

Behavioral Effects of Odorant Injection on Larvae and Eggs of *Bicyclus anynana*

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Abstract

Background A non-gustatory neural circuit was shown to alter dietary preferences in rodents.

Aim & Method To examine if a similar non-gustatory mechanism facilitate *Bicyclus anynana* learning a preference for a novel odor, we investigated the behavioral effect of injection of isoamyl acetate solution to larvae and eggs, and then that of their offspring.

Results The injected larvae's preferences were not altered, but those of their offspring were. Also, larvae from the injected eggs showed strong naïve preference for the odor.

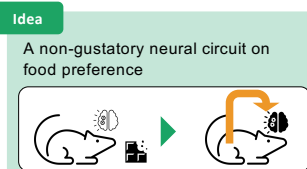
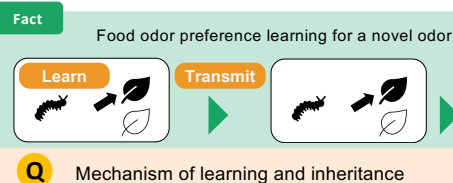
Discussion Isoamyl acetate injections therefore may contribute a novel pathway for learning in *B. anynana*.



Background



Bicyclus anynana



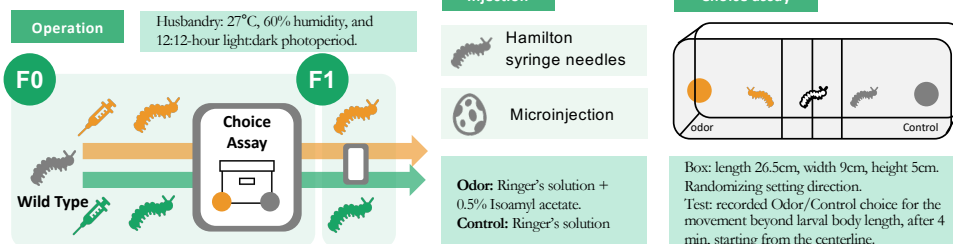
Hypothesis

Larvae injection...

Egg injection...



Materials & Methods



Conclusion

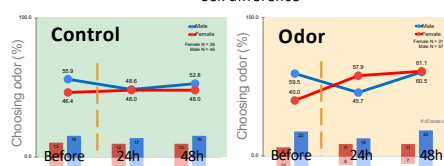
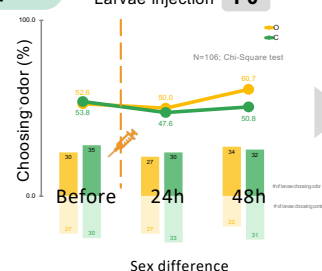
Result 1 | Injection of odorants may contribute to odor learning and its inheritance



- ① Larvae injection F0 **No change in odor preference**
No sex difference
- ② Larvae injection F1 **Increased preference for the odor**

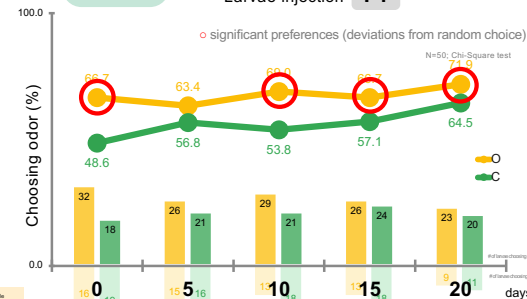
Exp. 1

Larvae injection F0



Exp. 2

Larvae injection F1

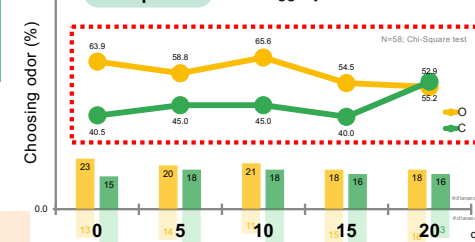


Result 2 | Larvae from injected eggs prefer the odor

- ③ Egg injection **Increased naïve preference for the odor**

Exp. 3

Egg injection



Acknowledgement

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