

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.
Follow the sample format for each person. DO NOT EXCEED FOUR PAGES.

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|--|---------------------------|---------------------|----------------|
| NAME | | POSITION TITLE | |
| Lee M. Graves | | Associate Professor | |
| EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.) | | | |
| INSTITUTION AND LOCATION | DEGREE (if applicable) | YEAR(s) | FIELD OF STUDY |
| Iowa State University, Ames, IA | B.S. | 1982 | Biochemistry |
| University of Illinois, Urbana, IL | Ph.D. | 1990 | Biochemistry |
| University of Washington, Seattle, WA | Postdoc | 1994 | Pharmacology |

A. POSITIONS AND HONORSPositions and Employment

- 1990-1994 Postdoctoral Research Fellow, Department of Pharmacology, University of Washington, Seattle, WA
- 1994-1995 Lecturer, Department of Pharmacology, University of Washington, Seattle, WA
- 1995-2001 Assistant Professor, Department of Pharmacology, University of NC at Chapel Hill, Chapel Hill, NC
- 2001-present Associate Professor, Department of Pharmacology, University of NC at Chapel Hill, Chapel Hill, NC

Other Experience and Professional Memberships

American Society for Pharmacology and Experimental Therapeutics (ASPET) and American Society for Biochemistry and Molecular Biology (ASBMB)

Molecular Pharmacology Executive Committee

Editorial Board/ Molecular Pharmacology

Editorial Board/ Journal of Biological Chemistry

Scientific Advisory Board, Serenex Inc., Durham, NC

Chairman, Peer Review Committee (American Heart Association-Molecular Signaling 1)

Director of Graduate Studies-UNC-Chapel Hill Pharmacology Department

Honors

- 1992 American Diabetes Association Fellowship Award - University of Washington
- 2000 Jefferson-Pilot Research Award - University of North Carolina
- 2000 American Heart Association Established Investigator Award
- 2005 Secretary/Treasurer Elect Division for Molecular Pharmacology -ASPET

B. SELECTED PEER-REVIEWED PUBLICATIONS (since 2000)

1. **Graves, L.M.**, Guy, H., Kozlowski, P., Huang, M., Lazarowski, E., Pope, R.M., Collins, M.A., Dahlstrand, E.N., Earp, H.S., and Evans, D.R. (2000). Regulation of carbamoyl phosphate synthetase by MAP kinase. *Nature* 403, 328-332.
2. Sidovar, M., He, Y., Kozlowski, P., and **Graves, L.M.** (2000). Phosphorylation of Serine 43 is not required for the regulation of Raf-1 kinase by cAMP. *J. Biol. Chem* 275, 28688-28694.
3. Sorokin, A., Kozlowski, P., **Graves, L.M.**, Philip, A. (2001). Protein tyrosine kinase Pyk-2 mediates endothelin-induced p38 MAP kinase activation in glomerular mesangial cells. *J. Biol. Chem*, 276, 21521-8.
4. Lambert, J.M., Karnoub, A., **Graves, L.M.**, Campbell, S.L. and Der, C.J. (2002). Role of MLK3-mediated activation of p70S6 kinase in Rac transformation. *J. Biol. Chem.* 277, 4770-7.
5. Huang, M., Kozlowski, P., Collins, M.A., Haystead, T.A. and **Graves, L.M.** (2002). Caspase-dependent Cleavage of Carbamoyl Phosphate Synthetase II during Apoptosis. *Mol Pharm.* 61, 569-577.

