dCURRICULUM VITAE

Hongwei Yao, PhD.

Associate Professor of
Department of Molecular Biology, Cell Biology & Biochemistry (Research)
Brown University Warren Alpert Medical School
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Research Expertise

- Bronchopulmonary dysplasia
- Chronic obstructive pulmonary disease
- Pulmonary fibrosis
- Oxidative stress
- Inflammatory responses
- Cellular senescence/premature aging
- Mitochondrial dysfunction
- Metabolism

Current Position (2016-present)

Associate Professor: Department of Molecular Biology, Cell Biology & Biochemistry (Research), Brown University Warren Alpert Medical School.

Positions

2010-2015	Assistant Professor, Department of Environmental Medicine (Research), University of Rochester Medical Center, Rochester, NY USA.
2006-2010	Postdoctoral Fellow, Lung Biology & Disease Program and Department of Environmental Medicine, University of Rochester Medical Center, Rochester, NY USA.
2003-2006	Instructor, Department of Pharmacology, Zhejiang University, Hangzhou, China.

Education

1. 2000-2003: *Ph.D.*
   Institute of Clinical Pharmacology, Anhui Medical University, Hefei, China

2. 1997-2000: *Master of Medical Science*
   Institute of Clinical Pharmacology, Anhui Medical University, Hefei, China

3. 1992-1997: *Bachelor of Medical Science*
   Department of Clinical Medicine, Anhui Medical University, Hefei, China

Other Experience and Professional Memberships

2018	The Society for Redox Biology & Medicine
2018	The American Heart Association
2010-	The American Thoracic Society
2008-2010	The Associate Faculty Member of Faculty of 1000 Medicine
1998-2006	Member, the Society for Chinese Pharmacology

Honors

2022	2022 Whitsett award of Neonatal and Developing Lung/ATS program
2022	Co-chair of NIH workshop on Mitochondria in Pathogenesis of Lung and Sleep Disorders
2014	Poster award in the Pittsburgh-Munich International Lung Conference, Pittsburgh, PA.
2011, 2012	Facilitator in American Thoracic Association International Conference.
2011	Excellent review panel award in the Chinese SciencePaper Online.
2011	Best publication Robert N. Infurna award in the Department of Environmental Medicine, University of Rochester Medical Center.
2008	Provincial Natural Science and Technology Progress Award (third class) from the Department of Science and Technology of Anhui Province in China.
2004	Servier Young Investigator Award in Pharmacology between the Chinese Pharmacological Society and the Institut de Recherches Internationales Servier (France). *There have only eight young investigators to obtain this award per year in China.*
2003	Excellent Paper Award in the Natural Science of Anhui Province in China.

Editorial board membership in following journals

2022	Associate Editor of *Frontiers in Pharmacology*
2021	*Frontiers in Bioscience-Landmark*
2021	*Frontiers in Bioscience-Scholar*
2021	*Frontiers in Bioscience-Elite*
2020	*Physiological Reports*
2017	*American Journal of Physiology Lung Cellular and Molecular Physiology*
2016	*Frontiers in Pharmacology,*
2010	*Journal of Respiratory Research*
2010	*Dataset Papers in Science*

Reviewer in the following journals since 2004

Acta Pharmacologica Sinica
Advanced Science
Aging
Aging and Disease
African Journal of Pharmacy and Pharmacology
African Journal of Biotechnology
Archivum Immunologiae et Therapiae Experimentalis
American Journal of the Medical Sciences
American Journal of Pathology
American Journal of Physiology-Cell Physiology
American Journal of Physiology-Lung Cellular and Molecular Physiology
American Journal of Respiratory and Critical Care Medicine
American Journal of Respiratory Cell and Molecular Biology
Biochimica et Biophysica Acta
Biochemical Pharmacology
BMC Pulmonary Medicine
BMC Genomics
Brain Research Bulletin
British Journal of Pharmacology
Breast Cancer Research and Treatment
Cellular and Molecular Biology Letters
Cellular Physiology and Biochemistry
Chemical Biology & Drug Design
Chinese Medicine

Clinical and Experimental Pharmacology and Physiology
Clinical Translational Medicine
Chinese Journal of Physiology
EBioMedicine
Experimental Lung Research
Experimental and Therapeutic Medicine
European Respiratory Journal
FEBS Journal
Free Radical Biology and Medicine
Frontiers in Pharmacology
Frontiers in Medicine
Inflammation
Immunologiae et Therapiae Experimentalis
International Immunopharmacology
International Journal of Experimental Pathology
International Journal of COPD
International Journal of Molecular Sciences
International Journal of Biochemistry & Cell Biology
International Journal of Biological Macromolecules
iScience
JCI Insight
Journal of Cellular and Molecular Medicine
Journal of Pharmacology and Experimental Therapeutics
Journal of Gastrointestinal and Liver Diseases
Journal Inflammation (London)
Journal of Pediatrics
Journal of Pharmacy and Pharmacology
Journal of Gastrointestinal and Liver Diseases
Journal of Inflammation Research
Journal of Medicinal Plants Research
Journal of Toxicology & Environmental Health Sciences
Journal of Cellular Physiology
Liver International
Mechanisms of Ageing and Development
Medical science monitor
Molecular and Cellular Biochemistry
Mucosal Immunology
Oncotarget
Oncogene
PLoS One
Respiratory Research
Pharmacological Research
Physiological Reports
Planta Medica
Respiration
Respirology
Scientific Reports
Translational Research

Yao, Hongwei, PhD, Associate Professor (Research), Brown University

Toxicology
Toxicology and Applied Pharmacology
Tohoku Journal of Experimental Medicine
Virology

