QC Report - Agilent Technologies : 2 Color Gene Expression

|			
Date	Tuesday, December 02, 2008 - 15:54	BG Method	No Background
Image	167-201-xdr_251485038759_S01_H [1_2]	Background Detrend	On(FeatNCRange, LoPass)
Protocol	GE2-v5_95_Feb07 (Read Only)	Multiplicative Detrend	True
User Name	scan	Dye Norm	Linear Lowess
Grid	014850_D_F_20060807	Linear DyeNorm Factor	1.02(Red) 1.91(Green)
FE Version	9.5.3.1	Additive Error	2(Red)6(Green)
		Saturation Value	643735 (r), 486135 (g)

Spot Finding of the Four Corners of the Array
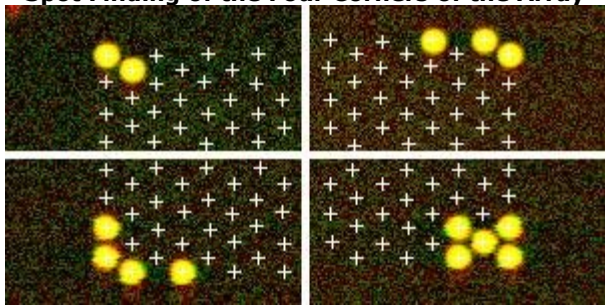
Grid Normal

	Feature		Local Background	
	Red	Green	Red	Green
Non Uniform	74	25	48	0
Population	104	88	1238	559

Spatial Distribution of All Outliers on the Array
532 rows x 85 columns
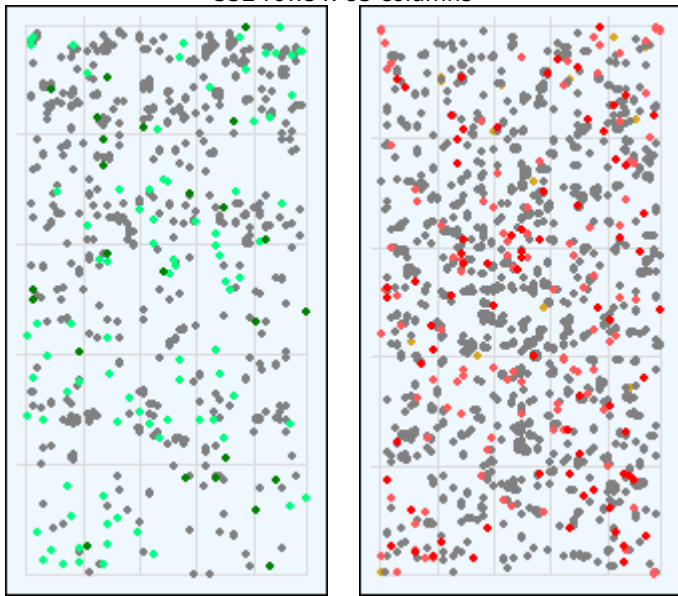
FeatureNonUnif (Red or Green) = 74(0.16%)

GeneNonUnif (Red or Green) = 61 (0.149 %)

- ● BG NonUniform   ● BG Population
- ● Red FeaturePopulation   ● Red Feature NonUniform
- ● Green FeaturePopulation   ● Green Feature NonUniform

Net Signal Statistics

Agilent SpikeIns:

	Red	Green
# Saturated Features	33	10
99% of Sig. Distrib.	221935	93630
50% of Sig. Distrib.	36417	11134
1% of Sig. Distrib.	1777	400

Non-Control probes:

	Red	Green
# Saturated Features	116	1
99% of Sig. Distrib.	59094	24048
50% of Sig. Distrib.	79	47
1% of Sig. Distrib.	21	11

Red and Green Background Corrected Signals (Non-Control Inliers)

