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Der Laborbereich ist akkreditiert nach DIN EN ISO 15189.

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### About Ph.D. thesis of MSc. Sofia Mazzoleni:

"Evolution of sex chromosomes in reptiles"

The work presented by Sofia Mazzoleni was performed at the Charles University (Prague, Czech) in the laboratory of Dr. Michail Rovatsos.

The work is a cumulative one, based on 5 peer reviewed publications.

Topic is sex determination in reptiles, specifically in turtles, and studies were based on (molecular) cytogenetics and PCR-approaches. As a result the thesis describes XX/XY sex chromosomes in seven previously unstudied Australasian chelids (Pleurodira) from the genera Chelodina, Elseya and Emydura.

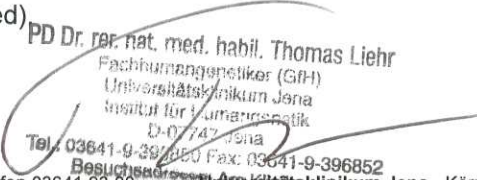
Also – by including own and literature data Sofia Mazzoleni could show that male heterogamety is widespread and potentially old across Chelidae, while female heterogamety seems only to be present in Trionychidae. Concerning molecular cytogenetic data, repetitive elements are very well suited as DNA-probes to identify cryptic sex chromosomes.

During studying reptiles also bird were taken as a reference and it turned out that sex determination is extremely conserved in birds and a new qPCR-based molecular sex identification method was established applicable in all bird species.

Overall, the studies done cover a standard spectrum of approaches (cytogenetics, molecular cytogenetics including CGH and PCR); however, also a new test system applicable in birds was established. Thus, the presented work has scientific and methodological strengths. The data was very well published (IF ~1.1 to ~4.0); it is normally very hard to publish data on animal not being model systems and/or of commercial value.

In conclusion I recommend the work of Sofia Mazzoleni to be accepted as a PhD-dissertation. In case I shall provide an evaluation I would give a 1.0 (on a scale of 1.0 = best and 6.0 = worst and failed)

Sincerely

  
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