Workshop

"Profiling of immune response to guide cancer diagnosis, prognosis, and prediction of therapy"

November 27, 28, 2007
Bethesda, Maryland

Agenda - Draft 2/22/07

GOALS:

A one and half day workshop is proposed by Francesco Marincola (Department of Transfusion Medicine, Clinical Center, NIH) and Magdalena Thurin (Cancer Diagnosis Program, NCI) to discuss novel strategies to increase the efficiency of the discovery and validation of molecular predictors of cancer diagnosis, prognosis and response to treatment based on markers of immune response.

The workshop is based on the working hypothesis that common effector pathways may determine immune surveillance and immune rejection of cancer. Recent examples demonstrate that distinct molecular profiles correlate with different immune responsiveness and clinical outcome in various primary and metastatic cancers including melanoma, renal carcinoma, breast, colon, ovarian and pancreatic carcinoma. The profiles differ particularly in expression of immunologically relevant genes and molecules. Among them, genes related to T-cell response and regulation, growth factors, cytokines, chemokines and others molecules that express inflammatory activity have been identified. Thus, it is possible that immune stimulatory and inflammatory stimuli at the tumor site induce expression of several immune modulators and predispose to immune rejection in otherwise dormant host immune system.

On this premise, we propose to analyze whether immunological parameters correlate with clinical outcome and whether they can be validated as predictors of responsiveness and/or progression in cancer. These markers may in turn offer: 1) a better rationale for patient stratification during the conduct of clinical trials, therefore, avoiding unnecessary under/over treatment of patients, 2) opportunity to formulate hypotheses relevant to the response to treatment, and 3) information that can be used for development of novel therapeutic targets.

Day 1 8.00AM – 5.30 PM

Organizers: Francesco Marincola, *National Institute of Health (NIH)*, Stefan Ambs, Sheila Taube and Magdalena Thurin, *National Cancer Institute (NCI)*

Opening Remarks (10 min)

Introductory Session (30 min presentations)
Chair: Giorgio Trinchieri, National Cancer Institute

1) Overview about cancer and immune response
   Giorgio Trinchieri, National Cancer Institute

2) Inflammation and cancer
   Lisa Coussens, University of San Francisco

3) Immune response based markers-Clinical perspective
   John Kirkwood, University of Pittsburgh

Session 1. Immune response as prognostic signatures in cancer (20 min presentations)
Chair: Magdalena Thurin, National Cancer Institute

1) Effector Memory T cells, early metastasis, and survival in colorectal cancer
   Jerome Galon, Institut National de la Sante et de la Recherché Medicale (NSERM), Paris

2) T regulatory T cells as predictors of survival in ovarian cancer
   George Coukos, University of Pennsylvania School of Medicine

3) Immunophenotyping in lymphoma diagnosis and classification
   Randy Gascoyne, University of British Columbia

4) Immune modulators of SLN for prediction of metastasis and potential for therapy
   Richard Essner, John Wayne Cancer Institute

Session 2: Identification of predictors of response
Chair: Francesco Marincola, National Institutes of Health

1) Carbonic Anhydrase IX and other markers as predictors of immune responsiveness to Interleukin-2
   Michael Atkins, Department of Medicine, Harvard Medical School

2) Melanoma specific signature of circulating lymphocytes
   Peter P. Lee, Stanford University School of Medicine

3) Global transcriptional response to IFN-α as predictor of response to HCV therapy
   Xiu-Song He, Stanford University School of Medicine

4) Common features of immune responsiveness in humans
Francesco Marincola, National Institutes of Health

Day 2 8.00AM-2.00PM

Session 3: Genetic background in immune relevant genes influence on response to therapy
Chair: Stefan Ambs, National Cancer Institute

1) Polymorphisms of IFN, IL-10 and CTLA-4 as predictors of immune responsiveness
Jeffrey Weber, University of Southern California

2) Interleukin-6 polymorphism as predictor of outcome in high-risk breast cancer
Angela DeMichele, University of Pennsylvania School of Medicine

3) Immunoglobulin G fragment C receptor polymorphism predicts response to Rutuximab
Ronald Levy, Stanford University School of Medicine

4) Polymorphism in inflammation genes and bladder cancer
Xifeng Wu, University of Texas M.D. Anderson Cancer Center

Session 4: Clinical evaluation-are we ready?
Chair: Sheila Taube, National Cancer Institute

1) Feasibility and standardization of specimens
Steven J. Qualman, Ohio State University

2) Statistical approaches to study design and data analysis
Kevin Dobbin, National Cancer Institute

3) Utilization of amplification tools for the real-time analysis of small clinical samples
Ena Wang, National Institutes of Health

Conclusion and recommendations