- ● Background Subtracted Signal

Features (NonCtrl) with BGSubSignals < 0: 5644 (Red); 7275 (Green)
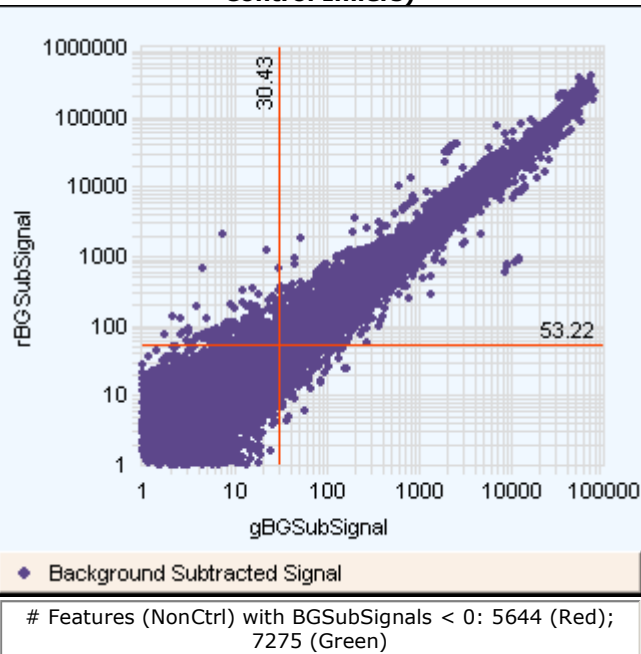
Negative Control Stats

	Red	Green
Average Net Signals	23.81	14.77
StdDev Net Signals	2.21	2.79
Average BG Sub Signal	-1.74	-2.07
StdDev BG Sub Signal	2.08	2.72

Local Bkg (inliers)

	Red	Green
Number	43757	44456
Avg	62.43	55.05
SD	2.17	3.59

Foreground Surface Fit

	Red	Green
RMS_Fit	0.89	0.88
RMS_Resid	2.37	3.34
Avg_Fit	65.48	56.62

Reproducibility: %CV for Replicated Probes

Median %CV Signal (inliers)

	Non-Control probes		Agilent SpikeIns	
	Red	Green	Red	Green
BGSubSignal	13.64	13.88	10.37	8.67
ProcessedSignal	5.00	6.03	3.49	3.85

Array Uniformity: LogRatios

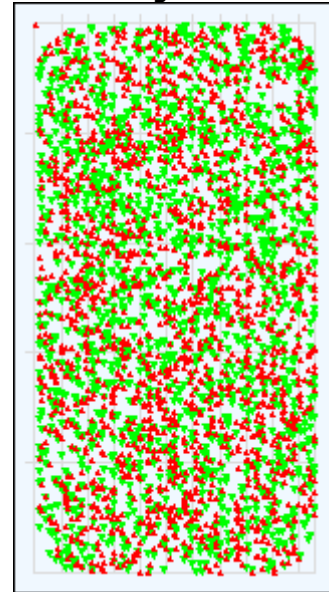|	Non-Control	Agilent SpikeIns
AbsAvgLogRatio	0.14	0.53
AverageS/N	5.11	50.96

Sensitivity:Agilent SpikeIns - Ratio of Signal to Background for 2 dimmest probes

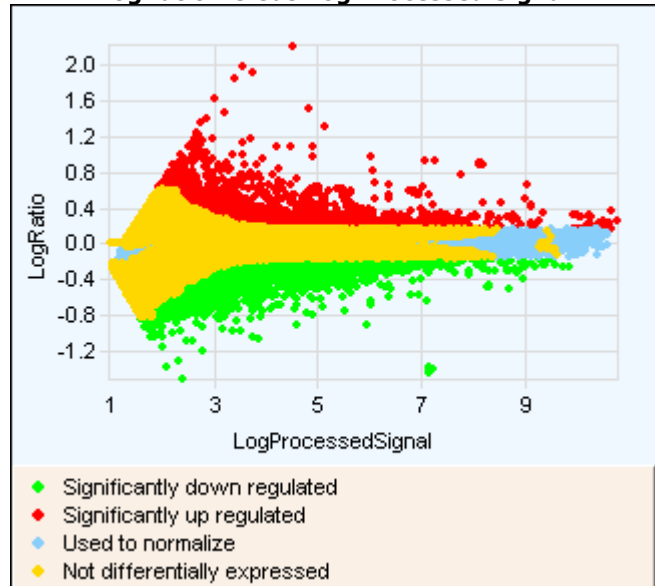| (+)E1A_r60_n11		(+)E1A_r60_a97	
(g)	**(r)**	**(g)**	**(r)**
83.1	145.5	162.9	30.3

