

# Featured Publications

(2019.01-2019.12)

1. Gao, Z., Chen, W., Liu, M., Chen, X., Wan, L., Zhang, X., Yuan, L., Lin, J., Wang, M., Zhou, L., Xu, X., and **Sun, Y.\*** (2019) Tac1-expressing neurons in the periaqueductal gray facilitate the itch-scratching cycle via descending regulation. *Neuron* 101: 45-59.
2. Fang, Y., Chen, M., Xu, H., Li, P., Han, C., Hu, J., Zhu, S., Ma, H., and Lu, H.\* (2019) An orientation map for disparity-defined edges in area V4. *Cereb. Cortex* 29: 666-679.
3. Li, X., Han, Y., Zhang, W., Wang, S., Wei, Y., Li, S., Lin, J., Yan, J., Chen, A., Zhang, X., Zhao, Z., Shen, W. and **Xu, X.\*** (2019) Agrp neurons project to the medial preoptic area and modulate maternal nest-building. *J. Neurosci.* 39: 456-471.
4. Qiu, P., Jiang, J., Liu, Z., Cai, Y., Huang, T., Wang, Y., Liu, Q., Nie, Y., Liu, F., Cheng, J., Li, Q., Tang, Y., Poo, M., **Sun, Q.\***, and **Chang, H.\*** (2019) BMAL1 knockout macaque monkeys display reduced sleep and psychiatric disorders. *National Science Review* 6: 87-100.
5. **Liu, Z.\***, Cai, Y., Liao, Z., Xu, Y., Wang, Y., Wang, Z., Jiang, X., Li, Y., Lu, Y., Nie, Y., Zhang, T., Li, C., Bian, X., Poo, M., **Chang, H.\***, and **Sun, Q.\*** (2019) Cloning of a gene-edited macaque monkey by somatic cell nuclear transfer. *National Science Review* 6: 101-108.
6. Zeng, H., Huang, J., Chen, M., Wen, Y., **Shen, Z.\*** and **Poo, M.\*** (2019) Local homogeneity of tonotopic organization in the primary auditory cortex of marmosets. *Proc. Natl. Acad. Sci. USA.* 116: 3239-3244.
7. Guan, S., Wang, J., Gu, X., Zhao, Y., Hou, R., Fan, H., Zou, L., Gao, L., Du, M., **Li, C.\*** and Fang, Y.\* (2019) Elastocapillary self-assembled neurotassels for stable neural activity recordings. *Sci. Adv.* 5: 2842.
8. Cai, Y., Cheng, T., Yao, Y., Li, X., Ma, Y., Li, Y., Zhao, H., Bao, J., Zhang, M.\*, **Qiu, Z.\***, and Xue, T.\* (2019) In vivo genome editing rescues photoreceptor degeneration via a Cas9/RecA-mediated homology-directed repair pathway. *Sci. Adv.* 5: 3335.
9. Liu, X., Liu, L., Ji, Y., Li, C., Wei, T., Yang, X., Zhang, Y., Cai, X., Gao, Y., Xu, W., Rao, S., Jin, D., Lou, W.\*, **Qiu, Z.\***, and Wang, X.\* (2019) Enrichment of short mutant cell-free DNA fragments enhanced detection of pancreatic cancer. *EBioMedicine* 41: 345-356.
10. Luo, J., He, K., Andolina, I., Li, X., Yin, J., Chen, Z., **Gu, Y.\*** and **Wang, W.\*** (2019) Going with the flow: the neural mechanisms underlying illusions of complex-flow motion. *J. Neurosci.* 39: 2664-2685.
11. Zuo, E., Sun, Y., Wu, W., Yuan, T., Ying, W., Sun, H., Yuan, L., Steinmetz, L.\* , Li, Y.\* , and

