

Curriculum Vitae

Name : Lian Wei-Shiung 連韋雄

Sex: Male

Birth Date: 1975/08/30

Citizenship: Taiwan

Home Address & TEL NO. : 2F., No.8, Ln. 108, Siwei 2nd Rd., Lingya District., Kaohsiung City 802, Taiwan.

Office Address & TEL NO. : No.123, Dapi Rd., Niasong Dist., Kaohsiung City 833, Taiwan;
Tel:07-7317123-6405

E-mail Address: lianws@cgmh.org.tw

Language: Mandarin, English

Education: (Date, Name of Medical or Dental School, Location)

1. Department of Animal Science and Technology, National Taiwan University, Taipei, Taiwan

Degree (Doctoral), Major: Stem cells engineering and Adiponectin therapeutic investigation

Thesis Title: The role and therapeutic application of prostaglandin in ischemic renal and cardiac diseases

Date of Graduation: June 2011.

2. Department of Animal Science, National Taiwan University, Taipei, Taiwan

Degree (Master), Major: Endocrinology

Thesis Title: Screening Chinese Medicinal Herbs on Gonadotropic Activity by *in vitro* Culture System of Mouse Leydig Cells

Date of Graduation: June 2000.

3. Department of Animal Science, Chinese Culture University, Taipei, Taiwan

Degree, Major: Bachelors, Animal science

Date of Graduation: June 1998.

Employment Record : (Date, Title, Department, Name of Hospital of Institutions, Location)

2021~present Associate Researcher Fellow, Department of Medical Research, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan.

2017~2021 Assistant Research Fellow, Department of Medical Research, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan.

2014~2017 Post-doctoral fellow, Core Laboratory for Phenomics and Diagnostics, Department of Pediatrics, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan.

2011~2014 Post-doctoral fellow, Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan.
Department of Medical Research, Tzu Chi General Hospital and Department of Pediatrics, Tzu Chi

University, Hualien, Taiwan.

2005~2011 Ph.D. student, Department of Animal Science and Technology, National Taiwan University, Taipei, Taiwan.

2003~2005 Research Assistant, Institute of Biomedical Sciences, Academia Sinica. Taipei, Taiwan.

Board Certification :

1. 2020/10/23 IACUC Committee Member Continuing Education Training Class.
109 農科實動字第 0352 號。
2. 2014/7/11 Laboratory Animal Regulations and Care Management Class. 103 農科實動字第 0210 號。

Professional Affiliations: (Medical Organizations or Societies)

1. 2018~2021 Adjunct teacher, Department of Leisure and Sport Management, Cheng Shiu University.
2. 2021~Present Adjunct teacher, Institute of Aquatic Food Science and Technology, National Kaohsiung University of Science and Technology.

Professional Activities:

- 2019 Invited for PhenoMaster metabolism analysis system workshops by TSE Inc. Berlin, Germany (Training and Certification)
- 2016 OARSI World Congress on Osteoarthritis The Institute for the Advancement of Human Behavior (IAHB) (Education and Certification)
- 2015 Invited for Multi Conditioning system for animal behavior analysis workshops by TSE Inc. Bad Homburg, Germany (Training and Certification)
- 2004 Invited for High-Resolution *In vivo* Micro-Imaging system workshops by VisualSonics Inc. Canada. (Mouse echocardiography training)

Research Interest:

1. Cardiovascular biology
2. Stem cells
3. Musculoskeletal biology
4. Molecular cell biology

Research Project:

計畫名稱	計畫內擔任之工作	起迄年月	補助或委託機構	執行情形
(長庚屏科)超微量級質譜偵測及大數據運算模擬平台應用：解析天然生物活性成分治療骨質疏鬆之腸道微生物體與代謝體機轉之研究	主持人	2021/01/01-2021/12/31	長庚醫院	執行中

