Molly Bray, Ph.D. - Director

Mission

This Shared Facility provides the UAB research community with Affymetrix GeneChip Microarray technology to study expression or genetic alterations associated with a full spectrum of diseases and cancer.

Facility Description

The UAB CCC Microarray Shared Facility is located in room 412 of the Kaul Human Genetics Building. Comprised of 520 square feet of physical laboratory space, the Facility is equipped with the Affymetrix Complete GeneChip Instrument System that includes the GeneChip Scanner 3000 7G, Fluidics Station 450 and the GeneChip Hybridization Oven 640. The Facility also has a dedicated workstation with Affymetrix GeneChip Command Console (AGCC) 1.0. An Agilent 2100 BioAnalyzer is used for RNA quantitation and quality control. Other equipment such as a Thermo Forma refrigerated tabletop centrifuge with multiple rotors/adapters, microcentrifuges, water baths, and Thermo Forma –86˚C Freezer, is also available for sample storage and processing.

The Shared facility currently runs the 3' Expression arrays and has introduced the GeneST arrays from Affymetrix. The GeneST arrays are differentiated from the 3' Expression arrays in that the probe sets for each gene are now distributed throughout the gene and not clustered in the 3' end. This probe configuration provides a more complete analysis of gene expression and is not subject to 3' bias of transcripts. The cost of the GeneST arrays is also $225 less expensive. Beginning mid summer of 2009 the core will offer the new microRNA GeneChips from Affymetrix. The miRNA chips contain microRNAs from 71 species including human, mouse and rat.

The Shared facility is also able to process the DNA Chips from Affymetrix. The facility has successfully hybridized the mouse promoter arrays for a Chromatin-IP-Chip experiment. In addition, new and upgraded equipment will be placed in the facility in the late summer, early fall of 2009 that will allow the core to process the SNP Chips, SNP 5.0 and SNP 6.0, from Affy, which have 1 million and 2 million SNPs/Chip, respectively. These Chips will provide a platform for Whole Genome Association studies for SNP variants and Copy number variants (CNV).

The Facility has the Axon GenePix 4000B scanner and GenePix Pro 6.0 for the scanning and analysis of glass slide based microarrays. The core of our Facility's data analysis and management systems is the GeneSpring Data analysis package from Agilent running on a dedicated Dell server. The core currently has a 3 seat license for access to the software, meaning 3 investigators can access the analysis package from their offices at the same time. Investigators are encouraged to download the software to their respective desktops and access the analysis package through the server.

The Shared Facility no longer provides or supports custom microarray printing.

Research Information

1. GeneChip Technology allows scientists to reach their research goals by identifying genetic variations associated with disease to discovering new drug targets. The Facility is equipped with the Affymetrix Complete GeneChip Instrument System and is providing full Affymetrix GeneChip experiment services. Services include technology consultation, experimental design, RNA isolation, RNA quantification and quality control, target preparation, array scanning, and data extraction and analysis. The service fees and genechip prices are located at
http://www.heflingenetics.uab.edu
under Services.

3. Bioinformatics Resources provide up-to-date data analysis software packages that store, analyze, visualize, annotate, and report on the data from both Affymetrix GeneChip and spotted arrays. The new feature of GeneSpring Workgroup server software will enable investigators to access and analyze their data remotely. For Bioinformatic support of your GeneChip experiment

please contact David Crossman at 996-4045 or dkcrossm@uab.edu.

Services and Fees

The 3'Expression GeneChips are $775/Chip

The GeneST GeneChips are $550/Chip

The miRNA Chips are $300/Chip

The SNP Chips and Promoter Chips vary in price, please enquire

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