

CWSF 2015 - Fredericton, New Brunswick



Aaron Gomes

Microwave Assisted Extraction of Polyphenols from Cocoa Powder

Challenge: Health

Category: Senior

Region: Bay Area

City: Oakville, ON

School: King's Christian Collegiate

Abstract: This study analyzes polyphenol extraction from cocoa powder and the percentage composition which cocoa contains. The primary purpose of the experimentation was to determine if extraction could be used as a basic anti-malarial prophylactic and immune enhancer. The outcome of this study showed similar results when compared to polyphenol extraction of green tea hence, they share similar beneficial properties and could potentially function prophylactically.

Biography

I wanted to solve a problem. Originally, I approached my teacher with the idea of synthesizing a natural fertilizer using ethene from apples, the component which causes fruit to ripen. Later that same class we learned that ethene is gaseous at room temperature - we did not have the facility to contain this gas safely so I continued looking. I came across the use of cocoa as a malarial prophylaxis - very few studies have been conducted to prove this working hypothesis but it was speculated that it was due to the polyphenolic content. From this idea, I conducted my extraction procedure from raw cocoa powder. My experience competing in the Bay Area Science and Engineering Fair has been nothing short of incredible. It's given me a genuine interest in carrying out this study to determine how exactly polyphenols in cocoa will improve the lives of those living with the debilitating parasite, Malaria. I would have never had this opportunity had it not been for my Chemistry teacher, Dr. Rebekka Kahama - thank you! I'm excited to pursue Biological Life Science at Waterloo this coming term and look forward to possible medical science opportunities that may come from this degree!

Awards

Value

Excellence Award - Senior - Silver Medal Sponsor: Youth Science Canada	
Dalhousie University Faculty of Science Entrance Scholarship Senior Silver Medallist - \$2500 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science	\$2 500
UBC Science (Vancouver) Entrance Award Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver)	\$2 000
University of New Brunswick Canada-Wide Science Fair Scholarship Silver Medallist - \$2500 Entrance Scholarship Sponsor: University of New Brunswick	\$2 500
University of Ottawa Entrance Scholarship Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: University of Ottawa	\$2 000
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
Total	\$11 000