



George M. Carman, Ph.D.

Board of Governors Professor &  
Distinguished Professor of Food Science  
Director, Rutgers Center for Lipid Research,  
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## CURRICULUM VITAE

### **Education**

Ph.D., Food Biochemistry, University of Massachusetts, 1977  
M.S., Microbiology, Seton Hall University, 1974  
B.A., Biology (with honors), William Paterson University, 1972

### **Appointments**

Chief Scientific Officer, New Jersey Institute for Food, Nutrition, & Health, 2014-2017  
Director, Rutgers Center for Lipid Research, Rutgers University, 2007-present  
Board of Governors Professor, Rutgers University, 2011-present  
Distinguished Professor, Department of Food Science, Rutgers University, 1990-present  
Visiting Professor, Department of Molecular Biology, Princeton University, 1990-1991  
Professor, Department of Food Science, Rutgers University, 1986-1990  
Associate Professor, Department of Food Science, Rutgers University, 1982-1986  
Assistant Professor, Department of Food Science, Rutgers University, 1978-1982  
Postdoctoral Research Fellow, Department of Biochemistry and Molecular Biology,  
University of Texas Medical School, Houston, 1977-1978

### **Research Areas**

Biochemistry and molecular biology of phospholipid metabolism and lipid signaling

### **Professional Affiliations**

American Society for *Biochemistry* and Molecular Biology, American Oil Chemists' Society,  
American Society for Microbiology, American Chemical Society

### **Honors**

Distinguished Scientist Award, Rutgers University Food Science Alumni Committee (2016)  
Chancellor's Award Lectureship in Neuroscience, Louisiana State University School of Medicine  
(2016)  
Journal of Lipid Research Lectureship Award (2014)  
Avanti Award in Lipids, American Society for Biochemistry and Molecular Biology (2012)  
MERIT Award, National Institutes of Health (2010)  
Research Excellence Award for Sustained Research and Impact, School of Environmental and  
Biological Sciences, Rutgers University, 2009  
Faculty Mentor of the Year, Compact for Faculty Diversity, 2008  
Merck-AAAS Speaker, Hope College, 2006  
American Oil Chemists Society-Supelco/Nicholas Pelick Research Award, 2004  
Endel Karmas Award for Teaching Excellence, Rutgers University, 2004, 2015  
Board of Trustees Award for Excellence in Research, Rutgers University, 1999  
American Academy of Microbiology Fellow, 1998  
Foundation for Microbiology Lecturer, 1996-1998  
Selman A. Waksman Honorary Lectureship Award, 1996  
Research Excellence Award, NJ Agricultural Experiment Station, Rutgers University, 1993  
Merit Awards from Rutgers University, 1981, 1983, 1985-1991, 1993, 1994, 1997-2008  
Chairman, Gordon Research Conference-Molecular and Cellular Biology of Lipids, 1993  
Distinguished Alumni Award from William Paterson University, 1981  
Welch Foundation Postdoctoral Fellowship, 1977

Manufacturers Hanover Trust Co. Scholarship, 1968  
Memberships in the American Society of Biochemistry and Molecular Biology and the Honorary Societies of Sigma Xi, Phi Tau Sigma  
Rutgers Presidential Committee on Academic Planning and Review, 2008-2011  
Rutgers Presidential Committee on Standards and Priorities in Academic Development, 1998-2004

### **Editorships**

Journal of Biological Chemistry, Associate Editor, 2006-2019  
Journal of Lipid Research, Associate Editor, 2003-2006, 2017-2020  
Analytical Biochemistry, Executive Editor, 1994-2018  
Biochimica et Biophysica Acta, Executive Editor, 2004-2006, Guest Editor, "Regulation of Lipid Metabolism in Yeast" (special issue), 2007

