CURRICULUM VITAE

Cungui Mao, Ph.D.

Appointments
2002-Present Assistant Professor,
Division of General Internal Medicine - Geriatrics
Department of Medicine
Medical University of South Carolina

2003-Present Joint Assistant Professor
Department of Biochemistry and Molecular Biology
Medical University of South Carolina, Charleston, SC

1998-2002 Research Assistant Professor
Division of General Internal Medicine – Geriatrics, Department of Medicine
Medical University of South Carolina, Charleston, SC

Postdoctoral training
1994-1998 Postdoctoral Fellow, Department of Medicine
Duke University Medical Center, Durham, NC

1992-1994 Postdoctoral Fellow**,** Shanghai Institute of Biological Sciences
Chinese Academy of Sciences, Shanghai, China

Education
1989-1992 East China Normal University, Shanghai, China
Ph.D. in Biochemistry

1985-1988 East China Normal University, Shanghai, China
Master's degree of Science in Cell Biology

1981-1985 Hangzhou University, Zhejiang Province, China
Bachelor degree of Sciences in Biology

Professional societies
American Society for Cell Biology
American Society for Biochemistry and Molecular Biology
American Association for the Advancement of Science

Award
The Sphinx Pharmaceuticals postdoctoral award, 1997.

Ad hoc reviewer
Journal of Lipid Research
Biochemical Journal
Acta Pharmacologica Sinica

Teaching experience
Spring 2003 Lipid course, Biochemistry, Medical University of South Carolina

Grant support

R01 CA10483 (Mao) 7/1/04 - 6/30/09
NIH/NCI
Role on the Project: PI
Alkaline ceramidase and sphingolipid signaling
The goal is to define the role of the alkaline ceramidase 2 (ACER2) in regulating the levels of S1P and S1P-mediated tumor growth and angiogenesis.

R01 GM062887-02 (Obeid) 5/1/01-4/30/09
NIH/NIGMS
Role on the Project: Co-Investigator
Sphingosine phosphate phosphatases--regulation and role
The goals of this project are 1) to clone and characterize murine and human sphingosine phosphate phosphatases; 2) to define their roles in regulating the levels of S1P; and 3) to define roles of these enzymes in cell regulations.

1P20RR017677 Project 5 (Mao) 9/26/02-06/30/07
NIH/NCRR
Role on the Project: PI
COBRE Project 5: Human alkaline phytoceramidase regulation of angiogenesis
The goal is to define roles of the human alkaline phytoceramidase (ACER3) in angiogenesis using a mouse gene-targeting model.

GC-3319-05-44598CM
Science Applications Intl. Corp (SAIC)
Role on the Project: PI 12/15/05 - 8/15/06
Role of human alkaline ceramidase in skin cancer
The goal is to understand the role of the human alkaline ceramidase (ACER1) in regulating the growth and differentiation of skin tumor cells

42153MK-GC-3532/N66001-03 (Mao) 9/2/03-08/31/05
DOD (Hollings Cancer Center)
Role on the Project: PI
Role of human alkaline phytoceramidase (ACER3) in tumor growth
The goal is to understand the role of the human alkaline phytoceramidase (ACER3) in regulating tumor growth and apoptosis.

Publications

1. **Mao, C**., Wang, K, and Yan, J. (1992) Induction, isolation and purification of polygalacturonase from *Fusarium oxsporum. Acta Biochimica et Biophysica Sinica*, 24: 239-246.
2. **Mao, C**., Wang, K, and Yan, J. (1993) Characterization of endo-polygalacturonase from *Fusarium oxysporum*. *Acta Biochimica et Biophysica Sinica,* 25:151-157.
3. **Mao, C**. and Wang, K.(1993) Immobilization of endo-polygalacturonase on partially hydrolyzed agarose beads and its properties. *Chinese Biochemical Journal*, 9:390-394.
4. **Mao, C**., Kim, S., Almenoff, JA., Rudner, XL., and Kindman, LA. (1996) Molecular cloning and characterization of SCaMPER, a sphingolipid-Ca2+ release mediating protein of endoplasmic reticulum. *Proc. Natl. Acad. Sci.* 93: 1993-1996.

