



# ORANGE Report (Research Use Only)

SAMPLE

Test

PLATINUM VERSION

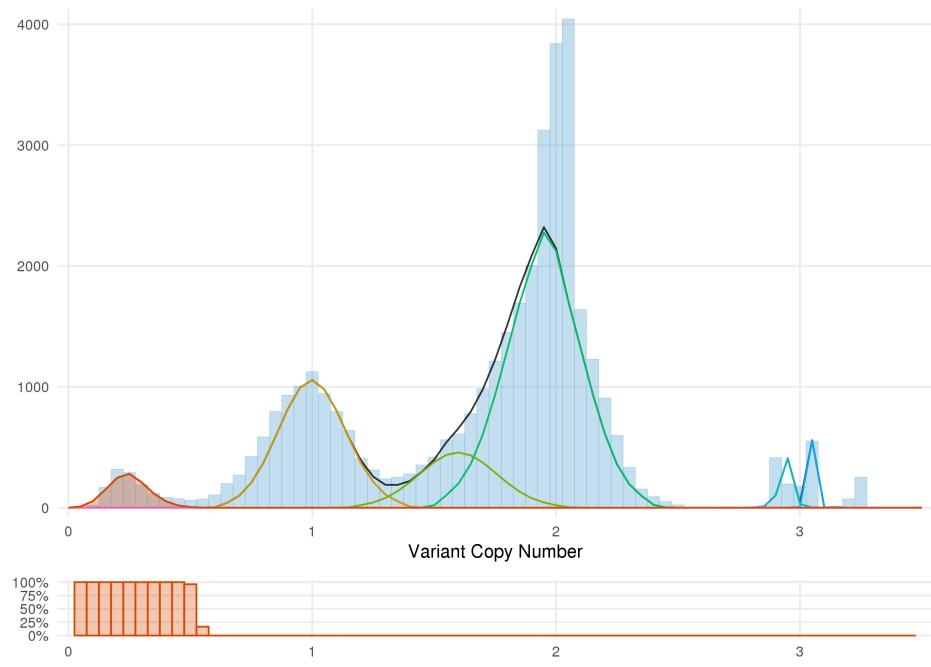
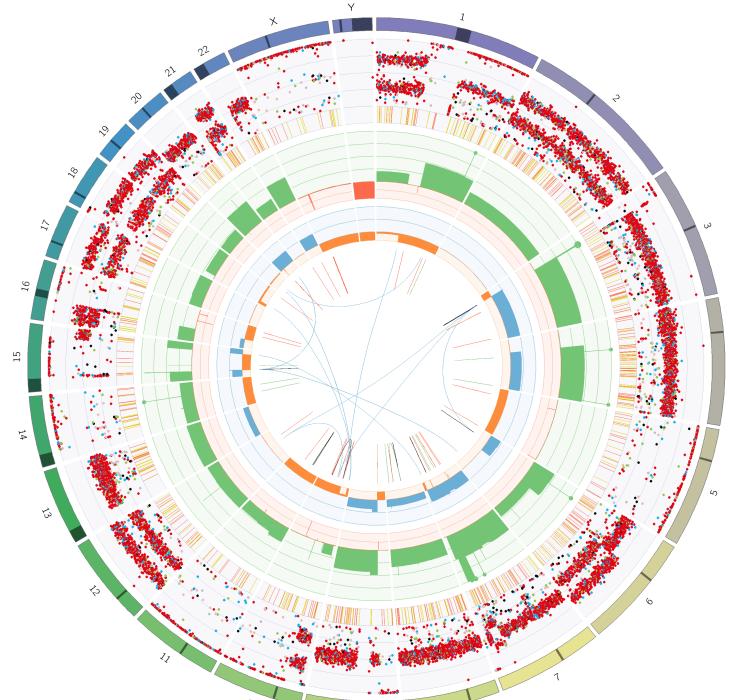
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CONFIGURED PRIMARY TUMOR  
skin melanoma (DOID 8923)

CUPPA CANCER TYPE  
Skin: Melanoma (100%)

