Diaclone

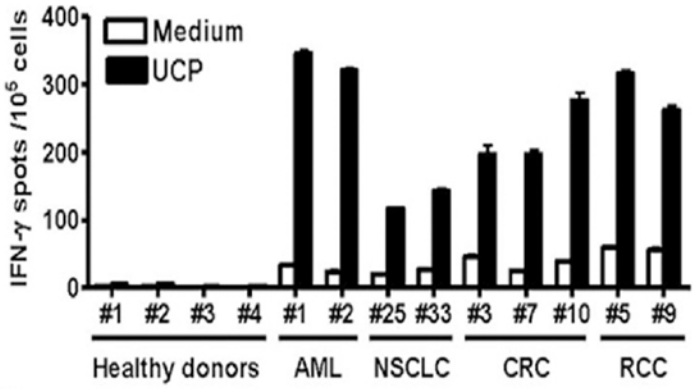
Application note:
ELISpot & Cancer Immunotherapy

Diaclone ELISpot: monitoring the T-cell response to tumor antigens

The ELISpot Assay is an ideal tool to evaluate the efficacy of novel cancer immunotherapies and cancer vaccines. The technique allows the quantification of tumor-specific T Cells from peripheral blood by detecting antigen-induced cytokine secretion and can be applied to Immune monitoring in basic research as well as in clinical trials.
The Diaclone IFNγ ELISpot assay has been successfully utilised in two recent studies published in Clinical Cancer Research by Dosset et al. and Godet et al.

In this study the authors measured the spontaneous T-Cell IFNγ responses against Universal Cancer Peptides (UCP). A high number of UCP specific CD4(+) T cells were observed in the blood of patients with various types of cancer. In metastatic lung cancer, the presence of UCP-specific T cell response positively impact on patient's survival. Then the authors go on to confirm the impact of this anti-tumor response in other cancers such as melanoma, breast and colorectal.

Analysis of spontaneous UCP-specific T cell responses in various human cancers



Blood lymphocytes from cancer patients were cultured in vitro with pool of UCPs for one week. Detection of UCP-specific T cell by IFN-γ ELISPOT. Representative data from healthy donors and nine responding patients are shown. Columns, mean of triplicate; bars, SD. (NSCLC: non small cell lung cancer; RCC: renal cell carcinoma; HNSCC: head and neck squamous cell carcinoma, AML: acute myeloid **leukemia; CRC: colorectal carcinoma).**

The results show that UCP- based vaccination could be used to design efficient immunotherapies in multiple types of cancers to reduce the risk of cancer recurrence in patients.

The sensitive and easy-to-perform ELISpot assays that assess the frequency of tumor-reactive T cells are crucial for the evaluation and further development of vaccination and Immunotherapy approaches.

Dosset M, et al. Universal cancer peptide-based therapeutic vaccine breaks tolerance against telomerase and eradicates established tumor. Clin Cancer Res. 2012 Nov 15;18(22):6284-95.
Godet Y, et al. Analysis of spontaneous tumor-specific CD4 T-cell immunity in lung cancer using promiscuous HLA-DR telomerase-derived epitopes: potential synergistic effect with chemotherapy response. Clin Cancer Res. 2012 May 15;18(10):2943-53.

ELISpot is a highly sensitive and specific technique for the identification and enumeration of ex-vivo cytokine producing cells at the single cell level. Virtue of its high sensitivity (at least 1 cell in 100,000) the assay is particularly effective in the measurement of the frequency of antigen- specific cell responses post vaccination.

Diaclone ELISpot

Flexibility

- Enzymatic or Fluorometric
- Mono or Dual protein detection
- Kits, Sets or Antibody Pairs
- Extensive range across different species

Performance

- High sensitivity - detect a single cell out of 100,000
- High specificity
- Robust Validation: ISO9001
- Focused, defined and easy to analyse spots

Take the leap and ask about Diaclone ELISpot

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