Sex Affects Immune Function in Reptiles



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Introduction

• We tested for sex and age differences in heterophil/lymphocyte ratios (hereafter, referred to as H:L) in Mediterranean House Geckos (*Hemidactylus turcicus*) and Painted Turtles (*Chrysemys picta*).



Heterophils are positively correlated with inflammatory response, as Turtles have temperature dependent sex is age.
determination (TSD) (lack sex chromosomes).



<u>Hypotheses:</u>



Geckos have **chromosomal sex determination (XX/XY).**

Methods

Step 1: Make blood smears





Step 2: Identify and count lymphocytes



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Heterophil

Results



Graph 1. Significant effect of sex (p= 0.0366).

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Graph 2. Significant effect of sex (p= 0.0137).

Conclusion

- Painted Turtles males had higher H:L ratios than females.
- Mediterranean House Geckos females had higher H:L ratios than males.
- No significant effect of age on H:L ratios for either species.
- These results could be due to the different sex-determining mechanisms, but further studies would be needed to test this hypothesis.
- These results could mean that other mechanisms of aging and inflammation may be more crucial to reptiles than changes in leukocyte ratios.



Future Research

- Repeat this experiment outside of the animals' breeding season.
- Test if and how different sex determining mechanisms could

impact immune function.





Thank You

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Questions?