QC  
PASS

Purity:	99% (97%-100%)
Ploidy:	3.10 (3.05-3.15)
Somatic variant drivers:	5 (BRAF, CDKN2A, TERT)
Germline variant drivers:	None
Somatic copy number drivers:	1 (PTEN)
Germline copy number drivers:	None
Somatic disruption drivers:	None
Germline disruption drivers:	None
Fusion drivers:	None
Viral presence:	None
Whole genome duplicated:	Yes
Microsatellite indels per Mb:	0.1 (Stable)
Tumor mutations per Mb:	13.7 (High)
Tumor mutational load:	184 (High)
HR deficiency score:	0.0 (Proficient)
DYPD status:	*1_HOM (Normal Function)
UGT1A1 status:	*1_HOM (Normal Function)
Number of SVs:	75 (Pan 0.22   Skin 0.34)
Max complex cluster size:	8
Telomeric SGLs:	0
Number of LINE insertions:	3





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## Somatic Findings

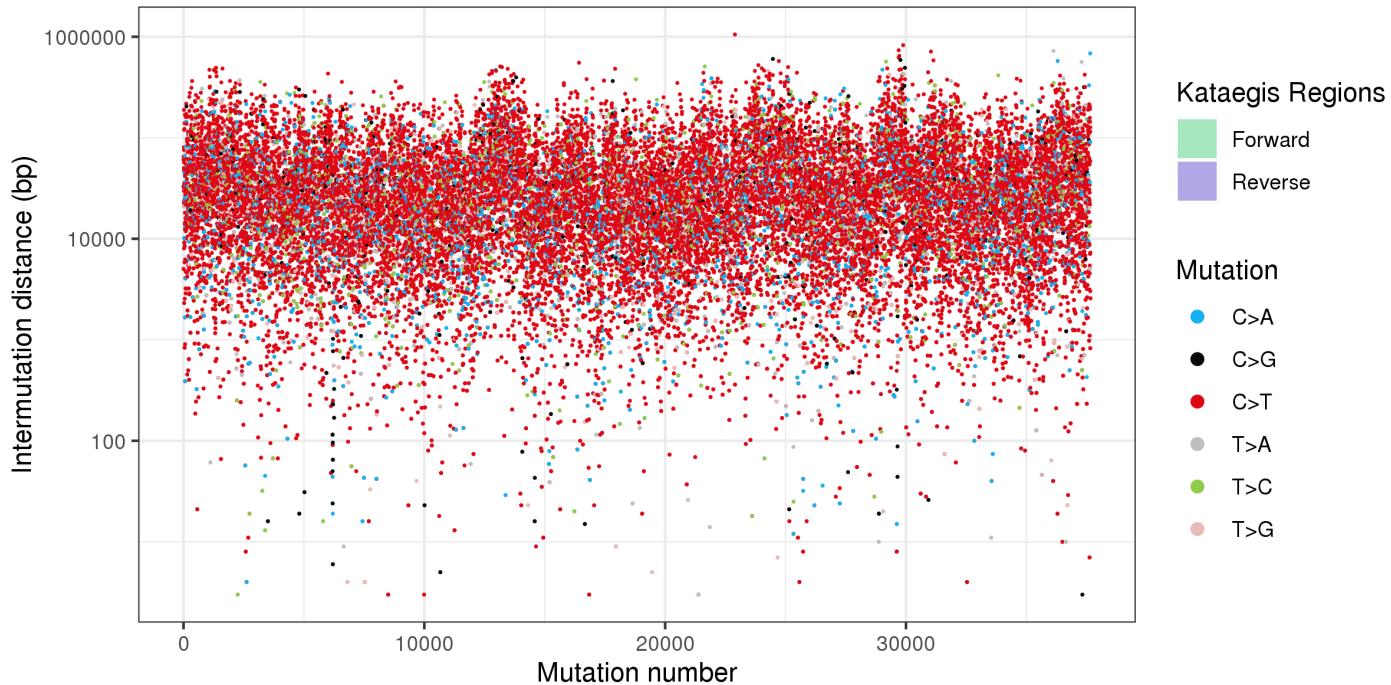
### Driver variants (6)