- Yang, H.\*** (2019) Cytosine base editor generates substantial off-target single nucleotide variants in mouse embryos. *Science* 364: 289-292.
12. Xu, W., Bao, P., Jiang, X., Wang, H., Qin, M., Wang, R., Wang, T., Yang, Y., Lorenzini, I., Liao, L., Sattler, R., and **Xu, J.\*** (2019) Reactivation of nonsense-mediated mRNA decay protects against C9orf72 dipeptide-repeat neurotoxicity. *Brain* 142: 1349-1364.
  13. Zhang, M., Zhou, C., Wei, Y., Xu, C., Pan, H., Ying, W., Sun, Y., Sun, Y., Xiao, Q., Yao, N., Zhong, W., Li, Y., Wu, K., Yuan, G., Mitalipov, S.\*, Chen, Z.\* and **Yang, H.\*** (2019) Human cleaving embryos enable robust homozygotic nucleotide substitutions by base editors. *Genome Biol.* 20: 101.
  14. Zhong, L., Zhang, Y., Duan, C., Deng, J., Pan, J. and **Xu, N.\*** (2019) Causal contributions of parietal cortex to perceptual decision-making during stimulus categorization. *Nat. Neurosci.* 22: 963-973.
  15. Sheng, M., Lu, D., Shen, Z. and **Poo, M.\*** (2019) Emergence of stable striatal D1R and D2R neuronal ensembles with distinct firing sequence during motor learning. *Proc. Natl. Acad. Sci. USA.* 116: 11038-11047.
  16. Zhang, L., Xue, Z., Liu, Q., Liu, Y., Xi, S., Cheng, Y., Li, J., Yan, J., Shen, Y., Xiao, C., Xie, Z.\*, **Qiu, Z.\***, and Jiang, H.\* (2019) Disrupted folate metabolism with anesthesia leads to myelination deficits mediated by epigenetic regulation of ERMN. *EBioMedicine* 43: 473-486.
  17. Zhang, R.\*, Du, W., Prober, D. and **Du, J.\*** (2019) Müller glial cells participate in retinal waves via glutamate transporters and AMPA receptors. *Cell Rep.* 27: 2871-2880.
  18. Wang, J., Lou, S., Wang, T., Wu, R., Li, G., Zhao, M., Lu, B., Li, Y., Zhang, J., Cheng, X., Shen, Y., Wang, X., Zhu, Z., Li, M., Takumi, T., Yang, H., Yu, X., Liao, L.\*, and **Xiong, Z.\*** (2019) UBE3A-mediated PTPA ubiquitination and degradation regulate PP2A activity and dendritic spine morphology. *Proc. Natl. Acad. Sci. USA.* 116: 12500-12505.
  19. Li, M., Yuan, N., Chen, X., Lu, Y., Gong, H., Qian, L., Wu, J., Zhang, S., Shipp, S., Ian, M., Sun, X.\*, and **Wang, W.\*** (2019) Impact of Acute Intraocular Pressure Elevation on the Visual Acuity of Non-human Primates. *EBioMedicine* 44: 554-562.
  20. Zhou, C., Sun, Y., Yan, R., Liu, Y., Zuo, E., Gu, C., Han, L., Wei, Y., Hu, X., Zeng, R., Li, Y.\*, Zhou, H.\*, Guo, F.\*, and **Yang, H.\*** (2019) Off-target RNA mutation induced by DNA base editing and its elimination by mutagenesis. *Nature* 571: 275-278.
  21. Zhang, X., Yan, W., Wang, W., Fan, H., Hou, R., Chen, Y., Chen, Z., Ge, C., Duan, S., Albert, C., and **Li, C.\*** (2019) Active information maintenance in working memory by a sensory cortex. *eLife* 8: e43191.
  22. Yuan, L., Dou, Y., and **Sun, Y.\*** (2019) Topography of reward and aversion encoding in the

- mesolimbic dopaminergic system. *J. Neurosci.* 39: 6472-6481.
23. Yu, S., and **He, J.\*** (2019) Stochastic cell-cycle entry and cell-state-dependent fate outputs of injury-reactivated tectal radial glia in zebrafish. *eLife* 8: e48660.
  24. Cheng, T.\*, Li, S., Yuan, B., Wang, X., Zhou W., and **Qiu, Z.\*** (2019) Expanding C–T base editing toolkit with diversified cytidine deaminases. *Nat. Commun.* 10: 3612.
  25. Xin, Y., Zhong, L., Zhang, Y., Zhou, T., Pan, J., and **Xu, N.\*** (2019) Sensory-to-category transformation via dynamic reorganization of ensemble structures in mouse auditory cortex. *Neuron* 103: 909-921.
  26. Fang, W., Li, J., Qi, G., Li, S., Sigman, M., and **Wang, L.\*** (2019) Statistical inference of body representation in the macaque brain. *Proc. Natl. Acad. Sci. USA.* 116: 20151-20157.
  27. Cui, Y., Li, X., Zeljic, K., Shan, S., **Qiu, Z.\***, and **Wang, Z.\*** (2019) Effect of PEGylated magnetic PLGA-PEI nanoparticles on primary hippocampal neurons: reduced nanoneurotoxicity and enhanced transfection efficiency with magnetofection. *ACS Appl Mater Interfaces.* 11: 38190-38204.
  28. Hou, H., Zheng, Q., Zhao, Y., Pouget, A., and **Gu, Y.\*** (2019) Neural correlates of optimal multisensory decision making under time-varying reliabilities with an invariant linear probabilistic population code. *Neuron* 104: 1010-1021.
  29. Zhang, S., Wang, Q., Yang, Q., Gu, H., Yin, Y., Li, Y., Hou, J., Chen, R., Sun, Q., Sun, Y., Hu G. and **Zhou, J.\*** (2019) NG2 glia regulate brain innate immunity via TGF- $\beta$ 2/TGFBR2 axis. *BMC Medicine* 17: 204.
  30. Yang, G., Zhou, C., Wang, R., Huang, S., Wei, Y., Yang, X., Liu, Y., Li, J., Lu, Z., Ying, W., Li, X., Jing, N., Huang, X.\*, **Yang, H.\***, and Qiao, Y.\* (2019) Base-Editing-Mediated R17H Substitution in Histone H3 Reveals Methylation-Dependent Regulation of Yap Signaling and Early Mouse Embryo Development. *Cell Rep.* 26: 302-312.

#### Review Articles

1. Wang, H.\*, and **Yang, H.\*** (2019) Gene-edited babies: What went wrong and what could go wrong. *PLOS Biol.* 17: e3000224. (Review)