

# The Immunology Institute's *Antibody Characterization and Serology (ACS)* Recharge Facility



Davide Botta<sup>1</sup>, Fen Zhou<sup>2</sup>, John A. Hall<sup>2,3</sup>, Kianna A. Arrington<sup>1</sup>, Yuting Lin<sup>1</sup>, Carol A. Ballinger<sup>1</sup>, Paul A. Goepfert<sup>1,4</sup>, Troy D. Randall<sup>1,5</sup> and Frances E. Lund<sup>1,2</sup>

<sup>1</sup>The Heersink School of Medicine Immunology Institute, UAB, Birmingham, AL, USA. <sup>2</sup>Department of Microbiology, UAB, Birmingham, AL, USA.

<sup>3</sup>Department of Biomedical Engineering, UAB, Birmingham, AL, USA. <sup>4</sup>Department of Medicine, Division of Infectious Diseases, UAB, Birmingham, AL, USA.

<sup>5</sup>Department of Medicine, Division of Clinical Immunology and Rheumatology, UAB, Birmingham, AL, USA.



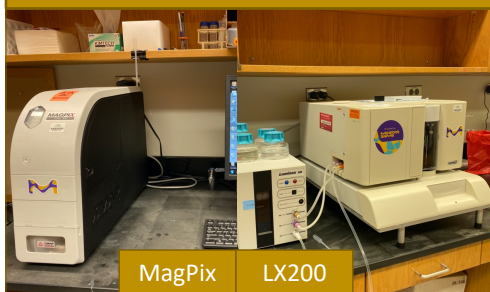
## Introduction

The purpose of the **Antibody Characterization and Serology (ACS)** recharge facility is to offer research reagents, multiplex immunoassays and high-throughput technologies that help researchers quantitatively measure multiplexed cytokines and other biomarkers present in serum/plasma and other samples. In addition, the **ACS** can quantitate B cell or antibody responses to self-antigens, allo-antigens and proteins derived from allergens and pathogens. Finally, the **ACS** can assess biomolecular interactions in real-time and in a high-throughput manner.

## Services

1. Measurement and quantitation of antigen-specific antibodies using antigen-multiplexed cytometric bead arrays (CBA).
2. Measurement and quantitation of highly multiplexed cytokines and other markers by Luminex® xMAP® technology.
3. Production and delivery of viral recombinant antigens (including biotin-labelled antigens) and B-cell tetramers to investigate B cell responses to vaccines and pathogens.
4. Analysis of biomolecular interactions (e.g. protein/protein or protein/drug interactions) using the high-throughput Alto surface plasmon resonance (SPR) system.

### Luminex multiplexing services

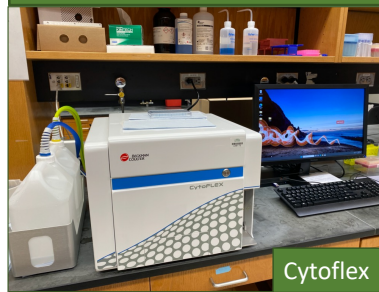


Measures up to 80 proteins in a 25 µl sample (pg/ml sensitivity).

Up to 80 samples per assay (serum, plasma, sups, BAL, etc...).

>500 human analytes available, including cytokines/chemokines.

### Cytometric Bead Array services

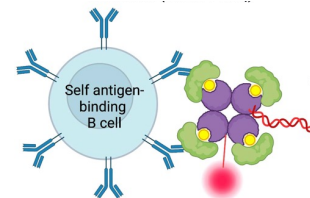


Simultaneous measurement of antigen-specific Abs (IgG, IgM, IgA).

Available arrays for β-Coronaviruses and Influenza antigens.

Flexible system configurable to 18 antigens in a single assay.

### Research reagents



### Tetramers & antigens

31 influenza and coronavirus antigens (+/- biotinylation).

66 influenza and coronavirus B cell tetramers conjugated up to 4 different fluorochromes.

### Ab binding kinetics services



High-throughput, benchtop Surface Plasmon Resonance (SPR) system.

Handling of 2 µl sample volumes.

Applications: Kinetics/affinity characterization, epitope mapping/binning, quantitation.

## Location

Shelby Interdisciplinary Biomedical Research Building (SHEL) Room 571



## Manager

Davide Botta  
dbotta@uab.edu



## Operator

Fen Zhou  
fzhou@uab.edu

