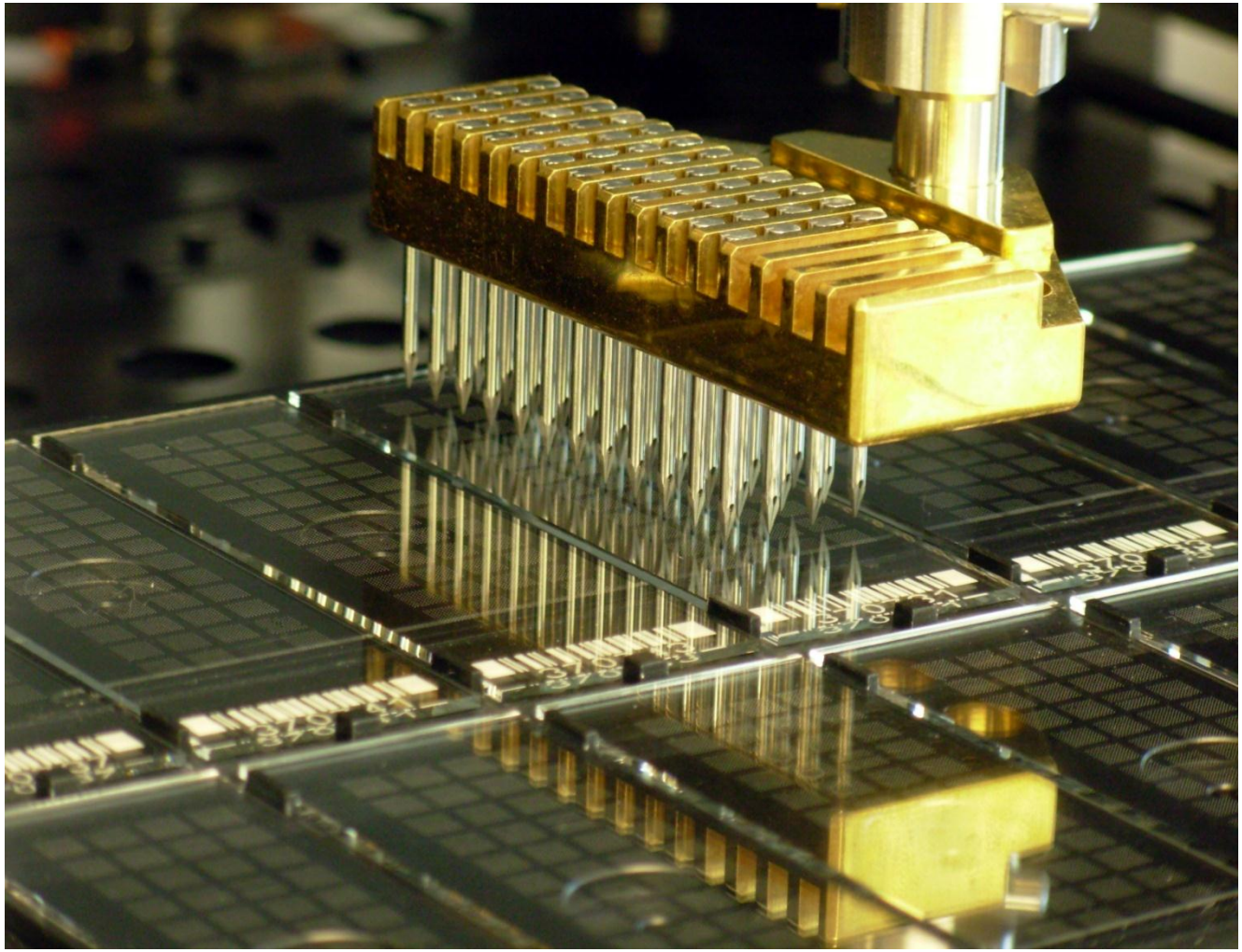
# LID-PEG Training Session

## Module2:
## Glycan Array Production
## & Screening

Presented by- Ryan Mcbride

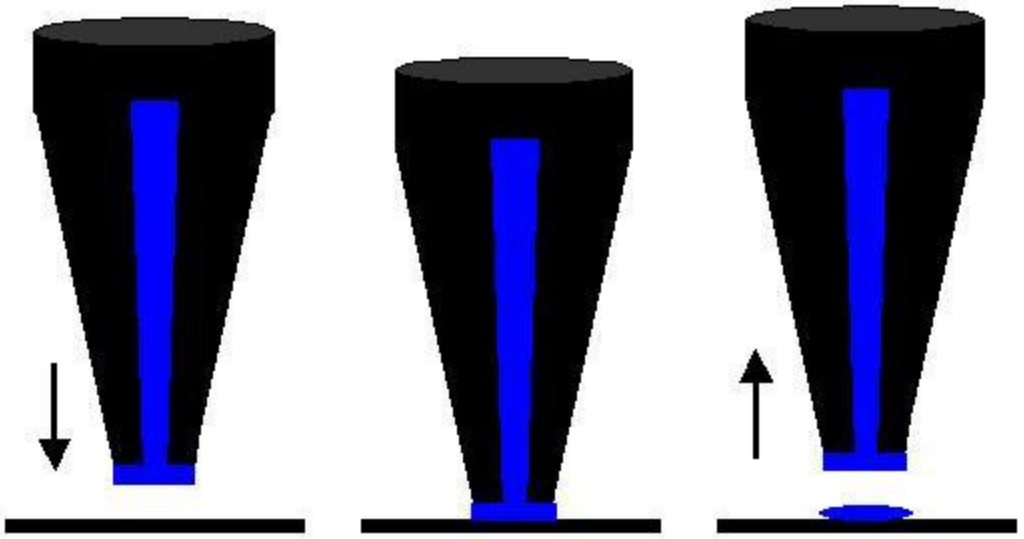
# Outline

- Contact Microarray Printing Basics
- Microarray Design/Printing
- Post Processing
- Sample Analysis
- Image Analysis/Data Acquisition
- Data Analysis/Output



