

CEBSIT Featured Publications

(2022.01-2022.12)

1. **Poo, M.*** (2022) International cooperation through big science programs. *NSR* 9:nwac187.
2. Lu, S., Wu, Y., Guo, Y., Liang, P., Yin, S., Yin, Y., Zhang, X., Liu, Y., Wang, H., Xiao, Y., Liang, X.*, **Zhou, J.*** (2022) Inhibition of astrocytic DRD2 suppresses CNS inflammation in an animal model of multiple sclerosis. *J. Exp. Med.* 219:e20210998.
3. Tian, X., Chen, Y., Majka, P., Szczupak, D., Perl, Y., Yen, C., Tong, C., Feng, F., Jiang, H., Glen, D., Deco, G., Rosa, M.*, Silva, A.*, **Liang, Z.* Liu, C.*** (2022) An integrated resource for functional and structural connectivity of the marmoset brain. *Nat. commun.* 13:7416.
4. Luo, M., Fei, X., Liu, X., Jin, Z., Wang, Y.*, **Xu, M.*** (2022) Divergent neural activity in the VLPO during anesthesia and sleep. *Adv. Sci.* 3:e2203395.
5. Yan, J., Ding, X., He, T., Chen, A., Zhang, W., Yu, Z., Cheng, X., Wei, C., Hu, Q., Liu, X., Zhang, Y., He, M., Xie, Z., Zha, X., Xu, C., Cao, P., Li, H., **Xu, X.*** (2022) A circuit from the ventral subiculum to anterior hypothalamic nucleus GABAergic neurons essential for anxiety-like behavioral avoidance. *Nat. commun.* 13:7464.
6. Zhao, M., Su, H., Zeng, Y., Sun, Y., Guo, X., Li, Y., Wang, C., Zhao, Z., Huang, X., Lin, K., Ye, Z., Lin, B., Hong, S., Zheng, J., Liu, Y., Yao, X., Yang, D., Lu, Y., Chen, H., Zuo, E., Yang, G., Wang, H., Huang, C., Lin, X., Cen, Z., Lai, L., Zhang, Y., Li, X., Lai, T., Lin, L., Zuo, D., Lin, M., Liou, C., Kong, Q., Yan, C., Xiong, Z., Wang, N., Luo, W., Zhao, C.*, **Cheng, X.***, Chen, W.* (2022) Loss of function of CMPK2 causes mitochondria deficiency and brain calcification. *Cell Discov.* 8:128.
7. Dong, Y., Li, J., Zhou, M., Du, Y., **Liu, D.*** (2022) Cortical regulation of two-stage rapid eye movement sleep. *Nat. Neurosci.* 118:30-47.
8. Wang, Z., Fei, X., Liu, X., Wang, Y., Hu, Y., Peng, W., Wang, Y., Zhang, S., **Xu, M.*** (2022) REM sleep is associated with distinct global cortical dynamics and controlled by occipital cortex. *Nat. Commun.* 13:6896.
9. Tong, C., Liu C., Zhang, K., Bo, B., Xia, Y., Yang, H., Feng, Y.*, **Liang, Z.*** (2022) Multimodal analysis demonstrating the shaping of functional gradients in the marmoset brain. *Nat. Commun.* 13:6584.
10. Qi, G., Fang, W.*, Li, S., Li, J., **Wang, L.*** (2022) Neural dynamics of causal inference in the macaque frontoparietal circuit. *eLife.* 11:e76145.
11. Zhang, W., Xie, Y. **Yang, T.*** (2022) Reward salience but not spatial attention

