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The Solubilizing of Recombinant Influenza Polymerase Acidic Protein



Honors Thesis

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Department: Chemistry

Advisor: Doug Daniels Ph.D.

December 2021

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Abstract

Influenza's potential to start a pandemic is a global concern. The costs of the COVID 19 pandemic to the international economy and health are a clear example of the harm influenza could inflict. Even in a normal year, influenza is responsible for 36.5 thousand deaths, 475 thousand hospitalizations and 27 million infections. With rising drug resistance, new antivirals are imperative to safeguard the worldwide population. One potential source of novel antivirals is the inhibition of polymerase acidic protein (PA), which plays an integral role in influenza's replication. While PA's structure is known, current PA crystal forms do not provide an accessible binding pocket, so the creation of new PA crystal forms could enable the structure-based refinement of novel lead compounds. Working toward new PA crystal forms, this thesis will elaborate on the processes of solubilizing polymerase acidic protein, the overexpression of PA, and its purification.

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