# Contact Microarray Printing

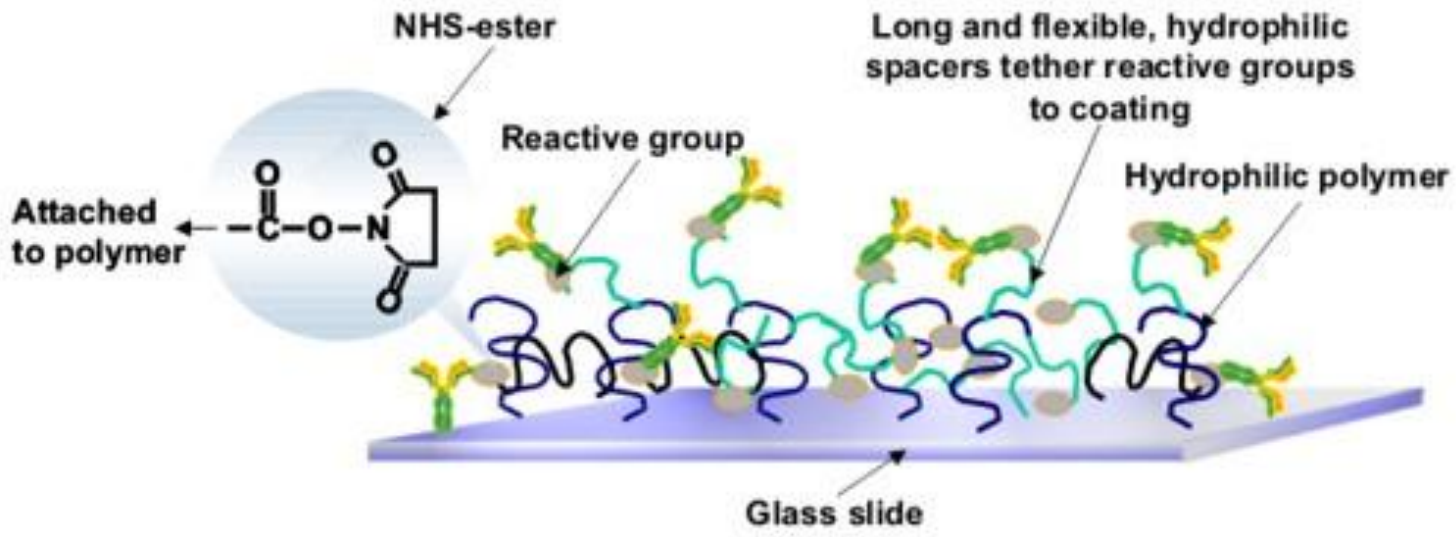
- Functions by passive capillary fluid uptake and delivery
- Stealth Microarray Spotting Pins
  - ~1nL of material deposited/spot
  - 25 – 100 spots per refill (source visit)



Telechem/ArrayIt

# Slide H

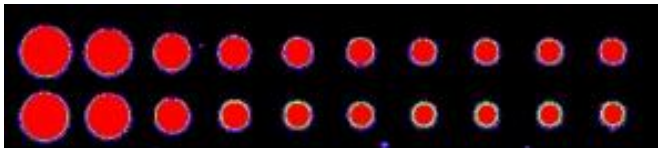
- Made by Schott/Nexterion (Germany)
- Polymer chemistry composed of a scaffold containing NHS-ester groups to bind amine-functionalized/containing compounds and azide groups for the polymerization of the scaffold




Sc hott/Nexterion

# Spotting Issues

Spot Rush → Spot Taper



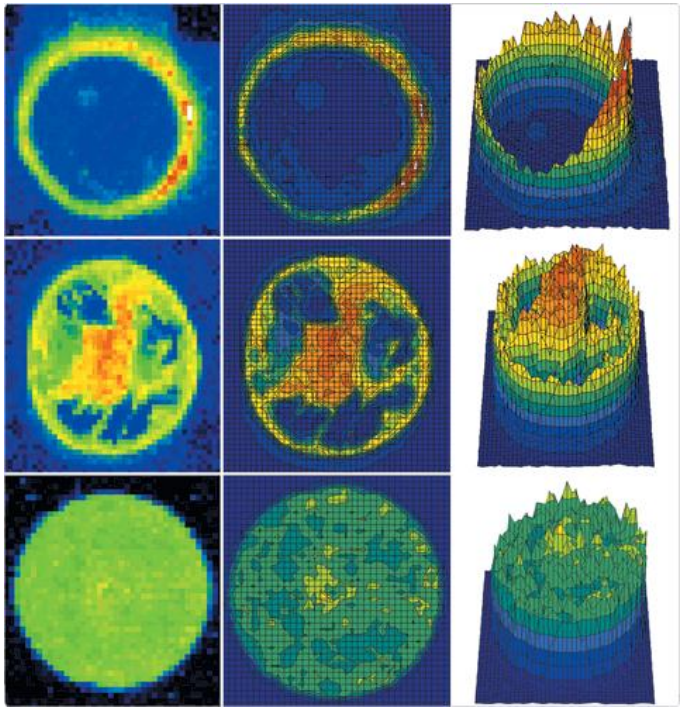
**Solution**

-“dab” pins onto a “pre-”spotting slide (PolyL-Lys)
- like using a quill pen

Coffee stain Spots (Donuts)

