February 2018

**Miriam L. Greenberg**
Professor, Department of Biological Sciences
Wayne State University

## I. Address:

Department of Biological Sciences
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Detroit, MI 48202
313 577-5202
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## II. Education:

| | | |
|---|---|---|
| Baccalaureate: | Reed College, Portland, Oregon<br>B.A. (1972), Biology | 1968-1972 |
| | Hebrew University, Jerusalem, Israel | 1970-1971 |
| Graduate: | Loyola University of Chicago<br>M.S. (1975) Microbiology | 1972-1975 |
| | Albert Einstein College of Medicine, NY.<br>Ph.D. (1980) Genetics | 1975-1980 |
| Postdoctoral training: | Harvard University, Cambridge, MA | 1980-1985 |

## III. Positions:

*Academic:*

Assistant Professor of Biological Chemistry, The University of Michigan 1986-1992
Associate Professor of Biological Sciences, Wayne State University (WSU) 1993-1997
Associate Professor of Oncology, Barbara Ann Karmanos Cancer Institute, WSU, 1997-present
Professor of Biological Sciences, Wayne State University, 1998-present
Visiting Professor, Dept. Biochemistry of Membranes, Utrecht University, the Netherlands, Sept. 2000-June 2001
Dozor Visiting Professor, Psychiatry Research Unit, Ben Gurion University, Israel, Dec. 2000-January 2001
Belkin Visiting Professor, Weizmann Institute of Science, Israel, 2016-2022

*Administrative leadership:*

Chair, American Society for Biochemistry and Molecular Biology (ASBMB) Committee on Equal Opportunities for Women - 1992-1994
Chair, ASBMB Professional Development, Mentoring, and Employment Committee - 1996-1998
Chair, WSU Microbiology and Genetics Division, Dept. of Biological Sciences - 1995-2000
Chair, WSU Graduate Committee, Dept. of Biological Sciences 1996-2000
Associate Dean for Research, WSU College of Liberal Arts and Sciences, 2004-2012
Completed course: “Principles and Techniques of Fundraising” offered by the Fundraising School, Center on Philanthropy, Indiana University, 2012

## IV. Awards:

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|---|---|
| Eliot Scholarship for Academic Excellence | 1968-1972 |
| Sigma Xi Graduate Student Research Form Award Loyola University | 1974 |
| NIH Pre-doctoral Trainee | 1975-1980 |
| Damon Runyon-Walter Winchell Cancer FoundationPostdoctoral Fellow | 1980-1982 |
| NIH NRSA Postdoctoral Fellow | 1982-1983 |
| Medical Foundation Postdoctoral Fellow | 1984-1985 |
| ASBMB Travel Award | 1991 |
| WSU Career Development Chair | 1995-1996 |
| Nederlandse Organisatie voor Wetenschappelijk Onderzoek Fellowship | 2000-2001 |
| Dozor Fellowship, Ben Gurion University of the Negev, Israel | 2000-2001 |
| Neufeld Memorial Research Award, U.S. Israel Binational Science Foundation | 2002 |
| WSU Outstanding Graduate Mentor Award | 2004 |
| WSU College of Science Teaching Award | 2004 |
| WSU Board of Governors Distinguished Faculty Fellowship | 2012-2013 |
| WSU OVPR Faculty Postdoc Award | 2014 |
| Weizmann Institute of Science Weston Faculty Fellowship (declined) | 2015-2016 |
| Fulbright Research Award (declined) | 2016 |
| Weizmann Institute of Science Belkin Faculty Fellowship | 2016-2017 |
| Weizmann Institute of Science Belkin Faculty Fellowship | 2017-2022 |

## V. Courses taught:

*Undergraduate:*

Biochemistry
Genetics
Biology Today

*Graduate:*

Biomembranes
Protein Purification and Biochemical Engineering
Eukaryotic Gene Structure and Function
Mitochondrial Biogenesis and Function
Research Internship in Molecular Biotechnology
Graduate Seminar in Biology
Graduate Seminar in Biochemistry
Membrane Biology
Principles and Applications of Biotechnology

*Global programs:*

Developed a Study Abroad program entitled “The Middle East Experience: Israel and the West Bank.” http://www.clas.wayne.edu/middleeast/

## VI. Research:

***Grant history (*currently active):***

*Federal*

NIH R01 GM37723, "Genetic Control of Mitochondrial Membrane Biogenesis", Principal Investigator, $283,399 direct costs total award, 1/1/87 to 12/31/89.

