Robert C. Murphy, Ph.D.

Curriculum Vitae

I. BIOGRAPHICAL SKETCH

Present Position: University Distinguished Professor

Present Address: Department of Pharmacology
University of Colorado Denver
Mail Stop 8303, RC1 South, Rm. 6120
12801 E. 17th Ave, Aurora, CO 80045-0511 USA
Tel: (303) 724-3352 | Fax: (303) 724-3357
Email: Robert.Murphy@ucdenver.edu
Web page: http://pharmacology.ucdenver.edu/faculty/murphy

Citizenship/Birth: U.S.A., Seymour, Indiana

Marital Status: Married - two children, four grandchildren

Education:

1966	B.S. (Chemistry), Mount Union College, Alliance, Ohio
1970	Ph.D. (Chemistry), Massachusetts Institute of Technology Professor Klaus Biemann, thesis supervisor
1971	Postdoctoral Fellow, Harvard Medical School, Dept. Biological Chemistry Professor Manfred L. Karnovsky

Academic Appointments:

Present

2008 – present	University Distinguished Professor, University of Colorado School of Medicine, Aurora, CO

Previous

1971 – 1976	Assistant Professor, University of Colorado School of Medicine
1976 – 1980	Associate Professor, University of Colorado School of Medicine
1978 – 1979	Visiting Scientist, Karolinska Institutet, Stockholm, Sweden, Kemi II (Professor Bengt Samuelsson), (sabbatical leave)
1980 – 2008	Professor of Pharmacology, University of Colorado School of Medicine
1987 – 1988	Acting Chairman, Department of Pharmacology, University of Colorado School of Medicine
1989 – 2004	Professor, Senior Faculty Member, National Jewish Medical and Research Center, Denver, Colorado
1998 – 2000	Acting Director, Program in Biomolecular Structure, University of Colorado Health Sciences Center
2004 – 2009	Visiting Professor of Biochemistry, University of Tokyo, Japan
2008 – 2010	Interim Chairman, Department of Pharmacology, University of Colorado School of Medicine
2011	Visiting Professor, Queen Mary University/University of London, London England UK (sabbatical leave)

Major Scientific Interests:
Biochemistry and pharmacology of bioactive lipid mediators including leukotrienes, PAF, metabolites of arachidonic acid, and oxidized phospholipids. The application of mass spectrometry to the qualitative and quantitative analysis of lipid mediators and mediator metabolites.

Honors and Awards:

1966	Magna Cum Laude, Mount Union College
1969 - 1970	Lunar Sample Preliminary Examination Team for Apollo 11 and 12
1976 - 1981	Career Development Award (National Institutes of Health)
1984	Plenary Lecture,Australia/New Zealand Society for Mass Spectrometry Ann Mtg
1984	Distinguished Professor Lecture, UCHSC
1988	Plenary Lecture, Japanese Society for Biomedical Mass Spectrometry
1989 - 1998	MERIT Award, National Heart, Lung, and Blood Institute, NIH
1992	Plenary Lecture, Kyoto '92 Int'l. Conf. on Biological Mass Spectrometry
1994	Plenary Lecture, 42nd Conference on Mass Spectrometry and Allied Topics
2003	Dean's Mentoring Award, Graduate School, University of Colorado School of Medicine
2004	Plenary Lecture, Australia & New Zealand Society for Mass Spectrometry Conf
2005	Plenary Speaker, Society for Free Radical Biology & Med Int'l Mtg, Austin, TX
2005	Faculty Excellence in Teaching Award, Department of Pharmacology, UCDHSC
2007	Outstanding Achievement Award, Eicosanoid Research Society
2008	University Distinguished Professor, University of Colorado Denver
2010	Excellence in Lipid Research, FASEB Journal of Lipid Research Lectureship Award
	Charles C. Sweeley Lecture, Michigan State University, East Lansing, MI
	Chancellor's Award Lecture in Neurosciences, Neuroscience Center of Excellence, LSU Health Sciences Center, New Orleans, LA
2011	Plenary Lecture, 14th Ann. Symposium, Chemical & Pharmaceutical Structure Analysis (CPSA), Langhorne, PA
2012	Plenary Lecture, Gordon Conference on Oxygen Radicals, Ventura Beach, CA
	Faculty Research Excellence Award, Department of Pharmacology, University of Colorado School of Medicine, Aurora, CO
2013	Innovator Award Lecture, 5th Int'l Conference on Phospholipase A_2, Neuroscience Center of Excellence, New Orleans, LA
2015	Key Note Lecture, 5th European Lipidomic Meeting, Int'l Mass Spectrometry Foundation, Swansea, UK

Professional Affiliations:

1965	American Chemical Society
1970	American Society for Mass Spectrometry
1970	Sigma Xi
1976	American Society of Pharmacology and Experimental Therapeutics
1984	Research Society on Alcoholism

Professional Service:

1988 – 1990	Vice President, American Society for Mass Spectrometry
1990 – 1992	President, American Society for Mass Spectrometry
1992 – 1994	Past President, American Society for Mass Spectrometry
1994 – 1996	Board of Scientific Advisors, NIH, NIAAA
1994 – 2012	External Advisory Board, Mass Spectrometry Facility, Washington University
2000 – 2011	External Scientific Advisory Board, Research Center for Pharmacology and Drug Toxicology, Vanderbilt University, Nashville, TN
2003 – 2014	COBRE External Advisory Board, Louisiana State University
2010 – present	External Book Advisory Board, Royal Society of Chemistry Series, Cambridge, UK
2010	Thesis Opponent, Gothenberg, Sweden

Ad Hoc Reviewer: Analytical Biochemistry; Analytical Chemistry; Biochemistry; Journal of American Chemical Society; Journal of Biological Chemistry; Journal of Clinical Investigation; Life Sciences; Biochemical Pharmacology; Biochemica Biophysica Acta; Science; Lipids; Clinical Chemistry; Molecular Pharmacology; Lipid Research; Prostaglandins; Prostaglandins Leukotriene Medicine; Journal

Pharmacology Experimental Therapeutics; American Review Respiratory Disease; Proceedings National Academy Science; Journal of Neurochemistry; Critical Reviews in Vasoactive Lipids

Journals

1974 – 1977	Associate Editor, *Organic Mass Spectrometry*
1977 – 1989	Editorial Board, *Organic Mass Spectrometry*
1983 – 2003	Editorial Board, *Biomedical Environmental Mass Spectrometry*, *Biological Mass Spectrometry*, *Journal of Mass Spectrometry*
1986 – 1999	Editorial Board, *British Journal of Pharmacology*
1989 – 2004	Editorial Board, *Journal of the American Society for Mass Spectrometry*
1994 – present	Editorial Board, *Mass Spectrometry Reviews*
2000 – 2005	Editorial Board, *Journal of Biological Chemistry*
2005 – 2009	Editorial Board, *Analytical Biochemistry*
2006 – present	Associate Editor, *Journal of Lipid Research*

Book Reviews: Journal of the American Chemical Society, American Scientist, Trends in Immunological Sciences

National and International Meeting Organizations

1983 Frontiers in Medicine Symposium, Denver, CO - Steering Committee
1984 Off-line HPLC-MS Workshop, San Antonio, TX - Organizer
1984 Leukotriene Session Organizer, FASEB Gordon Conf. Immunopathology, Saxon River, VT
1984 Winter Prostaglandin Meeting, Keystone, CO, 5-lipoxygenase Session Organizer
1985 Fast Atom Bombardment Matrix Workshop, San Diego, CA - Organizer
1985 Roussel Symposium "Lipoxygenase Products and Polyunsaturated Fatty Acids, Limoges, France - Scientific Advisory Committee
1988 ASMS Program Planning Committee
1988 Eicosanoid Mass Spectrometry Workshop - Taipei Conf. on Prostaglandin & LT Research
1989 1st Int'l Conf of Eicosanoids and Bioactive Lipids in Cancer & Radiation Injury, Detroit, MI - Advisory Committee
1990 7th Int'l Conf on Prostaglandins & Related Compounds, Florence, Italy-Advisory Committee
1991 2nd Int'l Conference of Eicosanoids & Bioactive Lipids in Cancer & Radiation Injury, Berlin, Germany, - Advisory Committee
1992 Winter Prostaglandin Conference, Keystone, CO - Conference Organizer
8th Intl Conf. on Prostaglandins & Related Compounds, Montreal, Canada - Advisory Com.
1995 FASEB Experimental Biology '95. ASPET Pharmacology Short Course on Lipid Mediators; Pharmacology Focus Symposium, Atlanta, GA – Organizer
1997 Keystone Symposium on Lipid Mediators, Keystone, CO - Organizer
1998 ASBMS Annual Meeting Satellite Symposium: Obtaining & Exploiting Structural Information, Washington, DC
2001 6th Int'l Symposium on Mass Spectrometry in the Health & Life Sciences: Molecular & Cellular Proteomics, San Francisco, CA - Advisory Committee
2009 Keystone Symposium on Complex Lipids in Biology, Olympic Park, CA – Organizer
4th Int'l Conference on Phospholipase A_2 & Lipid Mediators
Sanibel Conference on Mass Spectrometry: Lipidomics and Lipids in Mass Spectrometry, St. Petersburg Beach, FL – Program Co-Chair

National Institutes of Health: (RR, HLBI, GM, NIADDK, NINCDS, NCI)

1975-2006 Special Study Sections and site visits (62 visits)
1981- 1985 Regular Study Section - Bioanalytical Metalobiochemistry (BMT)
2010 NIH NIAID Centers for Medical Countermeasures Against Radiation (U19)

Other National Service

Grant Review (ad hoc); National Science Foundation; Veteran's Administration; Arthritis Society; Medical Research Council of Canada; American Heart Society

Institutional Committees

1990 - 2000 Chair, National Jewish Faculty Appointment, Reappointment, & Promotion
1990 - 1993 Pharmaceutical and Foundations Fundraising Task Force
1994 Education Task Force
1995 - 1996 Faculty Incentive and Compensation Committee
1997 Basic Research Task Force

University and Medical School Committees

1975 – 1977 Bioengineering Review Committee
1977 – 1989 Ad Hoc Promotion Committee
1980 – 1984 Medical School Admission Committee
1982 – 1986 Biomedical Research Assistance Committee (BRS), Chairman
1983 – 1985 Curriculum Committee (First and Second Year)
1984 – 1989 Hepatobiliary Center Advisory Board
1984 – 1986 Chancellor's Unified Basic Science Committee
1984 – 1985 Chancellor's Academic Planning and Review Committee
1985 – 1986 Pathology Chair Search Committee
1986 – 1987 Policy and Fiscal Planning Committee
1987 – 1989 Executive Committee
1988 – 1989 Hospital Reorganization Finance Committee
1988 – 1989 Pharmacology Chair Search Committee
1989 – 1990 Chancellor's Indirect Cost Recovery Committee
1988 – 1989 Faculty Senate
1996 – 2000 Structural Biology Program Committee - Chair
2000 – present Program in Biomolecular Structure Steering Committee
2002 – 2005 UCHSC School of Medicine Research Strategic Planning Committee
2005 – 2008 UCHSC Research Advisory Committee
2010 – 2013 Dean's Advisory Committee

Departmental Committees

1972 – 1976 Chair, Pharmacology Graduate Training Committee
1977 – 1990 UCHSC Pharmacology Departmental Space Committee
1985 – 1987 Chair Pharmacology Graduate Training Committee
1985 – 1987 Chair, Post Tenure Review Committee, Department of Pharmacology
1989 – 1998 UCHSC Pharmacology Graduate Training Committee
1989 – present Pharmacology Faculty Promotions and Tenure Committee,
1990 – 2000 Chair, National Jewish Faculty Appointment, Reappointment, & Promotion
2003 – 2006 Chair, Post-Tenure Review Committee, Department of Pharmacology
2008 – 2010 Chair, Post-Tenure Review Committee, Department of Immunology

University Teaching

1. Course Director

1972 – 1975 Pharmacology 601 - Spectroscopic Methods (Graduate School)
1974 – 1975 Pharmacology - CHAPS - Basic Pharmacology (Child Health Association)
1974 – 1976 Pharmacology 620 - Intro to Pharmacology (Graduate School)
1978 – 1986 Co-Director - Pharmacology 616 Drug Metabolism (Graduate School)
1980 – 1982 Co-Director - Pharmacology 510 (Medical School)
1982 – 1985 Pharmacology 510 - Pharmacology (Medical School)
1984 – 1988 Basic Science Pharmacology - Pharmacology (DSBS 602) (Dental School)
1997 – 1998 Pharmacology 7612 - Drug Metabolism (Graduate School)
2005 – 2008 Biomedical Sciences Core Course (IDPT 7801) (Graduate School)

2. Graduate and Medical School Lectures (*not all lectures given each year*)

· Spectroscopic Methods (16 lectures): Mass Spectrometry, NMR, IR, and UV Spectroscopy
· Pharmacology (DSBS 602/510/6600): Drug Metabolism; Pharmacokinetics; Parasite Chemotherapy; Toxicology; Alcohol; Anti-inflammatory Drugs; Prostaglandins & Leukotrienes

- TXCL 7561/7612 Drug Metabolism: Sulfate Conjugation; Mercapturic Acids; Glucuronides; Structure Determination; Oxidative States; Acetylation; Amine Conjugation
- TXCL 7560/7561 Drug Metabolism & Pharmacogenetics: Oxidation Reduction; Principles of Isolation and Identification of Metabolites
- PHCL 620 Intro to Pharmacology: Chemical Bonds; Structure Activity; Relationships; Arachidonic Acid Cascade
- PHCL 616 Drug Metabolism
- UCD Chemistry (593-3): Fundamentals of Mass Spectrometry (5 lectures)
- PHCL 7620 Principles in Pharmacology: Leukotrienes; Inflammation
- PHCL 7617 Molecular Pharmacology: Lipid Mediators
- PHCL 6000 Medical Pharmacology: Lipid Mediators
- PHCL 7600 Frontiers in Pharmacology: Mass Spectrometry of Lipids
- PHCL 7620 Graduate Pharmacology: Structure/Activity; Studies of Drugs & their targets
- IDPT 7801 Biomedical Sciences Core: Mass Spectrometry: Theory & Practice; Proteomics
- BMST 7454 Structural Analysis of Biomolecules II
- TXCL 7560 Drug Metabolism & Pharmacogenetics
- Tokyo Medical School Biochemistry: Proteomics and Lipidomics

Current Research Grant Support

NIH R01 ES022172 – High Throughput Lipidomics Analysis by MALDI/Ion Mobility Mass Spectrometry. 09/15/12 – 05/31/17. Total: $1,390,975.

NIH U54 HL117798 – Personalization of Therapeutic Efficacy and Risk. Program Director: Garrett Fitzgerald. Subcontract with University of Pennsylvania. 08/01/12 – 5/31/17. Total $745,000

15013 Seattle Children's Foundation – Preventing Preterm Birth. Project: Lipidomic biomarkers of preterm birth during pregnancy. P.I.: Robert C. Murphy. 03/01/16 – 02/28/18. Total: $275,218.

NIH R01 AT008621 – Role of PUFA-Gene Interactions in Health Disparities. Program Director: Floyd Chilton. Core P.I.: Robert C. Murphy. Subcontract with Wake Forest University. 12/01/15 – 02/28/20. Total $56,000

Previous Research Grant Support

NIH P01 HL034303 – Ether Lipids, Eicosanoids, and Lung Cell Pathophysiology. Program Director: Christina Leslie. Project 3: *Bioactive Lipid Mediators and Reactive Oxygen Species* P.I.: Robert C. Murphy. Subcontract with National Jewish Health. 02/01/11 – 01/31/16. Total: $1,450,000.

NIH P50 AT002782 – The Wake Forest Center for Botanical Lipids and Inflammatory Disease Prevention. Program Director: Floyd Chilton. Core A P.I.: Robert C. Murphy. Subcontract with Wake Forest University. 09/01/10 – 08/31/15. Total $375,000

NIH U54-GM069338 – Lipid Maps, Informatics, and Contextual Proteomics. Program Director: Edward Dennis. Core E P.I: Robert C. Murphy. Subcontract with UC San Diego. 08/01/08–07/31/14. Total $1,915,669

NIH U54 GM069338 – Lipid Maps, Informatics, and Contextual Proteomics. Program Director: Edward Dennis. Bridge C P.I: Robert C. Murphy. Subcontract with UC San Diego. 08/01/08–07/31/14. Total $1,552,614

NIH R01 HL025785 – Leukotrienes and Slow Reacting Substance of Anaphylaxis. 02/01/07–01/31/13. Total: $1,125,000.

NIH P01 HL34303-25 – Ether Lipids, Eicosanoids, and Lung Cell Pathophysiology. Program Director: Christina Leslie. Project 4: *Bioactive Lipid Mediators and Reactive Oxygen Species.* 9/01/05 – 8/31/10. Total: $1,203,008.

NIH U54-GM69338 – Lipid Maps, Informatics, and Contextual Proteomics. Program Director: Edward Dennis. Core E P.I: Robert C. Murphy. Subcontract with UC San Diego. 08/01/03–07/31/08. Total $1,915,669

NIH U54-GM69338 – Lipid Maps, Informatics, and Contextual Proteomics. Program Director: Edward Dennis. Bridge C P.I: Robert C. Murphy. Subcontract with UC San Diego. 08/01/03–07/31/08. Total $1,552,614

NIH R01 HL72235– Exhaled Air Biomarker in COPD. Subcontract with University of Colorado Health Sciences Center. P.I.: Norbert Voelkel, Co-P.I.: Robert C. Murphy. 08/01/02–7/31/06. Total $636,572

NIH P01 HL36577– Inflammation, Airways Reactivity and Asthma. Program Director: Erwin Gelfand. P.I.: Robert C. Murphy, Project 4 - *Eosinophil, Eicosanoids and Biosynthesis and Metabolism.* 07/01/01–06/30/06. Total $900,965.

NIH R01 HL25785 – Leukotrienes and Slow Reacting Substance of Anaphylaxis. 4/1/02–2/28/07. Total: $900,000.

NIH R01 GM20457- GC-MS and Stable Isotopes in Pharmacological Research. 6/15/73–5/31/76. Total: $224,131.

NIH R01 GM19897 - Structure Determination of Mast Cell Phospholipids. 9/9/75–8/31/80. Total: $168,724.

NIH K04 HD00128 - Development Award, Research Career. 5/1/74–4/30/81. Total: $133,966.

NIH P50 NS09199 - Basal Ganglia Disorders and Neurotransmitter Function. Program Director: Norman Weiner. Project 3: P.I.: Robert C. Murphy. 6/1/75–11/30/85. Total: $329,860.

NIH P50 AA03527 - Genetic Approaches to Neuropharmacology of Ethanol. Program Director: A. Weber. Component 12 P.I. Robert C. Murphy. 9/1/78–11/30/92. Total: $560,700.

NIH R01 HL25785 - Leukotrienes and Slow Reacting Substance of Anaphylaxis. **MERIT Award.** 4/1/90–2/28/99, Total: $900,000; 4/1/80–3/30/89, Total: $612,129

NIH S10 RR01757 - Highfield - FAB Mass 8/1/83–7/31/89. Total: $160,400

NIH R01 AI20774 - Leukotrienes and Platelet Activating Factor. 1/01/84–12/31/89. Total $415,776

NIH P01 HL34303 - Ether Lipids, Eicosanoids, and Lung Cell Pathophysiology. Program Director: Peter Henson. Project 1 P.I. Robert C. Murphy. Total $195,666; and Core C. 8/30/85–9/01/90. Total: $291,284.

NIH P01 HL34303 - Ether Lipids, Eicosanoids, and Lung Cell Pathophysiology. Program Director: Robert Murphy. Project 1: The PAF Cycle. Total: $799,112. Project 4: Translocation and Transcellular Biosynthesis. 9/30/90–8/31/95. Total: $389,477.

NIH P01 HL34303 - Ether Lipids, Eicosanoids, and Lung Cell Pathophysiology. Program Director: Peter Henson. Project 5 - *Isoeicosanoids and Oxidized Phospholipids*, P.I.: Robert C. Murphy. 9/01/95–8/31/00. Total: $820,141.

NIH-R01-GM41026 - Biochemical Pharmacology of Epoxygenase Eicosanoids. P.I.: F.A. Fitzpatrick; Co-P.I.: RC Murphy. 12/01/88–11/30/92. Total $608,140.

Amgen Research Grant - Structural Characterization of IMF-1. 5/01/92–4/30/94. Total $317,383. Amgen Inc. Boulder.

NIH R13 HL57774 - Conference on Lipid Mediators. Total: $10,000. Project Period 01/01/97–12/31/97

NIH R01 AA09468 - Neutrophil Chemotactic Factor and Alcoholic Hepatitis. 4/01/96–3/31/99. Total: $347,750.

NIH R01 HL64030 - Eosinophil, Eicosanoid Biosynthesis and Metabolism. 2/01/01–6/30/01 Total: $900,000.

R825702 - Environmental Protection Agency - Immunologic Basis of Environmental Lung Disease: **Project 3**: Mechanisms of Pulmonary Nitrogen Dioxide Toxicity. P.I.: Carl White; Co-P.I.: Robert C. Murphy. 02/16/98–09/30/02. Total: $114,856.

NIH 1 R01 HL62996 - Platelet-Activating Factor and UV Damage to Keratinocytes. Subcontract with Indiana University. P.I.: Jeffrey Travers. 07/01/99–06/30/03 Total: $111,875.

NIH P01 HL34303 - Ether Lipids, Eicosanoids, and Lung Cell Pathophysiology. Program Director: Peter Henson. **Project 2**–Isoeicosanoids and Biologically active oxidized Phospholipids, 9/01/00–8/31/05. Total: $940,792.