Spiked spots

Uniform spot



- increase humidification time post print or during printing
- change buffer composition

- change buffer composition
- addition of detergents or organics

Invitrogen

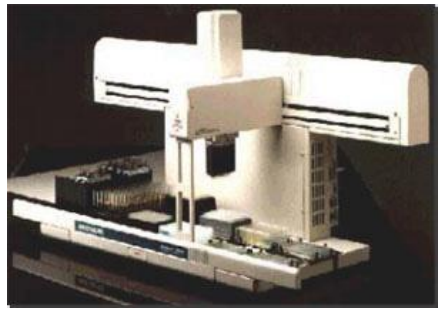
# Workflow

Lyophilized solid

Buffer

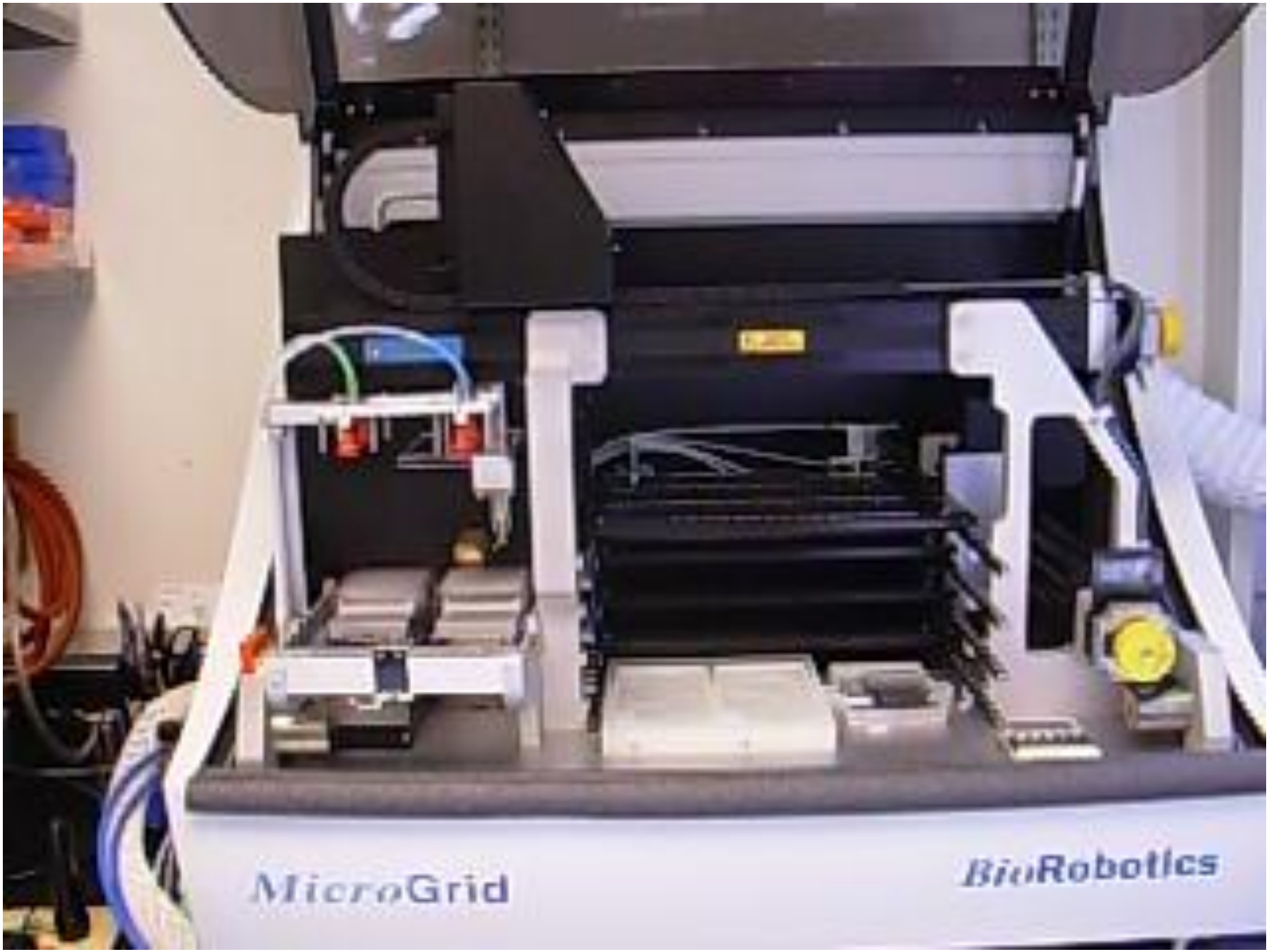
Stock
@ 1mM

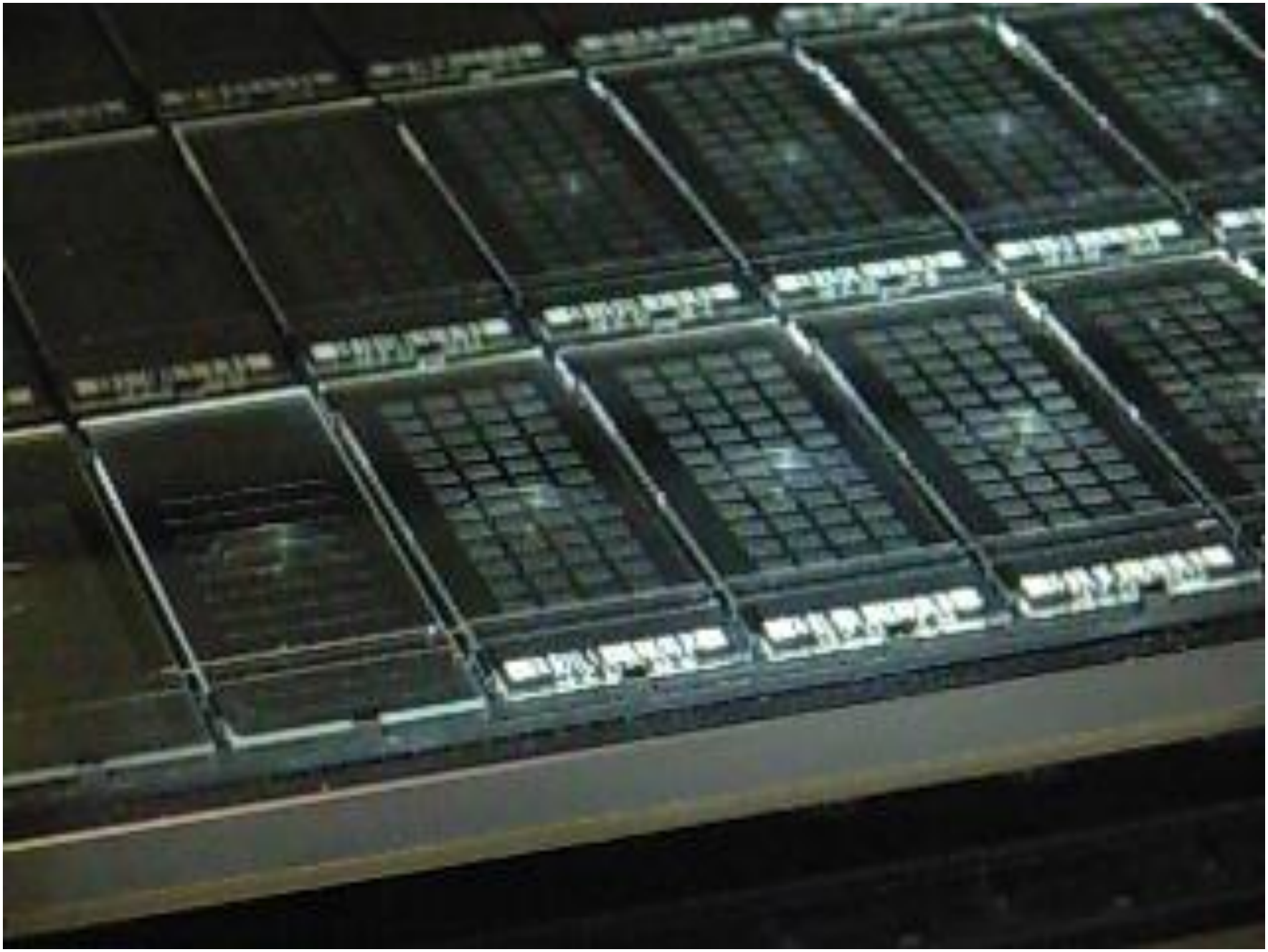
Hand pipetted/diluted
Into 96-well plates



