schelvis, J.P.M., Kim, S., Zhao, Y., Marletta, M.A. and Babcock, G.T. (1999). Structural dynamics of the guanylate cyclase heme pocket after CO photolysis. *J. Amer. Chem. Soc.* **121**: 7397-7400.
94. Zhao, Y., Brandish, P.E., Ballou, D. P. and Marletta, M.A. (1999). A molecular basis for NO sensing by soluble guanylate cyclase. *Proc. Natl. Acad. Sci. USA* **96**: 14753-14758.
95. Choi, C. Y.H., Cerda, J.F., Chu, H-A, Babcock, G.T. and Marletta, M.A. (1999). Spectroscopic characterization of the heme binding sites in *plasmodium falciparum* histidine-rich protein 2. *Biochemistry* **38**: 16916-16924.
96. Hurshman, A.R., Krebs, C., Edmondson, D.E., Huynh, B.H. and Marletta, M.A. (1999). Formation of a pterin radical on reaction of the heme domain of inducible nitric oxide synthase with oxygen. *Biochemistry* **38**: 15689-15696.
97. Denninger, J.W., Schelvis, J.P.M., Brandish, P.E., Zhao, Y., Babcock, G.T. and Marletta, M.A. (1999). Molecular mechanism of soluble guanylate cyclase activation by YC-1: Kinetic and resonance Raman studies. *Biochemistry* **39**: 4191-4198.
98. Perry, J.M., Zhao, Y. and Marletta, M.A. (2000). Cu²⁺ and Zn²⁺ inhibit nitric oxide synthase through an interaction with the reductase domain. *J. Biol. Chem.* **275**: 14070-14076.
99. Zhao, Y., Brandish, P. E., Di Valentin, M., Schelvis, J. P. M., Babcock, G. T., and Marletta, M. A. (2000). Inhibition of soluble guanylate cyclase by ODO. *Biochemistry* **39**: 10848-10854.

100. Marletta, M.A and Gerlt, J.A. (2000). Mechanisms. Mechanisms of catalysis - macroscopic and microscopic progress. *Curr. Opin. Chem. Biol.* **4**: 531-532.
101. Miller, J.R., Busby, R.W., Jordan, S.W., Cheek J., Henshaw, T.F., Ashley, G.W., Broderick, J.B., Cronan, J.E. Jr., and Marletta, M.A. (2000). *Escherichia coli* LipA is a lipoyl synthase: In vitro biosynthesis of lipoylated pyruvate dehydrogenase complex from octanoyl-acyl carrier protein. *Biochemistry* **39**: 15166-15178.
102. Rusche, K. M. and Marletta, M. A. (2001). Reconstitution of pterin-free inducible nitric oxide synthase. *J. Biol. Chem.* **276**: 421-427.
103. Cary, S. P. L. and Marletta, M. A. (2001). The case for CO signaling: why the jury still out. *J. Clin. Invest.* **107**: 1071-1073.
104. Johnson, A.R., Marletta, M.A. and Dyer, R.D. (2001). Slow-binding inhibition of human prostaglandin endoperoxide synthase-2 with darbufelone, an isoform-selective anti-inflammatory di-*tert*-butyl phenol. *Biochemistry* **40**: 7736-7745.
105. Marletta, M.A. (2001). Another activation switch for endothelial nitric oxide synthase: why does it have to be so complicated? *Trends Biochem. Sci.* **26**: 519-521.
106. Hurshman, A.R. and Marletta, M.A. (2001). Reactions catalyzed by the heme domain of inducible nitric oxide synthase: evidence for the involvement of tetrahydrobiopterin in electron transfer. *Biochemistry* **41**: 3439-3456.
107. Artz J.D., Schmidt B., McCracken J.L., Marletta M.A. (2002). Effects of nitroglycerin on soluble guanylate cyclase: implications for nitrate tolerance. *J. Biol. Chem.* **277**: 18253-18256.
108. Ballou D.P., Zhao Y., Brandish P.E., Marletta M.A. (2002). Revisiting the kinetics of nitric oxide (NO) binding to soluble guanylate cyclase: The simple NO-binding model is incorrect. *Proc. Natl. Acad. Sci USA* **99**: 12097-12101.
109. Choi, C.Y.H., Schneider, E.L., Kim, J.M., Gluzman, I.Y., Goldberg, D.E., Ellman, J.A. and Marletta, M.A. (2002). Interference with heme binding to histidine-rich protein-2 as an antimalarial strategy. *Chemistry & Biology* **9**: 881-889.
110. Spiering, M.M, Ringe, D., Murphy, J.R. and Marletta M.A. (2003). Metal stoichiometry and functional studies of the Diphtheria Toxin Repressor. *Proc. Natl. Acad. Sci. USA* **100**: 3808-3813.
111. Hurshman, A.R., Krebs, C., Edmondson, D.E., Huynh, B.H. and Marletta, M.A. (2003). Ability of Tetrahydrobiopterin Analogues to Support Catalysis by Inducible Nitric Oxide Synthase: Formation of a Pterin Radical Is Required for Enzyme Activity. *Biochemistry* **42**: 13287-13303.
112. Zhao, X., Miller, J.R., Jiang, Y., Marletta, M.A. and Cronan, J.E (2003). Assembly of the covalent linkage between lipoic acid and its cognate enzymes. *Chemistry & Biology* **10**: 1293-1302.
113. Gray, J.M., Karow, D.S., Lu, H., Chang, J.S., Marletta, M.A., Bargmann, C.I. (2004). Oxygen sensation and social feeding mediated by a *C. elegans* guanylate cyclase homologue. *Nature* **430**: 317-322.
114. Karow, D.S., Pan, D., Pellicena, P., Presley, A., Mathies, R.A. and Marletta, M.A. (2004). Spectroscopic characterization of the sGC-like heme domains from *Vibrio cholerae* and *Thermoanaerobacter tengcongensis*. *Biochemistry* **43**: 10203-10211.

