

Flow Cytometry Shared Resource at the Sylvester Comprehensive Cancer Center

Eric Wieder (ewieder@med.miami.edu), Sylvester Comprehensive Cancer Center, **Eric Wieder**, Sylvester Comprehensive Cancer Center/University of Miami, **Patricia Guevara**, Sylvester Comprehensive Cancer Center/University of Miami, **Shannon Saigh**, Sylvester Comprehensive Cancer Center/University of Miami, **Alain Diaz**, Sylvester Comprehensive Cancer Center/University of Miami, **Brit Chapman**, Sylvester Comprehensive Cancer Center/University of Miami, **George Grills**, Sylvester Comprehensive Cancer Center, University of Miami

The Sylvester Comprehensive Cancer Center (SCCC) Flow Cytometry Shared Resource (FCSR) at the University of Miami offers state-of-the-art instruments and services for flow cytometry, mass cytometry and imaging mass cytometry, and expertise in their applications. The FCSR is available to the Sylvester research community and to outside investigators. FCSR services facilitate a broad array of research, including studies on single cell genomics, apoptosis, drug metabolism, immune responses, and pathways of cellular activation. Fluorescence-activated cell sorting instruments include the BD FACSAria Fusion, FACSAria-III, and Beckman Coulter CytoFLEX SRT, all in biosafety cabinets for BSL-2 sorting. The FCSR provides both standard and spectral cytometry analysis with the Cytex Aurora. BD FACSymphony A6 SE, BD LSR-Fortessa-HTS, and BD FACSCanto- II. The FCSR also offers the Standard Biotools CyTOF Helios and Hyperion system, which uses heavy metal labelled antibodies and mass spectroscopy to identify cellular targets in suspension or on solid tissue sections, in support of both single cell and spatial multi-omics studies. The FCSR offers a repository of validated commercial antibody-to-human-tissues reagents and a heavy metal-antibody custom conjugation service in support of use of the CyTOF system. To facilitate Hyperion experiments, the Sylvester Cancer Modeling Shared Resource provides automated tissue array staining services with validated reagent panels that can then be utilized for FCSR services. The FCSR also works closely with the Sylvester Onco-Genomics Shared Resource to support single cell and spatial genomics studies. Data analysis support includes access to software solutions for imaging mass cytometry analysis (Visiopharm) and for highly multiplexed suspension studies (terraFlow, FCS Express and FlowJo). The FCSR provides consultation on project design and offers instrument and software training, seminars, and educational workshops. The FCSR works collaboratively with all the other Sylvester Shared Resources to offer integrated support for a wide array of studies, with a focus on oncology research.