

**Supplementary Table 1.**

All CNVs ( $|\log_2 \text{ratio}| > 0.75$ ) identified across all patients and library types are listed.

Patient	Library	Location	Log2 ratio
1	SI	chr1: 148638400-149778300	-1.275
1	SI	chr7: 150580200-151116800	-1.234
1	SI	chr19: 358300-8783100	-1.234
1	SI	chr2: 241558600-242208800	-1.127
1	SI	chr16: 88359000-89200400	-1.127
1	SI	chr11: 2745200-2990200	-1.012
1	SI	chr12: 34406300-34563100	-1.012
1	SI	chr6: 84592400-84814000	-0.918
1	SI	chr8: 141483200-141684000	-0.918
1	SI	chr3: 48536000-48729700	-0.905
1	SI	chr3: 50305600-50621800	-0.905
1	SI	chr3: 52785200-52932200	-0.905
1	SI	chr8: 21559500-21749000	-0.905
1	SI	chr8: 22507800-22612300	-0.905
1	SI	chr8: 46951300-47281400	-0.905
1	SI	chr8: 126349400-126794700	-0.905
1	SI	chr8: 144194000-145920600	-0.905
1	SI	chr12: 132864800-133397100	-0.905
1	SI	chr2: 218784800-218832300	-0.819
1	SI	chr3: 51996100-52507500	-0.819
1	SI	chr8: 1415600-2095400	-0.819
1	SI	chr8: 21933200-22201500	-0.819
1	SI	chr8: 23060000-23692200	-0.819
1	SI	chr8: 38276300-38441900	-0.819
1	SI	chr8: 70884500-71036600	-0.819
1	SI	chr8: 140574400-141060100	-0.819
1	SI	chr9: 127157700-127200500	-0.819
1	SI	chr9: 129332200-129544300	-0.819
1	SI	chr9: 133827500-133983900	-0.819
1	SI	chr9: 136216500-137456500	-0.819
1	SI	chr10: 74007900-74184600	-0.819
1	SI	chr10: 80812700-80997300	-0.819

1	SI	chr10: 103787000-104009400	-0.819
1	SI	chr12: 124722800-126026200	-0.819
1	SI	chr16: 87602700-87918900	-0.819
1	SI	chr18: 11700-153900	-0.819
1	SI	chr22: 30055000-30229500	-0.819
1	SI	chr1: 798600-3766500	-0.789
1	SI	chr3: 46941200-47020000	-0.789
1	SI	chr3: 126649200-126839900	-0.789
1	SI	chr9: 130528800-131209000	-0.789
1	SI	chr9: 137928600-140766000	-0.789
1	SI	chr10: 88352200-88550400	-0.789
1	SI	chr12: 56035700-57163000	-0.789
1	SI	chr12: 56035700-57163000	-0.789
1	SI	chr12: 130879100-131211800	-0.789
1	SI	chr15: 25381700-25399200	-0.789
1	SI	chr17: 4327500-4985600	-0.789
1	LI	chr6: 84606600-84806100	-0.98
1	LI	chr8: 143513900-143712200	-0.803
1	LI	chr17: 80832100-80084000	-0.803
1	LI	chr8: 145613600-145709200	-0.791
2	SI	chr2: 89563000-91640400	-0.84
2	SI	chr8: 39175800-39408300	-0.755
3	LI	chr3: 186450400-187448100	-0.912
3	LI	chr16: 33842100-34871800	-0.764

**Supplementary Table 2. Derivative log ratio spread (DLRS) analysis**

DLRS was calculated for SI and LI data sets as well as for exome validation data for each patient. SI and LI analyses were performed on normalized bam's.

	Patient 1			Patient 2			Patient 3		
	SI	LI	Exome	SI	LI	Exome	SI	LI	Exome
DLRS	0.117	0.096	0.142	0.084	0.082	0.1226	0.083	0.078	0.108

**Supplementary Table 3. Exome sequencing metrics & CNV detection**

Exome sequencing was performed on the same tumor/normal pairs that were whole genome sequenced for each patient to validate CNVs.

