

Diane Gitler

Technology Lesson #2:

AP Biology Virtual Lab – BioInteractive Immunology

This virtual lab teaches the procedures of performing an ELISA test to determine whether a particular antibody is present in a patient's blood sample. This particular exercise tests for the presence of Lupus. However, the same methods are used to test for HIV so this lab exercise was revisited again when the class completed a case study on HIV.

This technology exercise was very effective in demonstrating the need for laboratory procedures to be followed precisely. The virtual lab program tracked each student's procedure in carrying out the steps and gave false positive and false negative results (with explanations) in the event that procedures were not followed precisely. Students were then able to repeat the lab procedure in order to obtain more accurate results. Students were required to complete 4 trials, with the first being realistically tedious, demonstrating actual laboratory procedures. In order to take less time, trials 2-4 did not include all of the tedious steps but still required the students to follow exact procedures.

Each student performed the virtual lab individually using a Chrome Book and also completed an analysis worksheet as they completed each procedure.

This virtual lab can be accessed at <http://www.hhmi.org/biointeractive/immunology-virtual-lab>