

A mitoPodCast Interview with Dr. Walid Houry

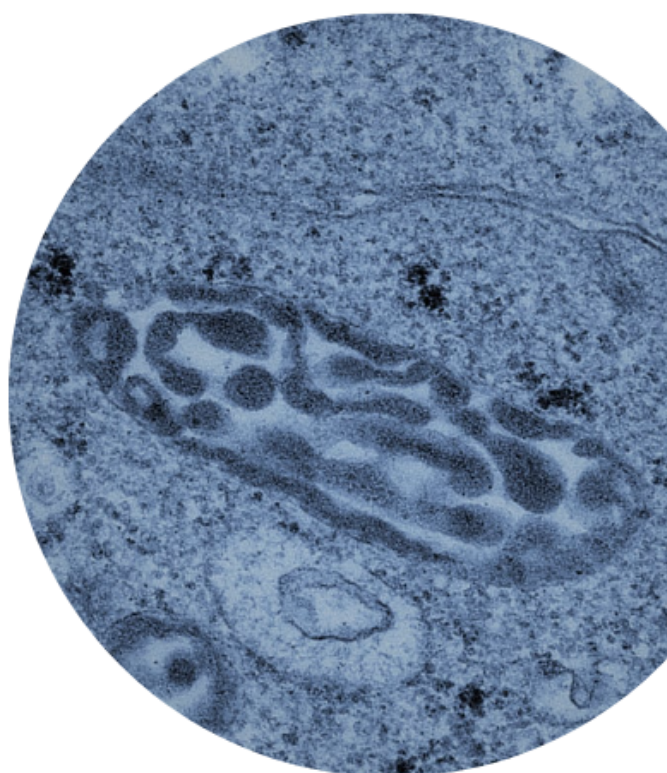


MEET DR. HOURY

Dr. Houry is a Professor in the Departments of Chemistry and Biochemistry at the University of Toronto. In 2018, he served as Acting Chair for the university's Department of Biochemistry. Dr. Houry obtained his Master of Science and PhD, both in Chemistry, from Cornell University.

BACKGROUND OF RESEARCH

Dr. Houry's group investigates mitochondrial quality control proteins called chaperones and proteases. These govern the assembly and proper folding of proteins required by our cells. Of particular interest is ClpP, a major mitochondrial protease that degrades proteins. Mutations in ClpP lead to mitochondrial diseases such as Perrault syndrome.

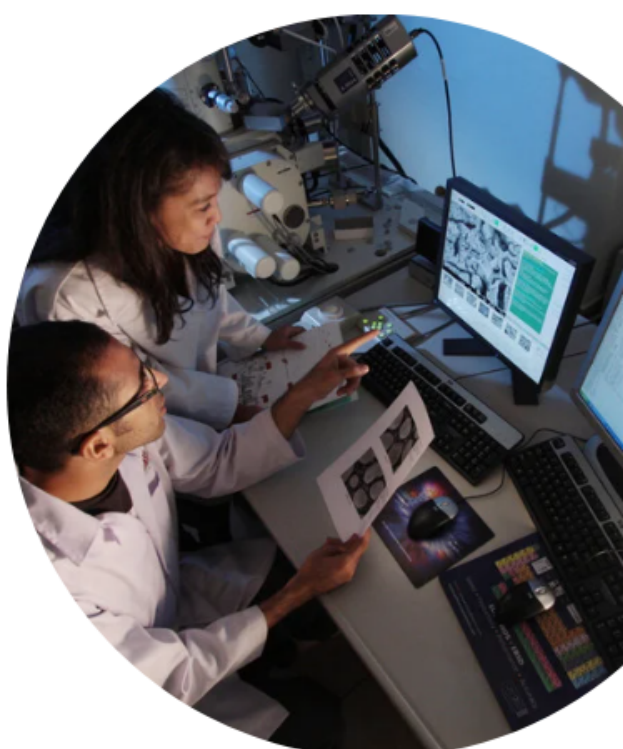


RECENT FINDINGS

Dr. Houry found that compounds can bind to ClpP and cause it to lose its selectivity filter. This causes ClpP to chew up many more proteins in a cell to the point where the mitochondrial apoptotic pathway is triggered and cell death occurs. In a broader sense, this unveiled a mechanism to activate or reduce ClpP function. This could have therapeutic implications for ClpP disorders.

HIS NEXT STEPS?

Dr. Houry would like to find compounds that regulate the function of ClpP's selectivity filter. On a broader scale, Dr. Houry would like to collaborate with other scientists who could test some of these compounds in tissues or animal models to see if there is therapeutic potential or if there are side effects.



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ACCELERATING DRUG DEVELOPMENT

We need to work with others to organize large-scale randomized clinical trials to get good evidence that novel drugs may indeed work for patients. Drug development needs to be rigorous and experiments need to have clear outcome measurements.

IMPORTANCE OF COLLABORATION

Dr. Houry had never encountered a patient with a ClpP mutation before the MITO2019 conference. After concluding his talk, he met a researcher named Dr. Shamima Rahman at University College London who had a patient with a ClpP mutation. This opened up a new opportunity for collaboration. This shows the power of collaborative initiatives and how it can drive new avenues of research.



FINAL MESSAGE AND GETTING IN TOUCH

We need to enhance collaboration between basic scientists, clinicians and patient to solve the most pressing issues in mitochondrial medicine.

If you have any questions, you can contact Dr. Houry at walid.houry@utoronto.ca or follow him on Twitter [@WAH_Canada](https://twitter.com/WAH_Canada).

Visit his lab website lab.walidhoury.com to learn more about his work.



Click here to listen to the full podcast!