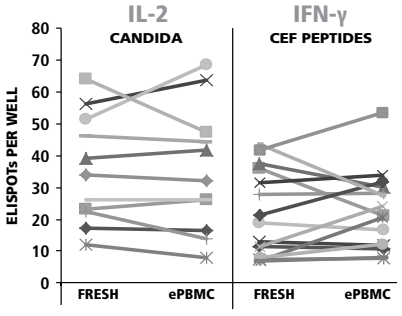
ePBMC®

Fully-functional PBMC at Your Fingertips™

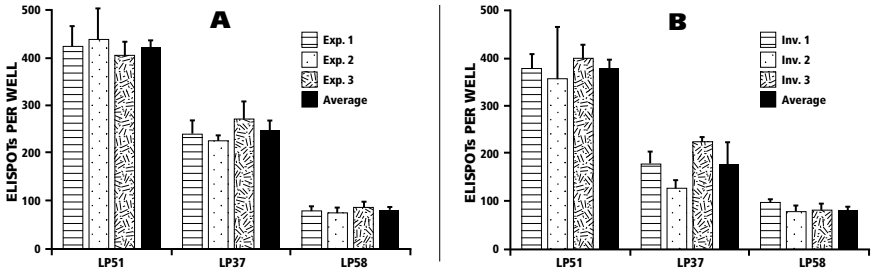
Our extensive library of cryopreserved peripheral blood mononuclear cells, ePBMC®, offers instant access to characterized, standardized, and quality-controlled PBMC in virtually unlimited quantities. These cells have been frozen to retain full functionality and can be used as reagents — IRBs covered!

Gain Instant Access to a Large Selection of Characterized Donors

Researchers can obtain PBMC from a few individuals in their immediate surroundings. Gaining access to a larger number of donors, however, is a major challenge. Each of the over 100 donors in the ePBMC® library is high-resolution HLA-typed and characterized for immune reactivity to dozens of antigens. This library of PBMC makes it possible to select donors with desired geno- and/or phenotypes and to test large collectives.



Comparison of results obtained testing fresh and cryopreserved ePBMC®. PBMC of 15 donors were isolated and tested. First fresh, measuring the T cell response to the specified antigens in IL-2 and IFN-γ ELISPOT assays. The remaining PBMC were cryopreserved, thawed, and retested under identical conditions (ePBMC®). Results obtained for the fresh and ePBMC® of the same donor are linked with a line. Data for weak responses are shown only to demonstrate that even weak responses are preserved after freeze-thaw.



Reproducibility of test results with ePBMC®. Three ePBMC® samples (LP51, LP37 and LP58) were tested in three independent experiments by a single individual (A), and by three different individuals in a single experiment (B). The CMVpp65 peptide-specific CD8 T cell response was tested in an IFN-γ ELISPOT assay. For each experiment, the light bars show the mean spot number per well for 3 replicate wells and the SD. The black bars show the mean and SD for the three respective experiments. The medium control in each test was less than 5 spots. The inter-laboratory reproducibility of these results was similarly high. (Zhang, et al, *J. Immunotoxicology,* 2009, 6:227)

Standardize the Largest Variable in PBMC-based Assays

Inter-assay variability of PBMC-based tests is notoriously high, even when the identical donor is bled repeatedly to obtain PBMC. This is because their cells are subjected to ever-changing environmental influences such as infections, stress, nutrition, etc. These variables are eliminated using ePBMC®. With up to 20 billion PBMC collected each time from a donor and frozen in up to 2,000 aliquots, there will never be a shortage in identical cell material. This means an essentially unlimited number of experiments can be run with the very same cells, permitting the standardization of the largest variable in cellular assays, the cell material itself. By minimizing the inter-assay variability, ePBMC® are ideal for assay development, qualification and validation, and permit assay harmonization in different laboratories.

Minimize Legal and Biohazard Exposure

Access to human cells of any kind is increasingly regulated by laws that protect the donor. Obtaining blood, even from healthy donors, requires rigorous and lengthy scrutiny in the form of institutional review boards (IRBs). However, since we have acquired IRB approvals for the ePBMC®

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– these human cells can be purchased as common reagents. By using ePBMC® you can avoid the risk of any potential liability. In addition, ePBMC® are much safer to work with than random PBMC because they have been pretested for most common pathogens, including HIV and hepatitis. Thus, by working with ePBMC® you can minimize your exposure in many ways.

More Cost Effective than DIY PBMC

The actual cost for generating PBMC for your assays goes well beyond the cost for blood. If you were to characterize your PBMC, the effort would be substantial. Our ePBMC® are quality controled and come pre-characterized with established functionality. Therefore, you don't risk assay failure due to your cell material as is the case with uncharacterized cells. Ficoll is also costly. And, it takes about two hours of work from drawing blood, performing the density gradient separation of PBMC, and subsequent washing steps before the cells are ready for the assay. In contrast, it takes less than 20 minutes to thaw and prepare ePBMC® for your assay. Thus, the use of ePBMC® is not only much more convenient and fast, it is also more cost effective.

PBMC ARE ESSENTIAL FOR IMMUNE ASSAYS AND AN EXCELLENT SOURCE OF HUMAN PRIMARY CELLS

- ELISPOT
- Tetramers/pentamers
- Intracytoplasmic cytokine staining (ICS)
- Cytokine ELISA assays
- ADCC
- Cytokine bead arrays (CBA)
- Cytokine protein arrays (CPA)
- Cytokine mRNA determinations (RT-PCR)
- Transmigration assay
- Cytotoxicity assays

Join the ePBMC® Community!

At CTL, we believe that progress in human research will greatly benefit from the ease of repeated access to high-quality, characterized PBMC. Twenty years ago, researchers in need of defined, inbred mice had to breed them in their own colonies, and they were accessible to only a few. Today, an infinite selection of such strains are offered commercially to the research community, and at a higher quality as well as lower cost. As medical research was revolutionized by the availability of a large selection of defined mouse strains, so will human research enter a new era with ePBMC®. In sharing this view, so far over 300 laboratories from the pharmaceutical and biotechnology industries, governmental agencies, and academia worldwide have joined the ePBMC® community and have been using these cells to their complete satisfaction.

Request a free sample to verify that these frozen cells function as well as freshly isolated PBMC, and join a new era of human research!

C.T.L.

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