Feb. 2021

CURRICULUM VITAE – Junxiang Wan

Personal history:

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Los Angeles, CA 90089
Office telephone: 213-740-1398
Email: junxianw@usc.edu
Permanent Residence: US permanent resident (2011)

Education:

1991 – 1996 M.D. Southeast University (Former Nanjing Railway Medical College), Nanjing, P.R.China
1997 – 2002 Ph.D. School of Public Health, Medical Center of Fudan University (Former Shanghai Medical University), FuDan University Shanghai, P.R.China.

Postgraduate training:

2002 – 2008 Postgraduate, Division of Clinical Immunology & Allergy, UCLA School of Medicine, Los Angeles

Faculty Appointments:

2012.08 Research Assistant Professor of Gerontology and Medicine, University of Southern California
2010 Assistant Researcher of Division of Endocrinology, Department of Pediatrics, UCLA School of Medicine, Los Angeles
2008 Assistant Researcher of Division of Pulmonary & Critic Care, Clinical Immunology & Allergy, UCLA School of Medicine, Los Angeles

Administrative Appointments:

2011 Director of Novel Immunoassay Development Core, Division of Endocrinology, Department of Pediatrics, UCLA School of Medicine, Los Angele
2012 Director of Aging Biomarker and Service Core, USC School of Gerontology

Awards, Honors and Membership in Honorary Societies:

2001 Young Scientists Excellent Paper Award. 3rd National Conference of Chinese Society of Toxicology. P.R.China.
2003 Hangzhou Science and Technology Progress Award. P.R.China.
2003 Ma'an'shan Science and Technology Award. P.R.China.
2004 Wu Zhizhong Occupational Medicine Awards. P.R.China.

Membership in Professional and Scientific Societies

Member of: The American Association of Immunologists

RESEARCH GRANTS AND FELLOWSHIPS RECEIVED:

Active

P30AG068345 Verdin, Lithgow, Cohen and Curran, MPI 07/01/2020 – 06/30/2025
NIA $800,000
The University of Southern California and Buck Institute Nathan Shock Center

Goals: This project will create training and research infrastructure for biology of aging research in California

R01AG061834 Cohen (PI) 09/01/2018 – 08/31/2023
NIA $395,000/year
Humanin is an AD resilience factor through its interaction with APOE4
We will define the physical and genomic interactions between humanin and APOE4 in AD models.

P01AG034906 Longo (PI) 04/01/11-07/31/23
NIA
Dietary Restriction, GH/IGF-I & Mechanisms of Differential Cellular Protection
The major goals of this project are to understand the role of diet in aging and longevity.
Role: Co-Investigator, in charge of assays about IGFs and their BPs, and MDPs, etc.

R01EY27363 Kenney (PI) 09/01/2018 - 08/31/2023
NEI $25,000/yr sub to Cohen
Protective Effects of Humanin on AMD Mitochondria
This project will determine the role of mitochondrial peptides in AMD prevention.
Role: subcontract co-investigator

R01AG061834 Cohen (PI) 09/01/2020 - 08/31/2025
NIA $250,000/year
Metformin-Regulated Mitochondrial Peptides and their Effects on Aging
We will assess the roles of novel peptides on aging phenotypes an determine if mtDNA variants affect them

Finshed:

5P30DK063491 Olefsky (PI) 05/1/2003 – 4/30/2013
NIDDK
UCSD/UCLA Diabetes &Endocrinology Research Center
The major goals of this project are to promote endocrine research at the 2 Universities.

1P01AG027734 Barzilai (PI) 09/1/2007 – 7/31/2012
NIA
Role of genes in humans with exceptional longevity
Goals of this project are to identify genes involved in longevity in the AECOM centenarian cohort.

1DP1OD004073-01 Cohen (PI) 08/1/2009 – 7/31/2013
NIA
Eureka Award: Mitochondrial Peptides and their role in aging
The goals of this project are to identify alterations in the levels of humanin and related peptides at the mt-DNA levels and in the circulation of humans with exceptional longevity and mouse models of aging.