VARIANT	VCN	CN	MACN	BIALLELIC	HOTSPOT	DL	CL	PHASE ID	RNA DEPTH
BRAF p.V600E	4.1	6.0	2.0	No	Yes	100%	100%		NA
CDKN2A p.A68fs	2.0	2.0	0.0	Yes	Near	100%	100%		NA
CDKN2A (alt) p.G83fs	2.0	2.0	0.0	Yes	Near	100%	100%		NA
TERT c.-125_-124delCCinsTT	1.7	2.0	0.0	Yes	Yes	100%	100%	4725	NA
SF3B1 p.P718L	2.0	3.0	1.0	No	No	15%	100%		NA
TP63 p.M499I	1.7	4.0	2.0	No	No	0%	100%		NA

### Other potentially relevant variants (2)

VARIANT	VCN	CN	MACN	BIALLELIC	HOTSPOT	DL	CL	PHASE ID	RNA DEPTH
ALB c.1059-52dupT	1.8	3.9	1.9	No	No		100%		NA
STK19 p.D89N	2.0	3.8	1.8	No	Yes		100%		NA

### Kataegis plot



### Driver amps/dels (1)

LOCATION	GENE	TYPE	CN	TPM	PERC (TYPE)	FC (TYPE)	PERC (DB)	FC (DB)
10q23.31	PTEN	partial loss	0.0	NA	NA	NA	NA	NA

### Potentially interesting near-driver amps (0)

NONE



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## Other regions with amps (1)

LOCATION	GENE	TYPE	CN	TPM	PERC (TYPE)	FC (TYPE)	PERC (DB)	FC (DB)
3p24.2	CFL1P7	full gain	12.1	NA	NA	NA	NA	NA

## Regions with deletions in genes in other autosomal regions (1)

LOCATION	GENE	TYPE	CN	TPM	PERC (TYPE)	FC (TYPE)	PERC (DB)	FC (DB)
16q21	CNOT1	partial loss	0.1	NA	NA	NA	NA	NA

## Driver fusions (0)

NONE

## Other potentially interesting fusions (0)

NONE

## Driver viruses (0)

NONE

## Other viral presence (0)

NONE

## Homozygous disruptions (0)

NONE

## Driver gene disruptions (2)

LOCATION	GENE	RANGE	TYPE	CLUSTER ID	JUNCTION CN	UNDISRUPTED CN
10q23.31	PTEN	Intron 5 Upstream	DEL	68	2.0	0.0
10q23.31	PTEN	Intron 6 Downstream	DEL	68	2.0	0.0