M.S. Thesis Students (*1985 – 2007*)

05 – 07	Aaron Ransome	*The efficiency of transcellular biosynthesis of leukotrienes in vivo in a mouse model of peritoneal inflammation*
01 – 04	Jessica Krank	*Adduction of RNA by leukotriene A_4*
95 – 98	Lisa M. Hall	*Pharmacologically active eicosanoids formed from nonenzymatic oxidation of red blood cell phospholipids*
85 – 88	Laura Vausbinder	*The ex vivo model of lipid mediator production*

Ph.D. Thesis Students (*1969 – 2015*)

11 – 15	Sarah Martin	*The regulation of eicosanoid biosynthesis through phospholipid remodeling*
08 – 12	Patrick Hutchins	*Cholesterol ester oxidation in human atherosclerosis*
05 – 10	Kelly Wynalda	*Ozonolysis of plasmalogen glycerophospholipids*
05 – 09	Santiago E. Farias	*Formation and role of bioactive lipid mediators in the brain: Leukotrienes in traumatic brain injury*
01 – 04	Melissa Pulfer	*Identification of biologically active compounds formed during the reaction of ozone with pulmonary surfactant*
00 – 03	Jennifer Dickinson	*The mechanism of intracellular stabilization of leukotriene A_4*
99 – 03	Rebecca Bowers	*Biosynthesis, metabolism and pharmacology of 5-oxo-ETE and FOG_7*
97 – 01	Jessica Fiedler	*Autocrine regulation of LTB_4 synthesis and metabolism*
90 – 93	Catherine Antoine	*Formation des leucotrienes au cours d'interactiones plaquettes-neutrophiles*
88 – 91	Michael A. Shirley	*Metabolic transformations of LTB_4 in isolated rat hepatocytes*
84 – 88	Danny O. Stene	*The metabolism of E_4 by isolated rat hepatocytes*
83 – 87	Peter E. Haroldsen	*Metabolism of platelet activating at the whole organ and cellular level*
81 – 85	Timothy W. Harper	*Mass spectrometry and metabolism of leukotriene B_4*
80 – 84	Joseph A. Zirrolli	*Analysis of leukotrienes and antimyocontractile substances in models of pulmonary hypertension*
78 – 81	W. Rodney Mathews	*Pharmacological and biochemical aspects of leukotriene C_4 and slow reacting substance*
69 – 73	Keith L. Clay	*Studies on the metabolic acidosis of methanol and ethylene glycol intoxication*

Thesis Committee Member

Adele Blacker	Wallace R. Helton	Divij Mathew	William Watson
Rachel Fickes	Ryan Hill	Amy Meyer	James Whitehurst
Ty Gould	Kelli G. Kline	Sarah Moore	Brian Ziemba
Kathleen J. Grant	John D. Laughlin	Ryan Walsh	

Postdoctoral Fellows

Ann-Charlotte Almstrand	Kathleen Harrison	Andrew McAnoy	Michael van Rollins
Michael Balazy	Susan Hattox	Patrick Perrin	Russell J Waugh
Karin Zemski Berry	Roger Hayes	Walter Pickett	Jay Y Westcott
Laura Bettazzoli	John Hevko	Christopher Rector	Patricia Wheelan
Joshua Black	Elizabeth Hill	Duane Reiber	Kerry Wooding
Floyd (Ski) Chilton	Joseph A Hankin	Angelo Sala	Simona Zarini
Mark Fitzgerald	Karen Jonscher	Mary Sisak	Joseph Zirrolli
Armel Fradin	Nona Khaselev	Robert W. Strife	
Bernard Fruteau De Laclos	Denise MacMillan	Jeffrey B. Travers	

II. INVITED LECTURES (National and International Meetings, Universities, and Industry)

1977: Stanford University, Department of Pharmacology
Finnigan Service Meeting
University of North Carolina, Department of Pharmacology
University of California, San Francisco, Department of Medicinal Chemistry

1978: Huddinge Hospital (Sweden), Dept. of Clinical Pharmacology

1979: Karolinska Institute, Stockholm, Kemi II
The Upjohn Corporation, Kalamazoo, MI
Michigan State University, Department of Biochemistry

1980: University of Utah, Department of Medicinal Chemistry
National Institutes of Health
University of Michigan, Department of Pharmacology
University of Kansas, Department of Pharmacology
National Jewish Hospital
13th Annual Miles International Symposium. Baltimore, MD

1981: Merck-Frosst Research Laboratories
Merck Sharp and Dhome
University of Colorado, Colorado Springs
University of Colorado, Department of Chemistry

1982: Emory University, Department of Pharmacology
Boehringer Ingelheim Pharmaceutical Company
Vanderbilt University, Department of Pharmacology
Ohio State University, Department of Pharmacology
Lederle Pharmaceutical Company
University of Kansas, Department of Pharmacology
National Jewish Hospital
North American Medicinal Chemistry Symposium. Toronto, Canada
Belgium Prostaglandin Symposium. Brussels, Belgium

1983: Workshop on Plant Lipoxygenase and Animal Tissue. Limoges, France
University of Pennsylvania, Department of Pharmacology
John Hopkins University, Department of Pharmacology and Therapeutics
Mayo Clinic, Department of Biochemistry
Harvard University, Department of Medicine
Given Institute of Pathobiology
Laval University, Dept. Endocrinologie
KROC Foundation: Int'l Conference

1984: US/Italy Symposium: Cyclooxygenase & Lipoxygenase Modulators in Lung Reactivity, Milan, Italy
Leukotrienes and Other Lipoxygenase Products (9th IUPHAR Satellite). London, England
The 9th Australian & New Zealand Society for Mass Spectrometry Conf., Canberra, Australia
University of Washington, Department of Medicinal Chemistry
National Institutes of Health, NIAAA
New York Academy of Sciences

1985: Symposium on Lipoxygenase Products and Polyunsaturated Fatty Acids. Limoges, France
Int'l Conference on Leukotrienes and Prostanoids in Health and Disease. Tel Aviv, Israel
University of Washington, Department Pharmacology
Abbott Research Laboratories
The Upjohn Company

1986: Transatlantic Airway Conference. Lucerne, Switzerland
Platelet Activating Factor: 2nd Int'l Conference. Gatlinberg, Tennessee

Freie Universitat, Berlin, Germany
Ohio State University, Department of Biochemistry
New York Medical College, Department of Pharmacology
Genentech, Inc, South San Francisco, CA
General Motors Research Laboratories, Biomedical Science Department
University of Utah School of Medicine, Department of Internal Medicine
34th ASMS Conference
NIH. Workshop: Potential therapeutic use of inhibitors of leukotriene generation & function
4th Annual Aspen Basic/Clinical Science Conference Immunology and Disease
Conference II: The Role of Lipid Mediators
2nd Annual Conference on PAF
The Upjohn Company
Abbott Laboratories
University of Colorado, Boulder, School of Pharmacy
National Jewish Center for Immunology and Respiratory Medicine, Denver, CO

1987: New York Academy of Sciences. Biology of Leukotrienes Conference. Invited speaker.
Workshop on Urinary Eicosanoids. Invited speaker. Bergamo, Italy
American Oil Chemists' Society. Workshop: Polyunsaturated Fatty Acids. Biloxi, Mississippi
St. Louis University, Department of Medicine
INSERM Unite 15, Hopital Lariboisiere
1987 Winter Prostaglandin Conference
Bowman Gray School of Medicine, Department of Biochemistry
Medical College of Wisconsin, Department of Biochemistry
Columbia University, Department of Pharmacology
AOCS Short Course on Polyunsaturated Fatty Acids and Eicosanoids
Mario Nergri Workshop on Urinary Eicosanoids
New York Academy of Science, Conference on the Biology of Leukotrienes

1988: Duke Symposium: Biology of Critical Care Medicine. Invited speaker. Durham, NC
Int'l School of Pharmacology. Invited speaker. Erice, Sicily
13th Annual Japanese Society for Biomedical Mass Spectrometry. Tokyo, Japan
Duke Symposium: Biology of Critical Care Medicine
FASEB: Invited speaker, Symposium: Inflammation and Mediator Interactions
University of Texas Health Sciences Center, Department of Biochemistry, Austin, TX
Mayo Clinic, Department of Pharmacology, Rochester, MN
Kansai Medical University, Osaka, Japan
4th Annual Inflammation Research Association Conference
25th National Meeting of the Society for Leukocyte Biology
University of Tennessee Health Sciences Center, Department of Pharmacology
Finnigan Corporation, San Jose, CA

1989: 3rd Int'l Conference on PAF and Structurally Related Alkyl Ether Lipids. Tokyo, Japan
Int'l Symposium on Trends in Eicosanoid Biology. Interlaken, Switzerland
Workshop on Analytical Chemistry, University of Colorado at Boulder, Boulder, CO
2nd Int'l Symposium on Mass Spectrometry in the Health and Life Sciences
1st Int'l Conference on Eicosanoids and Bioactive Lipids in Cancer & Radiation Injury
Louisiana State University Medical Center
Smith Kline & French Laboratories

1990: Advances in the Understanding and Treatment of Asthma Conference. London, England
University of Nebraska-Lincoln
FASEB Annual Meeting
University of Texas HSC
Universita di Milano, Milan, Italy
Vanderbilt University
Fall Alcohol Research Symposium. Steamboat Springs, CO

Frontiers in Basic Sciences That Relate to Heart, Lung, & Blood Diseases Symposium

1991: 2nd Int'l Conf. Eicosanoids & Bioactive Lipids in Cancer & Radiation Injury. Berlin, Germany
26th Annual Southeastern Regional Lipid Conference, Cashiers, North Carolina
33rd Rocky Mountain Conference on Analytical Chemistry, Denver, CO
FASEB Summer Res. Conf: Cytokines and Lipid Mediators as Regulator of Cell Function
Research Institute of Scripps Clinic
University of California, San Francisco
University of Denver, Department of Biological Sciences
Inflammation Research Association - Novel Lipid Mediators. New York

1992: Int'l Symposium on Trends and Eicosanoids Biology. Session VI Chair. Interlaken, Switzerland
Int'l Conference on Biological Mass Spectrometry. Plenary lecturer. Kyoto, Japan
4th Int'l Congress on PAF and Related Lipid Mediators. Invited lecturer. Snowbird, UT
ASMS Electrospray Ionization Workshop. Organizer. Boston, MA
Arachidonic Acid & the Cardiovascular System: From Molecular Approach to Clinical Concepts. Featured lecturer. Paris, France
Chicago Area Mass Spectrometry Discussion Group
Ohio State University, Chemistry Department
University of California, Los Angeles, Department of Pharmacology
Syntex USA, Palo Alto, CA
Bay Area Mass Spectrometry Discussion Group. San Mateo, CA
ICI Agrochemical Research. Jealott's Hill Research Station, England
University College, Dublin, Centre for Cardiovascular Sciences. Dublin, Ireland
34th Rocky Mountain Conference on Analytical Chemistry, Denver, CO
University of Colorado Health Sciences Center, Division of Clinical Pharmacology

1993: 1993 Winter Prostaglandin Conference. Keystone, CO
ASMS Electrospray Ionization Workshop. Organizer. Baltimore, MD
Plenary Lecture - 18th Japanese Society for Biomedical Mass Spectrometry. Tokyo, Japan
University of Colorado Health Sciences Center, HSC-Immunology Research Conference
35th Rocky Mountain Conference on Analytical Chemistry, Denver, CO
Cytokins and Lipid Mediators, FASEB Summer Conf., Copper Mtn., CO (Co-organizer)
3rd Int'l Conference on Lipid Mediators in Health and Disease, Jerusalem, Israel
Cellular Generation, Transport & Effects of Eicosanoids, NY Acad. Sci., Stockholm, Sweden
Vanderbilt University, Department of Pharmacology, Nashville, TN
Festschrift for Dr. Norman Weiner, Colorado Springs, CO
Boehringer Ingelheim, Department of Biochemistry and Pharmacology, Ridgefield, CT
University of Utah, Department of Medicine, Salt Lake City, UT
Board of Scientific Counselors, NIAAA, Maryland

1994: 42nd Annual Conference on Mass Spectrometry. Plenary Lecturer. Chicago, ILL
3rd Int'l Symposium on Mass Spectrometry in Health & Life Sciences. Featured lecturer, San Francisco, CA
Nexagen Inc., Boulder, CO
Amgen Inc., Boulder, CO
36th Rocky Mountain Conference on Analytical Chemistry, Denver, CO
9th International Conference on Prostaglandins and Related Compounds, Florence, Italy
Michigan State University, Department of Biochemistry, East Lansing, MI
University of Colorado, Department of Chemistry, Boulder, CO
External Evaluation Committee of Research Program "Tumor Cell Regulation," Deustch Krebs, Heidelberg, Germany

1995: NATO Advanced Study Institute. Int'l School of Pharmacology. Eicosanoids: From Biochemistry to Therapeutic Application. Two featured lectures. Erice, Italy

9th Int'l Congress of Immunology. Workshop organizer. San Francisco, CA
5th Int'l Congress on Platelet-Activating Factor & Related Lipid Mediators, Berlin, Germany
Nobel Mini Symposium in the Series: Frontiers in Medicine, Stockholm, Sweden
National Cancer Institute, Rockville, MD
University of Colorado, Denver, CO
Experimental Biology '95. ASPET Pharmacology Short Course on Lipid Mediators. FASEB Pharmacology Focus Symposium, Atlanta, GA
42nd ASMS Conf. on Mass Spectrometry & Allied Topics, Atlanta, GA
FASEB Summer Research Conf. "Cytokine & Lipid Mediator Networks" Saxtons River, VT
Rocky Mountain Mass Spectrometry Discussion Group, Golden, CO
Midwest Mass Spectrometry Discussion Group, Washington University, St. Louis, MO
Monsanto Pharmaceutical, St. Louis, MO

1996: NATO Advanced Study Institute. Mass Spectrometry in Biomolecular Sciences. Two featured lectures. Palermo, Italy
SRS-A to Leukotrienes: A Dawning of a New Treatment Int'l Symposium. Invited lecturer. Windsor, England
Pharmacology Faculty & Student Retreat. Featured lecturer. Copper Mt., CO
Dept. Cellular and Structural Biology, University of Colorado HSC, Denver, CO
Research in Progress Seminar, National Jewish Medical & Research Center, Denver, CO

1997: 5-Lipoxygenase Products in Asthma Conference, Puerto Rico
Gordon Research Conference on Lipid Mediators, Meriden, NH
FASEB Summer Research Conference on Cytokines & Lipid Mediators, Saxtons River, VT
5th Int'l Conf. on Eicosanoids & Other Bioactive Lipids in Cancer, Inflammation, & Related Diseases, La Jolla, CA
Vanderbilt University, Department of Pharmacology, Nashville, TN
University of Colorado Health Sciences Center, Clinical Pharmacology, Denver, CO
Asthma Retreat, National Jewish Medical and Research Center, Denver, CO
University of Indiana, Department of Chemistry, Bloomington, IN
45th ASMS Conference on Mass Spectrometry and Allied Topics, Palm Springs, CA

1998: 1998 ASBMB Annual Meeting Satellite Symposia, Washington, DC
46th ASMS Conference on Mass Spectrometry and Allied Topics, Orlando, FL
3rd Int'l Symposium on Mass Spectrometry in Health & Life Sciences. San Francisco, CA
23rd Annual Japanese Society for Biomedical Mass Spectrometry. Kanazawa, Japan
Colorado School of Minds, Chemistry Department, Golden, CO
National Institute of Environmental Health Sciences, Research Triangle Park, NC

1999: 11th Sanibel Conf on Mass Spectrometry, Sanibel Island, Florida
ACS National Meeting, Field Franklin Award Symposium II, Anaheim, CA
1999 Keystone Symposium on Lipid Mediators. Keystone Resort, CO
Jacques Maclouf Lecture, 10th Anniversary of Institute Des Vaisseaux et du Sang, Paris
47th ASMS Conference on Mass Spectrometry and Allied Topics, Dallas, TX
6th Intl. Conf. on Eicosanoids & Other Bioactive Lipids in Cancer, Inflammation & Related Diseases, Boston, MA
Medical Chemistry, University of Illinois, Chicago, IL
Vanderbilt University, Dept. Biochemistry/Dept. Pharmacology, Nashville, TN
University of Texas Southwest Medical Center, Dept. Biochemistry, Texas

2000: FASEB Gordon Conference, Saxton River, VT
Pfizer Central Research, Groton, CT
Atairgin Technologies, Irvine, CA
University of Colorado, Dept. of Pharmacology Faculty Retreat, Copper Mountain, CO

2001: Sanibel Conference, Sanibel Island, FL
University of Colorado, Dept. of Pharmaceutical Sciences, Denver, CO
American Chemical Society, Biemann Award Symposium, San Diego, CA
Keystone Symposium on Eicosanoid Lipid Mediators, Snowbird, UT
Merck Company, John Gilbert Memorial Lecture, Rahway, NJ
1st Takeda Science Foundation Symposium on PharmaSciences, Tokyo, Japan

2002: Winter Eicosanoid Conference, Baltimore, MD
Int'l Symposium on Recent Biomedical Advances in Eicosanoid Research, Berlin, Germany
12th Int'l Conf. Adv. in Prostaglandin, Leukotriene, & Other Bioactive Lipid Research, Istanbul, Turkey
University of Milan, Pharmacological Science, Milan, Italy
Sciex, Inc, Toronto, Canada
Exxon Meeting, National Jewish Medical and Research Center, Denver, CO
2002 Nobel Prize, University of Colorado HSC, Denver, CO
Recent Biomedical Advances in Eicosanoid Research, Berlin, Germany

2003: Keystone Symposium on Eicosanoid Lipid Mediators, Tahoe City, NV
2003 Discovery Proteomics, St. Louis, MO
51st ASMS Conference on Mass Spectrometry and Allied Topics, Montreal, Canada
Stoney Brook University, Long Island, NY
Duke University Medical Center, Durham, North Carolina
The University of Tokyo, Tokyo, Japan

2004: National Institutes of Health, NIAAA Seminar Series, Bethesda, M.D.
6th Annual Winter Eicosanoid Meeting, Baltimore, MD
NIDA Lipidomics Workshop, Washington, D.C.
Lipids and the Pathophysiology of Obesity, Washington, D.C.
95th AOCS Annual Meeting and Expo, Cincinnati, OH
FASEB Summer Research Conference on Phospholipase A_2, Pine Mountain, GA
ASBMB Conference on Redox Signaling, Kiawah Island, SC
Vanderbilt University, Department of Pharmacology, Nashville, TN
University of Minnesota, Department of Biochemistry, Minneapolis, MN

2005: University of Alabama at Birmingham, Department of Anesthesiology, Alabama
20th Australian/New Zealand Mass Spectrometry Conference, Adelaide, Australia
Clinical Pharmacology, Vanderbilt University, Nashville, Tennessee
7th Winter Eicosanoid Conference, Baltimore, MD
Keystone Symposium: Bioactive Lipids, Lipidomics and Their Targets, Whistler, BC
Mass Spectrometry Workshop, Dresden, Germany
53rd ASMS Conference on Mass Spectrometry, San Antonio, TX
22nd Montreaux LC/MS Symposium, Cornell University, Ithaca, NY
Eicosanoids & Other Lipid Mediators in Cancer, Inflammation & Other Dis., San Francisco, CA
78th Annual Meeting of the Japanese Biochemical Society, Kobe, Japan
40th Southeastern Regional Lipids Conference, Cashiers, NC
Plenary Speaker, Society for Free Radical Biology and Medicine Int'l Mtg, Austin, TX

2006: Keystone Symposium: Eicosanoids in Inflammation and Chronic Disease, Park City, UT
1st Singapore Lipid Symposium, National University of Singapore, Singapore
2006 Society of Toxicology Annual Meeting, San Diego, CA
Dept. of Chemistry and Biochemistry, Duquesne University, Pittsburgh, PA
Dept. of Chemistry and Biochemistry, University of Colorado, Boulder, CO
Dept. of Pharmacology, University of North Carolina, Chapel Hill, NC
University of Cardiff, Wales, UK
54th ASMS Conference on Mass Spectrometry, Seattle, WA
Students' Choice Speaker, Biotechnology & Bioengineering Ctr, Medical College of Wisconsin, Milwaukee, WI

2nd Scientific Meeting of the Metabolomics Society, Boston, MA
7th Cong. Int'l Society for the Study of Fatty Acids & Lipids (ISSFAL), Cairns, Australia

2007: Children's Hospital, Pediatric Grand Rounds, Denver, CO
ASMS 18th Annual Sanibel Conference on Imaging Mass Spectrometry, Sanibel Island, FL
Keystone Symposium: Bioactive Lipids in the Lipidomics Era, Taos, New Mexico
University of Pennsylvania, Center of Excellence in Environmental Toxicology, Philadelphia, PA
40th Anniversary Symposium, Center in Molecular Toxicology, Vanderbilt University, Nashville, TN
Experimental Biology Ann. Mtg., Lipid Maps Lipidomics Workshop, Washington, DC
3rd Int'l Conference on Phospholipases A_2 & Lipid Mediators, Naples, Italy
Applied Biosystems ASMS Annual Users Meeting, 55th Indianapolis, IN

2008: Keystone Symposium: Eicosanoids & Other Mediators of Chronic Inflammation, Big Sky, MT
The Association of Biomolecular Resource Facilities (ABRF), Salt Lake, UT
Institute of Medicine of the National Academies: Forum on Drug Discovery, Development, and Translation, Washington, DC
Department of Chemistry, North Carolina State University, Raleigh, NC
FASEB Summer Res Conf.–Phospholipid Metabolism: disease, signal transduction and membrane dynamics, New Haven, CT
School of Biology, Georgia Institute of Technology, Atlanta, GA
18th Annual Colorado Clinical Scholars Seminar, Aspen, CO

2009: Frontier Lipidology Meeting, Gothenberg, Sweden
Gordon Research Conf.: Molecular & Cellular Biology of Lipids, Waterville Valley, NH
International Mass Spectrometry Conference, Bremen, Germany
Department of Biochemistry, University of Texas Southwestern, Dallas, TX
Pennsylvania State University, College Station, PA
11th International Conference on Bioactive Lipids in Cancer, Cancun, Mexico
Keynote Speaker, Adv in Metabolic Profiling, Mass Spec Europe, Barcelona, Spain,

2010: Exxon Mobile Research and Engineering Symposium on Bio-Oil Recovery, New Jersey
Keystone Symposium, Bioactive Lipids: Biochemistry and Diseases, Kyoto, Japan
Keynote Speaker at FASEB Summer Conf, Phospholipid Metabolism: Disease, Signal Transduction, and Membrane Dynamics, Steamboat Springs, CO
ACS Field and Franklin Symposium, Boston, MA
Charles C. Sweeley Endowed Lectureship, Michigan State University, Lansing, MI
Eastern Analytical Symposium & Exposition, Award for Outstanding Achievements in Mass Spectrometry, New Jersey
Chancellor's Award Lecture in Neurosciences, Neuroscience Center of Excellence, LSU Health Sciences Center, New Orleans, LA
University of North Dakota, Department of Pharmacology, Physiology & Therapeutics, Grand Forks, ND

2011: University of Swansea, Department of Chemistry, Swansea, Wales, UK
Babraham Research Institute, Cambridge, UK
Eli Lilly and Company, Indianapolis, IN
University of Iowa, Iowa City, IA
12th Bioactive Lipids in Cancer, Inflammation and Related Diseases, Seattle, WA
Plenary Speaker, 14th Ann Chemical & Pharmaceutical Structure Analysis, Langhorne, PA
Boston University School of Medicine, Department of Biophysics, Boston, MA
18th Annual Meeting Society for Free Radical Biology & Medicine, Atlanta, GA
St. Louis University, Department of Chemistry, St. Louis, MO
Waters Associates, Mass Spectrometry Division, Milford, MA

2012: Gordon Conference on Oxygen Radicals, Ventura Beach, CA
Keynote speaker, Austria Lipidomics Meeting, Graz, Austria
Keynote speaker, 4th Intl. Graz Symposium on Lipid and Membrane Biology, Graz, Austria
Johns Hopkins University, Department of Physiology, Baltimore, MD
1st International Symposium on Lipid Mediators, Fukuoka, Japan
FASEB: Phospholipid Metabolism, Signal Transduction & Membrane Dynamics, Saxtons River, VT
EMBO Lipid Mass Spectrometry Course, Swansea, Wales, UK
Int'l SFB/Transregio 83 Symposium, Molecular Architecture and Cellular Functions of Lipid/Protein Assemblies, Heidelberg, Germany