	Patient 1		Patient 2		Patient 3	
Total amount of data generated (GB)	13.3		27.6		29.2	
Q30 data generated (GB)	11.1		24.8		23.1	
Read length	2x101		2x101		2x101	
Total #reads	125473318		224890888		301471184	
	Normal	Tumor	Normal	Tumor	Normal	Tumor
Total #mapped reads	53899773	67064679	168269051	152581663	149798936	143945852
%mapped reads	96.28	96.51	98.8	98.7	97.18	97.7
Average target coverage	59.57	75.04	143.20	113.96	152.30	171.20
# CNVs identified	4		0		0	

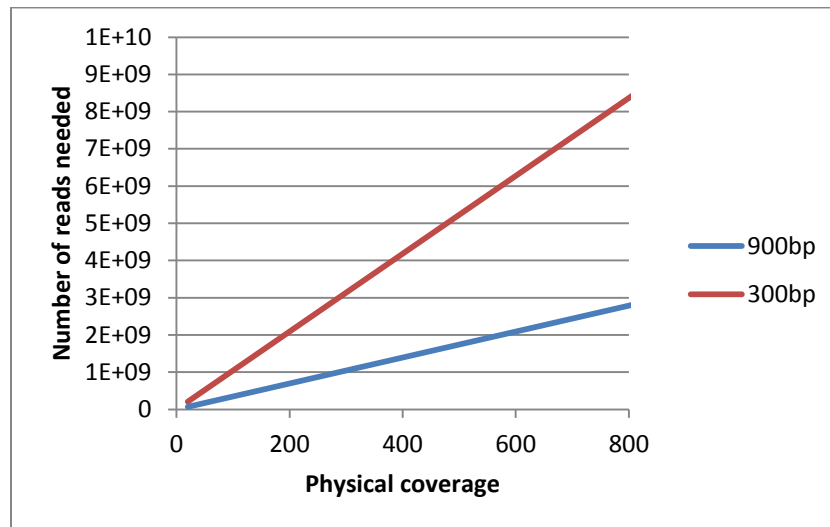
**Supplementary Table 4. CNVs identified in exome sequencing data**

2 of 4 genic CNVs identified in exome data overlap with CNVs identified in patient 1 LI data. CNV locations for LI and SI data are shown. Y=yes, N=no

Patient	Log2 ratio	Location	In whole genome data?
1	0.792	chr9:15433600-17332500	N
1	-0.850	chr17:79517200-80048500	Y (LI; chr17:80832100-80084000)
1	-1.286	chr19:7869-3633300	Y (SI; chr19:358300-8783100)
1	-0.816	chr19:4268500-4860000	N

