

Genome Editing for Human Benefit: Ethics, Engagement and Governance

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Pecha Kucha: Challenges of a Latin American startup using CRISPR for diagnosing sub-tropical diseases

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A potential solution to a grave public health problem in Latin America is being “frozen” by difficulties with CRISPR licensing. There have been many epidemics of Zika and Dengue in Latin American countries causing thousands of deaths. The difficulty in detecting the first infected patients is one of the main problems to solve. For instance, the need arises to proceed with the rapid identification (preventive in-situ) of Zika and Dengue serotypes.

Nowadays CRISPR is the most powerful tool to search and detect DNA and RNA. For that reason, recently this biotechnology has been used to detect DNA or RNA from viruses or bacteria in the blood of patients. Specifically, in this project, we have used CRISPR technology to detect Zika and Dengue viruses.

We confirmed the previously published data that using the CRISPR technology, a rapid and portable test to Zika and Dengue viruses can be achieved. In our hands, this has been developed into a paper strip test, avoiding the use of expensive equipment and costing only around USD 0.80 per sample. The next step was to begin a startup, which is a biotechnological based company that works as a tool to transfer technology from research to products. However, when we started moving forward, we realized that like in CRISPR-therapeutic, CRISPR in diagnosis is involved in a huge intellectual property battle. Licenses are available, but the conditions and terms are hard to reach for small companies despite the good predisposition of the parties.

This means that a potential solution to a grave public health problem in Latin America is being thwarted. Differential policies are necessary for the access of CRISPR technology for low- and middle-income countries. To avoid asymmetric negotiation processes, we must encourage mid- and low-income country’s governments to intervene in the negotiation with these big institutions.