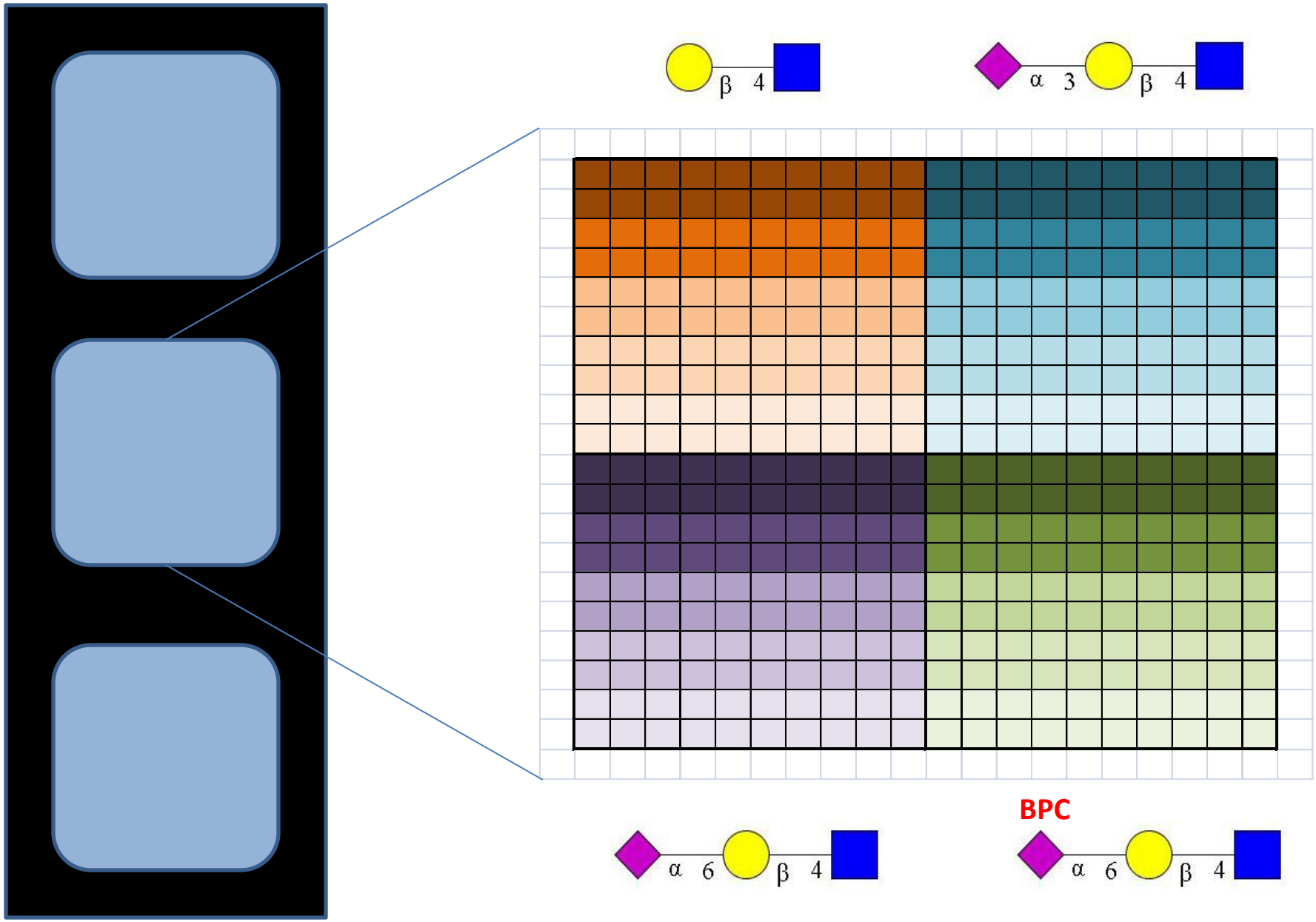
Transferred robotically
To 384-well plates