1R01GM090311 Cohen (PI) 10/1/2009 to 9/31/2014
NIGMS
Transformative-RO1 “Novel Mitochondrially Derived Peptides and Their Role in Health and Disease”
The goals of this project are to understand the function of novel mitochondrial peptides

1R01ES020812-01 Cohen (PI) 10/1/2011 – 9/30/2016
NIEHS

"Plasma Mitochondrial Peptide Assays as Biomarkers of Environmental Toxin Exposure"
The goals of this project are to measure humanin and SHLP levels in mice exposed to environmental toxins to identify a peptide signature for mitochondrial damage

1R21DK089447 Cohen (PI) 09/01/2011 – 08/30/2013
NIDDK
"Humanin and Type 2 Diabetes"
The goals of this project are to measure humanin and SHLP levels in patients with diabetes and pre-diabetes in order to assess their predictive value

Supplement to P01AG034906 Cohen (PI) 08/01/2018 - 07/31/2020
NIA $249,984
Humanin Mito-nutri-genomic Interaction in Alzheimer's Disease
This supplement will expand our studies of humanin and its interactions with diet on cognition.

W81XWH-17-1-0612 Cohen (PI) 09/01/2017 – 08/31/2020
DoD $200,000/year
Ethnic Disparity of Mitochondrial Peptides and Prostate Cancer Risk.
This project evaluates MDPs levels as predictors of prostate cancer health disparity.
Role: Co-Investigator.

AFAR BIG AWARD Cohen (PI) 07/01/2017 – 06/30/2020
AFAR $100,000/year
Characterization of the Healthspan Promoting Activity of the Mitochondrial Peptide Humanin.
This project will measure humanin levels in studies of diet and exercise.
Role: Co-Investigator

U54CA233465 Carpten (PI) 11/01/2018 – 10/30/2021
Florida-California Cancer Research, Education & Engagement Health
Equity Center
NCI
Project-1: Disparities in Mitochondrial Peptidomics and Transcriptomics in Prostate Cancer
Role: Co-Investigator

LECTURES AND PRESENTATIONS:

Analysis of gene expression profile in bronchial epithelial cells in response to diesel exhaust particles exposure using cDNA microarray. *The Toxicologist (supplement to toxicological sciences)*. Mar.7, 2006 45th Society of Toxicology Anuual Meeting. San Diego, U.S.A.

Impact of NQO1 and GSTT1 genotypes on risks of chronic benzene poisoning. Paper compilation of 3rd National Conference of Chinese Society of Toxicology. Oct. 18, 2001. National Conference of Chinese Society of Toxicology. Nanjing, P.R.China.

Bibliography:
Research Publications, Peer Reviewed:

1. Yang K, Wei Z, Wan J, Cai Y, Shen Y, Li Y, Gao Y, Yang M, Fu D, and Fu H. Study on management of patients with hypertension and risk factors. *Chinese General Practice.* 2002, 12(5): 990-991.

2. Wan J, Shi J, Hui L, Wu D, Jin X, Zhao N, Huang W, Xia Z, Hu G. Association of genetic polymorphisms in NQO1, CYP2E1, MPO, GSTM1, and GSTT1 genes with benzene poisoning. *Environ Health Perspect.* 2002. 110(12): 1213-1218.

3. Zhang ZB, Gu SY, Wan JX, Jin XP, Xia ZL. Relationship of genetic polymorphism of microsomal epoxide hydrolase with susceptibility of chronic benzene poisoning. *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi.* 2004. 22(3): 176-180.

4. Zhu SM, Ren XF, Wan JX, Xia ZL. Evaluation in vinyl chloride monomer (VCM)-exposed workers and the relationship between liver lesions and gene genetic polymorphism of metabolic enzymes. *World J. Gastroenterol.* 2005. 11:5821-5827.

5. Zhang Z, Wan J, Jin X, Jin T, Shen H, Lu D, Xia Z. Genetic polymorphisms in XRCC1, APE1, ADPRT, XRCC2, and XRCC3 and risk of chronic benzene poisoning in a Chinese occupational population. *Cancer Epidemiol. Biomarkers Prev.* 2005. 14:2614-2619.

6. Wan JX, Zhang ZB, Guan JR, Cao DZ, Ye R, Jin XP, Xia ZL. Genetic polymorphsim of toxicant-metabolizing enzymes and prognosis of chinese workers with chronic benzene poisoning. *European Journal of Oncology.* 2005. 10(2):177-122.
   a. This article was also include in "Living in a Chemical World: Framing the Future
   b. in Light of the Past". *Ann. N.Y. Acad. Sci.* 2006, 1076: 129–136.

