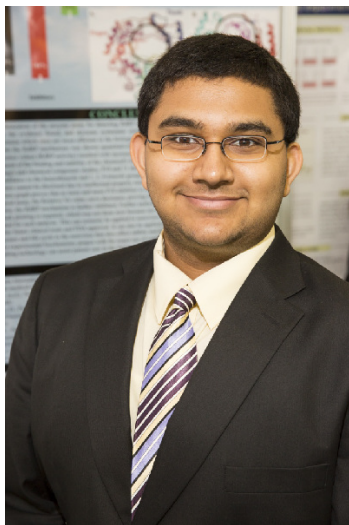


CWSF 2015 - Fredericton, New Brunswick



Jay Sharma

Killing Viruses: The discovery and characterization of novel RdRP inhibitors

Challenge: Health

Category: Senior

Region: Calgary Youth

City: Calgary, AB

School: Henry Wise Wood High School

Abstract: The foundation of the norovirus, whose outbreaks rate is rapidly increasing, is the RNA dependent RNA Polymerase (RdRP) cellular mechanism. The potency of benzothiazole and 1,2,4-triazole to inhibit the RdRP were tested with differential scanning fluorometry, in-vitro fluorescence based assays, and X-ray crystallography imaging using a synchrotron. Positive findings will impact future studies and treatments for millions of people affected by the norovirus.

Biography

Hello! I'm a grade 12 International Baccalaureate high school student from Calgary, who will pursue a degree in biochemistry, and eventually medicine. I am extremely passionate about science, biomedicine and innovation for the betterment of humanity. I was inspired to carry out my project from the hospital volunteer time I spent abroad and domestically, where I noticed and experienced the phenomenon of mass viral outbreaks affecting millions of people. I decided to try and put an end to a seemingly easy problem, and so I started going to the University of Calgary library. I also began conducting independent research on using unique inhibitors to attack the core process of the most dangerous group of viruses. I presented my ideas to the University of Calgary, which resulted in lab space to work on this idea. The result was this project, where I went beyond basic biochemistry to even using X-ray crystallographic imaging systems, and I plan to conduct future studies to enhance and solidify my results. Lastly, I would advise others to explore the world of science that exhilarates you, and pursue it enthusiastically! I kept this idea for innovation in mind and I now look forward to this momentous experience!

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