

## **CURRICULUM VITAE**

**James C. Bonner**

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**CURRENT POSITION** Associate Professor  
Department of Environmental and Molecular Toxicology  
North Carolina State University  
Raleigh, North Carolina 27695

### **EDUCATION**

Undergraduate: B.S., 1982, Biology, Middle Tennessee State University ,  
Murfreesboro, TN

Graduate: M.S., 1984, Biology, Laboratory of Dr. Marion R. Wells, Middle  
Tennessee State University, Murfreesboro, TN

Ph.D., 1988, Animal Physiology), Laboratory of Dr. James D.  
Yarbrough, Mississippi State University, Starkville, MS

### **POSTDOCTORAL TRAINING**

1988-1990, NIH Postdoctoral Fellow, Laboratory of Dr. Arnold R. Brody,  
Laboratory of Pulmonary Pathobiology, National Institute of Environmental  
Health Sciences, Research Triangle Park, NC

### **ACADEMIC APPOINTMENTS**

1990-1995, Staff Fellow, then Senior Staff Fellow, Laboratory of  
Pulmonary Pathobiology, National Institute of Environmental Health  
Sciences, Research Triangle Park, North Carolina.

1993-2004, Head, Airway Inflammation Group, Laboratory of Pulmonary Pathobiology, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina.

2004-2007, Associate Investigator, CIIT Centers for Health Research, Research Triangle Park, North Carolina.

### **ADJUNCT FACULTY POSITIONS**

Adjunct Associate Professor of Pathology, Duke University, Durham, North Carolina (1997 – date).

### **COMMITTEES, SOCIETIES AND PROFESSIONAL ACTIVITIES**

Member, American Heart Association Mid-Atlantic Consortium Study Section, Baltimore, MD (2004-2005)

Ad hoc Reviewer, National Heart Lung and Blood Institute (NHLBI) Acute Lung Injury SCCOR Study Section, Bethesda, MD (2003)

Ad hoc Reviewer, University of California Tobacco-Related Disease Research Program Study Section, San Francisco, CA (2003-2005)

Ad hoc Reviewer and Committee Member, Beryllium Rule Advisory Committee. U.S. Department of Energy (1997-Date)

Coordinator, Duke Visiting Pulmonary Scholar Program (2005-2007)

Member, American Thoracic Society (1996-Date)

Member, Society of Toxicology (2007-Date)

Sigma Xi Honorary Member (1984-Date)

Board Member, Environmental Federation of North Carolina (1998-2000)

## **EDITORIAL ACTIVITIES**

Deputy Editor, Experimental Lung Research (1999-2000)  
Editorial Board, American Journal of Respiratory Cell and Molecular  
Biology (2009 –present)

## **AD HOC REVIEWER FOR JOURNALS**

Journal of Biological Chemistry  
Journal of Clinical Investigation  
Journal of Experimental Medicine  
Journal of Immunology  
American Journal of Respiratory Cell and Molecular Biology  
American Journal of Respiratory Critical Care Medicine  
American Journal of Physiology: Lung Cell and Molecular Physiology  
American Journal of Pathology  
Free Radical Biology & Medicine  
Toxicological Sciences  
Environmental Health Perspectives

## **TEACHING APPOINTMENTS**

### Adjunct Teaching at Duke University:

- (1997-2007) Pathology 200 Core Course for Medical Students, Department of Pathology, Basic Principles of Pathology, Spring semester lecture on "Mechanisms of Environmental Lung Injury".

### Adjunct Teaching at North Carolina State University:

- (1999-2007) Department of Toxicology, Graduate Level Biochemical Toxicology 710 Biochemical Toxicology Course; "Respiratory Toxicology".
- (1999-2007) Toxicology 701 Introductory Course, Fall semester lecture on "Basic Principles of Respiratory Toxicology".
- (1995-2000) Veterinary Medical Sciences 570 Cell Biology Course, Department of Anatomy, College of Veterinary Medicine; Fall semester, lecture on "Lung Biology in Health and Disease".

