

Curriculum Vitae

Chaoqun Huang, M.D., Ph.D.

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Personal information

Full Name: Chaoqun Huang Sex: Male
Place of Birth: Lianyuan, Hunan Province, P.R. China
Nationality: China Language: Chinese and English

Education

Ph.D. - Human Molecular Genetics, Fudan University, China, 2004
M.S. - Biochemistry and Molecular Biology, Suzhou Medical College, China, 1999
M.D. - Clinical Medicine, Suzhou Medical College, China, 1994

Academic Training

2007, 1 to 2010, 10	Postdoctoral Research Associate	Department of Physiological Sciences, Oklahoma State University, USA
2005, 4 to 2006, 12	Postdoctoral Research Associate	Department of Physiology and Functional Genomics, University of Florida, USA
1993, 6 to 1994, 7	Intern	Suzhou Municipal Hospital, China

Academic and Professional Appointments

2018, 05 to present	Research Associate Professor	Department of Physiological Sciences, Oklahoma State University, USA
2017, 01 to present	Associate Director	Molecular Biology Core, The Oklahoma Center for Respiratory and Infectious Diseases, Oklahoma State University, USA
2010, 11 to 2018, 04	Research Assistant Professor	Department of Physiological Sciences, Oklahoma State University, USA
2000, 4 to 2005, 3	Lecturer	Department of Biochemistry and Molecular Biology, Soochow University, Suzhou, China

1994, 8 to 2000, 3 Teaching Assistant

Department of Biochemistry and Molecular
Biology, Suzhou Medical College, Suzhou,
China

Other Experience and Professional Memberships

2008- 2010 Membership of the Society of Toxicology

2008- 2010 Membership of Sigma XI the Scientific Research Society

Editorial board and Reviewership

Peer-Reviewer

Toxicology in Vitro

Toxicology letter

Genetic Testing and Molecular Biomarker

Journal of Neurotrauma

Scientifica

Scientific Report

BioMed Research International

International Journal of Biological Sciences

Gene

RSC Advances

Pathology - Research and Practice

Biomedicine & Pharmacotherapy

International Immunopharmacology

Journal of Immunological Methods

Honors

1994 First Rank Award of Chow for Excellent Student (Suzhou Medical College, China)

1999 First Rank Award of Zhiwei Du for young teacher (Suzhou Medical College, China)

Skills

Experimental Techniques:

- Experimentation on animals (Adenovirus lung delivery, Oral delivery of drugs by gavage)
- Cell culture and transfection
- Immunohistochemistry and Pathological technique (Lung)
- Western blotting and ELISA
- Molecular biological technique (Cloning, shRNA, Real-time qRT-PCR)
- Adenovirus and Lentivirus vector construction and virus preparation
- Next Generation Sequencing
- Bioinformatics analyses of gene and protein
- CRISPR/CAS9 system (knockout, knockdown, activation)

Tools: UNIX, MATLAB, VBA, SPSS, Word, Excel, PowerPoint.

Languages: English, Mandarin Chinese

Research Experience

I have more than 20 years of research experience in molecular biology and genomics. I have good training in studying genes, proteins, microRNAs, and lncRNAs. During my PhD studies, I have identified over 50 novel human genes, of which, many are crucially associated with human health and diseases. I also did functional studies on several novel genes. As a postdoctoral fellow, I have studied the regulation of nuclear receptor-mediated gene expression. In the past several years, I have focused my studies on the expression profiling, pathway and functional studies of miRNAs and lncRNAs in lung diseases including Acute Respiratory Distress Syndrome, Idiopathic Pulmonary Fibrosis and Chronic Obstructive Pulmonary Diseases.

1. Cloning and functional studies of novel genes.
2. Regulation of flavonoids on drug metabolizing and detoxification enzyme sulfotransferases.
3. MicroRNAs, lncRNAs and lung diseases
4. Iron-responsive element regulatory system in idiopathic pulmonary fibrosis

Research Support

Ongoing Research Support

R01 1R01HL135152 07/01/2017 – 05/31/2021
National Institutes of Health/NHLBI
The Role Of LncRNAs In Pulmonary Fibrosis
The major goal of this project is to understand how long non-coding RNAs (lncRNAs) regulate pulmonary fibroblast activation in IPF
Role: Co-Investigator
Amount: \$1,500,000