[整合型計畫] 肝細胞癌分子病理與治療機轉研究：腸道菌群、代謝產物及宿主腫瘤間交互作用：子計畫四-肝細胞癌生成之分子調節機制研究：腸道微生物菌相失衡與宿主表觀基因的互動(1/3~3/3)	主持人	2021/09/01-2024/8/31	長庚醫院	執行中
染色質重塑於退化性膝關節炎的致病角色研究：組蛋白去甲基酶 UTX 與甲基化酶 PRC2 複合物於軟骨細胞失能的對話 (優秀年輕學者研究計畫)	主持人	2020/08/01-2023/07/31	科技部	執行中
探討腸道微生物與宿主肌肉骨骼軸的交互作用：腸道菌失衡與宿主基因成份影響表觀基因於老年骨關節炎的修飾機制及其關聯性探討	主持人	2020/01/01-2022/12/31	長庚醫院	執行中
生技醫藥核心設施平台--國家綜合小鼠表現型暨藥物測試中心-台灣小鼠診所與動物設施聯盟(1/4-4/4)	共同主持人	2021/05/01-2022/04/30	科技部	執行中
(長中研究計畫)探索鳶尾素對減輕肺動脈高壓進展的調節機制	共同主持人	2020/08/01-2023/07/31	科技部	執行中
Chaperonin 60 調節軟骨細胞粒線體機能於退化性關節炎病程之生理功能研究 (PPG)	共同主持人	2018/05/01-2021/04/30	長庚醫院	已結案
(長正研究計畫)開發穿戴式微振動裝置改善骨質疏鬆	共同主持人	2019/01/01-2020/12/31	長庚醫院	已結案
生技醫藥核心設施平台--國家綜合小鼠表現型暨藥物測試中心-台灣小鼠診所與動物設施聯盟	共同主持人	2019/05/01-2020/04/30	科技部	已結案
退化性膝關節炎表觀基因調控與預防機轉之研究:H3K27 甲基化活性於軟骨細胞代謝的貢獻(新進人員研究計畫)	主持人	2018/10/01-2020/09/30	科技部	已結案

Bibliography (within 5 years):