115. Miller, B.H., Fratti, R.A., Poschet, J.F., Timmins, G.S., Master, S.S., Burgos, M., Marletta, M.A., Deretic, V. (2004). Mycobacteria inhibit nitric oxide synthase recruitment to phagosomes during macrophage infection. *Infect. Immun.* **75**: 2872-2788.
116. Pellicena, P., Karow, D.S., Marletta, M.A. and Kuriyan, J. (2004). Crystal structure of an oxygen binding domain related to soluble guanylate cyclase. *Proc. Natl. Acad. Sci. USA* **101**: 12854-12859.
117. Schneider, E.L. and Marletta, M.A (2005). Heme binding to the histidine-rich protein II from *Plasmodium falciparum*. *Biochemistry* **44**: 979-986.
118. Schneider, E.L., King D.S. and Marletta, M.A (2005). Amino acid substitution and modification resulting from *Escherichia coli* expression of recombinant *Plasmodium falciparum* histidine-rich protein II. *Biochemistry* **44**: 987-995.
119. Boon, E.M., Huang, S.H. and Marletta, M.A. (2005). Ligand specificity of H-NOX domains: from sGC to bacterial NO sensors. *Journal of Inorganic Biochemistry* **99**: 892-902.
120. Winger, J.A. and Marletta, M.A. (2005). Expression and characterization of the catalytic domains of soluble guanylate cyclase: interaction with the heme domain. *Biochemistry* **44**: 4083-4090.
121. Mitchell, D.A., Erwin, P.A., Michel, T. and Marletta, M.A. (2005). S-nitrosation and regulation of inducible nitric oxide synthase. *Biochemistry* **44**: 4636-4647.
122. Gribovskaja, I., Brownlow, K. C., Dennis, S. J., Rosko, A. J., Marletta, M. A., and Stevens-Truss, R. (2005). Calcium binding sites of calmodulin and electron transfer by inducible nitric oxide synthase. *Biochemistry* **44**: 7593-7601.
123. Boon, E.M., Huang, S.H. and Marletta, M.A. (2005). A molecular basis for NO selectivity in soluble guanylate cyclase. *Nature Chemical Biology* **1**: 53-59.
124. Luzzi, S.D. and Marletta, M.A. (2005). L-Arginine analogs as alternate substrates for nitric oxide synthase. *Bioorganic Medicinal Chemistry Letters* **15**: 3934-3941.
125. Mitchell, D.A. and Marletta, M.A. (2005). Thioredoxin catalyzes the S-nitrosation of the caspase-3 active site cysteine. *Nature Chemical Biology* **1**: 154-158.
126. Mills, S.A. and Marletta, M.A. (2005). Metal binding characteristics and the role of iron oxidation in the ferric uptake regulator from *Escherichia coli*. *Biochemistry* **44**: 13553-13559.
127. Cary, S.P.L., Winger, J.A. and Marletta, M.A. (2005). Tonic and acute nitric oxide signaling through soluble guanylate cyclase is mediated by non-heme NO, ATP, and GTP. *Proc. Natl. Acad. Sci. USA* **102**: 13064-13069.
128. Boon, E. M. and Marletta, M. A. (2005). Ligand discrimination in soluble guanylate cyclase and the H-NOX family of heme sensor proteins. *Curr. Opin. Chem. Biol.* **9**: 441-446.
129. Udit, A.K., Belliston-Bittner, W., Glazer, E.C., Hoang, Y., Nguyen, L., Marletta, M.A., Goodin, D.B., and Gray, H.B. (2005). Redox couples of inducible nitric oxide synthase. *J. Am. Chem. Soc.* **127**: 11212-11213.
130. Derbyshire, E.R., Tran, R., Mathies, R.A. and Marletta, M.A. (2005). Characterization of Nitrosoalkane Binding and Activation of Soluble Guanylate Cyclase. *Biochemistry* **44**: 16257-16265.

131. Karow, D.S., Pan, D., Davis, J.H., Behrends, S., Mathies, R.A., and Marletta, M.A. (2005) Characterization of Functional Heme Domains from Soluble Guanylate Cyclase. *Biochemistry* **44**: 16266-16274.
132. Hering, K.W., Artz, J.D., Pearson, W.H. and Marletta, M.A. (2006). The Design and Synthesis of YC-1 Analogues as Probes for Soluble Guanylate Cyclase. *Bioorg. Med. Chem Letters* **16**: 618-621.
133. Cary, S.P.L., Winger, J.A., Derbyshire, E.R. and Marletta, M.A. (2006). Nitric oxide signaling: no longer simply on or off. *TIBS* **31**: 231-239.
134. Erwin P.A., Mitchell D.A., Sartoretto J., Marletta M.A. and Michel T. (2006). Subcellular targeting and differential S-nitrosylation of endothelial nitric-oxide synthase. *J. Biol. Chem.* **281**: 151-157.
135. Boon, E.A., Davis, J.H., Tran, R., Karow, D.S., Huang, S.H., Pan, D., Miazgowicz, M.M., Mathies, R.A. and Marletta, M.A. (2006) Nitric oxide binding to prokaryotic homologs of the soluble guanylate cyclase β 1 H-NOX domain. *J. Biol. Chem.* **281**: 21892-21902.
136. Boon, E.M. and Marletta, M.A. (2006). Sensitive and selective detection of nitric oxide using an H-NOX domain. *J. Amer. Chem. Soc.* **128**: 10022-10023.
137. Martin, N.I. and Marletta, M.A. (2006) N^G -Hydroxyguanidines from Primary Amines. *Organic Letters* **8**: 4035-4038.
138. Niles, J.C. and Marletta, M.A. (2006). Utilizing RNA Aptamers to Probe a Physiologically Important Heme-Regulated Cellular Network. *ACS Chemical Biology* **1**: 515-524.
139. Chang, A.J., Chronis, N., Karow, D.S., Marletta, M.A. Bargmann, C.I. (2006). A Distributed Chemosensory Circuit for Oxygen Preference in *C. elegans*. *PLOS Biology* **4**(9): e274.
140. Mitchell, D.A., Morton, S.U. and Marletta M. A. (2006). Design and characterization of an active site selective caspase-3 transnitrosating agent. *ACS Chemical Biology* **1**: 659-665.
141. Woodward, J.J., Martin, N.I. and Marletta, M.A. (2007). An *Escherichia coli* expression-based method for heme substitution. *Nature Methods* **4**: 43-45.
142. Winger, J.A. Derbyshire, E.R. and Marletta, M.A. (2007) Dissociation of Nitric Oxide from Soluble Guanylate Cyclase and H-NOX Domain Constructs. *J. Biol. Chem.* **282**: 897-907.
143. Mitchell, D.A., Fernhoff, N., Morton, S.U. and Marletta, M.A. (2007). Thioredoxin is Required for S-Nitrosation of Procaspase-3 and the Inhibition of Apoptosis in Jurkat Cells. *Proc. Natl. Acad. Sci USA* **104**: 11609-11614.
144. Martin, N.I., Derbyshire, E.R. and Marletta, M.A. (2007). Synthesis and evaluation of a phosphonate analogue of the soluble guanylate cyclase activator YC-1. *Bioorg. Med. Chem. Letters* **17**: 4938-4941.
145. Martin, N.I. Woodward, J.J., Winter, M.B., Beeson, W.T. and Marletta, M.A. (2007). Design and synthesis of C5 methylated L-arginine analogues as active site probes for nitric oxide synthase. *J. Amer. Chem. Soc.* **129**: 12563-12570.
146. Huang, S.H., Rio, D.C. and Marletta, M.A. (2007). Oxygen regulation of the soluble guanylate cyclase, GCY 88E, from *Drosophila*. *Biochemistry* **46**: 15115-15122.
147. Price, M.S., Chao, L. and Marletta, M.A. (2007). *Shewanella oneidensis* MR-1 H-NOX regulation of a histidine kinase by nitric oxide. *Biochemistry* **46**: 13677-13683.