NIH R01 GM37723, "Genetic Control of Mitochondrial Membrane Biogenesis", Principal Investigator, $541,631 direct costs total award, 8/1/90 to 7/31/95.

NIH MBRS SO6 GM08167, "MBRS Program at Wayne State University", Joseph Dunbar, Program Director; $30,160 annual direct costs for my subproject, 4/1/95 to 3/31/99.

NIH RO1 MH56220, "Genetic and Biochemical Determinants of Lithium Responsiveness and Resistance", Principal Investigator, $363,005 direct costs total award, 5/1/97-4/30/00.

NIH RO1 HL62263, "Cardiolipin Biosynthesis and Function", Principal Investigator, $1,180,830 direct costs, 02/1/00-01/31/06.

NIH RO1 MH56220, "Molecular Targets of Lithium and Valproate", Principal Investigator, $650,000 direct costs, 2/1/01-1/31/06.

U.S.-Israel Binational Science Foundation (BSF) Grant 2001035, "Inositol-1-P Synthase in the Psychopharmacology of Bipolar Disorder," $237,000 direct costs, (with co-PI Galila Agam, Israel), 10/01/02-09/30/06.

NIH R21 HL084218, "Synthetic Lethal Interactions in Barth Syndrome", Principal Investigator, $275,000 direct costs 04/01/08-03/31/10.

NIH RO1 DK081367, "A Novel Mechanism of Regulation of Inositol Biosynthesis in Yeast", Principal Investigator, $915,000 direct costs, 05/01/09 – 04/30/14.

NIH R01 DK081367-01A1S1, "A Novel Mechanism of Regulation of Inositol Biosynthesis in Yeast-equipment supplement", Principal Investigator, $100,000 direct costs 02/01/10 – 04/30/10.

***NIH R01 HL117880, "The Role of Cardiolipin in the TCA Cycle: Implications for Barth Syndrome", Principal Investigator, $1,434,815 total award ($1,000,000 direct costs) 04/01/14 – 03/31/18.**

NIH 3R01 HL117880A1S1, "The Role of Cardiolipin in the TCA Cycle: Implications for Barth Syndrome", Principal Investigator, $93,340 direct costs 01/15/15 – 03/31/17.

NIH 2U19AI067773-11, "Center for High-Throughput Minimally-Invasive Radiation Biodosimetry," subaward no. 9(GG011896-09), "Novel humanized models of genetically-modified and lipid supplemented yeast cells (*S. cerevisiae*) for screening and selection of radiomitigators targeting the regulatory lipid mediators-generating iPLA2 pathways," $145,901 total award, 04/01/16 – 03/30/17.

***NIH 2U19AI067773-11, "Center for High-Throughput Minimally-Invasive Radiation Biodosimetry," subaward no. 9(GG011896-09), "Novel humanized models of genetically-modified and lipid supplemented yeast cells (*S. cerevisiae*) for screening and selection of radiomitigators targeting the regulatory lipid mediators-generating iPLA2 pathways," $145,907 total award, 08/01/17 – 07/31/18.**

***NIH 9 R01 GM125082-05A1, "Novel Mechanisms of Regulation of Inositol Biosynthesis", Principal Investigator, $1,336,987 total costs ($904,000 direct costs) 08/01/17 – 07/31/21.**

*Private*

American Cancer Society Research Grant, "Genetic Control of Mitochondrial Membrane Biogenesis", Principal Investigator, $63,333 total award, 01/01/90 to 08/31/90.

Stanley Foundation NAMI Research Institute, "Identification of Lithium Target Genes and Characterization of their Role in Lithium Responsiveness and Resistance in Bipolar Disorder", Principal Investigator, $100,000 direct costs total award, 8/1/97-7/31/99. (Co-investigator, Husseini Manji).