Ad hoc reviewer in the following grants

2023 Ad hoc reviewer: ZGM1 TWD-A(PR)
2022 Ad hoc reviewer: NICHD FRN ZHD1 DSR-N (55) 2
2022 Ad hoc reviewer: NIEHS 2023/01 ZES1 LWJ-S (RI) 1
2022 Program Committee for SfRBM's 29th Annual Meeting
2022 Judge abstracts for the Society of Redox Biology and Medicine 2022
2022 Postdoctoral Research Applications in University of Cyprus
2022 Ad hoc reviewer: the CPVB/COBRE Year 10 Pilot Project
2022 Falk Trust Catalyst Applications
2021 Program Committee for SfRBM's 28th Annual Meeting
2021 Ad hoc reviewer: the CPVB/COBRE Year 9 Pilot Project
2021 Ad hoc reviewer: UK/Medical Research Council grant
2020 Ad hoc reviewer: NHLBI R01 ICER ZRG1 EMNR-S (55) R study section
2020 Ad hoc reviewer: the CPVB/COBRE Year 8 Pilot Project
2020 Brown Internal Reviewer: Falk Trust Catalyst proposals
2019 Ad hoc reviewer: The American Heart Association Innovative Project Awards
2019 Ad hoc reviewer: NHLBI R01 ICER ZRG1 EMNR-S (55) R study section
2019 Ad hoc reviewer: the CPVB/COBRE Year 7 Pilot Project
2019 Ad hoc member: Florida Department of Health (FL DOH) Grant.
2018 Ad hoc reviewer: the CPVB/COBRE Year 6 Pilot Project
2018 Ad hoc member: Florida Department of Health (FL DOH) Grant.
2018 Judge for the Young Investigator Awards of the Society of Redox Biology and Medicine 2018
2018 Ad hoc reviewer: The Netherlands Organisation for Scientific Research
2018 Ad hoc reviewer: The American Heart Association Innovative Project Awards
2018 Ad hoc member: The United Arab Emirates University Grant
2018 Ad hoc member: UK/Medical Research Council grant
2018 Ad hoc member: NHLBI R01 ZHL1 CSR-N (S1) study section.
2017 Ad hoc member: King's Health Partners R&D Challenge Fund in King College London
2017 Ad hoc member: Florida Department of Health (FL DOH) Grant.
2017 Ad hoc member: The Wellcome Trust/DBT India Alliance.
2016 Ad hoc member: Florida Department of Health (FL DOH) Grant.
2005 Ad hoc member: National Natural Science Foundation of China

Invited talks and oral presentations

2022 Oral presentation in the 9th annual CPVB COBRE EAC meeting, Providence, Dec 8
2022 Multi-COBRE Seminar Series, Virtual/oral presentation, May 10
2022 2022 RI IDeA symposium, oral presentation, June 10
2021 Oral presentation in 2021 PAS virtual meeting, May 1
2021 Invited talk at the Chinese-American Lung Association, May 14.
2021 Invited talk at the Center for Diagnostics & Therapeutics, Georgia State University, June 15
2021 Invited talk at the Neonatal-Perinatal Medicine, University of Oklahoma Health Science Ctr, July 6
2021 Invited talk at the Pediatric Research Colloquium, Women & Infants Hospital of RI, Oct 8
2021 Oral presentation in the 8th annual CPVB COBRE EAC meeting, Providence, Oct 28
2020 Oral presentation in the 8th annual CPVB COBRE EAC meeting, Providence, Sept 10
2020 Talk at the CPVB COBRE bi-weekly seminar, Providence, RI, Dec 11
2019 Invited talk at the CVRC Data Club: Metabolic reprogramming in endothelial cells during hyperoxic lung injury. March 20.
2019 Oral presentation in the 7th annual CPVB COBRE EAC meeting, Providence, Oct 24

2018 Invited talk at the Department of Pulmonary and Critical Care Medicine of the Brigham and Women's Hospital in Harvard University, March 23
2018 Invited talk at the CardioPulmonary Vascular Biology COBRE Sept 7
2018 Oral presentation in the 6th annual CPVB COBRE EAC meeting, Providence, Nov 8
2018 Oral presentation at the 25th Annual Meeting of the Society for Redox Biology and Medicine, Chicago, IL, Nov 15
2017 Invited talk at the 8th Respiratory Symposium of Shandong Province, Jinan, China, May 4
2017 Invited talk at the Guangzhou Institute of Respiratory Disease, Guangzhou, China, May 8
2017 Oral presentation at the 24th Annual Meeting of the Society for Redox Biology and Medicine, Baltimore, Maryland, Dec 1
2016 Oral presentation at the Endothelial Injury and Repair: COBRE/CPVB, Oct 28
2015 Invited talk at the Division of Pulmonary and Critical Care Medicine of the Mayo Clinic, Nov 6
2015 Invited talk at the Department of Comparative Biomedical Sciences of the Louisiana State University Veterinary Medical Sciences, Jan 26
2015 Invited talk at the AstraZeneca Innovation Center China, April 14
2015 Invited talk at the Molecular Biology, Cell Biology & Biochemistry of the Brown University, July 30
2014 Oral presentation in the American Thoracic Society International Conference in San Diego, CA from May 16-May 21.
2014 Invited talk at the Department of Pathology and Laboratory Medicine at the University of Vermont College of Medicine, Dec 3
2013 Invited talk at the Hefei Institute of Physical Science, Chinese Academy of Sciences, China
2013 Invited talk at the School of Pharmacy, Anhui Medical University, China
2012 Invited talk at the Lung Biology and Disease Program and Department of Environmental Medicine, University of Rochester, on Sept 18, 2012.
2010 Oral presentation in the 8th European Respiratory Society (ERS) Lung Science Conference in Estoril, Portugal from March 26-28, 2010.
2009 Invited talk in the postdoctoral seminar at the Department of Environmental Medicine, University of Rochester on Feb 12, 2009.