5. **Mao, C.,** Wadleigh, M., Hannun, Y. and Obeid, LM. (1997) Identification and characterization of *Saccharomyces cerevisiae* dihydrosphingosine-1-phosphate phosphatase. *J. Biol. Chem.* 272: 28690-28694.
6. Jenkins, G.M., Richards, A., Wahl, T., **Mao, C**., Obeid, L., and Hannun, Y. (1997). Involvement of yeast sphingolipids in the heat stress response of *Saccharomyces cerevisiae*. *J. Biol. Chem,* 272**:** 32566-32572.
7. **Mao, C**., Saba, J., and Obeid, L. (1999) The dihydrosphingosine-1-phosphate phosphatases *of Saccharomyces cerevisiae* are important regulators of cell proliferation and heat stress responses. *Biochem, J.* 342: 667-675.
8. Guo, W-X., **Mao, C**., Obeid, LM., and Boustany, RM. (1999) A disrupted homologue of the human CLN3 or juvenile neuronal ceroid lipofuscinosis gene in *Sacharomyces cerevisiae*: A model to study batten disease. Cellular and Molecular Neurobiology 19: 671-680.
9. **Mao, C.,** Xu, R., Bielawska, A., and Obeid, ML. (2000) Cloning of an alkaline ceramidase from *Saccharomyces cerevisiae*. An enzyme with reverse (CoA-independent) ceramide synthase activity. *J. Biol. Chem.* 275: 6876-6884.
10. **Mao, C.,** Xu, R., Bielawska, A., Szulc, M.Z., and Obeid, M.L. (2000) Cloning and characterization of a *Saccharomyces cerevisiae* alkaline ceramidase with specificity for dihydroceramide. *J. Biol. Chem,* 275: 31369-31378.
11. Sawai, H., Okamoto, Y., Luberto, C., **Mao, C**., Bielawska, A., Domae, N., and Hannun, Y.A. (2000) Identification of ISC1 (YER019w) as inositol phosphosphingolipid phospholipase C in *Saccharomyces cerevisiae*. *J. Biol. Chem,* 275: 39793-39798.
12. **Mao, C.,** Xu, R., Szulc, Z.M., Bielawska, A., Galadari, S.H., and Obeid, L.M. (2001) Cloning and characterization of a novel human alkaline ceramidase: a mammalian enzyme that hydrolyzes phytoceramide. *J. Biol. Chem.* 276: 26577-26588.
13. Boujaoude, L.B., Wilder-Bradshaw, C.B., **Mao, C.,** Cohn, J., Ogretmen, B., Hannun, Y.A., and Obeid, L.M. (2001) CFTR regulates uptake of sphingoid base phosphates and LPA. *J. Biol. Chem.* 276: 35258-35264.
14. Chung, N., **Mao, C**., Heitman, J., Hannun, Y. A., and Obeid, L. M. (2001) Phytosphingosine as a specific inhibitor of growth and nutrient import in *Saccharomyces cerevisiae*. *J. Biol. Chem.* 276: 35614-35621.
15. Sato, M., Markiewicz, M., Yamanaka, M., Bielawska, A., **Mao, C.,** Obeid, L.M., Hannun, Y.A., and Trojanowska, M. (2003) Modulation of transforming growth factor-beta (TGF-beta) signaling by endogenous sphingolipid mediators. *J. Biol. Chem.* 278:9276-9282.
16. **Mao, C.,** Xu, R., Szulc, Z.M., Bielawski J., Becker, K.P., Bielawska, A., Galadari, S.H., Hu, W., and Obeid, L.M. (2003) Cloning and characterization of a mouse endoplasmic reticulum alkaline ceramidase. *J. Biol. Chem.* **278**:31184-31191.
17. Johnson, K.R., Johnson, K.Y., Becker, K.P., Bielawski, J., **Mao, C.,** and Obeid, L.M. (2003) Role of human sphingosine-1-phosphate phosphatase 1 in the regulation of intra and extracellular sphingosine-1-phosphate levels and cell viability. *J. Biol. Chem.* 278: 34541-34547.
18. Liang F, Hu W, Schulte BA, **Mao C**, Qu C, Hazen-Martin DJ, Shen Z. (2004) Identification and characterization of an L-type Cav1.2 channel in spiral ligament fibrocytes of gerbil inner ear. *Brain Res Mol Brain Res*. 125:40-6.
19. Hu W, Xu R, Zhang G, Jin J, Szulc ZM, Bielawski J, Hannun YA, Obeid LM, **Mao C**. (2005) Golgi fragmentation is associated with ceramide-induced cellular effects. *Mol Biol Cell.* 16:1555-67.
20. Galadari S, Wu BX, **Mao C**, Roddy P, El Bawab S, Hannun YA. (2006) Identification of a novel amidase motif in neutral ceramidase. *Biochem J.* 393:687-95.
21. Houben E, Holleran WM, Yaginuma T, **Mao C**, Obeid LM, Rogiers V, Takagi Y, Elias PM, Uchida Y. (2006) Differentiation-associated expression of ceramidase isoforms in cultured keratinocytes and epidermis. *J Lipid Res*. 47: 1063-70.