Publications

1. Wang FS, Wu RW, Chen YS, Ko JY, Jahr H, **Lian WS**. (2021 Aug). Biophysical Modulation of the Mitochondrial Metabolism and Redox in Bone Homeostasis and Osteoporosis: How Biophysics Converts into Bioenergetics. *Antioxidants (Basel)*. 10(9):1394.
2. Wu RW, **Lian WS**, Chen YS, Ko JY, Wang SY, Jahr H, Wang FS. (2021 Aug). Piezoelectric Microvibration Mitigates Estrogen Loss-Induced Osteoporosis and Promotes Piezo1, MicroRNA-29a, and Wnt3a Signaling in Osteoblasts. *Int J Mol Sci*. 22(17):9476.
3. **Lian WS**, Wu RW, Chen YS, Ko JY, Wang SY, Jahr H, Wang FS. (2021 Aug). MicroRNA-29a in Osteoblasts Represses High-Fat Diet-Mediated Osteoporosis and Body Adiposis through Targeting Leptin. *Int J Mol Sci*. 22(17):9135.
4. **Lian WS**, Wu RW, Chen YS, Ko JY, Wang SY, Jahr H, Wang FS. (2021 Aug). MicroRNA-29a Mitigates Osteoblast Senescence and Counteracts Bone Loss through Oxidation Resistance-1 Control of FoxO3 Methylation. *Antioxidants (Basel)*. 10(8):1248.
5. Hsu CH, Liu IF, Kuo HF, Li CY, **Lian WS**, Chang CY, Chen YH, Liu WL, Lu CY, Liu YR, Lin TC, Lee TY, Huang CY, Hsieh CC, Liu PL. (2021 Sep). miR-29a-3p/THBS2 Axis Regulates PAH-Induced Cardiac Fibrosis. *Int J Mol Sci*. 22(19):10574.
6. Tsao CF, Chang YH, Shen FC, Su YJ, Lin HY, Chang CS, Lin CY, **Lian WS**, Chuang JH, Lin TK, Liou CW, Wang PW, Weng SW. (2021). Legacy Effect of Antioxidant N-acetylcysteine in Cellular Senescence of Diet-induced Obesity Mice. *Curr Mol Med*. 21(6):506-525.
7. Yang CH, Hwang CF, Chuang JH, **Lian WS**, Wang FS, Huang EI, Yang MY. (2020, Oct). Constant Light Dysregulates Cochlear Circadian Clock and Exacerbates Noise-Induced Hearing Loss. *Int J Mol Sci*. 21(20):7535.
8. Wang FS, Kuo CW, Ko JY, Chen YS, Wang SY, Ke HJ, Kuo PC, Lee CH, Wu JC, Lu WB, Tai MH, Jahr H, **Lian WS** (2020. Sep). Irisin Mitigates Oxidative Stress, Chondrocyte Dysfunction and Osteoarthritis Development through Regulating Mitochondrial Integrity and Autophagy. *Antioxidants (Basel)*. 9(9):810.
9. Wang FS, Chen YS, Ko JY, Kuo CW, Ke HJ, Hsieh CK, Wang SY, Kuo PC, Jahr H, **Lian WS**. (2020. Jun). Bromodomain Protein BRD4 Accelerates Glucocorticoid Dysregulation of Bone Mass and Marrow Adiposis by Modulating H3K9 and Foxp1. *Cells*. 9(6):1500.
10. Lin HY, Weng SW, Shen FC, Chang YH, **Lian WS**, Hsieh CH, Chuang JH, Lin TK, Liou CW, Chang CS, Lin CY, Su YJ, Wang PW. (2020. Jul). Abrogation of Toll-Like Receptor 4 Mitigates Obesity-Induced Oxidative Stress, Proinflammation, and Insulin Resistance Through Metabolic Reprogramming of Mitochondria in Adipose Tissue. *Antioxid Redox Signal*. 33(2):66-86.
11. Chen YS, **Lian WS**, Kuo CW, Ke HJ, Wang SY, Kuo PC, Jahr H, Wang FS. (2020. Jul). Epigenetic Regulation of Skeletal Tissue Integrity and Osteoporosis Development. *Int J Mol Sci*. 21(14):4923.

(Equal Contribution)