Current Teaching within the Department of Toxicology at NC State University:

(2008-Date) Course Coordinator and lecturer: General Toxicology 701.

(2007-Date) Lecturer for Biochemical Toxicology 710.

**POSTDOCTORAL TRAINEES**

Joseph A. Lasky, M.D. (1993-1994) Pulmonary and Critical Care Research Fellow, Duke University Medical Center, Current Position: Chief of Pulmonary Medicine, Tulane University Medical School, New Orleans, LA.

Patrick G. Coin, Ph.D. (1993-1996) Guest Researcher from Veterans Administration Medical Center, Durham, NC, Co-mentor, Victor Roggli, M.D. (1993-1996). Current Position: Assistant Professor and Coordinator of Environmental Health Sciences Program, Durham Technical Institute, Durham, NC.

Alvaro R. Osornio-Vargas, M.D., Ph.D. (1993-1996) Visiting Fellow co-funded by NIH International Office. Current Position: Chief, Department of Environmental Health, University Program for the Environment, National Autonomous University of Mexico (UNAM), Mexico City, Mexico.

Pamela M. Lindroos, Ph.D. (1993-1998) NIH Intramural Training Fellow. Current Position: Senior Director of Scientific Writing, Webbwrites, Inc., Durham, NC.

James E. Boyle, M.D. (1996-1998) NIH Clinical Award Fellow. Current Position: Private Practice Pulmonologist, Decatur, AL.

Ping Zhang, M.D. (1998-2001) NIH Intramural Training Fellow Current Position: Biologist, University of Florida, Gainesville.

Yi-Zhe Wang, M.D., Ph.D., (1997-2002) NIH Intramural Training Fellow. Current Position: Psychiatrist, Holly Hill Hospital, Raleigh, North Carolina.

Dianne Walters, Ph.D. (2002-2004) NIH Intramural Training Fellow. Current Position: Assistant Professor, East Carolina State University.

Jennifer Ingram, Ph.D. (2000-2005) NIH Intramural Training Fellow and then CIIT Postdoctoral Fellow. Current Position: Assistant Research Professor, Division of

Pulmonary, Allergy and Critical Care Medicine, Duke University Medical Center, Durham, NC.

Aurita A. Menezes, Ph.D. (2004-2007) CIIT Postdoctoral Fellow. Current Position: Research Specialist, Integrated DNA Technologies, Iowa City, Iowa.

Elizabeth Turpin, Ph.D. (2005-date) CIIT Postdoctoral Fellow. Current Position: Investigator, Pfizer Inc., Research Triangle Park, NC.

Jessica P. Ryman-Rasmussen, Ph.D. (2007-2008) North Carolina State University. Current Position: Toxicologist, US EPA, Washington, DC.

### **GRADUATE STUDENT COMMITTEES**

Limin Zhang, Ph.D. candidate (1995 – 2000) Graduate Supervisor, Dr. Kenneth Alder, North Carolina State University.

Brian Booth, Ph.D. candidate (1999 – 2004) Graduate Supervisor, Dr. Linda Martin, North Carolina State University.

Kimberly Raiford, Ph.D., (2002-2007) Graduate Supervisor, Dr. Kenneth Adler, North Carolina State University.

Hiuying Zhang, Ph.D. candidate (2007-present) Graduate Supervisor, Dr. Phillip Sannes, North Carolina State University.

Peter Broglie, Ph.D. candidate (2007 –present) Graduate Supervisor, Dr. Jun Tsuji, North Carolina State University.

### **CURRENT GRADUATE STUDENTS:**

Mark Cesta, Ph.D. Candidate, North Carolina State University (2003-date)

Phillip Bost, M.S. Candidate, North Carolina State University (2007-date)

Ellen Glista, Ph.D. Candidate, North Carolina State University (2009-date)

Brian Sayers, Ph.D. Candidate, NC State University (2009-Date)

### **UNDERGRADUATE TRAINEES**

Julie Keck (1994) North Carolina State University (NIEHS funded)

Cindy Hong (1995) University of North Carolina (NIEHS funded)

Patricia O'Brien (1996) New College, Tampa Florida (NIEHS funded)

Leon Adelman (1998) North Carolina School of Science and Math, (NIEHS).