148. Derbyshire, E. R. and Marletta, M.A. (2007). Butyl isocyanide as a probe of the activation of soluble guanylate cyclase: investigating the role of non-heme nitric oxide. *J. Biol. Chem.* **282**: 35741-35748.
149. Martin, N.I., Beeson, W.T., Woodward, J.J. and Marletta, M.A. (2008). N^G -Aminoguanidines from primary amines and the preparation of nitric oxide synthase inhibitors. *J. Med. Chem.* **51**: 924-931.
150. Derbyshire, E.R., Gunn, A., Ibrahim, M., Spiro, T.G., Britt, R.D., and Marletta, M.A. (2008). Characterization of two different 5-coordinate soluble guanylate cyclase ferrous nitrosyl complexes. *Biochemistry* **47**: 3892-3899.
151. Chang, H.H., Falick, A.M, Carlton, P.M, Sedat, J.L., Derisi, J.M. and Marletta, M.A. (2008). Conserved N-terminal Processing of Proteins Exported by Malaria Parasites. *Mol. Biochem. Parasitol.* **160**: 107-115.
152. Chao, L.Y., Marletta, M.A. and Rine, J. (2008). Sre1, a Site-Specific GATA DNA Binding Protein of Iron Uptake Genes in the Fungal Pathogen *Histoplasma capsulatum*. *Biochemistry* **47**: 7274-7283.
153. Chao, L.Y., Rine, J. and Marletta, M.A. (2008) Spectroscopic and Kinetic Studies of Nor1, a Cytochrome P450 Nitric Oxide Reductase From the Fungal Pathogen *Histoplasma capsulatum*. *Arch. Biochem. Biophys.* **480**: 132-137.
154. Olea, C., Boon, E.M., Pellicena, P., Kuriyan, J., and Marletta, M.A. (2008) Probing the Function of Heme Distortion in the H-NOX Family *ACS Chemical Biology* **3**: 703-710.
155. Winger, J.A., Derbyshire, E.R., Lamers, M.H., Marletta, M.A., Kuriyan, J. (2008). The crystal structure of the catalytic domain of a eukaryotic guanylate cyclase. *BMC Struct Biol.* **8**: 42 (and following).
156. Woodward, J.J., Chang, M.M., Martin, N.I., and Marletta, M.A. (2008). Evidence for a ferric-peroxo intermediate as the active oxidant in the second step of nitric oxide synthase catalysis. *J. Amer. Chem Soc.* **131**: 297-305.
157. Martin, N.I., Woodward, J.J., Winter, M.B. and Marletta, M.A. (2009). 4,4-Difluorinated analogues of L-arginine and N^G -hydroxy-L-arginine as mechanistic probes for nitric oxide synthase. *Bioorg. Med. Chem. Letters* **19**: 1758-1762.
158. Zimmer, M., Gray, J.M., Pokala¹, N., Chang, A.J., Karow, D.S, Marletta, M.A., Hudson, M.L., Morton, D.B., Chronis, N. and Bargmann, C.I. (2009). Distinct Neuronal Soluble Guanylate Cyclases Detect Increases and Decreases in Environmental Oxygen Levels. *Neuron* **26**: 865-879.
159. Reece, S.Y., Woodward, J.J. and Marletta, M.A. (2009). Synthesis of Nitric Oxide by the NOS-like Protein from *Deinococcus radiodurans*: A Direct Role for Tetrahydrofolate. *Biochemistry* **48**: 5483-5491.
160. Niles, J., Derisi J., and Marletta, M.A. (2009). Inhibiting *Plasmodium Falciparum* Growth and Heme Detoxification Pathway Using Heme-Binding DNA Aptamers. *Proc. Natl. Acad. Sci. USA* **106**: 13266-13271.
161. Derbyshire, E.R., Fernhoff, N.B., Deng, S. and Marletta, M. A. (2009). Nucleotide regulation of soluble guanylate cyclase substrate specificity. *Biochemistry* **48**: 7519-7524.

162. Tran, R., Boon, E. M., Mathies, R.A. and Marletta, M.A. (2009). Resonance Raman spectra of an O₂-binding H-NOX domain reveal heme relaxation upon mutation. *Biochemistry* **48**: 8568-8577.
163. Agapie, T., Suseno, S., Woodward, J.J., Stoll, S., Britt, R.D., and Marletta, M.A. (2009). NO Formation by a Protein from *Sorangium cellulosum*: A Catalytically Self-Sufficient Bacterial Nitric Oxide Synthase. *Proc. Natl. Acad. Sci. USA* **106**: 16221-16226.
164. Fernhoff, N.B., Derbyshire, E.R. and Marletta, M.A. (2009). A nitric oxide/cysteine interaction mediates the activation of soluble guanylate cyclase. *Proc. Natl. Acad. Sci. USA* **106**: 21602-22607.
165. Erbil, W.K., Price, M.S., Wemmer, D.E., and Marletta, M.A. (2009). A structural basis for N-NOX signaling in *Shewanella oneidensis* by trapping a histidine kinase inhibitory conformation. *Proc. Natl. Acad. Sci. USA* **106**: 19753-19760.
166. Tian, C., Beeson, W.T., Iavarone, A.T., Sun, J., Marletta, M.A., Cate, J.H., and Glass, N.L. (2009). Systems analysis of plant cell wall degradation by the model filamentous fungus *Neurospora crassa*. *Proc. Natl. Acad. Sci. USA* **106**: 22157-22162.
167. Carlson, H.K., Plate, L., Price, M.S., Allen, J.J., Shokat, K.M., and Marletta, M.A. (2010). Use of a semisynthetic epitope to probe histidine Kinase activity and regulation. *Anal. Biochem.* **397**: 139-143.
168. Weinert, E.E., Plate, L., Whited, C.A., Olea, C. Jr, and Marletta, M.A. (2010). Determinants of ligand affinity and heme reactivity in H-NOX domains. *Angew. Chem. Int. Ed. Engl.* **49**: 720-723.
169. Olea, C. Jr, Herzik, M.A. Jr, Kuriyan, J., and Marletta, M.A. (2010). Structural insights into the molecular mechanism of H-NOX activation. *Protein Science* **19**: 881-887.
170. Derbyshire, E.R., Deng, S., and Marletta, M.A. (2010). Incorporation of tyrosine and glutamine residues into the soluble guanylate cyclase heme distal pocket alters NO and O₂ binding. *J. Biol. Chem.* **285**: 17471-17478.
171. Woodward, J.J., Nejatjahromy, Y., Britt, R.D., and Marletta, M.A. (2010). Pterin-Centered Radical as a Mechanistic Probe of the Second Step of Nitric Oxide Synthase. *J. Amer. Chem. Soc.* **132**: 5105-5113.
172. Ibrahim, M., Derbyshire, E.R., Marletta, M.A., and Spiro, T.G. (2010). Probing Soluble Guanylate Cyclase Activation by CO and YC-1 using Resonance Raman Spectroscopy. *Biochemistry* **49**: 3815-3823.
173. Winter, M.B., McLaurin, E.J., Reece, S.Y., Olea, C., Nocera, D.G., and Marletta, M.A. (2010). Ru-Porphyrin Protein Scaffolds for Sensing O₂. *J. Amer. Chem. Soc.* **132**: 5582-5583.
174. Wang, Y., Dufour, Y.S., Carlson, H.K., Donohue, T.J., Marletta, M.A., and Ruby, E.G. (2010). H-NOX-mediated NO sensing modulates symbiotic colonization by *Vibrio fischeri*. *Proc. Natl. Acad. Sci. USA* **107**: 8375-8380.
175. Ibrahim, M., Derbyshire, E.R., Soldatova, A.V., Marletta, M.A., and Spiro, T.G. (2010). Soluble guanylate cyclase is activated differently by excess NO and by YC-1: resonance Raman spectroscopic evidence. *Biochemistry* **49**: 4864-4871.
176. Yoon, J., Herzik, M.A. Jr., Winter, M.B., Tran, R., Olea, C. Jr., and Marletta, M.A. (2010). Structure and properties of a bis-histidyl ligated globin from *Caenorhabditis elegans*. *Biochemistry* **49**: 5662-5670.

