

Do individuals prophylactically adapt their immune response in presence of infected group members ?

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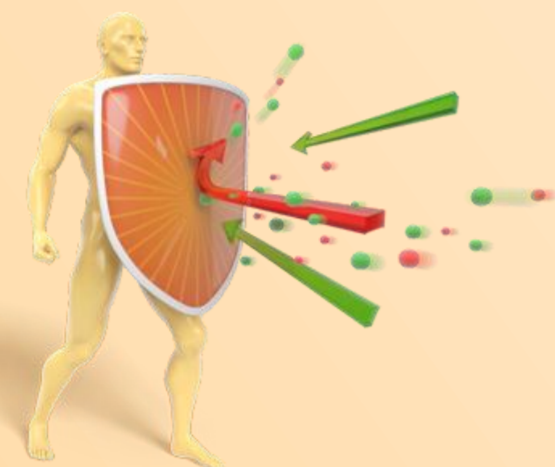


Introduction



Increases risk of pathogen infection (Cremer et al. 2007)

Group living



Selects for the ability to prophylactically adapt one's immune system (Ruiz-Gonzales et al. 2009)

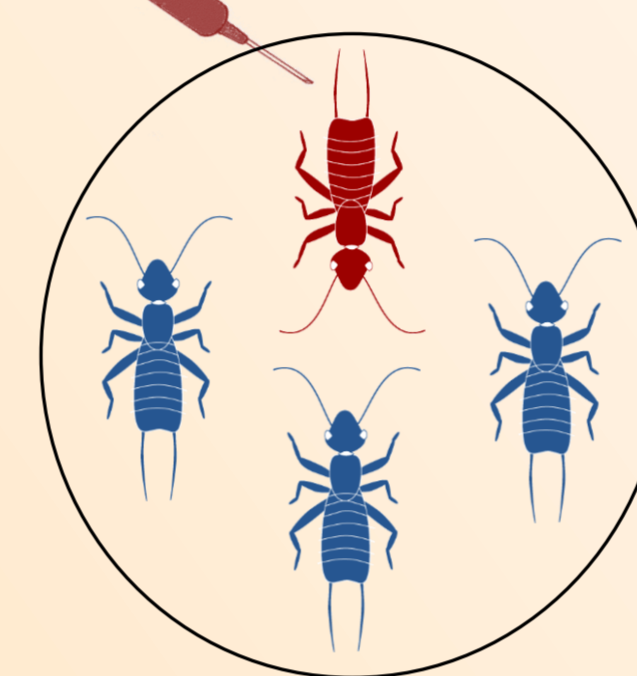
Here, we tested whether individuals **reduce their risk of infection by increasing their basal immunity** in presence of an immune-challenged group member.

Material and methods

- *Forficula auricularia* : gregarious insect.
- We challenged 1 individual from a group of 4 and measured immunity in all 4 individuals, either 24 or 48h later (n = 94).

