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研究方向:	下丘脑发育、功能与疾病

简历介绍:

吴青峰, 博士, 研究员, 博士生导师

2005年毕业于复旦大学获临床医学学士学位, 2012年毕业于中国科学院神经科学研究所获理学博士学位。2012-2016年在美国Johns Hopkins University (约翰霍普金斯大学) 从事博士后研究。先后获得中国科学院院长特别奖(特等奖)、中国科学院优秀博士毕业论文奖、礼来优秀博士论文奖、细胞生物学青年论坛学术新人奖、人类前沿科学奖(HFSP Postdoctoral Fellowship)、美国马里兰干细胞研究基金奖(MSCRF Fellowship)。2018年入选中国科学院脑智卓越中心, 2020年入选北京脑科学与类脑研究中心合作研究员。现任中国神经学会神经发育与再生分会理事、突触可塑性分会理事和北京细胞生物学会理事。

研究领域:

研究方向

1、下丘脑发育:从神经发生到环路组装

下丘脑通过调节内分泌、自主神经和行为功能来维持机体内稳态, 包括饥饿、睡眠、体温、口渴、昼夜节律、情绪调节、性欲和激素释放等。然而, 对于不同脊椎动物的下丘脑发育, 包括其模式生成、神经发生和环路组装, 我们却知之甚少。我们团队一直致力于开发和应用单细胞分析方法(包括单细胞谱系追踪、单细胞多组学和单细胞遗传操作等), 用于研究下丘脑发育过程中神经发生和核团生成过程(Cell Stem Cell, 2021; PLoS Biol, 2018; Cell Regen, 2018)。由于下丘脑神经元种类的多样性、神经元连接的复杂性以及神经元功能的重要性, 我们需要付出更多的努力来解码神经生成和环路组装的过程和机制。

2、下丘脑功能、激素分泌与功能失调

下丘脑不仅分泌神经递质和神经肽, 还分泌神经激素, 用以协调大脑和外周器官之间的相互协作。如果下丘脑神经元命运决定和环路组装出现异常, 会导致代谢失调和内分泌紊乱等疾病。为探讨下丘脑发育的生理意义, 我们主要关注以下三方面的研究: 1) 调节进食行为和机体代谢的新型神经元亚型; 2) 中枢性早熟和青春期延迟的细胞机制; 3) 乳头状颅咽管瘤的遗传病因和病理机制(Nat Commun, 2021; J Endocrinol, 2018)。

3、神经干细胞的稳态调控

神经干细胞的稳态维持对于神经发育和神经再生至关重要, 胚胎期神经干细胞的稳态失调可以导致大脑发育异常, 出现自闭症、智力障碍等疾病; 成年期神经干细胞的稳态失调可以导致精神分裂症、情绪障碍、早衰等疾病。我们利用谱系追踪技术、基因编辑技术等研究在不同生理或病理条件下调控神经干细胞稳态的分子机制(Cell Rep, 2020; Cell, 2012)。

代表论著:

代表性论文(*通讯作者):

31. Shi, X, Zhuang, Y., Chen, Z., Xu, M., Kuang, J., Sun, X., Gao, L., Kuang, X., Zhang, H., Li, W., Wong, S.Z.H., Liu, C., Liu, L., Jiang, D., Pei, D., **Wu, Q.F.*** (2022) Hierarchical deployment of Tbx3 dictates the identity of hypothalamic KNDy neurons to control puberty onset. **Science Advances**. DOI: 10.1126/sciadv.abq2987

30. Ge, M., Sheikhsahrokh, A., Shi, X., Zhang, Y.H., Xu, Z., **Wu, Q.F.*** (2022) A Spacetime Odyssey of Neural Progenitors to Generate Neuronal Diversity. **Neurosci. Bull.** DOI: 10.1007/s12264-022-00956-0

