Qiping Zheng, MD, PhD

Research Associate Professor
Molecular Oncology Laboratory
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Education and Training:
1999-2004 Postdoctoral training, Baylor College of Medicine, USA
1995-1998 Ph.D. Fudan University, Shanghai, China,
1987-1990 M.S., School of Medicine, Soochow University, Suzhou, China
1982-1987 B.M. in Clinical Medicine, Anhui Medical University, Hefei, China

Working Experience and Accomplishments:
Dr. Zheng, received his MD and PhD degrees in China. He joined Brendan Lee's Lab at Baylor College of Medicine as a Postdoctoral Fellow in January 1999 and later as a Research Assistant Professor in 2004. In 2007, He became a tenure-track Assistant Professor and started his own lab in the Department of Anatomy and Cell Biology, Rush University Medical Center. Dr. Zheng had a continuous funding history while he stayed in the United States. These funding supports included multiple research grants from Arthritis and Cancer Foundations and from NIH (R03 and R21). In 2012, Dr. Zheng was recruited as a Full Professor at Jiangsu University, China.

Research Interests:
Dr. Zheng has a long-standing history working on mouse type X collagen gene (Col10a1) regulation for decades. The type X collagen gene is a specific molecular marker of hypertrophic chondrocytes during endochondral ossification. His lab has successfully identified the tissue-specific Col10a1 cis-enhancer and its multiple candidate binding transcription factors (TF) using biochemical, proteomics, bioinformatics, and in vivo transgenic approaches. These TFs include Runx2, Dlx5, and Tbx5 etc.
Runx2 is a well-known TF essential for osteoblast differentiation and chondrocyte hypertrophy during skeletal development. Interestingly, Dlx5 and Tbx5, up- and down regulates Col10a1 expression respectively, and are potential positive or negative Col10a1 regulators. The research hypothesis here is that candidate regulators upregulating Col10a1 expression are expected to promote chondrocyte hypertrophy and thus leading to bone growth, while regulators downregulating Col10a1 expression are inhibitors for chondrocyte hypertrophy and therefore, potential therapeutic targets for skeletal over growth under pathophysiological conditions, such as osteoarthritis. These candidate Col10a1 regulators are currently under investigation.
In recent years, Dr. Zheng has expanded his research to cancer biology, including studies on osteosarcoma and other cancers. For instance, they have been working on URI, a RNA polymerase II Subunit 5-Interacting protein, which is known to function as an oncoprotein, possibly through the mTOR pathway, and regulates tumor cell motility, invasion, and metastasis.

Publications (selected from >60 papers):

1. Wang Q, Li N, Chen F, Hei R, Gu J, Lu Y, Sun L , Zheng, Q.. (2020). TAp63γ influences mouse cartilage development. Aging (Albany NY). ;12(9):8669-8679.
2. Zhang F, Hu X, Gu Y, Bian H, Xu Z, Wang Q, Chen J, Lu Y, Sun L, Zheng Q, Gu J. (2018). URI knockdown induces autophagic flux in gastric cancer cells. Am J Cancer Res. 2018 Oct 1;8(10):2140-2149 eCollection 2018.
3. Li N, Wang Q, Zhu T, Qiao L, Zhang F, Mi R, Wang B, Chen L, Gu J, Lu Y, and Zheng, Q. (2016). In vitro functional characterization of prostaglandin endoperoxide synthase 2 during chondrocyte hypertrophic differentiation. Oncotarget. 2016 Jun 14;7(24):36280-36292.
4. Gu J, Lu Y, Li F, Qiao L, Wang Q, Li N, Borgia GA, Deng Y, Lei G, and Zheng Q. (2014). Identification and characterization of the novel Col10a1 regulatory mechanism during chondrocyte hypertrophic differentiation. Cell Death Dis. 2014 Oct 16;5:e1469.
5. Ding, M., Lu, Y., Abbassi, S., Li, F., Li X, Song, Y., Geoffroy, V., Im, HJ., and Zheng, Q., (2012). Targeting Runx2 expression in hypertrophic chondrocytes impairs endochondral ossification during early skeletal development. J Cell Physiol. 227(10):3446-3456. doi: 10.1002/jcp.24045.
6. Li, F., Lu, Y., Ding, M., Napierala, D., Abbassi, S., Chen, Y., Duan, X., Wang, S., Lee, B., and Zheng, Q. (2011). Runx2 contributes to murine Col10a1 gene regulation through direct interaction with its cis-enhancer. J Bone Miner Res. 26(12):2899-2910.
7. Zheng, Q., Keller, B., Zhou, G., Napierala, D., Chen, Y., Zabel, B., Parker, A., and Lee, B (2009). Localization of the cis-enhancer element for mouse type X collagen gene expression in hypertrophic chondrocytes in vivo. J Bone Miner Res. 24(6):1022-1032
8. Zhou, G., Zheng, Q., Engin, F., Munimez, E., Chen, Y., Sebald, E., Krakow, D., and Lee, B. (2006). Dominance of SOX9

function over RUNX2 during skeletogenesis. Proc Natl Acad Sci USA. 103(50):19004-19009.
9. Zheng, Q., Sebald, E., Zhou, G., Chen, Y., Wilcox, W., Lee, B., and Krakow, D. (2005). Dysregulation of chondrogenesis in human cleidocranial dysplasia. Am J Hum Genet 77(2):305-312.
10. Zheng, Q., Zhou, G., Morello, R., Chen, Y., Garcia-Rojas, X., and Lee, B. (2003). Type X collagen gene regulation by RUNX2 contributes directly to its hypertrophic chondrocyte-specific expression in vivo. J Cell Biol. 162 (5): 833-842.