R01 HL116876 08/01/2013 – 05/31/2019
National Institutes of Health/NHLBI
miR-101 Control of Pulmonary Fibrosis
The major goal of this project is to understand microRNA regulation of the signaling pathways involved in fibroblast proliferation and activation in IPF
Role: Co-Investigator
Amount: \$1,828,750 (Direct cost: \$1,250,000)

Seed grant Huang (PI)
12/01/2017 – 11/30/2018
Research Advisory Committee, Center for Veterinary Health Sciences, Oklahoma State University
Role: Principle investigator
Amount: \$15,000

Completed Research Support

Seed grant

Huang (PI)

02/01/2013 – 01/31/2014

Research Advisory Committee, Center for Veterinary Health Sciences, Oklahoma State University

Identification of functional microRNA-mRNA pairs in rat ARDS

Role: Principle investigator

Amount: \$15,000

Postdoctoral Seed grant

Huang (PI)

01/01/2010 - 12/31/2010

Research Advisory Committee, Center for Veterinary Health Sciences, Oklahoma State University

Regulation of miR-124 by WNT/beta-catenin Signaling.

Role: Principle investigator

Amount: \$5,000

2003007 Seed research funds of Soochow University. China. 01/01/2004-12/31/2004

Cloning and Functional Study of Human Novel Gene LHFPL1. ¥ 10,000

Role: Principle Investigator

30300059 National Natural Science Funds for Young Scientists. China. 01/01/2004-12/31/2004

Bioinformatics and Experiment of Protein Self Splicing. ¥ 70,000

Role: Co- Principle Investigator

30470356 National Natural Science Funds. China. 01/01/2005-12/31/2007

Bioinformatics and Experiment of Protein Self Splicing. ¥ 160,000

Role: Co- Principle Investigator

BK2000026 Funds of Jiangsu Natural Science. Jiangsu Province, China. 01/01/1998-12/31/2000

Selection and Checking of the Gene Marker Related to the High Honey and Royal Jelly Production Quantity Trait of *Apis Mellifera* Lindauer. ¥ 30,000

Role: Co- Principle Investigator

Scientific Publications

Papers published in peer-reviewed journals

1. Yang X, Zhao C, Bamunuarachchi G, Wang Y, Liang Y, Huang C, Zhu Z, Xu D, Lin K, Senavirathna LK, Xu L, Liu L. miR-193b represses influenza A virus infection by inhibiting Wnt/beta-catenin signalling. *Cell Microbiol* 2019; 21: e13001.

