Diversity of Tarantulas

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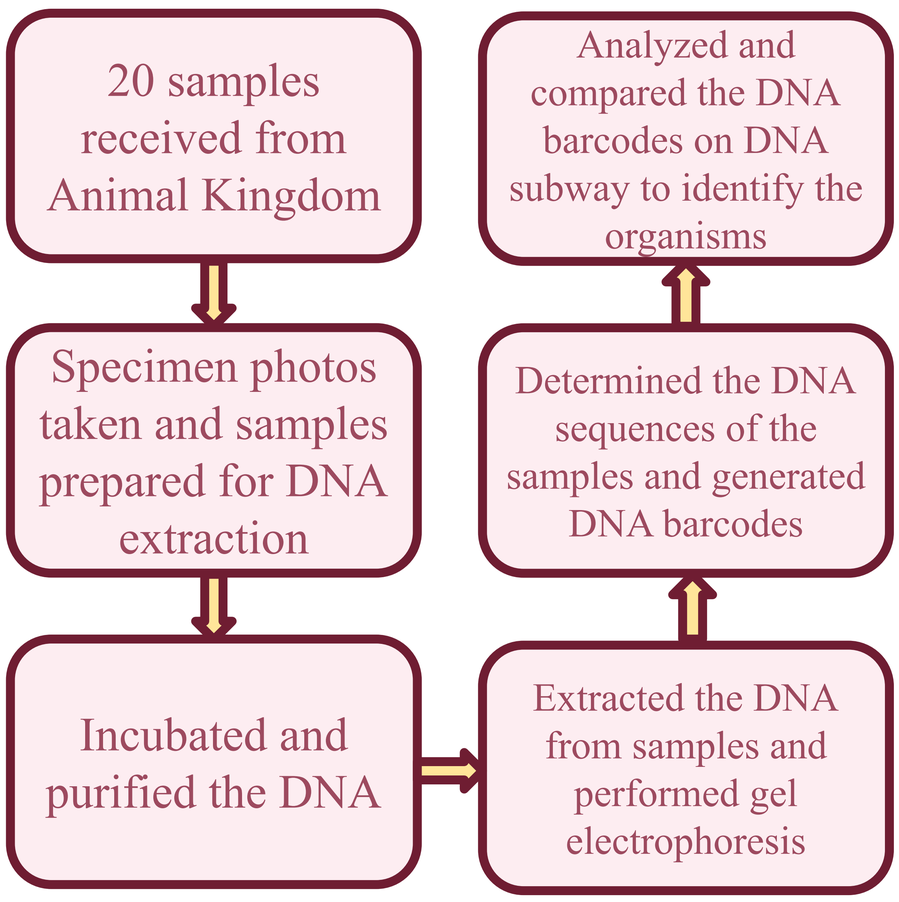
Abstract

In the study of tarantulas, there is limited knowledge of species diversity since many species look physically similar due to convergent evolution (they live in similar but isolated habitats and have similar adaptations). For our project we are using the molts of different tarantula species to find their DNA barcode. This project is meant to create a strong collection of Tarantula DNA barcodes. Our intended methods include silica DNA extraction. We expect to find the DNA barcodes for the various tarantula species we are examining.

Introduction

DNA barcoding is using the DNA of an organism to identify its exact species. Our intention for barcoding and sequencing these tarantula molts is to build a stronger reference library of tarantula DNA barcodes that can be used by conservationists and zoological staff. We should study tarantula biodiversity because Tarantulas are a natural predator of pests and act as a stabilizer of insect pest density. Tarantula diversity is decreasing because the invasive nature of DNA barcoding, which involves the killing of tarantulas, resulting in endangerment of tarantulas. This is important because tarantulas play a crucial role in ecosystems as natural predators of pests.

Materials and Methods



References

Curly Hair
(Tliltocatl)
Image Courtesy of Pisces Pet Emporium

Indian Ornemental
(Poecilotheria regalis)
Image Courtesy of Bhudda Bugs

Chaco Golden Knee
(Grammostola pulchripes)
Image Courtesy of Dave the Bug Guy

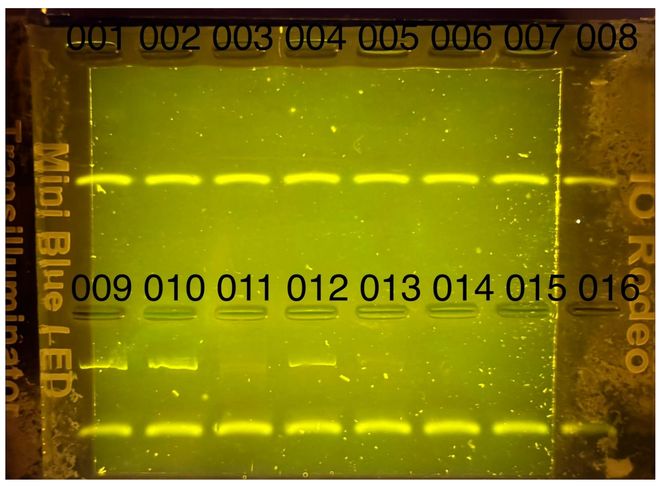
Sample #	Common Name	Scientific Name
DKA-001	Curly Hair	*Tliltocatl albopilosus*
DKA-002	Trinidad Chevron	*Psalmopoeus cambridgei*
DKA-003	Indian Ornamental	*Poecilotheria regalis*
DKA-004	Curly Hair	*Tliltocatl albopilosus*
DKA-005	Curly Hair	*Tliltocatl albopilosus*
DKA-006	Curly Hair	*Tliltocatl albopilosus*
DKA-007	Curly Hair	*Tliltocatl albopilosus*
DKA-008	Brazilian Salmon Pink	*Lasiodora parahybana*
DKA-009	Pink Toe	*Avicularia avicularia*
DKA-010	Brazilian Black	*Grammastola pulchra*
DKA-011	Goliath Bird eater	*Theraphosa blondi*
DKA-012	Smith's Red Knee	*Brachypelma smithi*
DKA-013	Rose Hair	*Grammastola rosea/porteri*
DKA-014	Curly Hair	*Tliltocatl albopilosus*
DKA-015	Brazilian Salmon Pink	*Lasiodora parahybana*
DKA-016	Brazilian salmon pink bird-eating tarantula	*Lasiodora parahybana*
DKA-017	Chaco Golden Knee	*Grammastola pulchripes*
DKA-018	Togo Starburst Baboon	*Heteroscodra maculata*
DKA-019	Curly Hair	*Tliltocatl albopilosus*
DKA-020	Brazilian Black	*Grammastola pulchra*

Sample DKA-009

Sample DKA-014

Sample DKA-010

Sample DKA-019



Results

Based on the Gel Electrophoresis results, PCR of the samples was successful. We are awaiting DNA barcoding results from Cold Spring Harbor Lab, which will provide us with the DNA barcode for each sample, and ultimately the correct identification of tested tarantula species.

Discussion

We are anticipating that the DNA barcode results will show a high biodiversity within Tarantulas.

Future Directions

Once we receive our DNA Barcode results, we will trim, analyze, and compare the DNA to identify the organisms and the amount of biodiversity within their environment.

Acknowledgements

Thank you to the DNA Learning Center Staff for support with proposals, providing laboratory equipment, and supporting sequence analysis.

CENTRAL PINE BARRENS
JOINT PLANNING & POLICY COMMISSION

BARCODE LONG ISLAND

Brookhaven National Laboratory

NEW YORK STATE Department of Environmental Conservation