### **Editorial Boards**

Journal of Biological Chemistry, Board Editor, 1998-2003, 1992-1997  
Journal of Lipid Research, Board Member, 2006-2018  
Journal of Bacteriology, Board Member, 1992-1994  
Applied and Environmental Microbiology, Board Member, 1985-1990  
Gene Regulation and Systems Biology, Board Member, 2006-2008  
Journal of Food Biochemistry, Board Member, 1979-1992  
Journal of Food Science, Board Member, 1985-1987  
InSight, Board Member, 1998-2002

### **Grants**

National Institutes of Health  
Phospholipid Metabolism and Membrane Function, GM028140, 1980-2020, PI  
Regulation of Phospholipid Synthesis, GM050679, 1994-2021, PI  
Regulation of Phosphatidylinositol Metabolism, GM 35655, 1986-1995, PI  
Gordon Research Conference on Lipid Metabolism, GM 49037, 1993, PI  
Liquid Chromatography Mass Spectrometry System, RR 021120, 2006, Co-PI  
National Science Foundation  
Regulation of Yeast Phosphatidate Phosphatase, DCB 9204588, 1992-1995, PI  
Gordon Research Conference on Lipid Metabolism, IBN 9300895, 1993, PI  
American Heart Association  
Gordon Research Conference on Lipid Metabolism, 1993, PI  
United States Department of the Army  
Gordon Research Conference on Lipid Metabolism, 1993, PI  
United States Department of Agriculture  
Determination of Phosphatidylcholine by Enzymatic Analysis, 1980, PI  
Universal Foods Corporation  
Biochemistry of Yeast Cell Membranes, 1980-1984, PI  
General Foods Fund  
Reduction of Linolenic Acid from Soybean Oil, 1979-1981, PI  
Mobil Oil Foundation  
Enzyme Research Project, 1981-1982, PI

### **Review Panels**

National Institutes of Health  
Biochemistry and Biophysics of Membranes Study Section, Member, 2011-2015  
Biological Chemistry and Macromolecular Biophysics Study Section, Ad Hoc Member, 2010 (Chair), 2009, 2008 (Chair), 2006  
Chemistry and Related Sciences Special Emphasis Panel, 1998, 2004

Physiological Chemistry Study Section, Member, 1988-1992, 1998-2002  
Physiological Chemistry Study Section, Ad Hoc Member, 1984, 1986, 1987  
Reviewers Reserve, 1992-1996  
Special Topics in Biological Sciences Study Section, Chair, 2008  
Study Section Boundaries Team (for Biological Chemistry and Macromolecular Biophysics Integrated Review Groups), 2003  
National Science Foundation: Review Panel for Research Experiences for Undergraduates, 1987  
Biotechnology and Biological Sciences Research Council of Scotland, Hannah Research Institute Visiting Group, 1999  
Medical University of South Carolina, Department of Biochemistry and Molecular Biology, External Advisory Board, Chair, 2002, 2005  
University of Massachusetts, Food Microbiology Review Committee, 1980

### ***Meeting Committees***

American Society for Biochemistry and Molecular Biology  
Search Committee, JBC Editor-in-Chief, Member, 2015-2016  
Annual Meeting Program Planning Committee, Co-chair, 2006, 2001, Member, 1998, 2002-2004  
Lipid Research Division, Director, 2017-present, Steering Committee, 2010-2017  
Meetings Committee, 2001-2004, Chair, 2002-2004  
National Council, 2000-2001, 2002-2006  
Strategic Plan Retreat, 2000  
Satellite Meeting "Membrane Lipids and Cell Function," Co-organizer, 2001  
Satellite Meeting "Molecular Characterization of Membrane Lipid Metabolism," Co-organizer, 1998  
Theme Meeting "Biochemistry and Molecular Biology of Lipids," Co-organizer, 2006  
Federation of American Societies for Experimental Biology (FASEB)  
Experimental Biology Executive Board, 2005-2008  
FASEB Summer Research Conferences Advisory Committee, 2003-2009  
FASEB Science Research Conference, "Phospholipid Cell Signaling and Metabolism in Inflammation and Cancer, Co-organizer, 2014  
Gordon Research Conference-Molecular and Cellular Biology of Lipids  
Chair, 1993, Advisory Committee, 1993-present  
International Conference on the Bioscience of Lipids, Steering Committee, 2010-2013  
Keystone Symposia, "Cell Activation and Signal Transduction: Lipid Second Messengers IV," Organizer, 2000  
Institute of Food Technologists  
Annual Meeting Program Committee, 1981-1984  
Chairperson to Scientific Sessions of Annual Meetings 1982, 1983  
NY Section, Seminar Chair, 1984-1985  
Phi Tau Sigma, President of Rutgers University Chapter, 1979-1981  
Theobald Smith Society, NJ Branch of the American Society for Microbiology  
President, 1997-1998, President Elect and Program Chair, 1996-1997  
Local Councilor, 1994-1996  
Waksman Award Committee, 1999-2001, Chair 2000  
USDA Northeast Regional Project NE-116, Chair, 1982-1984, Secretary, 1980-1982  
Yeast Lipid Conference, Steering Committee, 2005-2018.