29. Hong, H., Zhao, Z., Huang, X., Guo, C., Zhao, H., Wang, G., Zhang, Y.P., Zhao, J.P., Shi, J., **Wu, Q.F.**, Jiang, Y.H., Wang, Y., Li, L.M., Du, Z., Zhang, Y.Q.*, Xiong, Y.* (2022) Comparative proteome and cis-regulatory element analysis reveals specific molecular pathways conserved in dog and human brains. **Mol Cell Proteomics**. DOI: <https://doi.org/10.1016/j.mcpro.2022.100261>

28. Wu, H.*, Fu, R., Zhang, Y.H., Liu, Z., Chen, Z., Xu, J., Tian, Y.*, Jin, W.*, Wong, S.Z.H.*, **Wu, Q.F.** (2022) Single-cell RNA sequencing unravels upregulation of immune cell crosstalk in relapsed pediatric ependymoma. **Front Immunol**. DOI: 10.3389/fimmu.2022.903246

27. Chen, A., Liao, S., Cheng, M., Ma, K., Wu, L., Lai, Y., Qiu, X., Yang, J., Xu, J., Hao, S., Wang, X., Lu, H., Chen, X., Liu, X., Huang, X., Li, Z., Hong, Y., Jiang, Y., Peng, J., Liu, S., Shen, M., Liu, C., Li, Q., Yuan, Y., Wei X., Zheng, H., Feng, W., Wang Z., Liu, Y., Wang, Z., Yang, Y., Xiang, H., Han, L., Qin, B., Guo, P., Lai, G., Mu? oz-Cánoves, P., Maxwell, P.H., Thierry, J.P., **Wu, Q.F.**, Zhao, F., Chen, B., Li, M., Dai, X., Wang, S., Kuang, H., Hui, J., Wang, L., Fei, J.F., Wang, O., Wei, X., Lu, H., Wang, B., Liu, S., Gu, Y., Ni, M., Zhang, W., Mu, F., Yin, Y., Yang, H., Lisby, M., Cornall, R.J., Mulder, J., Uhlén, M.,

