

# CWSF 2013 - Lethbridge, Alberta



## Cathy Tie

### Characterizing RNF20 and RNF40 in Class Switching of B Cells

**Challenge:** Health

**Category:** Senior

**Region:** Peel

**City:** Mississauga, ON

**School:** Glenforest S.S.

**Abstract:** The roles and functions of proteins RNF20 and RNF40 in the class switch recombination process of B cells were investigated. Through polymerase chain reaction (PCR) and PCR clean-up, the PCR products were ligated into an expression vector for flow cytometry. Results revealed the efficiency of over fourteen primers, consequently advancing the research towards an effective antibody response that is critical in protective immunity.

#### Biography

My name is Cathy Tie and I'm a Grade 11 student enrolled in the International Baccalaureate Diploma Program at Glenforest Secondary School in Mississauga, Ontario. My passion for the sciences began as early as the sixth grade, and was triggered by hands-on experiments outside of textbook science. I delve further into scientific research in tenth grade when my partner and I investigated alternative sources for bio-ethanol production, and successfully competed in the Canada-Wide Science Fair in PEI. During the summer of 2012, I studied at the University of Pennsylvania which enabled me to advance my studies in the sciences. It's been a pleasure working at the Martin laboratory at the University of Toronto for my project this year. Though, outside of the lab, I enjoy taking on leadership roles in my community. I currently hold presidency in the school-wide science club and math club, and I actively partake executive roles in youth philanthropies such as Tumai for Tomorrow. In the future, I wish to continue research in molecular biology and further discoveries made in the subject of antibody diversification.

#### Awards

#### Value

Excellence Award - Senior - Bronze Medal Sponsor: Youth Science Canada	\$100
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
<b>Total</b>	<b>\$2 100</b>