Peer-reviewed publications *(excluding Chinese articles)*

Publication	**Number**	**Publons citation metrics (Based on the Web of Science)**
Original Articles	*71*	
Review Articles	*22*	Total citations >5,800
Book Chapters	*7*	
Conference Abstracts	*36*	H-index of 41
Total	*136*	

Articles

1. Yao H*, Wallace J, Peterson AL, Scaffa A, Rizal S, Hegarty K, Maeda H, Chang J, Oulhen N, Kreiling A, Huntington KE, DePaepe ME, Barbosa G, Dennery PA*. Timing and cell specificity of senescence drives postnatal lung development and injury. ***Nature Communications***. 2023, 14 (1): 273. *Co-corresponding authors.
2. Teape D, Peterson AL, Ahsan N, Ellis K, Correia N, Luo R, Hegarty K, Yao H, Dennery PA. Hyperoxia impairs intraflagellar transport mechanics and causes dysregulated metabolism with resultant decreased cilia length. ***Am J Physiol Lung Cell Mol Physiol***, 2023, doi: 10.1152/ajplung.00522.2021.
3. Chang JL, Gong J, Rizal S, Peterson AL, Chang J, Yao C, Dennery PA, Yao H. Upregulating carnitine palmitoyltransferase 1 inhibits hyperoxia-induced endothelial cell dysfunction and persistent lung injury. ***Respiratory Research***. 2022, 23(1):205.
4. Scaffa A*, Tollefson GA*, Yao H*, Rizal S, Wallace J, Oulhen N, Carr JF, Uzun A, Dennery PA. Identification of heme oxygenase-1 as a DNA-binding protein. ***Antioxidants***. 2022, 11(11): 2135. *Co-first author.

5. Maeda H, Yao H, Go H, Huntington KE, De Paepe ME, Dennery PA. Involvement of miRNA-34a regulated Krüppel-like factor 4 expression in hyperoxia-induced senescence in lung epithelial cells. ***Respiratory Research***. 2022, 23 (1):340.
6. Sun X, Nakajima E, Norbrun C, Sorkhdini P, Yang AX, Yang D, Ventetuolo CE, Braza J, Vang A, Aliotta J, Banerjee D, Pereira M, Baird G, Lu Q, Harrington EO, Rounds S, Lee CG, Yao H, Choudhary G, Klinger JR, Zhou Y. Chitinase 3-like-1 contributes to the development of pulmonary vascular remodeling in pulmonary hypertension. ***JCI Insight***. 2022, 7(18):e159578.
7. Gong J, Feng Z, Peterson AL, Carr JF, Lu X, Zhao H, Ji X, Zhao YY, De Paepe ME, Dennery PA, Yao H. The pentose phosphate pathway mediates hyperoxia-induced lung vascular dysgenesis and alveolar simplification in neonates. ***JCI Insight***. 2021, 6: e137594-e137610.
8. Scaffa M*, Yao H*, Oulhen N, Wallace J, Peterson AL, Rizal S, Ragavendran A, Wessel G, De Paepe ME, Dennery PA. Single-cell transcriptomics reveals lasting changes in the lung cellular landscape into adulthood after neonatal hyperoxic exposure. ***Redox Biol***. 2021, 48:102091. *Co-first author.
9. Yue L, Lu X, Dennery PA, Yao H. Metabolic dysregulation in bronchopulmonary dysplasia: Implications for identification of biomarkers and therapeutic approaches. ***Redox Biol***. 2021, Doi: 10.1016/j.redox.2021.102104.
10. Gillis SP*, Yao H*, Rizal S, Maeda H, Chang J, Dennery PA. Loss of the transcriptional repressor Rev-erbα upregulates metabolism and proliferation. ***Sci Rep***. 2021, 11: 12356-12367. *Co-first author.
11. Scaffa AM, Peterson AL, Carr JF, Garcia D, Yao H, Dennery PA. Hyperoxia causes senescence and increases glycolysis in cultured lung epithelial cells. ***Physiol Rep***. 2021, 9: e14839-e14852.
12. Ji X, Yao H, Beebe M, Gardenhire DS, Mo H. Tocotrienols: Dietary Supplement for Chronic Obstructive Pulmonary Disease. ***Antioxidants***. 2021,10: 883-900.
13. Han H, Peng G, Meister M, Yao H, Yang JJ, Zou MH, Liu ZR, Ji X. Electronic Cigarette Exposure Enhances Lung Inflammatory and Fibrotic Responses in COPD Mice. ***Front Pharmacol***. 2021, 12:726586.
14. Garcia D, Carr JF, Chan F, Ellis KA, Scaffa A, Ghio AJ, Peterson AL, Yao H, Dennery PA. Short exposure to hyperoxia causes mitochondrial dysregulation in cultured lung epithelial cells and alveolar simplification in neonatal mice. ***Pediatr Res***. 2021, 90:58-65
15. Gong J, Feng Z, Peterson AL, Carr JF, Vang A, Braza J, Choudhary G, Dennery PA, Yao H. Endothelial to mesenchymal transition during neonatal hyperoxia-induced pulmonary hypertension. ***J Pathology***. 2020, 252(4):411-422.
16. Yao H. Peterson AL, Li J, Xu H, Dennery PA. Heme oxygenase 1 and 2 differentially regulate glucose metabolism and adipose tissue mitochondrial respiration: implications for metabolic dysregulation. ***Int J Mol Sci***. 2020, 21:7123-7136.
17. Peterson AL, Carr JF, Dennery PA, Yao H. Hyperoxic exposure caused lung lipid compositional changes in neonatal mice. ***Metabolites***. 2020, 10: 340-357.
18. Yue L, Vuong B, Yao H, Owens BD. Doxycycline preserves chondrocyte viability and function in human and calf articular cartilage ex vivo. ***Physiol Rep***. 2020, 8: e14571-e14584.
19. Mao Q, Chu S, Shapiro S, Yao H, De Paepe ME. Discordant placental oxygenation and autophagy in twin anemia-polycythemia sequence (TAPS). ***Placenta***, 2020, 90: 7-17.
20. Lu X, Gong J, Dennery PA, Yao H. Endothelial-to-mesenchymal transition: pathogenesis and therapeutic targets for chronic pulmonary and vascular diseases. ***Biochem Pharmacol***, 2019, 168:100-107.
21. Qu J, Yue L, Gao J, Yao H. Perspectives on Wnt Signal Pathway in the Pathogenesis and Therapeutics of Chronic Obstructive Pulmonary Disease. ***J Pharmacol Exp Ther***. 2019, 369:473-480.
22. Yao H*, Gong J, Peterson AL, Lu X, Zhang P, Dennery PA. Fatty acid oxidation protects against hyperoxia-induced endothelial cell apoptosis and lung injury in neonatal mice. ***Am J Respir Cell Mol Biol***. 2019, 60: 667-677. *Corresponding author
23. Zhao H, Dennery PA, Yao H. Metabolic reprogramming in the pathogenesis of chronic lung diseases including BPD, COPD, and pulmonary fibrosis. ***Am J Physiol Lung Cell Mol Physiol***, 2018, 314: L544-L554.
24. Dennery PA, Carr J, Peterson A, Yao H. The role of mitochondrial fatty acid use in neonatal lung injury and repair. ***Trans Am Clin Climatol Assoc***. 2018,129:195-201.
25. Zhang Z, Cheng X, Yue L, Cui W, Zhou W, Gao J, Yao H. Molecular pathogenesis in chronic obstructive pulmonary disease and therapeutic potential by targeting AMP-activated protein kinase. ***J Cell Physiol***. 2018, 233:1999-2006.

