

BISC/ImmPort Data Release 4 studies

September 2013

Study Program: New York Influenza Center of Excellence

Title: Host differences in influenza-specific CD4 T cell and B cell responses are modulated by viral strain and route of immunization

Accession: SDY95

Subjects: 499

Study PI, contact: Mark Sangster, Ph.D, University of Rochester Medical Center, Rochester, NY

Study Description: HLA-DR1 transgenic (DR1) mice and C57BL/10 (B10) mice analyzed after infection with influenza virus A/New Caledonia/20/99 (NC). The pattern of secretion of IL-2, IFN-g, and IL-4 by CD4 T cells activated by NC infection was determined to be largely independent of epitope specificity and the magnitude of the epitope-specific response. Interestingly, however, the characteristics of the virus-specific CD4 T cell and the B cell response to NC infection differed in DR1 and B10 mice.

Assays in ImmPort:

Assay Type	Number of Exp. Samples
ELISPOT	2556
Virus Titer	126
ELISA	422
Luminex xMAP	808

Clinical Assessments in ImmPort: none

Notes: new study

Study Program: New York Influenza Center of Excellence

Title: Primary seasonal influenza virus infection elicits CD4 T cells specific for genetically conserved epitopes that can be mobilized for cross protective immunity to pandemic H1N1 influenza

Accession: SDY99

Subjects: 266

Study PI, contact: Andrea Sant, Ph.D., University of Rochester Medical Center, Rochester, NY

Study Description: In this study, a mouse model of primary and secondary influenza infection is developed by using a widely circulating seasonal H1N1 virus and the pandemic strain of H1N1 that emerged in Mexico in 2009, and several key issues are evaluated. The specificity of CD4 T cell reactivity toward epitopes conserved among H1N1 viruses or unique to the seasonal or pandemic strain was assessed by ELISpot assays.

Assays in ImmPort:

Assay Type	Number of Exp. Samples
ELISPOT	691
Virus Neutralization	51
Virus Titer	8
Other	227

Clinical Assessments in ImmPort: none

Notes: new study

Study Program: New York Influenza Center of Excellence

Title: The peptide specificity of the endogenous T follicular helper cell repertoire generated after protein immunization

Accession: SDY139

Subjects: 62

Study PI, contact: Andrea Sant, Ph.D., University of Rochester Medical Center, Rochester, NY

Study Description: T follicular helper (Tfh) cells potentiate high-affinity, class-switched antibody responses, the predominant correlate of protection from vaccines. Despite intense interest in understanding both the generation and effector functions of this lineage, little is known about the epitope specificity of Tfh cells generated during polyclonal responses. To date, studies of peptide-specific Tfh cells have relied on either the transfer of TcR transgenic cells or use of peptide:MHC class II tetramers and antibodies to stain TcR and follow limited peptide specificities. In order to comprehensively evaluate polyclonal responses generated from the natural endogenous TcR repertoire, we developed a sorting strategy to separate Tfh cells from non-Tfh cells and found that their epitope-specific responses could be tracked with cytokine-specific ELISPOT assays. The immunodominance hierarchies of Tfh and non-Tfh cells generated in response to immunization with several unrelated protein antigens were remarkably similar. Additionally, increasing the kinetic stability of peptide-MHC class II complexes enhanced the priming of both Tfh and conventional CD4 T cells. These findings may provide us with a strategy to rationally and selectively modulate epitope-specific Tfh responses. By understanding the parameters that control epitope-specific priming, vaccines may be tailored to enhance or focus Tfh responses to facilitate optimal B cell responses.

Assays in ImmPort:

Assay Type	Number of Exp. Samples
ELISPOT	340
Flow Cytometry	100
Q-PCR	456

Clinical Assessments in ImmPort: none

Notes: new study

Study Program: New York Influenza Center of Excellence

Title: Analyses of the specificity of CD4 T Cells during the primary immune response to influenza virus reveals dramatic MHC-linked asymmetries in reactivity to individual viral proteins

Accession: SDY147

Subjects: 80

Study PI, contact: Andrea Sant, Ph.D., University of Rochester Medical Center, Rochester, NY

Study Description: ELISpot assays using overlapping peptides representing different influenza viral proteins were used to enumerate and identify the specificity of anti-influenza CD4 T cells directly, *ex vivo*, following infection of two mouse strains that express unrelated MHC class II molecules with influenza virus.

Assays in ImmPort:

Assay Type	Number of Exp. Samples
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ELISPOT	1715
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Clinical Assessments in ImmPort: none

Notes: new study

Study Program:

Title: VRC304 - A Phase I Study of the Safety and Immunogenicity of a Recombinant DNA Plasmid Vaccine (VRC-AVIDNA036-00-VP) Encoding for the Influenza Virus H5 Hemagglutinin Protein in Healthy Adults shared to Semi-Public Workspace (SPW) Project

Accession: SDY167

Subjects: 45

Study PI, contact: Julie E. Ledgerwood, D.O., National Institute of Allergy and Infectious Diseases (NIAID), Vaccine Research Center (VRC), Bethesda, MD

Study Description: VRC304 - A Phase I, double-blind, placebo-controlled, randomized, dose escalation study to evaluate safety, tolerability, and immunogenicity of a recombinant DNA vaccine against the influenza virus hemagglutinin H5.

