

## Song Hong, PhD

Assistant Professor of Ophthalmology and Neuroscience

### Education

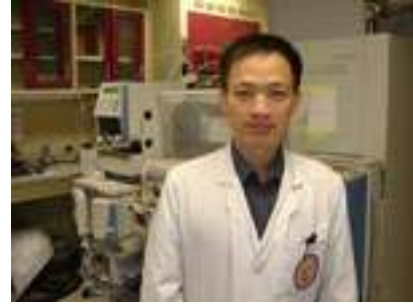
1996-2001 Postdoctoral Training, Cornell University, NY

1996 PhD, The University of Georgia, GA

### Positions

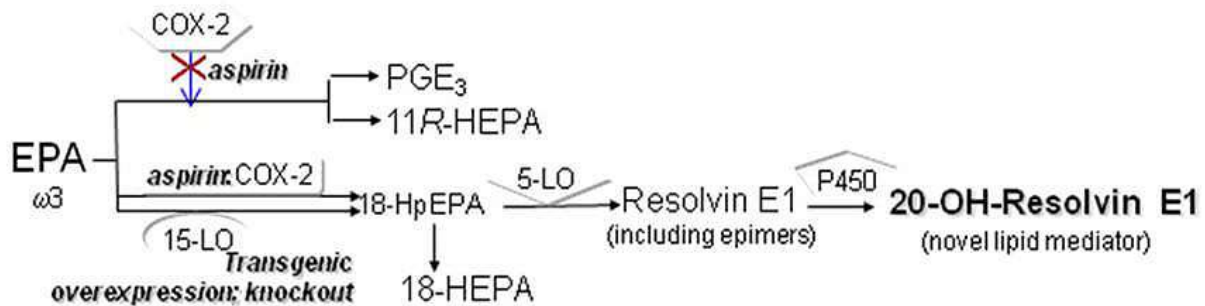
2006-present Assistant Professor of Ophthalmology and Neuroscience; Neuroscience Center, LSU Health Sciences Center, New Orleans, LA

2001-2006 Instructor, Harvard Medical School, Boston, MA



### Current Research

We use lipidomic approaches to define pro- and anti-inflammatory mediators in laser-induced choroidal neovascularization molecular and cellular mechanisms to elucidate the bioactivity of lipid mediators. We also study lipidomes in angiogenesis. The typical pathways that we have studied are presented as follows:



Lipidomic pathways generate eicosapentaenoic acid (EPA)-derived lipid-mediators that regulate inflammation, angiogenesis, and choroid neovascularization.

### Research Interests and Goals

Lipidomic pathways that regulate inflammation, angiogenesis, and choroid neovascularization. Lipid biochemistry and biology related to human health and diseases including retinal degeneration.

### Key Recent Papers

Bazan NG, Marcheselli VL, Lu Y, Hong S, Jackson F. Lipidomic Approaches to Neuroprotection Signaling in the Retinal Pigment Epithelium. Signal Transduction in the Retina. Edited by Fliesler SJ & Kisselev OG, CRC Press, 2008.

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Hong S\*, Lu Y\*, Yong R, Gotlinger KH, Pertasis NP, Serhan CN. Resolvin D1, Protectin D1, and Related Docosahexaenoic Acid-Derived Products: Structure Analysis via Electrospray/Low Energy Tandem Mass Spectrometry Based on Spectra and Fragmentation Mechanisms. Journal of the American Society for Mass spectrometry. 18: 128-144, 2007

Tjonahen E, Oh SF, Siegelman J, Elangovan S, Percarpio KB, Hong S, Arita M, Serhan CN, Resolvin E2: identification and anti-inflammatory actions: pivotal role of human 5-lipoxygenase in resolvin E series biosynthesis, *Chem Biol* 13:1193-202, 2007.

Connor KM, Sangiovanni JP, Lofqvist C, Aderman CM, Chen J, Higuchi A, Hong S, Pravda EA, Majchrzak S, Carper D, Hellstrom A, Kang JX, Chew EY, Salem N Jr, Serhan CN, Smith LE, Increased dietary intake of omega-3-polyunsaturated fatty acids reduces pathological retinal angiogenesis, *Nat Med* 13:868-73, 2007.

Duffield JS\*, Hong S\*, Vaidya V, Lu Y, Fredman G, Serhan CN, Bonventre JV, Endogenous Antiinflammatory Omega-3 Lipid Mediators Resolvin D and Protectin D1 Mitigate Acute Kidney Injury, *J Immunol* 177:5902-11, 2006.

Xia S, Wang J., Lu Y, Hong S, Serhan C.N., Kang J.X, The Growth of Melanoma is Inhibited in Fat-1 Transgenic Mice: Impact of n-6/n-3 Essential Fatty Acids, *Proc Natl Acad Sci USA* 103:12499-504, 2006.

Hudert CA, Weylandt KH, Lu Y, Wang J, Hong S, Dignass A, Serhan CN, Kang JX, Transgenic Mice Rich in Endogenous n-3 Fatty Acids are Protected from Colitis, *Proc Natl Acad Sci. USA* 103:11276-81, 2006.

Lu Y\*, Hong S\*, Gotlinger KH, Pertasis NA, Serhan CN, Lipid Mediator Informatics and Proteomics in Inflammation and Its Resolution, *The Scientific World Journal* 6:589-614, 2006.

Arita M, Yoshida M, Hong S, Tjonahen E, Glickman JN, Petasis NA, Blumberg RS, Serhan CN, Resolvin E1, A Novel Endogenous Lipid Mediator Derived from Omega-3 Eicosapentaenoic Acid, Protects against TNBS-induced Colitis, *Proc Natl Acad Sci USA* 102:7671-76, 2005.

Lu Y\*, Hong S\*, Tjonahen E, Serhan CN, Mediator-lipidomics: Databases and Search Algorithms for PUFA-derived Mediators, *Journal of Lipid Research* 46:790-802, 2005.

Vance RE, Hong S, Gronert K., Serhan CN, Mekalanos JJ., The Opportunistic Pathogen *Pseudomonas Aeruginosa* Carries A Secretable Arachidonate 15-Lipoxygenase, *Proc. Natl. Acad. Sci. USA* 101:2135-2139, 2004.

Hong S\*, Gronert K\*, Devchand PR, Moussignac RL, Serhan CN., Novel Docosatrienes and 17S-resolvins Generated from Docosahexaenoic Acid in Murine Brain, Human Blood and Glial Cells: Autacoids in Anti-inflammation, *J. Biol. Chem.* 278:14677-14687, 2003.

Marcheselli VL\*, Hong S\*, Lukiw WJ, Tian XH, Gronert K, Musto A, Gimenez JM, Chiang N, Serhan CN, Bazan NG, Novel Docosanoids Inhibit Brain Ischemia-reperfusion-mediated Leukocyte Infiltration and Pro-Inflammatory Gene Expression, *J. Biol. Chem* 278:43807-43817, 2003.

Devechand PR, Arita M, Hong S, Bannenberg, G, Moussignac RL, Gronert, K, Serhan CN, Human ALX Receptor Regulates Neutrophil Recruitment in Transgenic Mice: Roles in Inflammation and Host Defense, *FASEB J* 17:652-659, 2003.

Serhan CN, Hong S, Gronert K, Colgan SP, Devchand, PR, Mirick G, Moussignac R., Resolvins: A Family of Bioactive Products of Omega-3 Fatty Acid Transformation Circuits

Initiated by Aspirin Treatment that Counter Proinflammation Signals, J. Experimental Medicine.  
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