2. More S, Zhu Z, Lin K, Huang C, Pushparaj S, Liang Y, Sathiaselan R, Yang X, Liu L. Long non-coding RNA PSMB8-AS1 regulates influenza virus replication. *RNA Biol* 2019; 16: 340-353.
3. Senavirathna LK, Huang C, Yang X, Munteanu MC, Sathiaselan R, Xu D, Henke CA, Liu L. Hypoxia induces pulmonary fibroblast proliferation through NFAT signaling. *Scientific reports* 2018; 8: 2709.
4. More S, Yang X, Zhu Z, Bamunuarachchi G, Guo Y, Huang C, Bailey K, Metcalf JP, Liu L. Regulation of influenza virus replication by Wnt/beta-catenin signaling. *PloS one* 2018; 13: e0191010.
5. Zeng X, Huang C, Senavirathna L, Wang P, Liu L: miR-27b inhibits fibroblast activation via targeting TGFbeta signaling pathway. *BMC cell biology* 2017, 18(1):9.
6. Huang C, Xiao X, Yang Y, Mishra A, Liang Y, Zeng X, Yang X, Xu D, Blackburn MR, Henke CA et al: MicroRNA-101 attenuates pulmonary fibrosis by inhibiting fibroblast proliferation and activation. *The Journal of biological chemistry* 2017, 292(40):16420-16439.
7. Xiao X, Senavirathna LK, Gou X, Huang C, Liang Y, Liu L: EZH2 enhances the differentiation of fibroblasts into myofibroblasts in idiopathic pulmonary fibrosis. *Physiological reports* 2016, 4(17).
8. Mishra A, Guo Y, Zhang L, More S, Weng T, Chintagari NR, Huang C, Liang Y, Pushparaj S, Gou D et al: A Critical Role for P2X7 Receptor-Induced VCAM-1 Shedding and Neutrophil Infiltration during Acute Lung Injury. *Journal of immunology* 2016, 197(7):2828-2837.
9. Zhang L, Huang C, Guo Y, Gou X, Hinsdale M, Lloyd P, Liu L: MicroRNA-26b Modulates the NF-kappaB Pathway in Alveolar Macrophages by Regulating PTEN. *Journal of immunology* 2015, 195(11):5404-5414.
10. Xiao X, Huang C, Zhao C, Gou X, Senavirathna LK, Hinsdale M, Lloyd P, Liu L: Regulation of myofibroblast differentiation by miR-424 during epithelial-to-mesenchymal transition. *Archives of biochemistry and biophysics* 2015, 566:49-57.
11. Wang Y, Huang C, Chintagari NR, Xi D, Weng T, Liu L: miR-124 regulates fetal pulmonary epithelial cell maturation. *American journal of physiology Lung cellular and molecular physiology* 2015, 309(4):L400-413.
12. Narasaraju T, Shukla D, More S, Huang C, Zhang L, Xiao X, Liu L: Role of microRNA-150 and glycoprotein nonmetastatic melanoma protein B in angiogenesis during hyperoxia-induced neonatal lung injury. *American journal of respiratory cell and molecular biology* 2015, 52(2):253-261.
13. Huang C, Yang Y, Liu L: Interaction of long noncoding RNAs and microRNAs in the pathogenesis of idiopathic pulmonary fibrosis. *Physiological genomics* 2015, 47(10):463-469.
14. Wang M, Wang W, Zhang P, Xiao J, Wang J, Huang C: Discrimination of the expression of paralogous microRNA precursors that share the same major mature form. *PloS one* 2014, 9(3):e90591.
15. Huang C, Zhou T, Chen Y, Sun T, Zhang S, Chen G: Estrogen-related receptor ERRalpha regulation of human hydroxysteroid sulfotransferase (SULT2A1) gene expression in human Caco-2 cells. *Journal of biochemical and molecular toxicology* 2014, 28(1):32-38.

16. Huang C, Xiao X, Chintagari NR, Breshears M, Wang Y, Liu L: MicroRNA and mRNA expression profiling in rat acute respiratory distress syndrome. *BMC medical genomics* 2014, 7:46.
17. Guo Y, Mishra A, Weng T, Chintagari NR, Wang Y, Zhao C, Huang C, Liu L: Wnt3a mitigates acute lung injury by reducing P2X7 receptor-mediated alveolar epithelial type I cell death. *Cell death & disease* 2014, 5:e1286.
18. Zhou T, Huang C, Chen Y, Xu J, Shanbhag PD, Chen G: Methamphetamine regulation of sulfotransferase 1A1 and 2A1 expression in rat brain sections. *Neurotoxicology* 2013, 34:212-218.
19. Wang Y, Huang C, Reddy Chintagari N, Bhaskaran M, Weng T, Guo Y, Xiao X, Liu L: miR-375 regulates rat alveolar epithelial cell trans-differentiation by inhibiting Wnt/beta-catenin pathway. *Nucleic acids research* 2013, 41(6):3833-3844.
20. Li X, Huang C, Xue Y: Contribution of lipids in honeybee (*Apis mellifera*) royal jelly to health. *Journal of medicinal food* 2013, 16(2):96-102.
21. Chen Y, Zhang S, Zhou T, Huang C, McLaughlin A, Chen G: Liver X receptor alpha mediated genistein induction of human dehydroepiandrosterone sulfotransferase (hSULT2A1) in Hep G2 cells. *Toxicology and applied pharmacology* 2013, 268(2):106-112.
22. Zhou T, Chen Y, Huang C, Chen G: Caffeine induction of sulfotransferases in rat liver and intestine. *Journal of applied toxicology : JAT* 2012, 32(10):804-809.
23. Zhao C, Huang C, Weng T, Xiao X, Ma H, Liu L: Computational prediction of MicroRNAs targeting GABA receptors and experimental verification of miR-181, miR-216 and miR-203 targets in GABA-A receptor. *BMC research notes* 2012, 5:91.
24. Weng T, Mishra A, Guo Y, Wang Y, Su L, Huang C, Zhao C, Xiao X, Liu L: Regulation of lung surfactant secretion by microRNA-150. *Biochemical and biophysical research communications* 2012, 422(4):586-589.
25. Bhaskaran M, Xi D, Wang Y, Huang C, Narasaraju T, Shu W, Zhao C, Xiao X, More S, Breshears M et al: Identification of microRNAs changed in the neonatal lungs in response to hyperoxia exposure. *Physiological genomics* 2012, 44(20):970-980.
26. Huang C, Zhou T, Chen Y, Zhang S, Chen G: (-)Epicatechin Regulation of Hydroxysteroid Sulfotransferase STa (rSULT2A1) Expression in Female Rat Steroidogenic Tissues. *Journal of Pharmacology and Toxicology* 2011, 6(4):349-360.
27. Huang C, Zhou T, Chen Y, Sun T, Zhang S, Chen G: Estrogen-related receptor ERRalpha-mediated downregulation of human hydroxysteroid sulfotransferase (SULT2A1) in Hep G2 cells. *Chemico-biological interactions* 2011, 192(3):264-271.
28. Zhou T, Huang C, Chen Y, Shanbhag P, Chen G: Methamphetamine regulation of sulfotransferases in rat liver and brain. *American Journal of Pharmacology and Toxicology* 2010, 5(3):125-132.
29. Chen Y, Huang C, Zhou T, Zhang S, Chen G: Biochanin A induction of sulfotransferases in rats. *Journal of biochemical and molecular toxicology* 2010, 24(2):102-114.
30. Huang C, Wan B, Gao B, Hexige S, Yu L: Isolation and characterization of novel human short-chain dehydrogenase/reductase SCDR10B which is highly expressed in the brain and acts as hydroxysteroid dehydrogenase. *Acta biochimica Polonica* 2009, 56(2):279-289.