Barbara Ann Karmanos Cancer Institute Virtual Discovery Grant, "The Role of Cardiolipin in Doxorubicin-Induced Cardiotoxicity," Principal Investigator, (co-P.I. Ralph Parchment), $72,000 total award, 03/01/97-09/01/98.

Barth Syndrome Foundation, "*TAZ1* Gene Function in Yeast: a Molecular Model for Barth Syndrome", Principal Investigator, $39,630 direct costs total award, 3/1/03 – 2/28/05.

Stanley Foundation NAMI Research Institute, "Identification of New Valproate-like Anti-bipolar Carboxylic Acids," Principal Investigator, $149,696 total costs, 08/01/05-07/31/07. (Co-investigator, Robert Belmaker).

Barth Syndrome Foundation, "Does Copper Deficiency Play a Role in Barth Syndrome?" Principal Investigator, $40,000 total award, 2/1/06 – 1/31/07.

Barth Syndrome Foundation "The Role of Phosphatidylglycerol in Activating Protein Kinase C Mediated Signaling." Principal Investigator, $40,000 total award, 3/1/07 – 2/28/08.

Barth Syndrome Foundation, "Perturbation of the Osmotic Stress Response in Cardiolipin Deficient Mutants." Principal Investigator, $40,000 total award, 4/1/08 – 3/31/09.

Barth Syndrome Foundation, "The Role of Tafazzin in Mitochondrial Protein Import – Implications for Barth Syndrome." Principal Investigator, $40,000 total award, 4/1/09 – 3/31/10.

Barth Syndrome Foundation, "Perturbation of Mitophagy in Cardiolipin Mutants." Principal Investigator, $40,000 total award, 4/1/10 – 3/31/11.

Barth Syndrome Foundation, "Loss of Cardiolipin Leads to Defective Iron-Sulfur Biosynthesis and Perturbation of Iron Homeostasis." Principal Investigator, $40,000 total award, 4/1/11 – 3/31/12.

Barth Syndrome Foundation, "Cardiolipin Deficiency Leads to Defects in the TCA Cycle." Principal Investigator, $40,000 total award, 4/1/12 – 3/31/13.

Barth Syndrome Foundation, "Identification of human CL phospholipases that are deleterious to tafazzin-deficient cells." Principal Investigator, $50,000 total award, 4/1/14 – 3/31/15.

Barth Syndrome Foundation, "Cardiolipin is required for mitochondrial protein processing," Principal Investigator, $50,000 total award, 4/1/16 – 3/31/17.

Stealth Biotherapeutics, "Elucidating the mechanism of action of elamipretide in the yeast *Saccharomyces cerevisiae,*" Principal Investigator, $55,512 direct costs, 6/1/16 – 12/31/17.

### *Mentorship of students and postdoctoral fellows*

#### ***Master's students and their present positions:***

Neil Adhikari, M.S. 2004. Identification of inositol sensitive mutants.
Doctoral student, Michigan State University

Gnanada Kulkarni, M.S. 2006. Synthetic lethal interactions in Barth syndrome.
Ph.D., WSU

Adam Campbell, M.S. Biotechnology. 2007. Effects of valproate on vacuolar function.
Doctoral student, Oregon State University

Dhara Mehta. M.S. Biotechnology. 2008. The role of GSK-3 in regulation of inositol homeostasis.

Manoj Bandara. M.S. 2010. Valproate sensitive mutants in the PI cycle.
Visiting faculty, Spectrum Institute of Science and Technology, Sri Lanka

Janani Ganesh. M.S. 2010. Isolation and characterization of suppressors of *crd1tom7.*
Scientist, Axol Biosciences, England

Olesya Plazyo. M.S. Biotechnology. 2012. The role of cardiolipin in trafficking to the vacuole.
Postdoctoral fellow, WSU

#### ***Doctoral students and their present positions:***

Stacey Minskoff, Ph.D. 1993, Regulation of Phospholipid Metabolism in Yeast.
Research scientist, Boehringer Ingelheim Pharmaceuticals

Beth Kelly, Ph.D. 1993, Regulation of Cardiolipin Biosynthesis in Yeast.
Associate Director, Intellectual Property, Seattle Genetics

Patricia Racenis, Ph.D. 1994, Regulation of Phosphatidic Acid Biosynthesis in Yeast.