177. Carlson, H.K., Vance, R.E., and Marletta, M.A. (2010). H-NOX regulation of c-di-GMP metabolism and biofilm formation in *Legionella pneumophila*. *Mol. Microbiol.* **77**: 930-942.
178. Stoll, S., Nejatjahromy, Y., Woodward, J.J., Ozarowski, A., Marletta, M.A., and Britt, R. D. (2010). Nitric Oxide Synthase Stabilizes the Tetrahydrobiopterin Cofactor Radical by Controlling its Protonation State. *J. Amer. Chem. Soc.* **132**: 11812-11823.
179. Olea, C., Kuriyan, J. and Marletta, M.A. (2010). Modulating heme redox potential through protein-induced porphyrin distortion. *J. Amer. Chem. Soc.* **32**: 12794-12795.
180. Sun, J., Phillips, C.M., Anderson, C.T., Beeson, W.T., Marletta, M.A. and Glass, N.L. (2011). Expression and characterization of the *Neurospora crassa* endoglucanase GH5-1. *Prot. Exp. Purif.* **75**: 147-154.
181. Beeson, W.T., Iavarone, A.T., Hausmann, C.D., Cate, J.H.D. and Marletta, M.A. (2011). Extracellular Aldonolactonase from *Sporotrichum thermophile*. *Appl. Environ. Microbiol.* **77**: 650-656.
182. Phillips, C.M., Iavarone, A.T., and Marletta, M.A. (2011). Quantitative proteomic approach toward cellulose degradation by *Neurospora crassa*. *J. Proteomic Res.* **10**: 4177-4185
183. Derbyshire, E.R., Winter, M.B., Ibrahim, M., Deng, S. Spiro, T.G. and Marletta M.A. Probing domain interactions in soluble guanylate cyclase. *Biochemistry* **50**: 4281-4290.
184. Tran, R., Weinert, E.E., Boon, E.M., Mathies, R.A. and Marletta, M.A. (2011). Determinants of the heme-CO vibrational modes in the H-NOX family. *Biochemistry* **50**: 6519-6530.
185. Weinert, E.E., Phillips-Piro, C.M., Tran, R, Mathies, R.A., and Marletta, M.A. (2011). Controlling conformational flexibility of an O₂-binding H-NOX domain. *Biochemistry* **50**: 6832-6840.
186. Barglow, K.T., Knutson, C.G., Wishnok, J.S., Tannenbaum, S.R., and Marletta, M.A. (2011). Site-specific and redox-controlled S-nitrosation of thioredoxin. *Proc. Natl. Acad. Sci. USA* **108**: E600-E606.
187. Winter, M.B., Herzik, M.A. Jr, Kuriyan, J., and Marletta, M.A. (2011). Tunnels modulate ligand flux in a heme nitric oxide/oxygen (H-NOX) binding domain. *Proc. Natl. Acad. Sci. USA* **108**: E881-889.
188. Phillips, C.M., Beeson, W.T., Cate, J.H., and Marletta, M.A. (2011). Cellobiose Dehydrogenase and a Copper Dependent Polysaccharide Monooxygenase Potentiate Cellulose Degradation by *Neurospora crassa*. *ACS Chemical Biology* **6**: 1399-1406.
189. Beeson, W.T., Phillips, C.M., Cate, J.H., and Marletta, M.A. (2011). Oxidative cleavage of cellulose by fungal copper-dependent polysaccharide monooxygenases. *J. Amer. Chem. Soc.* **134**: 890-892.
190. Smith, B.S., Fernhoff, N.B., and Marletta M.A. (2012). Mechanism and kinetics of inducible nitric oxide synthase auto S-nitrosation and inactivation. *Biochemistry* **51**: 1028-1040.
191. Derbyshire, E.R, and Marletta M.A. (2012). Structure and regulation of soluble guanylate cyclase. *Ann. Rev. Biochem.* **81**: 533-559.
192. Surmeli, N.B., and Marletta, M.A. (2012). Insight into the rescue of oxidized soluble guanylate cyclase by the activator cinaciguat. *ChemBioChem* **13**: 977-981.

193. Plate, L. and Marletta, M.A. (2012). Nitric oxide modulates bacterial biofilm formation through a multicomponent cyclic di GMP signaling network. *Mol. Cell* **46**: 449-460.
194. Li, X., Beeson, W.T., Phillips, C.M, Marletta, M.A. and Cate, J.H.D. (2012). Structural basis for substrate targeting and catalysis by fungal polysaccharide monooxygenases. *Structure* **20**:1051-1061.
195. Gunn, A., Derbyshire, E.R., Marletta, M.A. and Britt, R.D. (2012). Conformationally distinct five-coordinate heme-NO complexes of soluble guanylate cyclase elucidated by multifrequency electron paramagnetic resonance (EPR). *Biochemistry* **51**: 8484-8490.
196. Fernhoff, N.B., Derbyshire, E.R., Underbakke, E.S. and Marletta, M.A. (2012). Heme-assisted S-Nitrosation Desensitizes Ferric Soluble Guanylate Cyclase to Nitric Oxide. *J. Biol. Chem.* **287**: 43053-43062.
197. Smith, B.S. and Marletta, M.A. (2012). Mechanisms of S-nitrosothiol formation and selectivity in nitric oxide signaling. *Current Opinion Chem. Biol.* **16**: 498-506.
198. Winter, M.B., Klemm, P.J., Phillips-Piro, C.M., Raymond, K.N., and Marletta, M.A. (2013). Porphyrin-Substituted H-NOX Proteins as High Relaxivity MRI Contrast Agents. *Inorg Chem.* **52**: 2277-2279.
199. Underbakke, E.S., Iavarone, A.T. and Marletta, M.A. (2013). Higher order interactions bridge the nitric oxide receptor and catalytic domains of soluble guanylate cyclase. *Proc Natl Acad Sci USA.* **110**: 6777-6782.
200. Weinert, E.E., Phillips-Piro, C., and Marletta M.A. (2013). π -Stacking in a Heme Protein Tunes Gas Ligand Affinity. *J. Inorganic. Biochem.* **127**: 7-12.
201. Underbakke, E.S., Surmeli, N.B., Smith, B.C., Wynia-Smith, S.J., Marletta, M.A. (2013) Nitric oxide signaling. *Comprehensive Inorganic Chemistry II*, Vol. 3 Oxford: Elsevier 241-262.
202. Ivanisevic, J., Zhu, Z., Plate, L., Tautenhahn, R., Chen, S., O'Brien, P., Johnson, C., Marletta, M.A., Patti, G., and Siuzdak, G. (2013). Omic Scale Metabolite Profiling: A Dual Separation – Mass Spectrometry Approach for Coverage of Lipids and Central Carbon Metabolism. *Anal. Chem.* **85**: 6876-6884.
203. Smith, B.S., Underbakke, E.S., Kulp, D.W., Schief, W.R. and Marletta, M.A. (2013) Nitric oxide synthase domain interfaces regulate electron transfer and calmodulin activation. *Proc Natl Acad Sci USA.* **110** E3577-3586.
204. Plate, L. and Marletta, M.A. (2013). Nitric Oxide-Sensing H-NOX Proteins Govern Bacterial Communal Behavior. *TiBS* **38**: 566-575.
205. Plate, L. and Marletta, M.A. (2013). Feedback Control in the *Shewanella oneidensis* H-NOX/Nitric Oxide Signaling Network through the Transcriptional Regulator HnoC. *Proc Natl Acad Sci USA.* **110**: E4648-4657.
206. Nierth, A. and Marletta, M.A. (2014). Direct meso-Alkynylation of Metalloporphyrins Through Gold Catalysis for Hemoprotein Engineering. *Angew. Chem. Int. Ed.* **53**: 2611-2604.
207. Vu, V., Beeson, W.T., Phillips, C.M., Cate, J.H.D. and Marletta, M.A. (2014). Determinants of regioselective hydroxylation in the fungal polysaccharide monooxygenases. *JACS* **136**: 562-565.

