

Overview of Mouse Microarray Project

The Purpose of the Mouse Microarray project was to make inexpensive homemade mouse DNA microarrays for UMN investigators

- a) cDNA libraries used to generate our mouse microarrays
 - i) BMAP (Brain Molecular Anatomy Project) NIH and Iowa.
 - (1) ~8,000 unique gene clusters from 11K clones
 - (2) from 10 different regions of mouse brain
 - (3) distributed by Research Genetics, \$8,700
 - ii) NIA 15K mouse cDNA project
 - (1) developed by Minoru S.H. Ko, MD/PhD
 - (2) 15,000 unique mouse cDNAs.
 - (3) Derived predominantly from embryonic cDNAs
- b) Basic protocol for generation of mouse microarrays
 - i) Obtain cDNA library
 - (1) thousands of bacterial stocks in 96-well plates
 - (2) each bacterial stock contains a standard eukaryotic expression plasmid that contains a unique stretch of mouse cDNA inserted in the multiple cloning site
 - ii) Replicate the library
 - iii) PCR amplify each cDNA clone in 96 well reactions
 - iv) Check PCR reactions on an agarose gel
 - v) Purify PCR reactions with a Millipore filter
 - vi) Elute purified DNA with 3XSSC (spotting buffer)
 - vii) Spot DNA onto glass slides using a DNA spotting robot
- c) Generation of the BMAP and NIA15K arrays
 - i) People who did the work
 - (1) Pam Skinner (Ashley Haase's lab) Contact via skinner@lenti.med.umn.edu
 - (2) Jennifer O'Neil (Mike Farrar's lab)
 - (3) Courtney Byam (Harry Orr's lab)
 - (4) Heliane Serra (Harry Orr's lab)
 - (5) Tina Lamb (Ashley Haase's lab)
 - (6) Dawn Jolson (Grant Anderson and Cari Mariash's lab)
 - (7) Rashmi Korke (Wei-Shou Hu's lab)
 - (8) Luke Dunklee (BMGC)
 - (9) Paul Carolan (BMGC)
 - (10) Cara Swanson-White (Haase lab)
 - (11) Marcela de Leon Gatti (Wei-Shou Hu's lab)

- ii) Financial contributors
 - (1) Ashley T. Haase
 - (2) David Largaespada
 - (3) Harry T. Orr
 - (4) Cary Mariash, Dept. of Medicine
 - (5) Grant Anderson, Dept. of Medicine
 - (6) Mike Farrar
 - (7) Leslie Schiff, Microbiology, reovirus mechanisms
 - (8) Dave Bernlohr
 - (9) Pat Cleary
 - (10) Catherine Verfaillie
 - (11) Dave Zarkower and Vivian Bardwell
 - (12) Karen Wasiluk and Dunn
 - (13) Wei-Shou Hu
 - (14) Graduate School
 - (15) Biomedical Genomics Center (BMGC)

- iii) Technical guidance
 - (1) Vivek Kapur, Mike Paustian (Kapur's lab)
 - (2) Luke Dunklee (Staskus' lab)
 - (3) Derived protocols from:
 - (a) Microarray protocols developed by the DeRisi Lab, UCSF, Modified by the Kapur Lab, U of MN
 - (b) Microarray protocols developed by NIA/NIH Mouse Genomics Project
 - (c) TIGR microarray protocols

- iv) Use of spotters
 - (1) AGAC and Kapur lab BioRobotics spotter
 - (2) McGlennen lab Cartesian spotter
 - (3) BMGC new BioRobotics spotter

For more information contact:

Pam Skinner, skinner@lenti.med.umn.edu

Paul Carolan, pcarolan@mail.ahc.umn.edu Phone 612-624-0437