6. Wu, W., Jaspers I., Zhang W., **Graves, L.M.**, Samet J.M. (2002). Role of Ras in metal-induced EGF receptor signaling and NF-kappaB activation in human airway epithelial cells. *Am J Physiol Lung Cell Mol Physiol.* May; 282(5):L1040-8.
7. Wu, W., **Graves, L.M.**, Gill, G.N., Parsons, S.J., and Samet, J.M., (2002). Src-dependent Phosphorylation of the Epidermal Growth Factor Receptor on Tyrosine 845 is Required for Zinc-induced Ras Activation. *J. Biol. Chem.* 277, 24252.
8. Huang, M., Wang, Y., Collins, M., Mitchell, B.S., and **Graves, L.M.** (2002). A77 1726 Induces Differentiation of Human Myeloid Leukemia K562 Cells by Depletion of Intracellular CTP Pools. *Mol Pharm* 62, 463-472.
9. Huang, M., Wang Y., Collins M.A., Gu J.J., Mitchell B.S., **Graves, L.M.** (2002). Inhibition of nucleoside transport by p38 MAP kinase inhibitors. *J Biol Chem.* 277, 28364-28367.
10. **Graves, L.M.**, Han, J., and Earp, H.S. 3rd (2002). Transactivation of the EGF Receptor; Is the PDGF Receptor an Unexpected Accomplice? *Molecular Interventions* 2(4), 208-212.
11. Han, J., Pope, R.M., Borchers, C., and **Graves, L.M.** (2002). Mapping of Protein Phosphorylation by Dual Enzyme Digestion and MALDI/Quadrupole TOF Mass Spectrometry. *Anal. Bioch.* 310, 215-218.
12. MacKeigan, J.P., Taxman, D.J., Hunter, D., Earp, H.S., **Graves, L.M.** and Ting, J.P-Y. (2002) Inactivation of the Antiapoptotic Phosphatidylinositol 3-Kinase-Akt Pathway by the Combined Treatment of Taxol and Mitogen-activated Protein Kinase Kinase Inhibition. *Clin. Canc. Res.* 8, 2091-2099.
13. Huang, M. and **Graves, L.M.** (2003). The De Novo Synthesis of Pyrimidine Nucleotides; Emerging Interfaces with Signal Transduction Pathways. *Cell and Molecular Life Sciences* 60(2):321-36.
14. Huang, M., Wang, Y., Cogut, S.B., Mitchell, B.S., and **Graves, L.M.** (2003). Inhibition of Nucleoside Transport by Protein Kinase Inhibitors *J. Pharm Exp. Ther.* 304, 753-760.
15. Gu J.J., Gathy, K., Santiago, L., Chen, E., Huang M., **Graves, L.M.** and Mitchell B.S. (2003). MPA Induces Apoptosis in Hemopoietic Cell Lines by Guanine Nucleotide Depletion. *Blood* 101(12):4958-65.
16. Samet, JM, Dewar BJ, Wu W, **Graves LM.** (2003) Mechanisms of Zn(2+)-induced signal initiation through the epidermal growth factor receptor. *Toxicol Appl Pharmacol.* 191(1):86-93.
17. Hilder, T.L., Tou, C.L.J, Grindeland, R.E., Wade, C.E., and **Graves, L.M.** (2003) Phosphorylation of the Insulin Receptor Substrate-1 Serine 307 Correlates with JNK Activity in Atrophic Skeletal Muscle. *FEBS* 553, 63-67.
18. Gardner, O.S., Dewar B.J., Earp H.S., Samet J.M., and **Graves L.M.** (2003) Dependence of PPAR ligand-induced MAPK signaling on epidermal growth factor receptor transactivation. *J. Biol. Chem.* 278, 46261-46269.
19. Wu, W., Samet, J.M., Silbajoris, R., Dailey, L.A., Sheppard, D., Bromberg, P.A., **Graves, L.M.** (2004) Heparin-Binding EGF Cleavage Mediates the Zinc-induced EGF Receptor Phosphorylation. *Am J Physiol Lung Cell Mol Physiol.* 30(4), 540-547.
20. Huang, M. Wang, Y.H. and **Graves, L.M.** (2004) Regulation of Equilibrative Nucleoside Uptake by Protein Kinase Inhibitors. *Nucleosides, Nucleotides and Nucleic Acids* 23, 1445-50.
21. Huang, M., Wang, Y.H., Collins, M.A., and **Graves, L.M.** (2004) CPEC Induces Erythroid Differentiation of K562 Cells Through CTP Depletion and Activation of p38 MAP Kinase *Leukemia* 18, 1857-63.
22. Lindsey-Boltz, L.A., Wauson E.M., **Graves L.M.**, Sancar A. (2004) The human Rad9 checkpoint protein stimulates the carbamoyl phosphate synthetase activity of the multifunctional protein CAD. *Nucleic Acids Res.* Aug 23;32(15):4524-30.
23. Gardner OS, Shiau CW, Chen CS and **Graves L.M.** (2005) PPAR γ independent activation of p38 MAPK by thiazolidinediones in rat liver epithelial cells requires CaMKII and protein kinase R: correlation with endoplasmic reticulum stress. *J. Biol. Chem.* (in press, Jan 13, Epub ahead of print).
24. Johnson, G.L., Dohlman, H.G., and **Graves, L.M.** (2005) Targeting MAPK Kinase Kinases (MKKKs) by Small Molecules for Selective Inhibition of Signaling Networks and Gene Expression (in press).
25. Hilder, T.L., Carlson, G.M., Haystead T.A.J., Krebs, E.G., and **Graves, L.M.** (2005) Caspase-3 dependent cleavage and activation of skeletal muscle phosphorylase b kinase. *Mol and Cellular Biochem.* (in press).
26. Hilder, T.L. Baer L.A., Fuller, C.A., Grindeland, R.E., Wade, C.E., and **Graves L.M.** (2005) Insulin-Independent Pathways Mediating Glucose Uptake in Hindlimb Suspended Skeletal Muscle *J. Applied Physiol.* (submitted).
27. Huang, M., Wang, Y., Yang, J., Shi, Y.Y., Birrer, M.J., Orlowski, R.Z., Heasley, L.E. and **Graves, L.M.** (2005) ENT1 is Negatively Regulated by Stress-activated MAP Kinases and MKP-1. *Mol Pharm* (submitted).
28. Gardner OS, Dewar B.J and **Graves L.M.** (2005) Activation of mitogen-activated protein kinases by

peroxisome proliferators-activated receptor ligands; an example of non- genomic signaling (Mini review). *Mol Pharm* (submitted).

C. CURRENT RESEARCH SUPPORT

Lee M. Graves, Ph.D.

National Institutes of Health

1 R01 GM069976-01

7/01/04-6/30/08

Regulation of Nucleoside Transporters by Protein Kinases

Project Description: The major objectives are to elucidate the mechanisms by which protein kinases regulate the expression and stability of nucleoside transporters in normal and tumor cells.

Lee M. Graves, Ph.D.

NASA

12/30/02-11/31/05

Project Description: The main objective of this proposal is to apply proteomics to study the regulation of protein kinases during skeletal muscle atrophy.