

**Sizhu Amelia Chen**  
**PhD Candidate**  
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Amelia received her Bachelor of Science with Specialization in Biochemistry in 2021 at the University of Alberta. During her undergraduate study, she worked as a summer student in Dr. Joanne Lemieux's lab. She continued her work on the crystallization of feline coronavirus main protease with feline prodrug GC376 as her BIOCH 499 project and published her work as a second author of the paper. Dr. Lemieux's teams have shown that GC376 was also a potent inhibitor of SARS-CoV and SARS-CoV-2 *in vivo*.

Amelia continued her study in Department of Biochemistry, currently, she is a second year PhD student in Dr. Joanne Lemieux's lab. She has been worked on investigating the effect of main protease mutations found in different variant of concerns on viral and host substrates cleavage and drug resistance. Her current project focuses on investigating the role of transmembrane regions in SARS-CoV-2 main protease autoprocessing. She has experienced in various techniques related to bacteria, mammalian and insect cells culturing, protein purification, activity assays, structural analysis.

Amelia has actively attended and presented her research in a variety of local, national, and international conferences. She delivered oral presentations in the International Protease Society conference in Singapore and the Pacific Coast Protease conference in the State.

Her article, "SARS-CoV-2 M<sup>pro</sup> Protease Variants of Concern Display Altered Viral Substrate and Cell Host Target Galectin-8 Processing but Retain Sensitivity toward Antivirals," showed changes in the activity of 31 SARS-CoV-2 M<sup>pro</sup> mutants in variants of concern toward viral substrate and cell host target galectin-8, leading to reduced cytokine secretion. All M<sup>pro</sup> mutants retain sensitivity toward antivirals, suggesting M<sup>pro</sup> will remain a high-priority antiviral drug candidate as SARS-CoV-2 evolves. Her work has been published in ACS central science. She has participated in the design of a cover art which was selected as the journal cover of Volume 9, Issue 4.