



virax  **biolabs**

ELISpot Assays

Single-Cell Resolution
High Sensitivity
Quantitative Outputs

ELISpot Assays

The ELISpot (Enzyme-Linked ImmunoSpot) assay is a powerful and highly sensitive technique used to detect and quantify specific secreted proteins, typically cytokines, at the single-cell level.

The ability to measure specific cytokines at such a detailed level has made ELISpot a crucial tool in various fields, including vaccine research, immunotherapy, autoimmune disease studies, and cancer immunology.

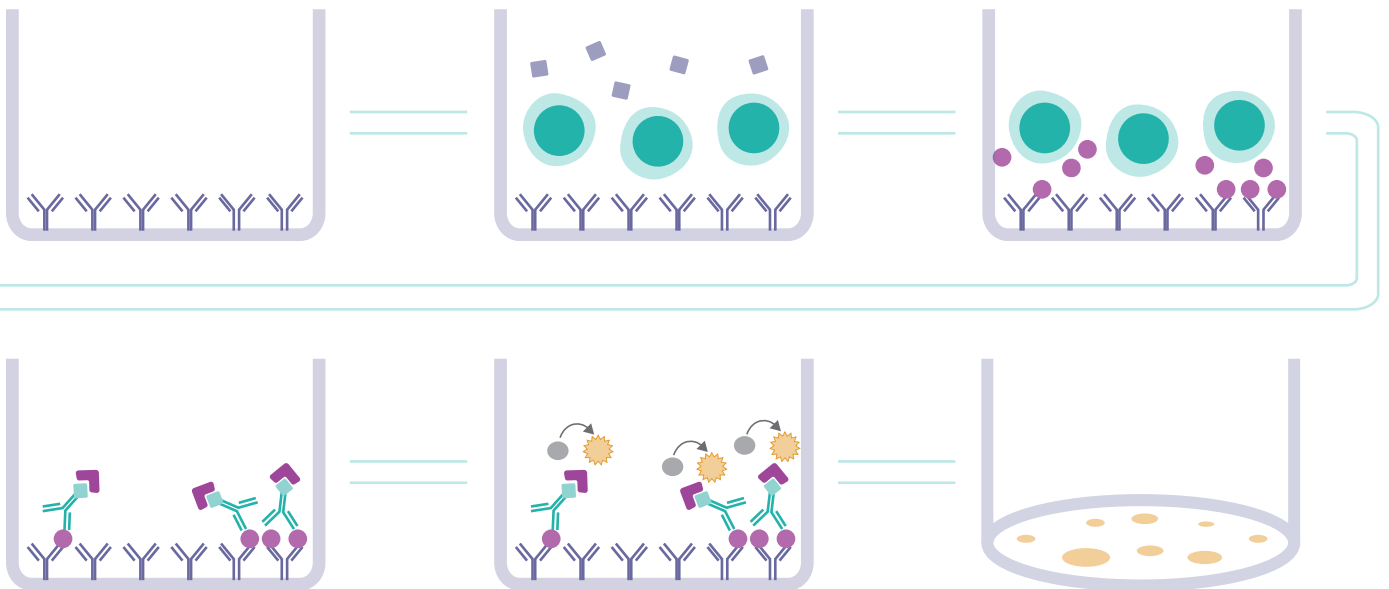
How ELISpot works

The ELISpot assay is based on the principle that cytokines or other secreted proteins are captured on the surface of a well as they are secreted by activated immune cells.

1 Plates are pre-coated with capture antibody specific to the target cytokine, (e.g. IFN- γ).

2 PBMCs are added to the wells and stimulated with an antigen or peptide pool to induce cytokine secretion.

3 Secreted cytokines are captured by antibodies near the cell.



4 After 24-48 hrs, biotinylated antibodies are added, where they bind to the captured cytokines, and are detected via a streptavidin-enzyme conjugate.

5 A substrate reacts with the enzyme, generating coloured spots at secretion sites. Each 'spot' represents a single cytokine-secreting cell.

6 Spots are analysed using a microscope or an ELISpot reader to quantify cytokine-secreting cells.

Advantages

Single-Cell Sensitivity	Quantitative & Specific	High Sensitivity	Ex Vivo Analysis
Delivers single-cell resolution, allowing the detection of rare cytokine-secreting cells, that may be missed by other methods.	Provides quantitative data on the frequency of protein-secreting cells.	Capable of detecting low levels of secreted cytokines, making it ideal for analysing weak immune responses.	Can be performed using primary cells without the need for in vivo models.

Applications

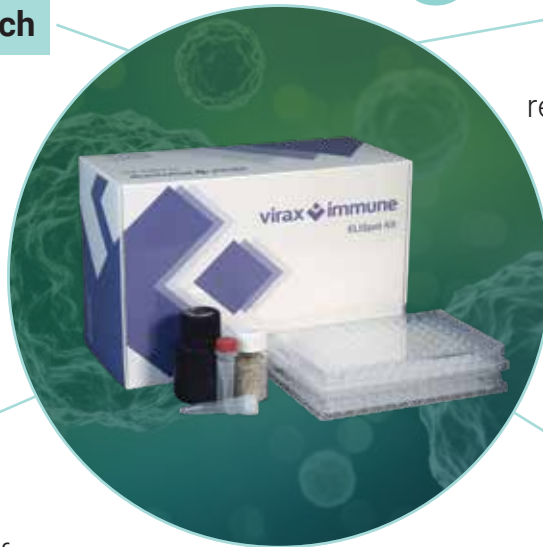
Infectious Disease Research

ELISpot evaluates immune responses to pathogens or treatments.