Andrea Marti (1998) Florida International University, Miami Florida, (Hispanic Association of Colleges and Universities-funded summer internship).

Jasmine Gorham (1999) Hillside Highschool, Durham, NC, (North Carolina Central University Molecular Biology Intership).

Lisa Carter (2000) Peace College, Raleigh, NC, (NIEHS funded)

Kristen Geisenhoffer (2001) North Carolina State University (NIEHS-funded summer internship)

Douglas Robinson (2001) University of Maryland, Baltimore, MD (NIEHS-funded summer internship)

Matt Sheppard (2008) North Carolina State University.

Andrew Snipes (2008) North Carolina State University.

## **CURRENT FUNDING**

- National Institute of Environmental Health Sciences (NIEHS/NIH)
- National Heart, Lung and Blood Institute (NHLBI/NIH)
- NC State College of Agricultural and Life Sciences

## **INVITED LECTURES (recent years)**

### **1997:**

Seminar: North Carolina State University Department of Toxicology Seminar Series, Raleigh, NC. Lecture topic: "Cytokine Receptor Signaling in Health and Disease"

Keynote Speaker, Duke University Medical Center, Department of Pathology Inaugural Research Retreat. North Carolina Biotechnology Center. Lecture topic: "Cytokine-Binding Proteins in Lung Disease".

**1998:**

Speaker: 10th International Colloquium on Pulmonary Fibrosis, Siena, Italy. Presentation: "Role of MAP Kinases in the Regulation of the PDGF Receptor System".

**1999:**

Speaker: Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Human Studies Division. "Role of Tyrosine Kinase Receptors in Metal-Induced Lung Injury". Chapel Hill, NC, October 2, 1999.

Speaker: Experimental Biology (FASEB) Meeting Symposium entitled "Recent Advances in Molecular Mechanisms and Pharmacological Interventions of Lung Fibrosis", "Regulation of the platelet-derived growth factor receptor system in pulmonary fibrogenesis". Washington, D.C., April 18, 1999.

Speaker, NIEHS Symposium on Apoptosis and Growth Factor/Signal Transduction Pathways: "Role of receptor tyrosine kinases in lung fibrosis", Research Triangle Park, NC, May 20, 1999.

Speaker, Society of Toxicology Continuing Education Course on "Metal-Induced Pulmonary Fibrosis", Society of Toxicology Annual Meeting, Philadelphia, PA, March 19, 1999.

**2000:**

Speaker: International Meeting of the American Thoracic Society, Session on Pulmonary Fibrosis. Presentation entitled "Susceptibility of cyclooxygenase-2 null mice to metal-induced pulmonary fibrosis". Toronto, Canada, May 10, 2000.

Co-chair of session: "Cytokines in Lung Fibrosis" and speaker: "Function of Receptor Tyrosine Kinases during Metal-Induced Pulmonary Fibrogenesis". 11<sup>th</sup> International Colloquium on Lung Fibrosis, Stockholm, Sweden, September 23, 2000.

Seminar: Department of Pulmonary, Critical Care and Occupational Medicine, University of Iowa. "Diverse Outcomes of EGF Receptor

Signaling in Pulmonary Fibrogenesis". Iowa City, IA, November 2, 2000.

**2001:**

Seminar: University of California at Davis, March 3<sup>rd</sup>, 2001.  
Presentation on "Activation of Signal Transduction Pathways during Metal-Induced Lung Injury". Davis, CA, March 3, 2001.

Speaker: Duke University Integrated Toxicology Program, "The Health Effects of Particulate Matter". Duke University, Durham, NC, October 2, 2001.

Speaker, University of North Carolina, Conference on "Regulation of fibrogenesis by intestinal and hepatic inflammation". Chapel Hill, NC, April 12, 2001.

**2002:**

Seminar: University of Vermont, Department of Pathology, "Role of EGF Receptor and Oxidative Stress in Metal-Induced Airway Remodeling and Fibrosis". Burlington, VT, March 18, 2002.

