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