

## **Testimony in support of CRISPR-Cas-9 – Asha Sidhu**

Senator Claxton, Representative Meyer and other honorable members of the Health and Human Services Committee. My name is Asha Virmani Sidhu and I am currently a senior at Colby College in Waterville Maine. Today I am testifying in support of LD 1601 because although I was unsure of my opinion on gene editing when I first started college, through research, genetics classes and lab meetings I have learned how gene editing can be extremely beneficial to human health.

In my genetics class here at Colby College one of our final assignments was to debate whether or not it would be ethical to use CRISPR techniques in human beings. My team's argument was based on the fact that there are numerous ways in which CRISPR can be utilized in order to improve human health. Directly through embryonic gene edits to decrease or eliminate the effect of detrimental genetic diseases, and indirectly though using CRISPR in other organisms to improve healthcare platforms which already exist.

In the Fall of last year, I worked alongside Dr. José Fernández Robledo and a small team on a molecular project where the goal was to see if we could use CRISPR techniques in the marine protozoan parasite *Perkinsus marinus*. *Perkinsus* is a single celled organism which is found here in Maine and actually is the cause of 'Dermo' Disease in oysters. *Perkinsus* is filtered by a mollusk host and it infects their blood cells before proliferating and eventually killing the host. Here in the Gulf of Maine we have observed major breakouts of Dermo disease in the warmer summer months although it is still prevalent throughout the rest of the year. I used this organism as a good example for advocating for CRISPR in other organisms to improve human health because as seen in a study with humanized mice, *Perkinsus* acts as a natural adjuvant,

which means it kickstarts an individual's immune system and makes it a great subject to use when developing vaccines.

This direct health application is one of numerous ways that CRISPR can be used to benefit our society. I personally feel extremely lucky to have worked with such a cutting-edge biotechnology technique as an undergrad in college. My experiences with CRISPR have inspired me to continue working in biotechnology and I hope to eventually go to graduate school and continue my education in cellular biology.

Thank you for your consideration. I am happy to answer any questions or elaborate on anything else.