**Supplementary Figure 1. Comparison of sequencing required to achieve a target physical coverage**

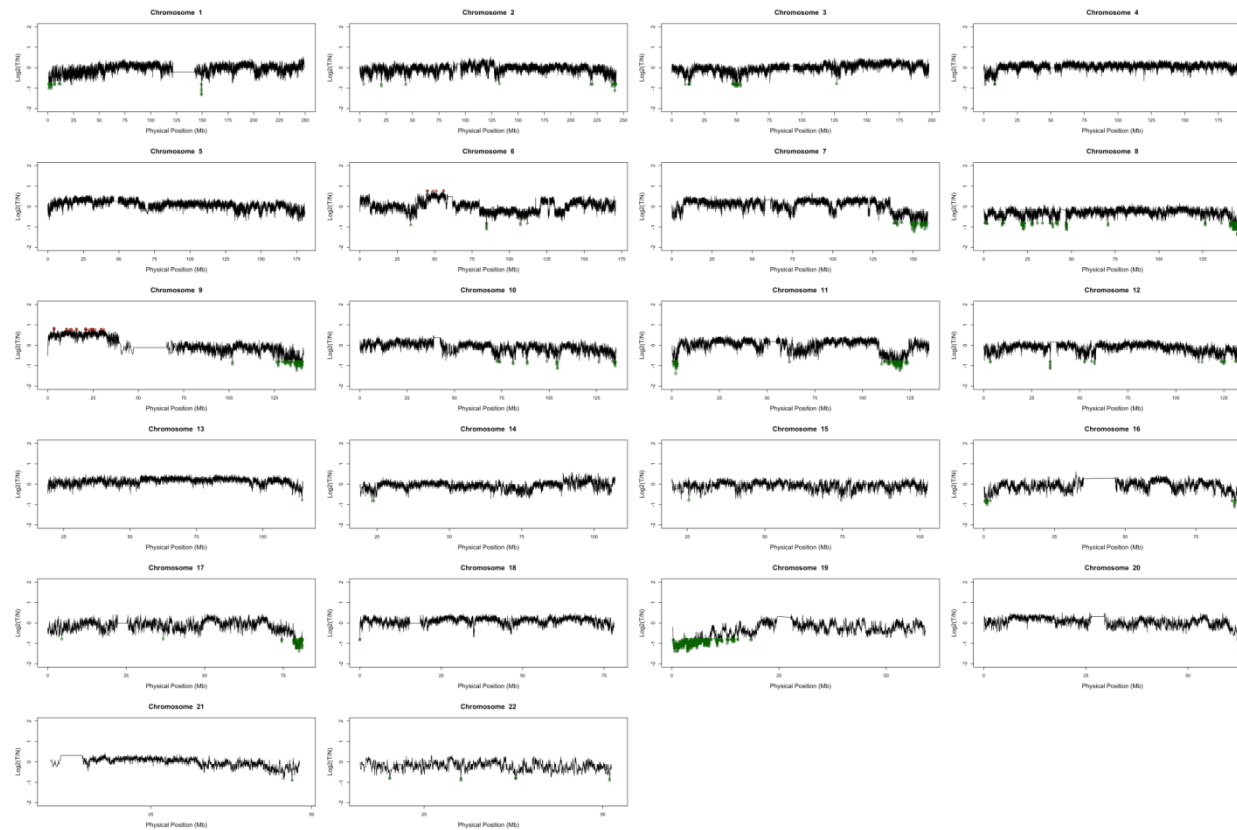
*A priori* analyses were performed to compare the