

# Preview the CGH Workspace in Agilent SureDesign

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**November 6, 2013**

# Today's Agenda

## eArray and **SureDesign** Product Roadmap

- Important Dates

## CGH Workspace Transition to **SureDesign**

- User accounts
- Existing user content
- Workgroups
- Collaborations

## **SureDesign** CGH Standard Wizard

## **SureDesign** CGH Advanced Wizard

# Genomics Applications in eArray and SureDesign



eArray

Gene Expression

miRNA

SureSelect RNA Target  
Enrichment

SureSelect DNA Capture  
Arrays



SureDesign



**NEW!**  
CGH / CGH + SNP



**NEW!** ChIP and  
DNA Methylation



SureSelect DNA  
Target Enrichment



HaloPlex Target  
Enrichment System

# CGH Workspace Transition to SureDesign

## CGH Coming to SureDesign on November 18, 2013!

SureDesign



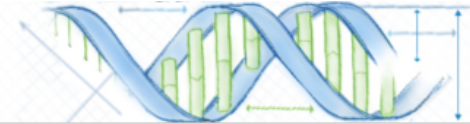
Home



Find  
Designs



Create  
Designs



Show Advanced Options | Mark Hartnett (Agilent Technologies) | Cart (0) | [Logout](#) | [Settings](#) | [Help - Home](#)

### Start Designing



HaloPlex



SureSelect DNA



CGH



ChIP

### Designs: In Progress



131010\_Std\_CGH

CGH | Updated 10-Oct-2013

Draft



### Designs: Recent and Favorites

131009\_Std\_CGH

CGH | Completed 09-Oct-2013



### Messages (0)

You have no messages.

You will be notified here when:

- Agilent has scheduled SureDesign maintenance or upgrades.
- A new user has requested to join your workgroup.
- You have been invited to join a collaboration.

**Login to SureDesign at:**

- <https://earray.chem.agilent.com/suredesign/index.htm>
- Use your eArray username and password



Agilent Technologies

# eArray CGH Users Now Have SureDesign Access

Users can register in either eArray or **SureDesign**

- Get access to both systems
- Using **the SAME** Username and Password

One Username and Password

The diagram illustrates that a single set of credentials provides access to both the SureDesign and eArray platforms. Two green arrows point from the central text box to the respective web interfaces.

**SureDesign Interface:** The left screenshot shows the SureDesign homepage with a navigation bar (Home, Find Designs, Create Designs) and a 'Start Designing' section. A 'SureDesign' logo is overlaid on the main content area.

**eArray Interface:** The right screenshot shows the eArray homepage with a navigation bar (Home, Microarray, Probe Group, Probe, My Account, Data) and a search form. A table of jobs is visible at the bottom.

Job Type	Job Name	Status	Created Date	Job Position	Action
ProbeDesign	120910_Ecol1_1	Probe Design Completed	10-Sep-2012		Delete

Name	Created Date	Action
120917_Ecol1	17-Sep-2012	Order   Download   Publish

# CGH Workspace Transition to SureDesign

## Accounts

- All eArray user accounts are already active in **SureDesign**
- Same username and password

## Content

- All eArray CGH user content will migrate to **SureDesign**
- Probes, probe groups, custom CGH array designs

## Workgroups

- All eArray user workgroups are already active in **SureDesign**
- Continued access to co-workers' content

## Collaborations

- All collaborations established in eArray are already active in **SureDesign**

# CGH Standard Design Wizard in SureDesign

Meets the needs of many users and design scenarios

- Human (CGH, CGH + SNP)
- Rat, Mouse (CGH)

