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Abstract

In my AP Biology class, I will cover a unit on viruses and the immune response in humans. In addition to teacher directed labs, students will wrap-up this unit by performing a Bio-Rad ELISA Immuno Explorer to detect for the presence of an HIV antibody. Upon completing this unit, students should be able to demonstrate a deeper understanding of the immune system/immune response, antibody structure, and HIV.

Rationale

Emerging pathogens are a prominent issue for biologists and conservationists, among many other fields of science. With our state's agriculture, tourism, location and climate, we are at risk of being exposed to a wide variety of pathogens not native to Florida, and our ability to prevent or manage breakouts and survive economic loss largely depends on education. In my classroom, I plan to take what I've learned at ICORE and relate it to my students in way that deepens their understanding of emerging pathogens. One way I can accomplish this is by leading them in an ELISA lab where they will test for the presence of HIV antibodies. By performing this ELISA, students will gain a greater understanding of immunology, the lab process, and even careers in biotechnology.

Plan

With viruses a part of our AP Biology syllabus, I plan to cover the immune system/immune response, antibody structure, and HIV. Once I have covered all this in lecture, we will perform the BioRad version of an ELISA Immuno Explorer. This lab will provide my students a first-hand experience with a lab technique that is used daily to detect the presence of HIV antibodies.

Student Assessments

Students will be tested on their depth of knowledge of the immune response, antibody structure, and HIV.

ICORE Elements

We will perform an ELISA test similar to the one that we completed during ICORE.

Literature Cited

http://www.bio-rad.com

Budget

Two Bio-Rad Immuno Explorer Kits (for 96 students): $230.00