

Bone Growth and Repair – Publications

1. Shi CJ, Wen XS, Gao HF, Liu ZH, Xu XK, Li LF, Shen T, Xian CJ (2016). Steamed root of *Rehmannia glutinosa* Libosch (Plantaginaceae) alleviates methotrexate-induced intestinal mucositis in rats. *J Ethnopharmacol* 183, 143–150
2. Su YW, Chung R, Ruan C-S, Chim SM, Kuek V, Dwivedi PP, Hassanshahi M, Chen KM, Xie Y, Chen L, Foster BK, Rosen V, Zhou XF, Xu J, and Xian CJ (2016). Neurotrophin-3 induces BMP-2 and VEGF activities and promotes the bony repair of injured growth plate cartilage and bone in rats. *J Bone Miner Res* 2016 Jan 13. doi: 10.1002/jbmr.2786. [Epub ahead of print].
3. Fan J, Yuan F, Zhu X, Li S-Z, Mei J, Yu G-R, Tang Q, Xian CJ (2016). Clinical pathological significance of the overexpression of glucose transporter protein-1 (Glut-1) in human osteosarcoma. *Oncology Letters* (accepted 8/11/2015).
4. Cai Z, Li Z, Wang L, Hsu HY, Xiao Z, Xian CJ (2016). A three-dimensional finite element modelling of human chest injury following front or side impact loading. *J Vibroeng* 18, 535-550.
5. Cui H, Li T, Wang L, Su Y, Xian CJ (2016). Dioscorea bulbifera polysaccharide and cyclophosphamide combination enhances anti-cervical cancer effect and attenuates immunosuppression and oxidative stress in mice. *Sci Rep* 6, 19185; doi: 10.1038/srep19185.
6. Cui H, Yang M, Wang L, Xian CJ (2015). Identification of a new marine bacterial strain SD8 and optimization of its culture conditions for producing alkaline protease. *PloS One* 10(12):e0146067
7. Cai Z, Li Z, Dong J, Mao Z, Wang L, Xian CJ (2015). A study on protective performance of bullet-proof helmet under impact loading. *J Vibroeng* (accepted 14 Dec 2015).
8. Zhong Y, Wang L (equal first author), Dong J, Zhang Y, Luo P, Qi J, Liu X, and Xian CJ (2015). Three-dimensional reconstruction of peripheral nerve internal fascicular groups. *Sci Rep* 5, 17168; doi: 10.1038/srep17168.
9. Zhou J, Chen KM, Zhi DJ, Xie QJ, Xian CJ, and Li HY (2015). Effects of pyrite bioleaching solution of *Acidithiobacillus ferrooxidans* on viability, differentiation and mineralization potentials of rat osteoblasts. *Arch Pharm Res* DOI 10.1007/s12272-015-0650-3.
10. King TJ, Shandala T, Lee AMC, Foster BK, Chen K-M, Howe PR, Xian CJ (2015). Potential effects of phytoestrogen genistein in modulating acute methotrexate chemotherapy-induced osteoclastogenesis and bone damage in rats. *Int J Mol Sci* 16, 18293-18311; doi:10.3390/ijms160818293.
11. Zhang L, Ge S, Liu H, Wang Q, Wang L, and Xian CJ (2015). Contact damage failure analyses of fretting wear behavior of the metal stem – bone cement interface. *J Mech Behav Biomed Mater* 51, 132–146
12. Gao H-F, Wen X-S, Xian CJ (2015). Hydroxymethyl furfural in Chinese herbal medicines: Its formation, presence, metabolism, bioactivities and implications. *Afr J Tradit Complement Altern Med* 12, 43-54
13. Fan CM, Georgiou KR, McKinnon R, Keefe DM, Howe PR, and Xian CJ (2015). Combination chemotherapy with cyclophosphamide, epirubicin and 5-fluorouracil causes trabecular bone loss, bone marrow cell depletion and marrow adiposity in female rats. *J Bone Miner Metab* 2015 Jun 9 (ePub ahead of print, PMID: 26056019)
14. Zhou FH, Yu Y, Zhou X-F, and Xian CJ (2015). Methotrexate chemotherapy triggers touch-evoked pain and increased CGRP-positive sensory fibres in the tibial periosteum of young rats. *Bone* 73, 24–31.
