

CEBSIT Featured Publications

(2023.01-2023.12)

1. Zhai, R.*, Tong, G., Li, Z., Song, W., Hu, Y., Xu, S., Wei, Q., Zhang, X., Li, Y., Liao, B., Yuan, C., Fan, Y., Song, G., Ouyang, Y., Zhang, W., Tang, Y., Jin, M., Zhang, Y., Li, H., Yang, Z., Lin, G., Stein, D., **Xiong, Z.***, Wang, Z.* (2023) Rhesus monkeys exhibiting spontaneous ritualistic behaviors resembling obsessive-compulsive disorder. *Natl Sci Rev.* 10:nwad312.
2. Li, X., Ren, Y., Gu, Y., Zhu, T., Zhang, Y., Li, J., Li, C., Wang, G., Song, L., Bi, Z.* , **Liu, Z.*** (2023) In situ regeneration of inner hair cells in the damaged cochlea by temporally regulated co-expression of Atoh1 and Tbx2. *Development.* 150:dev201888.
3. Peng, H., Qiu, J., Zhou, Q., Zhang, Y., Chen, Q., Yin, Y., Su, W., Yu, S., Wang, Y., Cai, Y., Gu, M., Zhang, H., Sun, Q., Hu, G., Wu, Y., Liu, J., Chen, S.* , Zhu, Z.* , Song, X.* , **Zhou, J.*** (2023) Intestinal epithelial dopamine receptor signaling drives sex-specific disease exacerbation in a mouse model of multiple sclerosis. *Immunity.* 56(12): 1-17.
4. Cao, J., Li, W., Li, J., Mazid, M., Li, C., Jiang, Y., Jia, W., Wu, L., Liao, Z., Sun, S., Song, W., Fu, J., Wang, Y., Lu, Y., Xu, Y., Nie, Y., Bian, X., Gao, C., Zhang, X., Zhang, L., Shang, S., Li, Y., Fu, L., Liu, H., Lai, J., Wang, Y., Yuan, Y., Jin, X., Li, Y., Liu, C., Lai, Y., Shi, X., Maxwell, P., Xu, X., Liu, L., Poo, M., Wang, X., **Sun, Q.***, **Esteban, M.***, **Liu, Z.*** (2023) Live birth of chimeric monkey with high contribution from embryonic stem cells. *Cell.* 186:4996-5014.e24.
5. Tao, R.* , Wang, K., Chen, T., Zhang, X., Cao, J., Zhao, W., **Du, J.***, **Mu, Y.*** (2023) A genetically encoded ratiometric indicator for tryptophan. *Cell Discov.* 9:106.
6. Chen, W., Shen, T., Wang, M., Yuan, L., Wang, L., Ding, W., Shi, X., Wang, X., Bo, B., Liang, Z., **Sun, Y.*** (2023) An atlas of itch-associated neural dynamics in the mouse brain. *Cell Rep.* 42:113304.
7. Fan, J., Li, X., Wang, P., Yang, F., Zhao, B., Yang, J., Zhao, Z., **Li, X.*** (2023) A Hyperflexible Electrode Array for Long-Term Recording and Decoding of Intraspinal Neuronal Activity. *Adv. Sci.* 10:2302377.
8. Tian, Y., Yin, J., Wang, C., He, Z., Xie, J., Feng, X., Zhou, Y., Ma, T., Xie, Y., Li, X., Yang, T., Ren, C.* , Li, C.* , **Zhao, Z.*** (2023) An Ultraflexible Electrode Array for Large-Scale Chronic Recording in the Nonhuman Primate Brain. *Adv. Sci.* 10:2302333.
9. Hu, M., **Yu, Q.*** (2023) Spatiotemporal dynamics of self-generated imagery reveal a reverse cortical hierarchy from cue-induced imagery. *Cell Report.* 42:113242.
10. Liu, X., Cheng, Z.* , Lin, H., Tan, J., Chen, W., Bao, Y., Liu, Y., Zhong, L., Yao, Y., Wang, L., Wang, J.* , **Gu, Y.*** (2023) Decoding effects of psychoactive drugs in a

high-dimensional space of eye movements in monkeys. *NATL SCI REV.* 10:nwad255.