7. Ritz SA, Wan J, Diaz-Sanchez D. Sanchez. Sulforaphane induced phase II enzyme induction inhibits cytokine production by diesel extract. *Am. J. Respir. Mol. Biol.* 2006, 292: L33-L39.

8. Wan J, Diaz-Sanchez D. Phase II enzymes induction blocks the enhanced IgE production in B cells by diesel exhaust particles. *J. Immunol*. 2006, 177: 3477-3483.

9. Gu SY, Zhang ZB, Wan JX, Jin XP, Xia ZL. Genetic polymorphisms in CYP1A1, CYP2D6, UGT1A6, UGT1A7, and SULT1A1 genes and correlation with benzene exposure in a Chinese occupational population. *J Toxicol Environ Health.* 2007, 70: 916-924.

10. Wu F, Zhang Z, Wan J, Gu S, Liu W, Jin X, Xia Z. Genetic polymorphisms in hMTH1, hOGG1 and hMYH and risk of chronic benzene poisoning in a Chinese occupational population. *Toxicol Appl Pharmacol.* 2008, 233(3):447-453.

11. Sun P, Qiu Y, Zhang Z, Wan J, Wang T, Jin X, Lan Q, Rothman N, Xia ZL. Association of genetic polymorphisms, mRNA expression of p53 and p21 with chronic benzene poisoning in a chinese occupational population. *Cancer Epidemiol Biomarkers Prev.* 2009, 18(6):1821-1828.

12. Sun P, Zhang Z, Wan J, Zhao N, Jin X, Xia Z. Association of genetic polymorphisms in GADD45A, MDM2, and p14 ARF with the risk of chronic benzene poisoning in a Chinese occupational population. *Toxicol Appl Pharmacol.* 2009, 240(1):66-72.

13. Mason EJ, Grell JA, Wan J, Cohen P, Conover CA. Insulin-like growth factor (IGF)-I and IGF-II contribute differentially to the phenotype of pregnancy associated plasma protein-A knock-out mice. *Growth Hormone and IGF Research.* 2011, 21(5):243-7.

14. Mehta H, Gao Q, Galet C, Paharkova V, Wan J, Said JW, Sohn J, Lawson G, Cohen P, Cobb JL, Lee KW. IGFBP-3 is a Metastasis Suppression Gene in Prostate Cancer. *Cancer Res.* 2011; 71:5154-63.

15. Oh YK, Bachar AR, Zacharias DG, Kim SG, Wan J, Cobb LJ, Lerman LO, Cohen P, Lerman A. Humanin Preserves Endothelial Function and Prevents Atherosclerotic Plaque Progression in Hypercholesterolemic ApoE Deficient Mice. *Atherosclerosis*. 2011; 219:65-73.

16. Gray A, Aronson WJ, Barnard RJ, Mehta HH, Wan J, Said J, Cohen P, Galet C. Global IGFBP-1 deletion does not affect prostate cancer development in a c-Myc transgenic mouse model. *J Endocrinol*. 2011, 211:297-304.

17. Aronson WJ, Kobayashi N, Barnard RJ, Henning S, Huang M, Jardack PM, Liu B, Gray A, Wan J, Konijeti R, Freedland SJ, Castor B, Heber D, Elashoff D, Said J, Cohen P, Galet C. Phase II Prospective Randomized Trial of a Low-Fat Diet with Fish Oil Supplementation in Men Undergoing Radical Prostatectomy. *Cancer Prev Res (Phila).* 2011; 4:2062-71.

18. Konijeti R, Koyama S, Gray A, Barnard RJ, Said JW, Castor B, Elashoff D, Wan J, Beltran PJ, Calzone FJ, Cohen P, Galet C, Aronson WJ. Effect of a Low-Fat Diet Combined with IGF-1 Receptor Blockade on 22Rv1 Prostate Cancer Xenografts. *Mol Cancer Ther.* 2012 Jul;11(7):1539-1546.

19. Junxiang Wan, Atzmon Gil, Hwang David., Barzlai Nir, Kratzsch J, Strasburger CJ, Pinchas Cohen. Growth hormone receptor (GHR) exon-3 polymorphism status detection by dual enzyme linked immunosorbent assay (ELISA). *J Clin Endocrinol Metab.* 2013. 98(1):E77-81.

