Qualimap Analysis Results

BAM QC analysis

Generated by Qualimap v.2.3

2025/01/08 02:20:55

1. Input data & parameters

1.1. QualiMap command line

```
qualimap bamqc -bam output/samtools/anc.sorted.dedup.bam -nw 400 -hm 3
```

1.2. Alignment

Command line:	bwa mem data/assembly/scaffolds.fasta data/trimmed/anc_R1.fastq.gz data/trimmed/anc_R2.fastq.gz
Draw chromosome limits:	no
Analyze overlapping paired-end reads:	no
Program:	bwa (0.7.18-r1243-dirty)
Analysis date:	Wed Jan 08 02:20:55 PST 2025
Size of a homopolymer:	3
Skip duplicate alignments:	no
Number of windows:	400
BAM file:	output/samtools/anc.sorted.dedup.bam

2. Summary

2.1. Globals

Reference size	4,561,556
Number of reads	528,116
Mapped reads	524,874 / 99.39%
Unmapped reads	3,242 / 0.61%
Mapped paired reads	524,874 / 99.39%
Mapped reads, first in pair	262,705 / 49.74%
Mapped reads, second in pair	262,169 / 49.64%
Mapped reads, both in pair	523,084 / 99.05%
Mapped reads, singletons	1,790 / 0.34%
Secondary alignments	0
Supplementary alignments	228 / 0.04%
Read min/max/mean length	15 / 150 / 125.87
Duplicated reads (estimated)	137,299 / 26%
Duplication rate	27.34%
Clipped reads	3,982 / 0.75%

2.2. ACGT Content

Number/percentage of A's	16,320,943 / 24.6%
Number/percentage of C's	16,755,376 / 25.26%
Number/percentage of T's	16,325,641 / 24.61%
Number/percentage of G's	16,938,449 / 25.53%
Number/percentage of N's	102 / 0%

GC Percentage	50.79%

2.3. Coverage

Mean	14.5438
Standard Deviation	7.6481

2.4. Mapping Quality

Mean Mapping Quality	54.38

2.5. Insert size

Mean	233.7
Standard Deviation	450.41
P25/Median/P75	128 / 206 / 312

2.6. Mismatches and indels

General error rate	0.14%
Mismatches	89,444
Insertions	337
Mapped reads with at least one insertion	0.06%
Deletions	1,457
Mapped reads with at least one deletion	0.28%
Homopolymer indels	44.15%

2.7. Chromosome stats

Name	Length	Mapped	Mean	Standard

		bases	coverage	deviation
NODE_1_length_348724_cov_30.410613	348724	5081370	14.5713	5.3673
NODE_2_length_327290_cov_30.828326	327290	4877758	14.9035	10.4418
NODE_3_length_312063_cov_30.523209	312063	4546632	14.5696	5.3329
NODE_4_length_202800_cov_31.500777	202800	3034830	14.9646	16.1981
NODE_5_length_164027_cov_28.935175	164027	2308685	14.075	5.0109
NODE_6_length_144088_cov_29.907986	144088	2108065	14.6304	5.3189
NODE_7_length_140177_cov_30.441113	140177	2059065	14.689	5.1831
NODE_8_length_127776_cov_30.976883	127776	1877480	14.6935	6.7192

NODE_9_length_123571_cov_29.288152	123571	1753639	14.1913	5.0499
NODE_10_length_118944_cov_29.338572	118944	1669533	14.0363	4.8723
NODE_11_length_116005_cov_30.127036	116005	1637149	14.1127	5.1533
NODE_12_length_115292_cov_29.218192	115292	1597621	13.8572	4.8274
NODE_13_length_115019_cov_29.129970	115019	1600113	13.9117	4.964
NODE_14_length_105066_cov_31.022726	105066	1534748	14.6075	5.1833
NODE_15_length_101045_cov_29.964256	101045	1424334	14.096	5.0193
NODE_16_length_97665_cov_30.761641	97665	1446914	14.8151	5.6541
NODE_17_le	96980	1432309	14.7691	5.1509

ngth_96980_cov_30.807024				
NODE_18_length_93668_cov_29.878076	93668	1340490	14.3111	4.8813
NODE_19_length_93657_cov_27.899733	93657	1288382	13.7564	5.5388
NODE_20_length_90130_cov_29.100296	90130	1248863	13.8562	5.2764
NODE_21_length_89111_cov_29.734113	89111	1251203	14.0409	5.1864
NODE_22_length_87915_cov_29.488718	87915	1225670	13.9415	5.1646
NODE_23_length_82281_cov_29.598170	82281	1178272	14.3201	5.7231
NODE_24_length_64635_cov_29.576118	64635	893787	13.8282	5.3508
NODE_25_length_60439_cov_30.11018	60439	877417	14.5174	5.1305

