

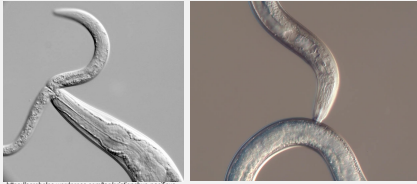
Variation of recognition mechanism of predator species to other nematodes

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INTRODUCTION

Diplogasterid predator
Pristionchus pacificus

Aphelenchoidid predator
Seinura caverna

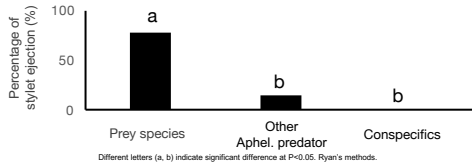


<https://acrobates.wordpress.com/blog/pristionchus-pacificus>

- distinguishes **SAME STRAIN** from others
- based on **CHEMICAL** recognition (Lightfoot et al., 2019)

Conspecific recognition **ERROR** of *S. caverna*

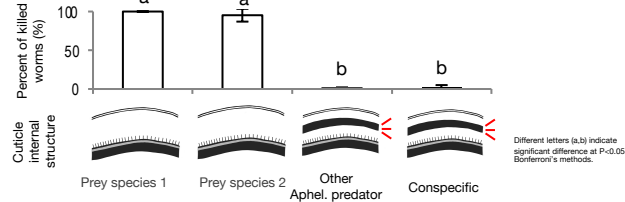
We examined whether *S. caverna* tries to predate conspecifics or not. As results, *S. caverna* did not try to predate to not only conspecifics but also other aphelenchoidid predator.



- **CANNOT** distinguish **CONSPECIFICS** from other aphel. predator
- Conspecific recognition based on **????**

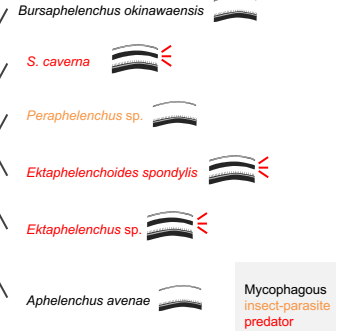
Is conspecific recognition explained by **PHYSICAL** one?

- The purpose of this experiment is to examine whether **physical cues work for conspecific recognition or not**.
- We compared cuticle internal cuticle ultrastructures among aphel. nematode species including predator nematode species.
- We also measured survival rates of four aphel. species exposed to *S. caverna*.



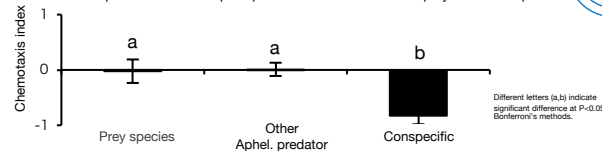
Internal cuticle structure was related with predation avoidance

Specific cuticle is evolved **ONLY IN PREDATOR**



Is conspecific recognition explained by **CHEMICAL** one?

- The purpose of this experiment is to examine **whether chemical cues work for conspecific recognition or not**.
- We conducted chemotaxis assay.
- We hypothesized that *S. caverna* avoids secreted/excreted chemical cues from conspecifics and other aphel. predator while does not from prey nematode species.



Chemical recognition did not explain the conspecific recognition

CONCLUSION

- *Seinura caverna* failed to distinguish conspecifics from the other predator species, i.e., there were conspecific recognition error in *S. caverna*.
- The recognition error was explained by **physical recognition** system instead of **chemical one**.
- *Seinura caverna* seems to evolve a conspecific recognition system which differs from that of *Pristionchus*.