### ***Community Service***

Cub Scouts, Troop 66, Den Leader, 1997-1999.  
Boy Scouts, Troop 88, Merit badge councilor, 2007-2012, Troop committee, 2007-2013.

West Windsor Township, Basketball Coach, 1998, 1999, 2002, 2003, 2005-2007, 2012; Little League Baseball Coach, 1995, 2001, 2003, 2004, 2007; Girls Softball Coach, 2000; Swimming Official, 2002-2005.

West Windsor-Plainsboro School System, Science Inventors Judge, 1995; Math Partners, development of mathematics curriculum, 1993

### ***Collaborators***

Khosrow Adeli, Markus Aebi, Robert M. Bell, Enoch P. Baldwin, Kendall J. Blumer, Dawn L. Brasaemle, David N. Brindley, James R. Broach, Roman Chrast, Mark Christian, Günther Daum, Pascale de Lonlay, Edward A. Dennis, Joseph L. Dixon, William Dowhan, Joseph Eichberg, Scott Emr, Anthony S. Fischl, Susan A. Henry, Michael Kazmaier, Claudia Kent, Kyung-Sup Kim, Christopher R. McMaster, Alfred R. Merrill, Merce Miranda, Thomas J. Montville, Joseph T. Nickels, Jr., Robert A. Niederman, Odile Ozier-Kalogeropoulos, Christian R.H. Raetz, Symeon Siniosoglou, Myron Solberg, Paul Sternweis, Judith Storch, Stephen L. Sturley, Ming-Daw Tsai, Dennis R. Voelker, Charles J. Waechter, Bruce P. Wasserman, Josef Wissing, Raphael A. Zoeller

### ***Teaching/Mentoring***

#### Courses Taught

Undergraduate: Food Chemistry, Topics in Food Chemistry, Food and Enzymes

Graduate: Food Enzymology, Lipids and Signal Transduction, Food Fundamentals II

(participate), Advanced Biochemistry (participate), Biochemistry and Molecular Biology (participate), Yeasts (participate), Microbial Biochemistry (participate),

### ***Current Laboratory Members (12)***

Prabuddha Dey (postdoctoral), Gil-Soo Han (research assistant professor), Azam Hassaninasab (postdoctoral), Sara Hazaveh (undergraduate), Meagan Hennessy (graduate), Joanna Kwiatak (postdoctoral), Kimberly Lai (undergraduate), Katelyn Meyler (graduate), Mona Mirheydari (postdoctoral), Yeon Hee Park (postdoctoral), Yunjung Shin (undergraduate), Erica Weber (undergraduate)