number of reads required using SI (300bp) or LI (900bp) libraries to achieve a target physical coverage.



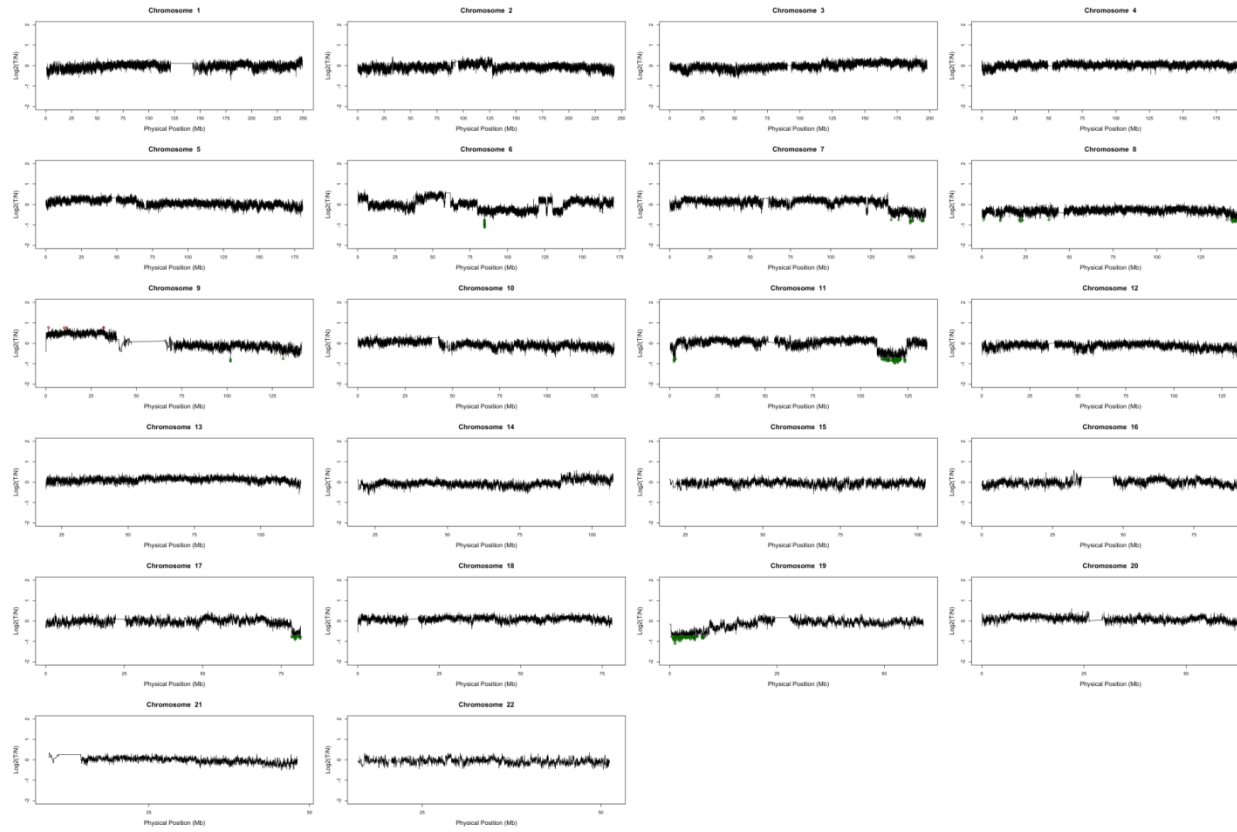
## Supplementary Figure 2. Copy number analysis