Speaker, American Thoracic Society Meeting. "Metal-induced lung injury". Atlanta, GA, May 17, 2002.

Speaker, Aspen Lung Conference. "Interleukin-13-induced myofibroblast growth requires STAT-6 and PDGF-AA: a possible mechanism of airway remodeling in asthma". Aspen, CO, June 4, 2002.

Speaker: Lovelace Respiratory Research Institute, Conference on "New Molecular Approaches for Early Diagnosis and Treatment of Respiratory Disease", Session on "Genomic/Proteomic Techniques in Diagnosis/Treatment of Occupational/Environmental Lung Disease". Santa Fe, NM, October 13, 2002.

Review Panel Member, National Heart Lung and Blood Institute, Acute Lung Injury SCCOR Study Section, Bethesda, MD, February 27, 2002.

**2003:**

Review Panel Member, California Tobacco Research Disease Related Program Study Section, San Francisco, CA, March 15, 2003.

Seminar: Johns-Hopkins School of Public Health. "Receptor tyrosine kinases in airway remodeling and fibrosis". Baltimore, MD, May 7, 2003.

Seminar: Duke University Medical Center Department of Pulmonary and Critical Care Medicine, "PDGF and EGF Receptor Signaling in Lung Fibrogenesis". Durham, NC, July 8, 2003.

Seminar: Signal Transduction Colloquium, Duke University Department of Pharmacology. Durham, NC, December 3, 2003.

**2004:**

Review Panel Member, American Heart Association Mid-Atlantic Consortium, Baltimore, MD, April 2, 2004.

Speaker: 13<sup>th</sup> International Colloquium on Pulmonary Fibrosis, October, Banff, Alberta, Canada. October 19, 2004.

**2005:**

Review Panel Member, California Tobacco Research Disease Related Program Study Section, San Francisco, CA, April 1, 2005.

Review Panel Member, American Heart Association Mid-Atlantic Consortium, Baltimore, MD. April 15, 2005.

Seminar: University of California at Davis, Davis, CA. "Stat-dependent Signaling in Chronic Airway Remodeling". Davis, CA, September 30, 2005.

Speaker: Conference on "Mechanisms of Action of Inhaled Fibers, Particles, and Nanoparticles in Lung and Cardiovascular Disease": "Mechanisms of Vanadium-Induced Airway Remodeling and Fibrogenesis". EPA Conference Center, Research Triangle Park, NC, October 26, 2005.

**2006:**

Speaker: Society for Toxicologic Pathology, Session on Pathology of Respiratory System, "Lung Fibrotic Responses to Particle and Nanoparticle Exposure". Vancouver, British Columbia, June 21, 2006.

Speaker: Ninth International Workshop on Scleroderma Research. Session on Fibrotic Mediators: "PDGF Signaling: Role of Cell Migration, Tissue Remodeling and Fibrosis". Boston, MA, August 5-9, 2006.

Speaker: 3<sup>rd</sup> RTP Rodent Pathology Course. Cardiopulmonary Pathology. "Fibrotic Lung Disease and Animal Models". Research Triangle Park, NC, September 17-19, 2006.

**2007:**

Speaker: Pulmonary Research Group Symposium on Compromised Respiratory Defenses in the Context of COPD. "Airway Injury, Repair and Fibrosis". GlaxoSmithKline Campus, King of Prussia, PA, May 11, 2007.

Seminar: North Carolina State University, Department of Environmental and Molecular Toxicology. "Growth Factor Signaling in Metal Oxide-Induced Pulmonary Fibrosis". Raleigh, North Carolina, March 7<sup>th</sup>, 2007.

Seminar: Duke University Medical Center. "Growth Factor Signaling in Metal Oxide-Induced Airway Fibrosis and Allergic Asthma". Durham, North Carolina, March 16<sup>th</sup>, 2007.

**2008:**

Invited Speaker: NC State University Nanotechnology Integration Forum. "Nanomaterials and Health Science". NC State Centennial Campus, Raleigh, NC, February 21<sup>st</sup>, 2008.