11. Zhu, Z., Li, Y., Xu, J., Xue, H., Feng, X., Zhu, Y.* , **Xiong, Z.***(2023) CDKL5 deficiency in adult glutamatergic neurons alters synaptic activity and causes spontaneous seizures via TrkB signaling. *Cell Rep.* 42:113202.
12. Yao, M., Wen, B., Yang, M., Guo, J., Jiang, H., Feng, C., Cao, Y., He, H., **Chang, L.*** (2023) High-dimensional topographic organization of visual features in the primate temporal lobe. *Nat. Commun.* 14: 5931.
13. Zhang, L., Jia, Z., Wu, Q., Bai, T., Wang, B., Hu, X., Li, T., Liu, X., Fu, J., Chen, Y., Ding, X., Liu, Z., Xu, Z.* , & **Zhou, H.*** (2023) Alleviating symptoms of neurodegenerative disorders by astrocyte-specific overexpression of TMEM164 in mice. *Nat. Metab.* 5:1787–1802.
14. Wang, Y., Chen, Z., Ma, G., Wang, L., Liu, Y., Qin, M., Fei, X., Wu, Y., **Xu, M.***, Zhang, S.*(2023)A Frontal Transcallosal Inhibition Loop Mediates Interhemispheric Balance in Visual Processing. *Nat. Commun.* 14: 5213.
15. Yin, S., Ma,X., Sun, Y., Yin, Y., Long, Y., Zhao, C.,Ma, J., Li, S., Hu, Y., Li, M., Hu,G.* ,**Zhou, J.*** (2023) RGS5 augments astrocyte activation and facilitates neuroinflammation via TNF signaling. *J Neuroinflammation.* 20: 203.
16. Li, S., Zeng, X., Shao, Z., **Yu, Q.**(2023)Neural representations in visual and parietal cortex differentiate between imagined, perceived, and illusory experiences.*J. Neurosci.* 43 : 6508-6524.
17. Bai, T., Zhan, L., Zhang, N., Lin, F., Saur, D., **Xu, C.***(2023)Learning-prolonged maintenance of stimulus information in CA1 and subiculum during trace fear conditioning. *Cell Rep.*42:112853.
18. Zheng, C., Wei, L., Liu, B., Wang, Q., Huang, Y., Wang, S., Li, X., Gong, H., **Wang, Z.***(2023)Dorsal BNST DRD2+ neurons mediate sex-specific anxiety-like behavior induced by chronic social isolation. *Cell Rep.*42:112799.
19. Chen, A., Sun, Y.* , Lei, Y., Li, C., Liao, S., Meng, J., Bai, Y., Liu, Z., Liang, Z., Zhu, Z., Yuan, N., Yang, H., Wu, Z., Lin, F., Wang, K., Li, M., Zhang, S., Yang, M., Fei, T., Zhuang, Z., Huang, Y., Zhang, Y., Xu, Y., Cui, L., Zhang, R., Han, L., Sun, X., Chen, B., Li, W., Huangfu, B., Ma, K., Ma, J., Li, Z., Lin, Y., Wang, H., Zhong, Y., Zhang, H., Yu, Q., Wang, Y., Liu, X., Peng, J., Liu, C., Chen, W., Pan, W., An, Y., Xia, S., Lu, Y., Wang, M., Song, X., Liu, S., Wang, Z.,Gong, C., Huang, X., Yuan,Y., Zhao, Y., Chai, Q., Tan, X., Liu, J., Zheng, M., Li, S., Huang, Y., Hong, Y., Huang, Z., Li, M., Jin, M., Li, Y., Zhang, H., Sun, S., Li, G., Bai, Y., Cheng, M., Hu, G., Liu, S., Wang, B., Xiang, B., Li, S., Li, H., Chen, M., Wang, S., Li, M., Liu, W., Liu, X., Zhao, Q., Lisby, M., Wang, J., Fang, J., Lin, Y., Xie, Q., Liu, Z., He, J., Xu, H., Huang, W., Mulder, J., Yang, H., Sun, Y., Uhlen, M., Poo, M., Wang, J., Yao, J*., Wei, W.* , Li, Y.* , Shen, Z.* , Liu, L.* , Liu, Z.* , Xu, X.* , Li, C.*(2023)Single-cell spatial transcriptome reveals cell-type organization in the macaque cortex. *Cell.* 186:3726-3743.
20. Xie, L., Liu, H., You, Z., Wang, L., Li, Y., Zhang, X., Ji, X., He, H., Yuan, T., Zheng, W., Wu, Z., Xiong, M., Wei, W.* , **Chen, Y*.**(2023)Comprehensive spatiotemporal