Ming Zhao, Ph.D. 1997, Enzymatic mechanism of yeast cardiolipin synthase.
Program officer, National Cancer Institute, NIH

Feng Jiang, Ph.D. 1998, Characterization of the cardiolipin biosynthetic pathway in yeast.
Manager of web development, MedAmerica Inc.

Diego Rua, Ph.D. 1999, Role of cardiolipin in adriamycin-induced cardiotoxicity.

Marlene Murray, Ph.D. 1999, Identification and characterization of inositol monophosphatase in the yeast *Saccharomyces cerevisiae.*
Associate Professor, Andrews University

Deirdre Vaden, Ph.D. 2000, Lithium and valproic acid affect multiple targets in the phosphoinositide cycle of *Saccharomyces cerevisiae.*

Associate Professor, Prairie View A & M University

Daobin Ding, Ph.D. 2001. Characterization of targets of lithium and valproate in inositol and phospholipid metabolism in *Saccharomyces cerevisiae.*
Resident, Dept. of Ob/Gyn, Medical College of Ohio

Zhiming Gu, Ph.D. 2002. An insight into cardiolipin remodeling.
Application Scientist, Applied Biosystems

Shulin Ju, Ph.D. 2004. The effects of valproate on inositol metabolism in *Saccharomyces cerevisiae.*
Assistant Professor, Wright State University

Quan Zhong, Ph.D. 2005. The regulation and function of cardiolipin in *Saccharomyces cerevisiae.*
Assistant Professor, Wright State University

Vishal Gohil, Ph.D. 2005. Interdependence of cardiolipin biosynthesis and mitochondrial respiratory chain function.
Assistant Professor, Texas A & M University

Yihui Shi, Ph.D. 2005. New insights into the molecular targets of lithium and valproate.
Postdoctoral fellow, SRI International

Guiling Li, Ph.D. 2007. The role of mitochondrial anionic phospholipids in signaling pathways and essential functions.
Research associate, Wenzhou Medical College

Shuliang Chen. Ph.D. 2008. Essential cellular functions of cardiolipin in *Saccharomyces cerevisiae.*
Postdoctoral fellow, University of California, San Diego

Jingming Zhou. Ph.D. 2009. The role of cardiolipin in longevity and stress response in *Saccharomyces cerevisiae.*
Head of the Biology Group, International Department of Jinling High School, Hexi Campus

Amit Joshi. Ph.D. 2012. Identification of cellular functions of cardiolipin as physiological modifiers of Barth syndrome.
Postdoctoral fellow, NIH

Vinay Patil. Ph.D. 2013. The role of cardiolipin in iron homeostasis and glutathione metabolism.
Pharmacologist, Center for Drug Evaluation and Research (CDER)
Division of Gastroenterology and Inborn Error Products
U.S. Food and Drug Administration (FDA)

Cunqi Ye. Ph.D. 2014. Characterization and identification of novel regulators of the synthesis of phospholipids.
Postdoctoral fellow, Univ. of Texas Southwestern

Rania Deranieh. Ph.D. 2014. Regulation of inositol biosynthesis and cellular consequences of inositol depletion: Implications for the mechanism of action of valproate.
Postdoctoral fellow, Hussman Institute for Autism

Zheni Shen. Ph.D. 2015. Cardiolipin regulates mitophagy through the PKC pathway.

Technical supervisor, Total Toxicology Labs LLC

Wenxi Yu. Ph.D. 2016. Novel regulatory mechanisms of inositol biosynthesis in *Saccharomyces cerevisiae* and mammalian cells, and implications for the mechanism underlying VPA-induced glucose-6-phosphate depletion.
Postdoctoral fellow, University of Michigan

Shyamala Jadhav. Ph.D. 2016. Genome wide analysis identifies sphingolipid metabolism as a target of valproic acid.
Postdoctoral fellow, NIH.

