

Recent Publication List

(2021.01-2021.12)

1. Sun, H., Cao, Z., Gao, R., Li, Y., Chen, R., Du, S., Ma, T., Wang, J., Xu, X., **Liu, JY.*** (2021) Severe brain calcification and migraine headache caused by SLC20A2 and PDGFRB heterozygous mutations in a five-year-old Chinese girl. *Mol. Genet. Genomic Med.* 9: e1670
2. Lan, N.*, Hao, M., Niu, C., **Cui, H.**, Wang, Y., Zhang, T., Fang, P., and Chou, C. (2021) Next Generation Prosthetic Hand: from Biomimetic to Biorealistic. *Research* 2021: 4675326
3. Liu, T.*, Hou, H., **Du, J.*** (2021) A protocol for simultaneous Ca²⁺ and morphology imaging of brain endothelial tip cells in larval zebrafish. *STAR Protoc.* 2(1): 100388
4. Zhang, H., Wang, H., Shen, X., Jia, X., Yu, S., Qiu, X., Wang, Y., **Du, J.***, **Yan, J.***, **He, J.*** (2021) The landscape of regulatory genes in brain-wide neuronal phenotypes of a vertebrate brain. *elife* 10:e68224.
5. Jiang, M., Wang, M., Shi, Q., Wei, L., Lin, Y., Wu, D., Liu, B., Nie, N., Qiao, H., Xu, L., Yang, T., **Wang, Z.*** (2021) Evolution and neural representation of mammalian cooperative behavior. *Cell Rep.* 37: 110029
6. Zheng, Q., Zhou, L., **Gu, Y.*** (2021) Temporal synchrony effects of optic flow and vestibular inputs on multisensory heading perception. *Cell Rep.* 37: 109999
7. Yang, K., Shi, Y., Du, X., Wang, J., Zhang, Y., Shan, S., Yuan, Y., Wang, R., Zhou, C., Liu, Y., Cai, Z., Wang, Y., Fan, L., Xu, H., Yu, J., Cheng, J., Li, Fei., **Qiu, Z.*** (2021) SENP1 in the Retrosplenial Agranular Cortex Regulates Core Autistic-Like Symptoms in Mice. *Cell Rep.* 37: 109939
8. Chen, Z., Zhang, Z., Zhang, W., Xie, T., Li, Y., Xu, X., **Yao, H.*** (2021) Direct and indirect pathway neurons in ventrolateral striatum differentially regulate licking movement and nigral responses. *Cell Rep.* 37: 109847
9. **Mao, D*.**, Avila, E., Caziot, B., Laurens, J., Dickman, J.D., Angelaki, D.E. (2021) Spatial modulation of hippocampal activity in freely moving macaques. *Neuron* 109: pp.1-14
10. Mu, D., **Sun, Y.*** (2021) Circuit mechanisms of itch in the brain. *J. Invest. Dermatol.* 142(1):23-30.
11. **Ye, Z.***, Hanssen, H., Steinhardt, J., Tronnier, V., Rasche, D., Brüggemann, N., & Münte, T. F. (2021) Subthalamic Nucleus Stimulation Impairs Sequence Processing in Patients with Parkinson's Disease. *J. Parkinson. dis.* 11(4):1869-1879.

