

CWSF 2012 - Charlottetown, Prince Edward Island



Tannya Cai

Effect of Curcumin on RSV Replication and Virus Induced Cytokine Production

Challenge: Health

Category: Senior

Region: Ottawa

City: Gatineau, QC

School: Elmwood School

Abstract: This project investigates the effect of curcumin, a safe element of certain foods, on the replication of RSV in tissue culture as well as its effect on infection-induced cytokine production. Curcumin has potential as a therapeutic for RSV infections, either by direct ability to inhibit virus replication, or by indirect effects on symptoms through inhibition of inflammatory cytokines.

Biography

My name is Tannya Cai, and beyond my hours in a lab, I am a competitive figure skater and pianist! I hope to pursue medical studies in the future. My inspiration came from Dr. K. Wright and stories I heard from Inuit people, who are most susceptible to the Respiratory Syncytial Virus (RSV) in Canada. RSV is the leading cause of lower respiratory tract infections in infants and can develop into fatal cases of pneumonia or bronchiolitis; there is no vaccine or effective antiviral drugs, which is how I became interested. Lack of medical facilities and supplies in the North for hospitalization makes it necessary for infants to travel down south for care, which is costly and delays treatment. After Dr. Wright's suggestion of testing the effect of Curcumin, found in Turmeric, which has anti-bacterial, anti-inflammatory, and anti-viral properties, the project took off! Further investigations include examining a greater variety of cytokines to see overall effects of curcumin on cytokine production. Cell signalling pathways affected by curcumin will be examined along with effective methods of incorporating curcumin into diets of the Inuit people. This was an incredible experience. I would recommend anyone with similar interests to give it a try!

Awards

Value

Excellence Award - Senior - Bronze Medal Sponsor: Nuclear Waste Management Organization	\$300
University of Ottawa Entrance Scholarship Senior Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Ottawa	\$1 000
Western University Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: Western University	\$1 000
Total	\$2 300