Spatial Distribution of Significantly Up-Regulated and Down-Regulated Features

#Up-Regulated:1999 (Red) ; #Down-Regulated:2146 (Green)

▲Up-Regulated ▽Down-Regulated

LogRatio Versus Log Processed Signal

- ◆ Significantly down regulated
- ◆ Significantly up regulated
- ◆ Used to normalize
- ◆ Not differentially expressed

Agilent SpikeIns Signal Statistics

Probe Name	Exp	Obs	SD	S/N
(+)E1A_r60_n9	-1.00	-0.93	0.01	120.84
(+)E1A_r60_a107	-0.48	-0.37	0.01	52.36
(+)E1A_r60_a135	-0.48	-0.34	0.01	44.07
(+)E1A_r60_n11	-0.48	-0.35	0.01	32.08
(+)E1A_r60_1	0.00	0.18	0.01	23.56
(+)E1A_r60_a20	0.00	0.09	0.02	4.74
(+)E1A_r60_3	0.48	0.65	0.01	93.40
(+)E1A_r60_a104	0.48	0.57	0.01	41.27
(+)E1A_r60_a97	0.48	0.64	0.01	43.55
(+)E1A_r60_a22	1.00	1.13	0.02	53.69

Evaluation Metrics for GE2_QCMT_Feb07

Metric Name	Value	UpLim	LowLim	IsMandatory
AnyColorPrcntBGNonUnifOL	0.11	5.00	NA	False
AnyColorPrcntFeatNonUnif...	0.16	1.00	NA	False
absE1aObsVsExpCorr	1.00	NA	0.86	False
absE1aObsVsExpSlope	1.03	NA	0.85	False
gE1aMedCVBkSubSignal	8.67	25.00	NA	False
gNegCtrlAveBGSubSig	-2.07	10.00	-20.00	False
gNegCtrlSDevBGSubSig	2.72	15.00	NA	False
gNonCntrlMedCVBkSubSignal	13.88	25.00	NA	False
rE1aMedCVBkSubSignal	10.37	25.00	NA	False
rNegCtrlAveBGSubSig	-1.74	4.00	-20.00	False
rNegCtrlSDevBGSubSig	2.08	6.00	NA	False
rNonCntrlMedCVBkSubSignal	13.64	25.00	NA	False

◆ In Normal Range ◆ Evaluate

Agilent SpikeIns: % CV of Average BG Sub Signal

Median %CV:10.37%(Red);8.67%(Green)
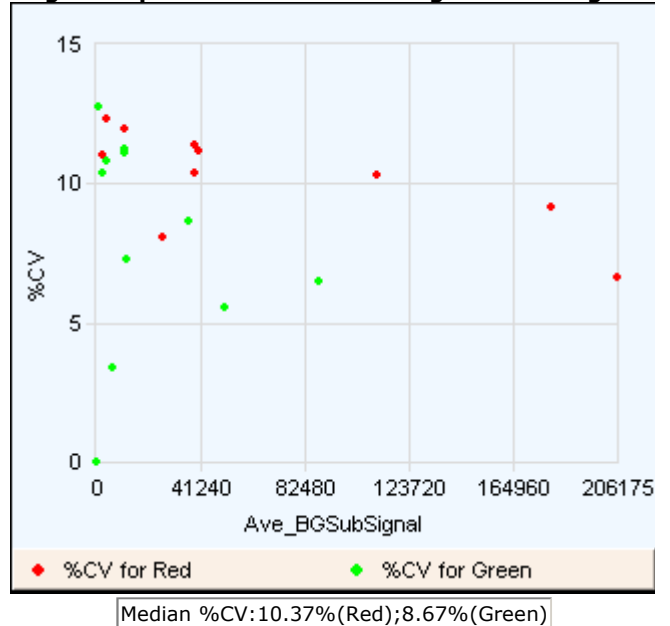
Agilent SpikeIns: Expected LogRatio Vs Observed LogRatio

Y-Intercept = 0.128 ; Slope = 1.027 ; R^2 = 0.997