2013: Department of Chemistry, Wayne State University, Detroit MI
Virginia Commonwealth Medical Center, Richmond, VA
245th ACS National Meeting & Exposition, New Orleans, LA
5th Int'l Conf on Phospholipase A_2 Mediated Signaling in Translational Medicine, New Orleans, LA
61st ASMS Conference Workshop, Minneapolis, MN

2014: Sanford|Burnham Medical Research Institute, Orlando, Florida
University of Nebraska, Nebraska Gateway to Nutrigenomics, Lincoln, NE
Vanderbilt University, Biochemistry & Molecular Biology, Nashville, TN
Bill and Melinda Gates Foundation, Global Alliance to Prevent Prematurity and Stillbirth (GAPPS), Seattle, WA
Lipidomics for Biomarker & Clinical Analysis Int'l Conf & Wrkshop, Regensburg, Germany
Lipid Mediators in Health & Disease, Stockholm, Sweden
Applications of Time of Flight Mass Spectrometry, Waters Corp & UCLA, Long Beach, CA
Athens Conference on Mass Spectrometry and Health, Athens, Greece

2015: 6th Int'l Conference on PLA_2 and Lipid Mediators, Tokyo, Japan
Satellite Symposium of 6th Int'l Conference on PLA_2 and Lipid Mediators, Tokyo, Japan
Juntendo University, Tokyo, Japan
5th European Lipidomic Meeting, Swansea, United Kingdom
ASMS Fall Workshop 2015: Lipids and Lipidomics, San Diego, CA
Human Quantitative Dynamics Workshop, Bethesda, MD
LipidMAPs Annual Meeting: Lipidomic Impact on Cancer, Metabolic and Inflammatory Diseases, La Jolla, CA

2016 New Strategies and Challenges in Lung Proteomics and Metabolomics Workshop, National Jewish Health, Denver, CO
Lipid Mediators in Health & Disease/7th Int'l Conf on PLA_2 & Lipid Mediators, La Jolla CA
Kern Conference on Lipids, Keystone, CO
Dept. Biochemistry & Molecular Biology, St. Louis University, St. Louis, MO
NIH Metabolomics Program 2016 Workbench Annual Meeting, Baltimore, MD
2016 Grand Challenges Annual Meeting, London, England
Sanford Markey, PhD, Retirement Seminar, Bethesda, MD
Office of Research Development & Education, University of Colorado Denver, Aurora, CO

2017 Keystone Symposium: Lipidomics and Bioactive Lipids in Metabolism and Disease Tahoe City, NV
Santa Clara University, Chemistry and Biochemistry Departments, Santa Clara, CA
NIH-NHLBI Workshop: The Role of Lipid Droplets in Obesity and Metabolic Syndrome Related Cardiovascular Diseases, Bethesda, MD
65th ASMS Conference: Celebration of Klaus Biemann's Science, Indianapolis, IN

III. BIBLIOGRAPHY

1. Murphy RC, Djuricic MV, Markey SP, Biemann K. Acidic components of Green River Shale identified by a gas chromatography-mass spectrometer-computer system. *Science* 165:695-697 (1969).
2. Murphy RC. Preliminary examination of lunar samples from Apollo 11. Lunar sample preliminary examination team member. *Science* 165:1211-1227 (1969).
3. Murphy RC, Preti G, Nafissi VN, Biemann K. Search for organic material in lunar finds by mass spectrometry. *Science* 167:755-757 (1970).
4. Murphy RC, Preti G, Nafassi VN, Biemann K. Search for organic material in lunar finds by mass spectrometry. Proc. Apollo 11 Lunar Sci. Conf. *Geochim. Cosmochim. Acta* Suppl. 1, Vol. 2, pp. 1891-1900, Pergamon Press (1970).
5. Murphy RC. Preliminary investigation of lunar samples from Apollo 12. Lunar sample preliminary examination team member. *Science* 167:1325-1335 (1970).
6. Althaus JR, Biemann K, Biller J, Donahue PF, Evans DA, Forster HJ, Hertz HS, Hignite CE, Murphy RC, Preti G, Reinhold V. Identification of the drug Darvon and its metabolites in the urine of a comatose patient using a gas chromatograph-mass spectrometer-computer system. *Experientia* 26:714-717 (1970).
7. Burlingame AL, Hauser JS, Simoneit BR, Smith DH, Biemann K, Mancuso N, Murphy RC, Flory DA, Reynolds MS. Preliminary organic analysis of the Apollo 12 cores. *Proc Sec Lunar Sci Conf* 2:1891-1889 (MIT Press) (1971).
8. Preti G, Murphy RC, Biemann K. The search for organic compounds in various Apollo 12 samples by mass spectrometry. *Proc Sec Lunar Sci Conf* 2:1879-1889 (MIT Press) (1971).
9. Meyer AS, Hanzmann E, Murphy RC. Absolute configuration of cecropia juvenile hormone. *Proc Natl Acad Sci USA* 68:2312-2315 (1971). *PMCIDID389407*
10. Djuricic MS, Murphy RC, Vitorovic D, Biemann K. Organic acids obtained by alkaline permanganate oxidation of the Green River (Colorado) oil-shale kerogen. *Geochim Cosmochin Acta* 35:1201-1207 (1971).
11. Djuricic MS, Vitorovic D, Andressen B, Hertz HS, Murphy RC, Preti G, Biemann K. Acids obtained by oxidation of kerogens of ancient sediments of different geographic origin. *Adv of Organic Geochemistry* 1971:305-321 (1972).
12. Murphy RC. Aromatic and heteroatom-containing organic compounds in the lunar samples. *Space Life Sciences* 3:450-454 (1972).
13. Murphy RC, Watkins WD. Pharmacology of pyrazoles I. Structure elucidation of metabolites of 4-methylpyrazole. *Biochem. Biophys. Res. Commun.* 49:283-291 (1972).
14. Orange RP, Murphy RC, Karnovsky ML, Austen KF. The physiochemical characteristics and purification of slow reacting substance of anaphylaxis. *J Immunol* 110:760-770, (1973).
15. Orange RP, Murphy RC, Austen KF. Inactivation of slow reacting substance of anaphylaxis (SRS-A) by arylsulphatases. *J Immunol* 113:316-332 (1974).
16. Mulhauser RO, Watkins WD, Murphy RC, Chidsey CA. Pharmacokinetic studies of the disposition of secobarbital in the dog. *Drug Metab Dispos* 2:513-520 (1974).
17. Murphy RC. Facile synthesis of deuterated estrogens. *Steroids* 24:343-350 (1974).
18. Murphy RC. Synthesis of stable isotope labeled norepinephrine. *J Labeled Comp* 11:341-447 (1975).
19. Bronaugh RL, Hattox S, Hoehn MM, Murphy RC, Rutledge CO. The separation and identification of dopamine 3-0-sulphate and dopamine 4-0-sulphate in urine of Parkinsonian patients. *J Pharmacol Exp Ther* 195:441-452 (1975).

20. Clay KL, Murphy RC, Watkins WD. Experimental methanol toxicity in the primate: Analysis of metabolic acidosis. *Toxicol Appl Pharmacol* 34:49-61 (1975).

21. Ning TC, Atkins DM, Murphy RC. Bladder explosions during transurethral surgery. *J Urol* 114:536-539 (1975).

22. Hattox SE, Murphy RC. Synthesis and mass spectrometry of deuterium labeled melatonin. *Biomed Mass Spectrom* 2:272-275 (1975).

23. Anderson FS, Murphy RC. Isocratic separation of some purine nucleotide, nucleoside and base metabolites from biological extracts by high-performance liquid chromatography. *J Chromatogr* 121:251-262 (1976).

24. Zirrolli JA, Murphy RC. Mass spectrometry of 3-methoxy fatty acid methyl esters. *Org Mass Spectrom* 11:1114-1119 (1976).

25. Clay KL, Murphy RC. On the metabolic acidosis of ethylene glycol intoxication. *Toxicol Appl Pharmacol* 39:39-49 (1977).

26. Clay KL, Watkins WD, Murphy RC. Metabolism of pyrazole: Structure elucidation of urinary metabolites. *Drug Metab Dispos* 5:149-156 (1977).

27. Buck SH, Murphy RC, Molinoff PB. The normal occurrence of octopmine in the central nervous system of the rat. *Brain Res* 122:281-297 (1977).

28. Bryson RD, Watanabe AS, Rumack BH, Murphy RC. Commercially prepared Burdock Root Tea poisoning: A case report. *J Am Med Assoc* 239:2157 (1978).

29. Freed CR, Murphy RC. Mass spectrometric measurement of catecholamine turnover in rat hypothalamus after long-term L-dopa infusion. *J Pharmacol Exp Ther* 205:702-709 (1978).

30. Hattox SE, Murphy RC. Mass spectrometry and gas chromatography of trimethylsilyl derivatives of catecholamine related molecules. *Biomed Mass Spectrom* 5:338-345 (1978).

31. Murphy RC, Hattox SE, Helbig HR. Application and evaluation of limited mass recording with a gas chromatograph-mass spectrometer-computer system. *Biomed Mass Spectrom* 5:444-448 (1978).

32. Freed CR, Murphy RC. The synthesis of 2,3,5,6-tetra-deuterio acetaminophen. *J Labeled Compound* 15:637-643 (1978).

33. Murphy RC, Clay KL. Synthesis and back exchange of ^{18}O-labeled amino acids for use as internal standards with mass spectrometry. *Biomed Mass Spectrom* 6:309-314 (1979).

34. Freed CR, Quintero E, Murphy RC. Hypotension and hypothalamic amine metabolism after long-term alpha-methyldopa infusions. *Life Sciences* 23:313-322 (1978).

35. Clay KL, Murphy RC. A new procedure for isolation of amino acids based on selective hydrolysis of trimethylsilyl derivatives. *J Chromatogr* 164:417-426 (1979).

36. Murphy RC, Anderson FS, Clay KL. *In vitro* and *in vivo* studies of amino acids labeled with ^{18}O at the carboxyl moiety. In Stable Isotopes: Proc. 3rd Int. Conf. (ER Klein, PLD Klein, Eds.) Academic Press, NY, 139-146 (1979).

37. Samuelsson B, Borgeat P, Hammarstrom S, Murphy RC. Introduction of a nomenclature. *Prostaglandins* 17:785-787 (1979).

38. Murphy RC, Hammarstrom S, Samuelsson B. Leukotriene C: A slow reacting substance (SRS) from murine mastocytoma cells. *Proc Natl Acad Sci USA* 76:4275-4279 (1979). *PMCIDID411556*

39. Hammarstrom S, Murphy RC, Samuelsson B, Clark DA, Mioskowski C, Corey EJ. Structure of leukotriene C: Identification of the amino acid part. *Biochem Biophys Res Commun* 91:1266-1272 (1979).

40. Palmer MR, Mathews R, Murphy RC, Hoffer BJ. Leukotriene C elicits a prolonged excitation of cerebellar Purkinje neurons. *Neurosci Lett* 18:173-180 (1980).

41. Samuelsson B, Borgeat P, Hammarstrom S, Murphy RC. Leukotrienes: A new group of biologically active compounds. In: Advances in Prostaglandin and Thromboxane Research, Vol. 6 (B Samuelsson, PW Ramwell, R Paoletti, Eds.) Raven Press, NY, 1-18 (1980).

42. Clay KL, Murphy RC. The exchange of (^{18}O-H_2O) with the aromatic oxygen atom of catecholamine metabolites. *Biomed Mass Spectrom* 7:345-348 (1980).

43. Skoglund ML, Gerber JG, Murphy RC, Nies AS. Prostaglandin production in intact isolated gastric parietal cells. *Eur J Pharmacol* 66:145-148 (1980).

44. Clay KL, Murphy RC. Back exchange of ^{18}O-labeled amino acids by erythrocytes: The possible role of amino acid transport. *Biochem Biophys Res Commun* 95:1205-1210 (1980).

45. Samuelsson B, Hammarstrom S, Murphy RC, Borgeat P. Leukotrienes and slow reacting substance of anaphylaxis (SRS-A). *Allergy* 35:375-381 (1980).

46. Gerber JG, Payne NA, Murphy RC, Nies A. Prostacyclines produced by the pregnant uterus in the dog may act as circulating vasodepressor substance. *J Clin Invest* 67:632-636 (1981). *PMCID370611*

47. Murphy RC, Mathews R, Pickett W. Leukotrienes and thromboxanes: Metabolites of essential fatty acids with significant untoward pharmacological properties. *In* Nutritional Factors: Modulating Effects of Metabolic Processes, (EG Bassett, ed.), Raven Press, NY, pp. 495-509 (1981).

48. Pickett WC, Murphy RC. Enzymatic preparation of carboxyl oxygen-18 prostaglandin F_2 utility for quantitative mass spectrometry. *Anal Biochem* 111:115-121 (1981).

49. Pickett WC, Murphy RC. Combined chemical and enzymatic synthesis of 5,12-dihydroxy-6,8,10,14-eicosatetraenoic acid and comparison with leukotriene B. *In* SRS-A and Leukotrienes (PJ Piper, ed.), J. Wiley and Sons, Chichester 73-80 (1981).

50. Palmer MR, Mathews WR, Hoffer BJ, Murphy RC. Electrophysiological response of cerebellar Purkinje neurons to leukotriene D_4 and B_4. *J Pharmacol Exp Ther* 219:91-96 (1981).

51. Mathews WR, Rokach J, Murphy RC. Analysis of leukotrienes by high pressure liquid chromatography. *Anal Biochem* 118:96-101 (1981).

52. Vargaftig BB, Lefort J, Murphy RC. Leukotriene C and leukotriene D induce aspirin-sensitive bronchoconstriction in the guinea pig. *In* Pharmacology of Inflammation and Allergy: Lipids and Cells (F Russomarie, B Vargaftig, J Benveniste, eds.), Inst Natl Sante Rech Med, Paris, 153-160 (1981).

53. Murphy RC, Pickett WC, Culp BR, Lands WEM. Tetraene and pentaene leukotrienes: Selective production from murine mastocytoma cells after dietary manipulation. *Prostaglandins* 22:613-622 (1981).

54. Vargaftig BB, Lefort J, Murphy RC. Inhibition by aspirin of bronchoconstriction due to leukotriene C_4 and D_4 in the guinea pig. *Eur J Pharmacol* 72:417-418 (1981).

55. Vargaftig BB, Lefort J, Murphy RC. Leukotrienes C and D induce aspirin-sensitive bronchoconstriction in the guinea pig. *Agents and Action* 11:574-576 (1981).

56. Murphy RC, Mathews WR. Purification and characterization of leukotrienes from mastocytoma cells. *Methods Enzymol* 86:409-416 (1982).

57. Murphy RC, Clay KL. Preparation of ^{18}O-derivatives of eicosanoids for GC-MS quantitative analysis. *Methods Enzymol* 86:547-551 (1982).

58. Murphy RC, Clay KL, Mathews WR. Electrospray loading of field desorption emitters and desorption chemical ionization probes. *Anal Chem* 54:336-338 (1982).

59. Jorg A, Henderson WR, Murphy RC, Klebanoff SJ. Leukotriene generation by eosinophils. *J Exp Med* 155:390-402 (1982).

60. Jakschik BA, Harper T, Murphy RC. The 5-lipoxygenase and leukotriene forming enzymes. *Methods Enzymol* 86:30-37 (1982).

61. Murphy RC, Mathews WR, Rokach J, Fenselau C. Comparison of biological-derived and synthetic leukotriene C_4 by fast atom bombardment mass spectrometry. *Prostaglandins* 23:201-206 (1982).

62. Mathews WR, Murphy RC. Inhibition of leukotriene biosynthesis in mastocytoma cells by diethylcarbamazine. *Biochem Pharmacol* 31:2129-2132 (1982).

63. Strife RJ, Clay KL, Murphy RC. Quantitation of prostaglandin 6-keto-$F_{1\alpha}$ by capillary GC-MS with an enzymatically prepared oxygen-18 internal standard. *In* Synthesis and Applications of Isotopically Labeled Compounds, (WP Duncan, AB Susan, eds.), Elsevier, Amsterdam, pp. 301-302 (1982).

64. Jakschik BA, Harper T, Murphy RC. Leukotriene C_4 and D_4 formation by particulate enzymes. *J Biol Chem* 257:5346-5349 (1982).

65. Voelkel NF, Worthen S, Reeves JT, Henson PM, Murphy RC. Nonimmunological production of leukotrienes induced by platelet-activating factor. *Science* 218:286-288 (1982).

66. Metz SA, Hall ME, Harper TW, Murphy RC. Rapid extraction of leukotrienes from biological fluids and quantitation by high-performance liquid chromatography. *J Chromatogr* 233:193-201 (1982).

67. Murphy RC. Leukotrienes. *In* 1984 Yearbook of Science and Technology, (SP Parker, Ed.), McGraw Hill, New York, pp. 253-255 (1983).

68. Voelkel NF, Simpson J, Worthen S, Reeves JT, Henson PM, Murphy RC. Platelet-activating factor causes pulmonary vasoconstriction and edema via platelet- independent leukotriene formation. *In* Advances in Prostaglandins, Thromboxane and Leukotriene Research, Vol. 12, (B Samuelsson, R Paoletti, PM Ramwell, ed.), Raven Press, New York, pp. 179-183 (1983).

69. Leder R, Kirch D, Murphy R, Clay K, Freedman R. Partial resolution of tardive dyskinesia with treatment of co-existing thyrotoxicosis. *Can J Psychiat* 28:134-136 (1983).

70. Clay KL, Wahlin L, Murphy RC. Interlaboratory reproducibility of fast atom bombardment mass spectral data. *Biomed Mass Spectrom* 10:489-494 (1983).

71. Anderson FS, Westcott JY, Zirrolli JA, Murphy RC. Ethylenediaminetetraacetic acid in liquid chromatography of leukotrienes. *Anal Chem* 55:1837-1839 (1983).

72. Murphy RC, Hoffer B, Palmer M, Olsen L, Hayes EC, Rosenthal A, Young RN, Rokach J. Localization of cells with leukotriene-like immunoreactivity during anaphylaxis: Preliminary observations. *In* Leukotrienes and Other Lipoxygenase Products, (PJ Piper, ed.), John Wiley and Sons, Ltd., London, pp. 70-77 (1983).

73. Westcott JY, Murphy RC. The interaction of ethanol and exogenous arachidonic acid in the formation of leukotrienes and prostaglandin D_2 in mastocytoma cells. *Prostaglandins* 26:223-239 (1983).

74. Stenmark KR, James SL, Voelkel NF, Toews WH, Reeves JT, Murphy RC. Leukotriene C_4 and D_4 in neonates with hypoxemia and pulmonary hypertension. *N Engl J Med* 309:77-80 (1983).

75. Clay KL, Murphy RC. High resolution accurate mass measurements of FAB-generated ions by use of peak matching and multichannel analyzer techniques. *Int J Mass Spectrom Ion Phys* 53:327-330 (1983).

76. Hunter SW, Murphy RC, Clay KL, Gohren MD, Brennan PJ. Trehalose containing lipooligosaccharide. A new class of species-specific antigens from mycobacterium. *J Biol Chem* 258:10481-10487 (1983).

77. Kirch D, Hattox S, Bell J, Murphy RC, Freedman R. Plasma homovanillic acid and tardive dyskinesia during neutroleptic maintenance and withdrawal. *Psychiatry Res* 9:217-223 (1983).

78. Johnston GD, Hiatt HR, Nies AS, Payne NA, Murphy RC, Gerber JG. Factors modifying the early nondiuretic vascular effects of furosemide in man. *Circ Res* 53:630-635 (1983).

79. Feddersen CO, Mathias M, Murphy RC, Reeves JT, Voelkel NF. Leukotriene E_4 causes pulmonary vasoconstriction, not inhibited by meclofenamate. *Prostaglandins* 26:869-883 (1983).

80. Voelkel NF, Morganroth M, Stenmark KR, Feddersen OC, Murphy RC, Reeves JT. Leukotrienes in the lung circulation: Actions and interactions. *In* Hypoxia Exercise and Attitude, (JR Sutton, NL Jones, CS Houston, eds.), Alan Liss Publishers, New York, pp. 141-152 (1983).

81. Burghuber OC, Strife R, Zirrolli J, Mathias MM, Reeves JT, Murphy RC, Voelkel NF. Die rolle des arachidonsauremetabolismus auf den wasserstoffperoxid-induzierten lungenschaden. *Kongr Ber Wiss Tag Norddtsch Ges Lungen-u Bronchialheilk* 18:123-132 (1983).

82. Strife RJ, Murphy RC. Preparation of pentafluorobenzyl esters of arachidonic acid lipoxygenase metabolites: Analysis by gas chromatography and negative ion chemical ionization mass spectrometry. *J Chromatogr* 305:3-12 (1984).

83. Strife RJ, Murphy RC. Stable isotope labeled 5-lipoxygenase metabolites of arachidonic acid: Analysis by negative ion chemical ionization mass spectrometry. *Prostaglandins, Leukotrienes Med* 13:1-8 (1984).

84. Clay KL, Stene DO, Murphy RC. Quantitative analysis of platelet activating factor (AGEPC) by fast atom bombardment mass spectrometry. *Biomed Mass Spectrom* 11:47-49 (1984).

85. Metz SA, Murphy RC, Fujimoto WY. Effect of glucose-induced insulin release of lipoxygenase-mediated metabolites of arachidonic acid. *Diabetes* 33:119-124 (1984).

86. VanRollins M, Baker RC, Sprecher HW, Murphy RC. Oxidation of docosahexaenoic acid by rat liver microsomes. *J Biol Chem* 259:5776-5783 (1984).

87. Westcott JY, Clay KL, Murphy RC. Decomposition of leukotriene C_4. *J Allergy Clin Immunol* 74:363-368 (1984).

88. VanRollins M, Murphy RC. Autooxidation of docosahexaenoic acid: Analysis of ten isomers of hydroxydocosahexaenoate. *J Lipid Res* 25:507-517 (1984).

89. Morganroth ML, Reeves JT, Murphy RC, Voelkel NF. Leukotriene synthesis and receptor blockers block hypoxic pulmonary vasoconstriction. *J Appl Physiol* 56:1340-1346 (1984).

90. Voelkel NF, Stenmark KR, Reeves JT, Mathias MM, Murphy RC. Actions of lipoxygenase metabolites in isolated rat lungs. *J Appl Physiol* 57:860-867 (1984).

91. van Grondelle A, Worthen GS, Ellis D, Mathias MM, Murphy RC, Strife RJ, Reeves JT, Voelkel NF. Altering hydrodynamic variables influences PGI_2 production by isolated lungs and endothelial cells. *J Appl Physiol* 57:388-395 (1984).

92. Hunter SW, Fujiwara T, Murphy RC, Brennen PJ. N-acylkanosamine: A novel N-acylaminosugar from the trehalose-containing lipooligosaccharide antigens of *Mycobacterium kansasii*. *J Biol Chem* 259:9729-9734 (1984).

