

Wu Qiang (吳強)



Position: Associate Professor

Faculty: The State Key Laboratory of Quality Research in Chinese Medicine, Macau University of Science and Technology

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Research areas:

Stem Cell Biology, Epigenetics, Cancer Biology, Gene regulation

Academic Qualifications

1986-1990 B. Agri. Department of Horticulture, Huazhong Agricultural University

1992-1995 M.Sc. Department of Genetics, Wuhan University

1998-2003 Ph.D Department of Biological Sciences, National University of Singapore

Employment History

2017-present Associate professor, Macau University of Science and Technology

2009-2016 Assistant professor, Department of Biochemistry, National University of Singapore

2006-2008 Research associate, The Gurdon Institute, University of Cambridge
(Advisor: Prof Magdalena Zernicka-Goetz)

2003-2006 Postdoctoral fellow, Genome Institute of Singapore
(Advisor: Prof Ng Huck Hui)

2002-2003 Research assistant, National University of Singapore
(Supervisor: Dr. Philippa Melamed)

1996-1998 Administrator, Wuhan Science and Technology Committee, China

1995-1996 Assistant Lecturer, Tongji Medical University, Wuhan, China

1990-1992 Administrator, Qingling Horticultural Farm, Wuhan, China

Editorial Services

Academic editor of *PLoS ONE* (July 2010-present)

Guest editor of *Stem Cells International* (2015)

Lead guest editor of *Stem Cells International* (2016-2017, 2020)

Academic Editor of *Frontiers in Cell and Developmental Biology* (from 2021)

Academic editor of *Stem Cell Review and Reports* (from 2021)

Membership in Professional Societies

Member of the International Society for Stem Cell Research

Member of the Stem Cell Society Singapore

Vice president of Macau Society for Stem Cell Research

Reviewing Services

Referee for *Nucleic Acids Research*, *Nature Communications*, *Oncotarget*, *Stem Cells*, *Stem Cell Research*, *Protein & Cell*, *Scientific Reports*, *PLoS ONE*, *Stem Cells & Development*, *Stem Cell Reviews and Reports*, *Experimental Cell Research*, *International Journal of Biochemistry & Cell Biology*, *Journal of Genetics and Genomics*, *BMC Medical Genetics*, *Phytomedicine*, *Frontiers in Cell and Developmental Biology*.

Grant reviewer for Medical Research Council UK grants, China National Natural Science Foundation, Singapore Biomedical Research Council Grants, The Chinese University of Hong Kong, National University Health System (Seed grants, Bench to Bedside grants, Aspiration grants), National University of Singapore Academic Research Grants.

Teaching experience:

Epigenetics and Chromatin Biology, Stem Cell Biology, Experimental Biochemistry, Laboratory Techniques in Life Sciences, Techniques in Biomedical Research, Stem Cells and Regenerative Medicine, Biochemistry and Molecular Biology, Techniques in Chinese Medicine Research, Current Biotechnology, Life Sciences, Pharmacology and Toxicology, Molecular Pharmacology.

Publications (Citation: over 4,100 times)

1. Yu S, Li J, Ji G, Ng ZL, Siew J, Lo WN, Ye Y, Chew Y, Long YC, Zhang W, Ernesto Guccione E, Loh YH, Jiang ZH, Yang H and **Wu Q#**. Npac Is a Co-factor of Histone H3K36me3 and Regulates Transcriptional Elongation in Mouse ES Cells. **Genomics**,

Proteomics and Bioinformatics 2021 Mar 3;S1672-0229(21)00053-X. doi: 10.1016/j.gpb.2020.08.004. Online ahead of print.

2. Ng ZL, Siew J, Li J, Ji G, Yu S, Chew Y, Png CW, Zhang Y, Wen S, Yang H, Zhou Y, Long YC, Jiang ZH, **Wu Q**[#]. PATZ1 Cooccupies Genomic Sites with p53 and Inhibits Liver Cancer Cell Proliferation via Regulating p27. **Frontiers in Cell and Developmental Biology** Feb 1;9:586150. doi: 10.3389/fcell.2021.586150. eCollection 2021.

3. He MY, Xu SB, Qu ZH, Guo YM, Liu XC, Cong XX, Wang JF, Low BC, Li L, Wu Q, Lin P, Yan SG, Bao Z, Zhou YT, Zheng LL. Hsp90 β interacts with MDM2 to suppress p53-dependent senescence during skeletal muscle regeneration. **Aging Cell** 2019 Oct;18(5):e13003.

4. Wong YQ, Xu H, **Wu Q**, Liu X, Lufei C, Xu XQ, Fu XY. STAT3-Inducible Mouse ESCs: A Model to Study the Role of STAT3 in ESC Maintenance and Lineage Differentiation. **Stem Cells International** 2018:8632950.

