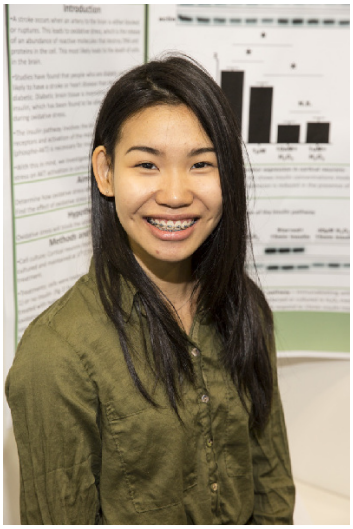
CWSF 2015 - Fredericton, New Brunswick



YaWen Huang

The Effects of Stroke-Like Oxidative Stress on the Insulin Pathway

Challenge: Health
Category: Intermediate
Region: Winnipeg Schools
City: Winnipeg, MB
School: Grant Park High

Abstract: Stroke leads to oxidative stress, which damages brain cells. Neurons cultured from rats were treated with different amounts of insulin with and without hydrogen peroxide to determine the effects of stroke-like oxidative stress on the insulin pathway. Oxidative stress decreases the amount of insulin receptor and prevents activation of AKT (also known as PKB). Therefore, oxidative stress disables the use of insulin in a neuron.

Biography

I am YaWen Huang. I am currently a student in the Grade 9 Advanced Placement program at Grant Park High School. I began attending Grant Park in seventh grade and plan to continue until I graduate high school. I found myself very curious and interested in the human body during science class at this school and decided to begin a project this year. I worked with my mentor at the St. Boniface Research Centre, who focuses on neurodegenerative disorders such as Alzheimer's disease and Diabetes. I told him I wanted to do a project about stroke. Through discussion and progression, we decided to find out what effects oxidative stress has on the insulin pathway. Oxidative stress happens during stroke and it is a pathway that is essential for cell health. I enjoyed the process involved in this project and the knowledge I gained through this experience. If I were to work further into this project I would find a way to protect cells during oxidative stress. The advice I would give to other students thinking about a project is to ask a lot of questions. This is important because that how we gain knowledge, by questioning.

Awards	Value
Excellence Award - Intermediate - Bronze Medal Sponsor: Youth Science Canada	
Western University Scholarship Bronze Medallist - $1000 Entrance Scholarship Sponsor: Western University	$1 000
Total	$1 000

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