- dominates the value representation in the orbitofrontal cortex. *Nat. Commun.* 13:6303.
12. Chen, M., Qi, J., **Poo, M.***, Yang, Y.* (2022) Stability and dynamics of dendritic spines in macaque prefrontal cortex. *NSR.* 9:nwac125.
 13. Li, W., Lu, J., Zhu, Z., **Gu, Y.*** (2022) Causal contribution of optic flow signal in Macaque extrastriate visual cortex for roll perception. *Nat. Commun.* 13:5479.
 14. Han, R., Jin, M., Xu, G.*, **He, J.*** (2022) Progressively Decreased HCN1 Channels Results in Cone Morphological Defects in Diabetic Retinopathy. *J. Neurosci.* 42:8200-8212.
 15. Jin, M., Zhang, H., Xu, B., Li, Y., Qin, H., Yu, S., **He, J.*** (2022) Jag2b-Notch3/1b-mediated neuron-to-glia crosstalk controls retinal gliogenesis. *EMBO Rep.* 23:e54922.
 16. Bi, Z., Li, X., Ren, M., Gu, Y., Zhu, T., Li, S., Wang, G., Sun, S., Sun, Y., **Liu, Z.*** (2022) Development and transdifferentiation into inner hair cells require Tbx2. *NSR* nwac156.
 17. Shi, Q., Fan, J., **Wang, Z.***, Zhang, Z.* (2022) Multimodal channel-wise attention transformer inspired by multisensory integration mechanisms of the brain. *Pattern Recogn.* 130:108837.
 18. Luo, Z., Du, Y., Li, S., Zhang, H., Shu, M., Zhang, D., He, S., Wang, G., Lu, F.*, **Liu, Z.*** (2022) Three distinct Atoh1 enhancers cooperate for sound receptor hair cell development. *PNAS* 119:e2119850119.
 19. Zhang, Z., Yin, C.*, **Yang, T.***(2022) Evidence accumulation occurs locally in the parietal cortex. *Nat. Commun.* 13:4426.
 20. Xiao, Q., Xu, Z., Xue, Y., Xu, C., Han, L., Liu, Y., Wang, F., Zhang, R., Han, S., Wang, X., Li, G., Li, H.*, **Yang, H.***, Shu, Y.* (2022) Rescue of autosomal dominant hearing loss by in vivo delivery of mini dCas13X-derived RNA base editor. *Sci. Transl. Med.* 14:654.
 21. Chen, H., Zhang, X., Yang, R., Wang, G., Zhu, X., Xu, Y., Wang, D., Zhang, N., Qiu, S., Zhan, L., Shen, Z., Xu, X., Long, G.*, **Xu, C.*** (2022) An intein-split transactivator for intersectional neural imaging and optogenetic manipulation. *Nat. Commun.* 13:3605.
 22. Xu, P., He, H., Gao, Q., Zhou, Y., Wu, Z., Zhang, X., Sun, L., Hu, G., Guan, Q., You, Z., Zhang, X., Zheng, W., Xiong, M., **Chen, Y.*** (2022) Human midbrain dopaminergic neuronal differentiation markers predict cell therapy outcome in a Parkinson's disease model. *J. Clin. Invest.* 132:e156768.
 23. Feng, C., Wang, Y., Zha, X., Cao, H., Huang, S., Cao, D., Zhang, K., Xie, T., **Xu, X.***, **Liang, Z.***, **Zhang, Z.*** (2022) Cold-sensitive ventromedial hypothalamic neurons control homeostatic thermogenesis and social interaction-associated