31. Huang C, Chen Y, Zhou T, Chen G: Sulfation of dietary flavonoids by human sulfotransferases. *Xenobiotica; the fate of foreign compounds in biological systems* 2009, 39(4):312-322.
32. Chen Y, Huang C, Zhou T, Chen G: Genistein induction of human sulfotransferases in HepG2 and Caco-2 cells. *Basic & clinical pharmacology & toxicology* 2008, 103(6):553-559.
33. Liu S, Huang C, Li D, Ren W, Zhang H, Qi M, Li X, Yu L: Molecular cloning and expression analysis of a new gene for short-chain dehydrogenase/reductase 9. *Acta biochimica Polonica* 2007, 54(1):213-218.
34. Wang M, Luo G, Li F, Wu S, Jiang J, Huang C: Isolation and characterization of a novel four-transmembrane protein PMP22CD specifically expressed in the testis. *International Journal of Molecular Sciences* 2006, 7(10):425-437.
35. Huang LL, Zhao XM, Huang CQ, Yu L, Xia ZX: Structure of recombinant human cyclophilin J, a novel member of the cyclophilin family. *Acta crystallographica Section D, Biological crystallography* 2005, 61(Pt 3):316-321.
36. Hu H, Huang CQ, Liu HL, Han Y, Yu L, Bi RC: Crystallization and preliminary X-ray crystallographic studies of human cyclophilin J. *Acta crystallographica Section F, Structural biology and crystallization communications* 2005, 61(Pt 2):216-218.
37. Shan Y, Hexige S, Guo Z, Wan B, Chen K, Chen X, Ma L, Huang C, Zhao S, Yu L: Cloning and characterization of the mouse Arht2 gene which encodes a putative atypical GTPase. *Cytogenetic and genome research* 2004, 106(1):91-97.
38. Huang C, Zhou J, Wu S, Shan Y, Teng S, Yu L: Cloning and tissue distribution of the human B3GALT7 gene, a member of the beta1,3-Glycosyltransferase family. *Glycoconjugate journal* 2004, 21(5):267-273.
39. Huang C, Guo J, Liu S, Shan Y, Wu S, Cai Y, Yu L: Isolation, tissue distribution and prokaryotic expression of a novel human X-linked gene LHFPL1. *DNA sequence : the journal of DNA sequencing and mapping* 2004, 15(4):299-302.
40. Guo JH, Saiyin H, Wei YH, Chen S, Chen L, Bi G, Ma LJ, Zhou GJ, Huang CQ, Yu L et al: Expression of testis specific ankyrin repeat and SOCS box-containing 17 gene. *Archives of andrology* 2004, 50(3):155-161.
41. Guo J, Chen S, Huang C, Chen L, Studholme DJ, Zhao S, Yu L: MANSC: a seven-cysteine-containing domain present in animal membrane and extracellular proteins. *Trends in biochemical sciences* 2004, 29(4):172-174.
42. Chen S, Guo JH, Saiyin H, Chen L, Zhou GJ, Huang CQ, Yu L: Cloning and characterization of human CAGLP gene encoding a novel EF-hand protein. *DNA sequence : the journal of DNA sequencing and mapping* 2004, 15(5-6):365-368.
43. Lan M, Shen W, Huang C, Gu X, Jiang Y, Zhao Y, Lu W: RAPD-PCR method for detecting DNA polymorphism in *Boophilus microplus* (Acari: Ixodidae). *Systematic and Applied Acarology* 1996, 1(1):11-14.

