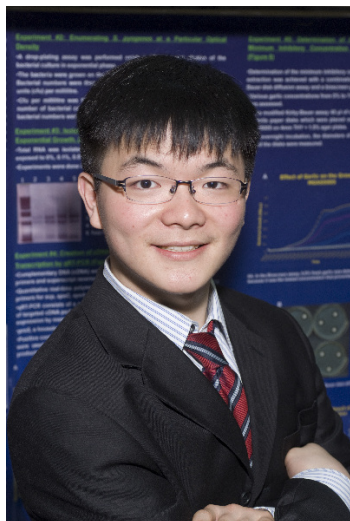


## CWSF 2009 - Winnipeg, Manitoba



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