Vaishnavi Raja. Ph.D. 2016. Cardiolipin is required for optimal acetyl-CoA metabolism.
Postdoctoral fellow, Henry Ford Hospital

Wenjia Lou. Ph.D. 2017. Novel functions of cardiolipin remodeling in *Saccharomyces cerevisiae* and mammalian cells: Implications for Barth syndrome

Yiran Li. Ph.D. 2018 (anticipated). Cardiolipin deficiency imposes metabolic dysfunction that may contribute to Barth syndrome pathology.

***Postdoctoral fellows and their current positions:***

Roxanne Karkhoff-Schweizer (1988-1989)
Associate Professor, Colorado State University

Paulette Gaynor (1989-1992)
Consumer Safety Officer, U.S. FDA

Michael Schlame (1992-1994)
Associate Professor., Dept. of Cell Biology, NYU Medical School

Kevork Hagopian (1993-1995)
Project Scientist, Molecular Biosciences, UC Davis

Vasilij Koshkin (1998-2001)
Research associate, York University

Deirdre Vaden (2000-2004)
Associate Professor, Prairie View A & M University

Lining Ma (2002-2004)
Postdoctoral fellow, University of Wisconsin

Abed Azab (2004-2006)
Senior lecturer, Ben Gurion University

Quan He (2003-2007)
Research assistant professor, Sanford Burnham Medical Research Institute

Rania Deranieh (2014 –2016)
Postdoctoral fellow, Hussman Institute for Autism

Christian Reynolds (2016 – 2017)

Assistant professor, Wayne State University

Wenxi Yu (2016 – 2017)
Postdoctoral fellow, University of Michigan

Vaishnavi Raja (2016 – 2017)
Postdoctoral fellow, Henry Ford Hospital

Stephen Gibson (2016 – 2017)

***Current trainees:***

***Doctoral students:***

Michael Salsaa'. Cross talk between glycolysis and inositol synthesis.

Jiajia Jia. Synthetic genetic interactions with cardiolipin remodeling mutants.

Mahmoud Suliman. Sphingolipid metabolism as a target of mood stabilizing drugs.

Zhuqing Liang. Perturbation of micronuclei in cardiolipin deficient cells.

Kendall Case. Energy metabolism dysfunction in response to mood stabilizing drugs.

***Master's student:***
Abu Mohammad Ramim. The Role of NNT in mitochondrial redox metabolism.

***Postdoctoral fellow:***
Wenjia Lou. The function of cardiolipin remodeling in ameliorating oxidative stress.

## *Invited presentations and seminars (past 5 years):*

Department of Biology, Northeastern University, February 2013. "Perturbation of iron-sulfur biogenesis in cardiolipin deficient cells – Implications for Barth syndrome."

Division of Endocrinology, Wayne State University School of Medicine, Grand Rounds. February 2013. "Perturbation of iron-sulfur biogenesis in cardiolipin deficient cells - Implications for Barth syndrome."

Department of Biochemistry and Molecular Biology, Wayne State University School of Medicine. April 2013. "Perturbation of iron-sulfur biogenesis in cardiolipin deficient cells - Implications for Barth syndrome."

Department of Biology, Drexel University. April 2013. "Perturbation of iron-sulfur biogenesis in cardiolipin deficient cells - Implications for Barth syndrome."

Invited speaker, 11th Yeast Lipids Meeting, Halifax, Nova Scotia, May 2013. "Post-translational regulation of inositol biosynthesis – Implications for bipolar disorder."

Session chair, Gordon Research Conference on the Molecular and Cellular Biology of Lipids, July 2013.

Invited speaker, European Federation for the Science and Technology of Lipids Symposium on *'Cardiolipin as Key Lipid of Mitochondria in Health and Disease,'* Sept 2013, Bari, Italy.

Invited speaker, 11th Annual Meeting of the Society for Heart and Vascular Metabolism (SHVM), Sept/Oct, 2013, Cambridge, Maryland.

Department of Biological Sciences, Lehigh University. December 2013. "Using yeast to elucidate mechanisms in genetic disorders - Barth syndrome and bipolar disorder."

