

## CWSF 2009 - Winnipeg, Manitoba



### Charice Chan, Douglas Lam

#### One Two Freeze Thaw

**Division:** Biotechnology / None

**Category:** Junior

**Region:** Edmonton

**City:** Edmonton, AB

**School:** Grandview Heights School

**Abstract:** This project investigated a central issue in food preservation and tissue banking using cryopreservation, namely, cellular damages during freezing and thawing. Red onion skin cells were subjected to different rates of freezing and thawing. Subsequent cellular damages were studied microscopically and video-recorded in real time. Results suggest that at -20°C, slower freezing rates are more beneficial to the preserved cells, irrespective of thawing rates.

#### Biographies

**Charice** - Not many kids have read medical dictionaries as their hobby. I happen to be one of them. My name is Charice Sum-King Chan, a grade eight honors with distinction student, who is in the Accelerated program at Grandview Heights School in Edmonton, Alberta. I am a past school spelling bee champion who is in preparation for a school presidential election. I am also actively participating in a short term mission visiting an elite orphanage this July in Beijing. As the youngest of three sisters, I achieved a grade eight level in piano and cello. I enjoy playing the cello in the Edmonton Youth Orchestra as well as at church celebratory functions. My ...

**Douglas** - Although my friends call me a nerd, I am more than just my brain. Granted, I am an eager participant in grade 8 at Grandview Heights School, but my curiosity has led me in diverse directions: public speaking where I placed first in the under 13 category in the 2008 Alberta Provincial Music Festival; piano studies and performance; and swimming where I have competed in both regional and provincial levels. Last year, I was honoured to receive the Simon Hocking Memorial Science Award, and the Highest Honors Standing for Grade 7 at Grandview Heights School. This is my first year participating in the Regional and National Science Fairs. To date, my...

#### Awards

#### Value

The University of Western Ontario Scholarship	\$1 500
Silver Medallist - \$1500 Entrance Scholarship	
Sponsor: University of Western Ontario	
Silver Medal - Biotechnology & Pharmaceutical Sciences - Junior	\$700
Sponsor: Youth Science Canada	
Total	\$2 200