5. Chen L, Ye Y, Dai H, Zhang H, Zhang X, Wu Q, Zhu Z, Spalinskas R, Ren W, Zhang W. User-Friendly Genetic Conditional Knockout Strategies by CRISPR/Cas9. **Stem Cells International** 2018:9576959. 3.989

6. Yu S, Ma H, Ow JR, Goh Z, Chiang CM, Yang H[#], Loh YH[#] and **Wu Q**[#]. Zfp553 is essential for maintenance and acquisition of pluripotency. **Stem Cells and Development** 2016 25(1):55-67.

7. Ma H, Ow JR, Tan BC, Goh Z, Feng B, Loh YH, Fedele M[#], Li H[#] and **Wu Q**[#]. The dosage of Patz1 modulates reprogramming process. **Scientific Reports** 2014 Dec 17;4:7519.

8. Yang W, Lee YH, Jones AE, Woolnough JL, Zhou D, Dai Q, **Wu Q**, Giles KE, Townes TM and Wang H. The histone H2A deubiquitinase Usp16 regulates embryonic stem cell gene expression and lineage commitment. **Nature Communications** 2014 May 2;5:3818.

9. Ow JR, Ma H, Jean A, Lee YH, Chong YM, Soong R, Fu XY, Yang H[#] and **Wu Q**[#]. Patz1 regulates embryonic stem cell identity. **Stem Cells and Development** 2014 23 (10):1062-1073.

10. Ma H, Ng HM, Teh X, Li H, Lee YH, Chong YM, Loh YH, Collins JJ, Feng B, Yang H[#] and **Wu Q**[#]. Zfp322a regulates mouse ES cell pluripotency and enhances reprogramming efficiency. **PLoS Genetics** 2014 10(2): e1004038.

11. Do DV, Ueda J, Messerschmidt DM, Lorthongpanich C, Zhou Y, Feng B, Guo G, Lin PJ, Hossain MZ, Zhang W, Moh A, **Wu Q**, Robson P, Ng HH, Poellinger L, Knowles BB, Solter D and Fu XY. A genetic and developmental pathway from STAT3 to the OCT4-NANOG circuit is essential for maintenance of ICM lineages in vivo. **Genes & Development** 2013 27:1378-1390.

12. Ma H, Ow JR, Chen X and **Wu Q**[#]. With or without them: essential roles of cofactors in ES Cells. **Journal of Stem Cell Research & Therapy** 2012 S10:006.

13. Lee YH, Ma H, Tan TZ, Ng SS, Soong R, Mori S, Fu XY, Zernicka-Goetz M and **Wu Q**[#]. Protein arginine methyltransferase 6 regulates embryonic stem cell identity. **Stem Cells and Development** 2012 21(14):2613-2622.

14. Wu Q[#] and Ng HH[#]. Mark the transition: chromatin modifications and cell fate decision. *Cell Research* 2011 21(10):1388-1390.
15. Lee YH and Wu Q[#]. Chromatin regulation landscape of embryonic stem cell identity. *Bioscience Reports* 2011 31(2): 77-86.
16. Wu Q^{*}, Bruce AW^{*}, Jedrusik A, Ellis PD, Andrews RM, Langford CF, Glover DM and Zernicka-Goetz M. CARM1 is required in ES cells to maintain pluripotency and resist differentiation. *Stem Cells* 2009 27(11):2637-2645.
17. Wu Q^{*}, Chen X^{*}, Zhang J, Loh YH, Low TY, Zhang W, Zhang W, Sze SK, Lim B, and Ng HH. Sall4 interacts with Nanog and co-occupies Nanog genomic sites in embryonic stem Cells. *Journal of Biological Chemistry* 2006 (281):24090-24094.
18. Loh YH^{*}, Wu Q^{*}, Chew JL^{*}, Vega VB, Zhang W, Chen X, Bourque G, George J, Leong B, Liu J, Wong KY, Sung KW, Lee CWH, Zhao XD, Chiu KP, Lipovich L, Kuznetsov VA, Robson P, Stanton LW, Wei CL, Ruan Y, Lim B & Ng HH. The Oct4 and Nanog transcription network regulates pluripotency in mouse embryonic stem cells. *Nature Genetics* 2006 (38): 431-440.
19. Wei CL, Wu Q, Vega V, Chiu KP, Ng P, Zhang T, Shahab A, Ridwan A, Fu YT, Weng Z, Liu JJ, Kuznetsov VA, Sung K, Lim B, Liu ET, Yu Q, Ng HH and Ruan Y. The precise global map of p53 transcription factor binding sites in the human genome. *Cell* 2006 (124): 207-219.
20. Zhang J, Tam WL, Tong GQ, Wu Q, Chan HY, Soh BS, Lou Y, Yang J, Ma Y, Chai L, Ng HH, Lufkin T, Robson P and Lim B. Sall4 modulates embryonic stem cell pluripotency and early embryonic development by the transcriptional regulation of *Pou5f1*. *Nature Cell Biology* 2006 (8):1114-1123.
21. Vikhanskaya F, Toh WH, Dulloo I, Wu Q, Boominathan L, Ng HH, Vousden KH and Sabapathy K. p73 supports cellular growth through c-Jun-dependent AP-1 transactivation. *Nature Cell Biology* 2007 9 (6): 698 –706.
22. Yan J, Jiang J, Lim CA, Wu Q, Ng HH and Chin KC. BLIMP1 regulates cell growth through repression of p53 transcription. *Proceedings of the National Academy of Sciences* 2007 104(6):1841-1846.
23. Wang X, Kua HY, Hu Y, Guo K, Zeng Q, Wu Q, Ng HH, Karsenty G, Crombrughe BD, Yeh J and Li B. p53 functions as a negative regulator of osteoblastogenesis, osteoblast-dependent osteoclastogenesis, and bone remodeling *Journal of Cell Biology* 2006 172(1):115-125.
24. Luo M, Koh M, Feng J, Wu Q and Melamed P. Cross talk in hormonally regulated gene transcription through induction of estrogen receptor ubiquitylation. *Molecular and Cellular Biology* 2005 25 (16): 7386-7398.
25. Melamed P, Xue Y, Poon JFP, Wu Q, Xie H, Yeo J, Foo TWJ and Chua HK. The male seahorse synthesizes and secretes a novel C-type lectin into the brood pouch during early pregnancy *FEBS Journal* 2005 272(5):1221-1235.
26. Wu Q, Zhang W, Pwee KH and Kumar PP. Rice HMGB1 protein recognizes DNA structures and bends DNA efficiently. *Archives of Biochemistry and Biophysics* 2003 (411):105-111.
27. Wu Q, Zhang W, Pwee KH and Kumar PP. Cloning and characterization rice *HMGB1* gene. *Gene* 2003 (312):103-109.

