
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”

Jeffrey Grimm

¹Western Washington University, Bellingham, WA, United States**Related Articles:**Preprint (bioRxiv): <https://www.biorxiv.org/content/10.1101/2024.11.05.622115v1>Authors' Response to Peer-Review Reports: <https://bio.jmirx.org/2025/1/e71629/>Published Article: <https://bio.jmirx.org/1/e68519/>(JMIRx Bio 2025;3:e71627) doi: [10.2196/71627](https://doi.org/10.2196/71627)**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

The manuscript from Peroutka and Covelo [1] describes the results of chemogenic activation or inhibition of the ventral pallidum–nucleus accumbens shell pathway in adult female rats on sucrose intake (20% sucrose bottle access) versus operant response–provided food pellets delivered on a progressive ratio schedule. The rats were not food restricted. Activation of the pathway decreased sucrose intake while inactivation of the pathway increased sucrose intake. Activation or inactivation did not clearly alter responding for food pellets. The authors provide discussion including an interpretation of the results, such that this pathway is important for sucrose consumption but not motivation for food. This is an interesting study that has some limitations listed below.

Specific Comments**Major Comments**

1. Why were only female rats used for this study?
2. What was the approximate age of the rats at the start of the study?
3. The conclusion of the pathway being relevant for sucrose consumption but not food motivation is reasonable, but it would be stronger if the comparisons were made with sucrose consumption versus sucrose motivation and also food consumption versus food motivation.

Minor Comments

4. Are there more objective data from analysis of the immunohistochemistry? What is presented are representative images, but was there any quantification done?
5. The authors discuss cell types but do not specify the likely type of neurons stimulated in this study; is it possible to do so?

Round 2 Review

General Comments

The authors have addressed my concerns from the initial draft.

Conflicts of Interest

None declared.

Reference

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](https://doi.org/10.2196/68519)]
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