Abstracts Presented at National / International Meetings

1. Huang C, Xu D, Senavirathna LK, Liu L. A Role of Iron in the Pathogenesis of Idiopathic Pulmonary Fibrosis. *The FASEB Journal*. 2018,32(1). (2018)

2. Sathiseelan R, Huang C, Senavirathna LK, Liu L. A Role of IL-21 in Pulmonary Fibroblast Activation. *The FASEB Journal* 31 (1 Supplement), 656.15-656.15. (2017)
3. Senavirathna LK, Huang C, Liu L. Effect of Hypoxia on Fibroblast Proliferation in Idiopathic Pulmonary Fibrosis. *The FASEB Journal* 30 (1 Supplement), 746.7-746.7. (2016)
4. Zhai B, Zhang L, Huang C, Varshney R, Sivasami P, Hinsdale M, Liu L. Mesenchymal stem cell expressed VEGF-E protects pulmonary endothelial cells from cigarette smoke toxicity (1176.9). *The FASEB Journal* 28 (1 Supplement), 1176.9. (2014)
5. Huang C, Yang Y, Liu L. Interaction of long noncoding RNAs and microRNAs in the pathogenesis of idiopathic pulmonary fibrosis. 2014 meeting, Long noncoding RNAs: Marching toward mechanism. (2014)
6. Huang C, Liu L. LncRNA FENDRR in the pathogenesis of idiopathic pulmonary fibrosis. 2013 meeting, Long noncoding RNAs. (2013)
7. Xiao X, Huang C, Zhao C, Liu L. Regulation Of The Differentiation Of Fibroblasts To Myofibroblasts During Epithelial Mesenchymal Transition By MiR-424. B66. THE FIBROBLAST POOL ON THE MOVE: DERIVATION AND TARGETING, A3501-A3501. (2012)
8. Huang C and Chen G. Hesperetin induction of sulfotransferases in Hep G2 cells and rat tissues. Abstract of the Society of Toxicology 2008 Annual Meeting. Seattle, WA. Abstract318. *The Toxicologist*. 2008, 102(1):65. (2008)
9. Huang C and Chen G. Dietary flavonoids sulfation by human sulfotransferases. Abstract of the Society of Toxicology 2008 Annual Meeting, Seattle, WA. Abstract2236. *The Toxicologist*. 2008, 102(1):460. (2008)
10. Huang C, Chen Y, Zhou T, and Chen G. (-) Epicatechin regulation of hydroxysteroid sulfotransferase STa expression in female rat tissues. Abstract of the South Central Chapter of the Society of Toxicology 2008 Annual Meeting, Jefferson, Arkansas. Abstract22. (2008)
11. Chandru H, Huang C, and Chen G. Nitric Oxide regulation of sulfotransferase 1A1 and 2A1 via P38 MAPK and ERK signaling pathways in human liver cell lines. Abstract of the South Central Chapter of the Society of Toxicology 2008 Annual Meeting, Jefferson, Arkansas. Abstract17. (2008)

Book Chapters

1. Chapter 35-38 “Southern Blotting”, “Labeling of double strand DNA probe”, “DNA Hybridization”, “Detection of hybridization signal” in *The Experiment Course of Biochemistry and Molecular biology* (P117-124). 2001, Soochow University Press.
2. Chapter 9 “The Strategy of Gene Cloning” and Chapter 10 “Study of gene function” in *the Clinical Biochemistry and Molecular Biology* (P156-165, P204-211). 2005, Science Press of Beijing.
3. Chapter 5 “Genomics and Strategy of Gene Cloning” in *Medical Biochemistry and Molecular Biology* (2nd Edition)(P43-51). 2009, Science Press.