12. Ko JY, **Lian WS**, Tsai TC, Chen YS, Hsieh CK, Kuo CW, Wang FS. (2019, Nov). MicroRNA-29a Mitigates Subacromial Bursa Fibrosis in Rotator Cuff Lesion with Shoulder Stiffness. *Int J Mol Sci.* 20(22). pii: E5742. (Equal Contribution)
13. Wu RW, **Lian WS**, Kuo CW, Chen YS, Ko JY, Wang FS. (2019, Nov). S100 Calcium Binding Protein A9 Represses Angiogenic Activity and Aggravates Osteonecrosis of the Femoral Head. *Int J Mol Sci.* 20(22). pii: E5786. (Equal Contribution)
14. Wu RW, **Lian WS**, Chen YS, Kuo CW, Ke HC, Hsieh CK, Wang SY, Ko JY, Wang FS. (2019, Oct). MicroRNA-29a Counteracts Glucocorticoid Induction of Bone Loss through Repressing TNFSF13b Modulation of Osteoclastogenesis. *Int J Mol Sci.* 20(20). pii: E5141. (Equal Contribution)
15. **Lian WS**, Ko JY, Chen YS, Ke HJ, Hsieh CK, Kuo CW, Wang SY, Huang BW, Tseng JG, Wang FS. (2019, Sep). MicroRNA-29a represses osteoclast formation and protects against osteoporosis by regulating PCAF-mediated RANKL and CXCL12. *Cell Death Dis.* 10(10):705.
16. Shen FC, Weng SW, Tsao CF, Lin HY, Chang CS, Lin CY, **Lian WS**, Chuang JH, Lin TK, Liou CW, Wang PW. (2018, Oct). Early intervention of N-acetylcysteine better improves insulin resistance in diet-induced obesity mice. *Free Radic Res.* 52(11-12):1296-1310.
17. **Lian WS**, Ko JY, Chen YS, Ke HJ, Wu SL, Kuo CW, Wang FS (2018, Sep). Chaperonin 60 sustains osteoblast autophagy and counteracts glucocorticoid aggravation of osteoporosis by chaperoning RPTOR. *Cell Death Dis.* 9(10):938.
18. **Lian WS**, Ko JY, Wu RW, Sun YC, Chen YS, Wu SL, Weng LH, Jahr H, Wang FS (2018, Sep). MicroRNA-128a represses chondrocyte autophagy and exacerbates knee osteoarthritis by disrupting Atg12. *Cell Death Dis.* 9(9):919.
19. Wang FS, Wu RW, **Lian WS**, Tsai TC, Chen YS, Sub YC, Ke HJ, Li JC, Hwang JL, Ko JY. (2018, Apr). Sclerostin Vaccination Mitigates Estrogen Deficiency Induction of Bone Mass Loss and Microstructure Deterioration Bone. *BONE.* 12:24-34.
20. **Lian WS**, Wu RW, Lee MS, Chen YS, Sun YC, Wu SL, Ke HJ, Ko JY, Wang FS (2017, Dec). Subchondral mesenchymal stem cells from osteoarthritic knees display high osteogenic differentiation capacity through microRNA-29a regulation of HDAC4. *J Mol Med (Berl).* 95(12):1327-1340.
21. Ko JY, Lee MS, **Lian WS**, Weng WT, Sun YC, Chen YS, Wang FS (2017, Jun). MicroRNA-29a Counteracts Synovitis in Knee Osteoarthritis Pathogenesis by Targeting VEGF. *Scientific Reports.* 7, 3584.
22. Wang FS, **Lian WS**, Lee MS, Weng WT, Huang YH, Chen YS, Sun YC, Wu SL, Chuang PC, Ko JY (2017, May). Histone demethylase UTX counteracts glucocorticoid deregulation of osteogenesis by modulating histone-dependent and -independent pathways. *J Mol Med (Berl).* 95(5):499-512. (Equal Contribution)

23. Wang FS, **Lian WS**, Weng WT, Sun YC, Ke HJ, Chen YS, Ko JY (2016, Sep). Neuropeptide Y mediates glucocorticoid-induced osteoporosis and marrow adiposity in mice. *Osteoporos Int.* 27(9):2777-2789. (Equal Contribution)

Presentations:

- 2021 Mouse Molecular Genetics (MMG) Symposium. Taipei, Taiwan. **Invited speaker/ Title:** Mitochondrial Chaperonin Regulates Chondrocyte Anabolism and Counteracts Knee Osteoarthritis. (Oral presentation).
- 2021 The virtual 29th Annual Meeting of the European Orthopaedic Research Society (EORS). **Invited speaker/ Title:** Effects of Fndc5-derived hormone-like myokines on cartilage metabolism. (Oral presentation).
- 2020 Annual Meeting of Taiwan Society for Mitochondrial Research and Medicine (TSMRM)/Hualien, Taiwan. **Title:** MicroRNA-128a is epigenetically repressing Atg12 leads to disrupting chondrocyte autophagy and intensifies knee osteoarthritis. (Post presentation).
- 2020 The virtual 28th Annual Meeting of the European Orthopaedic Research Society (EORS). **Chair Session and Invited speaker/** Metabolic Insights Into Chondrocyte Function and Osteoarthritis Therapeutics. (Oral presentation).
- 2019 27th Annual and Anniversary Meeting of the European Orthopaedic Research Society (EORS). Maastricht/Netherlands. **Workshops/** Cartilage microenvironment and Osteoarthritis: Impact on Treatment Options. **Title:** Methylated Histone Pathway Modulation of Cartilage Integrity and Osteoarthritis. (Oral presentation).
- 2019 ICORS/COA 2nd International Combined Meeting of Orthopaedic Research Societies. Montréal, Canada. **Workshops/** Emerging Molecular Therapeutic Potentials for Treating Osteoarthritis. **Title:** Trimethyl H3K27 Assembly Modulation of Cartilage Integrity and Osteoarthritis. (Oral presentation).
- 2018 The 26th Annual and Anniversary Meeting of the European Orthopaedic Research Society (EORS)/ Galway, Ireland. **Title:** Sclerostin Vaccination Prevents Estrogen Loss- Induced Osteoporosis. (Oral presentation).
- 2018 The 33th Joint Annual Conference of Biomedical Sciences (JACBS), Taipei, Taiwan. **Title:** Histone demethylase UTX counteracts glucocorticoid deregulation of osteogenesis by modulating histone-dependent and -independent pathways (Oral presentation).
- 2017 The 25th Annual and Anniversary Meeting of the European Orthopaedic Research Society (EORS), Munich, Germany. **Title:** Subchondral mesenchymal stem cells from osteoarthritic knees display high osteogenic differentiation capacity through microRNA-29a regulation of HDAC4 (Oral presentation).
- 2017 The 32th Joint Annual Conference of Biomedical Sciences (JACBS), Taipei, Taiwan. **Title:** Isolation and Characterization of Human Epiphysis Mesenchymal Stem Cells: The microRNA-29a Act as an Osteogenic Regulator (Oral presentation).

