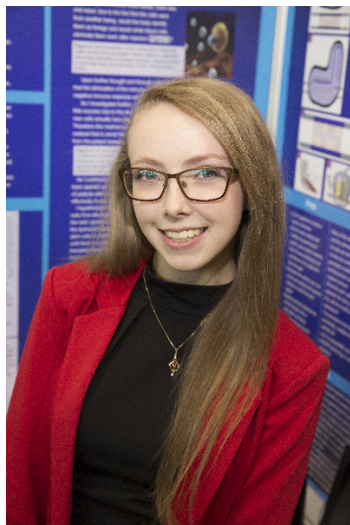


CWSF 2019 - Fredericton, New Brunswick



Kaia Lyn Addy

Medical Applications of CRISPR-Cas9 Altered Stem Cells to Modify Proteins

Challenge: Health

Category: Senior

Region: Durham

City: Oshawa, ON

School: Pickering H.S.

Abstract: Based upon extensive research, I developed a hypothesis that stem cells can be modified on a genetic level using CRISPR-Cas9 technology (cuts a portion of mutated or incorrect DNA from the genome and replaces it with the correct portion) to change the proteins that these cells produce. These cells would then be able to improve and/or cure many genetic and protein-related illnesses, like muscular dystrophy.

Biography

My name is Kaia Lyn Addy Hartley and I am 18 and a student at Pickering High School in Ajax Ontario where I am heavily involved in the special needs program where I both work and am the student leader for the schools best buddies program and am part of the mock trial team. Outside of school I am involved in dance and the arts but much of my time is also designated to my scientific research and current schooling. I began to take an interest in the sciences at a young age but it wasn't until a few months ago that I developed the theory that stem cells that have been genetically altered using CRISPR-Cas9 technology could help many of my friends and family members who suffer from illnesses and disabilities through their altered protein production. It was this theory that my project was built on, that soon lead me to win 1st place at my Regional Science Fair, the Applied Science and Technology Award and a scholarship. I hope to eventually be able to test my theory on a variety of illnesses, hoping to help others and to become a biomedical researcher or a pediatric/adolescent occupational therapist.

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