

## CWSF 2012 - Charlottetown, Prince Edward Island



### Sarah Wang

#### Studying the Anti-parasitic Activity of a Novel Synthetic Compound

**Challenge:** Health

**Category:** Senior

**Region:** Manitoba Schools Science Symposium

**City:** Winnipeg, MB

**School:** Fort Richmond Collegiate

**Abstract:** We synthesized a novel compound with structural and biochemical properties similar to existing anti-Leishmania compounds to treat cutaneous Leishmaniasis. We investigated its leishmanicidal activities in axenic cultures and infected macrophages, as well as its cytotoxic effects on host cells showing that the compound has both direct and indirect (via induction of nitric oxide in macrophages) anti-Leishmania activities without significantly affecting host cell viability and proliferation.

#### Biography

I'm involved in many academic activities and have placed in some math contests and national biotechnology Brain game. I'm a member and school representative of Youth in Philanthropy committee, a great singer and artist. Three of my paintings were published in our school book. I work a part-time job to pay for my piano lessons. I got my project inspiration by seeing lots of people suffering from the diseases that can't be cured properly today and human leishmaniasis is one of them. Plus I'm very into science, especially immunology and would love to help others. To further investigate my project, I'll use the competitive inhibitor I-NAME to block the nitric oxide production in macrophages and treat infected cells with the compound to determine whether induction of NO is how it inhibits parasite growth in macrophages. We could also reduce its cytotoxicity or testing more specific concentrations to use for drug treatment. Then we can try it on the primary cells in vitro, mice in vivo and hopefully on human someday. The advice I would give others is to follow your interests, when it gets very hard, boring and exhausting, hold on to it and eventually you'll taste the sweetness.