26. Lu Q, Mundy M, Chambers E, Lange T, Newton J, Borgas D, Yao H, Choudhary G, Basak R, Oldham M, Rounds S. Alda-1 protects against acrolein-induced acute lung injury and endothelial barrier dysfunction. ***Am J Respir Cell Mol Biol***. 2017, 57: 662-673.
27. Ahmad T, Sundar IK, Tormos AM, Lerner CA, Gerloff J, Yao H, Rahman I. Shelterin TPP1 Reduction Causes Telomere Attrition and Cellular Senescence via Sirt1 Deacetylase in Chronic Obstructive Pulmonary Disease. ***Am J Respir Cell Mol Biol***. 2017,56:38-49.
28. Yue L, Yao H. Mitochondrial dysfunction in inflammatory responses and cellular senescence: pathogenesis and pharmacological targets for chronic lung diseases. ***Br J Pharmacol***. 2016, 173: 2305-2317.
29. Yao H, Sundar IK, Huang Y, Gerloff J, Sellix MT, Sime PJ, and Rahman I. Disruption of SIRT1-mediated regulation of circadian molecular clock and inflammation in COPD. ***Am J Respir Cell Mol Biol.*** 2015, 53: 782-792.
30. Ahmad T, Sundar IK, Lerner CA, Gerloff J, Tormos AM, Yao H*, Rahman I. Impaired mitophagy leads to cigarette smoke stress-induced cellular senescence: implication for COPD. ***FASEB J***. 2015, 29: 2912-2929. *Co-corresponding author
31. Sundar IK, Ahmad T, Yao H, Hwang J, Gerloff J, Lawrence BP, Sellix MT, Rahman I. Influenza A virus-dependent remodeling of pulmonary clock function in a mouse model of COPD/emphysema. ***Sci Rep***. 2015, 4:9927.
32. Guo J, Yao H, Lin X, Xu H, Dean D, Zhu Z, Liu G, Sime P. IL-13 Induces YY1 through the AKT Pathway in Lung Fibroblasts. ***PLoS One***. 2015, 10:e0119039
33. Lerner CA, Sundar IK, Yao H, Gerloff J, Ossip DJ, McIntosh S, Robinson R, Rahman I. Vapors produced by electronic cigarettes and e-juices induce toxicity, oxidative stress, and inflammatory response in lung epithelial cells and in mouse lung. ***PLoS One***. 2015, 10: e0116732.
34. Sundar IK, Yao H, Sellix MT, and Rahman I. Circadian Molecular Clock in Lung Pathophysiology. ***Am J Physiol Lung Cell Mol Physiol*****.** 2015, 309: L1056-75.
35. Sundar IK, Yao H, Sellix MT, and Rahman I. Circadian Clock Coupled Lung Cellular and Molecular Functions in Chronic Airway Diseases. ***Am J Respir Cell Mol Biol.*** 2015, 53:285-90.
36. Yao H, Sundar IK, Ahmad T, Lerner C, Gerloff J, Friedman AE, Phipps RP, Sime PJ, McBurney MW, Guarente L, Rahman I. SIRT1 protects against cigarette smoke-induced lung oxidative stress via FOXO3-dependent mechanism. ***Am J Physiol Lung Cell Mol Physiol***. 2014, 306: L816-L828.
37. Sundar IK, Yao H, Huang Y, Lyda E, Sime PJ, Sellix MT, Rahman I. Serotonin and Corticosterone Rhythms in Mice Exposed to Cigarette Smoke and in Patients with COPD: Implication for COPD-Associated Neuropathogenesis. ***PLoS One***. 2014, 9: e87999.
38. Hwang J, Sundar IK, Yao H, Sellix MT, Rahman I. Circadian clock function is disrupted by environmental tobacco/cigarette smoke, leading to lung inflammation and injury *via* a SIRT1-BMAL1 pathway. ***FASEB J***. 2014, 28:176-194.
    - Selected for Cover Page of Jan 2014 issue.
39. Xu T, Meng XM, Yao H, Li J. IL-2 is a gradually proved potential therapeutic target for hepatocellular carcinoma. ***Dig Liver Dis.*** 2014, 46: 289-90.
40. Yao H*, Sundar IK, Gorbunova V, Rahman I. P21-PARP-1 Pathway Is Involved in Cigarette Smoke-Induced Lung DNA Damage and Cellular Senescence**.** ***PLoS One***. 2013, 8: e80007. *Co-corresponding author
41. Yao H, Hwang J, Sundar IK, Friedman AE, McBurney MW, Guarente L, Gu W, Kinnula VL, Rahman I. SIRT1 redresses the imbalance of tissue inhibitor of matrix metalloproteinase-1 and matrix metalloproteinase-9 in the development of mouse emphysema and human COPD. ***Am J Physiol Lung Cell Mol Physiol***. 2013, 305: L615-L624.
42. Lam HC, Cloonan SM, Bhashyam AR, Haspel JA, Singh A, Sathirapongsasuti JF, Cervo M, Yao H, Chung AL, Mizumura K, An CH, Shan B, Franks JM, Haley KJ, Owen CA, Tesfaigzi Y, Washko GR, Quackenbush J, Silverman EK, Rahman I, Kim HP, Mahmood A, Biswal SS, Ryter SW, Choi AM. Histone deacetylase 6-mediated selective autophagy regulates COPD-associated cilia dysfunction. ***J Clin Invest***. 2013, 123:5212-5230.
43. Hwang J*, Yao H*, Caito S, Sundar IK, Rahman I. Redox regulation of sirt1 in inflammation and cellular senescence. ***Free Radic Biol Med*****.** 2013, 61C: 95-110. *co-first author.