- hyperthermia. *Cell Metab.* 34:P888-901.
24. Shao, Y., Fan, L., Wu, W., Zhu, Y., **Xu, H.*** (2022) A developmental switch between electrical and neuropeptide communication in the ventromedial hypothalamus. *Curr. Biol.* 32:3137-3145.
 25. Gao, L., Liu, S., Gou, L., Hu, Y., Liu, Y., Deng, L., Ma, D., Wang, H., Yang, Q., Chen, Z., Liu, D., Qiu, S., Wang, X., Wang, D., Wang, X., Ren, B., Liu, Q., Chen, T., Shi, X., Yao, H., Xu, C., Li, C., Sun, Y., Li, A., Luo, Q., Gong, H.* , **Xu, N.***, **Yan, J.*** (2022) Single-neuron projectome of mouse prefrontal cortex. *Nat. Neurosci.* 25:515-529.
 26. Yang, Q., Lin, Z., Zhang, W., Li, J., Chen, X., Zhang, J., **Yang, T.*** (2022) Monkey plays Pac-Man with compositional strategies and hierarchical decision-making. *eLife.* 11:e74500.
 27. **Kapoor, V.***, Dwarakanath, A., Safavi, S., Werner, J., Besserve, M., Panagiotaropoulos, T.* , Logthetis, N. (2022) Decoding internally generated transitions of conscious contents in the prefrontal cortex without subjective reports. *Nat. Commun.* 13:1535.
 28. Lu, Z., He, S., Jiang, J., Zhuang, L., Wang, Y., Yang, G., Jiang, X., Nie, Y., Fu, J., Zhang, X., Lu, Y., Bian, X., Chang, H., Xiong, Z., Huang, X.* , **Liu, Z.***, **Sun, Q.*** (2022) Base-edited cynomolgus monkeys mimic core symptoms of STXBP1 encephalopathy. *Mol. Ther.* 30:2163-2175.
 29. Sun, Y., Wang, L., Zhu, T., Wu, B., Wang, G., Luo, Z., Li, C.* , **Wei, W.***, **Liu, Z.*** (2022) Single-cell transcriptomic landscapes of the otic neuronal lineage at multiple early embryonic ages. *Cell Rep.* 38:110542.
 30. Li, Y., Wang, Y., **Cui, H.*** (2022) Posterior parietal cortex predicts upcoming movement in dynamic sensorimotor control. *PNAS* 119:e2118903119.
 31. Jiang, Y., Komatsu, M., Chen, Y., Xie, R., Zhang, K., Xia, Y., Gui, P., Liang, Z. * , **Wang, L.*** (2022) Constructing the hierarchy of predictive auditory sequences in the marmoset brain. *eLife.* 11:e74653.
 32. Xia, S., **Xu, H.*** (2022) Astrocytic gap junctions contribute to aberrant neuronal synchronization in a mouse model of MeCP2 duplication syndrome. *Neurosci. Bull.* 38:591-606.
 33. Xie, Y., Hu, P., Li, J., Chen, J., Song, W., Wang, X., Yang, T., Dehaene, S., Tang, S.* , **Min, B.***, **Wang, L.*** (2022) Geometry of sequence working memory in macaque prefrontal cortex. *Science.* 375:632-639
 34. Zhang, H., Zhen, Y., Yu, S., Long, T., Zhang, B., Jiang, X., Li, J., Fang, W., Sigman, M., Dehaene, S., **Wang, L.*** (2022) Working memory for spatial sequences:Developmental and evolutionary factors in encoding ordinal and relational structures. *J. Neurosci.* 42:850-864.

35. Yu, H., Miao, W., Ji, E., Huang, S., Jin, S., Zhu, X., Liu, M., Sun, Y., Xu, F., Yu, X.* (2022) Social touch-like tactile stimulation activates a tachykinin 1-oxytocin pathway to promote social interactions. *Neuron* 110:1051-1067.
36. Chen, R., Du, S., Yao, Y., Zhang, L., Luo, J., Shen, Y., Xu, Z., Zeng, X., Zhang, L., Liu, M., Yin, C., Tang, B., Tan, J., Xu, X.* , **Liu, J.*** (2022) A novel SPAST mutation results in spastin accumulation and defects in microtubule dynamics. *Mov. Disord.* 37:598-607.

Review Articles:

1. **Poo, M.*** (2022) Transcriptome, connectome and neuromodulation of the primate brain. *Cell* 185:P2636-2639.
2. Wang, L., Ding, W., **Sun, Y.*** (2022) Spinal ascending pathways for somatosensory information processing. *Trends Neurosci.* 45:594-607.