26. Yun, H., Dumbell, R., Hanna, K., Bowen, J., Mclean, S.L., Kantamneni, S., Pors, K., **Wu, Q.F.**, Helfer, G.* (2022) The chemerin-CMKLR1 axis is functionally important for central regulation of energy homeostasis. **Front Physiol.** 13, 897105. [信息公开](#) [内部网](#)
25. Zhao, Z., Zhang, D., Yang, F., Xu, M., Zhao, S., Pan, T., Liu, C., Liu, Y., **Wu, Q.F.**, Tu, Q., Zhou, P., Li, R., Kang, J., Zhu, L., Gao, F., Wang, Y.*; Xu Z.* (2022) Evolutionarily conservative and non-conservative regulatory networks during primate interneuron development revealed by single-cell RNA and ATAC sequencing. **Cell Res.** 32, 425-436
24. Wu, H., Fu, R., Zhang, Y.H., Liu, Z., Chen, Z., Xu, J., Tian, Y., Jin, W., Wong, S.Z.H., **Wu, Q.F.** (2022) Single-cell RNA Sequencing of Pediatric Ependymoma Unravels Subclonal Heterogeneity Associated with Patient Survival. bioRxiv <https://www.biorxiv.org/content/10.1101/2022.02.26.482082v1>
23. Yan, Y., Tian, M., Li, M., Zhou, G., Chen, Q., Xu, M., Hu, Y., Luo, W., Guo, X., Zhang, Cheng., Xie, H., **Wu, Q.F.**, Xiong, W.*; Liu, S.*; Guan, J.* (2022) ASH1L haploinsufficiency results in autistic-like phenotypes in mice and links Eph receptor gene to autism spectrum disorder. **Neuron.** 110, 1156-1172
22. Wen, Q., Weng, H., Liu, T., Yu, L., Zhao, T., Qin, J., Li, S., **Wu, Q.F.**, Tissir, F., Qu, Y., Zhou, L.* (2022) Inactivating Celsr2 promotes motor axon fasciculation and regeneration in mouse and human. **Brain.** 145(2): 670-683.
21. Chen, Z., Li, S., Xu, M., Liu, C., Ye, H., Wang, B., **Wu, Q.F.*** (2022) Single-cell Transcriptomic Profiling of the Hypothalamic Median Eminence during Aging. **J Genet Genomics.** 49, 523-536 (Cover story)
20. Wang, A., Wang, J., Tian, K., Huo, D., Ye, H., Li, S., Zhao, C., Zhang, B., Zheng, Y., Xu, L., Hua, X., Wang, K., **Wu, Q.F.**, Wu, X., Zeng, T.*; Liu, Y.*; Zhou, Y.* (2021) An epigenetic circuit controls neurogenic programs during neocortex development. **Development.** 148 (22): dev199772.
19. Zhang, Y., Xu, M., Shi, X., Sun, X.L., Mu, W., Wu, H., Wang, J., Li, S., Su, P., Gong, L., He, M., Yao, M., **Wu, Q.F.*** (2021) Cascade diversification directs generation of neuronal diversity in the hypothalamus. **Cell Stem Cell.** 28, 1483-1499.
18. Mu, W., Li, S., Xu, J., Guo, X., Wu, H., Chen, Z., Qiao, L., Helfer, G., Lu, F., Liu, C., **Wu, Q.F.*** (2021) Hypothalamic Rax+ tanycytes contribute to tissue repair and tumorigenesis upon oncogene activation in mice. **Nat Commun.** 12, 2288.
17. Zhu, X., Du, Y., Li, D., Xu, J., **Wu, Q.F.**, He, W., Zhang, K., Zhu, J., Guo, L., Qi, M., Liu, A., Qi, J., Wang, G., Meng, J., Yang, Z.*; Zhang, K.*; Lu, Y.* (2021) Aberrant TGF- β 1 signaling activation by MAF underlies pathological lens growth in high myopia. **Nat Commun.** 12, 2102.
16. Chang, Y., Jiang, Y., Li, C., Wang, Q., Zhang, F., Qin, C.F., **Wu, Q.F.**, Li, J., Xu, Z.* (2021) Different Gene Networks are Disturbed by Zika Virus Infection in a Mouse Microcephaly Model. **Genomics Proteomics Bioinformatics.** 18, 737-748.
15. Wang J., Li T., Wang J., Xu Z., Meng W., **Wu, Q.F.*** (2020) Talpid3-Mediated Centrosome Integrity Restrains Neural Progenitor Delamination to Sustain Neurogenesis by Stabilizing Adherens Junctions. **Cell Rep.** 33, 108495.
14. Zhang, Y., Xu, M., Li, S., Wu, H., Shi, X., Guo, X., Mu, W., Gong, L., Yao, M., He, M., **Wu, Q.F.*** (2020) Cascade Diversification Directs the Generation of Neuronal Diversity in Hypothalamus. bioRxiv. 125054.
13. Berg, D.A., Su, Y., Jimenez-Cyrus, D., Patel, A., Huang, N., Morizet, D., Lee, S., Shah, R., Rojas Ringeling F., Jain, R., Epstein, J.A., **Wu, Q.F.**, Canzar, S., Ming, G.L.*; Song, H.*; and Bond, A.M. (2019) A Common Embryonic Origin of Stem Cells Drives Developmental and Adult Neurogenesis. **Cell.** 18, 654-668.
12. Tang, C., Wang, M., Wang, P., Wang, L., **Wu, Q.**, and Guo, W.* (2019). Neural Stem Cells Behave as a Functional Niche for the Maturation of Newborn Neurons through the Secretion of PTN. **Neuron.** 101, 32-44.
11. Xu, M., Wang, J., Guo, X., Li, T., Kuang, X., **Wu, Q.F.*** (2018) Illumination of neural development by in vivo clonal analysis. **Cell Regen.** 12, 33-39.
10. Helfer, G., and **Wu, Q.F.*** (2018). Chemerin: a multifaceted adipokine involved in metabolic disorders. **J Endocrinol.** 238, R79-R94.
9. Wong, S.Z.H., Scott, E.P., Mu, W., Guo, X., Borgenheimer, E., Freeman, M., Ming, G.L., **Wu, Q.F.***; Song, H.*; and Nakagawa, Y.* (2018). In vivo clonal analysis reveals spatiotemporal regulation of thalamic nucleogenesis. **PLoS Biol.** 16, e2005211.
8. Wei, D., Gao, N., Li, L., Zhu, J.X., Diao, L., Huang, J., Han, Q.J., Wang, S., Xue, H., Wang, Q., **Wu, Q.F.**, Zhang, X., and Bao, L.* (2017). alpha-Tubulin acetylation restricts axon overbranching by dampening microtubule plus-end dynamics in neurons. **Cereb Cortex.** 28, 3332-3346.
7. Yoon, K.J., Song, G., Qian, X., Pan, J., Xu, D., Rho, H.S., Kim, N.S., Habela, C., Zheng, L., Jacob, F., Zhang, F., Lee, E.M., Huang, W.K., Ringeling, F.R., Vissers, C., Li, C., Yuan, L., Kang, K., Kim, S., Yeo, J., Cheng, Y., Liu, S., Wen, Z., Qin, C.F., **Wu, Q.**, Christian, K.M., Tang, H., Jin, P., Xu, Z., Qian, J., Zhu, H., Song, H., and Ming, G.L.* (2017). Zika-virus-encoded NS2A disrupts mammalian cortical neurogenesis by degrading adherens junction proteins. **Cell Stem Cell.** 21, 349-358.
6. Oh, Y., Zhang, F., Wang, Y., Lee, E.M., Choi, I.Y., Lim, H., Mirakhori, F., Li, R., Huang, L., Xu, T., Wu, H., Li, C., Qin, C.F., Wen, Z., **Wu, Q.F.**, Tang, H.*; Xu, Z.*; Jin, P.*; Song, H., Ming, G.L.*; Lee, G. (2017). Zika virus directly infects peripheral neurons and induces cell death. **Nat Neurosci.** 20, 1209-1212.
5. Yang, L., Dong, F., Yang, Q., Yang, P.F., Wu, R., **Wu, Q.F.**, Wu, D., Li, C.L., Zhong, Y.Q., Lu, Y.J., Cheng X, Xu FQ, Chen L, Bao L, Zhang X.* (2017). FGF13 selectively regulates heat nociception by interacting with Nav1.7. **Neuron.** 93, 806-821.