Immune challenge

Lipopolysaccharide (LPS) or Ringer or no challenge



Non-focal

24h or 48h later

2 key immune measurements

Phenoloxidase (PO) & total-PO activities

Hemocyte concentration

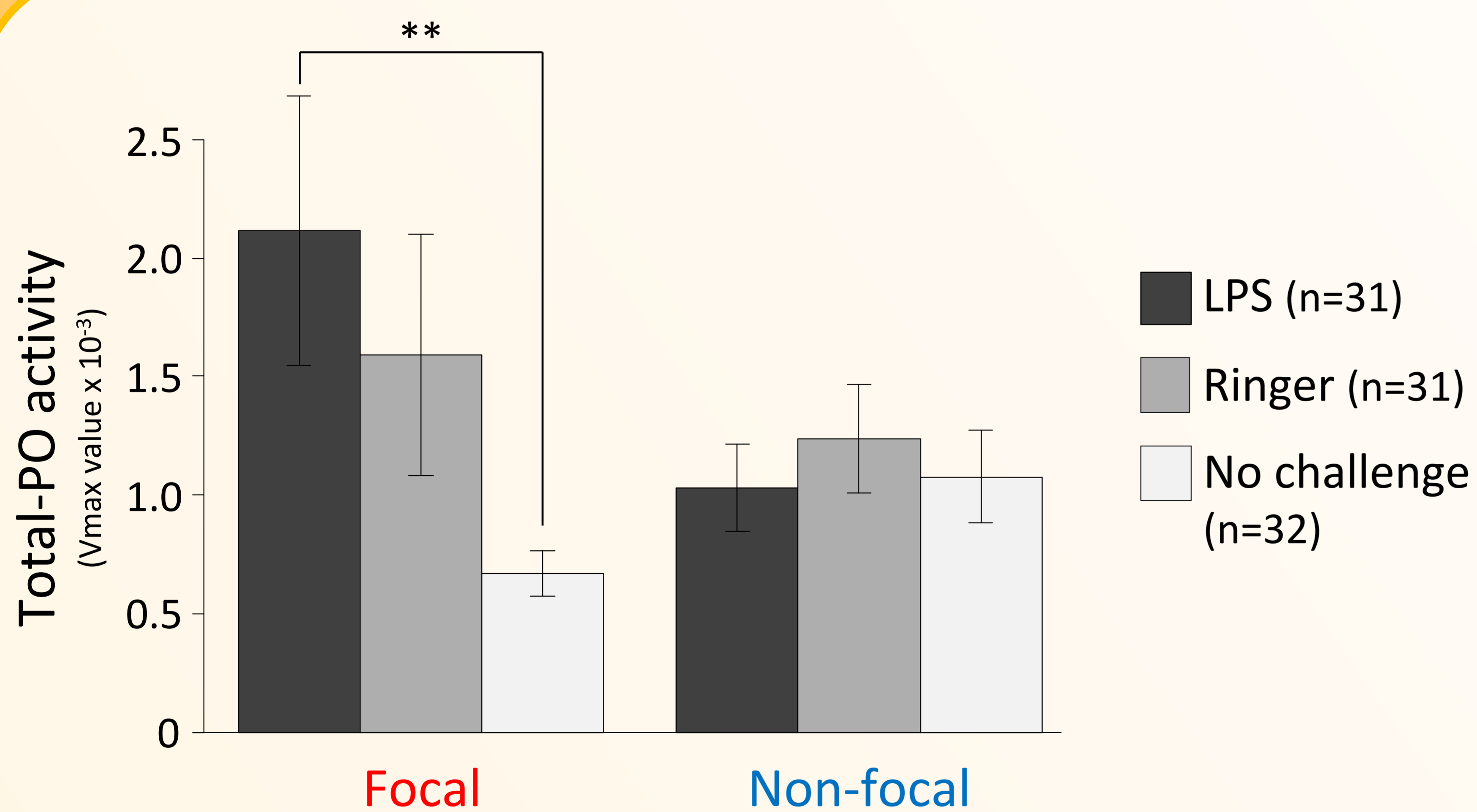
Predictions

If prophylactic mechanism:

→ Focal immunity differs between focal treatments

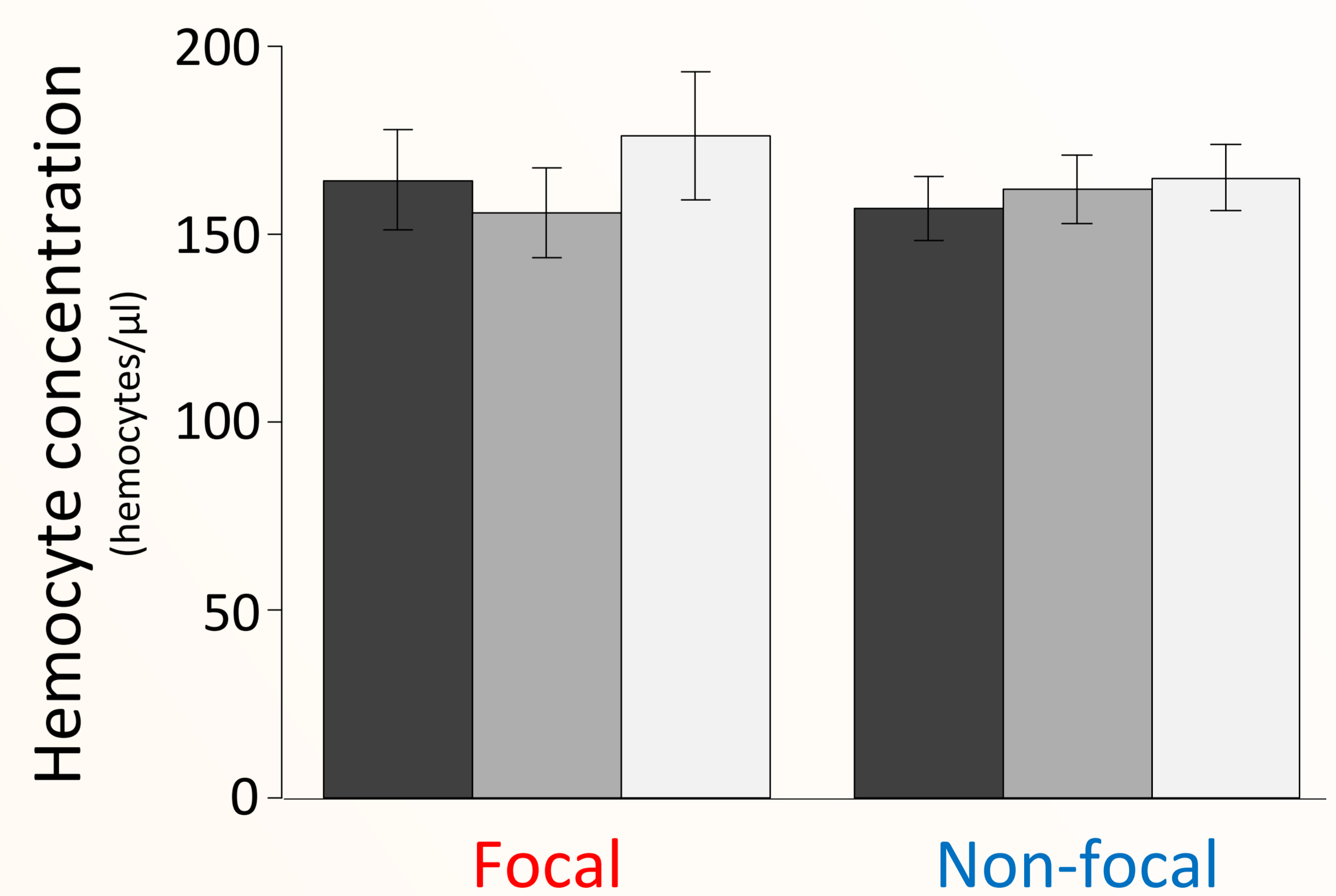
→ No difference in immunity between focal and non-focal individuals

Results



Focal responded to the challenge by increasing PO and total-PO activities. Non-focals did not increase PO & total-PO activities in response to this threat.

• **No prophylactic adaptation !**



Neither the status nor the treatment affected hemocyte concentration

• Not a suitable measurement for prophylaxis?

• Hemocytes are **not involved in the response to our immune challenge?**

Conclusion

Our results **do not support the hypothesis of a prophylactic change in immunity in *F. auricularia*.**