12. Lu, B., Lou, S., Xu, R., Kong, D., Wu, R., Zhang, J., Zhuang, L., Wu, X., He, J., Wu, Z., **Xiong, Z.** * (2021) Cerebellar spreading depolarization mediates paroxysmal movement disorder. *Cell Rep.* 36:109743.
13. Luo, Z., Zhang, J., Qiao, L., Lu, F.* & **Liu, Z.*** (2021) Mapping Genome-wide Binding Sites of Prox1 in Mouse Cochlea Using the CUT&RUN Approach. *Neurosci. Bull.* 37(12):1703-1707.
14. Li, H., Wu, S., Ma, X., Li, X., Cheng, T., Chen, Z., Wu, J., Lv, L., Li, L., Xu, L., Wang, W., Hu, Y., Jiang, H., Yin, Y., **Qiu, Z.***, Hu, X. (2021) Co-editing PINK1 and DJ-1 Genes Via Adeno-Associated Virus-Delivered CRISPR/Cas9 System in Adult Monkey Brain Elicits Classical Parkinsonian Phenotype. *Neurosci. Bull.* 37: 1271-1288
15. Liu, H., **Qiu, Z.*** (2021) Overexpression of MECP2 in the Suprachiasmatic Nucleus Alters Circadian Rhythm and Induces Abnormal Social Behaviors. *Neurosci. Bull.* 37(12):1713-1717.
16. Zheng, F., Liu, G.* , Dang, T., Chen, Q., An, Y., Wu, M., Kong, X., **Qiu, Z.*** & Wu, B. (2021) GABA Signaling Pathway-associated Gene *PLCL1* Rare Variants May be Associated with Autism Spectrum Disorders. *Neurosci. Bull.* 37:1240–1245.
17. Zhang, R., He, H., Yuan, B., Wu, Z., Wang, X., Du, Y.* , **Chen, Y.*** , **Qiu, Z.*** (2021) An Intronic Variant of *CHD7* Identified in Autism Patients Interferes with Neuronal Differentiation and Development. *Neurosci. Bull.* 37:1091–1106.
18. Sun, S.#, Li S.#, Luo, Z.#, Ren, M., He, S., Wang, G., **Liu, Z.*** (2021) Dual expression of *Atoh1* and *Ikzf2* promotes transformation of adult cochlear supporting cells into outer hair cells. *eLife.* 10:e66547.
19. Hasanpour M.; Mitricheva E.; Logothetis N.; **Noori H.R.*** (2021) Intensive longitudinal characterization of multidimensional biobehavioral dynamics in laboratory rats. *Cell Rep.* 35:108987.
20. Yuan, T., Yan, N., Fei, T., Zheng, J., Meng, J., Li, N., Liu, J., Zhang, H., Xie, L., Ying, W., Li, D., Shi, L., Sun, Y., Li, Y., Li, Y., **Sun, Y.*** & Zuo, E.* (2021) Optimization of C-to-G base editors with sequence context preference predictable by machine learning methods. *Nat. Commun.* 12:4902.
21. Gong, H., Yuan, N., Shen, Z., Tang, C., Shipp, S., Qian, L., Lu, Y., Andolina, I., Zhang, S., Wu, J., Yang, H., **Wang, W.*** (2021) Transduction catalysis: Doxorubicin amplifies rAAV-mediated gene expression in the cortex of higher-order vertebrates. *iScience* 24:102685
22. Liu, X., Li, H., Wang, Y., Lei, T., Wang, J., Spillmann, L., Andolina, I.* , **Wang, W.*** (2021) From receptive to perceptive fields: Size-dependent asymmetries in both negative afterimages and subcortical ON and OFF post-stimulus responses. *J. Neurosci.* 41(37):7813-7830.

23. Zhang, Y., Ye, F., Zhang, T., Lv, S., Zhou, L., Du, D., Lin, H., Guo, F., Luo, C.* & **Zhu, S.***(2021) Structural basis of ketamine action on human NMDA receptors. *Nature* 596(7871):301-305.
24. Zeng, H., Huang, J., Li, J., Shen, Z., Gong, N., Wen, Y., **Wang, L.***, **Poo, M.*** (2021) Distinct neuron populations for simple and compound calls in the primary auditory cortex of awake marmosets. *NSR* 8(11):nwab126.
25. Wang, H., Lv, S., Stroebel, D., Zhang, J., Pan, Y., Huang, X., Zhang, X., Paoletti, P., **Zhu, S.*** (2021) Gating mechanism and a modulatory niche of human GluN1-GluN2A NMDA receptors. *Neuron*. 109:2443-2456.
26. Liu W., Wang C., He T., Su M., Lu Y., Zhang G., Münte, T., Jin L.* , **Ye, Z.*** (2021) Substantia nigra integrity correlates with sequential working memory in Parkinson's disease. *J. Neurosci.* 41:6304–13.
27. Zhang, B.* , Kan, J., Yang, M., Wang, X., Tu, J. Dorris, M.*(2021)Transforming absolute value to categorical choice in primate superior colliculus during value-based decision making. *Nat. Commun.* 12:3410
28. Yang, Q., Zhai, Y., Wang, H., Zhang, X., Hu, G.* , **Zhou, J.***(2021) Nuclear isoform of FGF13 regulates post-natal neurogenesis in the hippocampus through an epigenomic mechanism. *Cell Rep.* 35:109127.
29. Ma, G., Liu, Y., Wang, L., Xiao, Z., Song, K., Wang, Y., Peng, W., Liu, X., Wang, Z., Jin, S., Tao, Z., Li, C., Xu, T., Xu, F., **Xu, M.***, Zhang, S.* (2021) Hierarchy in sensory processing reflected by innervation balance on cortical interneurons. *Sci. Adv.* 7:eabf5676.
30. Duan, C.* , Pan, Y., Ma, G., Zhou,T., Zhang, S., **Xu, N.***(2021)A cortico-collicular pathway for motor planning in a memory-dependent perceptual decision task. *Nat. Commun.* 12:2727.
31. Liu, Y., Xin, Y., **Xu, N.*** (2021) A cortical circuit mechanism for structural knowledge-based flexible sensorimotor decision-making. *Neuron*. 109:2009-2024.
32. **Chang, L.***, Egger, B., Vetter, T., Tsao, D.* (2021) Explaining face representation in the primate brain using different computational models. *Curr. Biol.* 31:2785-2795.
33. **Liu, Z.***, Li, K., Cai, Y., Liu, Q., Zhang, T., Lu, Y., Nie, Y., Wang, Y., Yan, Z., Qu, Y., Li, Y., Wang, Z., **Xiong, Z.***, **Sun, Q.*** (2021) Accelerated passage of gene-modified monkeys by hormone-induced precocious puberty. *NSR* 8(7):nwab083.
34. Xu, C., Zhou, Y.* , Xiao, Q., He, B., Geng, G., Wang, Z., Cao, B., Dong, X., Bai, W., Wang, Y., Wang, X., Zhou, D., Yuan, T., Huo, X., Lai, J.* , **Yang,**