44. Sundar IK, Yao H, Rahman I. Oxidative stress and chromatin remodeling in chronic obstructive pulmonary disease and smoking-related diseases. ***Antioxid Redox Signa*l**. 2013, 18:1956-71.
45. Yao H, Chung S, Hwang J, Rajendrasozhan S, Sundar IK, Dean DA, McBurney MW, Guarente L, Gu W, Mikko R, Kinnula VL, Rahman I. Sirtuin 1 protects against pulmonary emphysema via FOXO3-mediated reduction of premature senescence. ***J Clin Invest***. 2012. 122:2032-2045.
46. Basic VT, Tadele E, Elmabsout AA, Yao H, Rahman I, Sirsjö A, Abdel-Halim SM. Exposure to cigarette smoke induces overexpression of von Hippel-Lindau tumor suppressor in mouse skeletal muscle. ***Am J Physiol Lung Cell Mol Physiol***. 2012. 303:L519-L527.
47. Sundar IK, Chung S, Hwang JW, Lapek JD Jr, Bulger M, Friedman AE, Yao H, Davie JR, Rahman I. Mitogen- and Stress-Activated Kinase 1 (MSK1) Regulates Cigarette Smoke-Induced Histone Modifications on NF-κB-dependent Genes. ***PLoS One***. 2012, 7: e31378.
48. Yao H, Rahman I. Role of histone deacetylase 2 in epigenetics and cellular senescence: implications in lung inflammaging and COPD. ***Am J Physiol Lung Cell Mol Physiol***. 2012, 303(7):L557-66.
49. Yao H, Rahman I. Perspectives on translational and therapeutic aspects of SIRT1 in inflammaging and senescence. ***Biochem Pharmacol***. 2012. 84(10):1332-9.
50. Rahman I, Kinnula VL, Gorbunova V, Yao H. SIRT1 as a therapeutic target in inflammaging of the pulmonary disease. ***Prev Med***. 2012, 54: S20-8.
51. Chung S, Sundar IK, Hwang JW, Yull FE, Blackwell TS, Kinnula VL, Bulger M, Yao H, and Rahman I. NF-κB Inducing Kinase, NIK Mediates Cigarette Smoke/TNFα-Induced Histone Acetylation and Inflammation through Differential Activation of IKKs. ***PLoS One***. 2011, 6: e23488.
52. Nadtochiy SM, Yao H, McBurney MW, Gu W, Guarente LP, Rahman I, Brookes PS. SIRT1 mediated acute cardioprotection. ***Am J Physiol Heart Circ Physiol***. 2011, 301: H1506-1512.
53. Hwang J, Rajendrasozhan S, Yao H, Chung S, Sundar IK, Huyck HL, Pryhuber GS, Kinnula VL, Rahman I. FoxO3 deficiency leads to increased susceptibility to cigarette smoke-induced inflammation, airspace enlargement, and chronic obstructive pulmonary disease. ***J Immunol***. 2011, 187: 987-998.
54. Yao H, Rahman I. Current concepts on oxidative/carbonyl stress, inflammation and epigenetics in pathogenesis of chronic obstructive pulmonary disease. ***Toxicol Appl Pharmacol.*** 2011, 254: 72-85.
55. Sundar IK, Mullapudi N, Yao H, Spivack SD, Rahman I. Lung cancer and its association with chronic obstructive pulmonary disease: update on nexus of epigenetics. ***Curr Opin Pulm Med***. 2011, 17:279-85.
56. Yao H, Arunachalam G, Hwang J, Chung S, Sundar IK, Kinnula VL, Crapo JD, Rahman I. Extracellular superoxide dismutase protects against pulmonary emphysema by attenuating oxidative fragmentation of extracellular matrix. ***Proc Natl Acad Sci USA***. 2010.107:15571-15576.
57. Yao H, Hwang J, Moscat J, Diaz-Meco MT, Leitges M, Kishore N, Li X, Rahman I. PKCζ mediates cigarette smoke/aldehyde- and lipopolysaccharide-induced lung inflammation and histone modifications. ***J Biol Chem***. 2010, 285: 5405-5416.
58. Caito S, Rajendrasozhan S, Cook S, Chung S, Yao H, Friedman AE, Brookes PS and Rahman I. SIRT1 is an Redox Sensitive Deacetylase Which is Post-translationally Modified by Oxidants and Carbonyl Stress. ***FASEB J***. 2010. 24:3145-3159.
59. Rajendrasozhan S, Chung S, Sundar IK, Yao H, Rahman I. Targeted disruption of NF-{kappa}B1 (p50) augments cigarette smoke-mediated lung inflammation and emphysema in mice: a critical role of p50 in chromatin remodeling. ***Am J Physiol Lung Cell Mol Physiol***. 2010, 298: L197-L209.
60. Caito S, Hwang J, Chung S, Yao H, Sundar IK, and Rahman I. PARP-1 inhibition does not restore oxidant-mediated reduction in SIRT1 activity. ***Biochem Biophys Res Commun***. 2010, 392: 264-270.
61. Arunachalam G, Yao H, Sundar IK, Caito S, Rahman I. SIRT1 regulates oxidant- and cigarette smoke-induced eNOS acetylation in endothelial cells: Role of resveratrol. ***Biochem Biophys Res Commun***. 2010, 393:66-72.
62. Rajendrasozhan S, Hwang JW, Yao H, Kishore N, Rahman I. Anti-inflammatory effect of a selective IkappaB kinase-beta inhibitor in rat lung in response to LPS and cigarette smoke. ***Pulm Pharmacol Ther***. 2010, 23:172-181.
63. Chung S, Sundar IK, Yao H, Ho Y, and Rahman I. Glutaredoxin1 regulates cigarette smoke-mediated lung inflammation through differential modulation of IκB kinases in mice: impact on chromatin modifications. ***Am J Physiol Lung Cell Mol Physiol***. 2010. 299:L192-203.