208. Underbakke, E.S., Iavarone, A.T., Chalmers, M.J., Pascal, B.D., Novick, S., Griffin, P.R. and Marletta, M.A. (2014). Nitric Oxide-Induced Conformational Changes in Soluble Guanylate Cyclase. *Structure* **22**: 602-611.
209. Campbell, M.G., Underbakke, E.S., Potter, C.S., Carragher, B. and Marletta, M.A. (2014). Single particle EM reveals the higher order domain architecture of soluble guanylate cyclase. *PNAS* **111**: 2960-2965.
210. Campbell, M.G., Smith, B.S., Potter, C.S., Carragher, B. and Marletta, M.A. (2014). The molecular architecture of the mammalian nitric oxide synthases. *PNAS* **111**: E3614-3623.
211. Vu, V., Beeson, W.T., Span, E.A., Farquhar, E.R., and Marletta, M.A. (2014). A family of starch-active polysaccharide monooxygenases. *PNAS* **111**: 13822-13827.
212. Herzik, M.A. Jr., Jonnalagadda, R. Kuriyan, J., and Marletta, M.A. (2014) Structural insights into the role of iron-histidine bond cleavage in NO-induced activation of H-NOX gas sensor proteins. *PNAS* **111**: E4156-164.
213. Wilkins, M.R., Aldashev, A.A., Wharton, J., Rhodes, C.J., Vandrovcova, J., Kasperaviciute, D., Bholse, S.G., Mueller, M., Geschka, S., Rison, S., Kojonazarov, B., Morrell, N.W., Neidhardt, I., Surmeli, N.B., Aitman, T.J., Stasch, J-P., Behrends, S. and Marletta, M.A. (2014) Analysis of exomes from 24 Kyrgyz highlanders with and without pulmonary hypertension: α_1 -A680T variant in *GUCY1A3* as a candidate conferring protection. *Circulation: Cardiovascular Genetics* **7**: 920-929.
214. Beeson, W.T., Vu, V.V., Span, E.A., Phillips, C.M., and Marletta, M.A. (2015). Cellulose Degradation by Polysaccharide Monooxygenases. *Ann. Rev. Biochemistry* Vol. **84**: 923-946.
215. Sürmeli, N.B., Müskens, F.M. and Marletta, M.A. (2015) The influence of nitric oxide on soluble guanylate cyclase regulation by nucleotides: Role of the pseudosymmetric site. *J. Biol. Chem.* **290**: 15570-15580.
216. Rao, M, Smith, B.C. and Marletta, M.A. (2015) Nitric oxide mediates biofilm formation and symbiosis in *Silicibacter* sp. Strain TrichCH4B. *mBio* **6**(3):e00206-00215.
217. Span, E. A. and Marletta, M.A. (2015) The Framework of Polysaccharide Monooxygenase Structure and Chemistry. *Curr. Opin. Struct. Biol.* **35**: 93-99.
218. Vu, V. and Marletta, M.A. (2016) Starch-degrading polysaccharide monooxygenases. *Cellular and Molecular Life Sciences* **73**: 2809-2819.
219. Zhou, Y., Wynia-Smith, S.L., Couvertier, S.M., Kalous, K.S., Marletta, M.A., Smith, B.C., Weerapana, E. (2016) Chemoproteomic strategy to quantitatively monitor transnitrosation uncovers functionally relevant S-nitrosation sites on cathepsin D and HADH2. *Cell Chemical Biology* **23**: 727-737.
220. Hespen, C.W., Bruegger, J.J., Phillips-Piro, C.M., and Marletta, M.A. (2016) Structural and functional evidence indicates selective oxygen signaling in H-NOX. *ACS Chemical Biology* **11**: 2337-2346.
221. Rao, M., Herzik, M.A., Iavarone, A.T. and Marletta, M.A. (2017) Nitric Oxide-Induced Conformational Changes Govern H-NOX and Histidine Kinase Interaction and Regulation in *Shewanella oneidensis*. *Biochemistry* **56**: 1274-1284.
222. Span, E.A., Suess, D.L.M., Deller, M.C., Britt, R.D. and Marletta, M.A. (2017) The Role of the Secondary Coordination Sphere in a Fungal Polysaccharide Monooxygenase. *ACS Chemical Biology* **12**: 1295-1103.

223. Agostoni, M., Hangasky J.A., and Marletta, M.A. (2017). Physiological and Molecular Understanding of Bacterial Polysaccharide Monooxygenases. *Microbiol. Mol. Biol. Rev.* **81**:e00015-17.
224. Guo, Y., Suess, D.L.M., Herzik, M.A., Iavarone, A.T., Britt, R.D. and Marletta, M.A. (2017) Regulation of nitric oxide signaling through selective formation of a distal NO receptor-ligand complex. *Nature Chem. Biol.* **13**: 1216-1221.
225. Guo, Y., Iavarone, A.T., Cooper, M.M. and Marletta, M.A. (2018) Mapping the H-NOX/HK binding interface in *Vibrio cholerae* by hydrogen/deuterium exchange mass spectrometry. *Biochemistry* **57**: 1779-1789.
226. Bruegger J.J., Smith B.C., Wynia-Smith S.L., and Marletta M.A. (2018) Comparative and integrative metabolomics reveal that S-nitrosation inhibits physiologically relevant metabolic enzymes. *J. Biol. Chem.* **293**: 6282-6296 doi: 10.1074/jbc.M117.817700.
227. Hangasky, J.A., Iavarone, A. T. and Marletta, M.A. (2018) Co-Substrate Reactivity of Polysaccharide Monooxygenases: O₂ versus H₂O₂. *PNAS* **115**: 4915-4920. doi: 10.1073/pnas.1801153115. Epub 2018 Apr 23.
228. Hangasky, J.A. and Marletta, M.A. (2018) A random-ordered substrate binding mechanism for polysaccharide monooxygenases. *Biochemistry* **57**: 3991-3199. doi: 10.1021/acs.biochem.8b00129.
229. Hespen, C.W., Breugger, J.J., Guo, Y. and Marletta, M.A. (2018) Native alanine substitution in the glycine hinge modulates conformational flexibility of Heme Nitric oxide/Oxygen (H-NOX) sensing proteins. *ACS Chemical Biology* **13**: 1631-1639.
230. Horst, B.G. and Marletta, M.A. (2018). Physiological activation and deactivation of soluble guanylate cyclase. *Nitric Oxide* **77**: 65-74. doi: 10.1016/j.niox.2018.04.011. Epub 2018 Apr 25.
231. Guo, Y. and Marletta, M.A. (2019). Structural insight into H-NOX gas sensing and cognate signaling protein regulation. *ChemBioChem* **20**: 7-19. doi: 10.1002/cbic.201800478. [Epub ahead of print].
232. Guo, Y., Cooper, M.M., Bromberg, R. and Marletta, M.A. (2018) A dual H-NOX signaling system in *Saccharophagus degradans*. *Biochemistry* **57**: 6570-6580 doi: 10.1021/acs.biochem.8b01058. Epub 2018 Nov 13.
233. Hangasky, J.A., Detomasi, T.C. and Marletta, M.A. (2019) Glycosidic bond hydroxylation by polysaccharide monooxygenases. *Trends in Chemistry* **1**(2): 198-209. DOI: <https://doi.org/10.1016/j.trechm.2019.01.007>
234. Horst, B.G., Stewart, E.M., Nazarian A.A., Marletta, M.A. (2019) Characterization of a Carbon Monoxide-Activated Soluble Guanylate Cyclase from *Chlamydomonas reinhardtii*. *Biochemistry* **58**:2 250-2259. doi: 10.1021/acs.biochem.9b00190. Epub 2019 Apr 17. PMID: 30946781