93. Gal J, Murphy RC. On the availability of 2,3,4,6-tetra-0-acetyl-beta-D-glucopyranosyl isothiocyanate, a chiral derivatizing agent in HPLC. *J Liquid Chromatogr* 7:2307-2314 (1984).

94. Murphy RC. Mass spectrometric quantitation and analysis of leukotrienes and other 5-lipoxygenase metabolites. *Prostaglandins* 28:597-601 (1984).

95. Clay KL, Murphy RC, Andres JL, Lynch J, Henson PM. Structure elucidation of platelet activating factor derived from human neutrophils. *Biochem Biophys Res Commun* 121:815-825 (1984).

96. Harper TW, Westcott JY, Voelkel NF, Murphy RC. Metabolism of leukotrienes B_4 and C_4 in the isolated perfused rat lung. *J Biol Chem* 259:14437-14440 (1984).

97. Morganroth ML, Stenmark KR, Zirrolli JA, Mauldin R, Mathias M, Reeves JT, Murphy RC, Voelkel NF. Leukotriene C_4 production during hypoxic pulmonary vasoconstriction in isolated rat lungs. *Prostaglandins* 28:867-875 (1984).

98. Murphy RC, Westcott JY. Synthesis of prostaglandins and leukotrienes: Effects of ethanol. *In* Recent Developments in Alcoholism, Vol. 3, (M. Galanter, Ed.), Plenum Press, New York, pp. 101-122 (1985).

99. Murphy RC. Measurement of 5-Lipoxygenase products in the lung. *In* Cyclooxygenase and Lipoxygenase Modulators in Lung Reactivity (F Berti, S Hurd, RS Hegyeli, eds.). Progress in Biochemical Pharmacology. S. Karger, Basel, Switzerland, vol. 20, pp. 84-100 (1985).

100. Burghuber OC, Strife RJ, Zirrolli J, Henson PM, Henson JE, Mathias MM, Reeves JT, Murphy RC, Voelkel NF. Leukotriene inhibitors attenuate rat lung injury induced by hydrogen peroxide. *Am Rev Respir Dis* 131:778-785 (1985).

101. Westcott JY, Murphy RC. Effect of alcohols on arachidonic acid metabolism in murine mastocytoma cells and human polymorphonuclear leukocytes. *Biochem Biophys Acta* 833:262-271 (1985).

102. Soberman RJ, Harper TW, Murphy RC, Austen KF. Identification and functional characterization of a soluble LTB_4 20-hydroxylase of human polymorphonuclear leukocytes. *Proc Nat Acad Sci USA* 82:2292-2295 (1985). *PMCID397543*

103. Gerozissis K, Vulliez B, Saavedra JM, Murphy RC, Dray F. Lipoxygenase products of arachidonic acid stimulate LHRH release from rat median eminence. *Neuroendocrinology* 40:272-276 (1985).

104. Sorensen SM, Hattox S, Johnson SW, Bickford P, Murphy RC, Freedman R. Norepinephrine-dependent and independent mechanisms of persistent effects of amphetamine in rat cerebellum. *Life Sciences* 36:2383-2389 (1985).

105. Murphy RC. Eicosanoid mass spectrometry. *Finnigan Spectra* 10:11-14 (1985).

106. Westcott JY, Clay KC, Murphy RC. Preparation of oxygen-18 labeled lipoxygenase metabolites of arachidonic acid. *Biomed Mass Spectrom* 12:714-718 (1985).

107. Murphy RC, Harper, T.W. Mass spectrometry and eicosanoid analysis. *In* Biochemistry of Arachidonic Acid Metabolism (WEM Lands, Ed.), Martius Nijhoff Publishers, Boston, pp. 417-435, (1985).

108. Morganroth ML, Stenmark KR, Morris KG, Murphy RC, Mathias M, Reeves JT, Voelkel NF. Diethylcarbamazine inhibits acute and chronic hypoxic pulmonary hypertension in awake rats. *Am Rev Respir Dis* 131:488-492 (1985).

109. French TA, Clay KL, Murphy RC, Weiner N. Alpha-methyl-para-tyrosine effects in mice selectively bred for differences in sensitivity to ethanol. *Biochem Pharmacol* 34:3811-3821 (1985).

110. Roberts DG, Strife RJ, Gerber JG, Murphy RC, Nies AS. Effect of sustained water diuresis on prostaglandin E_2 excretion in humans. *Am J Physiol* 248:F830-F834 (1985).

111. Stenmark KR, Morganroth ML, Remigio LK, Voelkel NF, Murphy RC, Henson PM. Alveolar inflammation and arachidonate metabolism in monocrotaline-induced pulmonary hypertension. *Am J Physiol* 248:H859-H866 (1985).

112. Murphy RC, Henson PM. Mediator network. Annales de l'Institut Pasteur/Immunologie (Institut Pasteur, Ed.), 136D:175-228 (1985).

113. Spearman ME, Prough RA, Estabrook RW, Falck JR, Manna S, Leibman KC, Murphy RC, Capdevila J. Novel glutathione conjugates formed from epoxyeicosatrienoic acids (EETs). *Arch Biochem Biophys* 242:225-230 (1985).

114. Westcott JY, Stenmark KR, Murphy RC. Analysis of leukotriene B_4 in human lung lavage by HPLC and mass spectrometry. *Prostaglandins* 31:227-237 (1986).

115. Chilton FH, III, Murphy RC. Fast atom bombardment of arachidonic acid containing phosphatidylcholine molecular species. *Biomed Mass Spectrom* 13:71-76 (1986).

116. Balazy M, Murphy RC. Determination of sulfidopeptide leukotrienes in biological fluids by gas chromatography/mass spectrometry. *Anal Chem* 58:1098-1101 (1986).

117. Murphy RC, Harper TW. Mass spectrometry of leukotrienes. *In* Mass Spectrometry in Biomedical Research, (S. Gaskell, Ed.), John Wiley & Sons Ltd, Chichester, U.K., pp. 11-29 (1986).

118. Harper TW, Garrity MJ, Murphy RC. Metabolism of leukotriene B_4 in isolated rat hepatocytes. Identification of novel 18-carboxyl-dinor LTB_4 metabolite. *J Biol Chem* 261:5414-5418 (1986).

119. Chilton FH, Murphy RC. Remodeling of arachidonate-containing phosphoglycerides within the human neutrophil. *J Biol Chem* 261:7771-7777 (1986).

120. Chilton FH, Murphy RC. Characterization of the arachidonate-containing molecular species of phosphoglycerides in the human neutrophil. *Prostagl Leukotr Med* 23:141-148 (1986).

121. Westcott JY, Balazy M, Stenmark KR, Murphy RC. Analysis of leukotriene D_4 in human lung lavage by HPLC, RIA, and mass spectrometry. *In* Advances in Prostaglandins, Thromboxane and Leukotriene Research (U Zor, Z Naor, F Kohen, Eds.), Raven Press, New York, Vol. 16, pp. 353-361 (1986).

122. Westcott JY, Chang S, Balazy M, Stene DO, Pradelles P, Maclouf J, Voelkel NF, Murphy RC. Analysis of 6-keto-$PGF_{1\alpha}$, 5-HETE, and LTC_4 in rat lung: Comparison of GC/MS, RIA, and EIA. *Prostaglandins* 32:857-873 (1986).

123. Burghuber OC, Strife R, Zirrolli J, Mathias MM, Murphy RC, Reeves JT, Voelkel NF. Hydrogen peroxide induced pulmonary vasoconstriction in isolated rat lungs is attenuated by U60,257, a leukotriene synthesis blocker. *Wien Klin Wochenschr* 98:117-119 (1986).

124. Murphy RC, Clay KL. Chemical synthesis and mass spectrometry of PAF. *In* Platelet Activating Factor (F. Snyder, Ed.), Plenum Publishing Company, New York, pp. 9-31 (1987).

125. Haroldsen PE, Clay KL, Murphy RC. Quantitation of lyso-platelet activating factor molecular species from human neutrophils by mass spectrometry. *J Lipid Res* 28:42-49 (1987).

126. Strife RJ, Voelkel NF, Murphy RC. Mass spectrometric analysis of 5-hydroxyeicostetraenoic acid (5-HETE) in the perfusate of the isolated rat lung. *Am Rev Respir Dis* 135:S18-S21 (1987).

127. Chilton FH, Hadley JS, Murphy RC. Incorporation of arachidonic acid into 1-acyl-2-lyso-sn-glycero-3-phosphocholine of the human neutrophil. *Biochim Biophys Acta* 917:48-56 (1987).

128. Gal J, Desai DM, Bloedow DC, Miller LV, Murphy RC. On the conversion of verapamil to carboxy verapamil. *Res Commun Chem Path Pharmacol* 52:387-390 (1986).

129. Murphy RC, Clay KL. Measurement of platelet activating factor by physico-chemical techniques. *Am Rev Respir Dis* 136:207-210 (1987).

130. Haroldsen PE, Voelkel NF, Henson JE, Henson PM, Murphy RC. Metabolism of platelet activating factor (PAF) in the isolated perfused rat lung. *J Clin Invest* 79:1860-1867 (1987). *PMCID424530*

131. Chilton FH, Murphy RC. Stimulated production and natural occurrence of 1,2-Diarachidonoylglycerophosphocholine in human neutrophils. *Biochem Biophys Res Commun* 145:1126-1133 (1987).

132. Haroldsen PE, Murphy RC. Analysis of phospholipid molecular species in rat lung as dinitrobenzoate diglycerides by electron capture negative chemical ionization mass spectrometry. *Biomed Environ Mass Spectrom* 14:573-578 (1987).

133. Fradin A, Henson PM, Murphy RC. Effect of ethanol on arachidonic acid metabolism in the murine peritoneal macrophage. *Prostaglandins* 33:579-589 (1987).

134. Murphy RC, Chilton FH, Haroldsen PE. Analysis and remodeling of phospholipid molecular species containing esterified arachidonic acid." *In* Proc. AOCS Short Course on Polyunsaturated Fatty Acids, (WEM Lands, Ed.) American Oil Chemists' Society, Champaign, Ill. Chapter 21, pp 169-184 (1987).

135. Westcott JY, Murphy RC, Stenmark K. Eicosanoids in human ventricular cerebrospinal fluid following severe brain injury. *Prostaglandins* 34:877-887 (1987).

136. Schwartzman ML, Balazy M, Masferrer J, Abraham NG, McGiff JC, Murphy RC. 12(R) HETE - A cytochrome P450-dependent arachidonate metabolite that inhibits Na^+,K^+-ATPase in the cornea. *Proc Natl Acad Sci USA* 84:8125-8129 (1987). *PMCID299491*

137. Bergholte JM, Soberman RJ, Hayes R, Murphy RC, Okita RT. Oxidation of 15-hydroxyeicosatetraenoic acid and other hydroxy-fatty acids by purified lung NAD^+-dependent prostaglandin dehydrogenase. *Arch Biochem Biophys* 257:444-450 (1987).

138. Stenmark KR, Eyzaguirre M, Westcott JY, Henson PM, Murphy RC. Potential role of eicosanoids and PAF in the pathophysiology of bronchopulmonary dysplasia. *Am Rev Respir Dis* 136:770-772 (1987).

139. Okita RT, Soberman RJ, Bergholte JM, Masters BSS, Hayes R, Murphy RC. omega-Hydroxylation of 15-hydroxyeicosatetraenoic acid by lung microsomes from pregnant rabbits. *Mol Pharmacol* 32:706-709 (1987).

140. Maclouf J, Murphy RC. Transcellular metabolism of neutrophil-derived leukotriene A_4 by human platelets. *J Biol Chem* 263:174-181 (1988).

141. Murphy RC, Stene DO. Oxidative metabolism of leukotriene E_4 by rat hepatocytes. *Ann NY Acad Sci* 524:35-42 (1988).

142. Stene DO, Murphy RC. Metabolism of leukotriene E_4 in isolated rat hepatocytes: Identification of β-oxidation products of sulfidopeptide leukotrienes. *J Biol Chem* 263:2773-2778 (1988).

143. Murphy RC, Falck JR, Lumin S, Yadagiri P, Zirrolli JA, Balazy M, Masferrer JL, Abraham NG, Schwartzmann ML. 12(R)-Hydroxy-eicosatrienoic acid: A vasodilator cytochrome P-450 dependent arachidonate metabolite from the bovine cornea epithelium. *J Biol Chem* 263:17197-17202 (1988).

144. Perrin P, Zirrolli J, Stene D, Lellouche JP, Beaucourt JP, Murphy RC. *In vivo* formation of β-oxidized metabolites of leukotriene E_4 in the rat. *Prostaglandins* 37:53-60 (1988).

145. Murphy RC. Mass spectrometry and leukotrienes. *Proc Jap Soc Biomed Mass Spectrom* 13:21-27 (1988).

146. Hadley JS, Fradin A, Murphy RC. Electron capture negative ion chemical ionization analysis of arachidonic acid. *Biomed Environ Mass Spectrom* 15:175-178 (1988).

147. Santoro TJ, Morris DH, Murphy RC, Baker RC. Aberrant production of leukotriene C_4 by macrophages from autoimmune-prone mice. *J Exp Med* 168:783-788 (1988).

148. Maclouf J, Murphy RC, Henson PM. Platelets and endothelial cells contribute to the production of LTC_4 by transcellular metabolism with neutrophils. *Adv Prostaglandins Thromboxane Leukot Res* 19:259-262 (1989).

149. Stene DO, Murphy RC. Sequential formation of leukotriene E_4 metabolites by isolated rat hepatocytes. *Adv. Prostaglandins Thromboxane Leukot Res* 19:108-111 (1989).

150. Masters BSS, Okita RT, Muerhoff AS, Leithauser MT, Gee A, Winquist S, Roerig DL, Clark, JE, Murphy RC, Ortiz de Montellano P. Pulmonary P-450-mediated eicosanoid metabolism and regulation in the pregnant rabbit. *Adv. Prostaglandins Thromboxane Leukot Res* 19:335-338 (1989).

151. Maclouf J, Fradin A, Vausbinder L, Henson PM, Murphy RC. Development of an *ex vivo* model to assess transcellular metabolism of arachidonic acid: Towards a reappraisal of the biosynthesis of eicosanoids. *In* Platelets and Vascular Occlusion, (Patrono C, FitzGerald GA, Eds.) Raven Press, New York, Vol. 54, pp. 151-159 (1989).

152. Maclouf J, Fitzpatrick FA, Murphy RC. Transcellular biosynthesis of eicosanoids. *Pharmacol Res* 21:1-7 (1989).

153. Murphy RC, Fitzpatrick FA, Maclouf J. Transcellular biosynthesis of eicosanoids and inflammation. *In* The Handbook of Inflammation: "Mediators of the Inflammatory Process." Vol. 6, (PM Henson, RC Murphy, Eds.), Elsevier Science Publishers BV, Amsterdam, The Netherlands, pp. 147-154 (1989).

154. Stene DO, Murphy RC. Metabolism of sulfidopeptide leukotrienes. *In* NATO ASI on Prostanoids and Drugs (B Samuelsson, F Berti, GC Folco, GP Velo, Eds.), Plenum Press, New York, vol. 177, pp. 37-46 (1989).

155. Murphy RC. Biosynthesis and Metabolism. *In* Prostaglandins in Clinical Practice, (WD Watkins, MB Peterson, JR Fletcher, Eds.), Raven Press, New York, Chapter 1, pp. 1-20 (1989).

156. Murphy RC, Clay KL, Zirrolli JA. Fundamental mass spectrometry and eicosanoid research. *In* NATO ASI on Prostanoids and Drugs (B Samuelsson, F Berti, GC Folco, GP Velo, Eds.), Plenum Press, New York, vol. 177, pp. 5-14 (1989).

157. Fitzpatrick FA, Murphy RC. Cytochrome P-450 metabolism of arachidonic acid: Formation and biological actions of "epoxygenase" derived eicosanoids. *Pharmacol Rev* 40:229-241 (1989).

158. Maclouf J, Murphy RC, Henson PM. Transcellular sulfidopeptide leukotriene biosynthetic capacity of vascular cells. *Blood* 74:703-707 (1989).

159. Fradin A, Zirrolli JA, Maclouf J, Vausbinder L, Henson PM, Murphy RC. PAF and leukotriene biosynthesis in whole blood: A model for the study of transcellular arachidonate metabolism. *J Immunol* 143:3680-3685 (1989).

160. Morelli JG, Yohn JJ, Lyons B, Murphy RC, Norris DA. Leukotrienes C_4 and D_4 as potent mitogens for cultured human neonatal melanocytes. *J Invest Dermatol* 93:719-722 (1989).

161. Murphy RC. Evidence for a common biosynthetic intermediate for eicosanoids and platelet activating factor. *In* The Therapeutic Control of Inflammatory Diseases (NR Ackerman, Ed.), Elsevier Science, Amsterdam, The Netherlands, pp. 150-156 (1989).

162. Chang S-W, Westcott JY, Pickett WC, Murphy RC, Voelkel NF. Endotoxin-induced lung injury in the rat: The role of eicosanoids. *J Appl Physiol* 66:2407-2418 (1989).

163. Masferrer JL, Murphy RC, Pagano PJ, Dunn MW, Laniado-Schwartzman M. Ocular effects of a novel cytochrome P-450 dependent arachidonic acid metabolite. *Invest Ophthalmol Visual Sci* 30:454-460 (1989).

164. Masferrer JL, Murphy RC, Abraham NG, Laniado-Schwartzman M. Corneal arachidonate metabolism via cytochrome P-450: Characterization of two novel biologically active metabolites. *Adv Prostaglandins Thromboxane Leukot Res* 19:351-354 (1989).

165. Murphy RC and Sala A. Quantitation of sulfidopeptide leukotrienes in biological fluids by gas chromatography-mass spectrometry. *Methods Enzymol* 187:90-98 (1990).

166. Morelli JG, Norris DA, Lyons MB, Murphy RC. Metabolism of exogenous leukotrienes by cultured human keratinocytes. *J Invest Dermatol* 94:681-684 (1990).

167. Zirrolli JA, Davoli E, Bettazzoli L, Gross ML, Murphy RC. Fast atom bombardment and collision-induced dissociation of prostaglandins and thromboxanes: Some examples of charge remote fragmentation. *J Am Soc Mass Spectrom* 1:325-335 (1990).

168. Maclouf J, Murphy RC, Henson PM. Transcellular biosynthesis of sulfidopeptide leukotrienes during receptor-mediated stimulation of human neutrophil/platelet mixtures. *Blood* 76:1838-1844 (1990).

169. Murphy RC, Clay KC. Preparation of labeled molecules by exchange with oxygen-18 Water. *Methods Enzymol* 193:338-348 (1990).

170. Laniado-Schwartzman M, David KL, Nishimura M, Abraham NG, Murphy RC. The cytochrome P450 metabolic pathway of arachidonic acid in the cornea. *Adv Prostaglandins Thromboxane Leukot Res* 21:185-192 (1990).

171. Bettazzoli L, Zirrolli JA, Reidhead CT, Shahgholi M, Murphy RC. Incorporation of arachidonic acid in glycerophospholipids of a murine bone marrow derived mast cell. *Adv Prostaglandins Thromboxane Leukot Res* 20:71-78 (1990).

172. Sala A, Voelkel N, Maclouf J, Murphy RC. Metabolism of radioisotopic variants of LTE_4 in human subjects and excretion of urinary metabolites. *Adv Prostaglandins Thromboxane Leukot Res* 21:177-180 (1990).

173. Cahill RA, Zhao Y, Murphy R, Sala A, Foegh M, Spitzer T, Deeg HJ. High urinary leukotriene E_4 (LTE_4) and thromboxane 2 (TxB_2) levels are associated with capillary leak syndrome in bone marrow transplant patients. *Adv Prostaglandins Thromboxane Leukot Res* 21:525-528 (1990).

174. Shirley MA, Murphy RC. Metabolism of leukotriene B_4 in isolated rat hepatocytes: Involvement of 2,4-dienoyl CoA reductase in leukotriene B_4 metabolism. *J Biol Chem* 265:16288-16295 (1990).

175. Sala A, Voelkel N, Maclouf J, Murphy RC. Leukotriene E_4 elimination and metabolism in normal human subjects. *J Biol Chem* 265:21771-21778 (1990).

176. Miadonna A, Tedeschi A, Brasca C, Folco G, Sala A, Murphy RC. Mediator release after endobronchial antigen challenge in patients with respiratory allergy. *J Allergy Clin Immunol* 85:906-913 (1990).

177. Sala A, Murphy RC, Voelkel NF. Direct airway injury results in elevated levels of peptido leukotrienes, detectable in airway secretions. *Prostaglandins* 42:1-7 (1991).

178. Zirrolli JA, Clay KC, Murphy RC. Tandem mass spectrometry of negative ions from phosphatidylcholine molecular species related to platelet activating factor. *Lipids* 26:1112-1116 (1991).

179. Bernstrom K, Kayganich K, Murphy RC. Collisionally induced dissociation of epoxy-eicosatrienoic acids (EET) and EET-phospholipid molecular species. *Anal Biochem* 198:203-211 (1991).

180. Shirley MA, Murphy RC. Metabolism of LTB_4 by isolated hepatocytes: New metabolites and effect of ethanol. *In* Advances in the Understanding and Treatment of Asthma. (PJ Piper , RD Krell, Eds.) New York Academy of Sciences, New York, NY, Vol. 629, pp.410-412 (1991).

181. Murphy RC, Maclouf J, Henson PM. Transcellular biosynthesis of leukotrienes: Is leukotriene A_4 a mediator? *In* Eicosanoids and Other Bioactive Lipids in Cancer and Radiation Injury (KV Honn, LJ Marnett, S Nigam, T Walden, Eds.), Kluwer Academic Publishers, Boston, pp. 9-14 (1991).

182. Murphy RC, Sala A, Voelkel N, Maclouf J. Appearance of urinary metabolites of LTE_4 in human subjects. *Ann NY Academy Sci* 629:105-111 (1991).

183. Kayganich K, Murphy RC. Molecular species analysis of arachidonate containing glycerophosphocholines by tandem mass spectrometry. *J Am Soc Mass Spectrom* 2:45-54 (1991).

184. Nishimura M, Laniado-Schwartzman M, Falck JR, Lumin S, Zirrolli JA, Murphy RC. Metabolism of 12(R)-hydroxy-5,8,10,14-eicosatetraenoic acid (12(R)HETE) in corneal tissues: Formation of novel metabolites. *Arch Biochem Biophys* 290:326-335 (1991).

185. Sala A, Kayganich K, Zirrolli JA, Murphy RC. Negative ion tandem mass spectrometry of leukotriene E_4 and LTE_4 metabolites: Identification of LTE_4 in human urine. *J Am Soc Mass Spectrom* 2:314-321 (1991).

186. Carroll MA, Sala A, Dunn CE, McGiff MC, Murphy RC. Structural identification of cytochrome P450-dependent arachidonate metabolites formed by rabbit medullary thick ascending limb cells. *J Biol Chem* 266:12306-12312 (1991).