28. Zhang W, **Wu Q**, Pwee KH and Kini MR. Interaction of wheat high-mobility-group proteins with four-way-junction DNA and characterization of the structure and expression of HMGA gene. *Archives of Biochemistry and Biophysics* 2003 (409):357-366.
29. Zhang W, **Wu Q**, Jois SDS, Pwee KH and Kini MR. Characterization of the interaction of wheat HMGA with linear and four-way junction DNAs. *Biochemistry* 2003 (42):6596-6607.
30. **Wu Q**, Liao L, Yang D, He G and Shu L. Random amplified polymorphic DNAs (RAPD) in wild rice. *Journal of Tropical and Subtropical Botany* (in Chinese), 1998 (6): 260-266.

Invited Talks

Wu Q, The Regulatory Roles of Patz1 in Pluripotency and Cancer. Macau Precision Medicine Symposium 2019.

Wu Q, "Npac is a reader of histone H3K36me3 and regulates transcription elongation in embryonic stem cells acquisition". 1st Macau Stem Cell Symposium (12 September 2018, Macau).

Wu Q, "The essential roles of zinc finger proteins in pluripotency maintenance and acquisition". 7th Asia Pacific International Congress of Anatomists (17-20 March 2016, Singapore).

Wu Q, "New players in ES cell identity". (14 January 2016, Soochow University, Suzhou city, China).

Wu Q, "ZFPs in pluripotency regulation". The 14th Asian Conference on Transcription. (3-4 December 2015, Singapore).

Wu Q, "Zfp322a regulates mouse ES cell pluripotency and enhances reprogramming efficiency". Cold Spring Harbor Asia Conferences 2014 Epigenetics, Chromatin & Transcription. (5-9 May 2014, Cold Spring Harbor Asia, Suzhou, China).

Wu, Q, "Mind the fingers: ZFPs in stem cell identity and reprogramming". Mind the fingers: ZFPs in stem cell identity and reprogramming (23 Jun 2014, University of Toronto, Toronto, Canada).

Wu, Q, "Mind the fingers: ZFPs in stem cell identity and reprogramming". Mind the fingers: ZFPs in stem cell identity and reprogramming (28 May 2014, The Chinese University of Hong Kong, Hong Kong).

Wu, Q, "PRMTs in ES cell identity". PRMTs in ES cell identity (9 Jun 2013, Zhejiang University Medical School, Hangzhou, China).

Wu, Q, "Epigenetic regulation of ES cell pluripotency". Guangzhou Institute of Biomedicine and Health, Chinese Academy of Sciences (28 Jul 2011, Guangzhou, China, China).

Wu, Q, "Histone arginine methylation regulates ES cell identity". The 13th International Symposium, Society of Chinese Bioscientists in America. (27 Jul 2011, Guangzhou, China).

Wu, Q, "Histone arginine methylation regulates pluripotency". Histone arginine methylation regulates pluripotency (2 July 2009, CSI, NUS, Singapore).