

Curriculum Vitae

Dr. Xizhi Guo, Professor
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1. Education

1997.09, Ph.D. in Shanghai Institute of Plant Physiology & Ecology, Chinese Academy of Sciences, Shanghai, China
1993.09, B.S. in Wuhan University, China

2. Research experience

2007- present: PI, Distinguished Professor, SJTU
2002-2007: Postdoctoral fellow; GDRB, NIH/NHGRI

3. Professional Affiliations:

2000, Member of Association of China Plant Physiology
2004, Member of Association of American Cell Biology
2010, Member of Society for Neuroscience
2005-2016, Member of American Society of Bone and Mineral Research

4. Research interests:

Molecular and cellular mechanisms underlying skeletal development and disorders, adipose metabolism, the potential therapeutic application of bone marrow mesenchymal stem cell.

5. Selected Publications (*correspondent author):

- 1) Pei Liu, Sixia Huang, Shifeng Ling, Fuhua Wang, Wei Zhang, Shuqin Xu, Rujiang Zhou, Lin He, Xuechun Xia, Zhengju Yao, Ying Fan, Niansong Wang, Congxia Hu, Xiaodong Zhao, Haley O. Tucker, Jiqiu Wang*, Xizhi Guo*. Foxp1 controls brown/beige adipocyte differentiation and thermogenesis through regulating β 3-AR desensitization. Nature Communications (in press)
- 2) Shuqin Xu, Pei Liu, Yuanxin Chen, Yi Chen, Wei Zhang, Haixia Zhao, Yiwei Cao, Fuhua Wang, Nana Jiang, Shifeng Lin, Baojie Li, Zhenlin Zhang, Zhanying Wei, Ying Fan, Yunyun Jin, Lin He,

- Rujiang Zhou, Joseph D. Dekker, Haley O. Tucker, Simon E. Fisher, Zhengju Yao, Quansheng Liu*, Xuechun Xia*, **Xizhi Guo*** (2018). Foxp2 regulates anatomical features that may be relevant for vocal behavior and bipedal locomotion. PNAS. Aug 28;115(35):8799-8804.
- 3) Hanjun Li, Pei Liu, Shuqin Xu, Yinghua Li, Joseph D. Dekker, Baojie Li, Zhenlin Zhang, Yang Hong, Gong Yang, Tingting Tang, Yongxin Ren, Haley O. Tucker, Zhengju Yao, Xizhi Guo*. Foxp1 controls cell fate commitment and senescence of mesenchymal stem cells during skeletal aging (2017). Journal of Clinical Investigation. April 3, 127(4):1241-1253.
 - 4) Jian Yu, Jingjing Cao, Hanjun Li, Pei Liu, Xuqin Xu, Rujiang Zhou, Zhengju Yao* and Xizhi Guo*(2016) Bone marrow fibrosis with fibrocytic and immunoregulatory responses induced by β -catenin activation in osteoprogenitors. Bone. Mar; 84:38-46.
 - 5) Jianzhi Zhao, Hanjun Li, Rujiang Zhou, Gang Ma, Joseph D. Dekker, Haley O. Tucker, Zhengju Yao, Xizhi Guo* (2015) Foxp1 Regulates the Proliferation of Hair Follicle Stem Cells in Response to Oxidative Stress during Hair Cycling. Plos One. Jul 14;10(7):e0131674.
 - 6) Jingjing Cao, Lingling Zhang, Yong Wan, Hanjun Li, Rujiang Zhou, Heyuan Ding, Yongzhong Liu, Zhengju Yao, and Xizhi Guo* (2015) Ablation of Wntless in endosteal niches impairs lymphopoiesis rather than HSC maintenance. European Journal of Immunology Sep;45(9):2650-60. doi: 10.1002.
 - 7) Haixia Zhao, Wenrong Zhou, Zhengju Yao, Yong Wan, Jingjing Cao, Lingling Zhang, Jianzhi Zhao, Hanjun Li, Rujiang Zhou, Baojie Li, Gang Wei, Zhenlin Zhang, Catherine A. French, Joseph D. Dekker, Yingzi Yang, Simon E. Fisher, Haley O. Tucker, Xizhi Guo* (2015) Foxp1/2/4 regulate endochondral ossification as a suppresser complex. Developmental Biology 398:242-254.
 - 8) Lingling Zhang; Hanjun Li; Jian Yu; Jingjing Cao; Huihui Chen; Haixia Zhao; Jianzhi Zhao; Yiyun Yao; Lifang Wang; Rujiang Zhou; Zhengju Yao, Xizhi Guo* (2014) Ectodermal Wnt signaling regulates abdominal myogenesis during ventral body wall development. Developmental Biology 387: 64–72
 - 9) Bing Qi, Qian Cong, Ping Li, Gang Ma, Xizhi Guo, James Yeh, Min Xie, Michael D. Schneider, Huijuan Liu Baojie Li (2014) Ablation of Tak1 in osteoclast progenitor leads to defects in skeletal growth and bone remodeling in mice. Scientific Report 4: 7158
 - 10) Xuming Zhu, Yumei Wu, Sixia Huang, Yingwei Chen, Yixin Tao, Yushu Wang, Shigang He, Sanbing Shen, Ji Wu, Xizhi Guo, Baojie Li, Lin He, and Gang Ma* (2014) Overexpression of Wnt5a in mouse epidermis causes no psoriasis phenotype but an impairment of hair follicle anagen development. Experimental Dermatology 23(12): 926-928.
 - 11) Guan Yang, Jian Zhou, Yan Teng, Jing Xie, Jingting Lin, Xizhi Guo, Yuanrong Gao, Miao He, Xiao Yang,*and Songlin Wang* (2014) Mesenchymal TGF- β Signaling Orchestrates Dental Epithelial Stem Cell Homeostasis Through Wnt Signaling. Stem Cells. 32(11): 2939–2948
 - 12) Xuming Zhu, Sixia Huang, Lingling Zhang, Yumei Wu, Yingwei Chen, Yixin Tao, Yushu Wang, Shigang He, Sanbing Shen, Ji Wu, Baojie Li, Xizhi Guo*, Lin He*, Gang Ma* (2014) Constitutive Activation of Ectodermal β -Catenin Induces Ectopic Outgrowths at Various Positions in Mouse Embryo and Affects Abdominal Ventral Body Wall Closure. Plos One 9(3): e92092
 - 13) Shasha Zou, Tingting Chen, Yanan Wang, Ruhui Tian, Lingling Zhang, Pingping Song, Shi Yang, Yong Zhu, Xizhi Guo, Yiran Huang, Zheng Li, Lixin Kan*and Hongliang Hu* (2014) Mesenchymal stem cells overexpressing Ihh promote bone repair. Journal of Orthopaedic Surgery and Research, 9:102