64. Hwang JW, Chung S, Sundar IK, Yao H, Arunachalam G, McBurney M and Rahman I. Cigarette smoke-induced autophagy is regulated by SIRT1-PARP-1-dependent mechanism: implication in pathogenesis of COPD. ***Arch Biochem Biophys***. 2010. 500:203-209.
65. Sundar IK, Chung S, Hwang J, Arunachalam G, Cook S, Yao H, Mazur W, Kinnula VL, Fisher AB, and Rahman I. Peroxidiredoxin 6 differentially regulate acute and chronic cigarette smoke-mediated lung inflammatory response and injury. ***Exp Lung Res***. 2010. 36:451-462.
66. Arunachalam G, Sundar IK, Hwang JW, Yao H, Rahman I. Emphysema is associated with increased inflammation in lungs of atherosclerosis-prone mice by cigarette smoke: implications in comorbidities of COPD. ***J Inflamm (Lond)***. 2010. 7:34.
67. Adenuga D, Caito S, Yao H, Sundar IK, Hwang JW, Chung S, Rahman I. Nrf2 Deficiency influences susceptibility to steroid resistance via HDAC2 reduction. ***Biochem Biophys Res Commun***. 2010. 403:452-456.
68. Chung S, Yao H, Caito S, Hwang J, Arunachalam G, and Rahman I. Regulation of SIRT1 in cellular functions: role of polyphenols. ***Arch Biochem Biophys***. 2010. 501:79-90.
69. Adenuga D, Yao H, March TH, Seagrave J, Rahman I. Histone Deacetylase 2 is Phosphorylated, Ubiquitinated and Degraded by Cigarette Smoke**.** ***Am J Respir Cell Mol Biol***. 2009, 40: 464-473.
70. Yang SR, Yao H, Rajendrasozhan S, Chung S, Edirisinghe I, Valvo S, Fromm G, McCabe Jr MJ, Sime PJ, Phipps RP, Li JD, Bulger M, Rahman I. RelB is differentially regulated by IKKα in B Cells and Mouse Lung by Cigarette Smoke**.** ***Am J Respir Cell Mol Biol***. 2009, 40:147-158.
71. Yao H, Rahman I. Current concepts on the role of inflammation in COPD and lung cancer**.** ***Curr Opin Pharmacol***. 2009, 9:375-83.
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Book Chapters (Total 7):

1. Hwang J, Sundar IK, Yao H, Rahman I. SIRT1 and inflammaging in chronic obstructive pulmonary disease. In Rahman I and Bagchi D (eds). ***Inflammation, Advancing Age and Nutrition****, 1st Edition*. Elsevier. 2013, pp. 183-191.
2. Sundar IK, Yao H, Kirkham PA, Rahman I. Smoking, Oxidative/Carbonyl Stress, and Regulation of Redox Signaling in Lung Inflammation. In Ismail Laher (ed.), ***Systems Biology of Free Radicals and Anti-Oxidants***. Springer. 2013. DOI 10.1007/978-3-642-30018-9_65.
3. Yao H, Rahman I. Environment and the Role of Inflammation in Chronic Pulmonary Diseases: The Silent Mediator. In: Bharat B. Aggarwal, Sunil Krishnan, (eds.), ***Inflammation, Lifestyle and Chronic Diseases***: The Silent Link. CRC Press. 2011. pp. 58-88
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7. Yao H. Angiotensin converting enzyme in the pathophysiology of liver fibrosis. In: Lendeckel, Uwe; Hooper, Nigel M. (Eds.) ***Proteases in Gastrointestinal Tissues, Proteases in Biology and Disease***. Dordrecht: Springer. 2006. pp.183-207.