## Other potentially interesting gene disruptions (0)

NONE

## Potentially interesting LOH events (0)

NONE

## Signature allocations (12)

SIGNATURE	ALLOCATION	PERCENT
Sig2	3702.7	10%

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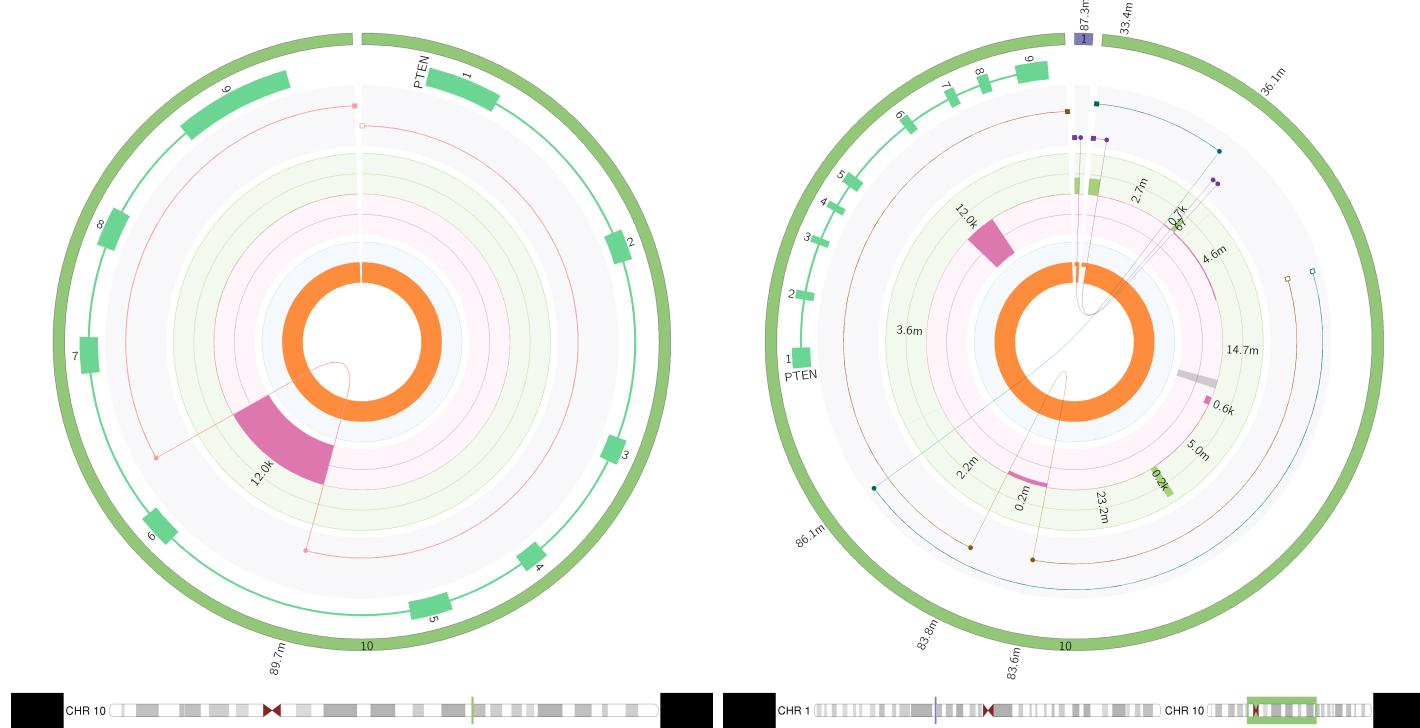
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## Signature allocations (12)

CONTINUED FROM THE PREVIOUS PAGE

SIGNATURE	ALLOCATION	PERCENT
Sig4	2038.8	5%
Sig7	23286.3	62%
Sig8	1984.8	5%
Sig11	1313.3	3%
Sig12	1137.1	3%
Sig17	1083.2	3%
Sig18	2057.3	5%
Sig20	253.1	1%
Sig24	289.0	1%
Sig28	514.4	1%
MISALLOC	4611.5	12%

## Structural driver plots (3)





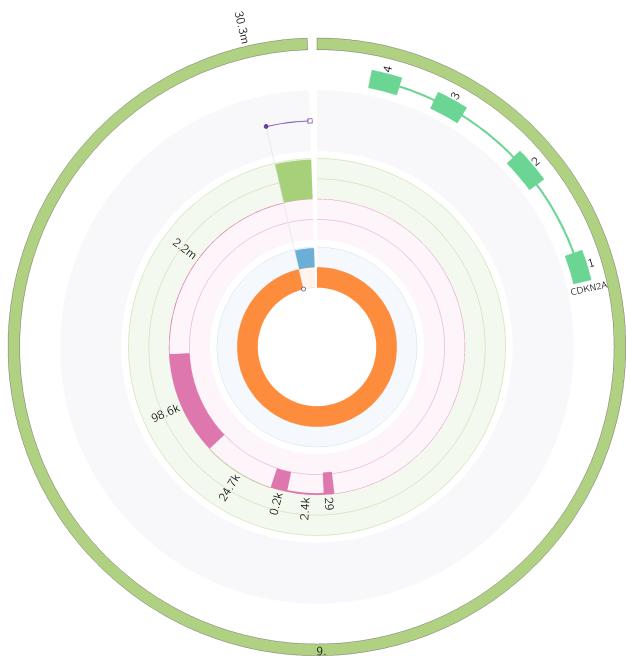
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### Germline Findings

#### Driver variants (0)

NONE

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#### Other potentially relevant variants (3)

VARIANT	VCN	CN	MACN	RNA DEPTH	BIALLELIC	HOTSPOT	GENOTYPE
CYP2D6 c.506-1G>A splice	1.8	4.0	2.0	NA	No	Yes	HET
CYP3A4 c.522-191C>T	2.4	4.0	2.0	NA	No	Yes	HET
CYP3A4 upstream	4.0	4.0	2.0	NA	Yes	Yes	HOM