- 14) Wenrong Zhou, Huang Zhu, Jinzhi Zhao, Hanjun Li, Yong Wan, Jingjing Cao, Haixia Zhao, Jian Yu, Rujiang Zhou, Yiyun Yao, Lingling Zhang, Lifang Wang, Lin He, Gang Ma, Zhengju Yao, Xizhi Guo* (2013) Misexpression of Pknox2 in mouse limb bud mesenchyme perturbs zeugopod development and deltoid crest formation. *PLoS One*. 8(5):e64237
- 15) Yong Wan, Cheng Lu, Jingjing Cao, Rujiang Zhou, Yiyun Yao, Jian Yu, Lingling Zhang, Haixia Zhao, Hanjun Li, Jianzhi Zhao, Xuming Zhu, Lin He, Yongzhong Liu, Zhengju Yao, Xiao Yang and Xizhi Guo* (2013) Osteoblastic Wnts differentially regulate bone remodeling and the maintenance of bone marrow mesenchymal stem cells. *Bone*. 55(1):258-67
- 16) Cheng Lu, Yong Wan, Jingjing Cao, Xuming Zhu, Jian Yu, Rujiang Zhou, Yiyun Yao, Lingling Zhang, Haixia Zhao, Hanjun Li, Jianzhi Zhao, Lin He, Gang Ma, Zhengju Yao, and Xizhi Guo* (2013) Wnts-mediated reciprocal regulation between cartilage and bone development during endochondral ossification. *Bone*. 53(2):566-74.
- 17) Huang Zhu, Jianzhi Zhao, Wenrong Zhou, Hanjun Li, Rujiang Zhou, Lingling Zhang, Haixia Zhao, Jingjing Cao, Xuming Zhu, Hongliang Hu, Gang Ma, Lin He, Zhengju Yao, Libo Yao, Xizhi Guo* (2012) Ndr2 regulates vertebral specification in differentiating somites. *Developmental Biology*. 369(2):308-18.
- 18) Xuming Zhu, Huang Zhu, Lingling Zhang, Sixia Huang, Jingjing Cao, Gang Ma, Guoying Feng, Lin He, Yingzi Yang, Xizhi Guo* (2012) Wls-mediated Wnts differentially regulate distal limb patterning and tissue morphogenesis. *Developmental Biology*. 365(2):328-38.
- 19) Sixia Huang, Xuming Zhu, Yanfang Liu, Yixin Tao, Guoyin Feng, Lin He, Xizhi Guo*, Gang Ma (2012) Wls Is Expressed in the Epidermis and Regulates Embryonic Hair Follicle Induction in Mice. *PLoS One*. 7(9):e45904.
- 20) Lin An, Xiwen Zhao, Jian Wu, Jianguo Jia, Yunzeng Zou, Xizhi Guo, Lin He, Hongxin Zhu (2012) Involvement of autophagy in cardiac remodeling in transgenic mice with cardiac specific over-expression of human programmed cell death 5. *PLoS One*. 7(1):e30097
- 21) Jun Yang, Shengying Qin, Chengqing Yi, Gang Ma, Huang Zhu, Wenrong Zhou, Yuyu Xiong, Xuming Zhu, Yujiong Wang, Lin He, Xizhi Guo* (2011). MiR-140 is co-expressed with Wwp2-C transcript and activated by Sox9 to target Sp1 in maintaining the chondrocyte proliferation. *FEBS Letter Oct 3;585(19):2992-7*.
- 22) Gang Ma, Jiang Yu, Yue Xiao, Danny Chan, Bo Gao, Jianxin Hu, Yongxing He, Shengzhen Guo, Jian Zhou, Lingling Zhang, Linghan Gao, Wenjuan Zhang, Yan Kang, Kathryn SE Cheah, Guoyin Feng, Xizhi Guo, Yujiong Wang, Cong-zhao Zhou and Lin He (2011). Indian hedgehog mutations causing brachydactyly type A1 impair Hedgehog signal transduction at multiple levels. *Cell Research*. Sep;21(9):1343-57.
- 23) Lun Yang, Kejian Wang, Jian Chen, Anil G. Jegga, Heng Luo, Leming Shi, Chunling Wan, Xizhi Guo, Shengying Qin, Guang He, Guoyin Feng, Lin He (2011). Exploring off-targets and off-systems for adverse drug reactions via chemical-protein interactome--clozapine-induced agranulocytosis as a case study. *PLoS Comput Biol*. 2011 Mar; 7(3):e1002016.
- 24) Yue Xiao, Lingling Zhang, Kuanjun He, Xiang Gao, Lun Yang, Lin He, Gang Ma, Xizhi Guo* (2011). Characterization of a novel missense mutation on murine Pax3 through ENU mutagenesis. *Journal of Genetics and Genomics*, 38 (2) 333-339.
- 25) Zhengfeng Yang, Chenghai Li, Xiu Wang, Chunyan Zhai, Zhengfang Yi, Lei Wang, Bisheng Liu, Bing Du, Huihui Wu, Xizhi Guo, Mingyao Liu, Dali Li, Jian Luo (2010). Dauricine induces apoptosis, inhibits proliferation and invasion through inhibiting NF-kappaB signaling pathway