### ***Former Laboratory Members***

#### Postdoctoral Fellows/Research Associates (23)

Sreenivas Avula (1999-2005), Myonsuk Bae-Lee (1988-1989), Maria Bruno (1993-1995), Hyeon-Son Choi (2008-2011), Lorena Eiguez (2007-2008), Stylianos Fakas (2008-2014), Donna Fugit (1983), Kathleen Holland (1986), Michael J. Homann (1988), Lu-Sheng Hsieh (2011-2016), Michael C. Kersting, (2002-2005), Keunsung Kim (1997-1999), Anthony J. Kinney (1988-1989), Virginia M. McDonough (1992-1995), Jeanelle Morgan (2006-2009), Shanthi Rangaswamy (1995-1996), Joseph E. Stukey (1993-1995), Wen-Min Su (2013-2017), David A. Toke (1996-1999), Zhi Xu (2009-2011), Kathleen Welsch (1988), Ying Yu (2000-2002), Geri M. Zeimet (1995-1997)

#### Ph.D. Recipients (32)

Myongsuk Bae-Lee (1986), Charles J. Belunis (1989), Rosa J. Buxeda (1993), Minjung Chae (2013), Yu-Fang Chang (2007), Mal-Gi Choi (2006), Hyeon-Son Choi (2008), Michael C. Cirigliano (1986), Anthony S. Fischl (1986), Paulette M. Gaynor (1989), Seung-Hee Han (2007), Michael J. Homann (1987), Wendy Iwanyshyn (2005), Michael J. Kelley (1989), Kee-Hong Kim (1999), Yi-Ping Lin (1991), Kelly R. Morlock (1991), He Mu (2000), Joseph T. Nickels Jr. (1993), June Oshiro (2003), Darin B. Ostrander (1998), Apostolos Pappas (1999), Tae-Sik Park (2001), Yeonhee Park (2015), Florencia Pascual (2013), Margaret A. Poole (1986), Yixuan Qiu (2016), Aníbal Soto-Cardalda (2010), Wen-Min Su (2013), Wen-I Wu (1995), Weng-Lang Yang (1996), Ying Yu (2000)

## M.S. Recipients (18)

Mal-Gi Choi (2003), Jeffery J. Cousminer (1982), Deirdre A. Dillion (1997), Steven M. Felder (1980), Anthony S. Fischl (1983), Jamie Furneisen (1999), Michael J. Homann (1984), Joyce M. Hromy (1986), Celeste N. Johnston (2002), Chrysanthos Konstantinou (2011), Maureen McKenzie (1982), Douglas Minck (1989), Anupama Nadkarni (1994), Daniel J. O'Brien (2001), June Oshiro (1999), Jennifer Quinlan (1991), Michele Robinson (1981), Jeanette E. Quinn (2001)