15. Yan J-L, Zhou J, Ma H-P, Ma X-N, Gao Y-H, Shi W-G, Fang Q-Q, Ren Q, Xian CJ, and Chen K-M (2015). Pulsed electromagnetic fields promote osteoblast mineralization and maturation needing the existence of primary cilia. *Mol Cell Endocrinol* 404, 132–140.

16. Wang LP, Dong JH, and Xian CJ (2015). Strain amplification analysis of an osteocyte under static and cyclic loading: a finite element study. *BioMed Res Int* 2015:376474. doi: 10.1155/2015/376474.
17. Georgiou KR, Raghu Nadhanan R, Fan CM, Xian CJ (2015). Methotrexate-induced bone marrow adiposity is mitigated by folic acid supplementation through the regulation of Wnt/ β -catenin signalling. *J Cell Physiol* 230, 648-656.
18. Chim SM, Chow ST, Kuek V, Lim BS, Tickner J, Chung R, Su YW, Zhang G, Xian CJ, Rosen V, Xu J (2015). EGFL7 is expressed in bone microenvironment and promotes angiogenesis via ERK, STAT3 and integrin signaling cascades. *J Cell Physiol* 230, 82-94.
19. Lee AMC, Shandala T, Nguyen L, Muhlhausler BS, Chen K-M, Howe PR, and Xian CJ (2014). Effects of resveratrol supplementation on bone growth in young rats and microarchitecture and remodelling in ageing rats. *Nutrients* 6, 5871 - 5887
20. Zhou J, Ma X-N, Ge B-F, Xian CJ and Chen K-M (2014). Sinusoidal electromagnetic fields promoting bone formation and inhibiting bone resorption in rat femoral tissues in vitro. *Electromagn Biol Med* 21:1-9
21. Ma H-P, Ma X-N, Ge B-F, Zhen P, Zhou J, Gao Y-H, Xian CJ, and Chen K-M (2014). Icaritin attenuates hypoxia-induced oxidative stress and apoptosis in osteoblasts and preserves their osteogenic differentiation potential in vitro. *Cell Prolif* 47:527-539
22. Xiang RD, Lee AM, Eindorf T, Gugger M, Fitzsimmons CJ, Kruk ZA, Pitchford WS, Thomsen DA, Anderson GI, Burns BI, Rutley DL, Xian CJ, Hiendleder S (2014). Widespread differential maternal and paternal genome effects on fetal bone phenotype at midgestation. *J Bone Miner Res* 29:2392-404.
23. Zhai Y-K, Pan Y-L, Bi Y-B, Li C-R, Wu X-L, Fan W-T, Lu T-L, Mei Q-B, Xian CJ (2014). The importance of the prenyl group in the activities of osthole in enhancing bone formation and inhibiting bone resorption in vitro. *Int J Endocrinol* Volume 2014 (2014), Article ID 921954, 16 pages.
24. Zhai Y-K, Guo X-Y, Ge B-F, Zhen P, Ma X-N, Zhou J, Ma H-P, Xian CJ, and Chen K-M (2014). Icaritin stimulates the osteogenic differentiation of rat bone marrow stromal cells via activating the PI3K-Akt-eNOS-NO-cGMP-PKG signal pathway. *Bone* 66, 189-198
25. Chung R and Xian CJ (2014). Recent research on the growth plate: Mechanisms for growth plate injury repair and potential cell-based therapies for regeneration. *J Mol Endocrinol* 53 (1): T45-T61. (Invited thematic review)
26. Xian CJ (2014). Recent research on the growth plate: Regulation, bone growth defects, and potential treatments. *J Mol Endocrinol* 53 (1): E1-E2. (editorial)
27. Xian CJ (2014). Guest Editor for a special thematic issue: *Recent research on the growth plate: Regulation, bone growth defects, and potential treatments*, published in: *J Mol Endocrinol* vol 53 (1).