Keynote Address: Carolina Society of Environmental Toxicology and Chemistry (CSETAC). "Risks and Benefits of Engineered Nanomaterials". April 4<sup>th</sup>, 2008, Morehead City, NC.

Invited Lecturer for The London Matrix Group Symposium (<http://www.londonmatrix.org/>), "Mesenchymal Cell Survival in Fibrotic Diseases", Imperial College, London, UK, June 2<sup>nd</sup>, 2008.

NCSU Workshop on Communicating Health and Safety Risks on Emerging Technologies in the 21<sup>st</sup> Century, "Risks of Inhaled Carbon Nanotubes", McKimmon Center, North Carolina State University, Raleigh, NC August 28-29, 2008.

Invited Lecturer: Sigma Xi Honorary Society. "Emerging Nanotechnology: A New Risk for Lung Diseases?", Research Triangle Park, NC, October 15<sup>th</sup>, 2008.

Seminar: Laboratory of Respiratory Biology, National Institute of Environmental Health Sciences, "Emerging Nanotechnology: A New Risk for Lung Diseases?", Research Triangle Park, NC, December 10<sup>th</sup>, 2008.

## **2009:**

Invited Speaker, Business Environmental and Safety Training Conference, "Risks and Benefits of Emerging Nanotechnologies", NCState University McKimmon Center, January 28<sup>th</sup>, 2009.

State-of-the-Art Lecturer, "Nanoparticles as a Potential Cause of Pleural and Interstitial Lung Disease". 52<sup>nd</sup> Annual Meeting of the Thomas L. Petty Aspen Lung Conference, Aspen, Colorado, June 10-13<sup>th</sup>, 2009.

## **RESEARCH INTERESTS**

- Pathogenesis of Pulmonary fibrosis.
- Nanotoxicology
- Lung injury by exposure to metals.
- Toxicology of air pollution particles, man-made fibers, and nanomaterials.
- Epithelial-fibroblast interactions in the lung.
- Growth factor receptor tyrosine kinases.
- Asthma pathogenesis.
- Strategies for the intervention of pulmonary fibrosis.

**BIBLIOGRAPHY****Completed Publications in Scientific Journals****Peer Reviewed**

1. Yarbrough, J.D., R.T. Roush, J.C. Bonner, and D.A. Wise (1986) Monogenic inheritance of cyclodiene insecticide resistance in mosquitofish, *Gambusia affinis*. *Experientia*, 42: 851-853.
2. Bonner, J.C., and M.R. Wells (1987) Comparative acute toxicity of DDT metabolites among american and european species of planarians. *Comp. Biochem. Physiol.*, 87C (2): 437-438.
3. Bonner, J.C., and J.D. Yarbrough (1987) Alteration of the t-butylbicyclophosphorothionate binding site as a mechanism of vertebrate cyclodiene insecticide resistance. *Pestic. Biochem. Physiol.*, 29: 260-265.
4. Bonner, J.C., and J.D. Yarbrough (1988) Vertebrate cyclodiene insecticide resistance: role of  $\gamma$ -aminobutyric acid and diazepam binding sites. *Arch. Toxicol.*, 62: 311-315.
5. Bonner, J.C., and J.D. Yarbrough (1989) Role of the brain t-butylbicyclophosphorothionate receptor in vertebrate resistance to endrin, 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane and cypermethrin. *J. Pharmacol. Exp. Therap.* 249 (1): 149-154.
6. Bonner, J.C., M. Hoffman, and A.R. Brody (1989) Alpha-macroglobulin secreted by alveolar macrophages serves as a binding protein for a macrophage-derived homologue of platelet-derived growth factor. *Am. J. Respir. Cell Mol. Biol.* 1: 171-179.
7. Bauman, M.D., A.M. Jetten, J.C. Bonner, R.K. Kumar, R.A. Bennett and A.R. Brody (1990) Secretion of a platelet-derived growth factor homologue by rat alveolar macrophages exposed to particulates *in vitro*. *Eur. J. Cell Biol.*, 51: 327-334.
8. Mangum, J. B., J.I. Everitt, J.C. Bonner, L. Moore, and A.R. Brody (1990) *In vitro* pulmonary co-culture system to model toxicant-induced alveolar injury. *In Vitro Cell. Dev. Biol.* 26: 1135-1143.