Invited speaker, Keystone Symposium on '*Aging - Pushing the Limits of Cellular Quality Control,'* January, 2014, Steamboat Springs, Colorado. "The central role of cardiolipin in mitochondrial and cellular functions."

Invited speaker, 7th International Barth Syndrome Conference, Clearwater, Fla., June 2014. "Deletion of the cardiolipin-specific phospholipase Cld1 rescues growth defects in the yeast tafazzin mutant."

Invited speaker, Midwest Yeast Meeting, Chicago, IL, September 2014. "The enigmatic functions of cardiolipin remodeling."

Biomedical Science Program, University of North Dakota School of Medicine, November 2014. "The enigmatic functions of cardiolipin remodeling."

Univ. of Pittsburgh, February 2015. "The role of cardiolipin in iron-sulfur biogenesis and energy metabolism."

Session chair and invited speaker, 14th International Conference, *Bioactive Lipids in Cancer, Inflammation, and Related Diseases*, July 2015, Budapest, Hungary

Invited speaker, European Federation Lipid Congress satellite meeting on *Cardolipin as Key Lipid of Mitochondria in Health and Disease,* September, 2015, Florence, Italy.

Institute of Protein Biochemistry, Naples, Italy. October 2015. "Valproate-mediated inositol depletion alters phosphoinositide homeostasis and perturbs vacuolar function and endocytosis."

Department of Biochemistry and Molecular Biology, Michigan State University. March, 2016. "The role of cardiolipin in iron-sulfur biogenesis and energy metabolism."

Invited speaker, Biophysical Society of Canada Annual Meeting, Winnipeg, Canada. June 2016.

Medical Biotechnology Program, University of Windsor, Canada. June, 2016. "Valproate-mediated inositol depletion alters phosphoinositide homeostasis and perturbs vacuolar function and endocytosis."

Invited speaker, 8th International Barth Syndrome Conference, Clearwater, Fla., July 2016.

Department of Biomolecular Sciences, Weizmann Institute of Science, Israel, January 2017. "Cardiolipin - mitochondrial phospholipid at the epicenter of energy metabolism."

Invited speaker, Israel Society of Biological Psychiatry Annual Meeting. Kfar Blum, Israel, March 2017.

Dept. of Clinical Biochemistry and Pharmacology, Ben Gurion University of the Negev, Israel, May 2017. "Cardiolipin deficiency, the underlying defect in Barth syndrome, leads to perturbation of mitochondrial energy metabolism."

Session chair, 13th Annual Yeast Lipids Conference. Paris, May 2017.

Invited speaker and session chair, 15th International Conference on Bioactive Lipids in Cancer, Inflammation, and Related Diseases. Puerto Vallarta, Mexico, October 2017.

Department of Food Science, Rutgers University, November, 2017. "Cardiolipin at the epicenter of energy metabolism – implications for Barth syndrome."

Future invited speaker invitations:
Dept. of Biochemistry and Biophysics,Texas A&M University, March 2018.
4th Molecular Medicine of Sphingolipids Meeting. Israel, October 2018.
CoA in Health, Disease and Bioscience Meeting. Stellenbosch, South Africa, October 2018.

***Review panels:***

*Member*:
NIH study section, Biochemistry and Biophysics of Membranes (BBM), **2015 - present**

*Ad hoc* reviewer/consultant:
Howard Hughes Medical Institute Predoctoral Fellowship Program, Genetics and Molecular Biology,1996 -1997.
Northeast SUN Grant Initiative, 2011

NIH panels:

- Physiological Chemistry, June 2000
- Neurological Sciences and Disorders-A, October 2002
- Molecular Neuropharmacology and Signaling, February 2004, June 2004
- MDCN Fellowship Review Special Emphasis Panel, November 2004
- ZRG1 BCMB-Q Biological Chemistry and Macromolecular Biophysics Panel, April 2005
- NHLBI, Heart, Lung, Blood Program Project Review Committee HLBP S Workgroup 013, October 2006
- NIGSM Special Emphasis Panel/Scientific Review Group 2010/01 ZGM1 MBRS-7 (TC), December 2009
- NHLBI Special Emphasis Panel/Scientific Review Group 2013/10 HLBP 1, May 2013
- Biochemistry and Biophysics of Membranes (BBM), June 2011, June 2014; February 2015