4. Liu, H., **Wu, Q.F.**, Li, J.Y., Liu, X.J., Li, K.C., Zhong, Y.Q., Wu, D., Wang, Q., Lu, Y.J., Bao, L., Zhang X.* (2015). Fibroblast growth factor 7 is a nociceptive modulator secreted via large dense-core vesicles. **J Mol Cell Biol.** 7, 466-475. [首页](#) [研究所介绍](#) [机构设置](#) [研究队伍](#) [博士后流动站](#) [研究生教育](#) [党群园地](#)

3. Zhang, X.*, Bao, L., Yang, L., **Wu, Q.**, and Li, S. (2012). Roles of intracellular fibroblast growth factors in neural development and functions. **Sci China Life Sci.** 55, 1038-1044. [信息公开](#) [内部网](#)

2. **Wu, Q.F.**, Yang, L., Li, S., Wang, Q., Yuan, X.B., Gao, X., Bao, L., and Zhang, X.* (2012). Fibroblast growth factor 13 is a microtubule-stabilizing protein regulating neuronal polarization and migration. **Cell.** 149, 1549-1564.

1. Liu, X.J., Zhang, F.X., Liu, H., Li, K.C., Lu, Y.J., **Wu, Q.F.**, Li, J.Y., Wang, B., Wang, Q., Lin, L.B., Zhong, Y.Q., Xiao, H.S., Bao, L., and Zhang, X.* (2012). Activin C expressed in nociceptive afferent neurons is required for suppressing inflammatory pain. **Brain.** 135, 391-403.



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