235. Vu V.V., Hangasky J.A., Detomasi T.C., Henry S.J.W., Ngo S.T., Span E.A., Marletta M.A. (2019) Substrate specificity in starch polysaccharide monooxygenases. *J Biol Chem.* 2019 Jun 24. pii: jbc.RA119.009509. doi: 10.1074/jbc.RA119.009509. [Epub ahead of print] PMID: 31235519
236. Horst, B.G., Yokom, A.L., Rosenberg, D.J., Kyle L. Morris, K.L., Hammel, M., Hurley, J.H., Marletta, M.A. (2019) Allosteric activation of the NO receptor soluble guanylate cyclase revealed by cryo-EM. *eLife* 8:e50634. DOI: <https://doi.org/10.7554/eLife.50634>.
237. Thompson, M.G., Blake-Hedges, J.M., Pereira, J.H., Hangasky, J.A., Belcher, M.S., Moore, W.M., Barajas, J.F., Cruz-Morales, P., Washington, L.J., Haushalter, R.W., Eiben, C.B., Liu, Y., Skyrud, W., Benites, V.T., Barnum, T.P., Baidoo, E.E.K., Scheller, H.V., Marletta, M.A., Shih, P.M., Adams, P.D., Keasling, J.D. (2020) An iron(II)-dependent oxygenase performs the last missing step of plant lysine catabolism. *Nature Commun.* **11**: 2931. <https://doi.org/10.1038/s41467-020-16815>.
238. Gonçalves, A.P., Heller, J., Span, E.A., Rosenfield, D., Do, H.P., Palma-Guerrero, J., Requena, N., Marletta, M.A., and Glass, N.L. (2020) Allorrecognition upon Fungal Cell-Cell Contact Determines Social Cooperation and Impacts the Acquisition of Multicellularity. *Current Biol.* 2019 29: 3006-3017.e3. <https://doi.org/10.1016/j.cub.2019.07.060>. Epub 2019 Aug 29. PMID: 31474536.
239. Hangasky, J.A., Detomasi, T.C., Lemon, C.M., and Marletta, M.A. (2020) "Glycosidic Bond Oxidation: The Structure, Function, and Mechanism of Polysaccharide Monooxygenases", Editor(s): Hung-Wen (Ben) Liu, Tadhg P. Begley, Comprehensive Natural Products III, Elsevier, Pages 298-331, ISBN 9780081026915, <https://doi.org/10.1016/B978-0-12-409547-2.14859-0>.
240. Lemon, C.M. and Marletta, M.A. (2021) Corrole-substituted fluorescent heme proteins. *Inorganic Chem.* 60: 2716-2729. <https://pubs.acs.org/doi/10.1021/acs.inorgchem.0c03599>.
241. Wittenborn, E.C., Marletta, M.A. (2021) Structural Perspectives on the Mechanism of Soluble Guanylate Cyclase Activation. *Int J Mol Sci.* 22(11):5439. doi: 10.3390/ijms22115439. PMID: 34064029; PMCID: PMC8196705.
242. Marletta, M.A. (2021) Revisiting Nitric Oxide Signaling: Where Was It, and Where Is It Going? *Biochemistry*: 60(46):3491-3496. doi: 10.1021/acs.biochem.1c00276. Epub 2021 Jun 7. PMID: 34096266.
243. Lemon, C.M. and Marletta, M.A. (2021). Designer Heme Proteins: Achieving Novel Function with Abiological Heme Analogs. *Accounts Chem Res.* 54(24):4565-4575. doi: 10.1021/acs.accounts.1c00588. Epub 2021
244. Lemon, C.M., Nissley, A.J., Latorraca, N.R., Wittenborn, E.C. and Marletta, M.A. (2022) Corrole-Protein Interactions in H-NOX and HasA. *RSC Chem Biol.* 21 571-581. doi: 10.1039/d2cb00004k.
245. Mitchell G., Silvis M.R., Talkington K.C., Budzik J.M., Dodd C.E., Paluba J.M., Oki EA, Trotta K.L., Licht D.J., Jimenez-Morales D., Chou S., Savage P.B., Gross C.A., Marletta M.A., Cox J.S. (2022) Ceragenins and anti-microbial peptides kill bacteria through distinct mechanisms. *mBio.* 13(1):e0272621. doi: 10.1128/mbio.02726-21.
246. Reyes-Rivera J., Wu Y., Guthrie B.G.H., Marletta M.A., King N., Brunet T. (2022) Nitric oxide signaling controls collective contractions in a colonial choanoflagellate. *Curr Biol.* 32(11): 2539-2547.e5. doi: 10.1016/j.cub.2022.04.017. Epub 2022 May 2. PMID: 35504284.
247. Lemon C.M., Hanley D., Batka A.E., Marletta M.A. (2022) Ratiometric Oxygen Sensing with H-NOX Protein Conjugates. *Inorg Chem.* 61(27):10521-10532. doi: 10.1021/acs.inorgchem.2c01430. Epub 2022 Jun 29. PMID: 35766625.