Printed

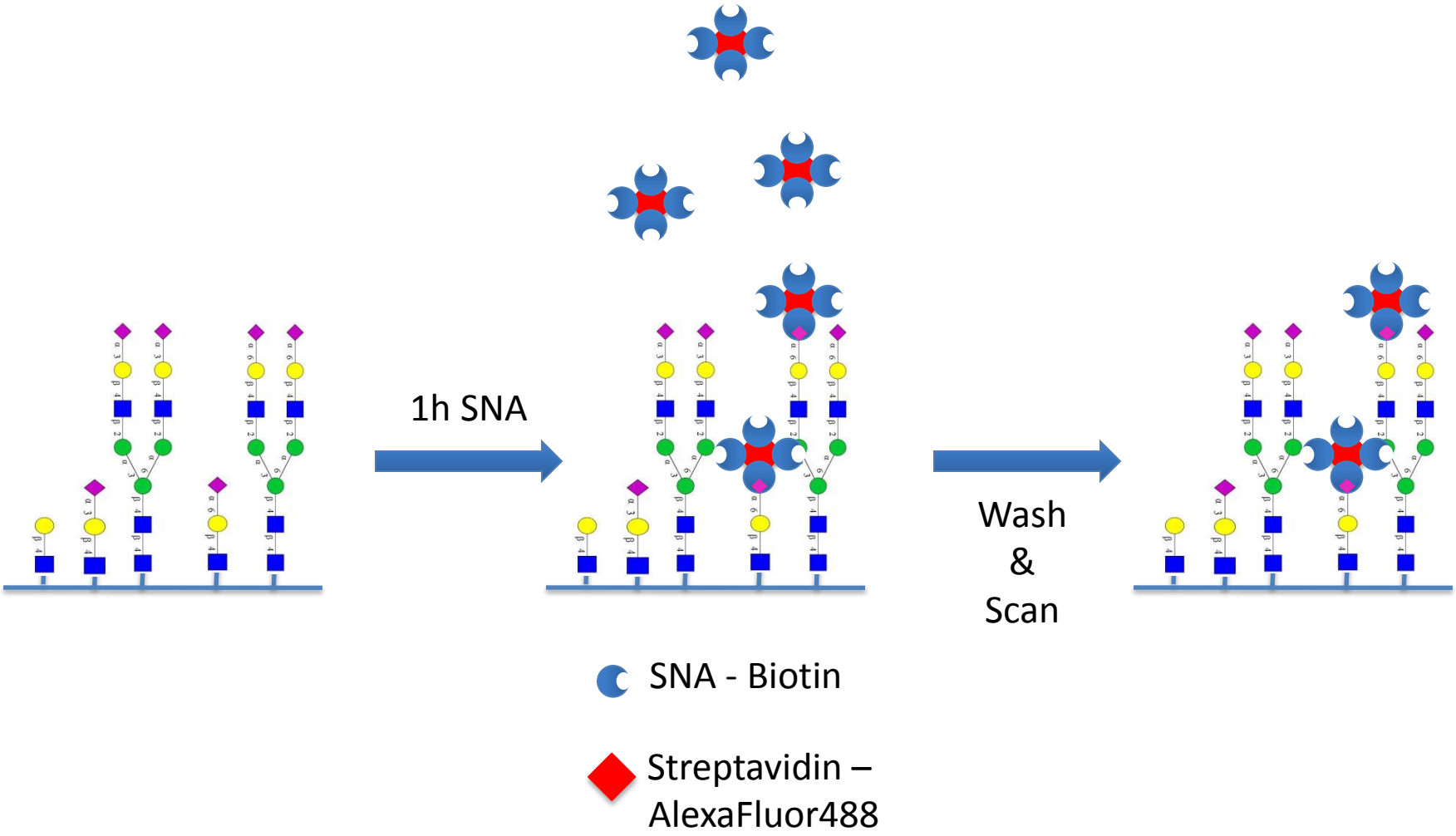

MicroGrid
BioRobotics



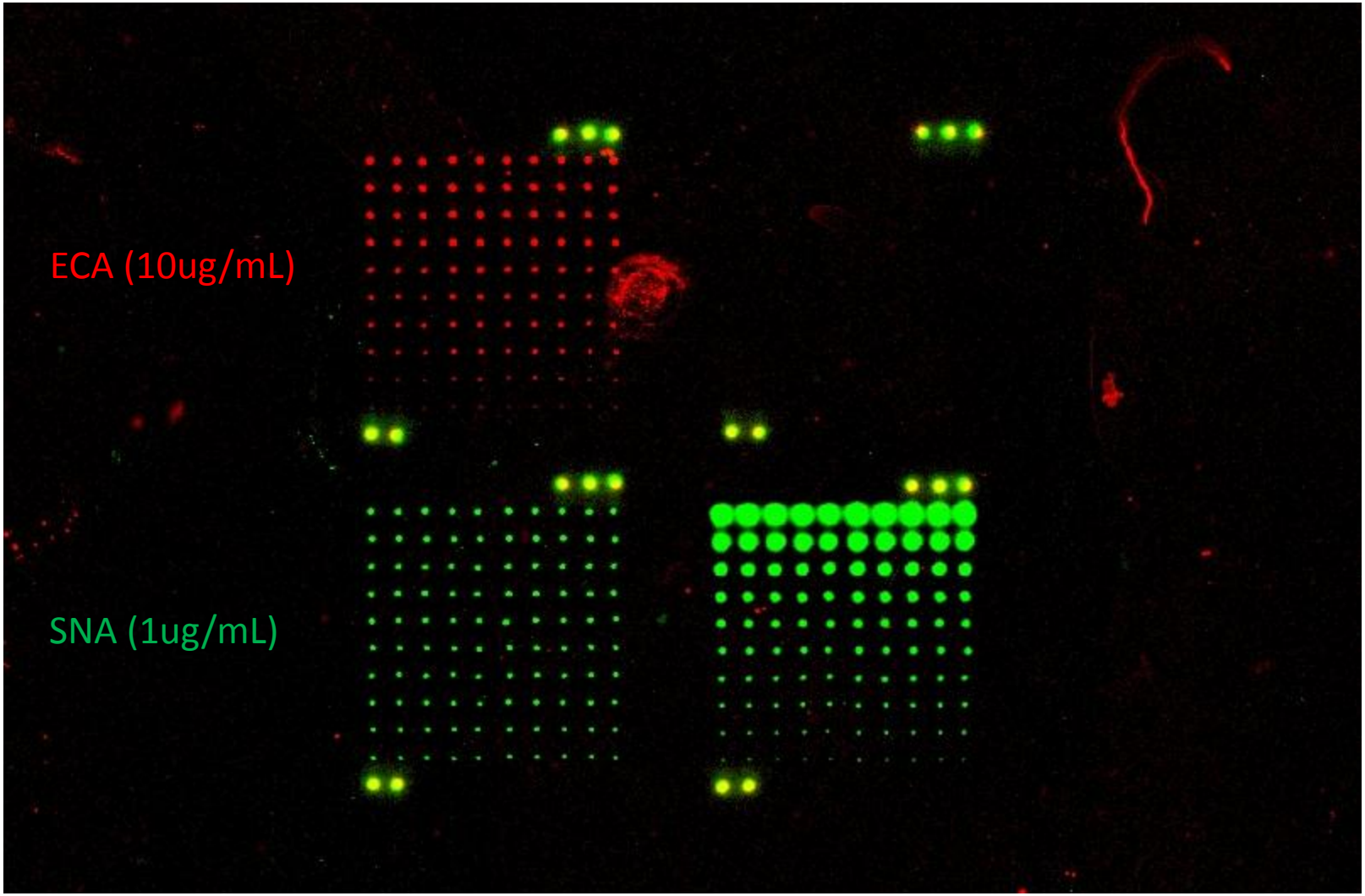
# Array Design



# Sample Incubation

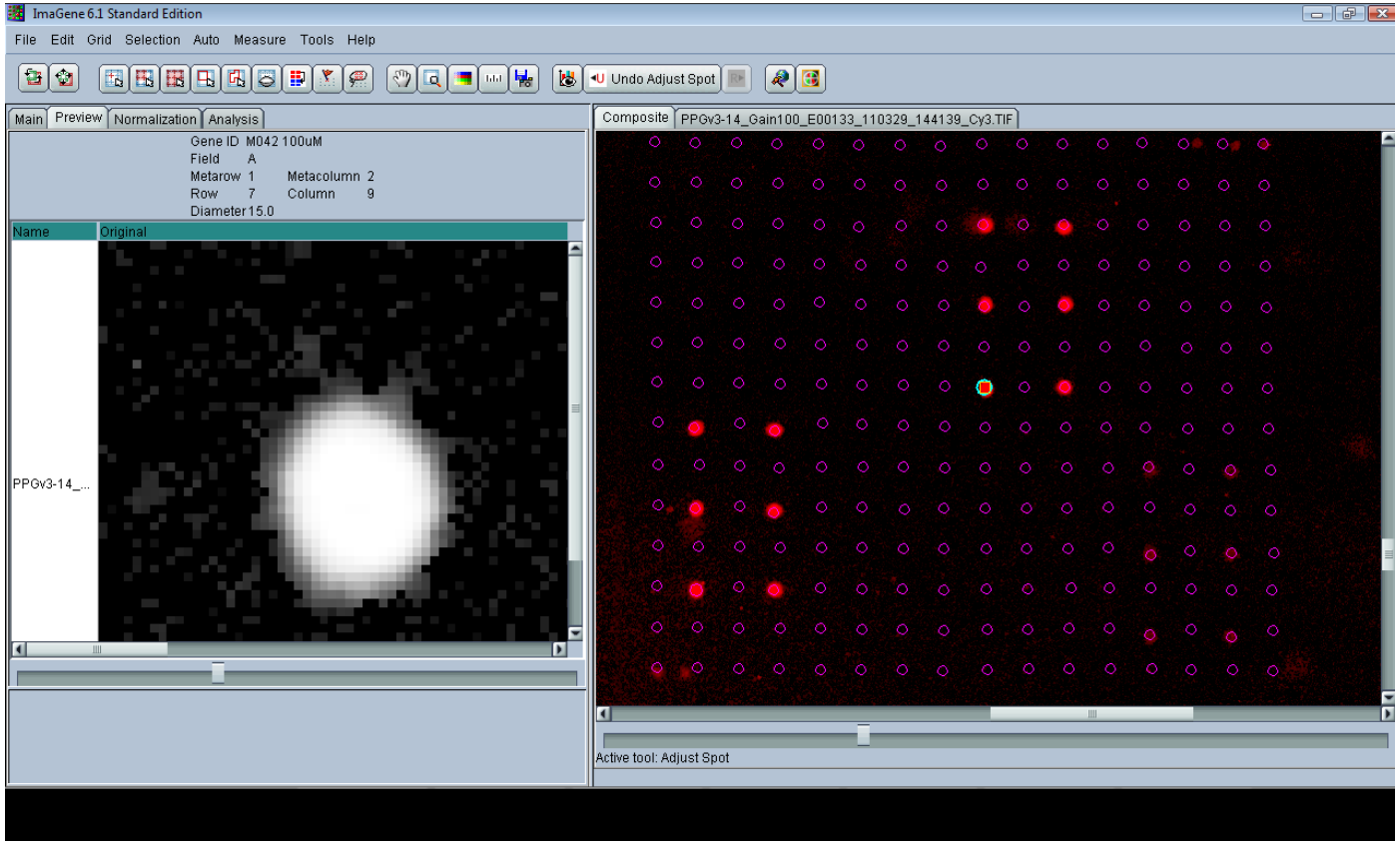


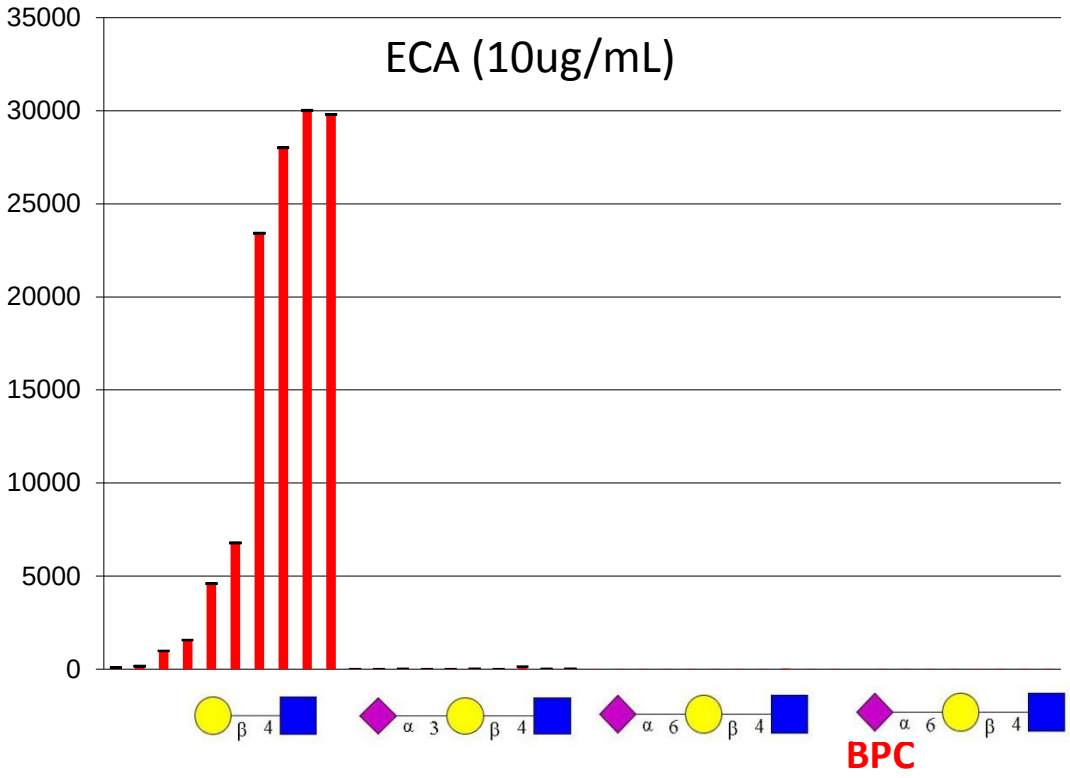
# Image Acquisition

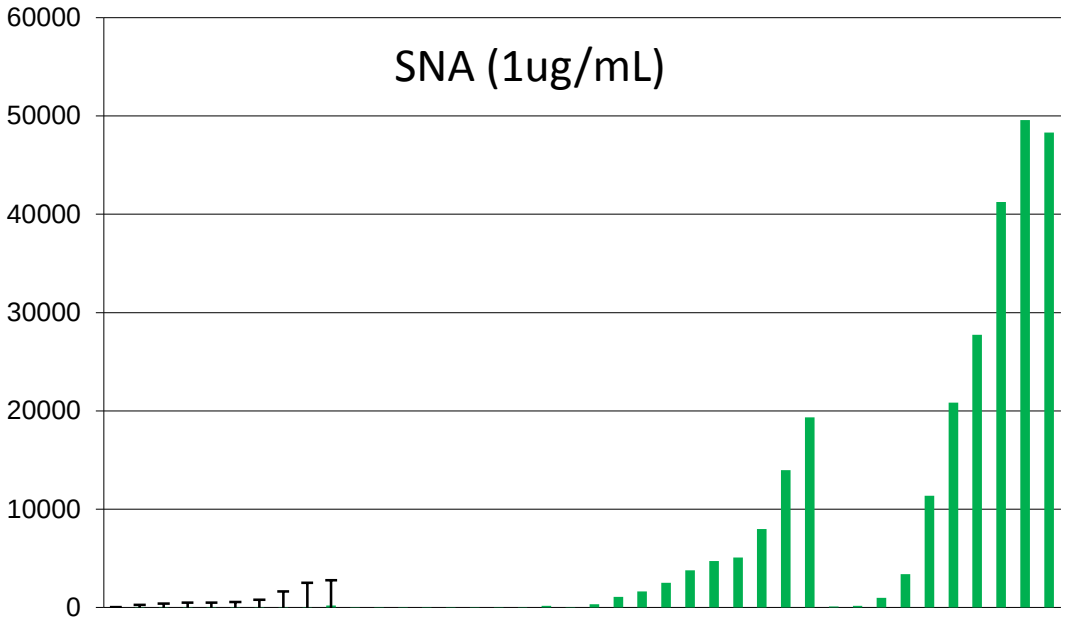


# Data Acquisition

| MR | MC | R | C | Sample |
|---|---|---|---|---|