20. mRNA expression levels among cell regulatory and DNA damage genes in benzene-exposed workers in China. Wang Q, Ye R, Ye YJ, Wan JX, Sun P, Zhu Y, Au W, Xia ZL. *J Occup Environ Med.* 2012 Dec;54(12):1467-70. doi: 10.1097/JOM.0b013e318223d56c.PMID:23095938

21. Widmer RJ, Flammer AJ, Herrmann J, Rodriguez-Porcel M, Wan J, Cohen P, Lerman LO, Lerman A. Circulating humanin levels are associated with preserved coronary endothelial function. *Am J Physiol Heart Circ Physiol.* 2013 304(3):H393-H397.

22. Parrella E, Maxim T, Maialetti F, Zhang L, Wan J, Wei M, Cohen P, Fontana L, Longo VD. Protein restriction cycles reduce IGF-1 and phosphorylated Tau, and improve behavioral performance in an Alzheimer's disease mouse model. *Aging Cell.* 201312(2):257-268. PMID:

23. Dean JP, Sprenger CC, Wan J, Haugk K, Ellis WJ, Lin DW, Corman JM, Dalkin BL, Mostaghel E, Nelson PS, Cohen P, Montgomery B, Plymate SR. Response of the insulin-like growth factor (IGF) system to IGF-IR inhibition and androgen deprivation in a neoadjuvant prostate cancer trial: effects of obesity and androgen deprivation. *J Clin Endocrinol Metab.* 2013. 98(5):E820-E828.

24. Galet C, Gray A, Said JW, Castor B, Wan J, Beltran PJ, Calzone FJ, Elashoff D, Cohen P, Aronson WJ. Effects of Calorie Restriction and IGF-1 Receptor Blockade on the Progression of 22Rv1 Prostate Cancer Xenografts. *Int J Mol Sci.* 2013. 14(7):13782-13795.

25. Chin YP, Keni J, Wan J, Mehta H, Anene F, Jia Y, Lue YH, Swerdloff R, Cobb LJ, Wang C, Cohen P. Pharmacokinetics and tissue distribution of humanin and its analogues in male rodents. *Endocrinology.* 2013. 154(10):3739-44.

26. Levine ME, Suarez JA, Sebastian B, Balasubramanian P, Cheng CW, Madia F, Fontana L, Mario G. Mirisola MG, Guevara-Aguirre J, Wan J, Passarino G, Kennedy BK, Wei M, Cohen P, Crimmins EM, Longo VD. Low Protein Intake Is Associated with a Major Reduction in IGF-1, Cancer, and Overall Mortality in the 65 and Younger but Not Older Population. *Cell Metab.* 2014. 19(3):407-17.

27. Milman S1, Atzmon G, Huffman DM, Wan J, Crandall JP, Cohen P, Barzilai N. Low insulin-like growth factor-1 level predicts survival in humans with exceptional longevity. *Aging Cell*. 2014. 13(4):769-771.

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30. Lee C, Zeng J, Drew BG, Sallam T, Martin-Montalvo A, Wan J, Kim SJ, Mehta H, Hevener AL, de Cabo R, Cohen P. The mitochondrial-derived peptide MOTS-c promotes metabolic homeostasis and reduces obesity and insulin resistance. *Cell Metabolism.* 2015; 21, 443–454

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32. Huffman DM, Farias Quipildor G, Mao K, Zhang X, Wan J, Apontes P, Cohen P,Barzilai N. Central insulin-like growth factor-1 (IGF-1) restores whole-body insulin action in a model of age-related insulin resistance and IGF-1 decline. *Aging Cell.* 2016 Feb;15(1):181-6. doi: 10.1111/acel.12415. PubMed PMID: 26534869; PubMed Central PMCID: PMC4717281.

33. Cobb LJ, Lee C, Xiao J, Yen K, Wong RG, Nakamura HK, Mehta HH, Gao Q, Ashur C, Huffman DM, Wan J, Muzumdar R, Barzilai N, Cohen P. Naturally occurring mitochondrial-derived peptides are age-dependent regulators of apoptosis, insulin sensitivity, and inflammatory markers. *Aging.* 2016. 8(4): 796-809. doi: 10.18632/aging.100943 PMID: 27070352

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novel regulators of metabolism. *J Physiol.* 2017. 595(21):6613-6621. doi: 10.1113/JP274472. Epub 2017 Jul 18. PMID: 28574175; PMCID: PMC5663826.