- in colon cancer cells. *J Cell Physiol.* Oct;225(1):266-75
- 26) Xizhi Guo, Kingston Kunlun Mak, Makoto Taketo, Yingzi Yang (2009). The Wnt/beta-catenin pathway interacts differentially with PTHrP signaling to control chondrocyte hypertrophy and final maturation. *PLoS One.* 26;4(6):e6067.
 - 27) Chuwen Lin, Xuan Jiang, Zhongquan Dai, Xizhi Guo, Yinghui Li, Tujun Weng, Jun Wang, Guoyin Feng, Xiang Gao, Lin He (2009). Sclerostin Mediates Bone Response to Mechanical Unloading via Antagonizing Wnt/beta-Catenin Signaling. *J Bone Miner Res.* Oct;24(10):1651-61
 - 28) Jian Zhou, Junwei Meng, Shenzhen Guo, Bo Gao, Gang Ma, Xuming Zhu, Jianxin Hu, Yue Xiao, Chuwen Lin, Hanyi Wang, Lushen Ding, Guoyin Feng, Xizhi Guo, Lin He (2007). IHH and FGF8 coregulate elongation of digit primordia. *Biochem Biophys Res Commun.* 363(3):513-8.
 - 29) Xianzhong Feng, Zhao Zhong, Zaoxia Tian, Yonghai Luo, Zhigang Cai Z, Jun Yang, Zeng Wang, Lin Weng, Jianghua Chen, Liying Zheng, Xizhi Guo, Jianghong Luo, Sato S, Tabata S, Wei Ma, Cao X, Xiaohe Hu, Congrong Sun, Da Luo (2006). Control of petal shape and floral zygomorphy in *Lotus japonicus*. *Proc Natl Acad Sci U S A.* 103(13): 4970-5.
 - 30) Timothy F. Day**, Xizhi Guo**, Lisa Garrett-Beal and Yingzi Yang. (2005) Wnt/ β -Catenin Signaling in Mesenchymal Progenitors Controls Osteoblast and Chondrocyte Differentiation during Vertebrate Skeletogenesis. *Developmental Cell* 8 (5): 739-750 (** authors contribute equally to the paper)
 - 31) Xizhi Guo, Timothy F. Day*, Xueyuan Jiang, Lisa Garrett-Beal, Lilia Topol and Yingzi Yang. (2004) Wnt/ β -catenin signaling is sufficient and necessary for synovial joint formation. *Gene & Development* 18:2404-2417
 - 32) Xizhi Guo, Zhong Zhao, Jianghua Chen, Xiaohe Hu, Da Luo. (2005). A putative CENTRORADIALIS/TERMINAL FLOWER 1-like gene, *Ljcen1*, plays a role in phase transition in *Lotus japonicus*. *Journal of Plant Physiology.* 163(4): 436-44