| 1 | 2 | 11 | 8 | M024 100uM |
| 1 | 2 | 12 | 8 | M053 100uM |
| 1 | 2 | 13 | 8 | M024 100uM |
| 1 | 2 | 14 | 8 | 0 |
| 1 | 2 | 1 | 9 | 0 |
| 1 | 2 | 2 | 9 | M036 100uM |
| 1 | 2 | 3 | 9 | M042 100uM |
| 1 | 2 | 4 | 9 | M036 100uM |
| 1 | 2 | 5 | 9 | M042 100uM |
| 1 | 2 | 6 | 9 | M036 100uM |
| 1 | 2 | 7 | 9 | M042 100uM |
| 1 | 2 | 8 | 9 | M012 100uM |
| 1 | 2 | 9 | 9 | M010 100uM |
| 1 | 2 | 10 | 9 | M012 100uM |
| 1 | 2 | 11 | 9 | M010 100uM |
| 1 | 2 | 12 | 9 | M012 100uM |
| 1 | 2 | 13 | 9 | M010 100uM |
| 1 | 2 | 14 | 9 | 0 |
| 1 | 2 | 1 | 10 | 0 |
| 1 | 2 | 2 | 10 | 0 |
| 1 | 2 | 3 | 10 | M020 100uM |




ECA (10ug/mL)
35000
30000
25000
20000
15000
10000
5000
0
β 4
α 3
β 4
α 6
β 4
α 6
β 4
BPC


SNA (1ug/mL)
60000
50000
40000
30000
20000
10000
0