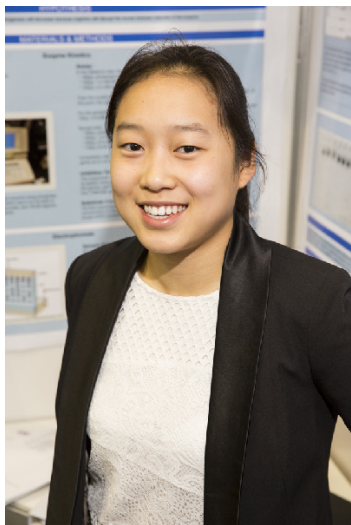


## CWSF 2015 - Fredericton, New Brunswick



### Yuwei Xia

#### Targeting the subunit interface of an enzyme overexpressed in cancer

**Challenge:** Discovery

**Category:** Senior

**Region:** Calgary Youth

**City:** Calgary, AB

**School:** Dr. E. P. Scarlett High School

**Abstract:** Cancer cells have been observed to rely on aerobic glycolysis for ATP generation, a phenomenon called the Warburg effect. If LDH, the enzyme that catalyzes aerobic glycolysis, is inhibited, tumor growth can be suppressed. By measuring LDH activity using a spectrophotometer, it was found that arginine is an uncompetitive inhibitor to LDH by targeting specific salt bridges between subunit interfaces and changing the tertiary structure.

#### Biography

I got the inspiration for my project from learning about cellular respiration and tumour growth in biology class, and working with my mentor Dr. R.A. Edwards from the University of Calgary. In the future I plan to further investigate the nature of LDH and hopefully develop a stronger and more specific inhibitor for it. One possible experiment is using gel electrophoresis to identify how inhibitors are breaking apart the subunits of the enzyme. My advice to other students who are thinking about doing a project is to pursue their interests and curiosities fearlessly. This was my first science fair project since grade six. It was only this year that I really got interested about scientific research and I'm so glad I had this learning experience. No matter how you do in the fair, the most important aspect of doing a project is your incredible learning and growth as a scientist.

Youth Science Canada  
PO Box 297  
Pickering ON L1V 2R4  
[www.youthscience.ca](http://www.youthscience.ca) / [info@youthscience.ca](mailto:info@youthscience.ca)  
416-341-0040