## Undergraduate Students (59)

### **Refereed Publications (209)**

1. Han, G.-S., and G. M. Carman. 2017. Yeast *PAH1*-encoded phosphatidate phosphatase controls the expression of *CHO1*-encoded phosphatidylserine synthase for membrane phospholipid synthesis. *J. Biol. Chem.* 292: 13230-13242.
2. Hassaninasab, A., G.-S. Han, and G. M. Carman. 2017. Tips on the analysis of phosphatidic acid by the fluorometric coupled enzyme assay. *Anal. Biochem.* 526: 69-70.
3. Dey, P., W.-M. Su, G.-S. Han, and G. M. Carman. 2017. Phosphorylation of lipid metabolic enzymes by protein kinase C requires phosphatidylserine and diacylglycerol. *J. Lipid Res.* 58: 742-751.
4. Qiu, Y., A. Hassaninasab, G.-S. Han, and G. M. Carman 2016. Phosphorylation of Dgk1 diacylglycerol kinase by casein kinase II regulates phosphatidic acid production in *Saccharomyces cerevisiae*. *J. Biol. Chem.* 291: 26455-26467.
5. Temprano, A., H. Sembongi, G. S. Han, D. Sebastian, J. Capellades, C. Moreno, J. Guardiola, M. Wabitsch, C. Richart, O. Yanes, A. Zorzano, G. M. Carman, S. Siniossoglou, and M. Miranda. 2016. Redundant roles of the phosphatidate phosphatase family in triacylglycerol synthesis in human adipocytes. *Diabetologia* 59: 1985-1994.
6. Hsieh, L.-S., W.-M. Su, G.-S. Han, and G.M. Carman. 2016. Phosphorylation of yeast Pah1 phosphatidate phosphatase by casein kinase II regulates its function in lipid metabolism. *J. Biol. Chem.* 291: 9974-9990.
7. Barneda D., J. Planas-Iglesias, M. L. Gaspar, D. Mohammadyani, S. Prasannan, D. Dormann, G. S. Han, S. A. Jesch, G. M. Carman, V. Kagan, M. G. Parker, N. T. Ktistakis, J. Klein-Seetharaman, A. M. Dixon, S. A. Henry, and M. Christian. 2015. The brown adipocyte protein CIDEA promotes lipid droplet fusion via a phosphatidic acid-binding amphipathic helix. *Elife*. DOI: 10.7554/eLife.07485
8. Park Y., G. S. Han, E. Mileykovskaya, T. A. Garrett, and G. M. Carman. 2015. Altered lipid synthesis by lack of yeast Pah1 phosphatidate phosphatase reduces chronological life span. *J. Biol. Chem.* 290: 25382-25394.
9. Barbosa A. D., H. Sembongi, W. M. Su, S. Abreu, F. Reggiori, G. M. Carman, and S. Siniossoglou. 2015. Lipid partitioning at the nuclear envelope controls membrane biogenesis. *Mol. Biol. Cell* 26: 3641-3657.
10. Merrill, A.H., Jr., and G. M. Carman. 2015. Introduction to thematic minireview series: novel bioactive sphingolipids. *J. Biol. Chem.* 290: 15362-15364.

11. Hsieh L.-S., W.-M. Su, G.-S. Han, and G. M. Carman. 2015. Phosphorylation regulates the ubiquitin-independent degradation of yeast Pah1 phosphatidate phosphatase by the 20S proteasome. *J. Biol. Chem.* 290: 11467-78.
12. Sahu-Osen, A., G. Montero-Moran, M. Schittmayer, K. Fritz, A. Dinh, Y.-F. Chang, D. McMahon, A. Boeszoermyeni, I. Cornaciu, D. Russell, M. Oberer, G. M. Carman, R. Birner-Gruenberger, and D. L. Brasaemle. 2015. CGI-58/ABHD5 is phosphorylated on Ser-239 by protein kinase A: Control of subcellular localization. *J. Lipid Res.* 56: 109-121.
13. Su, W.-M., G.-S. Han, and G. M. Carman. 2014. Yeast Nem1-Spo7 protein phosphatase activity on Pah1 phosphatidate phosphatase is specific for the Pho85-Pho80 protein kinase phosphorylation sites. *J. Biol. Chem.* 289: 34699-34708.
14. Gomez-Cambronero, J. and G. M. Carman 2014. Thematic minireview series on phospholipase D and cancer. *J. Biol. Chem.* 289: 22554-22556.
15. McMahon, D., A. Dinh, D. Kurz, D. Shah, G.-S. Han, G. M. Carman, and D. L. Brasaemle 2014. Comparative gene identification 58/alpha/beta hydrolase domain 5 lacks lysophosphatidic acid acyltransferase activity. *J. Lipid Res.* 55: 1750-1761.
16. Su, W.-M., Han, G.-S., and Carman, G. M. 2014. Cross-talk phosphorylations by protein kinase C and Pho85p-Pho80p protein kinase regulate Pah1p phosphatidate phosphatase abundance in *Saccharomyces cerevisiae*. *J. Biol. Chem.* 289: 18818-18830.
17. Pascual, F., L.-S. Hsieh, A. Soto-Cardalda, and G. M. Carman 2014. Yeast Pah1p phosphatidate phosphatase is regulated by proteasome-mediated degradation. *J. Biol. Chem.* 289: 9811-9822.
18. Pascual F., A. Soto-Cardalda, G. M. Carman. 2013. *PAH1*-encoded phosphatidate phosphatase plays a role in the growth phase- and inositol-mediated regulation of lipid synthesis in *Saccharomyces cerevisiae*. *J. Biol. Chem.* 288: 35781-35792.
19. Gallo-Ebert, C., M. Donigan, H. Y. Liu, F. Pascual, M. Manners, D. Pandya, R. Swanson, D. Gallagher, W. Chen, G. M. Carman, and J. T. Nickels, Jr. 2013. The yeast anaerobic response element AR1b regulates aerobic antifungal drug-dependent sterol gene expression. *J. Biol. Chem.* 288: 35466-35477.
20. Sembongi, H., M. Miranda, G.-S. Han, S. Fakas, N. Grimsey, J. Vendrell, G. M. Carman, and S. Siniossoglou 2013. Distinct roles of the phosphatidate phosphatases lipin 1 and 2 during adipogenesis and lipid droplet biogenesis in 3T3-L1 cells. *J. Biol. Chem.* 288: 34502-34513.
21. Michot, C., A. Mamoune, J. Vamecq, M. T. Viou, L.-S. Hsieh, E. Testet, J. Laine, L. Hubert, A. F. Dessen, M. Fontaine, C. Ottolenghi, L. Fouillen, K. Nadra, E. Blanc, J. Bastin, S. Candon, M. Pende, A. Munnich, A. Smahi, F. Djouadi, G. M. Carman, N. Romero, Y. de Keyzer, and P. de Lonlay 2013. Combination of lipid metabolism alterations and their sensitivity to inflammatory cytokines in human lipin-1-deficient myoblasts. *Biochim. Biophys. Acta* 1832: 2103-2114.
22. Qiu, Y., S. Fakas, G.-S. Han, A.D. Barbosa, S. Siniossoglou, and G. M. Carman. 2013. Transcription factor Reb1p regulates *DGK1*-encoded diacylglycerol kinase and lipid metabolism in *Saccharomyces cerevisiae*. *J. Biol. Chem.* 288: 29124-29133.

