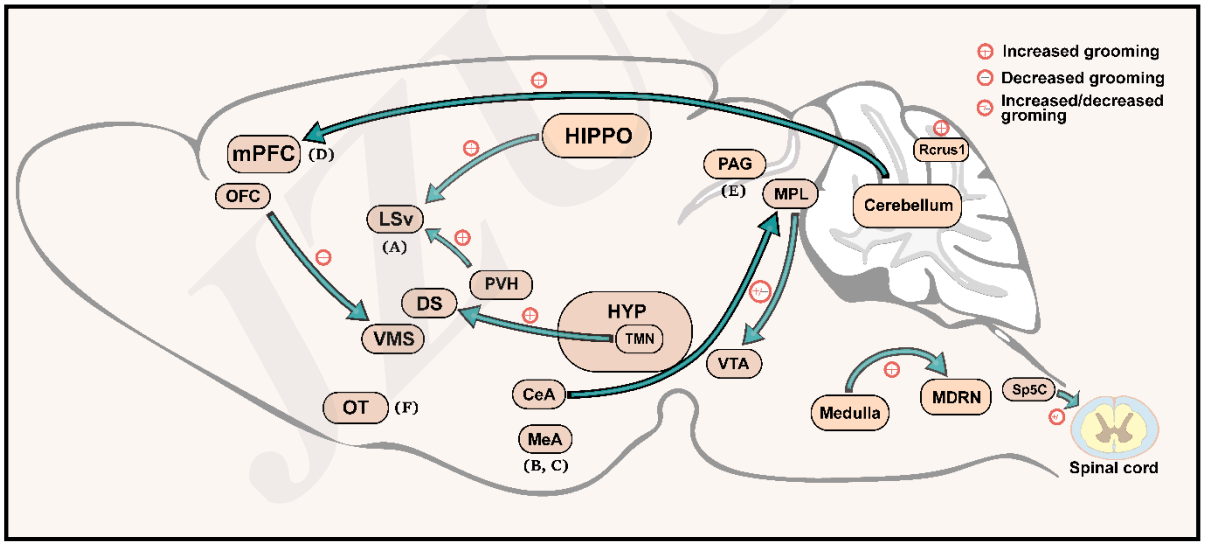
Cite this as: Guanqing LI, Chanyi LU, Miaomiao YIN, Peng WANG, Pengbo ZHANG, Jialiang WU, Wenqiang WANG, Ding WANG, Mengyue WANG, Jiahan LIU, Xinghan LIN, Jian-Xu ZHANG, Zhenshan WANG, Yiqun YU, Yun-Feng ZHANG. Neural substrates for regulating self-grooming behavior in rodents[J]. Journal of Zhejiang University Science B, 2024, 25(10): 841-856.
http://doi.org/10.1631/jzus.B2300562

Neural substrates for regulating self-grooming behavior in rodents

Key words: **Grooming, Repetitive behavior, Syntactic chain, Cephalocaudal progression, Neuropsychiatric disorders**

Research Summary

This review briefly summarizes the neural substrates responsible for rodent grooming behavior and explores its relevance in rodent models of neuropsychiatric disorders and neurodegenerative diseases with aberrant grooming phenotypes.



Neural circuits involved in the regulation of rodent self-grooming

Innovation points

- **Introduction** of the evolutionarily conserved repetitive behavior-self-grooming in rodents.

- **Summary** of the most updated research progress about neural substrates underlying self-grooming behavior, as well as neuropsychiatric disorders characterized with aberrant grooming phenotypes.

- **Emphasis** of the utility of rodent grooming as a reliable measure of repetitive behavior in neuropsychiatric models, holding promise for translational psychiatry.

Innovation points

A series of interesting yet unresolved questions were brought up for future studies.

1 | How can we develop more automated paradigms/platforms to analyze grooming behavior in a more precise, objective, and efficient way?

2 | What are the exact neuromorphological endophenotypes of corresponding brain regions under both normal and aberrant grooming behaviors?

3 | How do environmental factors interact with genes specifically pertaining to grooming behavior?

4 | What are the potential associations between the distinctly paralleled neural circuits responsible for grooming behavior?

5 | How do we apply large-scale bioinformatics and pathway analyses to study the complex grooming microstructure?