European panels:

- Netherlands Association for Science Research (NWO), 2013
- German-Israeli Foundation for Scientific Research and Development (GIF), 2013
- Croatian Science Foundation, 2014
- European Research Council (ERC) Cellular and Developmental Biology Panel, September 2010

***Editorial boards:***

*Journal of Biological Chemistry,* 2006-2011
*Chemistry and Physics of Lipids,* **2016 - present**

***Advisory boards:***

Scientific and Medical Advisory Board, Barth Syndrome Foundation, **2005-present**
Steering Committee, Yeast Lipids Conference, **2015-present**

***Publications:***

https://www.ncbi.nlm.nih.gov/sites/myncbi/1Fepgnb6G8gQv/bibliography/47534058/public/?sort=date&direction=ascending


1980 Birshtein, B.K., Campbell, R., and Greenberg, M.L. Aγ2b-γ2a Hybrid Immunoglobulin Heavy Chain Produced by a Variant of the MPC11 Mouse Myeloma Cell Line. *Biochemistry* **19**, 1730-1737.

1981 Henry, S.A., Greenberg, M.L., Letts, V.A., Shicker, B., Klig, L., and Atkinson, K.D. Genetic Regulation of Phospholipid Synthesis in Yeast, Proceedings of Tenth International Symposium on Yeast. In Current Developments in Yeast Research: Advances in Biotechnology, pp. 311-316, Stewart, G., and Russell, J., eds., New York: Pergamon Press.

1982 Greenberg, M.L., Reiner, B., and Henry, S.A. Regulatory Mutations of Inositol Biosynthesis in Yeast: Isolation of Inositol-Excreting Mutants. *Genetics* **100**, 19-33.

1982 Greenberg, M.L. Goldwasser, P., and Henry, S.A. Characterization of a Regulatory Mutant Constitutive for Synthesis of Inositol-1-Phosphate Synthase. *Molec. Gen. Genetics* **186,** 157-163.

1983 Greenberg, M.L., Klig, L., Shicker, B., Letts, V., and Henry, S.A. Yeast Mutant Defective in Phosphatidylcholine Synthesis. *J. Bacteriol*. **153**, 791-799.

1986 Greenberg, M.L., Myers, P.L., Skvirsky, R.C., and Greer, H. New Positive and Negative Regulators for General Control of Amino Acid Biosynthesis in *Saccharomyces cervisiae*. *Mol. Cell. Biol.* **6,** 1820-1829.

1986 Skvirsky, R., Greenberg, M.L., Myers, P.L., and Greer, H. A New Negative Control Gene for Amino Acid Biosynthesis in *Saccharomyces cerevisiae. Curr. Genet*. **10**, 495-501.

1986 Myers, P.L., Skvirsky, R.C., Greenberg, M.L., and Greer, H. Negative Regulatory Gene for General Control of Amino Acid Biosynthesis in Yeast. *Mol. Cell. Biol*. **6**, 3150-3155.

1988 Greenberg, M.L., Hubbell, S., and Lam, C. Inositol Regulates Phosphatidylglycerolphosphate Synthase Expression in *Saccharomyces cerevisiae*. *Mol. and Cell Biol*. **8**, 4773-4779.

1990 Kelly, B.L. and Greenberg, M.L. Characterization and Regulation of Phosphatidylglycerolphosphate Phosphatase in *Saccharomyces cerevisiae. Biochim. Biophys. Acta* ***1046,***144-150.

1990 Tamai, K.T. and Greenberg, M.L. Biochemical Characterization and Regulation of Cardiolipin Synthase in *Saccharomyces cerevisiae*. *Biochim. Biophys. Acta* **1046**, 214-222.

1991 Karkhoff-Schweizer, R., Kelly, B.L. and Greenberg, M.L. Characterization and Regulation of Phosphatidylglycerolphosphate Synthase in *Schizosaccharomyces pombe. J. Bact.* ***173,*** 6132-

6138.