- H.*(2021) Programmable RNA editing with compact CRISPR–Cas13 systems from uncultivated microbes. *Nat. Methods* 18:499-506.
35. Wei, Y., Zhou, Y., Liu, Y., Ying, W., Lv, R., Zhao, Q., Zhou, H., Zuo, E.*, **Sun, Y.*, Yang, H.*, Zhou, C.**(2021) Indiscriminate ssDNA cleavage activity of CRISPR-Cas12a induces no detectable off-target effects in mouse embryos.*Protein Cell* 12(9):741-745.
36. Liu, B., Tian, Q., **Gu, Y.**(2021)Robust vestibular self-motion signals in macaque posterior cingulate region. *eLife* 10:e64569.
37. Wang, G., Li, C., He, S., **Liu, Z.*** (2021) Mosaic CRISPR-stop enables rapid phenotyping of nonsense mutations in essential genes. *Development.* 148:dev196899.
38. Zhang, C., Kim, S., Li, J., Zhang, Y., Lv, Q., Zeljic, K., Gong, H., Wei, H., Liu, W., Sun, B., **Wang, Z.***, Voon, V.*(2021) Anterior limb of the internal capsule tractography: relationship with capsulotomy outcomes in obsessive-compulsive disorder.*J. Neurol. Neurosurg. Psychiatry.* 92:637-644.
39. Wang, H., Zhu, Z., Li, Y., Lou, S., Yang, G., Feng, X., Xu, W., Huang, Z., Cheng, X., **Xiong, Z.***. (2021) CDKL5 deficiency in forebrain glutamatergic neurons results in recurrent spontaneous seizures. *Epilepsia.* 62:517-528.
40. Liu, K., Luo, J., Ma, T., Fang, M., Xu, Z., Wang, L., Zhang, X., Wen, J., Liu, C., Cao, Y., Li, X., Zhang, L., Wang, N., Gao, A., Yi, P., **Liu, J.***. (2021) Germline mutation of PLCD1 contributes to human multiple pilomatricomas via PKD/ERK1/2 cascade and TRPV6. *J. Invest. Dermatol.* 141:533-544.
41. Wu, S., Li, X., Qin, D., Zhang, L., Cheng, T., Chen, Z., Nie, B., Ren, X., Wu, J., Wang, W., Hu, Y., Gu, Y., Lv, L., Yin, Y.,* Hu, X.,*, **Qiu, Z.*** (2021) Induction of core symptoms of autism spectrum disorders by in vivo CRISPR/Cas9-based gene editing in the brain of adolescent rhesus monkeys. *Sci. Bull.* 66:937-946.
42. Zhan, Y., Wei, J., Liang, J., Xu, X., He, R.*, Robbins, T., **Wang, Z.*** (2021) Diagnostic classification for human autism and obsessive-compulsive disorder based on machine learning from a primate genetic model. *Am. J. Psychiatry* 178: 65-76.
43. Gao, N., Hu, J., He, B., Ji, Z., Hu, X., Huang, J., Wei, Y., Peng, J., Wei, Y., Zhou, Y., Shen, X., Li, H., Feng, X., Xiao, Q., Shi, L., Sun, Y., Zhou, C., **Zhou, H.* & Yang, H.*** (2021) Endogenous promoter-driven sgRNA for monitoring the expression of low-abundance transcripts and lncRNAs. *Nat. Cell Biol.* 23:99-108.
44. **Ye, Z.***, Zhang G., Zhang Y.*, Li S., Liu N., Zhou X., Xiao W., Münte, T.* (2021) The role of the subthalamic nucleus in sequential working memory in De Novo parkinson's disease. *Mov. Disord.* 36:87-95.
45. Xiong, M., Tao, Y., Gao, Q., Feng, B., Yan, W., Zhou, Y., Kotsonis, T., Yuan, T.,