28. Lee AMC, Morrison JL, Botting KJ, Shandala T, Xian CJ (2014). Effects of maternal hypoxia during pregnancy on bone development in offspring: a guinea pig model. *Int J Endocrinol* Volume 2014, Article ID 916918, 12 pages, 2014. doi:10.1155/2014/916918.
29. Chung R, Foster BK, and Xian CJ (2014). The potential role of VEGF-induced vascularisation in the bony repair of injured growth plate. *J Endocrinol* 221:63-75
30. Zhou J, Wang J-Q, Ge B-F, Ma X-N, Ma H-P, Xian CJ and Chen K-M (2014). Different electromagnetic field waveforms have different effects on proliferation, differentiation and mineralization of osteoblasts in vitro. *Bioelectromagnetics* 35 (1), 30-38
31. Raghu Nadhanan R, Fan CM, Su YW, Howe PR, Xian CJ (2014). Fish oil in comparison to folic acid for protection against adverse effects of methotrexate chemotherapy on bone. *J Orthop Res*. 32:587-96
32. Fan CM, Garcia M, Scherer MA, Tran C and Xian CJ (2014). Potential roles of metallothionein I and II in protecting bone growth following acute methotrexate chemotherapy. *J Chemother* 26(1):37-48

33. Ma X-N, Zhou J, Ge B-F, Zhen P, Ma H-P, Shi W-G, Cheng K, Xian CJ, and Chen K-M (2013). Icariin induces Osteoblast Differentiation and Mineralization without Dexamethasone in vitro. *Planta Med* 79, 1501-8
34. Shan P-F, Xian CJ, Li M, Xiang G-D, Yuan L-Q (2013). Osteoporosis (editorial). *Int J Endocrinol* 2013. doi:10.1155/2013/952858
35. Raghu Nadhanan R, Skinner J, Chung R, Su Y-W, Howe PR, Xian CJ (2013). Supplementation with fish oil and genistein, individually or in combination, protects bone against the adverse effects of methotrexate chemotherapy in rats. *PLoS One* 8(8): e71592. doi:10.1371/journal.pone.0071592
36. Shan P-F, Xian CJ, Li M, Xiang G-D, Yuan L-Q (edited) (2013). *Osteoporosis*, a special issue edited by Shan P-F, Xian CJ, Li M, Xiang G-D, Yuan L-Q (2013), published in Int J Endocrinol (Hindawi Publishing Corp, ISSN: 1687-8337)
37. Georgiou KR and Xian CJ (2013). Role of Wnt/ β -catenin signalling in bone marrow adiposity after cancer chemotherapy. In Lin YF and Cui XX (eds) *Adipogenesis: Signaling Pathways, Molecular Regulation and Impact on Human Disease* (Nova Science Publishers), New York, Chapter 4, pages 109-125.
38. Dwivedi PP, Grose RH, Filmus J, Hii CST, Xian CJ, Anderson PJ, Powell BC (2013). Regulation of bone morphogenetic protein signalling and cranial osteogenesis by Gpc1 and Gpc3. *Bone* 55, 367-376.
39. Ming L-G, Lv X, Ma X-N, Ge B-F, Zhen P, Song P, Zhou J, Ma H-P, Xian CJ and Chen K-M (2013). The prenyl group contributes to activities of phytoestrogen 8-prenynaringenin in enhancing bone formation and inhibiting bone resorption in vitro. *Endocrinology* 154:1202–1214
40. Chung R and Xian CJ (2013). Preclinical studies on growth plate cartilage regeneration using chondrocytes or mesenchymal stem cells. In Mahato RI & Danquah MK (ed) *Emerging Trends in Cell and Gene Therapy* Springer, New York. Chapter 25, pages 625-636.
41. Chung R, Foster BK, and Xian CJ (2013). Inhibition of protein kinase-D promotes cartilage repair at injured growth plate in rats. *Injury* 44, 914–922
42. Chung R, Wong D, Macsai C, Piergentili A, Del Bello F, Quaglia W, and Xian CJ (2013). Roles of Wnt/beta-catenin signalling pathway in the bony repair of injured growth plate cartilage in young rats. *Bone* 52:651-658
43. Ming LG, Chen KM, and Xian CJ (2013). Functions and action mechanisms of flavonoids genistein and icariin in regulating bone remodelling. *J Cell Physiol* 228:513-21.