187. Baker NJ, Kirch DG, Waldo M, Bell J, Adler LE, Hattox S, Murphy R, Freedman R. Plasma homovanillic acid and prognosis in schizophrenia. *Biol Psychiatry* 29:192-196 (1991).

188. Murphy RC, Maclouf J, Henson PM. Interaction of platelets and neutrophils in the generation of sulfidopeptide leukotrienes. *In* Cell-Cell Interactions in the Release of Inflammatory Mediators, (Wong PY-K, Serhan CN, Eds.), Plenum Press, New York, pp. 91-101 (1991).

189. Maclouf J, Antoine C, De Caterina R, Sicari R, Murphy RC, Patrignani P, Loizzo S, Patrono C. Entry rate of leukotriene C_4 into the vascular compartment and subsequent metabolism in healthy subjects. *Am J Physiol* 263:H244-H249 (1992).

190. Murphy RC, Sala A. Biochemistry of lipid mediators in the lung. *In* Treatise on Pulmonary Toxicology: Comparative Biology of the Normal Lung, Vol. 1, (RA Parent, Ed.) CRC Press, Boca Raton, Florida, Chapter 25, pp. 427-449 (1992).

191. Voelkel NF, Czartolomna J, Simpson J, Murphy RC. FMLP causes eicosanoid-dependent vasoconstriction and edema in endotoxin primed lungs. *Am Rev Respir Dis* 145:701-711 (1992).

192. Bernstrom K, Kayganich K, Murphy RC, Fitzpatrick FA. Incorporation and distribution of epoxyeicosatrienoic acid into cellular phospholipids. *J Biol Chem* 267:3686-3690 (1992).

193. Hill E, Fitzpatrick F, Murphy RC. Biological activity and metabolism of 20-hydroxy-arachidonic acid in the human platelet. *Br J Pharmacol* 106:267-274 (1992). *PMCID1907511*

194. Hill E, Murphy RC. Synthesis of 20-hydroxy arachidonic acid by the human neutrophil and platelet metabolism. *In* Eicosanoids and Other Bioactive Lipids in Cancer and Radiation Injury (KV Honn, LJ Marnett, S Nigam, T Walden, Eds.), Kluwer Academic Publishers, Boston, pp.265-270 (1992).

195. Hill E, Murphy RC. Quantitation of 20-hydroxy-5,8,11,14-eicosatetraenoic acid (20-HETE) produced by human polymorphonuclear leukocytes using electron capture ionization gas chromatography-mass spectrometry. *Biol Mass Spectrom* 21:249-253 (1992).

196. Shirley MA, Reidhead CT, Murphy RC. Chemotactic LTB_4 metabolites produced in hepatocytes in the presence of ethanol. *Biochem Biophys Res Commun* 185:604-610 (1992).

197. Antoine C, Murphy RC, Henson PM, Maclouf J. Time-dependent utilization of platelet arachidonic acid by the neutrophil in formation of 5-lipoxygenase products in platelet-neutrophil coincubations. *Biochim Biophys Acta* 1128:139-146 (1992).

198. Morelli JG, Hake SC, Murphy RC, Norris DA. Leukotriene B_4-induced human melanocyte pigmentation and leukotriene C_4-induced human melanocyte growth are inhibited by different isoquinolinesulfonamides. *J Invest Dermatol* 98:55-58 (1992).

199. Shirley MA, Murphy RC. Novel 3-hydroxylated leukotriene B_4 metabolites from ethanol-treated rat hepatocytes. *J Am Soc Mass Spectrom* 3:762-768 (1992).

200. Kayganich K, Murphy RC. Fast atom bombardment tandem mass spectrometric identification of diacyl, alkyl-acyl, and alk-1-enyl acyl molecular species of glycerophosphoethanolamine in human neutrophils. *Anal Chem* 64:2965-2971 (1992).

201. Hill E, Maclouf J, Murphy RC, Henson PM. Reversible membrane association of neutrophil 5-lipoxygenase is accompanied by retention of activity and a change in substrate specificity. *J Biol Chem* 267:22048-22053 (1992).

202. Fruteau de Laclos B, Zirrolli JA, Murphy RC. Collision induced dissociation of carboxylate anions from derivatized 5-lipoxygenase metabolites of arachidonic acid. *Biol Mass Spectrom* 22:9-18 (1993).

203. Zirrolli JA, Murphy RC. Low energy tandem mass spectrometry of the molecular ion derived from fatty acid methyl esters: A novel method for analysis of branched-chain fatty acids. *J Am Soc Mass Spectrom* 4:223-229 (1993).

204. Kayganich KA, Rose DM, Murphy RC, Morrow JD, Roberts LJ, II. Collision induced dissociation of F_2-isoprostane-containing phospholipids. *J Lipid Res* 34:1229-1235 (1993).

205. Wheelan P, Zirrolli JA, Murphy RC. Low energy fast atom bombardment tandem mass spectrometry of monohydroxy substituted unsaturated fatty acids. *Biol Mass Spectrom* 22:465-473 (1993).

206. Wheelan P, Zirrolli JA, Morelli JG, Murphy RC. Metabolism of leukotriene B_4 by cultured human keratinocytes: Formation of glutathione conjugates and dihydro metabolites. *J Biol Chem* 268:25439-25448 (1993).

207. Murphy RC, Wheelan P, Zirrolli JA. Mass spectrometry of lipid mediators of the inflammatory process. *Proc Jap Soc Biomed Mass Spectrom* 18:3-9 (1993).

208. Murphy RC, Zirrolli JA. Lipid Mediators: Eicosanoid and Fatty Acid Mass Spectrometry. In: Biological Mass Spectrometry: Present and Future. (T Matsuo, Y Seyama, R Caprioli, M Gross, Eds.) John Wiley, p. 463, 1993.

209. Murphy RC, FitzGerald GA. Current approaches to estimation of eicosanoid formation *in vivo*. *Adv Prostaglandins Thromboxane Leukot Res* 22:341-348 (1994).

210. Maclouf J, Antoine C, Henson PM, Murphy RC. Leukotriene C_4 formation by transcellular biosynthesis. *Ann NY Acad. Sci* 714:143-150 (1994).

211. Kayganich-Harrison KA, Murphy RC. Incorporation of stable isotope labeled arachidonic acid into cellular phospholipid molecular species and analysis by fast atom bombardment tandem mass spectrometry. *Biol Mass Spectrom* 23:562-571 (1994).

212. Kayganich-Harrison KA, Murphy RC. Fast atom bombardment mass spectrometry of [^{13}C]arachidonic acid labeled phospholipid molecular species. *J Am Soc Mass Spectrom* 5:144-150 (1994).

213. Zirrolli JA, Wheelan P, Murphy RC. Analysis of long-chain fatty acyl coenzyme A thioesters by negative ion FAB/MS and tandem mass spectrometry. *J Am Soc Mass Spectrom* 5:416-424 (1994).

214. Kayganich-Harrison K, Murphy RC. Characterization of chain-shortened oxidized glycerophosphocholine lipids using fast atom bombardment and tandem mass spectrometry. *Anal Biochem* 221:16-24 (1994).

215. Wheelan P, Travers JB, Morelli J, Murphy RC. Leukotriene B_4 metabolism by a specific 12-hydroxydehydrogenase in cultured human cells. *In* Lipid Mediators in Health and Disease (U Zor, Ed.), Freund Publishing House, England, pp. 151-156, 1994.

216. Murphy RC, Harrison KA. Fast atom bombardment mass spectrometry of phospholipids. *Mass Spectrom Rev* 13:57-75 (1994).

217. Wheelan P, Travers J, Morelli J, Murphy RC. Metabolism of leukotriene B_4 (LTB_4) and 12-hydroxy-5,8,10,14-eicosatetraenoic acid (12-HETE) in human keratinocytes. *Ann NY Acad Sci* 744:39-49 (1994).

218. Bhatt RK, Chauhan K, Wheelan P, Murphy RC, Falck JR. 3-Hydroxy-leukotriene B_4 (3-OH-LTB_4): Total synthesis and stereochemical assignment. *J Am Chem Soc* 116:5050-5056 (1994).

219. Wheelan P, Sala A, Folco G, Nicosia S, Falck JR, Bhatt RK, Murphy RC. Stereochemical analysis and biological activity of 3-hydroxy-leukotriene B_4: A metabolite from ethanol treated rat hepatocytes. *J Pharmacol Exp Ther* 271:1514-1519 (1994).

220. Murphy RC. GC/MS of PAF and related lipids. *J Lipid Mediators Cell Signalling* 10:183-184 (1994).

221. MacMillan DK, Hill E, Sala A, Sigal E, Shuman T, Henson PM, Murphy RC. Eosinophil 15-lipoxygenase is a leukotriene A_4 synthase. *J Biol Chem* 269:26663-26668 (1994).

222. Benech H, Brune P, Pruvost A, Archimbault P, Guillot P, Murphy RC, Maclouf J, Grognet JM. Fate of etiproston, a synthetic analogue of $PGF_{2\alpha}$, in cows. *J Vet Pharmacol Therap* 17:339-344 (1994).

223. Hill E, MacMillan D, Sala A, Henson PM, Murphy RC. Properties of LTA_4 synthase in human neutrophil preparations. *Adv Prostaglandins Thromboxane Leukot Res* 23:155-157 (1995).

224. Wheelan P, Zirrolli JA, Murphy RC. Analysis of hydroxy fatty acids as pentafluorobenzyl ester, trimethylsilyl ether derivatives by EI GC/MS. *J Am Soc Mass Spectrom* 6:40-51 (1995).

225. Murphy RC. Lipid mediators, leukotrienes, and mass spectrometry. *J Mass Spectrom* 30:5-16 (1995).

226. Khanapure S, Manna S, Rokach J, Murphy RC, Wheelan P, Powell WS. 12-Oxo-LTB_4, a key pivotal intermediate in LTB_4 metabolism. *J Org Chem* 60:1806-1813 (1995).

227. Wheelan P, Murphy RC. Metabolism of 6-trans isomers of leukotriene B_4 in cultured hepatoma cells and in human polymorphonuclear leukocytes: Identification of a Δ^6-reductase metabolic pathway. *J Biol Chem* 270:19845-19852 (1995).

228. Harrison KA, Murphy RC. Isoleukotrienes: Biologically active free radical products of lipid peroxidation. *J Biol Chem* 270:17273-17278 (1995).

229. Wheelan P, Murphy RC. Metabolism of leukotriene B_4 in cultured hepatoma cells. *Arch Biochem Biophys* 321:381-389 (1995).

230. MacMillan DK, Murphy RC. Analysis of lipid hydroperoxides and long-chain conjugated keto acids by negative ion electrospray mass spectrometry. *J Am Soc Mass Spectrom* 6:1190-1201 (1995).

231. Harrison KA, Murphy RC. Negative electrospray ionization of glycerophosphocholine lipids: Formation of $[M-15]^-$ ions occurs via collisional decomposition of adduct anions. *J Mass Spectrom* 30:1772-1773 (1995).

232. Travers JB, Huff JC, Rola-Pleszczynski M, Gelfand EW, Morelli JG, Murphy RC. Identification of functional platelet-activating factor receptors on human keratinocytes. *J Invest Dermatol* 105:816-823 (1996).

233. Murphy RC. Free radical-induced oxidation of glycerophosphocholine lipids and formation of biologically active products. *Adv Exp Med Biol* 416:51-58 (1996).

234. Wheelan P, Zirrolli JA, Murphy RC. Electrospray ionization and low energy tandem mass spectrometry of polyhydroxy unsaturated fatty acids. *J Am Soc Mass Spectrom* 7:140-149 (1996).

235. Wheelan P, Zirrolli JA, Murphy RC. Negative ion electrospray tandem mass spectrometric structural characterization of leukotriene B_4 (LTB_4) and LTB_4-derived metabolites. *J Am Soc Mass Spectrom* 7:129-139 (1996).

236. Murphy RC, Harrison KA. Isoeicosanoids: Mass spectrometry of free radical oxidation products derived from arachidonoyl phospholipids. *In* Mass Spectrometry in the Biological Sciences (AL Burlingame, SA Carr, Eds.) Humana Press, Totowa, New Jersey, pp. 451-476 (1996)

237. Harrison KA, Murphy RC. Direct mass spectrometric analysis of ozonides: Application to unsaturated glycerophosphocholine lipids. *Anal. Chem*. 68:3224-3230 (1996).

238. Travers JB, Harrison KA, Johnson CA, Clay KL, Morelli JG, Murphy RC. Platelet-activating factor biosynthesis induced by various stimuli in human HACAT keratinocytes. *J Invest Dermatol* 107:88-94 (1996).

239. Waugh RJ, Murphy RC. Mass spectrometric analysis of four regioisomers of F_2-isoprostanes formed by free radical oxidation of arachidonic acid. *J Am Soc Mass Spectrom* 7:490-499 (1996).

240. Wheelan P, Simon FR, Murphy RC. Gas chromatographic/mass spectrometric analysis of oxo and chain-shortened leukotriene B_4 metabolites: Leukotriene B_4 metabolism in Ito cells. *J Mass Spectrom* 31:236-246 (1996).

241. Murphy RC. Metabolism of eicosanoids in mammalian cells. *In* Eicosanoids: From Technology to Therapeutic Applications (GC Folco, Ed.), Plenum Publishing, New York, NY, pp. 45-59 (1996).

242. Murphy RC, Waugh RJ. Mass spectrometry of isoeicosanoids as novel lipid substances. *In* Selected Topics in Mass Spectrometry in the Biomolecular Sciences (RM Caprioli, A Malorni, G Sindona, eds.) Kluwer Academic Publishers, The Netherlands, pp. 501-515 (1997).

243. Sala A, Folco G, Henson PM, Murphy RC. Pharmacological modulation of human platelets LTC_4-synthase. *Biochem Pharmacol* 53:905-908 (1997).

244. Waugh RJ, Morrow JD, Roberts LJ, II, Murphy RC. Identification and relative quantitation of F_2-isoprostane regioisomers formed *in vivo* in the rat. *Free Radic Biol Med* 23:943-954 (1997).

245. Wheelan P, Murphy RC. Quantitation of 5-lipoxygenase products by electrospray mass spectrometry: Effect of ethanol on zymosan-stimulated production of 5-lipoxygenase by human neutrophils. *Anal Biochem*, 244:110-115 (1997).

246. Murphy RC, Wheelan P. Metabolism of leukotrienes *in vitro* and *in vivo*. *In* From SRS-A to Leukotrienes: The Dawning of a New Treatment (S-E Dahlén, S Holgate, Eds.) Blackwell Science, London, Chapter 7, pp.101-120 (1997).

247. Travers JB, Johnson C, Clay KL, Harrison K, Zekman T, Morelli JG, Murphy RC. Identification of *sn*-2 acetyl glycerophosphocholines in human keratinocytes. *J Lipid Mediators Cell Signalling* 16:139-145 (1997).

248. Hankin J, Wheelan P, Murphy RC. Identification of novel metabolites of PGE_2 formed by isolated rat hepatocytes. *Arch Biochem Biophys* 340:317-330 (1997).

249. Shirley MA, Wheelan P, Howell SR, Murphy RC. Oxidative metabolism of a rexinoid and rapid phase II metabolite identification by mass spectrometry. *Drug Metab Dispos* 25:1144-1149 (1997).

250. Nakamura T, Bratton DL, Murphy RC. Analysis of epoxyeicosatrienoic and monohydroxy-eicosatetraenoic acids esterified to phospholipids in human red blood cells by electrospray tandem mass spectrometry. *J Mass Spectrom* 32:888-896 (1997).

251. Tsoukatos DC, Arborati M, Liapikos T, Clay KL, Murphy RC, Chapman MJ, Ninio E. Copper-catalyzed oxidation mediates PAF formation in human LDL subspecies: Protective role of PAF: acetylhydrolase in dense LDL. *Arterioscler Thromb Vasc Biol* 17:3505-3512 (1997).

252. Hankin JA, Murphy RC. MALDI-TOF and electrospray tandem mass spectrometric analysis of fatty acyl-CoA esters. *Int'l J Mass Spectrom Ion Proc* 165/166:467-474 (1997).

253. Murphy RC, Wheelan P. Pathways of leukotriene metabolism in isolated cell models and human subjects. *In* Lung Biology in Health and Disease: Five-Lipoxygenase Products in Asthma (JM Drazen, S-E Dahlén, TH Lee, Eds.) Marcel Dekker, New York, Vol. 120 pp. 87-123 (1998).

254. Hankin JA, Clay CE, Murphy RC. The effects of ethanol and acetaldehyde on the metabolism of prostaglandin E_2 and leukotriene B_4 in isolated rat hepatocytes. *J Pharmacol Exp Ther* 285:155-161 (1998).

255. Hall LM, Murphy RC. Electrospray mass spectrometric analysis of 5-hydroperoxy and 5-hydroxyeicosatetraenoic acids generated by lipid peroxidation of red blood cell ghost phospholipids. *J Am Soc Mass Spectrom* 9:527-532 (1998).

256. Pei Y, Barber LA, Murphy RC, Johnson CA, Kelley SW, Dy LC, Fertel RH, Nguyen TM, Williams DA, Travers JB. Activation of the epidermal platelet-activating factor receptor results in cytokine and cyclooxygenase-2 biosynthesis. *J Immunol* 161:1954-1961 (1998).

257. Hall LM, Murphy RC. Analysis of stable oxidized molecular species of glycerophospholipids following treatment of red blood cell ghosts with t-butylhydroperoxide. *Anal Biochem* 258:184-194 (1998).

258. Mancini J, Waugh RJ, Thompson JA, Evans JF, Belley M, Zamboni R, Murphy RC. Structural characterization of the covalent attachment of leukotriene A_3 to leukotriene A_4 hydrolase. *Arch Biochem Biophys* 354:117-124 (1998).

259. Hall LM, Murphy RC. Activation of human polymorphonuclear leukocytes by products derived from the peroxidation of human red blood cell membranes. *Chem Res Toxicol* 11:1024-1031 (1998).

260. Nakamura T, Henson PM, Murphy RC. Occurrence of oxidized metabolites of arachidonic acid esterified to phospholipids in murine lung tissue. *Anal Biochem* 262:23-32 (1998).

261. Fiedler J, Wheelan P, Henson PM, Murphy RC. Exogenous leukotriene B_4 (LTB_4) inhibits human neutrophil generation of LTB_4 from endogenous arachidonic acid during opsonized zymosan phagocytosis. *J Pharmacol Exp Ther* 287:150-156 (1998).

262. Travers JB, Murphy, RC, Johnson CA, Pei Y, Morin SM, Clay KL, Barber LA, Hood AF, Morelli JG, Williams DA. Identification and pharmacological characterization of platelet-activating factor and related 1-palmitoyl species in human inflammatory blistering diseases. *Prostagl. Other Lipid Mediators* 56:305-324 (1998).

263. Murphy RC, Nakamura T, Hall, LM. Radical thoughts about phospholipid oxidation: New directions for mass spectrometry. *Proc Jap Soc Biomed Mass Spectrom* 23:3-9 (1998).

264. Barber LA, Spandau DF, Rathman SC, Murphy RC, Johnson CA, Kelley SW, Hurwitz SA, Travers JB. Expression of the platelet-activating factor receptor results in enhanced ultraviolet B radiation-induced apoptosis in a human epidermal cell line. *J Biol Chem* 273:18891-18897 (1998).

265. Murphy RC, Khaselev N, Nakamura T, Hall, LM. Oxidation of glycerophospholipids from biological membranes by reactive oxygen species: LC/MS analysis of eicosanoid products. *J Chromatogr B Biomed Sci Appl* 731:59-71 (1999).

266. Murphy RC, Hankin JA. Metabolism of leukotrienes and formation of new leukotriene structures. *In* Novel Inhibitors of Leukotrienes. Progress in Inflammation Research (G Folco, B Samuelsson, RC Murphy, eds) Birkhäuser Verlag, Basel, Switzerland, pp. 63-82 (1999).

267. Mallat Z, Nakamura T, Ohan J, Leseche G, Tedgui A, Maclouf J, Murphy RC. The relationship of hydroxyeicosatetraenoic acids and F_2-isoprostanes to plaque instability in human carotid atherosclerosis. *J Clin Invest* 103:421-427 (1999). *PMCID407895*

268. Wheelan P, Hankin JA, Bilir B, Guenette D, Murphy RC. Metabolic transformations of leukotriene B_4 in primary cultures of human hepatocytes. *J Pharmacol Exp Ther* 288:326-334 (1999).

269. Sala A, Zarini S, Folco G, Murphy RC, Henson PM. Differential metabolism of exogenous and endogenous arachidonic acid in human neutrophils. *J Biol Chem* 274:28264-28269 (1999).

270. Harrison K, Clay KL, Murphy RC. Negative ion electrospray and tandem mass spectrometric analysis of platelet activating factor (PAF) (1-hexadecyl-2-acetyl-glycerophosphocholine). *J Mass Spectrom* 34:330-335 (1999).

271. Khaselev N, Murphy RC. Susceptibility of plasmenyl glycerophosphoethanolamine lipids containing arachidonate to oxidative degradation. *Free Radic Biol Med*, 26:275-284 (1999).

272. Marathe GK, Davies SS, Harrison KA, Silva AR, Murphy RC, Castro-Faria-Neto H, Prescott SM, Zimmerman GA, McIntyre TM. Inflammatory platelet-activating factor-like phospholipids in oxidized low-density lipoproteins are fragmented alkyl phosphatidyl-cholines. *J Biol Chem* 274:28395-28404 (1999).

273. Nakamura T, Hall L, Murphy RC. Oxidation of arachidonate containing glycerophospholipids in intact red blood cells and red blood cell membranes with tert-butylhydroperoxide. *Adv Exp Med Biol* 469:539-545 (1999).

274. Khaselev N, Murphy RC. Electrospray ionization mass spectrometry of lysoglycero-phosphocholine lipid subclasses. *J Am Soc Mass Spectrom* 11:283-291 (2000).

275. Murphy RC, Nakamura T. Electrospray mass spectrometric analysis of lipid mediators derived from arachidonic containing membrane phospholipids *In* Mass Spectrometry in Biology and Medicine (AL Burlingame, SA Carr, Eds.) Humana Press, Totowa, NJ, pp. 497-514 (2000).

276. Hankin JA, Murphy RC. The metabolism of LTB_4 in Lewis lung carcinoma porcine kidney cells (LLCPK-1). *Am J Respir Crit Care Med* 161:S81-S87 (2000).

277. Marathe GK, Harrison KA, Murphy RC, Prescott SM, Zimmerman GA, McIntyre TM. Bioactive phospholipid oxidation products. *Free Radic Biol Med* 28:1762-1770 (2000).

278. Harrison KA, Davies SS, Marathe GC, McIntyre T, Prescott S, Reddy KM, Falck JR, Murphy RC. Analysis of oxidized glycerophosphocholine lipids using electrospray ionization mass spectrometry and microderivatization techniques. *J Mass Spectrom* 35:224-236 (2000).

279. Khaselev N, Murphy RC. Structural characterization of oxidized phospholipid products derived from arachidonate containing plasmenyl glycerophosphocholine. *J Lipid Res* 41:564-572 (2000).