Copy number change plots are shown for both SI-WGS and LI-WGS normalized data for each of 3 patients: (A) patient 1 SI-WGS, (B) patient 1 LI-WGS, (C) patient 2 SI-WGS, (D) patient 2 LI-WGS, (E) patient 3 SI-WGS, (F) patient 3 LI-WGS. Results are organized by chromosome. Red demarcates indicate copy number gains and green demarcates copy number losses ( $|\log_2 \text{ratio}| > 0.75$ ).

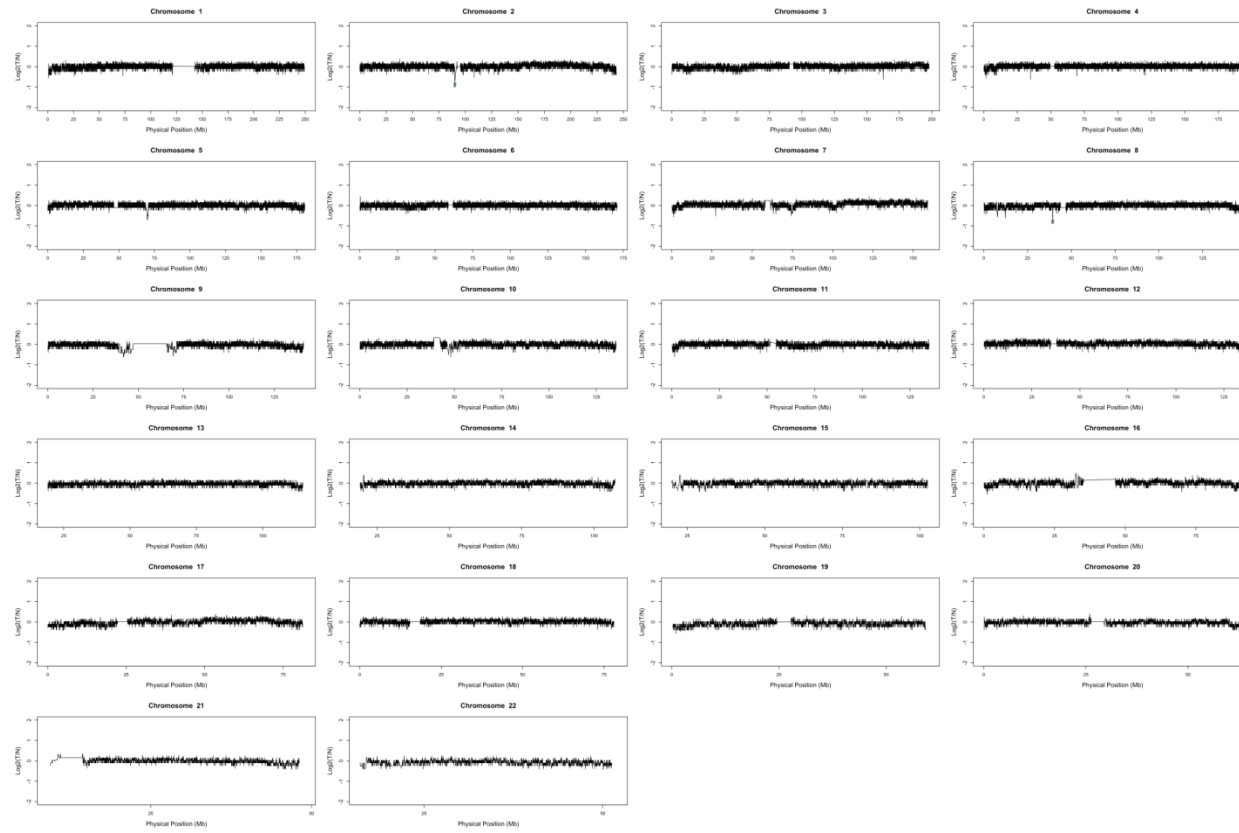
A) Patient 1 SI-WGS



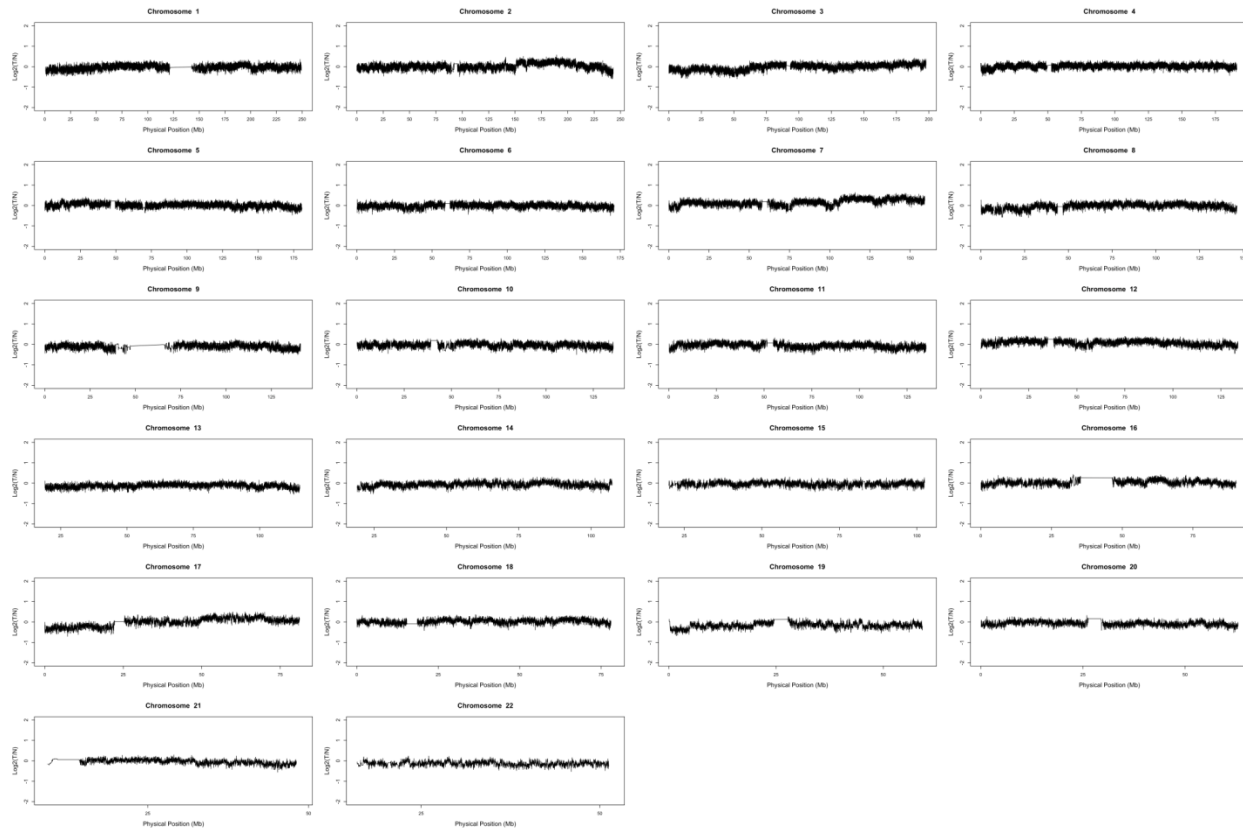
B) Patient 1 LI-WGS



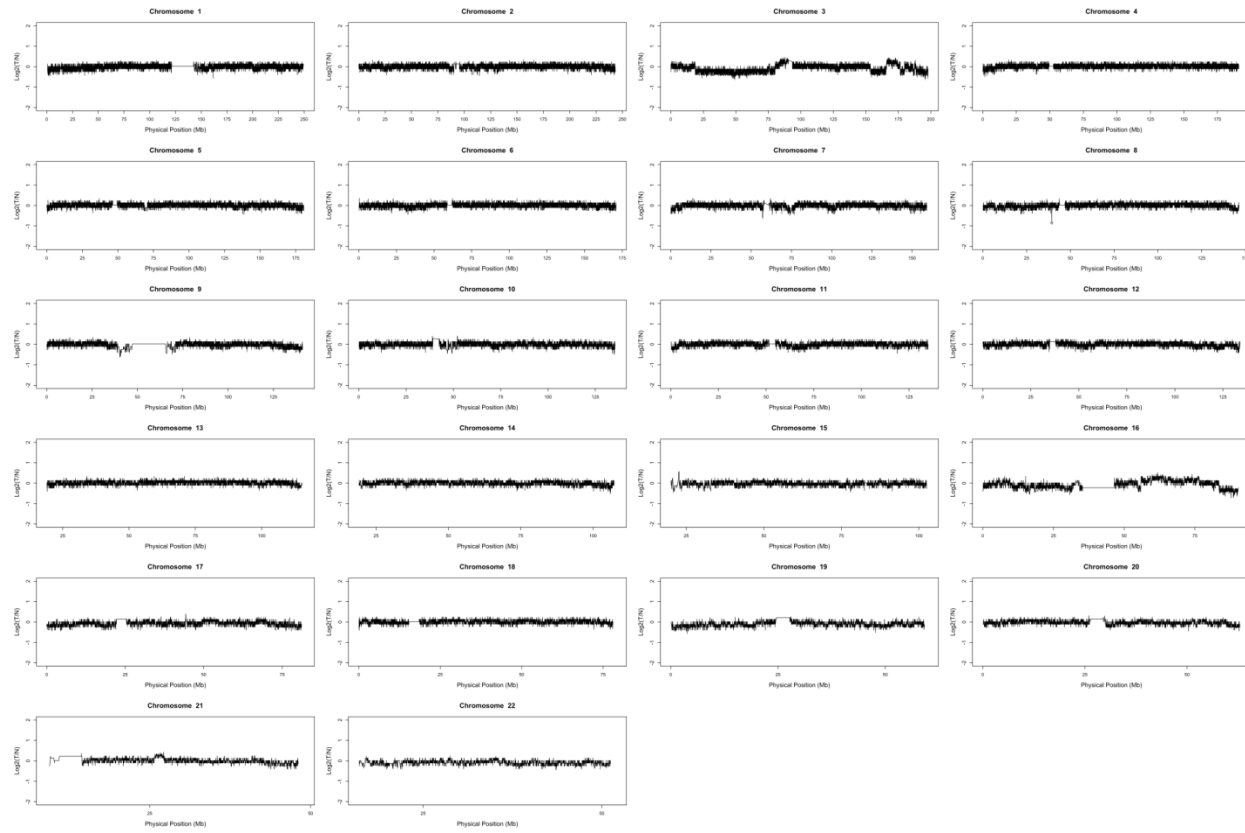
C) Patient 2 SI-WGS



D) Patient 2 LI-WGS



E) Patient 3 SI-WGS





F) Patient 3 LI-WGS