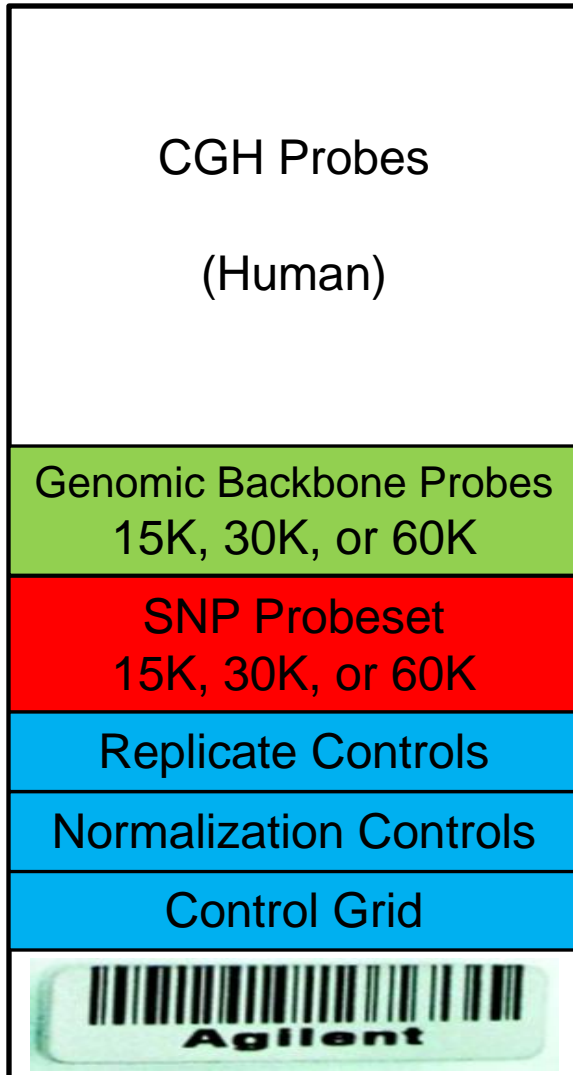
Simple, linear workflow

- Single probegroup
- HD probe search, whole gene only

Many design parameters are:

- hidden
- set to Agilent-recommended defaults

# Standard Wizard – CGH + SNP Design Concepts



Biological Probes – from HD probe search

- Whole gene only
- Probe density is automatically determined to fill the array
  - Minimum average probe spacing is 150bp
  - If needed, software increases probe replication and decreases total probe count

Required if SNP probeset is included  
Same allocation as SNP probeset

Optional

Required – for array QC metrics

Required – for dye normalization

Required – for spot-finding by extraction software



# CGH Standard Design Wizard in SureDesign

SureDesign Help - Define Target

CGH **Define Targets**

Define Design ✔

▶ Define Targets

Review Targets

Select Probes

Finalize

Design Complete

**CGH Array Design**

Name: 131009\_CGH\_Std  
Species: H. sapiens  
Format: 4 x 180 K

**Target Regions**

# Regions | Size: NA | NA

**Probes**

# CGH | Backbone: NA | NA  
Probe Spacing: NA  
CGH Replicates: NA  
# Norm. | Rep.: 2924 | 5000  
# Ctrl. Probes: 6539  
% Filled: ~ 8.0%

[UCSC View](#) [Download](#)

**\* Targets:**

# Enter gene IDs, gene symbols, or accessions.  
# SureDesign will map these targets to genomic locations  
# using the parameters below, then select probes from the  
# defined probe source that match the locations.  
SMAD4  
NM\_005359  
ENST00000342988  
CCDS11950  
4089

# Enter UCSC browser or BED coordinates  
chr18:48573407-48573675  
chr18 48573406 48573675

# Enter coordinates with identifiers  
chr18:48575655-48575704 MyGene1  
chr18 48577713 48577795 MyGene2 # exon 1  
chr18 48578994 48579032 MyGene2 # exon 2

# Enter coordinates with identifiers

[Upload](#)

[Example](#)

[Clear](#)

**\* Databases**

RefSeq  
 Ensembl  
 CCDS  
 Gencode  
 VEGA  
 CytoBand

**\* Parameters**

Replicate Count : 1

Genome-Wide Backbone : Fill

Include Flanking Regions (5' and 3') : 0

Allow Synonyms

[Cancel](#) [Back](#) [Next](#)