280. Khaselev N, Murphy RC. Peroxidation of arachidonate containing plasmenyl glycerophosphocholine lipids: Facile oxidation of esterified arachidonate at carbon-5. *Free Radic Biol Med* 29:620-632 (2000).

281. Reiber DC, Murphy, RC. Covalent binding of LTA_4 to nucleosides and nucleotides. *Arch Biochem Biophys* 379:119-126 (2000).

282. Bowers RC, Hevko J, Henson PM, Murphy RC. A novel glutathione containing eicosanoid (FOG_7) chemotactic for human granulocytes. *J Biol Chem* 275:29931-29934 (2000).

283. Hankin JA, Murphy RC. Lipids mediators and mass spectrometry: An historical perspective. *Int J Mass Spectrom* 200:201-217 (2000).

284. Hevko J, Bowers RC, Murphy RC. Synthesis of 5-oxo-6,8,11,14-tetraenoic acid and identification of novel omega oxidized metabolites in the mouse macrophage. *J Pharmacol Exp Ther* 296:293-305 (2001).

285. Marathe GK, Harrison KA, Roberts LJ 2nd, Morrow JD, Murphy RC, Tjoelker LW, Prescott SM, Zimmerman GA, McIntyre TM. Identification of platelet-activating factor as the inflammatory lipid mediator in $CC1_4$-metabolizing rat liver. *J Lipid Res* 42:587-596 (2001).

286. Murphy RC, Fiedler J, Hevko J. Analysis of nonvolatile lipids by mass spectrometry. *Chem Rev* 101:479-526 (2001).

287. Hevko J, Murphy RC. Electrospray ionization and tandem mass spectrometry of cysteinyl eicosanoids: Leukotriene C_4 and FOG_7. *J Am Soc Mass Spectrom* 12:763-771 (2001).

288. Murphy RC. Free radical induced oxidation of arachidonoyl plasmalogen phospholipids: Antioxidant mechanism and precursor pathway for bioactive eicosanoids. *Chem Res Toxicol* 14:463-472 (2001).

289. Davies SS, Pontsler AV, Marathe GK, Harrison KA, Murphy RC, Hinshaw JC, Prestwich GD, St. Hilaire A, Prescott SM, Zimmerman GA, McIntyre TM. Oxidized alkyl phospholipids are specific, high affinity peroxisome proliferator-activated receptor γ ligands and agonists. *J Biol Chem* 276:16015-16023 (2001).

290. Fiedler J, Simon FR, Iwahashi M, Murphy RC. Effect of PPARα activation on leukotriene B_4 metabolism in the isolated rat hepatocyte. *J Pharmacol Exp Therap* 299:691-697 (2001).

291. Mohapatra S, Capdevila JH, Murphy RC, Hevko JM, Falck JR. Efficient total synthesis of 5-oxo-6(E),8(Z),11(Z),14(Z)-eicosatetraenoic acid (5-oxo-ETE), a potent proinflammatory autacoid. *Tetrahedron Lett* 42:4109-4110 (2001).

292. Liu Y, Manna A, Li R, Martin WE, Murphy RC, Cheung AL, Zhang G. Crystal structure of the SarR protein from *Staphylococcus aureus*. *Proc Natl Acad Sci USA* 98:6877-6882 (2001). *PMCID34446*

293. Storey MK, Clay KL, Kutateladze T, Murphy RC, Overduin M, Voelker DR. Phosphatidylethanolamine has an essential role in *Saccharomyces cerevisiae* that is independent of its ability to form hexagonal phase structures. *J Biol Chem* 276:48539-48548 (2001).

294. Bauer AK, Dwyer-Nield LD, Hankin JA, Murphy RC, Malkinson AM. The lung tumor promoter, butylated hydroxytoluene (BHT), causes chronic inflammation in promotion-sensitive BALB/cByJ mice but not in promotion-resistant CXB4 mice. *Toxicology* 169:1-15 (2001).

295. Profita M, Sala A, Siena L, Henson PM, Murphy RC, Paterno A, Bonanno A, Riccobono L, Mirabella A, Bonsignore G, Vignola AM. Leukotriene B_4 production in human mononuclear

phagocytes is modulated by IL-4-induced 15-lipoxygenase. *J Pharmacol Exp Therap* 330:868-875 (2002).

296. Murphy RC, Zarini S. Glutathione adducts of oxyeicosanoids. *Prostaglandins Other Lipid Mediat* 68-69:471-482 (2002).

297. Petersen JE, Hiran TS, Goebel WS, Johnson C, Murphy RC, Azmi FH, Hood AF, Travers JB, Dinauer MC. Enhanced cutaneous inflammatory reactions to *Aspergillus fumigatus* in a murine model of chronic granulomatous disease. *J Invest Dermatol* 118:424-429 (2002).

298. Hevko JM, Murphy RC. Formation of murine macrophage derived FOG_7 is catalyzed by LTC_4 synthase. *J Biol Chem* 277:7037-7043 (2002).

299. Uhlson C, Harrison K, Allen CB, Ahmad S, White CW, Murphy RC. Oxidized phospholipids derived from ozone treated lung surfactant extract reduce macrophage and monocyte viability. *Chem Res Toxicol* 15:896-906 (2002).

300. Wilderman PJ, Vasil AI, Martin WE, Murphy RC, Vasil ML. *Pseudomonas aeruginosa* synthesizes phosphatidylcholine by use of the phosphatidylcholine synthase pathway. *J Bacteriol* 184:4792-4799 (2002). *PMCID135270*

301. Dickinson JS, Murphy RC. Mass spectrometric analysis of leukotriene A_4 and other chemically reactive metabolites of arachidonic acid. *J Am Soc Mass Spectrom* 13:1227-1234 (2002).

302. Stonehouse MJ, Cota-Gomez A, Parker SK, Martin WE, Hankin JA, Murphy RC, Chen W, Lim KB, Hackett M, Vasil AI, Vasil ML. A novel class of microbial phosphocholine-specific phospholipases C. *Mol Microbiol* 46:661-676 (2002).

303. Smith WL, Murphy RC. The eicosanoids: Cyclooxygenase, lipoxygenase, and epoxygenase pathways. *In* Biochemistry of Lipids, Lipoproteins and Membranes (Vance DE and Vance JE, Eds), 4th Ed., Chp 13, pp 341-371, Elsevier Science, New York (2002).

304. Hankin JA, Jones DNM, Murphy RC. Covalent binding of leukotriene A_4 to DNA and RNA. *Chem Res Toxicol* 16:551-561 (2003).

305. Pulfer M, Murphy RC. Electrospray mass spectrometry of phospholipids. *Mass Spectrom Rev* 22:332-364 (2003).

306. Liu Y, Hong X, Kappler J, Jiang L, Zhang R, Xu L, Pan C-H, Martin WE, Murphy RC, Shu H-B, Dal S, Zhang G. Ligand-receptor binding revealed by the TNF family member TALL-1. Nature 423:49-56 (2003).

307. Watanabe J, Marathe GK, Neilsen PO, Weyrich AS, Harrison KA, Murphy RC, Zimmerman GA, McIntyre TM. Endotoxins stimulate neutrophil adhesion followed by synthesis and release of PAF in microparticles. *J Biol Chem* 278:33161-33168 (2003).

308. Zarini S, Murphy RC. Biosynthesis of 5-oxo-6,8,11,14-eicosatetraenoic acid from 5-hydroperoxyeicosatetraenoic acid in the murine macrophage. *J Biol Chem* 278:11190-11196 (2003).

309. Hankin JA, Murphy RC. Covalent binding of leukotriene A_4 to nucleosides, nucleotides, and nucleic acid. *Adv Exp Med Biol* 525:29-33 (2003).

310. Zemski-Berry KA, Borgeat P, Gosselin J, Flamand L, Murphy RC. Urinary metabolites of leukotriene B_4 in the human subject. *J Biol Chem* 278:24449-24460 (2003).

311. Bowers R, Cool C, Murphy RC, Tuder RM, Hopken MW, Flores SC, Voelkel NF. Oxidative stress in severe pulmonary hypertension. *Am J Respir Crit Care Med* 169:764-769 (2004).

312. Murphy RC, Bowers RC, Dickinson J, Zemski Berry K. Perspective on the biosynthesis and metabolism of eicosanoids. *In* The Eicosanoids (P. Curtis Prior, editor) John Wiley & Sons, London, England, Chapter 1 (2004).

313. Pulfer MK, Harrison K, Murphy RC. Direct electrospray tandem mass spectrometry of the unstable hydroperoxy bishemiacetal product derived from cholesterol ozonolysis. *J Am Soc Mass Spectrom* 15:194-202 (2004).

314. Dickinson Zimmer JS, Voelker DR, Bernlohr DA, Murphy RC. Stabilization of leukotriene A_4 by epithelial fatty acid binding protein in the rat basophilic leukemia cell. *J Biol Chem* 279:7420-7426 (2004).

315. Di Gennaro A, Carnini C, Buccellati C, Ballerio R., Zarini S, Fumagalli F, Viappiani S, Librizzi L, Hernandez A, Murphy RC, Constantin G, de Curtis M, Folco G, Sala A. Cysteinyl-leukotriene receptors activation in brain inflammatory reactions and cerebral edema formation: A role for transcellular biosynthesis of cysteinyl-leukotrienes. *FASEB J*, 18:842-844 (2004).

316. Pulfer MK, Murphy RC. Formation of biologically active oxysterols during ozonolysis of cholesterol present in lung surfactant. *J Biol Chem* 279:26331-26338 (2004).

317. Hankin JA, Murphy RC. Mass spectrometric quantitation of deoxyguanosine and leukotriene A_4-deoxyguanosine adducts of DNA. *Anal Biochem* 333:156-164 (2004).

318. Zemski Berry KA, Murphy RC. Electrospray ionization tandem mass spectrometry of glycerophosphoethanolamine plasmalogen phospholipids. *J Am Soc Mass Spectrom* 15:1499-1508 (2004).

319. Ghosh M., Stewart A, Tucker DE, Bonventre JV, Murphy RC, Leslie CC. Role of cytosolic phospholipase A_2 in Prostaglandin E_2 production by lung fibroblasts. *Am J Respir Cell Mol Biol* 30:91-100 (2004).

320. Fessler MB, Arndt PG, Frasch SC, Lieber JG, Johnson CA, Murphy RC, Nick JA, Bratton DL, Malcolm KC, Worthen GS. Lipid rafts regulate lipopolysaccharide-induced activation of Cdc42 and inflammatory functions of the human neutrophil. *J Biol Chem* 279:39989-39998 (2004).

321. Dickinson Zimmer J, Bernlohr DA, Murphy RC. Fatty acid-binding proteins: Stabilization of leukotriene A_4 and competition with arachidonic acid. *J Lipid Res* 45:2138-2144 (2004).

322. Nick JA, Coldren CD, Geraci MW, Poch KR, Fouty BW, O'Brien J, Gruber M, Zarini S, Murphy RC, Kuhn K, Richter D, Kast KR, Abraham E. Recombinant human activated protein C reduces human endotoxin-induced pulmonary inflammation via inhibition of neutrophil chemotaxis. *Blood* 104:3878-3885 (2004).

323. Quittnat F, Nishikawa Y, Stedman TT, Voelker DR, Choi JY, Zhan MM, Murphy RC, Barkley RM, Pypaert M, Joiner KA, Coppens I. On the biogenesis of lipid bodies in ancient eukaryotes: Synthesis of triacylglycerols by a toxoplasma DGATI-related enzyme. *Mol Biochem Parasitol* 138:107-122 (2004).

324. Choi JY, Martin WE, Murphy RC, Voelker DR. Phosphatidylcholine and N-methylated phospholipids are nonessential in *Saccharomyces cerevisiae*. *J Biol Chem* 279:42321-42330 (2004).

325. Pulfer MK, Taube C, Gelfand E, Murphy RC. Ozone exposure *in vivo* and formation of biologically active oxysterols in the lung. *J Pharmacol Exp Ther* 312:256-264 (2005).

326. Blaine SA, Meyer AM, Hurteau G, Wick M, Hankin JA, Murphy RC, Dannenberg AJ, Geraci MW, Subbaramaiah K, Nemenoff RA. Targeted over-expression of mPGES-1 and elevated PGE_2 production is not sufficient for lung tumorigenesis in mice. *Carcinogenesis* 26:209-217 (2005).

327. Zemski Berry K, Murphy RC. Free radical oxidation of plasmalogen glycerophosphocholine containing esterified docosahexaenoic acid: Structure determination by mass spectrometry. *Antioxid Redox Signal* 7:157-169 (2005).

328. Murphy RC, Raetz CRH, Reynolds CM, Barkley RM. Mass spectrometry advances in lipidomica: Collision induced decomposition of Kdo_2-lipid A. *Prostaglandins Other Lipid Mediat* 77:131-140 (2005). *PMCID4535423*

329. Piboonpocanun S, Chiba H, Mitsuzawa H, Martin W, Murphy RC, Harbeck RJ, Voelker DR. Surfactant protein A binds *Mycoplasma pneumoniae* with high affinity and attenuates its growth by recognition of desaturated-phosphatidylglycerols. *J Biol Chem* 280:9-17 (2005).

330. Marathe GK, Johnson C, Billings SD, Southall MD, Pei Y, Spandau D, Murphy RC, Zimmerman GA, McIntyre TM, Travers JB. Ultraviolet B radiation generates PAF-like phospholipids underlying cutaneous damage. *J Biol Chem* 280:35448-35457 (2005).

331. Zhang Q, Southall MD, Mezsick SM, Johnson C, Murphy RC, Konger RL, Travers JB. Epidermal peroxisome proliferator-activated receptor as a target for ultraviolet B radiation. *J Biol Chem* 280:73-79 (2005).

332. Sparagna GC, Johnson CA, McCune SA, Moore RL, Murphy RC. Quantitation of cardiolipin molecular species in spontaneously hypertensive heart failure rats using electrospray ionization mass spectrometry. *J Lipid Res* 46:1196-1204 (2005).

333. Nomura T, Chang H-Y, Lu R, Hankin J, Murphy RC, Schuster VL. Prostaglandin signaling in the renal collecting duct: Release, reuptake, and oxidation in the same cell. *J Biol Chem* 280:28424-28429 (2005).

334. Zemski Berry KA, Murphy RC. Analysis of cell membrane aminophospholipids as isotope-tagged derivatives. *J Lipid Res* 46:1038-1046 (2005).

335. Fahy E, Subramaniam S, Brown HA, Glass CK, Merrill Jr AH, Murphy RC, Raetz CRH, Russell DW, Seyama Y, Shaw W, Shimizu T, Spener F, van Meer G, VanNieuwenhze MS, White SH, Witztum JL, Dennis EA. A comprehensive classification system for lipids. *J Lipid Res* 46:839-862 (2005).

336. Murphy RC, Barkley RM, Zemski Berry K, Hankin JA, Harrison K, Johnson C, Krank J, McAnoy A, Uhlson C, Zarini S. Electrospray ionization and tandem mass spectrometry of eicosanoids. *Anal Biochem* 346:1-42 (2005).

337. McAnoy AM, Wu CC, Murphy RC. Direct qualitative analysis of triacylglycerols by electrospray mass spectrometry using a linear ion trap. *J Am Soc Mass Spectrom* 16:1498-1509 (2005).

338. Murphy RC, Krank J, Barkley RM. LC/MS methodology in lipid analysis and structural characterization of novel lipid species. In: Functional Lipidomics, (Feng L, Prestwich GD, Eds.), CRC Press, Boca Raton, FL, Chp. 2, pp17-55 (2006).

339. Martin W, Murphy RC. Phospholipids by electrospray mass spectrometry. *In* The Encyclopedia Of Mass Spectrometry (Gross ML, Caprioli RM, Eds.) Elsevier, New York, Chp. 6, pp. 415-430 (2006).

340. Dickinson J, Murphy RC. Leukotriene and lipoxygenase products by electrospray mass spectrometry. *In* The Encyclopedia Of Mass Spectrometry (Gross ML, Caprioli RM, Eds.) Elsevier, New York, Chp. 6, pp. 502-517 (2006).

341. Murphy RC, Hankin JA, Krank J, Johnson CA. Prostaglandins and metabolites. *In* The Encyclopedia Of Mass Spectrometry (Gross ML, Caprioli RM, Eds.) Elsevier, New York, Chp. 6, pp. 492-502 (2006).

342. Zemski Berry K, Murphy RC. Analysis of polyunsaturated aminophospholipid molecular species using isotope-tagged derivatives and tandem mass spectrometry/mass spectrometry/mass spectrometry. *Anal Biochem* 349:118-128 (2006).

343. Zarini S, Gijón MA, Folco G, Murphy RC. Effect of arachidonic acid reacylation on leukotriene biosynthesis in human neutrophils stimulated with granulocyte-macrophage colony-stimulating factor and formyl-methionyl-leucyl-phenylalanine. *J Biol Chem* 281: 10134–10142 (2006).

344. Christmas P, Tolentino K, Primo V, Zemski Berry K, Murphy RC, Chen M, Lee DM, Soberman RJ. Cytochrome P-450 4F18 is the leukotriene B_4 ω-1/ω-2 hydroxylase in mouse polymorphonuclear leukocytes: Identification as the functional orthologue of human polymorphonuclear leukocyte CYP4F3A in the down-regulation of responses to LTB_4. *J Biol Chem*, 281:7189-7196 (2006).

345. Gould TA, Herman J, Krank J, Murphy RC, Churchill MEA. Specificity of acyl-homoserine lactone synthases examined by mass spectrometry. *J Bacteriol* 188:773-783 (2006). *PMCID1347284*

346. Kirwan JP, Gould TA, Schweizer HP, Bearden SW, Murphy RC, Churchill MEA. Quorum-sensing signal synthesis by the *Yersinia pestis* acyl-homoserine lactone synthase YspI. *J Bacteriol* 188:784-788 (2006). *PMCID1347278*

347. Folco G, Murphy RC. Eicosanoid transcellular biosynthesis: From cell-cell interactions to *in vivo* tissue responses. *Pharmacol Rev* 58:375-388 (2006).

348. Raetz CRH, Garrett TA, Reynolds CM, Shaw WA, Moore JD, Smith Jr DC, Ribeiro AA, Murphy RC, Ulevitch RJ, Fearns C, Reichart D, Glass CK, Benner C, Subramaniam S, Harkewicz R, Bowers-Gentry R, Buczynski MW, Cooper JA, Deems RA, Dennis EA. Kdo_2-Lipid A of *Escherichia coli*, a defined endotoxin that activates macrophages via TLR-4. *J Lipid Res* 47:1097-1111 (2006).

349. Chiba H, Piboonpocanun S, Mitsuzawa H, Kuronuma K, Murphy RC, Voelker DR. Pulmonary surfactant proteins and lipids as modulators of inflammation and innate immunity. *Respirology* 11:S2-S6 (2006).

350. Dennis, EA, Brown HA, Deems RA, Glass CK, Merrill AH, Murphy RC, Raetz CRH, Shaw W, Subramaniam S, Russell DW, VanNieuwenhze MS, White SH, Witztum JL, Wooley J. The LIPID MAPS approach to lipidomics. In: Functional Lipidomics, (Feng L, Prestwich GD, Eds.), CRC Press, Boca Raton, FL, Chp. 1, pp1-15 (2006).

351. Murphy RC, Fitzgerald M, Barkley RM. Neutral lipidomics and mass spectrometry. In: Metabolomics, Metabonomics, and Metabolic Profiling. Biomolecular Science Series (Griffiths W, ed.), Chp. 6, pp. 161–189, RSC Publishing, London (2007).

352. Gijón MA, Zarini S, Murphy RC. Biosynthesis of eicosanoids and transcellular metabolism of leukotrienes in murine bone marrow cells. *J Lipid Res* 48:716-725 (2007).

353. Murphy RC, James PF, McAnoy AM, Krank J, Duchoslav E, Barkley RM. Detection and abundance of diacylglycerol and triacylglycerol molecular species in cells using neutral loss mass spectrometry. *Anal Biochem* 366:59-70 (2007). *PMCID2034497*

354. Krank J, Murphy RC, Barkley RM, Duchoslav E, McAnoy AM. Qualitative analysis and quantitative assessment of changes in neutral glycerol lipid molecular species within cells. *Methods Enzymol* 432:1–20 (2007).

355. Fitzgerald M, Murphy RC. Electrospray mass spectrometry of human hair wax esters. *J Lipid Res*, 48:1231-1246 (2007).

356. Murphy RC, Gijón MA. Biosynthesis and metabolism of leukotrienes. *Biochem J*, 405:379-395 (2007).

357. Sud M, Fahy E, Cotter D, Brown A, Dennis EA, Glass CK, Merrill AH, Murphy RC, Raetz CR, Russell DW, Subramaniam S. LMSD: LIPID MAPS structure database. *Nucleic Acids Res* 35:D527-D532 (2007). *PMCID1669719*

358. Farias SE, Zarini S, Precht T, Murphy RC, Heidenreich KA. Transcellular biosynthesis of cysteinyl leukotrienes in rat neuronal and glial cells. *J Neurochem* 103:1310–1318 (2007).

359. Surviladze Z, Harrison KA, Murphy RC, Wilson BS. FcεRI and thy-1 domains have unique protein and lipid compositions. *J Lipid Res* 48:1325-1335 (2007).

360. Zemski Berry KA and Murphy RC. Characterization of acrolein-glycerophosphoethanolamine lipid adducts using electrospray mass spectrometry. *Chem Res Toxicol* 20:1342–1351 (2007). *PMCID2441484*

361. Sparagna GC, Chicco AJ, Murphy RC, Bristow MR, Johnson CJ, Rees ML, Maxey ML, McCune SA, Moore RL. Loss of cardiac tetralinoleoyl cardiolipin in human and experimental heart failure. *J Lipid Res*, 48:1559-1570 (2007).

362. Thomas MC, Mitchell TW, Harman DG, Deeley JM, Murphy RC, Blanksby SJ. Elucidation of double bond position in unsaturated lipids by ozone electrospray ionization mass spectrometry (OzESI-MS). *Anal Chem* 79:5013-5022 (2007).

363. Hankin JA, Barkley RM, Murphy RC. Sublimation as a method of matrix application for mass spectrometric imaging. *J Am Soc Mass Spectrom* 18:1646–1652 (2007). *PMCID2042488*

364. Frasch SC, Zemski-Berry K, Murphy RC, Borregaard N, Henson PM, Bratton DL. Lysophospholipids of different classes mobilize neutrophil secretory vesicles and induce redundant signaling through G2A. *J Immunol* 178:6540-6548 (2007).

365. Riekhof WR, Wu J, Gijón MA, Zarini S, Murphy RC, Voelker DR. Lyso-phosphatidylcholine metabolism in *Saccharomyces cerevisiae*. The role of P–type ATPases in transport and a broad specificity acyltransferase in acylation. *J Biol Chem* 282:36853–36861 (2007).