mapping of single-cell lineages in developing mouse brain by CRISPR-based barcoding. *Nat. Methods*. 20:1244–1255.

21. Chen, H. Liu, X, Li, L., Tan, Q., Li, S., Li, L., Li, C., Fu, J., Lu, Y., Wang, Y., Sun, Y., Luo, Z.* , Lu, Z., **Sun, Q.* , Liu, Z.*** (2023)CATI: an efficient gene integration method for rodent and primate embryos by MMEJ suppression. *GENOME BIOL.* 24,146.
22. Bai T., Zhan L.J., Zhang N., Lin F.K., Saur D., **Xu, C.*** (2023) Learning-prolonged maintenance of stimulus information in CA1 and Subiculum during trace fear conditioning. *Cell Rep.* 42:112853.
23. Li, D., **Chang, L.***(2023)Representational geometry of incomplete faces in macaque face patches. *Cell Rep.* 42:112673.
24. Du, X.#* , Li,F.#, Peng, X., Xu, B., Zhang, Y., Li, G., Liu, T., Li, Y., Wang, H., Yan, J., **Du, J.***(2023)Circadian regulation of developmental synaptogenesis via the hypocretinergic system.*Nat. Commun.*14:3195.
25. **Angelovski, G.***, Tickner B., Wang, G.(2023)Opportunities and challenges with hyperpolarized bioresponsive probes for functional imaging using magnetic resonance.*Nat. Chem.*15:775-763.
26. Zhu, X., Yan, H., Zhan, Y., Feng, F., Wei, C., Yao, Y.* , **Liu C.***(2023)An anatomical and connectivity atlas of the marmoset cerebellum. *Cell Rep.*42:112480.
27. Han, D., Xiao, Q., Wang, Y., Zhang, H., Dong, X., Li, G., Kong, X., Wang, S., Song, J., Zhang, W., Zhou, J., Bi, L., Yuan, Y., Shi, L., Zhong, N., **Yang, H.***, Zhou, Y.*(2023)Development of miniature base editors using engineered IscB nickase. *Nat. Methods.* 20 :1029–1036.
28. Gao, L., Liu, S., Wang, Y., Wu, Q., Gou, L., **Yan, J.*** (2023) Single-neuron analysis of dendrites and axons reveals the network organization in mouse prefrontal cortex. *Nat. Neurosci.* 26:1111–1126.
29. Ji, P., Wang, Y., Peron, T.* , Li, C.* , Nagler, J., **Du, J.***(2023)Structure and function in artificial, zebrafish and human neural networks.*Phys. Life Rev.* 45:74-111.
30. Li, S., He, S., Lu, Y., Jia, S., **Liu, Z.*** (2023)Epistatic genetic interactions between *Insm1* and *Ikzf2* during cochlear outer hair cell development. *Cell Rep.* 42:112504.
31. Xie, L., Xiong, Y., Ma, D., Shi, K., Chen, J., Yang, Q., **Yan, J.*** (2023)Cholecystokinin neurons in mouse suprachiasmatic nucleus regulate the robustness of circadian clock. *Neuron.* 111:2201-2217.
32. Liu, X., Li, Y., Xu, L., Zhang, T., Cui, H., Wei, Y., Xia, M., Su, W., Tang, Y., Tang, X., Zhang, D., Spillmann, L., Andolina, L., McLoughlin, N., **Wang, W.***, Wang, J.*(2023) Spatial and Temporal Abnormalities of Spontaneous Fixational Saccades and Their Correlates With Positive and Cognitive Symptoms in Schizophrenia.*Schizophrenia Bull.* 50:78-88.
33. Zhu, W., Ding, Y., Meng, J., Gu, L., Liu, W., Li, L., Chen, H., Wang, Y., Li, Z., Li, C.* , Sun, Y.* , **Liu, Z.*** (2023)Reading and writing of mRNA m6A modification orchestrate maternal-to-zygotic transition in mice.*Genome Biol.* 24:67.

