



# Treatment into Chronic Kidney Disease (CKD)



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## Introduction

This past summer, I did a research internship at Georgetown University's Department of Molecular and Cellular Biology. At this internship, I worked alongside postdocs, PhD candidates, and MDs to better understand the mechanisms of a treatment to alleviate Chronic Kidney Disease (CKD). This was done using animal models, specifically mice. Tissues were collected from these animals and used in our experiments.



Georgetown University's Department of Molecular and Cellular Biology. The lab I worked in was within this building and was directly above the medical school. Here, I visited symposiums, guest lectures, and networked with others in the field.

## Site Information:

Name of Site: Georgetown University Department of Molecular and Cellular Biology

Address: 3900 Reservoir Rd NW #337, Washington, DC 20007

Your supervisor: Dr. Moshe Levi

The site mission: Understand the mechanisms of CKD and finding treatments to alleviate such mechanisms

The particular goals of the site you were at: Using Nicotinamide Riboside to treat CKD while understanding its underlying mechanisms in doing so.

## Issues Confronting Site:

Funding, coordination with collaborators, especially since many of whom were in different countries, and ensuring proper resources.

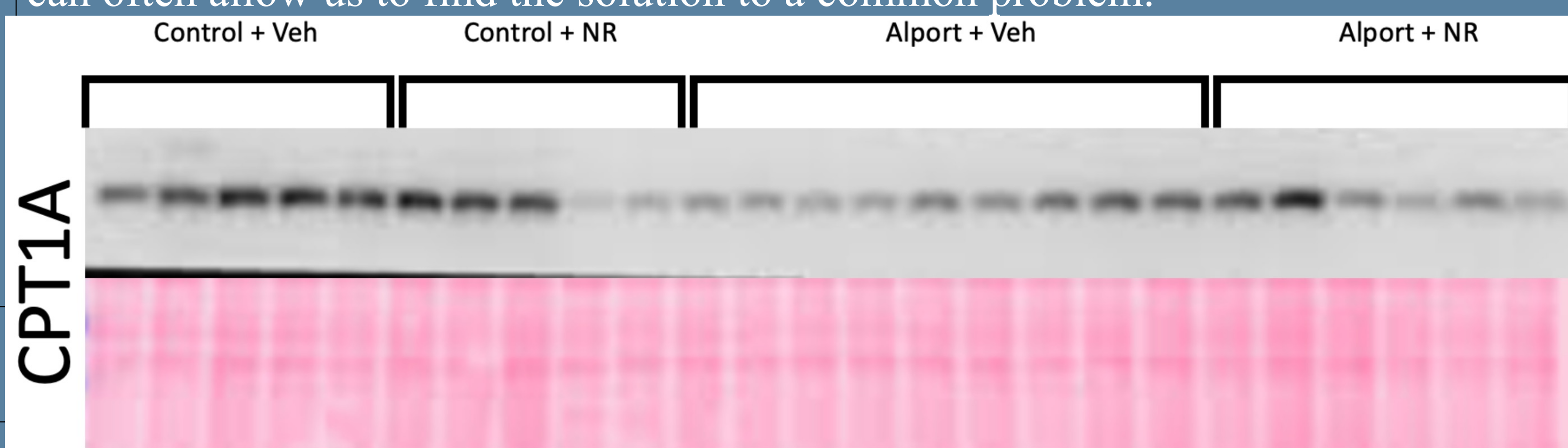
## Activities:

- Ran numerous experiments, including Western Blotting and PCR.
- Reviewed grants and manuscripts and attended lab meetings for weekly project updated.
- Attended symposiums and guest lectures.
- Mentored younger students on experiments.

## Discussion:

I greatly appreciated this experience as it fostered an appreciation for research. Furthermore, it offered an introduction into renal physiology, which is of much relevance to my coursework. I learned about my interest and passion for research and I hope to continue this passion into future opportunities.

Furthermore, it taught me the importance of collaboration and patience as experiments don't always go the way we hypothesized, and brainstorming together can often allow us to find the solution to a common problem.



An example of a Western Blot I ran in lab. The top bands are the protein expression as seen visually. This is later quantified to find exact relative protein expression between the groups. The bottom image is an image from the western blot. It is stained and then examined in a machine that exposes it to light to obtain the top image. This specific western blot was done with 25 samples from four different groups and we are analyzing the expression of the protein CPT1A in the kidneys.

## Impact:

Personally, this internship allowed me to apply the knowledge I have attained in a classroom setting and gain a better appreciation for my studies. It also enabled me to better understand what I would like to do in my future career.

In a larger societal context, the work done at the Levi Lab has the potential to offer a treatment for the disease that millions suffer from nationally. When this therapeutic approach is more widely used, I hope to look back on this work, knowing I had an impact in facilitating its evolution.

## Future Work:

I hope to continue to gain experience in numerous research labs. While I am interested in the kidney, I would also like to explore the brain and study the neurological effects of certain stimuli. My hope is that research continues to foster my learning and allow me to apply what I have learned in my coursework in a laboratory setting.

## Acknowledgments:

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