366. Smith WL, Murphy RC. The Eicosanoids: Cyclooxygenase, lipoxygenase, and epoxygenase pathways. *In* Biochemistry of Lipids, Lipoproteins & Membranes (Vance DE and Vance JE, Eds), 5th Ed., Ch. 12, pp.331-362, Elsevier Science, Oxford, UK (2008). *PMCID2367097*

367. Hutchins PM, Barkley RM, Murphy RC. Separation of cellular non–polar neutral lipids by normal phase chromatography and analysis by electrospray ionization mass spectrometry. *J Lipid Res* 49:804-813 (2008). *PMCID2367097*

368. Murphy RC, Johnson KM. Cholesterol, reactive oxygen species, and the formation of biologically active mediators. *J Biol Chem* 283:15521-15525 (2008). *PMCID2414298*

369. Smith WL, Murphy RC. Oxidized lipids formed non–enzymatically by reactive oxygen species. *J Biol Chem* 283:15513-15514 (2008). *PMCID3259636*

370. Farias SE, Basselin M, Change L, Heidenreich KA, Rapoport SI, Murphy RC. Formation of eicosanoids, E_2/D_2-isoprostanes and docosanoids following decapitation-induced ischemia, measured in high-energy microwaved rat brain. *J Lipid Res.* 49:1990-2000 (2008). *PMCID2515526*

371. Chicco AJ, McCune SA, Emter CA, Sparagna GC, Rees ML, Bolden DA, Marshall KD, Murphy RC, Moore RL. Low-intensity exercise training delays heart failure and improves survival in female hypertensive heart failure rats. *Hypertension* 51:1096-1102 (2008).

372. Gijón MA, Riekhof WR, Zarini S, Murphy RC, Voelker DR. Lysophospholipid acyltransferases and arachidonate recycling in human neutrophils. *J Biol Chem* 283:30235-30245 (2008). *PMCID2573059*

373. Frasch SC, Zemski Berry K, Fernandez-Boyanapalli R, Jin H-S, Leslie C, Henson PM, Murphy RC, Bratton, DL. NADPH oxidase-dependent generation of lyso-phosphatidylserine enhances clearance of activated and dying neutrophils via G2A. *J Biol Chem* 283:33736-33749 (2008). *PMCID2586279*

374. Zemski Berry K, Henson PM, Murphy RC. Effects of acrolein on leukotriene biosynthesis in human neutrophils. *Chem Res Toxicol* 21:2424-2432 (2008). *PMCID2772067*

375. Chicco AJ, Sparagna GC, McCune SA, Johnson CA, Murphy RC, Bolden DA, Rees ML, Gardner RT, Moore RL. Linoleate-rich high-fat diet decreases mortality in hypertensive heart failure rats compared with lard and low-fat diets. *Hypertension* 52:549-555 (2008). *PMCID2864132*

376. Bouvier J, Zemski Berry KA, Hullin-Matsuda F, Makino A, Michaud S, Geloën A, Murphy RC, Kobayashi T, Lagarde M, Delton-Vandenbroucke I. Selective decrease of bis(monoacylglycerol)phosphate content in macrophages by high supplementation with docosahexaenoic acid. *J Lipid Res* 50:243-255 (2009).

377. Shah KB, Duda MK, O'Shea KM, Sparagna GC, Chess DJ, Khairallah RJ, Robillard-Frayne I, Xu W, Murphy RC, Rosiers CD, Stanley WC. The cardioprotective effects of fish oil during pressure overload are blocked by high fat intake: Role of cardiac phospholipid remodeling. *Hypertension* 54:605-611 (2009). *PMCID3103889*

378. Murphy RC, Hankin JA, Barkley RM. Imaging of lipid species by MALDI mass spectrometry. *J Lipid Res*, 50:S317-S322 (2009). *PMCID2674737*

379. Farias S, Frey LC, Murphy RC, Heidenreich KA. Injury-related production of cysteinyl-leukotrienes contributes to brain damage following experimental traumatic brain injury. *J Neurotrauma* 26:1977-1986 (2009). *PMCID2822801*

380. Fahy E, Subramaniam S, Murphy RC, Nishijima M, Raetz CRH, Shimizu T, Spener F, van Meer G, Wakelam MJO, Dennis EA. Update of the LIPID MAPS comprehensive classification system for lipids. *J Lipid Res*, 50:S9-S14 (2009). *PMCID2674711*

381. Rector CL, Murphy RC. Determination of leukotriene A_4 stabilization by S100A8/A9 proteins using mass spectrometry. *J Lipid Res* 50:2064-2071 (2009). *PMCID2739761*

382. Zarini S, Gijón MA, Ransome AE, Murphy RC, Sala A. Transcellular biosynthesis of leukotrienes *in vivo* during mouse peritoneal inflammation. *Proc Natl Acad Sci USA* 106:8296-8301 (2009). *PMCID2688893*

383. Zemski Berry K, Turner WW, VanNieuwenhze MS, Murphy RC. Stable isotope labeled 4-(dimethylamino)benzoic acid derivatives of glycerophosphoethanolamine lipids. *Anal Chem* 81:6633-6640 (2009). *PMCID2929906*

384. Poeckel D, Zemski Berry KA, Murphy RC, Funk CD. Dual 12/15- and 5-lipoxygenase deficiency in macrophages alters arachidonic acid metabolism and attenuates peritonitis and atherosclerosis in apoE knockout mice. *J Biol Chem* 284:21077-21089 (2009). *PMCID2742872*

385. Steinhauer J, Gijón MA, Riekhof WR, Voelker DR, Murphy RC, Treisman JE. *Drosophila* lysophospholipid acyltransferases are specifically required for germ cell development. *Mol Biol Cell* 20:5224-5235 (2009). *PMCID2793297*

386. Brown HA, Murphy RC. Working towards an exegesis for lipids in biology. *Nat Chem Biol* 5:602-606 (2009).

387. O'Shea KM, Khairallah RJ, Sparagna GC, Xu W, Hecker PA, Robillard-Frayne I, Des Rosiers C, Kristian T, Murphy RC, Fiskum G, Stanley WC. Dietary omega-3 fatty acids alter cardiac mitochondrial phospholipid composition and delay Ca(2+)-induced permeability transition. *J Mol Cell Cardiol* 47:819-827 (2009). *PMCID2783943*

388. Talahalli R, Zarini S, Sheibani N, Murphy RC, Gubitosi-Klug RA. Increased synthesis of leukotrienes in the mouse model of diabetic retinopathy. *Invest Ophthal Vis Sci* 51:1699-1708 (2010). *PMCID2868429*

389. Dennis EA, Deems RA, Harkewicz R, Quehenberger O, Brown AH, Milne SB, Myers DS, Glass CK, Hardiman GT, Reichart D, Merrill AH, Sullards CM, Wang E, Murphy RC, Raetz CR, Garrett T, Guan Z, Ryan AC, Russell DW, McDonald JG, Thompson BM, Shaw WA, Sud M, Zhao Y, Gupta S, Maurya MR, Fahy E, Subramaniam S. A mouse macrophage lipidome. *J Biol Chem* 285:39976-39985 (2010). *PMCID3000979*

390. Parti RP, Loper R, Brown GD, Gordon S, Taylor PR, Bonventre JV, Murphy RC, Williams DL, Leslie CC. Cytosolic phospholipase A_2 activation by *Candida albicans* in alveolar macrophages: Role of Dectin-1. *Am J Respir Cell Mol Biol* 42:415-423 (2010). *PMCID2848735*

391. Basselin M, Hyung-Wook K, Chen M, Kaizong M, Rapoport SI, Murphy RC, Farias SE. Lithium modifies brain arachidonic and docosahexaenoic metabolism in rat lipopolysaccharide model of neuroinflammation. *J Lipid Res* 51:1049-1056 (2010). *PMCID2853431*

392. Zemski Berry K, Turner WW, VanNieuwenhze MS, Murphy RC. Characterization of oxidized phosphatidylethanolamine derived from RAW 264.7 cells using 4-(dimethylamino)benzoic acid derivatives. *Eur J Mass Spectrom* 16:463-470 (2010). *PMCID3086548*

393. Zachman DK, Chicco AJ, McCune SA, Murphy RC, Moore RL, Sparagna GC. The role of calcium-independent phospholipase A_2 in cardiolipin remodeling in the spontaneously hypertensive heart failure rat heart. *J Lipid Res* 51:525-534 (2010). *PMCID2817582*

394. Wynalda KM, Murphy RC. Low concentration ozone reacts with plasmalogen glycerophosphoethanolamine lipids in lung surfactant. *Chem Res Toxicol* 23:108-117 (2010). *PMCID2807911*

395. Axelsen PH, Murphy RC. Quantitative analysis of phospholipids containing arachidonate and docosahexaenoate chains in microdissected regions of mouse brain. *J Lipid Res* 51:660-671 (2010). *PMCID2817596*

396. Thomas CP, Morgan LT, Maskrey BH, Murphy RC, Kühn H, Hazen SL, Goodall AH, Hamali HA, Collins PW, O'Donnell VB. Phospholipid-esterified eicosanoids are generated in agonist-activated human platelets and enhance tissue factor-dependent thrombin generation. *J Biol Chem*, 285:6891-6903 (2010). *PMCID2844139*

397. Murphy RC, Fahy E. Isoprostane nomenclature: More suggestions. *Prostaglandins Leukot Essent Fatty Acids* 82:69-70 (2010). *PMCID2823939*

398. Kosmider B, Loader JE, Murphy RC, Mason RJ. Apoptosis induced by ozone and oxysterols in human alveolar epithelial cells. *Free Radic Biol Med* 48:1513-1524 (2010). *PMCID2965594*

399. Patwardhan AM, Akopian AN, Ruparel NB, Diogenes A, Weintraub SB, Uhlson C, Murphy RC, Hargreaves KM. Heat generates a family of oxidized linoleic acid metabolites that activate TRPV1 and produce pain in rodents. *J Clin Invest* 120:1617-1626 (2010). *PMCID2860941*

400. Hankin JA, Murphy RC. Relationship between MALDI IMS intensity and measured quantity of selected phospholipids in rat brain sections. *Anal Chem* 82:8476-8484 (2010). *PMCID3025046*

401. Morgan AH, Hammond VJ, Morgan L, Thomas CP, Tallman KA, Garcia-Diaz YR, McGuigan C, Serpi M, Porter NA, Murphy RC, O'Donnell VB. Quantitative assays for esterified oxylipins generated by immune cells. *Nat Protoc* 5:1919-1931 (2010).

402. Deeley JM, Hankin JA, Friedrich MG, Murphy RC, Truscott RJ, Mitchell TW, Blanksby SJ. Sphingolipid distribution changes with age in the human lens. *J Lipid Res* 51:2753-2760 (2010). *PMCID2918457*

403. Montrose DC, Kadaveru K, Ilsley JN, Root SH, Rajan TV, Ramesh M, Nichols FC, Liang BD, Sonin D, Hand AR, Zarini S, Murphy RC, Belinsky GS, Nakanishi M, Rosenberg DW. $cPLA_2$ is protective against COX inhibitor-induced intestinal damage. *Toxicol Sci* 117:122-132 (2010). *PMCID2923287*

404. Suram S, Gangelhoff TA, Taylor PR, Rosas M, Brown GD, Bonventre JV, Akira S, Uematsu S, Williams DL, Murphy RC, Leslie CC. Pathways regulating cytosolic phospholipase A_2 activation and eicosanoid production in macrophages by *Candida albicans*. *J Biol Chem* 285: 30676-30685 (2010). *PMCID2945562*

405. Sala A, Folco G, Murphy RC. Transcellular biosynthesis of eicosanoids. *Pharmacol Rep* 62:503-510 (2010). *PMCID4535419*

406. Hong X, Zang J, White J, Wang C., Pan C-H, Zhao R, Murphy RC, Dai S, Henson P, Kappler JW, Hagman J, Zhang G. Interaction of JMJD6 with single-stranded RNA. *Proc Natl Acad Sci USA* 107:14568-14572 (2010). *PMCID2930430*

407. Quehenberger O, Armando AM, Brown AH, Milne SB, Myers DS, Merrill AH, Bandyopadhyay S, Jones KN, Kelly S, Shaner RL, Sullards CM, Wang E, Murphy RC, Barkley RM, Leiker TJ, Raetz CR, Guan Z, Laird GM, Six DA, Russell DW, McDonald JG, Subramaniam S, Fahy E, Dennis EA. Lipidomics reveals a remarkable diversity of lipids in human plasma. *J Lipid Res* 51:3299-3305 (2010). *PMCID2952570*

408. Chen M, Lam BK, Luster AD, Zarini S, Murphy RC, Bair AM, Soberman RJ, Lee DM. Joint tissues amplify inflammation and alter their invasive behavior via leukotriene B_4 in experimental inflammatory arthritis. *J Immunol* 185:5503-5511 (2010). *PMCID3690310*

409. Leiker TJ, Barkley RM, Murphy RC. Analysis of diacylglycerol molecular species in cellular lipid extracts by normal-phase LC-electrospray mass spectrometry. *Intl J Mass Spectrom* 305:103-108 (2011). *PMCID3158596*

410. Murphy RC, Axelsen PH. Mass spectrometric analysis of long-chain lipids. *Mass Spec Rev* 30:579-599 (2011). *PMCID3117083*

411. Zemski Berry KA, Li B, Reynolds SD, Barkley RM, Gijón MA, Hankin JA, Henson PM, Murphy RC. MALDI imaging MS of phospholipids in the mouse lung. *J Lipid Res* 52:1551-1560 (2011). *PMCID3137021*

412. Farias SE, Heidenreich KA, Wohlauer MV, Murphy RC, Moore EE. Lipid mediators in cerebral spinal fluid of traumatic brain injured patients. *J Trauma-Injury Infection Crit Care* 71:1211-1218 (2011).

413. Hutchins PM, Murphy RC. Peroxide bond driven dissociation of hydroperoxy-cholesterol esters following collision induced dissociation. *J Am Soc Mass Spectrom* 22:867-874 (2011). *PMCID3565457*

414. Hankin JA, Farias S, Barkley RM, Heidenreich K, Frey LC, Hamazaki K, Kim H-Y, Murphy RC. MALDI mass spectrometric imaging of lipids in rat brain injury models. *J Am Soc Mass Spectrom* 22:1014-1021 (2011). *PMCID4537074*

415. Murphy RC, Gaskell SJ. New applications of mass spectrometry in lipid analysis. *J Biol Chem* 286:25427-25433 (2011). *PMCID3138261*

416. Kandasamy P, Zarini S, Chan ED, Leslie CC, Murphy RC, Voelker DR. Pulmonary surfactant phosphatidylglycerol inhibits *Mycoplasma pneumoniae*-stimulated eicosanoid production from human and mouse macrophages. *J Biol Chem*, 286:7841-7853 (2011). *PMCID3048671*

417. Frasch SC, Fernandez-Boyanapalli RF, Zemski Berry K, Leslie CC, Bonventre JV, Murphy RC, Henson PM, Bratton DL. Signaling via macrophage G2A enhances efferocytosis of dying neutrophils by augmentation of Rac activity. *J Biol Chem* 286:12108-12122 (2011). *PMCID3069415*

418. Murphy RC, Hankin JA, Barkley RM, Zemski Berry KA. MALDI imaging of lipids after matrix sublimation/deposition. *Biochim Biophys Acta* 1811:970-975 (2011). *PMCID3202086*

419. Murphy RC, Leiker TJ, Barkley RM. Glycerolipid and cholesterol ester analyses in biological samples by mass spectrometry. *Biochim Biophys Acta* 1811:776-783 (2011). *PMCID3205286*

420. Hutchins PM, Moore EE, Murphy RC. Electrospray MS/MS reveals extensive and nonspecific oxidation of cholesterol esters in human peripheral vascular lesions. *J Lipid Res* 52:2070-2083 (2011). *PMCID3196238*

421. Zemski Berry KA, Hankin J, Barkley RM, Spraggins JM, Caprioli RM, Murphy RC. MALDI imaging of lipid biochemistry in tissues by mass spectrometry. *Chem Rev* 111:6491-6512 (2011). *PMCID3199966*

422. Murphy RC, Merrill AH Jr. Lipidomics and imaging mass spectrometry. *Biochim Biophys Acta* 1811:635-636 (2011).

423. Barkley RM, Hankin JA, Zemski Berry KA, Murphy RC. Imaging lipids in tissues by matrix assisted laser desorption/ionization mass spectrometry. *In* Lipidomics – Technologies and Applications, (Ekroos K, Ed.), Chapter 7, pp. 129-142, Wiley-VCH Verlag, Weinheim, Germany, (2012).

424. Rong S, Cao Q, Liu M, Seo J, Jia L, Boudyguina E, Gebre AK; Colvin PL, Smith TL, Murphy RC, Mishra N, Parks JS. Macrophage 12/15 lipoxygenase expression increases plasma and hepatic lipid levels and exacerbates atherosclerosis. *J Lipid Res*, 53:686-695 (2012). *PMCID3307645*

425. Yao Y, Harrison KA, Al-Hassani M, Murphy RC, Rezania S, Konger RL, Travers JB. Platelet-activating factor receptor agonists mediate Xeroderma Pigmentosum A photosensitivity. *J Biol Chem* 287:9311-9321 (2012). *PMCID330881*

426. Eun JC, Moore EE, Mauchley DC, Johnson CA, Meng J, Banerjee A, Wohlauer MV, Zarini S, Gijon MA, Murphy RC. The 5-lipoxygenase pathway is required for acute lung injury following hemorrhagic shock. *Shock* 37:599-604 (2012). *PMCID3357208*

427. Mulligan CM, Sparagna GC, Le CH, De Mooy AB, Routh MA, Holmes MG, Hickson-Bick DL, Zarini S, Murphy RC, Xu FY, Hatch GM, McCune SA, Moore RL, Chicco AJ. Dietary linoleate preserves cardiolipin and attenuates mitochondrial dysfunction in the failing rat heart. *Cardiovasc Res* 94:460-468 (2012). *PMCID3353802*

428. Barajas-Espinosa A, Ni NC, Yan D, Zarini S, Murphy RC, Funk CD. The cysteinyl leukotriene 2 receptor mediates retinal edema and pathological neovascularization in a murine model of oxygen-induced retinopathy. *FASEB J* 26:1100-1109 (2012).

429. Hutchins PM, Murphy RC. Cholesteryl ester acyl oxidation and remodeling in murine macrophages: Formation of oxidized phosphatidylcholine. *J Lipid Res* 53:1588-1597 (2012). *PMCID3540862*

430. Sanford SD, Yun BG, Leslie CC, Murphy RC, Pfenninger KH. Group IVA phospholipase A_2 is necessary for growth cone repulsion and collapse. *J Neurochem* 120:974-984 (2012). *PMCID3296835*

431. Spann, NJ, Garmire LX, McDonald JG, Myers DS, Milne SB, Shibata N, Reichart D, Fox JN, Shaked I, Heudobler D, Raetz CRH, Wang EW, Kelly SL, Sullards MC, Murphy RC, Merrill

AH Jr, Brown HA, Dennis EA, Li AC, Ley K, Tsimikas S, Fahy E, Subramaniam S, Quehenberger O, Russell DW, Glass CK. Regulated accumulation of desmosterol integrates macrophage lipid metabolism and inflammatory responses. *Cell* 151:138-152 (2012). *PMCID3464914*

432. O'Donnell VB, Murphy RC. New families of bioactive oxidized phospholipids generated by immune cells: Identification and signaling actions. *Blood* 120:1985-1992 (2012). *PMCID3437593*

433. Rudolph MC, Maluf NK, Wellberg EA, Johnson CA, Murphy RC, Anderson SM. Mammalian fatty acid synthase activity from crude tissue lysates tracing ^{13}C-labeled substrates using gas chromatography-mass spectrometry. *Anal Biochem* 428:158-166 (2012). *PMCID3415257*

434. Zan J, Cicirelli EM, Mohamed NM, Sibhatu H, Kroll S, Choi O, Uhlson CL, Wysoczinski CL, Murphy RC, Churchill MEA, Hill RT, Fuqua C. A complex LuxR-Luxl type quorum sensing network in a roseobacterial marine sponge symbiont activates flagellar motility and inhibits biofilm formation. *Mol Microbiol* 85:916-933 (2012). *PMCID3429658*

435. Clark SR, Thomas CP, Hammond VJ, Aldrovandi M, Wilkinson GW, Hart KW, Murphy RC, Collins PW, O'Donnell VB. Characterization of platelet aminophospholipid externalization reveals fatty acids as molecular determinants that regulate coagulation. *Proc Natl Acad Sci USA* 110:5875-5880 (2013). *PMCID3625294*

436. Talahalli R, Zarini S, Tang J, Murphy R, Kern TS, Gubitosi-Klug RA. Leukocytes regulate retinal capillary degeneration in diabetic retinopathy via generation of leukotrienes. *J Leukoc Biol* 93:135-143 (2013). *PMCID3525833*

437. Merrill AH Jr, Murphy RC, Smith WL, Vance DE, Wilson JE, Yu RK. In memoriam: Charles (Chuck) Crawford Sweeley, Jr. (1930-2012). *J Lipid Res* 54:1-4 (2013). *PMCID3520516*

438. Kuklev DV, Hankin JA, Uhlson CL, Hong YH, Murphy RC, Smith WL. Major urinary metabolites of 6-keto-prostaglandin $F_{2\alpha}$ in mice. *J Lipid Res* 54:1906-1914 (2013). *PMCID3679392*

439. Cantley JL, Yoshimura T, Camporez JP, Zhang D, Jornayvaz FR, Kumashiro N, Guebre-Egziabher F, Jurczak MJ, Kahn M, Guigni BA, Serr J, Hankin J, Murphy RC, Cline GW, Bhanot S, Manchem VP, Brown JM, Samuel VT, Shulman GI. CGI-58 knockdown sequesters diacylglycerols in lipid droplets/ER-preventing diacylglycerol-mediated hepatic insulin resistance. *Proc Natl Acad Sci U S A* 110:1869-1874 (2013). *PMCID3562813*

440. Frasch SC, Fernandez-Boyanapalli RF, Berry KA, Murphy RC, Leslie CC, Nick JA, Henson PM, Bratton DL. Neutrophils regulate tissue neutrophilia in inflammation *via* the oxidant-modified lipid lysophosphatidylserine. *J Biol Chem* 288:4583-4593 (2013). *PMCID3576064*

441. Numata M, Nagashima Y, Moore ML, Berry KZ, Chan M, Kandasamy P, Peebles RS, Murphy RC, Voelker DR Phosphatidylglycerol provides short term prophylaxis against respiratory syncytial virus infection. *J Lipid Res* 54:2133–2143 (2013). *PMCID3708363*

442. Maurya MR, Gupta S, Li X, Fahy E, Dinasarapu AR, Sud M, Brown HA, Glass CK, Murphy RC, Russell DW, Dennis EA, Subramaniam S. Analysis of inflammatory and lipid metabolic networks across RAW 264.7 and thioglycolate-elicited macrophages. *J Lipid Res* 54:2525-2542 (2013). *PMCID3735949*

443. Wooding KM, Barkley RM, Hankin JA, Johnson CA, Bradford AP, Santoro N, Murphy RC. Mechanism of formation of the major estradiol product ions following collisional activation of the molecular anion in a tandem quadrupole mass spectrometer. *J Am Soc Mass Spectrom* 24:1451-1455 (2013). *PMCID3786604*

444. Aldrovandi M, Hammond VJ, Podmore H, Hornshaw M, Clark SR, Marnett LJ, Slatter DA, Murphy RC, Collins PW, O'Donnell VB Human platelets generate phospholipid-esterified

prostaglandins via cyclooxygenase-1 that are inhibited by low dose aspirin supplementation. *J Lipid Res* 54:3085-3097 (2013). *PMCID3793613*

445. Shibata N, Carlin AF, Spann NJ, Saijo K, Morello CS, McDonald JG, Romanoski C, Maurya MR, Kaikkonen M, Lam M, Crotti A, Reichart D, Fox JN, Quehenberger O, Raetz CR, Sullards MC, Murphy RC, Merrill AH Jr, Brown HA, Dennis EA, Fahy E, Subramaniam S, Cavener DR, Spector DH, Russell DW, Glass CK. 25-Hydroxycholesterol activates the Integrated Stress Response to reprogram transcription and translation in macrophages. *J Biol Chem* 288:35812-35823 (2013). *PMCID3861632*

446. Poczobutt JM, Gijon M, Amin J, Hanson D, Li H, Walker D, Weiser-Evans M, Lu X, Murphy RC, Nemenoff RA. Eicosanoid profiling in an orthotopic model of lung cancer progression by mass spectrometry demonstrates selective production of leukotrienes by inflammatory cells of the microenvironment. *PLoS One* 8(11), e79633 (2013). *PMCID3823604*

447. Suram S, Silveira LJ, Mahaffey S, Brown GD, Bonventre JV, Williams DL, Gow NA, Bratton DL, Murphy RC, Leslie CC. Cytosolic phospholipase $A_{2\alpha}$ and eicosanoids regulate expression of genes in macrophages involved in host defense and inflammation. *PLoS One* 8(7), e69002 (2013). *PMCID3742295*

448. O'Donnell VB, Murphy RC, Watson SP. Platelet lipidomics: A modern day perspective on lipid discovery and characterization in platelets. *Circ Res* 114:1185-1203 (2014). *PMCID4021279*

449. Martin SA, Gijon MA, Voelker DR, Murphy RC. Measurement of lysophospholipid acyltransferase activities using substrate competition. *J Lipid Res* 55:782-791 (2014). *PMCID 3966712*

450. Zemski Berry KA, Gordon WC, Murphy RC, Bazan NG. Spatial distribution of phospholipids in the human retina by MALDI imaging mass spectrometry. *J Lipid Res* 55:504-515 (2014). *PMCID3934734*

451. Rees ML, Gioscia-Ryan RA, McCune SA, Browder JC, Zachman DK, Chicco AJ, Johnson CA, Murphy RC, Moore RL, Sparagna GC. The AIN-76A defined rodent diet accelerates the development of heart failure in SHHF rats: A cautionary note on its use in cardiac studies. *J Animal Physiol Animal Nutri* 98:56-64 (2014).