#### Potentially pathogenic germline deletions (0)

NONE

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#### Potentially pathogenic germline LOH events (0)

NONE

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#### Potentially pathogenic germline homozygous disruptions (0)

NONE

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#### Potentially pathogenic germline gene disruptions (0)

NONE

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#### Genes with missed variant likelihood > 1% (0)

NONE

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### Germline CN aberrations (0)

NONE

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### Pharmacogenetics (2)

GENE	GENOTYPE	FUNCTION	LINKED DRUGS	SOURCE
DYPD	*1_HOM	Normal Function	5-Fluorouracil;Capecitabine;Tegafur	PHARMGKB
UGT1A1	*1_HOM	Normal Function	Irinotecan	PHARMGKB



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### Immunology

#### HLA QC

QC Status: PASS

#### HLA Alleles (6)

ALLELE	REF FRAGS	TUMOR FRAGS	RNA FRAGS	TUMOR CN	SOMATIC #MUTATIONS
A*01:01	210	1602	NA	2.0	NONE
A*01:01	211	1602	NA	1.8	NONE
B*08:01	216	750	NA	1.8	NONE
B*40:02	196	721	NA	2.0	NONE
C*03:04	213	768	NA	2.0	NONE
C*07:01	225	767	NA	1.8	NONE



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## Cohort Comparison

## Probabilities by classifier

### Cancer group (strips) and subtype (label)

**SNV96: Mutational signatures**

	AID/APOBEC (SBS2/13) = 3848 (10.2%)	0.54	29.02	3.34	2.44	3.01	0.98	1.61	0.99	0.92	0.76	0.99	32.88	422.8	0.99	0.93	0.95	0.97	0.96	1.46	1	41.15	0.91	0.64	7.13	1	0.65	0.57	0.93	0.99	3.67	200.39	58.33	3.87	4.72	0.98	1	0.33	0.51	0.96	0.33	Quantile in subtype cohort	
	Smoking (SBS4) = 2108 (5.6%)	0.98	Inf	15.09	0.99	188.21	2.23	10.62	5.87	1.76	1.21	Inf	15.64	Inf	0.99	1	3.72	1	1.06	0.95	4.28	5.55	0.98	0.93	378.33	1.22	0.46	0.16	0.1	Inf	1.57	6.13	Inf	Inf	0.99	1	1.52	1	1	3.17	0.93		
	MMRD (SBS6 = 0 %)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
	UV (SBS5) = 24193 (64.2%)	19.15	765.9292	7598.67	6104.0180	35.27	0.99	264.2	6.28	474.38	95.32	2016.1	38.84	25.92	60.99	42.57	23.03	57.36	35.16	349.11	0.97	17.65	58.0229	49.79	7.86	21.92	17.09	23.33	63.52	322.584032	22.1	141.4	88.55	91.64	92.06	0.33	0.5	0.24	22.1	1			
signature	ROS/FU (SBS17) = 1121 (3%)	0.97	15.63	0.99	2.05	1.64	0.95	0.91	0.95	0.93	0.94	Inf	104.79	72.53	0.57	0.25	0.99	1	0.95	1	0.95	87.51	0.92	0.97	0.99	1	0.93	1.22	0.97	0.89	7.9	12.994046	0.98	2.72	0.99	0.99	0.98	0.96	0.99	0.98	0.96	0.99	0.33

## **EVENT: Feature contributions**

### DNA COMBINED: Training set performance

training_set	Total no. of samples	128	9	66	80	59	47	37	157	183	908	159	138	58	837	349	85	320	131	341	372	10	26	101	44	277	254	78	56	216	77	12	18	56	46	118	607	408	49	71	241	1.00
	Recall (prop. of total correct)	0.74	0.33	0.95	0.76	0.85	0.57	0.43	0.68	0.7	0.94	0.96	0.94	0.74	0.96	0.85	0.61	0.91	0.54	0.96	0.88	0.5	0.27	0.66	0.77	0.94	0.91	0.65	0.84	0.99	0.91	0.75	0.67	0.79	0.74	0.8	0.99	0.99	0.73	0.73	0.88	
	Precision (prop. of predicted correct)	0.77	0.75	0.91	0.77	0.81	0.77	0.35	0.64	0.77	0.91	0.94	0.86	0.91	0.96	0.87	0.83	0.84	0.76	0.93	0.86	0.62	0.47	0.6	0.94	0.95	0.89	0.77	0.85	0.96	0.92	0.64	0.55	0.77	0.79	0.73	0.96	0.96	0.82	0.87	0.92	