9. Osornio-Vargas, A.R., J.C. Bonner, A. Badgett, and A.R. Brody (1990) Rat alveolar macrophage-derived PDGF-homologue is chemotactic for rat lung fibroblasts. *Am. J. Respir. Cell Mol. Biol.* 3: 595-602.
10. Bonner, J.C., Badgett, A., Osornio-Vargas, A.R., M. Hoffman and A.R. Brody (1990) PDGF-stimulated fibroblast proliferation is synergistically enhanced by receptor-recognized  $\alpha_2$ -Macroglobulin. *J. Cell. Physiol.* 145: 1-8.
11. Bonner, J.C., A.R. Osornio-Vargas, A. Badgett and A.R. Brody (1991) Differential proliferation of rat lung fibroblasts induced by the platelet-derived growth factor (PDGF)-AA, -AB, and -BB isoforms secreted by rat alveolar macrophages. *Am. J. Respir. Cell Mol. Biol.* 5: 539-547.
12. Walker, C., E. Bermudez, C. Malloy, W. Stewart, J.C. Bonner and J. Everitt. (1992) Characterization of PDGF-receptor and PDGF expression in asbestos-induced rat mesothelioma. *Cancer Res.* 52: 301-306.
13. Brody, A.R., J.C. Bonner, L.H. Overby, A. Badgett, V.K. Kalter, R.K. Kumar and R.A. Bennett. (1992) Interstitial pulmonary macrophages produce platelet-derived growth factor which stimulates rat lung fibroblast proliferation *in vitro*. *J. Leuk. Biol.* 51: 640-648.
14. Bonner, J.C., A. Goodell, J.A. Lasky and M.R. Hoffman. (1992) Reversible binding of platelet-derived growth factor (PDGF)-AA, -AB and -BB isoforms to a similar site on the "fast" and "slow" conformations of  $\alpha_2$ -macroglobulin. *J. Biol. Chem.* 267:12837-12844.
15. Bonner, J.C., A. L. Goodell, P.G. Coin and A.R. Brody. (1993) Chrysotile asbestos up-regulates gene expression and production of  $\alpha$ -receptors for platelet-derived growth factor (PDGF) on rat lung fibroblasts. *J. Clin. Invest.* 92: 425-430.
16. Walker, C., E. Bermudez, J. Bonner and J. Everitt. (1993) Species-specific PDGF expression in mesothelioma. *Eur. J. Respir. Dis.* 3:(11) 153-155.
17. Lasky, J.A., P.G. Coin, P.M. Lindroos, L.E. Ostrowski, A.R. Brody and J.C. Bonner. (1995) Chrysotile asbestos stimulates gene expression and secretion of PDGF-AA by rat lung fibroblasts: evidence for an autocrine loop. *Am. J. Respir. Cell. Mol. Biol.* 12: 162-170.