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38. Qin Q, Mehta H, Yen K, Navarrete G, Brandhorst S, Wan J, Delrio S, Zhang X, Lerman LO, Cohen P, Lerman A. Chronic treatment with the mitochondrial peptide humanin prevents age-related myocardial fibrosis in mice. Am J Physiol Heart Circ Physiol. 2018. 315(5):H1127-H1136. doi: 10.1152/ajpheart.00685.2017. PMID: 30004252.

39. Kim SJ, Mehta HH, Wan J, Kuehnemann C, Chen J, Hu JF, Hoffman AR, Cohen P. Mitochondrial peptides modulate mitochondrial function during cellular senescence. Aging. 2018.10(6):1239-1256. doi:10.18632/aging.101463. PubMed PMID: 29886458; PMCID: PMC6046248.

40. Yen K, Wan J, Mehta HH, Miller B, Christensen A, Levine ME, Salomon MP, Brandhorst S, Xiao J, Kim SJ, Navarrete G, Campo D, Harry GJ, Longo V, Pike CJ, Mack WJ, Hodis HN, Crimmins EM, Cohen P. Humanin Prevents Age-Related Cognitive Decline in Mice and is Associated with Improved Cognitive Age in Humans. Sci Rep. 2018. 8(1):14212. doi: 10.1038/s41598-018-32616-7. PMID: 30242290; PMCID: PMC6154958.

41. Kim SJ, Miller B, Mehta HH, Xiao J, Wan J, Arpawong TE, Yen K, Cohen P. The mitochondrial-derived peptide MOTS-c is a regulator of plasma metabolites and enhances insulin sensitivity. Physiol Rep. 2019 Jul;7(13):e14171. doi: 10.14814/phy2.14171. PubMed PMID: 31293078; PMCID: PMC6640593.

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regulator of senescence. Sci Rep. 2019 Apr 3;9(1):5546. doi: 10.1038/s41598-019-42064-6. PubMed PMID: 30944385; PubMed Central PMCID: PMC6447602.

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46. Yen K, Mehta HH, Kim SJ, Lue Y, Hoang J, Guerrero N, Port J, Bi Q, Navarrete G, Brandhorst S, Lewis KN, **Wan J**, Swerdloff R, Mattison JA, Buffenstein R, Breton CV, Wang C, Longo V, Atzmon G, Wallace D, Barzilai N, Cohen P. The mitochondrial derived peptide humanin is a regulator of lifespan and healthspan. Aging (Albany NY). 2020 Jun 23;12(12):11185-11199. doi: 10.18632/aging.103534. Epub 2020 Jun 23. PMID: 32575074; PMCID: PMC7343442.

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48. D'Souza RF, Woodhead JST, Hedges CP, Zeng N, **Wan J**, Kumagai H, Lee C, Cohen P, Cameron-Smith D, Mitchell CJ, Merry TL. Increased expression of the mitochondrial derived peptide, MOTS-c, in skeletal muscle of healthy aging men is associated with myofiber composition. Aging (Albany NY). 2020 Mar 17;12(6):5244-5258. doi: 10.18632/aging.102944. Epub 2020 Mar 17. PMID: 32182209; PMCID: PMC7138593.

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58. Min J, Rouanet J, Martini AC, Nashiro K, Yoo HJ, Porat S, Cho C, Wan J, Cole SW, Head E, Nation DA, Thayer JF, Mather M. Modulating heart rate oscillation affects plasma amyloid beta and tau levels in younger and older adults. Sci Rep. 2023 Mar 9;13(1):3967. doi: 10.1038/s41598-023-30167-0. PMID: 36894565; PMCID: PMC9998394.

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muscle atrophy by suppressing lipid infiltration. Am J Physiol Endocrinol Metab. 2024 Mar 1;326(3):E207-E214. doi:10.1152/ajpendo.00285.2023. Epub 2024 Jan 3. PMID: 38170165.

Books.

1: Miller B, Wan J. Assay Development and Measurement of the Aging Biomarker Humanin. Methods Mol Biol. 2020;2144:201-209. doi: 10.1007/978-1-0716-0592-9_18. PMID: 32410037.