23. Kim, H. E., E. Bae, D.-Y. Jeong, M.-J. Kim, W.-J. Jin, S. W. Park, G.-S. Han, G. M. Carman, E. Koh, and K.-S. Kim. 2013. Lipin1 regulates PPAR $\gamma$  transcriptional activity. *Biochem.J.* 453: 49-60.
24. Karanasios, E., A. D. Barbosa, H. Sembongi, M. Mari, G.-S. Han, F. Reggiori, G. M. Carman, and S. Siniosoglou. 2013. Regulation of lipid droplet and membrane biogenesis by the acidic tail of the phosphatidate phosphatase Pah1p. *Mol.Biol.Cell* 24: 2124-2133.
25. Chae, M. and G.M. Carman. 2013. Characterization of the yeast actin patch protein App1p phosphatidate phosphatase. *J. Biol. Chem.* 288: 6427-6437.
26. Pascual, F. and G. M. Carman. 2013. Phosphatidate phosphatase, a key regulator of lipid homeostasis. *Biochim. Biophys. Acta.* 1831: 514-522.
27. Chae, M., G.-S. Han, and G. M. Carman. 2012. The *Saccharomyces cerevisiae* actin patch protein App1p is a phosphatidate phosphatase enzyme. *J. Biol. Chem.* 287: 40186-40196.
28. Nadra, K., J. J. Medard, J. D. Mul, G.-S. Han, S. Gres, M. Pende, D. Metzger, P. Chambon, E. Cuppen, J. S. Saulnier-Blache, G. M. Carman, B. Desvergne, and R. Chrast. 2012. Cell autonomous lipin 1 function is essential for development and maintenance of white and brown adipose tissue. *Mol. Cell Biol.* 32: 4794-4810.
29. Carman, G. M. 2012. An unusual phosphatidylethanolamine-utilizing cardiolipin synthase is discovered in bacteria. *Proc. Natl. Acad. Sci. U. S. A* 109:16402-16403.
30. Su, W.-M., G.-S. Han, J. Casciano, and G. M. Carman. 2012. Protein kinase A-mediated phosphorylation of Pah1p phosphatidate phosphatase functions in conjunction with the Pho85p-Pho80p and Cdc28p-cyclin B kinases to regulate lipid synthesis in yeast. *J. Biol. Chem.* 287:33364-33376.
31. Choi, H. S., W. M. Su, G. S. Han, D. Plote, Z. Xu, and G. M. Carman. 2012. Pho85p-Pho80p phosphorylation of yeast Pah1p phosphatidate phosphatase regulates its activity, location, abundance, and function in lipid metabolism. *J. Biol. Chem.* 287: 11290-11301.
32. Henry, S.A., S.D. Kohlwein, and G.M. Carman. 2012. Metabolism and regulation of glycerolipids in the yeast *Saccharomyces cerevisiae*. *Genetics* 190: 317-349.
33. Carman, G. M. 2012. Thematic minireview series on the lipid droplet, a dynamic organelle of biomedical and commercial importance. *J. Biol. Chem.* 287: 2272.
34. Xu Z., W. M. Su, G. M. Carman. 2012. Fluorescence spectroscopy measures yeast PAH1-encoded phosphatidate phosphatase interaction with liposome membranes. *J. Lipid Res.* 53: 522-528.
35. Soto-Cardalda A., S. Fakas, F. Pascual, H. S. Choi, G. M. Carman. 2011. Phosphatidate phosphatase plays role in zinc-mediated regulation of phospholipid synthesis in yeast. *J. Biol. Chem.* 287: 968-977.
36. Fakas, S., Y. Qiu, J. L. Dixon, G.-S. Han, K. V. Ruggles, J. Garbarino, S. L. Sturley, and G. M. Carman. 2011. Phosphatidate phosphatase activity plays a key role in protection against fatty acid-induced toxicity in yeast. *J. Biol. Chem.* 286:29074-29085.