18. Osornio-Vargas, A.R., A.L. Goodell, A.R. Brody, and J.C. Bonner. (1995). Platelet-derived growth factor (PDGF)-AA, -AB, and -BB induce differential chemotaxis of early passage rat lung fibroblasts in vitro. *Am. J. Respir. Cell. Mol. Biol.* 12: 33-40.
19. Bonner, J.C., P.M. Lindroos, M.R. Hoffman and A. Badgett. (1995) Inhibition of platelet-derived growth factor-BB (PDGF-BB)-induced fibroblast proliferation by plasmin-activated  $\alpha_2$ Macroglobulin ( $\alpha_2$ M) is mediated via an  $\alpha_2$ macroglobulin receptor/low-density lipoprotein receptor-related protein (LRP)-dependent mechanism. *J. Biol. Chem.* 270:6389-6395.
20. Bonner, J.C., and A.R. Osornio-Vargas. (1995) Differential control of platelet-derived growth factor (PDGF)-A chain and PDGF-B chain isoforms by  $\alpha_2$ Macroglobulin. *J. Biol. Chem.* 270: 16236-16242.
21. Bonner, J.C., A. Badgett, P.M. Lindroos and A.R. Osornio-Vargas. (1995) Transforming growth factor-beta1 (TGF-beta1) down-regulates the platelet-derived growth factor (PDGF) alpha-receptor subtype on human lung fibroblasts in vitro. *Am. J. Respir. Cell Mol. Biol.* 13: 496-505.
22. Lindroos, P.M., P.G. Coin, A.R. Osornio-Vargas, and J.C. Bonner. (1995) Interleukin-1beta (IL-1beta) and the IL-1beta/ $\alpha_2$ macroglobulin complex increases platelet-derived growth factor-AA (PDGF-AA)-induced fibroblast proliferation and chemotaxis by up-regulation of the PDGF-alpha receptor. *Am. J. Respir. Cell. Mol. Biol.* 13: 455-465.
23. Badgett, A., J.C. Bonner and A.R. Brody. (1996) Interferon- $\gamma$  modulates lung macrophage production of PDGF-BB and fibroblast growth. *J. Lipid Med. Cell Signal.* 13: 89-97.
24. Coin, P.G., P.M. Lindroos, A.R. Osornio-Vargas, V.L. Roggli, and J.C. Bonner. (1996) Lipopolysaccharide (LPS) up-regulates the platelet-derived growth factor (PDGF) receptor-alpha on rat lung myofibroblasts and enhances biologic responses to all PDGF isoforms. *J. Immunol.* 156: 4797-4806.
25. Osornio-Vargas, A.R., P.M. Lindroos, P.G. Coin, A. Badgett, N.A. Hernandez-Rodriguez and J.C. Bonner. (1996) Maximal PDGF-induced lung myofibroblast chemotaxis requires the PDGF alpha-receptor. *Am. J. Physiol.*: 271 (15): L93-L99.

26. Bonner, J.C., A. Badgett, P.M. Lindroos, and P.G. Coin. (1996) Basic fibroblast growth factor-(bFGF) induces expression of the PDGF alpha-receptor on human bronchial smooth muscle cells. *Am. J. Physiol.*: 271 (15):L880-L888.
27. Kodavanti, U.P., R.H. Jaskot, J.C. Bonner, A. Badgett and K.L. Dreher. (1996) Eosinophilic lung inflammation in particulate-induced lung injury. *Exp. Lung Res.* 22: 541-554.
28. Lindroos, P.M., P.G. Coin, A. Badgett and J.C. Bonner. (1997) Alveolar macrophages stimulated with titanium dioxide, chrysotile asbestos and residual oil fly ash up-regulate the PDGF receptor-alpha on lung fibroblasts through an IL-1beta-dependent mechanism. *Am. J. Respir. Cell Mol. Biol.* 16: 283-292.
29. Bonner, J.C., A.B. Rice, P.M. Lindroos, C.R. Moomaw, and D.L. Morgan. (1998) Induction of PDGF receptor-alpha in rat myofibroblasts during pulmonary fibrogenesis *in vivo*. *Am. J. Physiol.* 18: L72- L80.
30. Bonner, J.C., A.B. Rice, P.M. Lindroos, P.O. O'Brien, K.L. Dreher, I. Rosas, E. Alfaro-Moreno, and A.R. Osornio-Vargas. (1998) Induction of the lung myofibroblast PDGF receptor system by urban ambient particles from Mexico City. *Am. J. Respir. Cell Mol. Biol.* 19: 672-680.
31. Lindroos, P.M., A.B. Rice, Y.-Z. Wang, and J.C. Bonner. (1998) Role of NF-kappaB and MAP kinase pathways in IL-1beta-mediated induction of PDGF receptor-alpha expression in rat lung myofibroblasts. *J. Immunol.* 161: 3464-3468.
32. Boyle, J.E., P.M. Lindroos, A.B. Rice, D.C. Zeldin, and J.C. Bonner. (1999) Prostaglandin-E2 counteracts interleukin-1beta stimulated up-regulation of PDGF-Ralpha on rat pulmonary myofibroblasts. *Am. J. Respir. Cell Mol. Biol.* 20: 433-440.
33. Rice, A.B., C.R. Moomaw, D.L. Morgan, and J.C. Bonner. (1999) Specific inhibitors of PDGF- or EGF-receptor tyrosine kinase reduce pulmonary fibrosis in rats. *Am. J. Pathol.* 155: 213-221.
34. Bonner, J.C., A.B. Rice, C.R. Moomaw, and D.L. Morgan. (2000) Airway fibrosis in rats induced by vanadium pentoxide. *Am. J. Physiol.* 278: L209-L216.