44. Georgiou KR, Hui SK, and Xian CJ (2012). Regulatory pathways associated with bone loss and bone marrow adiposity caused by aging, chemotherapy, glucocorticoid therapy and radiotherapy. *Am J Stem Cell* 1(3):205-224
45. Jin M, Yu Y, Qi H, Xie Y, Su N, Wang X, Tan Q, Luo F, Zhu Y, Wang Q, Du X, Xian CJ, Liu P, Huang H, Shen Y, Deng CX, Chen D, Chen L (2012). A novel FGFR3-binding peptide inhibits FGFR3 signaling and reverses the lethal phenotype of mice mimicking human thanatophoric dysplasia. *Hum Mol Genet* 21:5443-5455.
46. Fan CM, Foster BK, Hui SK, Xian CJ (2012). Prevention of bone growth defects, increased bone resorption and marrow adiposity with folic Acid in rats receiving long-term methotrexate. *PLoS One*. 2012;7(10):e46915.
47. Xie YL, Su N, Jin M, Li C, Du XL, Luo FT, Chen B, Shen Y, Huang HY, Xian CJ, Deng CX and Chen L (2012). Intermittent PTH (1-34) injection rescues the retarded skeletal development and postnatal lethality of mice mimicking human achondroplasia and thanatophoric dysplasia. *Hum Mol Genet* 21, 3941-55.
48. Shen ZY, Bi JX, Shi BY, Nguyen D, Xian CJ, Zhang H, and Dai S (2012). Exploring thermal reversible hydrogels for stem cell expansion in three-dimension. *Soft Matter* 8, 3250–3257.
49. Hui SK, Sharkey L, Kidder LS, Zhang Y, Fairchild G, Coghill K, Xian CJ, and Yee D (2012). The influence of therapeutic radiation on the patterns of bone marrow in ovary-intact and ovariectomized mice. *PLoS One* 7(8): e42668. doi:10.1371/journal.pone.0042668.

50. Du X-L, Xie Y-L, Xian CJ, Chen L (2012). Role of FGFs/FGFRs in skeletal development and bone regeneration. *J Cell Physiol* 227:3731-3743.
51. Raghu Nadhanan R, Scherer MA, Su Y-W, Abimosleh SM, Howarth GS and Xian CJ (2012). Dietary emu oil supplementation suppresses 5-fluorouracil chemotherapy-induced inflammation, osteoclast formation and bone loss. *Am J Physiol Endocrinol Metab* 302:E1440-9.
52. Georgiou KR, King TJ, Scherer MA, Zhou H, Foster BK and Xian CJ (2012). Attenuated Wnt-b-catenin signalling mediates methotrexate chemotherapy-induced bone loss and marrow adiposity in rats. *Bone* 50(6):1223-1233.
53. King TJ, Georgiou KR, Cool JC, Scherer MA, Ang ESM, Foster BK, Xu J, Xian CJ (2012). Methotrexate chemotherapy promotes osteoclast formation in the long bone of rats via increased pro-inflammatory cytokines and enhanced NF- κ B activation. *Am J Pathol* 181, 121–129.
54. Macsai CE, Georgiou KR, Zannettino AC, Foster BK, Xian CJ (2012). Microarray expression analysis of genes and pathways involved in growth plate cartilage injury responses and bony repair. *Bone* 50, 1081–1091.
55. Fong L, Muhlhausler BS, Gibson R, Xian CJ (2012). Perinatal maternal dietary supplementation of omega-3 fatty acids transiently affects bone marrow microenvironment, osteoblast and osteoclast formation and bone mass in male offspring. *Endocrinology* 153(5):2455-65.
56. Georgiou KR, Scherer MA, King TJ, Foster BK and Xian CJ (2012). Deregulation of the CXCL12/CXCR4 axis in methotrexate chemotherapy-induced damage and recovery of the bone marrow microenvironment. *Int J Exp Pathol* 93:104-14.