34. Li, Y., Xu, B., Jin, M., Zhang, H., Ren, N., Hu, J., **He, J.*** (2023) Homophilic interaction of cell adhesion molecule 3 coordinates retina neuroepithelial cell proliferation. *J. Cell Biol.* 222:e202204098.
35. Wang, F., Ruppell, K., Zhou, S., Qu, Y., Gong, J., Shang, Y., Wu, J., Liu, X., Diao, W., **Li, Y.***, Xiang, Y.* (2023) Gliotransmission and adenosine signaling promote axon regeneration. *Dev. Cell.* 58:660-676.
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37. Yu, Y., Qiu, Y., Li, G., Zhang, K., Bo, B., Pei, M., Ye, J., Thompson, G., Cang, J., Fang, F., Feng, F., Feng, Y., Duan, X.* , Tong, C.* , **Liang Z.*** (2023) Sleep fMRI with simultaneous electrophysiology at 9.4 T in male mice. *Nat. Commun.* 14:1651.
38. Zhang, J., Zhang, M., Wang, Q., Wen, H., Liu, Z., Wang, F., Wang, Y., Yao, F., Song, N., Kou, Z., Li, Y., Guo, F., **Zhu, S.*** (2023) Distinct structure and gating mechanism in diverse NMDA receptors with GluN2C and GluN2D subunits. *Nat. Struct. Mol. Biol.* 30:629–639.
39. You, Z., Wang, L., Hui, H., Xiong, M., Wei, W.* , **Chen, Y.*** (2023) Mapping of clonal lineages across developmental stages in human neural differentiation. *Cell Stem Cell.* 30:473-487.
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44. Yao, L., Ruan, M., Ye, S., **Cai, S.*** (2023) DNA topoisomerase 2-associated proteins PATL1 and PATL2 regulate the biogenesis of hERG K⁺ channels. *PNAS.* 120:e2206146120
45. Ji, X., Zhou, Y., Gao, Q., He, H., Wu, Z., Feng, B., Mei, Y., Cheng, Y., Zhou, W.* , **Chen, Y.***, Xiong, M.* (2023) Functional reconstruction of the basal ganglia neural circuit by human striatal neurons in hypoxic–ischaemic injured brain. *Brain.* 146:612-628.
46. **Okazawa, G.***, Kiani, R.* (2023) Neural Mechanisms that Make Perceptual Decisions Flexible. *Annu. Rev. Physiol.* 10 :191-215.

47. Tong, H., Huang, J.*, Xiao, Q., He, B., Dong, X., Liu, Y., Yang, X., Han, D., Wang, Z., Ying, W., Zhang, R., Wei, Y., Wang, X., Xu, C., Zhou, Y., Li, Y., Cai, M., Wang, Q., Xue, M., Li, G., Fang, K., Zhang, H.*, **Yang, H.*** (2023) High-fidelity Cas13 variants for targeted RNA degradation with minimal collateral effect. *Nat. Biotechnol.* 41 :108–119.
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49. Heldmann, M., Monch, E., Kessebohmer, A., Brüggemann, N., F. Münte, T.*, **Ye, Z.*** (2023) Pramipexole modulates fronto-subthalamic pathway in sequential working memory. *Neuropsychopharmacol.* 48:716–723.
50. Xu, R., Wu, X., **Xiong, Z.*** (2023) Low-intensity ultrasound directly modulates neural activity of the cerebellar cortex. *Brain Stimul.* 16:918-926.