1991 Gaynor, P., Hubbell, S., Schmidt A., R.A. Lina, S.A. Minskoff, and Greenberg, M.L. Regulation of Phosphatidylglycerolphosphate Synthase Expression in *Saccharomyces cerevisiae* by Factors which Affect Mitochondrial Development. *J. Bact*. **173**, 6124-6131.

1992 Minskoff, S.A., Gaynor, P.M. and Greenberg. M.L. Mutant Enrichment in *Schizosaccharomyces pombe* by Inositol-less Death. *J. Bact.* **174**, 4078-4085.

1992 Racenis, P.V., Lai, J.L., Das, A.K., Hajra, A.K., and Greenberg, M.L. Characterization of Acyl/Alkyl-Dihydroxyacetone Phosphate Reductase from *Saccharomyces cerevisiae*. *J. Bact*. **174**, 5702-5710.

1992 Gaynor, P.M. and M.L. Greenberg. Regulation of CDP-Diacylglycerol Synthesis and Utilization by Inositol and Choline in *Schizosaccharomyces pombe*. *J. Bact.* **174**, 5711-5718.

1993 Greenberg, M.L. and Axelrod, D. Anomalously Slow Diffusion of Lipid Probes in Membranes of the Yeast *Saccharomyces cerevisiae. J. Membrane Biol.* **131**, 115-127.

1994 Kelly, B.L. and Greenberg, M.L. Expression in Yeast of an *E. coli* Gene Encoding a Phospholipid Biosynthetic Enzyme. *Gene* **147**, 111-114.

1994 Minskoff, S.A., Racenis, P.V., Granger, J., Larkins, L., Hajra, A., and Greenberg, M.L. Regulation of Phosphatidic Acid Biosynthetic Enzymes in *Saccharomyces cerevisiae. J. Lipid Research* **35**, 2254-2262.

1995 Schlame, M., Zhao, M., Rua, D., Haldar, D. and Greenberg, M.L. Kinetic Analysis of Cardiolipin Synthase: A Membrane Enzyme with Two Glycerophospholipid Substrates. *Lipids*, **30**, 633-640.

1996 Greenberg, M.L. and Lopes, J.M. Genetic Regulation of Phospholipid Biosynthesis in Yeast. *Microbiolog. Rev.*, **60**, 1-20.

1997 Murray, Marlene and Greenberg, M.L. Regulation of Inositol Monophosphatase in *Saccharomyces cerevisiae. Mol. Microbiol.* **25**, 541-546.

1997 Minskoff, S. A. and Greenberg, M.L. Phosphatidylglycerophosphate Synthase from Yeast. *Biochim. Biophys. Acta* **1348,** 187-191.

1997 Schlame, M. and Greenberg, M.L. Cardiolipin Synthase from Yeast. *Biochim. Biophys. Acta* **1348,** 201-206.

1997 Jiang, F., Rizavi, H. S., and Greenberg, M.L. Cardiolipin Is Not Essential for Growth of *Saccharomyces cerevisiae* on Fermentable or Non-fermentable Carbon Sources. *Mol. Microbiol.* **26,** 481-491**.**

1998 Zhao, M., Schlame, M., Rua, D., and Greenberg, M.L. Cardiolipin Synthase is Associated with a Large Complex in Yeast Mitochondria. *J. Biol. Chem.,* **273,** 2402-2408**.**

1998 Jiang, F., Kelly, B.L., Hagopian, K., and Greenberg, M.L. Purification and Characterization of Phosphatidylglycerolphosphate Synthase from *Schizosaccharomyces pombe*. *J. Biol. Chem.,* **273,** 4681-4688**.**

1998 Zhao, M., Rua, D., Hajra, A., and Greenberg, M.L. Enzymatic Synthesis of [$^{3}$H]CDP-Diacylglycerol. *Anal. Biochem.* **258,** 48-52.

1999 Jiang, F., Gu, Z., Granger, J., and Greenberg, M.L. Cardiolipin Synthase Expression is Essential for Growth at Elevated Temperature and is Regulated by Factors Affecting Mitochondrial Development. *Mol. Microbiol.* **31,** 373-380.

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