

Mater Research Equipment Need: Fluorescent iSpot Reader

Cost: \$49 500

What it is:

Mater researcher Associate Professor Kristen Radford and her team are progressing a vaccination system that could see men with prostate cancer treated with therapeutic vaccines to complement other treatment options.

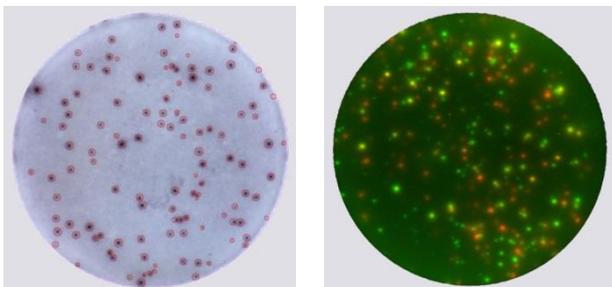
The Fluorescent iSpot Reader is one of the most sensitive tests for immune responses available. It allows researchers to detect T cells (immune cells) which are responding to cancer by producing proteins, at the single cell level. The current machine at Mater Research is not sensitive enough to detect T cells which are simultaneously producing multiple different proteins.

The purchase of the iSpot Reader will allow Mater researchers to not only measure if immune cells are responding to the presence of cancer, but *how* they are responding by detecting up to 3 different measurements for each cell.

This type of testing can be used to test for extremely rare reactions, with a theoretical limit of detecting one in one million cells.

How it works:

The iSpot Reader allows researchers to visualize how immune cells respond to the presence of cancer. Each spot that develops in the test represents a single cell. This means researchers can identify how frequently cells in a given population respond to the presence of the cancer, and which specific protein is produced, showing how the cells respond.

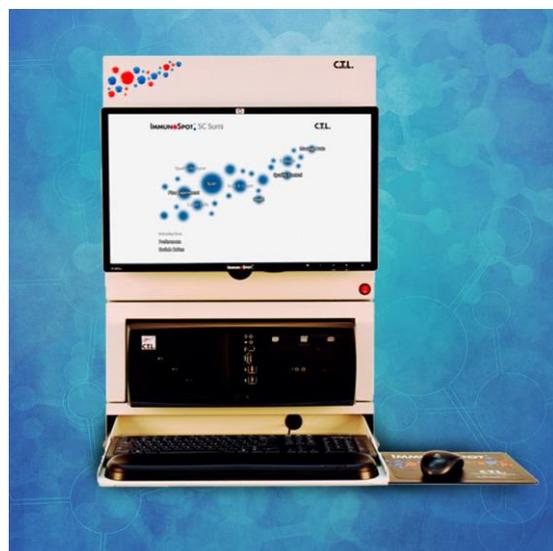


These images show the traditional method (left) which shows individual cells reacting, and the new method (right) providing more data on how the immune cells are responding.

How we will use it:

Associate Professor Kristen Radford and her team will use the Fluorescent iSpot Reader to measure the responses of immune cells to cancer in their human prostate cancer vaccine. This will allow them to test the effectiveness of their models as they seek to educate the human immune system to detect, and ultimately attack prostate cancer.

The iSpot Reader provides easier, faster, and more accurate experiments than the current capabilities at Mater. This means that Mater researchers will be able to run a greater number of more effective tests in a shorter timeframe, as they seek to develop a next generation vaccination strategy to treat prostate cancer.



(N.B Actual model may vary)