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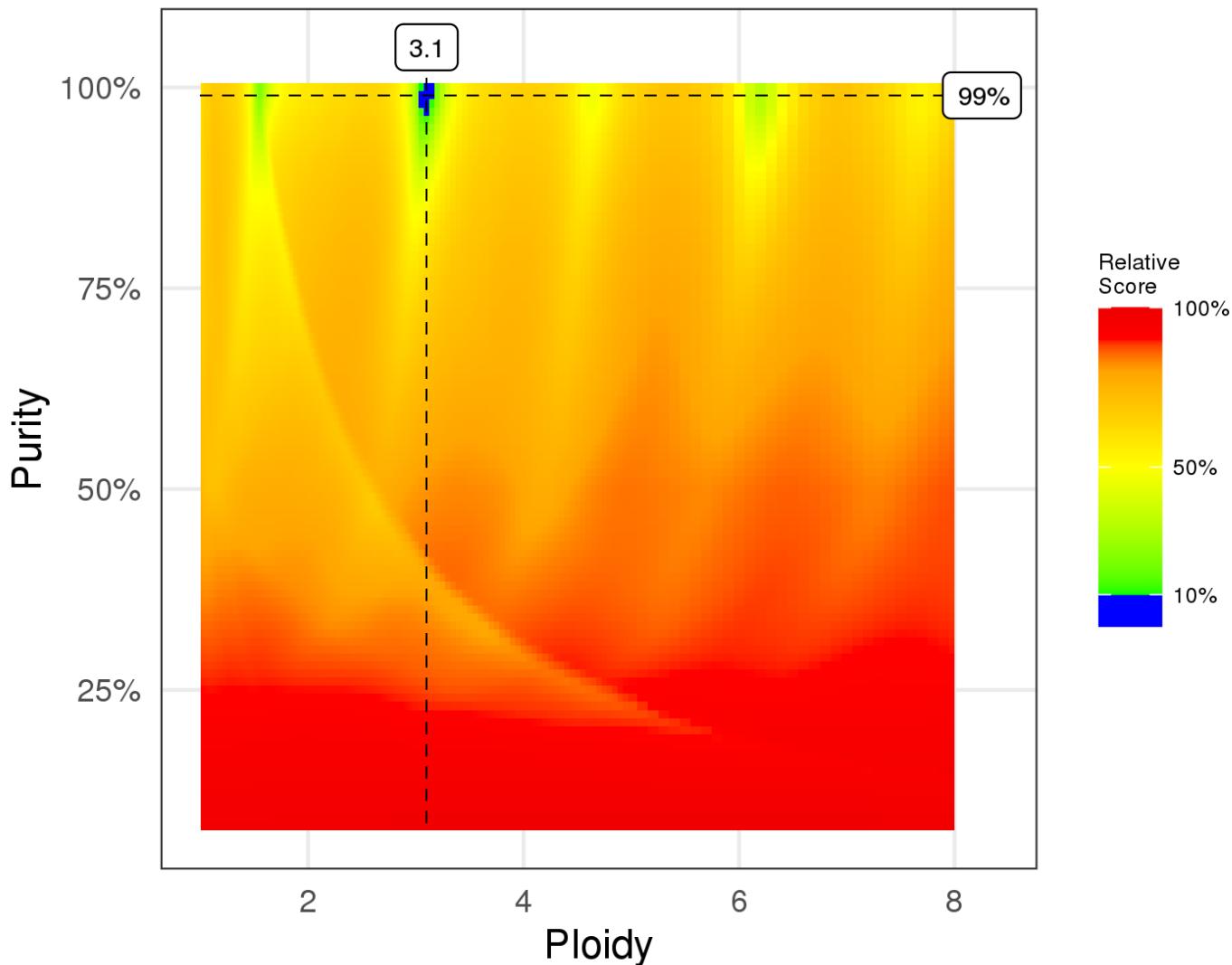
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### Quality Control