Conference Abstracts (exclusion of at least 10 conference abstracts with co-author)

1. Yao H, Zhang M, Hegarty K, Albertine KH, Dennery PA. Ontogeny and contribution of cellular senescence to normal lung development. **2023 *PAS Annual Meeting.*** Submitted.
2. Feng Z, Gong J, Lu X, Hegarty K, Dennery PA, Yao H. Damaged mitochondria contribute to hyperoxia-induced impaired angiogenesis and lung injury in neonatal mice. ***2023 ATS International Conferences***. Poster discussion.
3. Feng Z, Gong J, Lu X, Hegarty K, Dennery PA, Yao H. Enhancing mitophagy inhibits hyperoxia-induced impaired angiogenesis and lung injury in neonatal mice. ***2022 NISBRE Conferences***. Poster presentation.
4. Maeda H, Hegarty K, Dennery PA, Yao H. Fatty acid synthesis during postnatal lung development and injury in mice. ***2022 SfRBM Conference***, Poster presentation.
5. Yao H, Peterson AL, Rizal S, Chang J, Dennery PA. Timing of Senescence Drives Postnatal Lung Development And Injury. ***2022 ATS International Conferences***. Poster discussion.
6. Yao H, Peterson AL, Rizal S, Chang J, Dennery PA. Cellular senescence paradoxically drives postnatal lung development and injury in mice. **2022 *Pediatric Academic Societies (PAS) Annual Meeting.*** Poster presentation.
7. Chang J, Rizal S, Dennery PA, Yao H. Enhancing fatty acid oxidation via upregulating Cpt1a inhibits hyperoxia-induced persistent lung function decline, alveolar simplification and vascular remodeling in mice. ***2021, Lifespan Research Day***. Poster
8. Chang J, Rizal S, Dennery PA, Yao H. Upregulating Carnitine Palmitoyltransferase 1 Attenuates Hyperoxia-Induced Persistent Alveolar Simplification And Lung Vascular Remodeling In Mice. ***2021 SfRBM Conference***, Poster presentation.
9. Chang J, Peterson AL, Zhao YY, Dennery PA, Yao H. The Pentose Phosphate Pathway Mediates Hyperoxic Lung Vascular Dysgenesis and Alveolar Simplification in Neonatal Mice. ***2021 ATS International Conferences***. Poster presentation.
10. Chang J, Rizal S, Peterson AL, Dennery PA, Yao H. Increased pentose phosphate pathway contributes to hyperoxia-induced lung vascular dysgenesis and simplified alveolarization in neonates**. 2021 *Pediatric Academic Societies (PAS) Annual Meeting***, Oral presentation.
11. Gong J, Feng Z, Lu X, Peterson AL, Ji X, Dennery PA, Yao H. Pentose Phosphate Pathway Controls Endothelial Cell Proliferation During Hyperoxic Lung Injury in Neonates. ***Am J Respir Crit Care Med,*** 2020, 201: A4663. Poster discussion.
12. Gong J, Feng Z, Lu X, Peterson AL, Dennery PA, Yao H. Fatty acid oxidation attenuates hyperoxia-induced endothelial-to-mesenchymal transition. ***2019 ATS Grover Conference***, Sept 4-8, 2019. Sedalia, Colorado. Poster presentation.
13. Gong J, Lu X, Peterson AL, Dennery PA, Yao H. Hyperoxic exposure enhances autophagy to remove dysfunctional mitochondria in lung endothelial cells during neonatal lung injury. ***2019 Northeast Region IDeA Conference***, Aug 14-16, 2019. Bretton Woods, New Hampshire. Poster presentation
14. Gong J, Lu X, Peterson AL, Dennery PA, Yao H. Hyperoxic exposure impairs mitochondrial respiration and dynamics in lung endothelial cells during neonatal lung injury. ***2019 RI NIH IDeA Symposium***, Poster presentation, 6/7/2019.
15. Gong J, Lu X, Peterson AL, Dennery PA, Yao H. Hyperoxic exposure causes mitochondrial dysfunction but enhances autophagy in lung endothelial cells during neonatal lung injury. ***Pediatric Academic Societies Conference***, 2019, Apr 24-May 1, Baltimore, Maryland (Poster)
16. Gong J, Feng Z, Lu X, Abigail P, Dennery PA, Yao H. Role of fatty acid oxidation in hyperoxia-induced EndoMT: implication in pathogenesis of pulmonary hypertension. ***Am J Respir Crit Care Med,*** 2019, 199: A6035. Poster discussion.
17. Gong J, Feng Z, Abigail P, Dennery PA, Yao H. Role of fatty acid oxidation in hyperoxia-induced endothelial-to-mesenchymal transition in lung endothelial cells. ***Free Radical Biology Medicine***. 2018,128: S45. (Oral Presentation).
18. Feng Z, Dennery PA, Yao H. Hyperoxic exposure causes endothelial-to-mesenchymal transition, implications for the pathogenesis of pulmonary hypertension. ***Brown Summer Research Symposium***, Aug 2, 2018 (Poster)

19. Gong J, Feng Z, Peterson A, Dennery PA, Yao H. Hyperoxic exposure followed by air recovery causes endothelial-to-mesenchymal transition, implications for the pathogenesis of pulmonary hypertension. ***Brown Pediatric Scholarship Celebration***, Sept 12, 2018 (Poster)
20. Yao H, Zhao H, Peterson A, Dennery PA. Hyperoxic exposure followed by air recovery increased glycolysis and pentose phosphate pathway, which sustains proliferation in lung endothelial cells. **2018 RI NIH IDeA Symposium**, Poster presentation, 6/8/2018
21. Yao H, Zhao H, Peterson AL, Dennery PA. Hyperoxic Exposure Causes Metabolic Shifts Towards Pentose Phosphate Pathway, Leading to Abnormal Proliferation in Lung Endothelial Cells. ***Am J Respir Crit Care Med***. 2018;197: A6116 (Poster discussion)
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23. Yao H, Carr JF, Peterson AL, Dennery PA. Hyperoxia increases mitochondrial utilization of fatty acids in neonatal lung endothelial cells: implications for injury and repair. ***Pediatric Academic Societies (PAS) Annual Meeting***. 2017, San Francisco
24. Yao H, Ahmed T, Sundar IK, Tormos A, Rahman I. Cigarette Smoke Causes Shelterin TPP1 Reduction and Telomeric DNA Damage Leading to Lung Cellular Senescence in COPD. ***Am J Respir Crit Care Med***. 2016, 191: A2327. (Poster)
25. Yao H, Sundar IK, Gerloff1 J, Sellix MT, Sime PJ, Rahman I. SIRT1 Reduction is Involved in Clock Dysfunction, Telomere Attrition, and Inflammosenescence in COPD. ***Am J Respir Crit Care Med***. 2015, 190: A5324 (Poster discussion)
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31. Yao H, Arunachalam G, Chung S, Hwang J, Sundar IK, Kinnula VL, Crapo JD, and Rahman I. SOD3 protects cigarette smoke-induced inflammation and emphysema in mice. Accepted by the **8th European Respiratory Society Lung Science Conference** in Estoril, Portugal on March 26-28 2010. (Oral presentation)
32. Yao H, Chung S, Hwang J, Sundar IK, Arunachalam G, Cook SE, Rajendrasozhan S, McBurney MW, Rahman I. Genetic deficiency of SIRT1 enhances elastase-induced emphysema in mice. ***Am J Respir Crit Care Med***. 2010, 181: A3878. (Poster discussion)
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35. Yao H, Edirisinghe I, Rajendrasozhan S, Yang SR, Kode A, Caito S, Adenuga D, O'Reilly M, Rahman I. Targeted Disruption of p21CIP1/WAF1/SDI1 Attenuates Acute Cigarette Smoke-Induced Lung Inflammation in Mice. ***Am J Respir Crit Care Med***. 2007, 176: A256. (Poster)

