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Dr. Chen graduated from The 3rd Military Medical University at Chongqing with a Bachelor's degree in Medicine in 1985. Dr. Chen obtained his MS degree in Biochemistry from The Academy of Military Medical Sciences in 1988 and his Doctor of Philosophy in Molecular Genetics from the University of Western Ontario in 1995. After his postdoctoral training at University of Toronto and Harvard Medical School, Dr. Chen became an Assistant Professor of Biochemistry at Cardiovascular Research Institute within Morehouse School of Medicine in 1999. In 2005, Dr. Chen moved to the Cardiovascular Center at University of Michigan as a tenured Associate Professor of Internal Medicine. Currently, Dr. Chen is the Endowed Frederick G. L. Huetwell Collegiate Professor of Cardiovascular Medicine at the University of Michigan.

The long-term goal of Dr. Chen's research program in vascular medicine is elucidating the molecular basis of obesity/diabetes-induced cardiovascular diseases (CVD) and on developing new drugs/technologies to study and treat diabetes and CVD. In the past 12 years, his laboratory has made a series of significant contributions to our understanding of the role of PPARγ activation as a determinant of vascular cell gene expression and cellular function (*Circ Res* 2001, 89:1058-64; *JBC* 2001, 276:45888-94; *JBC* 2002, 277:26808-14; *ATVB* 2004, 24:257-63; *PNAS* 2004, 101:10703-8; *Cardiovasc Res* 2007 76:269-79; *Circulation* 2009a, 119:2161-9; *Circulation* 2009b, 119:1124-34), and has been among the first to begin to define the role of PPARδ activation in the cardiovascular system (*JBC* 2002; 277:11505-12; *Nat Med* 2004,10:1245-50). In addition, the discovery of the high affinity physiological PPARγ ligands, nitroalkene derivatives of linoleic acid (LNO_2) and oleic acid ($OA\text{-}NO_2$), advances our understanding of endogenous PPARγ modulation and provides novel therapeutic strategies for treating obesity/diabetes and CVD (*PNAS* 2005, 102:2340-5; *JBC* 2005, 280:42464-75; *Nat Struct Mol Biol* 2008; 15:865-7). Furthermore, nitro-fatty acids are a novel class of endogenous anti-inflammatory mediators (*JBC* 2006, 281:35686-98; *Endocrinology* 2008, 149:4086-94; *Circ Res* 2009, 105:965-72). Also, Dr. Chen's lab identified that Rad (Ras-associated with diabetes) GTPase plays critical roles in vascular lesion formation (*Circulation* 2005, 111:1071-1077) and cardiac hypertrophy (*Circulation* 2007, 116:2976-83). In his past research, the PI has extended our understanding of orphan nuclear hormone receptors by defining LXRa as a novel cAMP responsive nuclear modulator in the regulation of renin and c-myc gene

expression (*PNAS* 2000, 97:8513-8). He has also identified one novel gene, the exendin-4 that stimulates insulin secretion (*JBC* 1997, 272:4108-15). Indeed, BYETTA, the trade name for Exendin-4 was approved by FDA to treat type II diabetes and available to pharmacies on June 1, 2005. In summary, Dr. Chen has demonstrated a record of successful and productive research projects in an area of obesity/diabetes-induced CVD.

陈育庆博士的研究兴趣始终集中在探讨糖尿病和心血管并发症的发病机理及寻找新的治疗方法及药物，期望通过他们的研究能为人类的健康作贡献。陈博士于1997年首次克隆了一个新基因Exendin-4,并发现该分子可以刺激胰岛素的分泌。Exendin-4目前已在美国经过FDA的批准于2005年6月进入临床(商品名BYETTA）。陈博士在PPARγ及其它相关代谢性核受体的心血管作用方面取得了一系列创新性成果，为理解TDZ类型糖尿病治疗药物的心血管作用以及研究新的心血管治疗药物提供了理论基础。相关成果发表于权威医学学术杂志. 陈博士重要的贡献之一是发现硝基化脂肪酸是PPARγ的内源性高亲和性配体，这一发现有助于我们对PPARγ生理功能的进一步认识。并且进而发现硝基化脂肪酸是内源性的抗炎症分子。氮化脂类的发现及其与心血管疾病的关系的发现不仅为认识心血管疾病和糖尿病的发病机理提供了新的学说，更为心血管疾病的治疗提出了新的策略。

Selected Peer-reviewed Publications:

