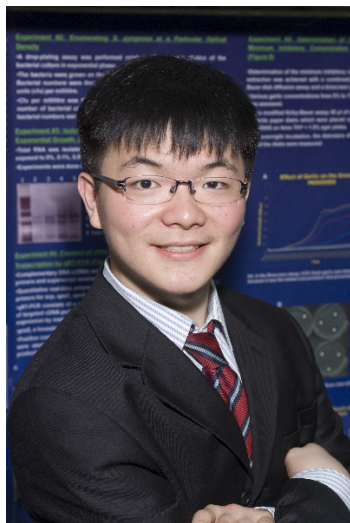


# CWSF 2009 - Winnipeg, Manitoba



## Tony Kwon

### Garlic-Induced Gene Expression Changes in Streptococcus pyogenes Predict a Reduc

**Division:** Life Sciences / Environmental Innovation

**Category:** Senior

**Region:** London District

**City:** London, ON

**School:** A.B. Lucas S.S.

**Abstract:** This project hypothesized that a natural product like fresh garlic could decrease the virulence factor expression of *S. pyogenes*. To address the hypothesis, qRT-PCR was performed to see the decrease in transcriptions of tested virulence factors (*speA*, *speC*, *slo*, *scp*) in the presence of various garlic concentrations. In conclusion, the result supported the hypothesis, suggesting that garlic could potentially be used to prevent streptococcal infections.

#### Biography

I am a grade 11 student in London, Ontario, Canada who attends A.B. Lucas Secondary School. I am currently a string bassist in Lucas Concert Band and a representative of the school music council. Also, I am in the school badminton team as a "men-singles" player. Concerning community activities, I play a monthly concert to a group of elders as a violinist. My hobbies and interests include scientific experiments, music, and sports. After joining SMARTS, I have begun to promote science to students by founding a science club at my school and giving presentations at the local public schools. Thanks to the wonderful experience I had through the local university lab, I hope to become a microbiologist when I grow up.

#### Awards

#### Value

|  |                 |
|--|-----------------|
| Dalhousie University Faculty of Science Entrance Scholarship<br>Senior Gold Medallist - \$4000 Entrance Scholarship<br>Sponsor: Dalhousie University, Faculty of Science | \$4 000         |
| UBC Science (Vancouver) Entrance Award<br>Senior Gold Medallist - \$4000 Entrance Scholarship<br>Sponsor: The University of British Columbia (Vancouver)                 | \$4 000         |
| The University of Western Ontario Scholarship<br>Gold Medallist - \$2000 Entrance Scholarship<br>Sponsor: University of Western Ontario                                  | \$2 000         |
| University of Ottawa Entrance Scholarship<br>Senior Gold Medallist - \$20,000 Entrance Scholarship (\$5,000 each year for 4 years)<br>Sponsor: University of Ottawa      | \$20 000        |
| Honourable Mention - Environmental Innovation - Senior<br>Sponsor: EnviroExpo, Presented by VIA Rail Canada  | \$100           |
| Gold Medal - Health Sciences - Senior<br>Sponsor: Canadian Institutes of Health Research   | \$1 500         |
| <b>Total</b>   | <b>\$31 600</b> |