QC	REF GENOME	FIT METHOD	MEAN DEPTH	CONTAMINATION	UNS. SEGMENTS	DELETED GENES
PASS	V37	NORMAL	111	0%	0	4

## Purity/Ploidy Scores



### Flagstats

	UNIQUE RC	SECONDARY RC	SUPPLEMENTARY RC	MAPPED PROPORTION
Ref Sample	740406212	0	5742696	99%
Tumor Sample	2671674230	0	21477075	100%



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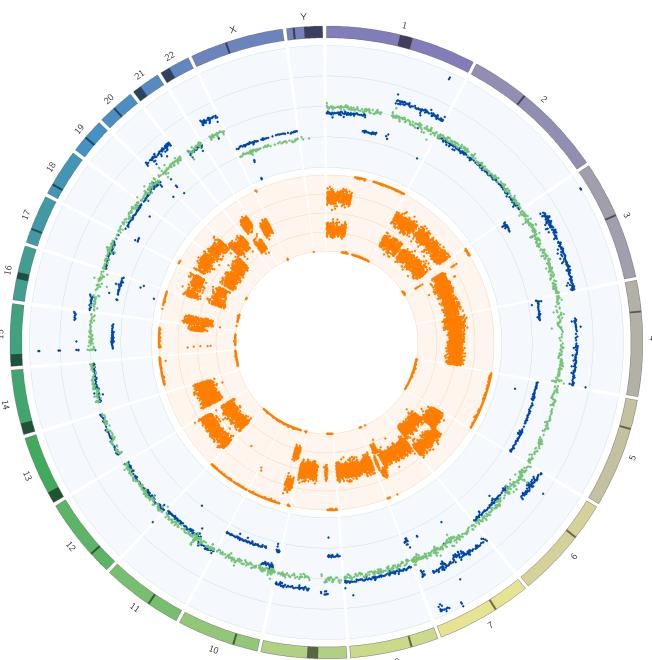
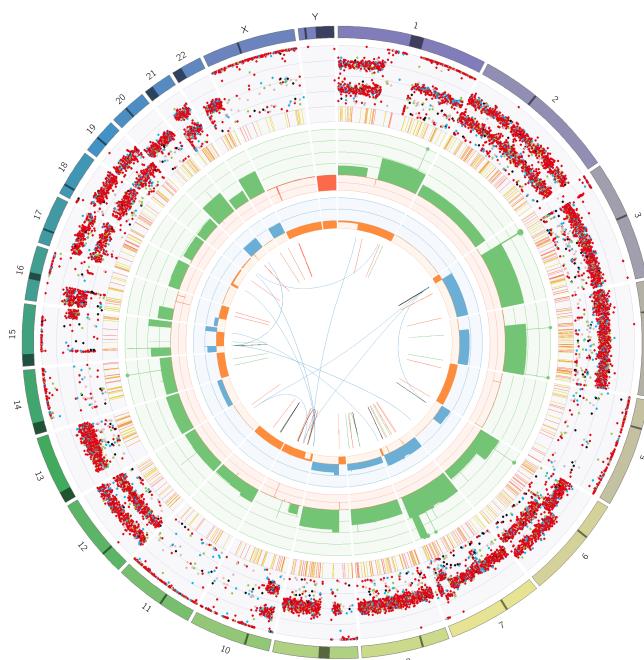
### Coverage Stats

	MEAN COVERAGE	SD COVERAGE	MEDIAN COVERAGE	MAD COVERAGE
Ref Sample	31.4	10.1	32	5
Tumor Sample	108.0	35.0	109	24

