



CEF Control Peptide Pools for ELISPOT Assays

International Edition

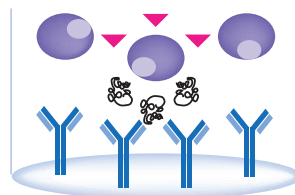
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Introduction

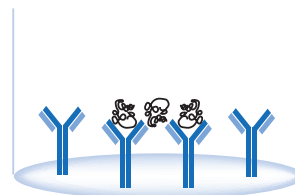
PANATecs offers a variety of peptide pools containing HLA (human leukocyte antigen) restricted T cell epitopes from human cytomegalovirus (C), Epstein-Barr virus (E), influenza virus (F) and tetanus toxin (T). The CEF control peptide pools provide a convenient tool for assays regarding HLA class I restricted T cell response, while the CEFT pools cover the applications based on HLA class II restricted T cell response. Each pool is useful as a peptide specific positive control in ELISPOT, cytotoxic T lymphocyte (CTL) and intracellular cytokine assays using human peripheral blood mononuclear cells (PBMC).

Typically phytohemagglutinin (PHA) has been used as a positive control for ELISPOT assays. Because PHA spots can vary widely in size, intensity and shape the assay gets a patchy occurrence. Due to the high spot number per well, confluence also becomes an issue. Furthermore PHA is known for losing its activity upon storage which results in ineffective IFN- γ production and indistinct spots. Finally PHA and other mitogens such as PMA and ionomycin do not test antigen-specific T cell receptor driven T cell activation. The CEF(T) peptide pools circumvent these problems. The pools stimulate CD8⁺ and CD4⁺ T cells and thus provide a suitable control for HLA-restricted immune responses.

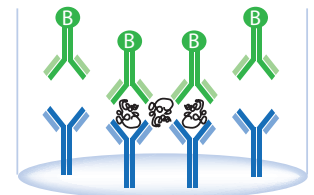
1. Incubate cells with or without stimulus in antibody coated well



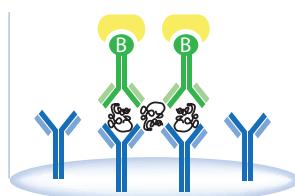
2. Remove cells by washing. Secreted cytokine is captured by the immobilized antibody.



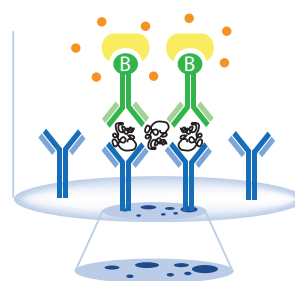
3. Incubate with biotinylated antibody



4. Incubate with alkaline phosphatase conjugated streptavidin



5. Add substrate and observe the formation of colored spots.



- Lymphocyte
- Stimulus
- Antibody
- Secreted Cytokine
- Biotinylated Antibody
- Alkaline Phosphatase (AP) Conjugated Streptavidin
- Color Product
- BCIP/NBT (AP Substrate)

FIGURE: The ELISPOT Assay.

highlight

HLA/MHC Class I

CEF Control Peptide Pool HLA Class I

PT-PA-CEF-001-1 1 Vial

Pool of 23 HLA class I restricted T cell epitopes from human cytomegalovirus, Epstein-Barr virus and influenza virus. Stimulates the release of IFN- γ from CD8⁺ T cells in individuals with certain highly frequent HLA types (HLA: A1, A2, A3, A11, A24, A68, B7, B8, B27, B35, B44). Chosen epitopes are presented by the most common Caucasian HLA types, whose cumulative frequencies represent >100% of Caucasian individuals. Useful as a peptide specific positive control in ELISPOT, CTL and intracellular cytokine assays using human PBMC.

LIT: A panel of MHC class I restricted viral peptides for use as a quality control for vaccine trial ELISPOT assays: J.R. Currier, et al.; J. Immunol. Methods 260, 157 (2002)

CEF Control Peptide Pool HLA Class I PLUS

PT-PA-CEF-002-1 1 Vial

Pool of 32 HLA class I-restricted T cell epitopes from human cytomegalovirus, Epstein-Barr virus and influenza virus. Stimulates the release of IFN- γ from CD8⁺ T cells in individuals with certain highly frequent HLA types (HLA: A1, A2, A0201, A3, A11, A24, A68, A6081, B7, B8, B18, B27, B35, B44, B0702). **Pool used by the NIH [1];** based on the original peptide pool described by Currier, et al. [2] with additional nine peptides. Useful as a peptide specific positive control in ELISPOT, CTL and intracellular cytokine assays using human PBMC.