452. Namgaladze D, Lips S, Leiker TJ, Murphy RC, Ekroos K, Ferreiros N, Geisslinger G., Brüne B. Inhibition of macrophage β-oxidation exacerbates palmitate-induced inflammatory and ER stress responses. *Diabetologia* 57:1067-1077 (2014).

453. Ravandi A, Leibundgut G, Hung M-Y, Patel M, Hutchins PM, Murphy RC, Prasad A, Mahmud E, Miller YI, Dennis E, Witztum JL, Tsimikas S. Release and capture of bioactive oxidized phospholipids and oxidized cholesteryl esters during percutaneous coronary and peripheral arterial interventions in humans. *J Am Coll Cardiol* 63:1961-1971 (2014).

454. Le CH, Mulligan CM, Routh MA, Bouma GJ, Frye MA, Jeckel KM, Sparagna GC, Lynch JM, Moore RL, McCune SA, Bristow M, Zarini S, Murphy RC, Chicco AJ. Delta-6-desaturase links polyunsaturated fatty acid metabolism with phospholipid remodeling and disease progression in heart failure. *Circ Heart Fail* 7:172-183 (2014).

455. Ren J, Pei-Chen Lin C, Pathak MC, Temple BR, Nile AH, Mousley CJ, Duncan MC, Eckert DM, Leiker TJ, Ivanova PT, Myers DS, Murphy RC, Brown HA, Verdaasdonk J, Bloom KS, Ortlund EA, Neiman AM, Bankaitis VA. A phosphatidylinositol transfer protein integrates phosphoinositide signaling with lipid droplet metabolism to regulate a developmental program of nutrient stress-induced membrane biogenesis. *Mol Biol Cell* 25:712-727 (2014). *PMCID3937096*

456. Sahu RP, Ocana JA, Harrison KA, Ferracini M, Touloukian CE, Al-Hassani M, Sun L, Loesch M, Murphy RC, Althouse SK, Perkins SM, Speicher PJ, Tyler DS, Konger RL, Travers JB. Chemotherapeutic agents subvert tumor immunity by generating agonists of platelet-activating factor. *Cancer Res* 74:7069-7078 (2014). *PMCID4252249*

457. Chilton FH, Murphy RC, Wilson BA, Sergeant S, Ainsworth H, Seeds MC, Mathias RA. Diet-gene interactions and PUFA metabolism: A potential contributor to health disparities and human diseases. *Nutrients* 6:1993-2022 (2014). *PMCID4042578*

458. Garcia-Mateo N, Ganfomina MD, Montero O, Gijon MA, Murphy C, Sanchez D. Schwann cell-derived Apolipoprotein D controls the dynamics of post-injury myelin recognition and degradation. *Front Cell Neurosci* 8:1-19 (2014). *PMCID4227524*

459. Zarini S, Hankin JA, Murphy RC, Gijón. Lysophospholipid acyltransferases and eicosanoid biosynthesis in zebrafish myeloid cells. *Prostaglandins Other Lipid Mediat* 113-115:52-61 (2014). *PMCID4252513*

460. Jiang Y, Djuric Z, Sen A, Ren J, Kuklev D, Waters I, Zhao L, Uhlson CL, Hong YH, Murphy RC, Normolle DP, Smith WL, Brenner DE. Biomarkers for personalizing omega-3 fatty acid dosing. *Cancer Prev Res* 7:1011-1022 (2014). *PMCID4185239*

461. Hester AG, Murphy RC, Uhlson CJ, Ivester P, Lee TC, Sergeant S, Miller LR, Howard TD, Mathias RA, Chilton FH. Relationship between a common variant in the fatty acid desaturase (FADS) cluster and eicosanoid generation in humans. *J Biol Chem*, 289:22482-22489 (2014). *PMCID4139254*

462. Ning F, Wang C, Zemski Berry K, Kandasamy P, Liu H, Murphy RC, Voelker DR, Won-Nho C, Pan C-H, Dai S, Niu L, Chu HW, Zhang G. Structural characterization of the pulmonary innate immune protein SPLUNC1 and identification of lipid ligands. *FASEB J* 28:5349-5360 (2014). *PMCID4232288*

463. Portillo J-AC, Schwartz I, Zarini S, Bapputty R, Kern TS, Gubitosi-Klug RA, Murphy RC, Subauste MC, Subauste CS. Proinflammatory responses induced by CD40 in retinal endothelial and Müller cells are inhibited by blocking CD40-Traf2,3 or CD40-Traf6 signaling. *Invest Ophthalmol Vis Sci*, 55:8590-8597 (2014). *PMCID4280881*

464. Corser-Jensen CE, Goodell DJ, Freund RK, Serbedzija P, Murphy RC, Farias SE, Dell'Acqua ML, Frey LC, Serkova N, Heidenreich KA. Blocking leukotriene synthesis attenuates the pathophysiology of traumatic brain injury and associated cognitive deficits. *Exp Neurol* 256:7-16 (2014). *PMCID4731038*

465. Hankin JA, Murphy RC, Barkley RM, Gijón MA. Ion mobility and tandem mass spectrometry of phosphatidylglycerol and bis(monoacylglycerol)phosphate (BMP). *Intl J Mass Spectrom* 378:255-263 (2015). *PMCID4394388*

466. Smith WL, Murphy RC. The Eicosanoids: Cyclooxygenase, lipoxygenase, and epoxygenase pathways. *In* Biochemistry of Lipids, Lipoproteins and Membranes (Ridgeway ND, McLeod RS, Eds) 6th Ed., Ch. 9, pp. 260-295, Elsevier Science, Oxford, UK (2015).

467. Ferracini M, Sahu R, Harrison KA, Waeiss RA, Murphy RC, Jancar S, Konger RL, Travers JB. Topical photodynamic therapy induces systemic immunosuppression via generation of platelet-activating factor receptor ligands. *J Invest Dermatol* 135:321–323 (2015). *PMCID4268233*

468. Almstrand A-C, Johnson C, Murphy RC. Evidence for an N-methyl transfer reaction in phosphatidylcholines with a terminal aldehyde during negative electrospray ionization tandem mass spectrometry. *Anal Bioanal Chem* 407:5045-5052 (2015).

469. Wooding KM, Hankin JA, Johnson CA, Chosich JD, Baek SW, Bradford AP, Murphy RC, Santoro N. Measurement of estradiol, estrone, and testosterone in postmenopausal human serum by isotope dilution liquid chromatography tandem mass spectrometry without derivatization. *Steroids* 96:89-94 (2015). *PMCID4366052*

470. Almstrand A-C, Voelker D, Murphy, RC. Identification of oxidized phospholipids in bronchoalveolar lavage exposed to low ozone levels using multivariate analysis. *Anal Biochem*, 474:50-58 (2015). *PMCID4375957*

471. Capra V, Rovati GE, Mangano P, Buccellati C, Murphy RC, Sala A. Transcellular biosynthesis of eicosanoid lipid mediators. *Biochim Biophys Acta* 1851:377-382 (2015).

472. Montrose DC, Nakanishi M, Murphy RC, Zarini S, McAleer JP, Vella AT, Rosenberg DW. The role of PGE_2 in intestinal inflammation and tumorigenesis. *Prostaglandins Other Lipid Mediat* 116-117:26-36 (2015). *PMCID4252513*

473. Gorden DL, Myers DS, Ivanova PT, Fahy E, Maurya MR, Gupta S, Min J, Spann NJ, McDonald JG, Kelly SL, Duan J, Sullards MC, Leiker TJ, Barkley RM, Quehenberger O, Armando AM, Milne SB, Mathews TP, Armstrong MD, Li C, Melvin WV, Clements RH, Washington MK, Mendonsa AM, Witztum JL, Guan Z, Glass CK, Murphy RC, Dennis EA, Merrill AH Jr, Russell DW, Subramaniam S, Brown HA. Biomarkers of NAFLD progression: A lipidomics approach to an epidemic. *J Lipid Res* 56:722-736 (2015). *PMCID4340319*

474. Ito Y, Correll K, Zemans R, Leslie C, Murphy R, Mason R. Influenza induces IL-8 and GM-CSF secretion by human alveolar epithelial cells through HGF/c-Met and TGFα/EGFR signaling. *Am J Physiol* 308:L1178-L1188 (2015). *PMCID4451400*

475. Li X, Ballantyne LL, Che X, Mewburn JD, Kang JX, Barkley RM, Murphy RC, Yu Y, Funk CD. Endogenously generated omega-3 fatty acids attenuate vascular inflammation and neointimal hyperplasia by interaction with free fatty acid receptor 4 in mice. *J Am Heart Assoc* e001856. doi: 10.1161/JAHA.115.001856 (2015). *PMCID4579939*

476. Numata M, Kandasamy P, Nagashima Y, Fickes R, Murphy RC, Voelker DR. Phosphatidylinositol inhibits respiratory syncytial virus infection. *J Lipid Res* 56:578-587 (2015). *PMCID4340305*

477. Shewale SV, Boudyguina E, Zhu X, Shen L, Hutchins PM, Barkley RM, Murphy RC, Parks JS. Botanical oils enriched in n-6 and n-3 fatty acid products of FADS2 are equally effective in preventing atherosclerosis and hepatosteatosis in mice. *J Lipid Res* 56:1191-1205 (2015). *PMCID4442876*

478. Grevengoed TJ, Martin SA, Katunga L, Cooper DE, Anderson EJ, Murphy RC, Coleman RA. Acyl-CoA synthetase 1 deficiency alters cardiolipin species and impairs mitochondrial function. *J Lipid Res* 56:1572-1582 (2015). *PMCID4513998*

479. Murphy RC. Commentary: Specialized pro-resolving mediators. Do they circulate in plasma? *J Lipid Res* 56:1641-1642 (2015). *PMCID4548769*

480. Zemski Berry KA, Murphy RC. Phospholipid ozonation products activate the 5-lipoxygenase pathway in macrophages. *Chem Res Toxicol* 29:1355-1364 (2016). *PMCID5029860*

481. Kandasamy P, Numata M, Berry KZ, Fickes R, Leslie CC, Murphy RC, Voelker DR. Structural analogs of pulmonary surfactant phosphatidylglycerol inhibit Toll-like receptor 2 and 4 signaling. *J Lipid Res* 57:993-1005 (2016). *PMCID4878184*

482. Dong L, Zou H, Yuan C, Hong YH, Uhlson CL, Murphy RC, Smith WL. Interactions of 2-O-arachidonylglycerol ether and ibuprofen with the allosteric and catalytic subunits of human cyclooxygenase-2. *J Lipid Res* 57:1043-1050 (2016). *PMCID4878188*

483. Hinz C, Aldrovandi M, Uhlson C, Marnett LJ, Longhurst HJ, Warner TD, Alam S, Slatter DA, Lauder SN, Allen-Redpath K, Collins PW, Murphy RC, Thomas CP, O'Donnell VB. Human platelets utilize cycloxygenase-1 to generate dioxolane A_3, a neutrophil-activating eicosanoid. *J Biol Chem* 291:13448-13464 (2016). *PMCID4919433*

484. Hamilton JP, Koganti L, Muchenditsi A, Pendyala VS, Huso D, Hankin J, Murphy RC, Huster D, Merle U, Mangels C, Yang N, Potter JJ, Mezey E, Lutsenko S. Activation of liver X receptor/retinoid X receptor pathway ameliorates liver disease in Atp7B(-/-) (Wilson disease) mice. *Hepatology* 63:1828-1841 (2016). *PMCID4874878*

485. Hankin JA, Barkley RM, Deng Y, Murphy RC. Mass spectrometric collisional activation and product ion mobility of human serum neutral lipid extracts. *Anal Chem* 88:6274-6282 (2016). *PMCID5007945*

486. Chen Y, Singh S, Matsumoto A, Manna SK, Abdelmegeed MA, Golla S, Murphy R, Dong H, Song B-J, Gonzalez FJ, Thompson D, Vasiliou V. Chronic glutathione depletion confers protection against alcohol-induced steatosis: Implication for redox activation of AMP-activated protein kinase pathway. *Sci Rep*, 6:29743, doi:10.1038/srep29743 (2016). *PMCID4940737*

487. Jayaraja S, Dakhama A, Yun B, Ghosh M, Lee H, Redente EF, Uhlson CL, Murphy RC, Leslie CC. Cytosolic phospholipase A_2 contributes to innate immune defense in *Candida albicans* lung infection. *BMC Immunol* 17:27 (2016). *PMCID4977843*

488. Slatter DA, Aldrovandi M, O'Connor A, Allen S, Brasher CJ, Murphy RC, Mecklemann S, Ravi S, Darley-Usmar V, O'Donnell VB. Mapping the human platelet lipidome reveals cytosolic phospholipase A_2 as a regulator of mitochondrial bioenergetics during activation. *Cell Metab*, 23:930-944 (2016). *PMCID4873619*

489. Yun B, Lee H-J, Jayaraja S, Suram S, Murphy RC, Leslie CC. Prostaglandins from cytosolic phospholipase $A_2\alpha$/cyclooxygenase-1 pathway and mitogen-activated protein kinases regulate gene expression in *Candida albicans*-infected macrophages. *J Biol Chem* 291:7070-7086 (2016). *PMCID4807289*

490. Martin SA, Brash AR, Murphy RC. The discovery and early structural studies of arachidonic acid. *J Lipid Res* 57:1126-1132 (2016). *PMCID4918860*

491. Poczobutt JM, Nguyen TT, Hanson D, Li H, Sippel TR, Weiser-Evans MC, Gijon M, Murphy RC, Nemenoff RA. Deletion of 5-lipoxygenase in the tumor microenvironment promotes lung cancer progression and metastasis through regulating T cell recruitment. *J Immunol* 196: 891-901 (2016). *PMCID4705594*

492. Bender G, Schexnaydre EE, Murphy RC, Uhlson C, Newcomer ME. Membrane-dependent activities of human 15-lox-2 and its murine counterpart: Implications for murine models of atherosclerosis. *J Biol Chem* 291:19413-19424 (2016). *PMCID5016680*

493. Costello CE, Hites RA, McCloskey JA, Murphy RC. In Memoriam: Klaus Biemann (1926-2016). *J Am Soc Mass Spectrom* 27:1583-1589 (2016).

494. Fickes R, Zemski Berry K, Voelker DR, Murphy RC. Tandem mass spectrometry of novel ether-linked phospholipid analogs of anionic pulmonary surfactant phospholipids. *Rapid Commun Mass Spectrom* 30:2601-2606 (2016). *PMCID5121057*

495. Sahu RP, Harrison KA, Weyerbacher J, Murphy RC, Konger RL, Garrett JE, Chin-Sinex HJ, Johnston ME 2nd, Dynlacht JR, Mendonca M, McMullen K, Li G, Spandau DF, Travers JB. Radiation therapy generates platelet-activating factor agonists. *Oncotarget* 7:20788-20800 (2016). *PMCID4991492*

496. Axelsen P, Murphy RC, Igarashi M, Rapoport SI. Increased ω6-containing phospholipids and primary ω6 oxidation products in the brain tissue of rats on an ω3-deficient diet. *PLoS One* 11(10): e0164326. doi: 10.1371/journal.pone.0164326 (2016). *PMCID5082804*

497. Aldrovandi M, Hinz C, Lauder SN, Podmore H, Hornshaw M, Slatter DA, Tyrrell VJ, Clark SR, Marnett LJ, Collins PW, Murphy RC, O'Donnell VB. DioxolaneA3-phosphatidylethanolamines are generated by human platelets and stimulate neutrophil integrin expression. *Redox Biol* 11:663-672 (2017)

498. Turcotte C, Zarini S, Jean S, Martin C, Murphy RC, Marsolais D, Laviolette M, Blanchet M-R, Flamand N. The endocannabinoid metabolite prostaglandin E_2 (PGE_2)-glycerol inhibits human neutrophil functions: Involvement of its hydrolysis into PGE_2 and EP receptors. *J Immunol* 198:3255-3263 (2017)

499. Zemski Berry KA, Barkley RM, Berry JJ, Hankin JA, Hoyes E, Brown JM, Murphy RC. Tandem mass spectrometry in combination with product ion mobility for the identification of phospholipids. *Anal Chem* 89:916-921 (2017). *PMCID5250582*

500. Zemski Berry KA, Murphy RC, Kosmider B, Mason RJ. Lipidomic characterization and localization of phospholipids in the human lung. *J Lipid Res* 58:926-933 (2017).

501. O'Donnell VB, Murphy RC. Directing eicosanoid esterification into phospholipids. J Lipid Res 58:837-839 (2017).

502. Muchenditsi A, Yang H, Hamilton J, Koganti L, Housseau F, Aronov L, Fan H, Pierson H, Bhattacharjee A, Murphy R, Sears CL, Potter JJ, Wooton-Kee R, Lutsenko S. Targeted inactivation of copper-transporter ATP7B in hepatocytes causes liver steatosis and obesity in mice. *Am J Physiol Gastrointest Liver Physiol* 313:G39-G49 (2017).

503. Sorgi CA, Zarini S, Martin SA, Sanchez RL, Scandiuzzi RF, Gijón MA, Guijas C, Flamand N, Murphy RC, Faccioli LH. Dormant 5-lipoxygenase in inflammatory macrophages is triggered by exogenous arachidonic acid. *Sci Rep* 7(1):10981:1-13 (2017).

504. Murphy RC, Okuno T, Johnson CA, Barkley RM. Determination of double bond positions in polyunsaturated fatty acids using the photochemical Paternò-Büchi reaction with acetone and tandem mass spectrometry. *Anal Chem* 89:8545-8553 (2017).

505. OkunoT, Gijón MA, Zarini S, Martin SA, Barkley RM, Johnson CA, Ohba M, Yokomizo T, Murphy RC. Altered eicosanoid production and phospholipid remodeling during cell culture. *J Lipid Res* 59:542-549 (2018).

506. Di Giovanni JP, Barkley RM, Jones DNM, Hankin JA, Murphy RC. Tandem mass spectrometry and ion mobility reveals structural insight into eicosanoid product ion formation. *J Am Soc Mass Spectrom* 29:1231-1241 (2018).

507. Murphy, RC. Challenges in mass spectrometry-based lipidomics of neutral lipids. Trends Anal Chem 107: 91-98 (2018).

508. Harrison KA, Romer E, Weyerbacher J, Ocana JA, Sahu RP, Murphy RC, Kelly LE, Smith TA, Rapp CM, Borchers C, Cool DR, Li G, Simman R, Travers JB. Enhanced platelet-activating factor synthesis facilitates acute and delayed effects of ethanol-intoxicated thermal burn injury. *J Invest Dermatol*, in press (2018).

509. ***Pillars Article***: Murphy RC, Hammarstrom S, Samuelsson B. Leukotriene C: A Slow-Reacting Substance from Murine Mastocytoma Cells. Proc. Natl. Acad. Sci. USA. 1979. 76: 4275−4279. *J Immunol* 200:1538 – 1542 (2018).

IV. BOOKS

Mediators of the Inflammatory Process, The Handbook of Inflammation, Vol. 6, (PM Henson and RC Murphy, Eds.), Elsevier Science Publishers BV, Amsterdam, The Netherlands, 1989.

Arachidonate Related Lipid Mediators, Methods in Enzymology (RC Murphy and FA Fitzpatrick, Eds.), Vol. 187, Academic Press, New York, 1990.

Murphy RC. *Mass Spectrometry of Lipids*, The Handbook of Lipid Research, (F. Snyder, Ed.) Vol. 7, Plenum Press, New York, 1993.

Novel Inhibitors of Leukotrienes, Progress in Inflammation Research (G Folco, B Samuelsson, RC Murphy, Eds.), Birkhäuser Publishing, Switzerland, 1999.

Murphy RC. Mass Spectrometry of Phospholipids: Tables of Molecular and Product Ions. Illuminati Press. Denver, CO, 2002.

Murphy RC. *Tandem Mass Spectrometry of Lipids*: *Molecular Analysis of Complex Lipids*. New Developments in Mass Spectrometry (S. Gaskell, Editor) Royal Society of Chemistry, London, UK (2015).