35. Wang, Y.-Z., and J.C. Bonner. (2000) Mechanism of extracellular signal-regulated kinase (ERK)-1 and ERK-2 activation by vanadium pentoxide in rat pulmonary myofibroblasts. *Am. J. Respir. Cell Mol. Biol.* 22: 590-596.
36. Wang, Y.-Z., P. Zhang, A.B. Rice, and J.C. Bonner. (2000) Regulation of interleukin-1 $\beta$ -induced platelet-derived growth factor-alpha expression in rat pulmonary myofibroblasts by p38 mitogen-activated protein kinase. *J. Biol. Chem.* 275: 22550-22557.
37. Zhang, P., Y.-Z. Wang, E. Kagan, and J.C. Bonner. (2000) Peroxynitrite targets EGF receptor, Raf-1 and MEK independently to activate MAP kinase. *J. Biol. Chem.* 275: 22479-22486.
38. Lindroos, P.M., Y.-Z. Wang, A.B. Rice, and J.C. Bonner. (2001) Regulation of PDGF alpha-receptor in pulmonary myofibroblasts by staurosporine. *Am. J. Physiol.: Lung Cell Molec. Physiol.* 280: L354-L362.
39. Zhang, L., K. Adler, P. Sannes, L. Martin, W. Gladwell, J. Koo, T.E. Gray and J.C. Bonner. (2001) Vanadium stimulates human bronchial epithelial cells to produce HB-EGF: a mitogen for human lung fibroblasts. *Am. J. Respir. Cell Mol. Biol.* 24: 123-131.
40. Booth, B.W., K.B. Adler, J.C. Bonner, F. Tournier, and L.D. Martin. (2001) Interleukin-13 induces proliferation of differentiated human airway epithelial cells via a mechanism mediated by transforming growth factor-alpha. *Am. J. Respir. Cell. Molec. Biol.* 25: 739-743.
41. Carter, L.A., M.B. Tabor, J.C. Bonner, and L.A. Bonner. (2002) Mitogen-activated protein kinase activation by oxidative and bacterial stress in an amphibian cell culture model. *Environ. Health. Perspect.* 110: 641-645.
42. Alfaro-Moreno, E., L. Martinez, C. Garcia-Cuellar, J.C. Bonner, J.C. Murray, I. Rosas, S.P. Rosales, and A.R. Osornio-Vargas. (2002) Biological effects induced in vitro by PM<sub>10</sub> from three different zones of Mexico City. *Environ. Health Perspect.* 110: 715-720.
43. Bonner, J.C., A.B. Rice, J.L. Ingram, C.R. Moomaw, A. Nyska, A. Bradbury, A.R. Sessoms, P.C. Chulada, D.L. Morgan, D.C. Zeldin, and R. Langenbach. (2002) Susceptibility of cyclooxygenase (COX)-2 deficient mice to pulmonary fibrosis. *Am. J. Pathol.* 161:459-470.

44. Rice, A.B., J.L. Ingram, and J.C. Bonner. (2002) p38 Mitogen-activated protein (MAP) kinase regulates growth factor-induced mitogenesis of rat pulmonary myofibroblasts. *Am. J. Respir. Cell Mol. Biol.* 27: 759-765.
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