Assays in ImmPort:

Assay Type	Number of Exp. Samples
ELISA	430
ELISPOT	300
Flow Cytometry	594
Hemagglutination Inhibition	44
Virus Neutralization	88

Clinical Assessments in ImmPort: Actual Visit, Adverse Events, Chemistry Results

Notes: Study updated to include flow cytometry files and derived flow cytometry data

Study Program: Vaccination and infection: indicators of immunological health and responsiveness

Title: CyTOF analysis of human T cells

Accession: SDY207

Subjects: 6

Study PI, contact: Mark Davis, Ph.D., Stanford University School of Medicine, Stanford, CA

Study Description: High dimensional analysis of CD8+ T cell phenotype and function

Assays in ImmPort:

Assay Type	Number of Exp. Samples
CyTOF	34

Clinical Assessments in ImmPort: none

Notes: new study

Study Program: Influenza Pathogenesis & Immunology Research Center (IPIRC)

Title: Serological Memory and Long-term Protection to Novel H1N1 Influenza Virus After Skin Vaccination

Accession: SDY208

Subjects: 7

Study PI, contact: Richard Compans, Ph.D., Emory Vaccine Center, Emory University, Atlanta, GA

Study Description: Investigating the long-lived immunity and improved protection after skin vaccination

Assays in ImmPort:

Assay Type	Number of Exp. Samples
ELISA	61
ELISPOT	9
Hemagglutination Inhibition	4
Microscopy	4
Other	13

Clinical Assessments in ImmPort: none

Notes: PI updated

Study Program: Inner City Asthma Consortium (ICAC)

Title: Asthma Control Evaluation (ACE): A Biomarker-Based Approach to Improving Asthma Control and Mechanistic Studies

Accession: SDY210

Subjects: 546

Study PI, contact: William Busse, Ph.D., University of Wisconsin, Madison, WI

Study Description: The purpose of ICAC-01 is to determine whether an asthma treatment strategy that measures exhaled nitric oxide (eNO) to indicate disease progression is more effective in treating asthma symptoms when combined with existing asthma treatment guidelines than treatment using the guidelines alone

Assays in ImmPort:

none	
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Clinical Assessments in ImmPort: Adherence Barriers, Adverse Events, Concomitant Medication, Allergen Skin Test, Brief Symptom Inventory, Follow-up Physical Exam, Exhaled Breath Condensates, etc...

Notes: new study

Study Program: Inner City Asthma Consortium (ICAC)

Title: Inner-City Anti-IgE Therapy for Asthma

Accession: SDY211

Subjects: 419

Study PI, contact: William Busse, Ph.D., University of Wisconsin, Madison, WI

Study Description: Inner-City Anti-IgE Therapy for Asthma (ICAC-08) is a multi-center, randomized, double-blind, placebo-controlled, parallel group efficacy and safety trial designed to compare 250 inner-city children and adolescents age 6-20 years old with moderate-to-severe allergic asthma receiving standardized specialist care, including basic asthma education, with 250 similar children and adolescents receiving comparable standardized specialist care and treatment with Xolair (tm) (omalizumab).

Assays in ImmPort:

none	
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Clinical Assessments in ImmPort: ICATA Anaphylaxis Assessment, Asthma Attitudes, Adherence Barriers, Asthma Control Follow-up, Adverse Events, Allergen Skin Test, Asthma Symptoms and Utilization, Bioelectrical Impedance Analysis, Concomitant Medications, etc...

Notes: new study

Study Program: New York Influenza Center of Excellence

Title: Orchestration of CD4 T cell epitope preferences after multi-peptide immunization

Accession: SDY217

Subjects: 283

Study PI, contact: Andrea Sant, Ph.D., University of Rochester Medical Center, Rochester, NY

Study Description: CD4 T cell responses were measured in response to single or multi-peptide immunization and dendritic cell immunizations in wild type or transgenic mice.

Assays in ImmPort:

ELISPOT	494
Flow Cytometry	64

Clinical Assessments in ImmPort: none

Notes: new study

Study Program: Immunobiology of Food Allergy and Its Treatment (CoFAR)

Title: Oral Immunotherapy for Childhood Egg Allergy

Accession: SDY218

Subjects: 55

Study PI, contact: Wesley Burks, MD, North Carolina Children's Hospital and Stacie Jones, MD, Arkansas Children's Hospital

Study Description: The purpose of this study is to determine the safety and efficacy of the administration of oral immunotherapy (OIT). The intent is to develop desensitization and eventually tolerance to egg allergen

Assays in ImmPort:

none	
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Clinical Assessments in ImmPort: Adverse Events, Atopic Dermatitis, Basophil, Medication, Protocol Deviation, Initial Escalation, Food Allergy Episode, Antibody Assay, Prick Skin Results, etc...

Notes: Updated PI, schematic, protocol

Study Program: Inner City Asthma Consortium (ICAC)

Title: Biomarker-based Cockroach Sublingual Immunotherapy Study (BioCSI)

Accession: SDY223

Subjects: 54

Study PI, contact: Robert Wood, MD, Johns Hopkins University School of Medicine, Baltimore, MD

Study Description: The purpose of this study is to evaluate the safety and efficacy of a sublingual cockroach extract given to adults with perennial allergic rhinitis, asthma, or both.

Assays in ImmPort:

none	
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Clinical Assessments in ImmPort: Adverse Events, Allergy History, Allergen Skin Test, Concomitant Medication, Dose Escalation, Hematology/Chemistry, IgE and IgG results, Peak Flow, Prescribed Medications, etc....

Notes: new study