LIT: [1] CEF Control Peptide Pool: http://www.aidsreagent.org/UploadDocs/9808_001.pdf • [2] A panel of MHC class I restricted viral peptides for use as a quality control for vaccine trial ELISPOT assays: J.R. Currier, et al.; J. Immunol. Methods 260, 157 (2002)

CE Control Peptide Pool HLA-A24

PT-PA-CEF-003-1 1 Vial

Pool of 8 HLA-A24 restricted T cell epitopes from human cytomegalovirus and Epstein-Barr virus. Stimulates the release of IFN- γ from CD8⁺ T cells in individuals being HLA-A24 positive. The HLA type A24 is the most frequent type in **Asian populations**, existent in approximately 70% of the Japanese population. It is also found in about 35% of the Indian population. Useful as a peptide-specific positive control in ELISPOT, CTL and intracellular cytokine assays using human PBMC.

LIT: Frequent transmission of cytotoxic-T-lymphocyte escape mutants of human immunodeficiency virus type 1 in the highly HLA-A24-positive Japanese population: T. Furutsuki, et al.; J. Virol. 78, 8437 (2004) • Identification of HLA-A2- or HLA-A24-restricted CTL epitopes possibly useful for glypican-3-specific immunotherapy of hepatocellular carcinoma: H. Komori, et al.; Clin. Cancer Res. 12, 2689 (2006) • For a comprehensive bibliography please visit our website.

CEF Control Peptide Pool HLA-A2

PT-PA-CEF-004-1 1 Vial

Pool of 5 HLA-A2 restricted T cell epitopes from human cytomegalovirus, Epstein-Barr virus and influenza virus. Stimulates the release of IFN- γ from CD8⁺ T cells in individuals being HLA-A2 positive. HLA-A2 is the most frequent type in **European populations**. Useful as a peptide specific positive control in ELISPOT, CTL and intracellular cytokine assays using human PBMC.

LIT: A panel of MHC class I restricted viral peptides for use as a quality control for vaccine trial ELISPOT assays: J.R. Currier, et al.; J. Immunol. Methods 260, 157 (2002) • Generation of clinical grade dendritic cells with capacity to produce biologically active IL-12p70: A. Zobywalski, et al.; J. Transl. Med. 5, 18 (2007) • For a comprehensive bibliography please visit our website.

NEW Cytomegalovirus Peptide Pool

PT-PA-CMV-001-1 1 Vial

This pool contains 5 HLA class I-restricted T cell epitopes from human cytomegalovirus. The CMV-Pool stimulates the release of IFN- γ from CD8⁺ T cells. The CMV peptide pool is useful as a peptide specific positive control in ELISPOT, CTL and intracellular cytokine assays using human PBMC. These cytomegalovirus peptides are also components of CEF Control Peptide Pool HLA Class I PLUS (Prod. No. PT-PA-CEF-002).

NEW Epstein-Barr Virus Peptide Pool

PT-PA-EBV-001-1 1 Vial

This pool contains 15 HLA class I-restricted T cell epitopes from Epstein-Barr virus. The EBV-Pool stimulates the release of IFN- γ from CD8⁺ T cells. The EBV peptide pool is useful as a peptide specific positive control in ELISPOT, CTL and intracellular cytokine assays using human PBMC. These Epstein-Barr virus peptides are also components of CEF Control Peptide Pool HLA Class I PLUS (Prod. No. PT-PA-CEF-002).

NEW Influenza Virus Peptide Pool

PT-PA-FLU-001-1 1 Vial

This pool contains 12 HLA class I-restricted T cell epitopes from influenza virus. The FLU-Pool stimulates the release of IFN- γ from CD8⁺ T cells. The FLU peptide pool is useful as a peptide specific positive control in ELISPOT, CTL and intracellular cytokine assays using human PBMC. These influenza virus peptides are also components of CEF Control Peptide Pool HLA Class I PLUS (Prod. No. PT-PA-CEF-002).

HLA/MHC Class II

NEW Selected MHC Class II Peptide Pool

PT-PA-EFT-001-1 1 Vial

This pool contains 9 selected MHC class II peptides (40 μ g/each) from Epstein-Barr virus, influenza virus and tetanus toxin. This pool stimulated the release of IFN- γ from CD4⁺ T cells of individuals with certain highly frequent HLA types (HLA: DR1, DR3, DR4, DR5, DR7, DR8, DR9, DR11, DR13, DR15, DR52a, DR52c). Useful as a peptide specific positive control in immunological tests such as ELISPOT or cytokine flow cytometry.

NEW Selected MHC Class II Peptide Pool PLUS

PT-PA-CEFT-001-1 1 Vial

This pool contains 23 selected MHC class II peptides (40 μ g/each) from human cytomegalovirus, Epstein-Barr virus, influenza virus and tetanus toxin. This pool stimulates the release of IFN- γ from CD4⁺ T cells of individuals with certain highly frequent HLA types (HLA: DR1, DR3, DR4, DR5, DR7, DR8, DR9, DR11, DR13, DR15, DR52a, DR52c, DRB1*0101, DRB1*0201, DRB1*0301, DRB1*0701, DRB1*0801, DRB1*1001, DRB1*1101, DRB1*1104, DRB1*1302, DQ2, DQA0102, DPW2). Useful as a peptide specific positive control in immunological tests such as ELISPOT or cytokine flow cytometry.

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