248. Detomasi T.C., Rico-Ramírez A.M., Sayler R.I., Gonçalves A.P., Marletta M.A., Glass N.L. (2022) A moonlighting function of a chitin polysaccharide monooxygenase, CWR-1, in *Neurospora crassa* allorecognition. *elife*. 11:e80459. doi: 10.7554/eLife.80459. PMID: 36040303; PMCID: PMC9550227.
249. Martinez-D'Alto, A., Yan, X., Detomasi T.C., Sayler R.I., Thomas, W.C., Talbot, N.J., Marletta, M.A. (2023) Characterization of a unique polysaccharide monooxygenase from the plant pathogen *Magnaporthe oryzae*. *Proc. Nat. Acad. Sci. USA* 120(8):e2215426120. doi: 10.1073/pnas.2215426120. Epub 2023 Feb 15. PMID: 36791100.
250. Wittenborn, E.C., Thomas, W.C., Houghton, K.A., Wirachman, E.S., Wu, Y. and Marletta, M.A. (2023) Role of the coiled-coil domain in allosteric activity regulation in soluble guanylate cyclase. *Biochemistry*. 2023 62(10):1568-1576. doi: 10.1021/acs.biochem.3c00052. Epub 2023 May 2. PMID: 37129924.
251. Detomasi, T.C., Batka, A.E., Valastyan, J.S., Hydorn, M.A., Craik, C.S., Bassler, B.L. and Marletta, M.A. (2023) Proteases influences colony aggregation behavior in *Vibrio cholerae*. *J Biol Chem*. 299(12):105386. doi: 10.1016/j.jbc.2023.105386. Epub 2023 Oct 26. PMID: 37898401; PMCID: PMC10709122
252. Sayler, R.I., Thomas, W. C., Rose, A.J., Marletta, M.A. (2024) Electron transfer in polysaccharide monooxygenase catalysis. *Proc Natl Acad Sci U S A*. 2025 Jan 7;122(1):e2411229121. doi: 10.1073/pnas.2411229121. PMID: 39793048; PMCID: PMC11725913.
253. Batka, A.E., Thomas, W.C., Tudorica, T.A., Sayler, R.I. and Marletta, M.A. Second-sphere histidine catalytic function in a fungal polysaccharide monooxygenase. *Biochemistry*. 2024 Dec 3;63(23):3136-3146. doi: 10.1021/acs.biochem.4c00527. Epub 2024 Nov 20. PMID: 39563485.
254. Wu, Y., Thomas, W.C., Green, Z.B. and Marletta, M.A. (2025) Characterization of a NO-activated Homodimeric Soluble Guanylate Cyclase from a Choanoflagellate. *Biochemistry*. 64(15):3393-3403. doi: 10.1021/acs.biochem.5c00228. PMID: 40658828.
255. Houghton KA, Thomas WC, Marletta MA. Molecular Aspects of Soluble Guanylate Cyclase Activation and Stimulator Function. *Biochemistry*. 64(22):4529-4541. doi: 10.1021/acs.biochem.5c00424. Epub 2025 Oct 27. PMID: 41146038.
256. Batka AE, Marletta MA. Copper-Dependent Polysaccharide Monooxygenases: Mechanism and Function. *Chem Rev*. 2026 Jul 22;126(14):8016-8033. doi: 10.1021/acs.chemrev.6c00006. Epub 2026 Jun 29. PMID: 42371685..
257. Batka AE, Bhat A, Rose AJ, Marletta MA. Participation of redox-active residues in polysaccharide monooxygenase catalysis. *RSC Chem Biol*. 2026 Jul 27. doi: 10.1039/d6cb00144k. Epub ahead of print. PMID: 42591791; PMCID: PMC13462859..

Non Peer Reviewed Publications

1. Marletta, M.A. and Stuehr, D.J. (1983). Biologically-derived reactive oxygen and the oxidation of simple nitrogenous compounds. In: *Oxy radicals and their scavenger systems*, Vol. 1: molecular aspects. (G. Cohen and R.A. Greenwald, eds.) Elsevier Science Publishing Co., New York, pp. 56-61.
2. Stuehr, D.J. and Marletta, M.A. (1987). Further studies on murine macrophage synthesis of nitrite and nitrate. In: *The relevance of N-nitroso compounds to human cancer, exposure and mechanisms*. (H. Bartsch, I O'Neill and R. Schulte-Hermann, eds.) IARC Scientific Publications No. 84, Lyon, pp.335-339.
3. Tayeh, M.A. and Marletta, M.A. (1990). Tetrahydrobiopterin is required for the oxidation of arginine to nitric oxide by macrophages. In: *Chemistry and Biology of Pteridines 1989*.

Pteridines and Folic Acid Derivatives. (H.-Ch. Curtius, S. Ghisla and N. Blau, eds.) Walter de Gruyter & Co., Berlin, pp. 300-303.

4. Tayeh, M.A. and Marletta, M.A. (1990). Tetrahydrobiopterin is required for the oxidation of arginine to nitric oxide by macrophages. In: Nitric Oxide from L-Arginine: A Bioregulatory System. (S. Moncada and E.A. Higgs, eds.) Excerpta Medica, Elsevier Science Publishers, Amsterdam, pp. 183-188.
5. Marletta, M.A. (1991). Nitric oxide, nitrovasodilators, and L-arginine - an unusual relationship. *West. J. Medicine* **154**: 107-109.
6. Hevel, J.M., White, K.A. and Marletta, M.A. (1992). Purification of the inducible murine macrophage nitric oxide synthase. identification as a flavoprotein and detection of enzyme-bound tetrahydrobiopterin in: Biology of Nitric Oxide: Part 2: Enzymology, Biochemistry and Immunology. (S. Moncada, M.A. Marletta, J.B. Hibbs Jr and E.A. Higgs eds.) Portland Press, pp. 19-21.
7. White, K.A. and Marletta, M.A. (1992). Identification of murine macrophage nitric oxide synthase as a flavoprotein: possible mechanistic roles of the flavins. In: Biology of Nitric Oxide: Part 2: Enzymology, Biochemistry and Immunology. (S. Moncada, M.A. Marletta, J.B. Hibbs and E.A. Higgs eds.) Portland Press, pp. 125-127.
8. Pufahl, R.A. and Marletta, M.A. (1992). Mechanistic probes of murine macrophage nitric oxide synthase. In: Biology of Nitric Oxide: Part 2: Enzymology, Biochemistry and Immunology. (S. Moncada, M.A. Marletta, J.B. Hibbs and E.A. Higgs eds.) Portland Press, pp. 51-53.
9. Rusche, K.M., Hevel, J.M. and Marletta, M.A. (1992). Purification of the malic enzyme from murine macrophages: a source of NADPH for the NO synthase. In: Biology of Nitric Oxide: Part 2: Enzymology, Biochemistry and Immunology. (S. Moncada, M.A. Marletta, J.B. Hibbs and E.A. Higgs eds.) Portland Press, pp. 45-47.
10. Olken, N.M. and Marletta, M.A. (1992). Irreversible inhibition of macrophage NO synthase by N^G-substituted-L-arginines. In: Biology of Nitric Oxide: Part 2: Enzymology, Biochemistry and Immunology. (S. Moncada, M.A. Marletta, J.B. Hibbs and E.A. Higgs eds.) Portland Press, pp. 24-28.
11. Hevel, J.M. and Marletta, M.A. (1993). Macrophage nitric oxide synthase: tetrahydrobiopterin decreases the NADPH stoichiometry. In: Proceedings of the Tenth International Symposium on the Chemistry and Biology of Pteridines and Folates. (J. Ayling, M.G. Nair and C.M. Baugh eds.) Plenum Press, pp. 285-288.
12. Marletta, M.A. (1993). Nitric oxide synthase: function and mechanism. In: Proceedings of the Tenth International Symposium on the Chemistry and Biology of Pteridines and Folates. (J. Ayling, M.G. Nair and C.M. Baugh eds.) Plenum Press, pp. 281-284.
13. White, K.A., Pufahl, R.A., Olken, N.M., Hevel, J.M., Richards, M.R. and Marletta, M.A. (1994). Nitric oxide synthase: mechanism and relationship to cytochrome P-450. In: Cytochrome P-450: Biochemistry, Biophysics and Molecular Biology John Libbey Eurotext Limited, France, pp. 43-48.
14. Spiering, M. M. and Marletta, M.A. (2003). Trace elements and nitric oxide function. *J. Nutrition* **133** (5 Suppl 1) 1431S-1433S.
15. Marletta, M.A. (2001). Another activation switch for endothelial nitric oxide synthase: why does it have to be so complicated? *TIBS* **26**:519-521.