36. Yao H, Rajendrasozhan S, Yang SR, Edirisinghe I, Kode A, Caito S, Adenuga D, Rahman I. Genetic Ablation of NADPH Oxidase Enhances Susceptibility to Acute Cigarette Smoke-Induced Inflammation in Mice. ***Am J Respir Crit Care Med***. 2007, 176: A256. (Poster discussion)

RESEARCH SUPPORT

Active research support

P20GM103652 (MPI: Choudhary and Harrington; Project 1 PI: Yao) 7/20/2018-5/31/2023
NIH/ NIGMS
"Endothelial Injury and Repair: CardioPulmonary Vascular Biology COBRE"
Project 1 Title: "Metabolic mechanisms of impaired vascularization during hyperoxic lung injury"

Spring 2023 Brown UTRA Award (Jared Hunter) 1/30/2023-4/28/2023
Title: Mitochondrial damage in hyperoxia-induced impairment of angiogenesis
Role: Mentor

Spring 2023 Brown UTRA Award (Joseph Suh) 1/30/2023-4/28/2023
Title: Fatty acid synthesis during postnatal lung development and injury
Role: Mentor

Completed research support

Spring 2022 Brown UTRA Award (Jason Chang) 2/20/2022-5/10/2022
Title: Upregulating Cpt1a Attenuates Hyperoxia-Induced Persistent Lung Injury
Role: Mentor

Falk Medical Research Trust Catalyst Award-NCE Yao (PI) 11/30/2020 – 8/31/2021
Dr. Ralph and Marian Falk Medical Research Trust
Title: Identification of carnitine palmitoyltransferase 1a as a novel target for bronchopulmonary Dysplasia

Spring 2021 Brown UTRA Award (Julia Chang) 1/20/2021-4/10/2021
Title: Enhancing carnitine palmitoyltransferase 1a protects against hyperoxia-induced lung endothelial cell dysfunction in vitro
Role: Mentor

Falk Medical Research Trust Catalyst Award Yao (PI) 11/30/2019 – 11/29/2020
Dr. Ralph and Marian Falk Medical Research Trust
Title: Identification of carnitine palmitoyltransferase 1a as a novel target for bronchopulmonary Dysplasia

Summer 2018 Research UTRA Award (PI: Zihang Feng) 6/4/2018-8/10/2018
Brown University
Title: Role of glycolysis in hyperoxia-induced lung endothelial cell dysfunction
Role: Mentor

Ocean State Research Institute CPVB COBRE pilot project Yao (PI) 06/01/2016-05/31/2017
Title: Metabolic dysregulation in pulmonary endothelial dysfunction during hyperoxic lung injury

American Lung Association Biomedical Grant RG-266456-N Yao (PI) 07/01/2013-06/31/2015
Title: SIRT1 regulation in telomere attrition in lung cellular senescence

National Natural Science Foundation of China Yao (PI) 1/1/2005-12/31/2007
Title: Role of epithelial-mesenchymal transition in the pathogenesis of pulmonary fibrosis

Submitted but not funded in 2022:

NHLBI 1R01HL166327-01 (PI: Yao) 09/01/2022-08/31/2027
Title: Metabolic mechanisms underlying bronchopulmonary dysplasia-associated pulmonary hypertension
33 percentiles

NHLBI 1 R01 HL166753-01 (MPI: Dennery and Yao) 09/01/2022-08/31/2027
Title: Impact of timing of senescence during lung development and injury

NIH 1 R03 HD110782-01 (PI: Yao) 09/01/2022-08/31/2024
Ontogeny and function of senescence in normal lung development

2022 OVPR Research Seed Fund Award, Yao (PI)
Metabolic mechanisms underlying bronchopulmonary dysplasia (BPD)-associated pulmonary hypertension

Preproposal: BROWN BIOMEDICAL INNOVATIONS TO IMPACT (BBII), Yao (PI)
Nanoparticle delivery of carnitine palmitoyltransferase 1a for treatment of bronchopulmonary dysplasia

Pending:
NHLBI 1R01HL166327-01A1 (PI: Yao) 07/01/2023-06/30/2028
Title: Metabolic mechanisms underlying bronchopulmonary dysplasia-associated pulmonary hypertension

Rhode Island Foundation grant application (PI: Yao) 04/01/2023-03/30/2024
Title: Upregulating Cpt1a inhibits hyperoxia-induced pulmonary hypertension by decreasing EndoMT

Preproposal: BROWN BIOMEDICAL INNOVATIONS TO IMPACT (BBII), Yao (PI)
Nanoparticle delivery of carnitine palmitoyltransferase 1a for treating BPD