57. Georgiou KR, MA Scherer, CM Fan, JC Cool, TJ King, BK Foster and CJ Xian (2012). Methotrexate chemotherapy reduces osteogenesis but increases adipogenic potential in the bone marrow. *J Cell Physiol* 227(3):909-18
58. Shandala T, YS Ng, B Hopwood, YC Yip, BK Foster, and CJ Xian (2012). The role of osteocyte apoptosis in cancer chemotherapy-induced bone loss. *J Cell Physiol* 227:2889-97
59. Xian CJ and T Shandala (2012). Roles of EGF family of growth factors in growth. In: VR Preedy (ed) *The Handbook of Growth and Growth Monitoring in Health and Disease*. Chap 170, pages 2857-2870. Springer. ISBN-13: 978-1441917942
60. Fan CM and Xian CJ (2012). Potential protection of bone growth using folinic acid during pediatric cancer chemotherapy. In *Horizons in Cancer Research* (Volume 48) (ed: Hiroto S. Watanabe), Nova Science Publishers, Inc, Hauppauge, NY 11788. ISBN 978-1-62100-524-7 (Invited book chapter). Chapter 6, pages 111-123.
61. Georgiou KR and Xian CJ (2012). Damage and recovery of the bone and bone marrow following methotrexate chemotherapy. In *Methotrexate: Update on Pharmacology, Clinical Applications and Adverse Effects* (eds: Valentina S. Castillo and Laura A. Moyano), ISBN: 978-1-62100-596-4 (Invited, Nova Science Publishers, Inc, Hauppauge, NY 11788). Chapter 9, pages 199-207.
62. Xian CJ (2011). *Bone Growth, Regulation, Injury and Repair* (A special issue in *Front Biosci* 2011) (Managing Editor: CJ Xian).
63. Tran CD, JC Cool, CJ Xian (2011). Dietary zinc and metallothionein on small intestinal disaccharidases activity in mice. *World J Gastroenterol* 17(3): 354-360.
64. Ma HP, Ming LG, Ge BF, Zhai YK, Song P, Xian CJ, Chen KM (2011). Icariin is more potent than genistein in promoting osteoblast differentiation and mineralization in vitro. *J Cell Biochem*. 112:916-23
65. Zhou J, LG Ming, BF Ge, JQ Wang, RQ Zhu, Z Wei, HP Ma, CJ Xian, and KM Chen (2011). Effects of 50Hz sinusoidal electromagnetic fields of different intensities on proliferation, differentiation and mineralization potentials of rat osteoblasts. *Bone* 49:753-761
66. Muhlhausler BS, Miljkovic D, Fong L, Xian CJ, Duthoit E, Gibson RA (2011). Maternal omega-3 supplementation increases fat mass in male and female rat offspring. *Front. Gene.* 2:48. doi: 10.3389/fgene.2011.00048

67. Macsai CE, B Hopwood, R Chung, BK Foster, and CJ Xian (2011). Structural and molecular analyses of bone bridge formation within the growth plate injury site and cartilage degeneration at the adjacent uninjured area. *Bone* 49:904-912.
 68. Chung R, Foster BK, Xian CJ (2011). Injury responses and repair mechanisms at injured growth plate. *Front Biosci* (Schol Ed) 2011 Jan 1;3:117-125 (invited review)
 69. Fan CM, Georgiou KR, King TJ, Xian CJ (2011). Methotrexate toxicity in growing long bones of young rats: a model for studying cancer chemotherapy-induced bone growth defects in children. *J Biomed Biotechnol* 2011:903097 (Invited review)
 70. Fan CM, Foster BK, Wallace WH, and Xian CJ (2011). Pathobiology and prevention of cancer chemotherapy-induced bone growth arrest, bone loss, and osteonecrosis. *Curr Mol Med* 11:140-51
 71. Chung R, Foster BK and Xian CJ (2011). Preclinical studies on mesenchymal stem cell-based therapy for growth plate cartilage injury repair. *Stem Cells Int* 2011, doi:10.4061/2011/570125 (Invited review).
-