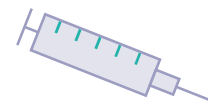
Cancer Immunotherapy

ELISpot can be used to track tumour-specific T cells to assess the effectiveness of immunotherapies.



Vaccines

ELISpot assays can measure the immune response to vaccine candidates by detecting the number of vaccine-specific T cells that secrete cytokines upon stimulation.



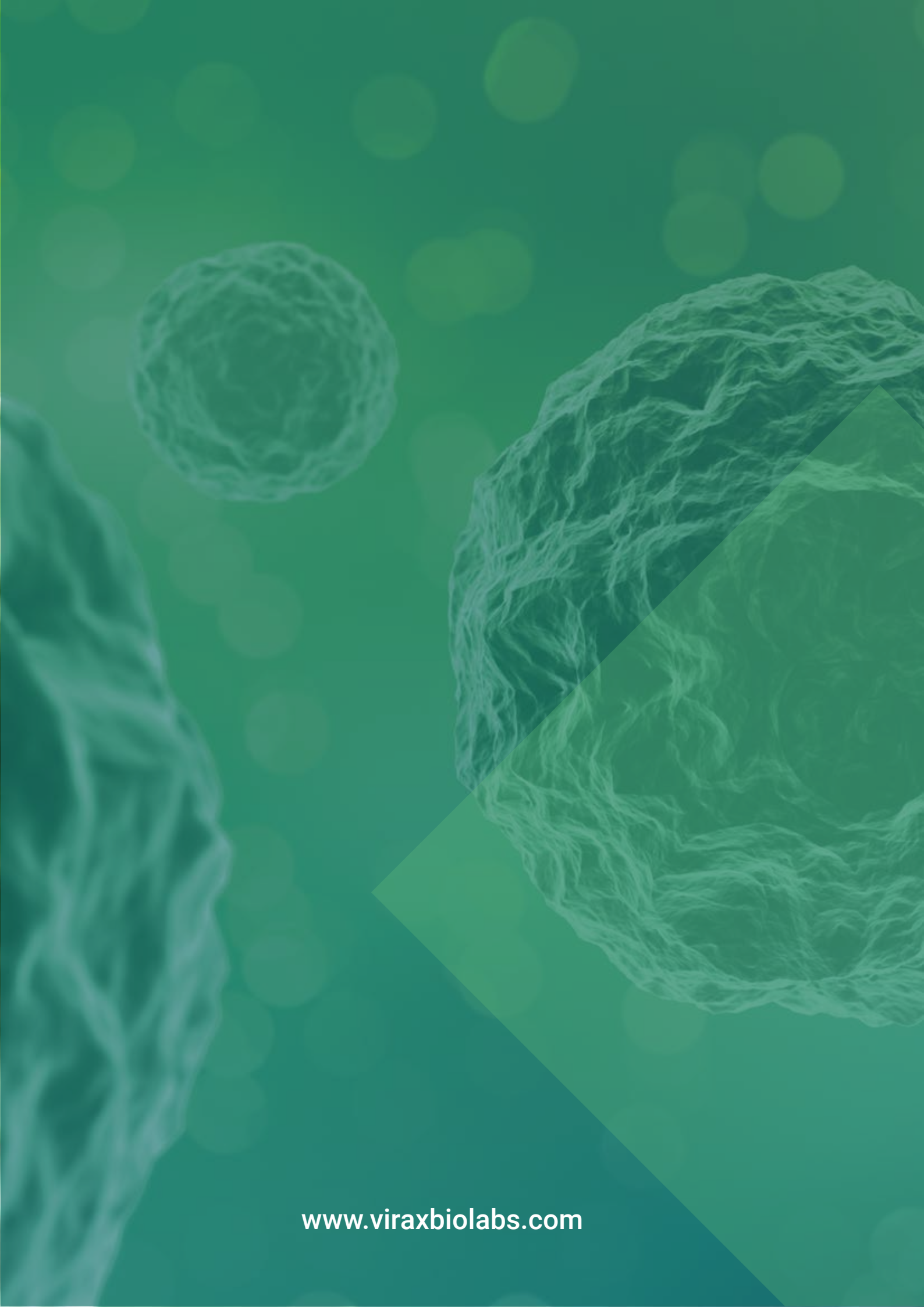
Immune Profiling & Clinical Monitoring

ELISpot supports clinical trials by monitoring immune responses, such as in stem cell transplants or immunotherapies.

Our ELISpot kits

Cytokines Available	+	Plate Types	+	Peptide Pools for stimulation
<ul style="list-style-type: none">IFN-γIL-2TNF-αIL-1βIL-6IL-8		<ul style="list-style-type: none">Choice of pre-coated and non-coated platesAlso available in 12x8 well strip plates		<ul style="list-style-type: none">Collection kits with premium peptides and IFN-γ ELISPOTContact us to explore mix-and-match collection kits

Contact us at support@viraxbiolabs.com to find out how we can help you find the ELISpot solution that's right for you.



www.viraxbiolabs.com