- You, Z., Wu, Z., Xi, J., Haberman, A., Graham, J., Block, J., Zhou, W., **Chen, Y.***, Zhang, S. (2021) Human Stem Cell-Derived Neurons Repair Circuits and Restore Neural Function. *Cell Stem Cell* 28:112-126.
46. Zhang, Z., Bai, L., Cong, L., Yu, P., Zhang, T., Shi, W., Li, F., Du, J. & **Wang, K.*** (2021) Imaging volumetric dynamics at high speed in mouse and zebrafish brain with confocal light field microscopy. *Nat. Biotechnol.* 39:74-83.
47. Wang, Z., Li, Y., Yang, X., Wang, Y., Nie, Y., Xu, Y., Zhang, X., Lu, Y., Zhang, T., Liu, Q., Jing, N., **Liu, Z.***, and **Sun, Q.*** (2021) Mitochondrial replacement in macaque monkey offspring by first polar body transfer. *Cell Res.* 31:233-236.
48. Lv, Q., Yin, D., Zhang, C., Sun, B., Voon, V.* , **Wang, Z.***.(2021) Neuroanatomical substrates and predictors of response to capsulotomy in intractable obsessive-compulsive disorder. *Biol. Psychiat.* 6:29-38.
49. **Yu, Q.***, Postle, B. (2021) The neural codes underlying internally generated representations in visual working memory. *J. Cognitive Neurosci.* 33:1142-1157.
50. Zhao, S. Qian, Y. **Mu, Y.*** (2021) Tracking single cells in zebrafish brain. *J. Neurosci. Meth.* 353:109086
51. Zeljic, K., Xiang, Q., Wang, Z., Pan, Y., Shi, Y., Zhou, Z., **Wang, Z.***, Liu, D.* (2021) Heightened perception of illusory motion is associated with symptom severity in Schizophrenia patients. *Prog. Neuropsychopharmacol. Biol. Psychiatry.* 104:110055.
52. Lv, Q., Yan, M., Shen, X., Wu, J., Yu, W., Yan, S., Yang, F., Zeljic, K., Shi, Y., Zhou, Z., Lv, L., Hu, X., Menon, R., **Wang, Z.*** (2021) Normative analysis of individual brain differences based on a population MRI-based atlas of cynomolgus macaques. *Cereb. Cortex* 31: 341-355.
53. Feng, L., Yin, D., Wang, X., Xu, Y., Xiang, Y., Teng, F., Pan, Y., Zhang, X., Su, J., **Wang, Z.***, Jin, L.* (2021) Brain connectivity abnormalities and treatment-induced restorations in patients with cervical dystonia. *Eur. J. Neurol.* 28:1537-1547.
54. Zhang, W., Li, S., Han, Y., **Xu, X.*** (2021) Sex differences in electrophysiological properties of mouse medial preoptic area neurons revealed by in vitro whole-cell recordings. *Neurosci. Bull.* 37:166-182.
55. Gu, S.* , Li, J., Li, S., Cao, J., Bu, J., Ren, Y., Du, W., Chen, Z., Xu, C., Wang, M., Jiang, L.* , Huang, C.* , and **Du, J.*** (2021) Efficient replacement of long DNA fragments via non-homologous end joining at non-coding regions. *J. Mol. Cell. Biol.* 13:75-77.
56. Wang, F., Li, E., De, L., Wu, Q., Zhang, Y.* (2021) OFF-transient alpha RGCs mediate looming triggered innate defensive response. *Curr. Biol.* 31(11):2263-2273.e3.

57. Chen, X., Liu, Y., **Xu, N., Sun, Y.*** (2021) Itch perception is reflected by neuronal ignition in the primary somatosensory cortex. *NSR*. nwab218.
58. Chen, X., Liu, Y., **Xu, N., Sun, Y.*** (2021) Multiplexed representation of itch and mechanical and thermal sensation in the primary somatosensory cortex. *J. Neurosci.* 41: 10330-10340.