Peer-Review Report

Peer Review of “Effects of Ventral Pallidum–Nucleus Accumbens Shell Neural Pathway Modulation on Sucrose Consumption and Motivation in Female Rats: Chemogenetic Manipulation Study”

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(JMIRx Bio 2025;3:e71626) doi: 10.2196/71626

KEYWORDS

ventral pallidum; nucleus accumbens shell; chemogenetics; sucrose; feeding behavior; food motivation; palatable food; DREADD; designer receptors exclusively activated by designer drugs

This is a peer-review report submitted for the paper “Effects of Ventral Pallidum–Nucleus Accumbens Shell Neural Pathway Modulation on Sucrose Consumption and Motivation in Female Rats: Chemogenetic Manipulation Study.”

Round 1 Review

General Comments

In this paper [1], the authors present an interesting and well-written paper dealing with the effects of stimulation and inhibition of projections from the ventral pallidum to the nucleus accumbens shell on feeding and food reinforced behaviors. The methods used are cutting edge, and my comments and suggestions are relatively minor.

Specific Comments

Minor Comments

1. In the third paragraph of the Introduction, the sentence beginning with “Parallelly” is very awkward; I am sure there is a way to word this that does not use “parallelly.” Also, the previous sentence could be made clearer as to whether effects on sucrose consumption are found just in female rats.

2. The number of subjects should be listed in the Methods.

3. In the last paragraph of the body of the manuscript, the sentence beginning with “The discrepancies observed across studies of this pathway...” is unfinished, and I am uncertain what the authors intended to say.

4. In discussing the differences between the results observed here and those reported by Vanchez et al [2], is it possible that these may reflect the use of “closed-loop” manipulations linked to the occurrence of licking in the Vanchez et al [2] paper, in contrast to the continuous modulation produced here by the use of the DREADD (designer receptors exclusively activated by designer drugs) technique? Also, in this section, the authors could be a bit clearer as to why the techniques used by Vanchez et al [2] would be expected to label a different subpopulation of cells than was the case in this study.

Conflicts of Interest

None declared.

References

1. Peroutka M, Rivero Covelo I. Effects of ventral pallidum–nucleus accumbens shell neural pathway modulation on sucrose consumption and motivation in female rats: chemogenetic manipulation study. JMIRx Bio. 2025;3(1):e68519. [FREE Full text] [doi: 10.2196/68519]
2. Vachez YM, Tooley JR, Abiraman K, Matikainen-Ankney B, Casey E, Earnest T, et al. Ventral arkypallidal neurons inhibit accumbal firing to promote reward consumption. Nat Neurosci. Mar 2021;24(3):379-390. [FREE Full text] [doi: 10.1038/s41593-020-00772-7] [Medline: 33495635]

Abbreviations

DREADD: designer receptors exclusively activated by designer drugs

Edited by O Singh; this is a non–peer-reviewed article. Submitted 22.01.25; accepted 22.01.25; published 08.03.25.

Please cite as:
Wirtshafter D
Peer Review of "Effects of Ventral Pallidum–Nucleus Accumbens Shell Neural Pathway Modulation on Sucrose Consumption and Motivation in Female Rats: Chemogenetic Manipulation Study"
JMIRx Bio 2025;3:e71626
URL: https://bio.jmirx.org/2025/1/e71626
doi: 10.2196/71626
PMID: