Grade 11

Protection and control - ELISA

Students will learn how research scientists attempt to understand infectious disease and our own genetics through antigen and antibody testing.

Activity: Explore infectious disease and immune function like antibody-antigen interactions with a disease outbreak game and enzyme-linked immunosorbent assay (ELISA) for mock patient testing.

Time required
Half day (2.5h)

Grade 11 students learn about the body's basic defence mechanisms including the adaptive immune system weaponry – antibodies. Antibody production is integral in protection against infectious disease and the same technology has been used in research to visualize otherwise invisible cell components that shift in disease, and in testing for infectious disease and genetics!

Specific learning outcomes addressed: B11-5-01; B11-5-02; B11-5-04; B11-5-11

Time Required	Student Experience
30 min	Introduction to the Research Centre and research interests, use of antibodies in research on cell behavior in disease and
5 min	Break for washrooms
10 min	Discuss the use of cells in medical research, see cardiac fibroblasts under phase-contrast microscope
15 min	Simulated infectious disease "outbreak" game with contact tracing
10 min	Puzzle activity to model antibody-antigen interaction
1 hr	Mock patient test ELISA - enzyme-linked immunosorbent assay
15min	Questions, wrap-up, and clean up