



Conditions Treated:

Research Areas:

- *Cellular and Molecular Biology*

Research Interests

Research focuses on studying the regulation and function of mammalian phospholipase A2 enzymes and the production of lipid mediators of inflammation. Our research focuses on studying cytosolic phospholipase A2alpha (cPLA2), which releases arachidonic acid for production of lipid mediators of inflammation. cPLA2 is potently activated in macrophages infected with microorganisms resulting in production of eicosanoids. This is an early response to microbial infection that initiates acute inflammatory responses. We are studying the role of pattern recognition receptors and the signal transduction mechanisms leading to activation of cPLA2 in macrophages focusing on the role of calcium mobilization and kinase activation. Calcium regulates cPLA2 by binding to an N-terminal C2 domain, which promotes translocation of cPLA2 from the cytosol to membrane for release of arachidonic acid. The role of calcium and phosphorylation of cPLA2 by mitogen-activated protein kinases in regulating its translocation to the forming phagosome during phagocytosis of zymosan is being investigated. A long-term goal is to elucidate the role of cPLA2 and production of eicosanoids in regulating susceptibility to microbial infection.

Education

University of Georgia, PhD, Microbiology

Teaching or Professional Positions

Professor, Division of Cell Biology, Department of Pediatrics, National Jewish Health

2001-Present: Pathology 6000, University of Colorado Medical School, Chemical mediators of inflammation.

2001-Present: Medical Pharmacology 6000, Anticoagulant drugs

1997-Present: FEBS Advanced Course on Lipid Signals, Chieti, Italy, Phospholipase A2 enzymes

Affiliations with the University of Colorado Denver

Professor, Departments of Pathology and Pharmacology, University of Colorado Denver

Professional Memberships

American Society for Biochemistry and Molecular Biology
Society Cell Biology

Society Leukocyte Biology

Awards & Recognition

1997-2002, Board of Scientific Counselors, NHLBI, NIH (review panel for the Intramural program, NHLBI)

2001, Biochemical Sciences Working Group (Center for Scientific Review) for review of the organization and operation of study sections

2000, Co-chairperson of FASEB Conference on Phospholipases

1998, Vice-chairperson of FASEB Conference on Phospholipases

1991-1995, NIH Study Section, Medical Biochemistry permanent member

1995, Co-chairperson of FASEB Conference on Cytokines and Lipid Mediators Editorial Boards: J. Biological Chem., Biochem. J, BMC Biochem.

Publications

Ghosh, M., Stewart, A., Tucker, D.E., Bonventre, J.V., Murphy, R.C. and Leslie, C.C. Role of cytosolic phospholipase A2 in prostaglandin E2 production by lung fibroblasts. *Amer. J. Respir. Cell Mol. Biol.* 30:91-100 (2004).

Evans, J. H., Gerber, S. H., Murray, D. and Leslie, C. C. The calcium binding loops of the cytoplasmic phospholipase A2 C2 domain specify targeting to Golgi and ER in live cells. *Mol. Biol. Cell* 15:371-383 (2004).

Evans, J. H. and Leslie, C. C. The cytosolic phospholipase A2 catalytic domain modulates association and residence time at Golgi membranes. *J. Biol. Chem.* 279:6005-6016 (2004).

Leslie, C. C. Regulation of arachidonic acid availability for eicosanoid production. *Biochem. Cell Biol.* 82: 1-17 (2004).

Girotti, M., Evans, J. H., Burke, D. and Leslie, C. C. Cytosolic phospholipase A2 translocates to forming phagosomes during phagocytosis of zymosan in macrophages. *J. Biol. Chem.* 279:19113-19121 (2004).

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Locations

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