37. Wang, H., J. Zhang, W. Qiu, G.-S. Han, G. M. Carman, and K. Adeli. 2011. Lipin-1 $\gamma$  isoform is a novel lipid droplet-associated protein highly expressed in the brain. *FEBS Lett.* 585, 1279-1284.
38. Mul, J. D., K. Nadra, N. B. Jagalur, I. J. Nijman, P. W. Toonen, J. J. Medard, S. Gres, B. A. de, G.-S. Han, J. F. Brouwers, G.M. Carman, J. S. Saulnier-Blache, D. Meijer, R. Chrast, and E. Cuppen 2011. A hypomorphic mutation in *Lpin1* induces progressively improving neuropathy and lipodystrophy in the rat. *J.Biol.Chem.* 286: 26781-26793.
39. Choi, H.-S., W.-M. Su, J. M. Morgan, G.-S. Han, Z. Xu, E. Karanasios, S. Siniosoglou, and G. M. Carman. 2011. Phosphorylation of phosphatidate phosphatase regulates its membrane association and physiological functions in *Saccharomyces cerevisiae*. Identification of Ser<sup>602</sup>, Thr<sup>723</sup>, and Ser<sup>744</sup> as the sites phosphorylated by CDC28 (CDK1)-encoded cyclin-dependent kinase. *J. Biol. Chem.* 286:1486-1498.
40. Fakas, S., C. Konstantinou, and G. M. Carman. 2011. *DGK1*-encoded diacylglycerol kinase activity is required for phospholipid synthesis during growth resumption from stationary phase in *Saccharomyces cerevisiae*. *J. Biol. Chem.* 286:1464-1474.
41. Carman, G.M., and G.-S. Han. 2011. Regulation of phospholipid synthesis in the yeast *Saccharomyces cerevisiae*. *Ann. Rev. Biochem.* 80: 859-883.
42. Carman, G.M. 2011. The discovery of the fat-regulating phosphatidic acid phosphatase gene. *Front. Biol.* 6: 172-176.
43. Karanasios, E., G.-S. Han, Z. Xu, G. M. Carman, and S. Siniosoglou. 2010. A phosphorylation-regulated amphipathic helix controls the membrane translocation and function of the yeast phosphatidate phosphatase. *Proc. Natl. Acad. Sci. U. S. A.* 107:17539-17544.
44. Han, G.-S. and G. M. Carman. 2010. Characterization of the human *LPIN1*-encoded phosphatidate phosphatase isoforms. *J. Biol. Chem.* 285: 14628-14638.
45. Choi, H.-S., G.-S. Han, and G. M. Carman. 2010. Phosphorylation of yeast phosphatidylserine synthase by protein kinase A. Identification of Ser<sup>46</sup> and Ser<sup>47</sup> as major sites of phosphorylation. *J. Biol. Chem.* 285: 11526-11536.
46. Montero-Moran, G., J. M. Caviglia, D. McMahon, A. Rothenberg, V. Subramanian, Z. Xu, S. Lara-Gonzalez, J. Storch, G.M. Carman, and D.L. Brasaemle. 2010. CGI-58/ABHD5 is a coenzyme A-dependent lysophosphatidic acid acyltransferase. *J. Lipid Res.* 51: 709-719.
47. Haller, J. F., C. Smith, D. Liu, H. Zheng, K. Tornheim, G.-S. Han, G. M. Carman, and R. A. Zoeller. 2010. Isolation of novel animal cell lines defective in glycerolipid biosynthesis reveals mutations in glucose-6-phosphate isomerase. *J. Biol. Chem.* 285: 866-877.
48. Elswaifi, S. F., F. St. Michael, A. Sreenivas, A. Cox, G.M. Carman, and T.J. Inzana. 2009. Molecular characterization of phosphorylcholine expression on the lipooligosaccharide of *Histophilus somni*. *Microb.Pathog.* 47: 223-230.
49. Carman, G.M., and G.-S. Han. 2009. Regulation of phospholipid synthesis in yeast. *J. Lipid Res.* 50: S69-S73.
50. Carman, G.M., and G.-S. Han. 2009. Phosphatidic acid phosphatase, a key enzyme in the regulation of lipid synthesis. *J. Biol. Chem.* 284: 2593-2597.



