

# Breast cancer, gene expression analysis in ‘black or african-american’ and ‘white’ cohorts, in PAM50 subtypes

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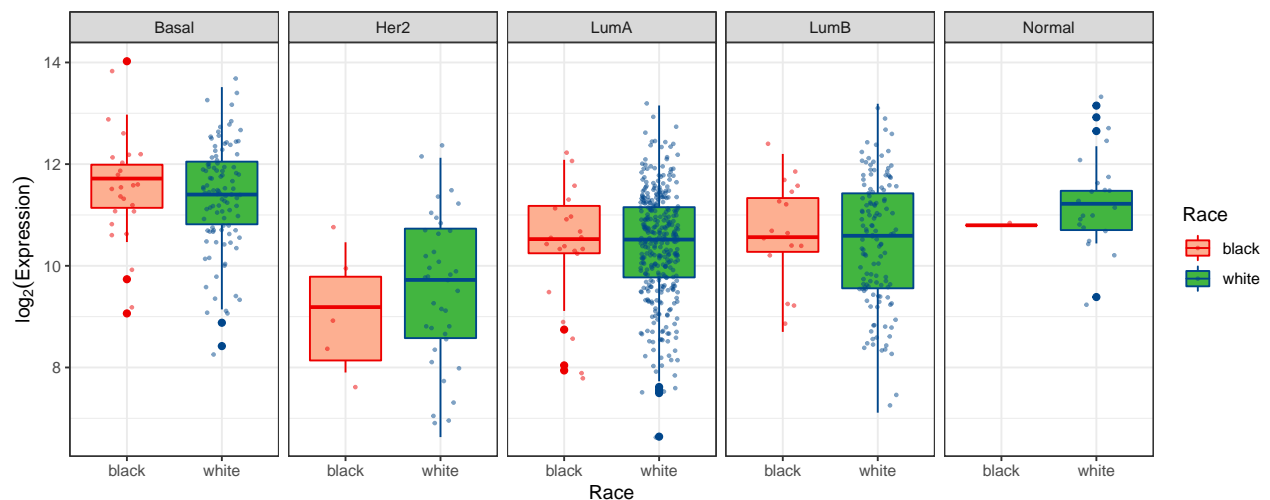
2021-07-02

```
selected_genes <- c("MYC")
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## Number of samples per Race and PAM50 subtypes

	Basal	Her2	LumA	LumB	Normal
black	23	5	21	16	1
white	101	37	344	128	21

## Expression analysis in ‘black or african-american’ and ‘white’ cohorts, in PAM50 subtypes



## T-test, differences between races in individual subtypes

For each PAM50 subtypes, compare expression between EA and AA cohorts. Only p-values are shown

**In Basal**

[1] 0.4303541

**In Her2**

[1] 0.4020254

**In LumA**

[1] 0.7885612

**In LumB**

[1] 0.5600073

**In Normal**

Not enough observations

## Two-way Anova

Race and PAM50 effects across all subtypes.

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
PAM50	4	152.4	38.11	31.032	<2e-16 ***
Race	1	0.1	0.06	0.047	0.828
Residuals	691	848.6	1.23		

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Across all subtypes, “Race” differences are not significant

Across all subtypes, “PAM50” differences are significant

## Dunnett post-hoc test, differences between PAM50 subtypes separately in European-American and African-American cohorts

**In EA cohort (“white” in TCGA classification)**

Dunnett’s test for comparing several treatments with a control :  
95% family-wise confidence level

	diff	lwr.ci	upr.ci	pval
Her2-Basal	-1.78266220	-2.3094421	-1.2558823	2.2e-15 ***
LumA-Basal	-0.95144106	-1.2616764	-0.6412057	3.5e-13 ***
LumB-Basal	-0.87883631	-1.2436770	-0.5139956	1.7e-08 ***
Normal-Basal	-0.06088636	-0.7183335	0.5965607	0.9983

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

In AA cohort (“black or african american” in TCGA classification)

Dunnett’s test for comparing several treatments with a control :  
95% family-wise confidence level

\$Basal

	diff	lwr.ci	upr.ci	pval
Her2-Basal	-2.4586488	-3.797190	-1.12010779	6.8e-05 ***
LumA-Basal	-1.2096290	-2.028385	-0.39087331	0.0015 **
LumB-Basal	-0.9059245	-1.789025	-0.02282427	0.0422 *
Normal-Basal	-0.7568016	-3.527845	2.01424154	0.9196

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1