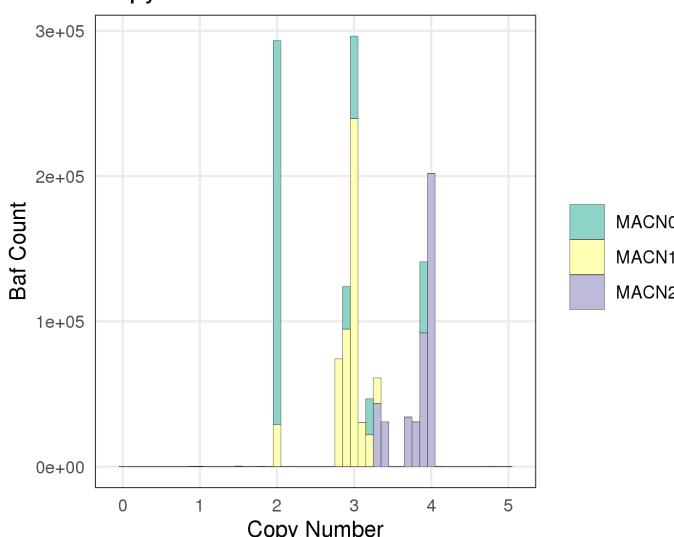
### Excluded Percentages

	ADAPTER	BASEQ	CAPPED	DUPE	MAPQ	OVERLAP	UNPAIRED	TOTAL
Ref Sample	0%	0%	1%	11%	5%	1%	0%	18%
Tumor Sample	0%	0%	1%	15%	5%	1%	0%	22%

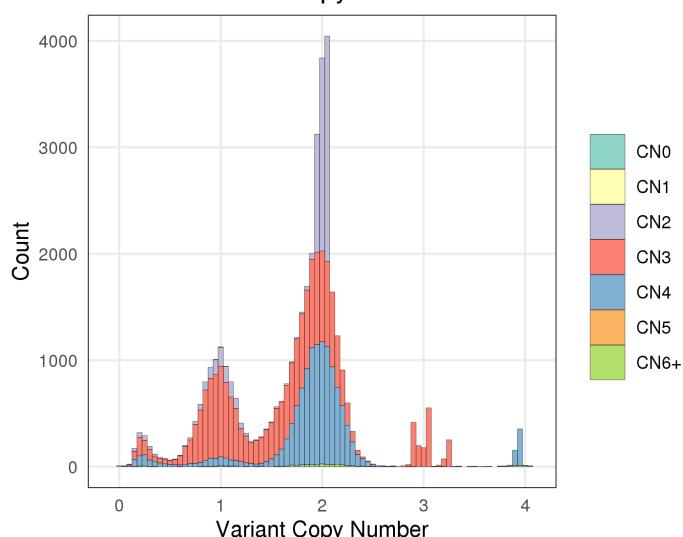
### QC plots



### Copy Number PDF



### Somatic Variant Copy Number PDF





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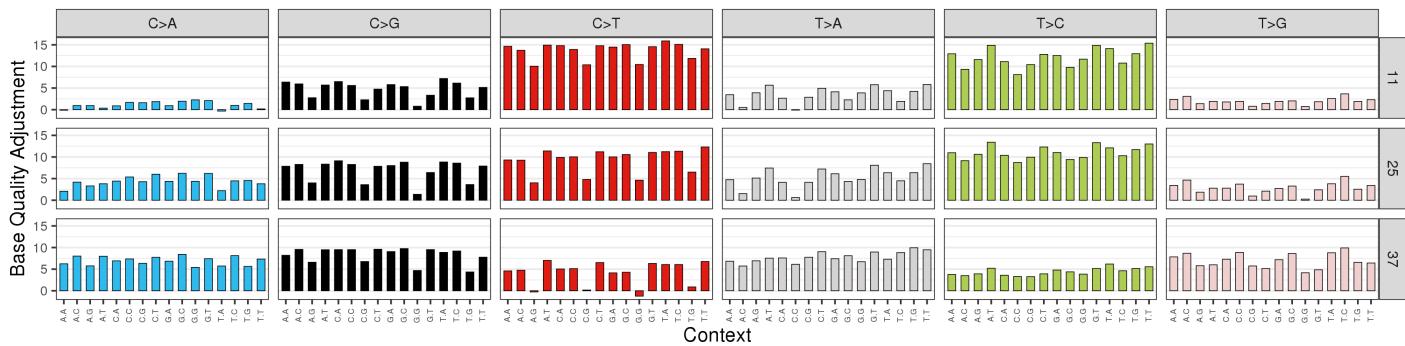
SAMPLE

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## Reference Sample BQR plot



## Tumor Sample BQR plot