1. Chen YE and Drucker DJ. Tissue-specific expression of unique mRNAs that encode proglucagon-derived peptides or exendin 4 in the lizard. *J Biol Chem.* 1997 Feb 14;272(7):4108-15.
2. Fu M, Zhang J, Zhu X, Myles DE, Willson TM, Liu X, Chen YE: Peroxisome proliferator-activated receptor gamma inhibits transforming growth factor beta-induced connective tissue growth factor expression in human aortic smooth muscle cells by interfering with Smad3. *J Biol Chem*. 2001 Dec 7;276(49): 45888-94.
3. Fu M, Zhu X, Wang Q, Zhang J, Song Q, Zheng H, Ogawa W, Du J, Chen YE: Platelet-derived growth factor promotes the expression of peroxisome proliferator-activated receptor gamma in vascular smooth muscle cells by a phosphatidylinositol 3-kinase/Akt signaling pathway. *Circ Res.* 2001 Nov 23;89(11):1058-64.
4. Baker PRS, Lin Y, Schopfer FJ, Woodcock SR Batthyany C, Sweeney S, Long MH, Iles KE, Gregor A, Baker LMS, Branchaud BP, Chen YE, Freeman, BA. Fatty acid transduction of nitric oxide signaling: multiple unsaturated fatty acid nitro derivatives with PPAR receptor-dependent signaling activity in human blood and urine. *J Biol Chem.* 2005, 280:42464-75.
5. Zhang J, Fu M, Liang J, Mou Y, Xiao Y, Floyd D, Li E, Chen YE: Selective disruption of PPARγ2 impairs adipose tissue development and insulin sensitivity. *Proc Natl Acad Sci U S A.* 2004; 101:10703-8.
6. Cheng LH, Ding GL, Qin Q, Huang Y, Lewis W, Evans RM, Schneider MD, Brako F, Xiao Y, Chen YE, Yang Q: Cardiomyocyte-restricted Peroxisome Proliferator-activated Receptor-delta Deletion Perturbs Myocardial Fatty Acid Oxidation and Leads to Cardiomyopathy. *Nature Medicine* 2004, 10:1245-50.

7. Schopfer FJ, Lin Y, Baker PRS, Cui TX, Garcia-Barrio M, Zhang J, Chen K, Chen YE, Freeman, BA. Nitrolinoleic acid: an endogenous PPARγ ligand. *Proc. Natl. Acad. Sci. USA* 2005, 102:2340–2345.
8. Fu M, Zhang J, Tseng YH, Cui TX, Zhu X, Xiao Y, Chang MJ, Hamamori Y, Ronald Kahn CR, Chen YE: Rad GTPase attenuates vascular lesion formation by inhibition of vascular smooth muscle cell migration. *Circulation* 2005, 111:1071-1077.
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10. Zhang J, Zhong W, Cui T, Hu X, Xu K, Li L, Liu C, Chen YE: Generation of an adult smooth muscle cell-targeted Cre recombinase mouse model. *Arterioscler Thromb Vasc Biol.* 2006 26:e23-4.
11. Chang L Zhang J, Tseng YH, Xie CQ, Jacob J, Brüning JC, Zhu X, Cui T, Youker KA, Yang Q, Day SM, Kahn CR, Chen YE: Rad GTPase deficiency leads to cardiac hypertrophy *Circulation* 2007 116:2976-83.
12. Li Y, Zhang J, Schopfer FJ, Martynowski D, Garcia-Barrio MT, Kovach A, Suino-Powell K, Baker PRS, Freeman BA, Chen YE, and Xu HE: Molecular recognition of nitro-fatty acids by PPARγ *Nat Struct Mol Biol.* 2008 Aug; 15(8):865-7.
13. Chang L, Villacorta L, Zhang J, Garcia-Barrio MT, Yang K, Hamblin M, Whitesall SE, D'Alecy LG, Chen YE. Vascular smooth muscle cell-selective PPARγ deletion leads to hypotension. *Circulation* 2009 Apr 28;119(16):2161-9.
14. Chen YE. Vascular cell lineage determination and differentiation. *Arterioscler Thromb Vasc Biol.* 2011 Jul;31(7):1467-8.
15. Zhang J, Villacorta L, Chang L, Fan Z, Hamblin M, Zhu T, Chen CS, Cole MP, Schopfer FJ, Deng CX, Garcia-Barrio MT, Feng YH, Freeman BA, Chen YE. Nitro-Oleic Acid Inhibits Angiotensin II-Induced Hypertension. *Circ Res*. 2010 Aug 20;107(4):540-8.
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18. Hu J, Sun X, Ma H, Xie C, Chen YE, Ma PX. Porous nanofibrous PLLA scaffolds for vascular tissue engineering. *Biomaterials*. 2010 Jul 29. 31:7971-77.