6. Selected Foundations:

- (1) Chief Scientist : The role of several signaling pathways in skeletal development and disorders, 973 project which grant supported by **Ministry of Science and Technology of China** (2007CB947300, 2007-2011), RMB 24,000,000
- (2) Principal Investigator: The role of miRNA in osteoarthritis, Pujiang program which grant supported by **Science and Technology Commission of Shanghai Municipality** (08PJ1407200, 2008-2010), RMB 180,000
- (3) Principal Investigator: Study of the function of *Foxp1/2/4* protein in bone development and pathogenesis, which grant supported by **National Natural Science Foundation of China** (31171396, 2012-2014), RMB 630,000
- (4) Principal Investigator: The role *Ndr1/2/4* genes in vertebral development and diseases, which grant supported by **National Natural Science Foundation of China** (31271553, 2013-2016), RMB 800,000

- (5) Principal Investigator (课题负责人): The molecular and cellular mechanisms underlying the vertebral development and dystrophy. 973 project which grant supported by Ministry of Science and Technology of China (2014CB942902, 2014-2018), RMB 2,1500,000
- (6) Principal Investigator: The influence of Foxp1 protein modification on MSC senescence, which grant supported by **National Natural Science Foundation of China** (91749103, 2018-2021) RMB 600, 000

7. Awards

“Pujiang Talent” of Shanghai (2008)

Young Investigator Award in American Society of Bone and Mineral Research (2005)

Fellows Award for Research Excellence (NIH 2005)

Member of American Society of Bone and Mineral Research (2005-2015)

Member of American Society of Cell Biology (2004)

8. Meeting and Presentations:

- 1) 2018, 6th Tripartate Conference on tooth and bone development and regeneration, Hongkong, China, oral presentation, “Foxp2 regulates anatomical features that may be relevant to vocal and bipedal locomotion”
- 2) 2018, The Ninth Conference on International Osteoporosis and Mineral Research, Suzhou, China, oral presentation, “Foxp2 regulates anatomical features that may be relevant to vocal and bipedal locomotion”
- 3) 2018, The Fourth Annual Meeting on Developmental Biology, Qunming, China, oral presentation, “Foxp2 regulates anatomical features that may be relevant to vocal and bipedal locomotion”
- 4) 2018, The Annual Meeting of Cell Biology Society, Nanjing, China, oral presentation, “Foxp1 controls BAT differentiation and energy expenditure by regulating beta3-adrenergic receptor expression”
- 5) 2016, Cold Spring Harbor Asia, Bone and Cartilage Development, Suzhou, China, oral presentation
- 6) 2016, Annual meeting of American Society for Bone and Mineral Research, Atlanta, GA, USA
- 7) 2015, Annual meeting of American Society for Bone and Mineral Research, Seattle, WS, USA
- 8) 2014, Annual meeting of American Society for Bone and Mineral Research, Houston, TX, poster “Foxp1 regulates the aging of bone marrow mesenchymal stem cells”
- 9) 2014, Cold Spring Harbor Asia, Bone and Cartilage Development, Suzhou, China, oral presentation,
- 10) “Foxp1/2/4 complex regulates endochondral ossification” 2014, 7th International Conference on Osteoporosis and Bone Research, Xiamen, China, oral presentation, “Foxp genes in bone development and disorders”