16. Marletta, M. A. (2006). Raising enzymes from the dead and the secrets they can tell. *ACS Chemical Biology* **1**: 73-74.
17. Kiessling L.L., Doudna J.A., Johnsson K., Mapp A.K., Marletta M.A., Seeberger P.H., Williamson J.R., Wedde S.G. (2007). A higher degree of difficulty. *ACS Chemical Biology* **24**: 197-199.
18. Marletta, M.A. (2007). Journal Club. *Nature* **448**: 108-109.
19. Marletta, M. A. and Stubbe, J. (2008) Editorial overview. *Curr. Opin. Structural Biol.* **18**: 641-643.
20. Marletta, M.A. and Fontecave, M. (2010). Editorial overview. *Curr. Opin. Structural Biol.* **20**: 657-658.
21. Marletta, M.A. (2017). Serendipity in Discovery: From Nitric Oxide to Viagra. *Proceedings of the American Philosophical Society* **161**: 189-207.

Books Edited

1. Biology of Nitric Oxide, Vol. 1: Physiological and Clinical Aspects, (S. Moncada, M.A. Marletta, J.B. Hibbs, Jr., & E.A. Higgs, eds.), Portland Press, London, 1992.
2. Biology of Nitric Oxide, Vol. 2: Enzymology, Biochemistry, and Immunology, (S. Moncada, M.A. Marletta, J.B. Hibbs, Jr., & E.A. Higgs, eds.), Portland Press, London, 1992.

Chapters in Books

1. Marletta, M.A. (1989). Chemical basis of toxicology. In: *A Guide to General Toxicology*, 2nd revised edition, (J.K. Marquis, ed.) S. Karger, Basel, pp. 1-23.
2. Marletta, M.A. and Light, D.R. (1985). The flavins. In: *Modern Chromatographic Analysis of Vitamins* (A.P. DeLeenheer, W.E. Lambert and M.G.M. DeRuyter, eds.) Marcel Dekker, Inc., Basel, pp. 413-433.
3. Wogan, G.N. and Marletta, M.A. (1985). Undesirable and potentially undesirable constituents of food. In: *Food Chemistry* 2nd ed. (O. Fennema, ed.) Marcel Dekker, Inc., New York, pp. 689-723.
4. White, K.A. and Marletta, M.A. (1993). Nitric oxide synthase. In: *Handbook of Experimental Pharmacology*, Vol. 105 (J.B. Schenkman and H. Greim, eds.). Springer-Verlag, Berlin pp. 719-728.
5. Marletta, M.A. (2004). Nitric Oxide Signaling, in *Encyclopedia of Biological Chemistry* (W.J. Lennarz & M.D. Lane, eds), Elsevier, Oxford, Vol. 3, pp.62-65.
6. Mitchell, D.A., Michel, T. and Marletta, M.A. (2007). Effects of S-nitrosation on nitric oxide synthase, in *Nitric Oxide* (B. Tota and B. Trimmer, eds). Elsevier, Oxford, pp. 151-179.
7. Derbyshire, E.R. and Marletta, M.A. (2007). Biological targets of nitric oxide. *Wiley Encyclopedia of Chemical Biology*.
8. Derbyshire, E.R. and Marletta, M.A. (2009). Biochemistry of Soluble Guanylate Cyclase. In: *Handbook of Experimental Pharmacology*, Vol. 191. cGMP: Generators, Effectors and Therapeutic Implications (Schmidt, H.H.H.W, Hofmann, F., Stasch, J.-P., eds). Springer. Pp. 17-31.

9. Weinert, E.E and Marletta, M.A. (2011). Heme Proteins as Gas Sensors. In: Handbook of Porphyrin Science, Vol. 15 (Kadish, K.M., Smith, K.M. and Guillard, R., eds). World Scientific Publishing Co., Inc. pp. 123-157.
10. Winter, M.B., Woodward, J.J. and Marletta M. A. (2013). An *Escherichia coli* Expression-Based Approach for Porphyrin Substitution in Heme Proteins In Methods in Molecular Biology, Volume 987, pp 95-106.
11. Hangasky, J.A., Detomasi, T.C., Lemon, C.M, and Marletta, M.A. (2020). Glycosidic bond oxidation: The structure, function and mechanism of the polysaccharide monooxygenases. In: Hung-Wen (Ben) Liu, Tadhg P. Begley (eds.) Comprehensive Natural Products III: Chemistry and Biology. vol. 5, pp. 298-331. Elsevier. <https://doi.org/10.1016/B978-0-12-409547-2.14859-0>.

Patents

1. US Patent 8,404,632 B2. Cary, S.P.L., Boon, E.M., Winger, J.A. and Marletta, M.A. Compositions and Methods for the Delivery of Nitric Oxide. Issued March 26, 2013
2. US Patent **9,493,527**. Cary, S.P.L., Boon, E.M., Winger, J.A. and Marletta, M.A. Compositions and Methods for the Delivery of Nitric Oxide. Issued November 15, 2016
3. US Patent 8,404,631 B2. Cary, S.P.L., Boon, E.M., Weinert, E., Winger, J.A. and Marletta, M.A. Compositions and Methods for the Delivery of Oxygen. Issued March 26, 2013
4. US Patent 9,493,526. Cary, S.P.L., Boon, E.M., Weinert, E., Winger, J.A. and Marletta, M.A. Compositions and Methods for the Delivery of Oxygen. Issued November 15, 2016
5. US Patent 20110243849 (Pending). Marletta, M.A., Winter, M.B., McLaurin; E.J., Reece, S.Y., Olea, C., Nocera; D.G. Heme-Binding Photoactive Polypeptides and Methods of Use Thereof.
6. US Patent 20110245326 (Pending). Belmont, B.J., Goldfless; S.J., Marletta, M.A., Niles, J.C. Post-Transcriptional Regulation of RNA-Related Processes Using Encoded Protein-Binding RNA Aptamers.
7. European Patent 2032156. Cary, S.P.L., Boon, E.M., Weinert, E., Winger, J.A. and Marletta, M.A. Compositions and Methods for the Delivery of Oxygen.
8. European Patent 077951531 (Pending). Cary, S.P.L., Boon, E.M., Winger, J.A. and Marletta, M.A. Compositions and Methods for the Delivery of Nitric Oxide.
9. New Zealand Patent 573004. Cary, S.P.L., Boon, E.M., Weinert, E., Winger, J.A. and Marletta, M.A. Compositions and Methods for the Delivery of Oxygen.
10. New Zealand Patent 573003 (Pending). Cary, S.P.L., Boon, E.M., Winger, J.A. and Marletta, M.A. Compositions and Methods for the Delivery of Nitric Oxide.
11. US Patent 61/471,627 (Provisional), Marletta, M.A., Doudna-Cate, J.H., Beeson, W.T., Phillips, C.M. Enhanced degradation of cellulose.
12. US Patent 8,569,022, Beeson, W.T., Doudna-Cate, J.H. and Marletta, M.A. Extracellular Aldonolactonase. October 29, 2013
13. US Patent 8,703,452 B2, Beeson, W.T., Doudna-Cate, J.H. and Marletta, M.A. Extracellular Aldonolactonase. April 22, 2014
14. US Patent 8,969,052 B2, Beeson, W.T., Doudna-Cate, J.H. and Marletta, M.A. Extracellular Aldonolactonase. March 3, 2015
15. US Patent 9,125,931 B2. Belmont, B.J., Goldfless, S.J., Marletta, M.A., Niles, J.C. Post-transcriptional regulation of RNA-related processes using encoded protein-binding RNA aptamers. Issued September 8, 2015