"Modified T-Cells: The implications of their use in the arenas of HIV and Cancer"

March 16, 2011
9-10:30am Pacific; 12-1:30pm Eastern; 6-7:30pm CET

Organized by the ISCT Legal and Regulatory Affairs Committee **Chair: Shirley Bartido,** QA Manager, Cell Therapy and Cell Engineering Facility, Memorial Sloan Kettering Cancer Center.

Speakers: Dr. Bruce Levine, Associate Professor, Department of Pathology and Laboratory Medicine, University of Pennsylvania School of Medicine.

Dr. Isabelle Rivière, Director, Cell Therapy and Cell Engineering Facility, Memorial Sloan Kettering Cancer Center. **Webinar Overview:**

Gene-modified T cells were the first gene therapy tool used in clinical gene transfer trials. After the first applications in immunodeficiency diseases, T cell gene therapy has been extended to HIV infection and cancer. In this Webinar, two experts will provide their insights in this cutting edge field.

"Strategies for Immune Reconstitution by Adoptive Transfer of Engineered T Cells in HIV"
Bruce Levine, Ph.D.
Associate Professor, Department of Pathology and Laboratory Medicine
University of Pennsylvania School of Medicine
Several gene therapy and genetic approaches have been investigated to build an HIV-resistant immune system through enhanced HIV-specific immunity, or engineering CD4 T cell resistance to HIV. Lessons learned in these investigations have applicability to novel cell and gene therapy approaches to other diseases including cancer

"Engineering T cells for cancer immunotherapy"
Isabelle Rivière, Ph.D
Center for Cell Engineering, Molecular Pharmacology and Chemistry Program, Memorial Sloan-Kettering Cancer Center, New York, NY

T cells modified to express a second generation chimeric antigen receptor (CAR) specific to the B cell tumor antigen CD19 (19-28z) successfully eradicate systemic human CD19+ tumors in SCID-Beige mice. Based on these findings, two phase I clinical trials targeting autologous T cells with 19-28z CAR have been initiated at Memorial Sloan-Kettering Cancer Center to treat patients with chemotherapy-refractory chronic lymphocytic leukemia (CLL) (NCT00466531) and relapsed acute lymphoblastic leukemia (ALL) (NCT01044069). So far, 10 patients have been enrolled. Patients initially undergo a leukopheresis procedure in order to obtain T cells. Following activation with Dynabeads ClinExVivo£ CD3/CD28 beads, the T cells are transduced with the 19-28z CAR using cGMP gammaretroviral vector stocks generated in our facility. The T cells are expanded utilizing a Wave£ bioreactor platform that we validated. Data will be presented on manufacturing and release of genetically modified T cells as well as on clinical outcome in patients that were treated.