22. Xu R, Jin J, Hu W, Sun W, Bielawski J, Szulc Z, Taha T, Obeid LM**, Mao C.** (2006) Golgi alkaline ceramidase regulates cell proliferation and survival by controlling levels of sphingosine and S1P. *FASEB J*. 20:1813-25.
23. Sun W, Xu R, Hu W, Jin J, Crellin HA, Bielawski J, Szulc ZM, Thiers BH, Obeid LM, **Mao C.** (2007) Upregulation of the human alkaline ceramidase 1 and acid ceramidase mediates calcium-induced differentiation of epidermal keratinocytes. *J. of Invest. Dermatol.* 128:389-97.
24. Aerts AM, Zabrocki P, François IE, Carmona-Gutierrez D, Govaert G, **Mao C**, Smets B, Madeo F, Winderickx J, Cammue BP, Thevissen K (2008) Ydc1p ceramidase triggers organelle fragmentation, apoptosis and accelerated ageing in yeast. *Cell Mol Life Sci.* 65:1933-42.
25. Sun W., Hu W, Xu R., Jin J, Szulc ZM., Zhang G, Galadari SH., Obeid ML, and **Mao C** (2008) Alkaline ceramidase 2 regulates beta1 integrin maturation and cell adhesion. *FASEB J.* 23:656-66.
26. Gong, Z, Zhou,W., Yu, H., **Mao, C**., Zhang, C., Cheng, J., Zhu, Z. (2009) Cloning, expression and functional analysis of a general odorant-binding protein 2 gene of the striped stem borer, *Chilo suppressalis*. *Insect Mol. Biol. In press.*

Reviews/Chapters

1. **Mao, C.,** and Obeid, L.M. (1999) Yeast Sphingosine-1-P Phosphatases: Assay, Expression, Deletion, Purification, and Cellular Localization by GFP Tagging. Merrill, A.H. and Hannun, Y.A. eds. Chapter 26: *Methods in Enzymology*, Volume 311: *Sphingolipid Metabolism and Cell Signaling*. (Academic Press)
2. Bawab,S.E., **Mao**, C., Obeid, L.M. and Hannun, Y.A. (2002) Ceramidases in the regulation of ceramide levels and function. Subcellular Biochemistry: *Phospholipid Metabolism in Apoptosis*, **36**, 187-205.
3. Obeid, L.M., Okamoto Y, **Mao, C.** (2002) Yeast sphingolipids: metabolism and biology. *Biochimica et Biophysica Acta 55983, 1-8.*
4. **Mao**, C., and Obeid,ML (2002) Ceramidases: Regulators of Turnover of Ceramide and Ceramide-Mediated Responses. In: Ceramide Signaling. Editor: Anthony H. Futerman, Landes Bioscience. ISBN: 1-58706-137-6.
5. **Mao, C**., and Obeid, L.M. (2008) Ceramidases: regulators of cellular responses mediated by ceramide, sphingosine, and sphingosine-1-phosphate*. Molecular and Cell Biology of Lipids.* Tigyi, G. (Guest Editor) ISSN 7388-1981. 1781:424-434.