# Demonstration – CGH Standard Design Wizard

Overview of the **SureDesign** Home Page

## Find Designs Tab

- Finding CGH designs, probegroups, and collaborations migrated from eArray

## Create Designs Tab

- CGH Standard Design Wizard

# CGH Advanced Design Wizard in SureDesign

For advanced users with specialized design scenarios

- Human (CGH, CGH + SNP)
- Rat, Mouse (CGH)
- Many additional species

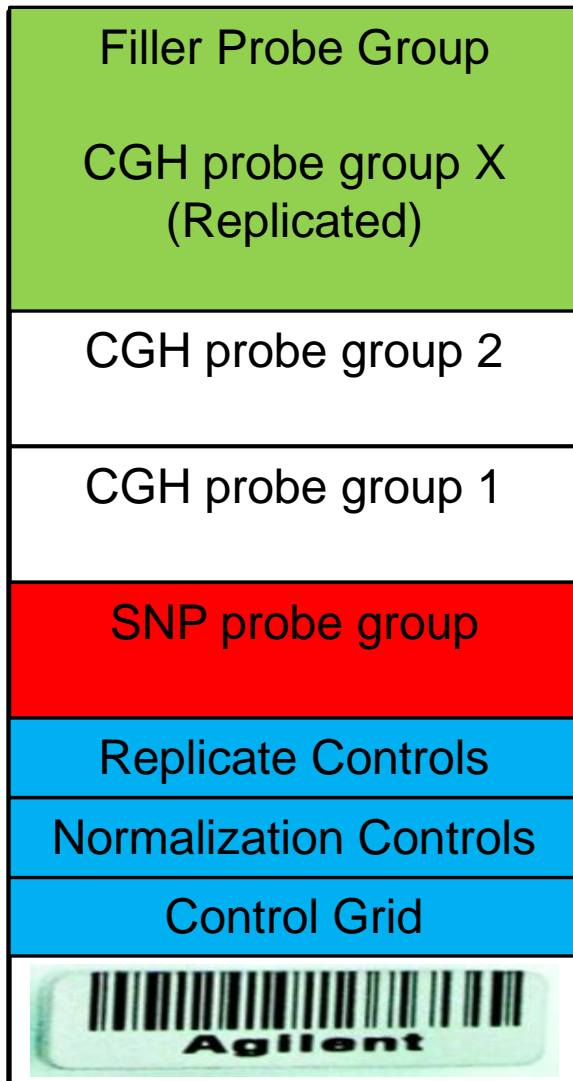
Powerful - many design parameters are

- Exposed to the user
- Can be modified by the user

Iterative workflow

- Create multiple probegroups via multiple methods
  - HD probe search, SNPs, probes from existing designs, upload probe sequences, genomic tiling
  - Target whole genes, exons, or intragenic regions
- Add the probegroups to the custom microarray

# Advanced Wizard – CGH + SNP Design Concepts



Optional – A probe group can be designated to fill remaining space on the array

Iterative Wizard - Create a new probegroup with each loop

- HD probe search
- SNPs – entire set or filter by chromosome
- probes from existing designs
- upload probe sequences
- genomic tiling

***Similar to CGH design in eArray***

Optional – for array QC metrics

Optional – for dye normalization

Required – choice of multiple versions for spot-finding by extraction software

# CGH Advanced Design Wizard in SureDesign

SureDesign Help - Add/Review Content

CGH (Advanced) **Add/Review Content**

Define Design ✔

▶ Add/Review Content

- Select HD probes
- Select probes from SNP
- Select Existing Probes
- Upload probes
- Tile Genes or Regions
- Finalize

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**CGH Array Design**

Name: 131004\_CGHSNP\_ADV  
 Species: H. sapiens  
 Format: 4 x 180 K

**Probes**

# CGH Probes: NA  
 # SNP Probes: 119218  
 # Ctrl. Probes: 8121  
 # Norm. Probes: 2924  
 # Rep. Probes: 5000  
 % Filled: 74.78%

Select Content Addition Method

- Select Probes from Agilent High Definition Database
- Select probes from SNP
- Select probes from an existing Design or Probegroup

▼

- Upload probes
- Design new probes by tiling genes or regions

- Or -

- Finalize this design

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Probegroup Summary

Name	# Targets	Target Size	# Probes	Type	Properties	# Reps	Actions
131004_CGHSNP_...			59609	SNP	<input type="checkbox"/> N <input type="checkbox"/> R <input type="checkbox"/> F	<input type="text" value="2"/>	<a href="#">Remove</a>
Human_CGH_1k_A				CGH ▼	<input type="checkbox"/> N <input checked="" type="checkbox"/> R <input type="checkbox"/> F	<input type="text" value="5"/>	<a href="#">Remove</a>
Human_CGH_3k_A				CGH ▼	<input checked="" type="checkbox"/> N <input type="checkbox"/> R <input type="checkbox"/> F	<input type="text" value="1"/>	<a href="#">Remove</a>

# Demonstration – CGH Advanced Design Wizard

Run the Advanced Design Wizard

Show the various content addition methods

# SureDesign and eArray Help and Support

## Agilent Informatics Software Support

- Hours of Operation
  - 8:30 PM to 5:30 PM Pacific Time
  - Sunday - Friday

- Email

**[informatics\\_support@agilent.com](mailto:informatics_support@agilent.com)**

- Phone (North America)  
800-227-9770 x 3 x 5 x 3