51. Grimsey, N., G. S. Han, L. O' Hara, J. J. Rochford, G. M. Carman, and S. Siniosoglou. 2008. Temporal and spatial regulation of the phosphatidate phosphatases lipin 1 and 2. *J. Biol. Chem.* 283: 29166-29174.
52. Han, G.-S., L. O' Hara, G.M. Carman, and S. Siniosoglou. 2008. An unconventional diacylglycerol kinase that regulates phospholipid synthesis and nuclear membrane growth. *J. Biol. Chem.* 283: 20433-20442.
53. Han, G.-S., L. O' Hara, S. Siniosoglou, and G.M. Carman. 2008. Characterization of the yeast *DGK1*-encoded CTP-dependent diacylglycerol kinase. *J. Biol. Chem.* 283: 20443-20453.
54. Chang, Y.-F., and G.M. Carman. 2008. CTP synthetase and its role in phospholipid synthesis in the yeast *Saccharomyces cerevisiae*. *Prog. Lipid Res.* 47: 333-339.
55. Nadra, K., A.-S. de Preux Charles, J.-J. Médard, W.T. Hendriks, G.-S. Han, S. Grès, G.M. Carman, J.-S. Saulnier-Blache, M.H.G. Verheijen, and R. Chrast. 2008. Phosphatidic acid mediates demyelination in *Lpin1* mutant mice. *Genes Dev.* 22, 1647-1661.
56. Soto, A., and G.M. Carman. 2008. Regulation of the *Saccharomyces cerevisiae* *CKI1*-encoded choline kinase by zinc depletion. *J. Biol. Chem.* 283: 10079-10088.
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