- 2016 OARSI World Congress on Osteoarthritis in RAI Amsterdam Convention Center, Amsterdam, Netherlands. **Title:** Differential Characteristics between Cartilage and Bone-marrow Mesenchymal Stem Cells in Osteoarthritic human Knees.

Honor &/or Awards:

- Nonmember 2020 Honorable Mention of Post presentation, TSMRM, Hualien, Taiwan.
- October 2019 Award of Orthoregeneration Foundation ON/EORS, Netherland. \$1000(CHF).
- April 2018 Honorable Mention of oral presentation on Chinese Association for Clinical Biochemistry, The 33th Joint Annual Conference of Biomedical Sciences (JACBS), Taipei, Taiwan.
- April 2017 Honorable Mention of oral presentation on Chinese Association for Clinical Biochemistry, The 32th Joint Annual Conference of Biomedical Sciences (JACBS), Taipei, Taiwan.
- July 2012 Award of Academic Research Thesis in Doctor, National Taiwan University.
- Nov 2010 Funding by National Science Council, Taipei, Taiwan. For participated the 43rd American Society of Nephrology annual meeting in Denver.

Book chapter:

1. Wang FS, **Lian WS**, Kuo CW 2019. Title: Heat Shock Protein 60 in Human Diseases and Disorders. Chapter: Heat shock protein 60 regulation of skeletal tissue integrity. Asea AAA, Kaur P, Springer Nature.
2. **連韋雄**, 郭仲文, 王逢興. 2020. 實驗動物科學(技術篇): 嚙齒類動物-骨關節疾病動物模式。中華實驗動物學會, 行政院農業委員會。

Patents & intellectual property:

1. Wei-Shiung Lian, Chin-Kuei Hsieh, Bo-Wun Huang, Jung-Ge Tseng, Jih-Yang Ko, Feng-Sheng Wang/Wireless portable and adjustable low-frequency vibration platform for stimulation bone cell proliferation/ Utility model patent M563251/Taiwan,2018,2028.
2. Wei-Shiung Lian, Chin-Kuei Hsieh, Bo-Wun Huang, Jung-Ge Tseng, Jih-Yang Ko, Feng-Sheng Wang/ 低頻振波刺激裝置/ LOW FREQUENCY VIBRATING WAVE STIMULATING DEVICE/2020 Applying.
3. 基因轉殖小鼠 [FVB/N-Tg(PGK-miR-29a)Wfs/Nar1]. 2019. 移轉及分讓國家實驗動物中心 -RMRC-DE-1-19007.
4. 基因轉殖小鼠 [FVB/N-Tg(PGK-Cnr1)Wfs/Nar1] 2020. 移轉及分讓國家實驗動物中心 -RMRC-DE-1-20002.