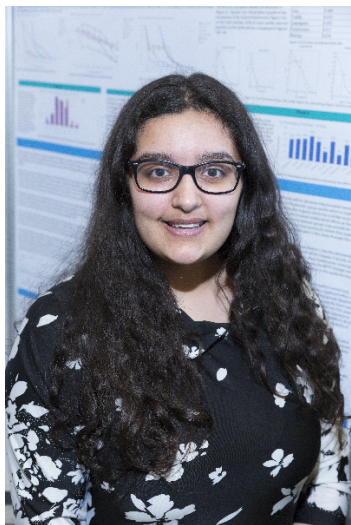


# CWSF 2018 - Ottawa, Ontario



## Pakeeza Mushtaq

### Essential Oils: A Smelly Cancer Treatment

**Challenge:** Health

**Category:** Intermediate

**Region:** Southeast Alberta

**City:** Brooks, AB

**School:** Brooks Composite High School

**Abstract:** This project investigated the potential for selected essential oils (EOs) to induce cell death in colorectal, lung, and brain cancer cell lines. Cytotoxicity of the EOs in non-cancerous cell lines was also determined. The EOs demonstrated anticancer effects but did not significantly affect the viability of non-cancerous cells. Mechanisms employed by the EOs in order to induce cell death were also determined.

#### Biography

Pakeeza Mushtaq is a grade 10 student attending Brooks Composite High School. Academics are important to Pakeeza as she constantly strives to exceed the expectations of her teachers. Pakeeza is an avid volunteer and is passionate about promoting STEM in rural areas. Pakeeza's work has been published in prose anthologies and she has received numerous accolades for her participation in math competitions. Pakeeza is a member of her school's Student Council and Newspaper. Pakeeza is also Vice-Chair of the Teen Advisory Board at the local library and a member of the Brooks Makerspace Committee. Pakeeza enjoys playing badminton and spending time with family and friends. Pakeeza hopes to pursue a career in medicine. At CWSF last year Pakeeza learned of the antibacterial properties of essential oils which led her to investigate the potential of essential oils in cancer treatment. In the future, Pakeeza aims to investigate options for the effective drug delivery of the essential oils tested in this project. Pakeeza suggests that students looking to participate in science fairs choose a project that interests them.

#### Awards

#### Value

Excellence Award - Intermediate - Silver Medal Sponsor: Youth Science Canada	
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
Total	\$2 000