

Prostate cancer (Rubin lab)

Variant Mapping

Total prostate samples	7
Total prostate variants (WGS)	33,329
Prostate variants vs. hg19 CCDS	9205
Prostate variants vs. hg19 TFBSes	410
Prostate variants vs. hg19 ncRNA	4

Selection of Cancer Drivers

- Most variants only appear in one sample
- Even just selecting variants appearing in more than one sample leaves a very small fraction of the total variants

Cancer	Total Variants	Variants in >1 Sample
COAD BCM Illumina	21,452	101
COAD BCM SOLID	9119	22
OV BCM Illumina	2390	18
OV WUSTL Illumina	5585	12
READ BCM Illumina	1677	3
READ BCM SOLID	8699	10
Multiple Myeloma	17,315	413
Melanoma	25,489	474

Multiple Myeloma Drivers

1KG Overlap

Multiple Myeloma

All Exome Variants	# of cancer variants	# of 1KG coding variants	Intersection	Percentage of cancer variants in intersection	Percentage of 1KG coding variants in intersection
Actual Data	17,315	514,269	35	0.202%	0.00681%
Random Data Avg	17,315	514,269	4.1	0.0237%	0.000797%

Driver Variants Only	# of cancer variants	# of 1KG coding variants	Intersection	Percentage of cancer variants in intersection	Percentage of 1KG coding variants in intersection
Actual Data	413	514,269	17	4.116%	0.00331%
Random Data Avg	413	514,269	0.11	0.0266%	0.000021%

Actual:Random Ratio

All exome variants	8.54
Driver variants only	154.55

Melanoma Drivers 1KG Overlap

Melanoma

All Exome Variants	# of cancer variants	# of 1KG coding variants	Intersection	Percentage of cancer variants in intersection	Percentage of 1KG coding variants in intersection
Actual Data	25,489	514,269	771	3.02%	0.150%
Random Data Avg	25,489	514,269	5.69	0.0223%	0.00111%

Driver Variants Only	# of cancer variants	# of 1KG coding variants	Intersection	Percentage of cancer variants in intersection	Percentage of 1KG coding variants in intersection
Actual Data	474	514,269	14	2.95%	0.00272%
Random Data Avg	474	514,269	0.13	0.0274%	0.00003%

Actual:Random Ratio

All exome variants	135.50
Driver variants only	107.69

TCGA Cancers' Drivers

Somatic Variants - Actual Data

Cancer	# of cancer exome driver variants	# of 1KG coding variants	Intersection	Percentage of cancer driver variants in intersection	Percentage of 1KG coding variants in intersection
COAD BCM Illumina	101	514,269	14	13.86%	0.00272%
COAD BCM SOLID	22	514,269	2	9.09%	0.000389%
OV BCM Illumina	18	514,269	1	5.56%	0.000194%
OV WUSTL Illumina	12	514,269	1	8.33%	0.000194%
READ BCM Illumina	3	514,269	0	0%	0%
READ BCM SOLID	10	514,269	1	10.00%	0.000194%

Somatic Variants - Average of 100 Runs Using Randomized Cancer Variant Positions

Cancer	# of cancer exome driver variants	# of 1KG coding variants	Intersection	Percentage of cancer driver variants in intersection	Percentage of 1KG coding variants in intersection
COAD BCM Illumina	101	514,269	0.03	0.0297%	0.00000583%
COAD BCM SOLID	22	514,269	0	0%	0%
OV BCM Illumina	18	514,269	0	0%	0%
OV WUSTL Illumina	12	514,269	0	0%	0%
READ BCM Illumina	3	514,269	0	0%	0%
READ BCM SOLID	10	514,269	0	0%	0%

Somatic Variants - Actual:Random Percentage Ratio

Cancer	Ratio
COAD BCM Illumina	466.6666667
COAD BCM SOLID	N/A
OV BCM Illumina	N/A
OV WUSTL Illumina	N/A
READ BCM Illumina	N/A
READ BCM SOLID	N/A