



PROGRAM

8:00 A.M. – 8:30 A.M.

Workshop check-in

8:30 A.M. – 8:45 A.M.

Welcome, Introduction
presented by Prof. Dr. Paul V. Lehmann

8:45 A.M. – 9:35 A.M. LIVE DEMO

Performing four-color B cell ELISPOT, three-color T cell ELISPOT, and NK/ADCC Assay: Thawing, counting, and plating PBMC for all three assays presented by Richard Caspell

Demonstrating:

- CTL's Quick Thawing Protocol for cryopreserved PBMC
- CTL's automated Live/Dead/Apoptotic PBMC Counting Platform
- Detection of IgM, IgA, IgG1, and IgG3 in four-color ImmunoSpot® Assay
- Detection of IFN- γ , Granzyme B, and TNF- α in three-color ImmunoSpot® Assay
- Detection of NK/ADCC activity using CTL's automated TVA™ Platform

9:35 A.M. – 10:30 A.M. LECTURE

The unique features of T cell ELISPOT for immune monitoring
presented by Prof. Dr. Paul V. Lehmann

10:30 A.M. – 10:45 A.M. COFFEE BREAK

10:45 A.M. – 11:45 A.M. LECTURE

The unique features of B cell ELISPOT for immune monitoring
presented by Prof. Dr. Paul V. Lehmann

Including:

- Morphology and kinetics of B cell ELISPOT formation permits measuring the affinity for antigen of the individual antibody-secreting B cells
- HCMV exposure revealed by ELISPOT that serodiagnostic failed to detect
- Detecting B cell autoimmunity in Multiple Sclerosis permitting diagnosis of the disease and monitoring of its activity

11:45 A.M. – 12:15 P.M. LUNCH BREAK

12:15 P.M. – 12:45 P.M. LECTURE

Measuring the antigen-specific T cell classes: CD8 effector vs. CD8 memory for CD4 Th1, Th2, Th17, and polyfunctional T cells
presented by Prof. Dr. Paul V. Lehmann

12:45 P.M. – 1:00 P.M. LIVE DEMO

Addition of Detection Reagents to multicolor ImmunoSpot® Assays — 1
presented by Richard Caspell

1:00 P.M. – 1:30 P.M. LECTURE

Using the antigen dose response to measure the functional affinity of the antigen-specific T cell response
presented by Dr. Alexey Y. Karulin

1:30 P.M. – 1:45 P.M. LIVE DEMO & COFFEE BREAK

Reading of the NK/ADCC Assay done in the morning — 1;
Addition of Detection Abs to multicolor ImmunoSpot® Assays — 2
presented by Richard Caspell

1:45 P.M. – 2:25 P.M. LECTURE & LIVE DEMO

Computational tools for epitope-based reverse vaccinology: Brief introduction to reverse vaccinology and live demonstration of tools for epitope prediction and vaccine design.

2:25 P.M. – 2:40 P.M. LIVE DEMO & COFFEE BREAK

Reading of the NK/ADCC Assay done in the morning — 2
presented by Richard Caspell

2:40 P.M. – 2:50 P.M. LECTURE

Measuring Live/Dead/Apoptotic cells in PBMC and T cell functionality — Serial measurements of apoptotic cell numbers provide better acceptance criterion for PBMC quality than a single measurement prior to the T cell assay
presented by Dr. Alexey Y. Karulin

2:50 P.M. – 3:00 P.M. LECTURE

Cryopreserved PBMC: Why overnight resting is generally not advisable
presented by Richard Caspell

3:00 P.M. – 3:15 P.M. LIVE DEMO & COFFEE BREAK

Addition of Tertiary Reagent to multicolor ImmunoSpot® Assays
presented by Richard Caspell

3:15 P.M. – 3:45 P.M. LECTURE

Harmonization of ELISPOT
presented by Prof. Dr. Paul V. Lehmann

3:45 P.M. – 4:00 P.M. LECTURE

Cut-offs for positive ELISPOT results: Statistics and how to experimentally increase the chance for the reliable detection of rare cells
presented by Dr. Alexey Y. Karulin

4:00 P.M. – 4:05 P.M. LIVE DEMO

Wash and dry multicolor ImmunoSpot® plates
presented by Richard Caspell

4:05 P.M. – 4:20 P.M. LECTURE

ELISPOT in 384-well format
presented by Jodi Hanson

4:20 P.M. – 4:30 P.M. LECTURE

The theory of multicolor ELISPOT analysis — unambiguously identifying cells that do or do not co-express analytes
presented by Dr. Alexey Y. Karulin

4:30 P.M. – 5:00 P.M. LIVE DEMO

Hands-on multicolor ELISPOT analysis: Evaluation of the four-color B cell and three-color T cell ImmunoSpot® plates generated in the morning
presented by Richard Caspell

Demonstrating ImmunoSpot® Instruments for:

- Simultaneous detection of colors, no cross-bleeding of fluorochromes
- Detection of single-positive cells (all B cells) and double-/multiple-positive cells (Polyfunctional T cells)
- Measuring B cell affinity

5:00 P.M. SUMMARY / FAREWELL / Q&A SESSION: OPEN DISCUSSION

Open-ended discussion, further question/answer session and opportunity for hands-on analysis of multicolor data on an ImmunoSpot® S6 Ultimate UV Image Analyzer
presented by Prof. Dr. Paul V. Lehmann