

Why CTL? Why ImmunoSpot?

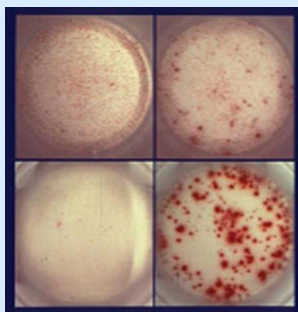


Cellular Technology Limited is the leading authority on ELISPOT assays. Find out why!

We introduced the current cytokine ELISPOT protocols.

The original ELISPOT protocols were established to detect antibody-producing B cells. Because T cells produce much less cytokine than B cells produce antibodies, for a long time it has been challenging to perform reproducible cytokine ELISPOT assays at single cell resolution. The commonly used PVDF membrane-based ELISPOT protocols were introduced by CTL's founding scientists at CWRU (United States Patent 08/577,957 and references¹⁻⁴). These highly improved protocols have been critical for converting the formerly fragile and low-resolution cytokine ELISPOT assays into the robust T cell diagnostic platform ELISPOT is today.

Improvement of ELISPOT assay results using CTL protocol



Freshly isolated peripheral blood mononuclear cells were cultured for 24h with media or the recall antigen tetanus toxoid (TT) in an IFN- γ assay. Note the decreased background reactivity and increased signal obtained using the CTL protocol.

We introduced image analysis techniques to the ELISPOT process.

At the very heart of science are exact, objective, and reproducible measurements. The precise evaluation of even such pristine ELISPOT results as shown in the lower right panel of the figure is impossible when the spots are counted visually. CTL's founding scientists lead by Prof. Paul V Lehmann built and patented the first ELISPOT reader at Case Western Reserve University (United States Patent 08/577,957). By introducing image analysis, we converted the previously time consuming and subjective evaluation of ELISPOT results into an automated and objective process.

We orchestrated the world's largest concentrated effort around the use of ELISPOT assays.

Starting from its CWRU-based academic roots, CTL has grown to become the

world leader in cytokine ELISPOT assay development, automated image analysis, and data management. Over forty employees at CTL dedicate their full-time efforts to the ELISPOT process. These efforts are complemented by close collaboration with dozens of the finest immunology laboratories in the world contributing invaluable expertise. This alliance constitutes the largest group in the world to advance the frontiers of ELISPOT technologies.

CTL is the only ELISPOT instrument manufacturer that has extensive in-house expertise in the ELISPOT method.

CTL was the first ELISPOT lab to meet GLP standards for high-throughput ELISPOT analysis and conducted the first clinical trial employing ELISPOT assays. CTL is supported by a multi-million dollar NIH contract for advancing ELISPOT analysis for clinical trials.

We have elevated cytokine ELISPOT assays to an exact science.

Evaluating ELISPOT assays requires more than just counting spots; it requires counting them with exacting accuracy. For example, how does one distinguish antigen-specific T cell spots from those produced by bystander reactions? And how does one establish spot size thresholds for different cytokines?

In over 30 peer-reviewed publications in high-ranking immunological journals, CTL's founding scientists have worked out the answers to such questions, thereby allowing precise and accurate results. (A list of these publications can be found at www.immunospot.com.)

The ImmunoSpot[®] product line has emerged as the crystallization of science and first-hand expertise.

CTL provides scientifically validated tools for ELISPOT analysis—analyzers, accessory software, satellite workstations, and data management solutions to meet different user needs and budgets. In addition, our expertise in building high-end ELISPOT readers for the academic and regulated markets has enabled us to develop instrumentation for fluorescence-based single-cell counting, colony and viral plaque counting, and a host of other applications.

References:

1. Science. 271:1728-2730, 1996
2. J. Immunol. 164:1862-1872, 2000
3. J. Immunol. 164:3723-3732, 2000
4. J. Immunol. 167:1353-1361, 2001

CTL is at the forefront of pioneer work in ELISPOT assays and related techniques.

For further information, please contact CTL at info@immunospot.com or 216-791-5084. You can also visit our website at

www.immunospot.com.