5				
NODE_26_length_59685_cov_30.383304	59685	881002	14.7609	5.1176
NODE_27_length_55232_cov_30.200073	55232	779091	14.1058	5.5112
NODE_28_length_54771_cov_30.970326	54771	800444	14.6144	5.3457
NODE_29_length_52138_cov_30.092833	52138	754496	14.4711	5.1616
NODE_30_length_48196_cov_29.149151	48196	646176	13.4073	5.1321
NODE_31_length_46922_cov_30.386978	46922	676039	14.4077	5.1525
NODE_32_length_46460_cov_30.242309	46460	655657	14.1123	4.9384
NODE_33_length_46046_cov_31.315495	46046	692413	15.0374	10.518

NODE_34_length_45753_cov_30.426110	45753	691321	15.1099	5.2627
NODE_35_length_44700_cov_29.781211	44700	637274	14.2567	4.8626
NODE_36_length_41536_cov_32.627536	41536	658694	15.8584	5.5663
NODE_37_length_41086_cov_30.478163	41086	588765	14.3301	5.6452
NODE_38_length_40828_cov_28.523276	40828	557434	13.6532	5.3662
NODE_39_length_40801_cov_30.672625	40801	595333	14.5911	5.9433
NODE_40_length_39502_cov_30.758326	39502	565347	14.3119	5.5537
NODE_41_length_34862_cov_30.076872	34862	480947	13.7957	4.9986
NODE_42_le	30861	436115	14.1316	4.7813

ngth_30861_cov_31.048986				
NODE_43_length_30094_cov_30.296532	30094	442427	14.7015	5.8085
NODE_44_length_29959_cov_29.454220	29959	434215	14.4936	5.4093
NODE_45_length_28922_cov_30.892494	28922	430970	14.9011	5.1187
NODE_46_length_28491_cov_30.233019	28491	404526	14.1984	5.1483
NODE_47_length_27211_cov_27.973281	27211	354984	13.0456	5.0663
NODE_48_length_22868_cov_29.982756	22868	330882	14.4692	5.3844
NODE_49_length_20918_cov_28.865122	20918	298255	14.2583	5.6303
NODE_50_length_16506_cov_29.38766	16506	228405	13.8377	4.9592

8				
NODE_51_length_16418_cov_30.461600	16418	240178	14.6289	4.7209
NODE_52_length_15612_cov_31.586353	15612	236949	15.1774	5.901
NODE_53_length_15148_cov_27.490611	15148	195073	12.8778	4.9371
NODE_54_length_14242_cov_29.450124	14242	201516	14.1494	5.2809
NODE_55_length_14021_cov_28.407702	14021	191508	13.6587	5.384
NODE_56_length_13692_cov_30.550512	13692	199197	14.5484	4.7702
NODE_57_length_9478_cov_29.379534	9478	135408	14.2866	5.3523
NODE_58_length_6711_cov_27.390865	6711	96762	14.4184	5.5316

NODE_59_length_6446_cov_27.963574	6446	91118	14.1356	5.9685
NODE_60_length_5807_cov_27.397382	5807	72478	12.4811	4.8212
NODE_61_length_4414_cov_35.839059	4414	72242	16.3666	5.9479
NODE_62_length_3105_cov_33.928666	3105	46392	14.9411	6.1437
NODE_63_length_2900_cov_61.188452	2900	76765	26.4707	8.3406
NODE_64_length_2654_cov_224.861855	2654	268746	101.2607	18.8007
NODE_65_length_2372_cov_24.938126	2372	32069	13.5198	5.8399
NODE_66_length_1662_cov_26.001893	1662	19277	11.5987	4.6984
NODE_67_le	1518	22030	14.5125	5.7213

ngth_1518_cov_32.673838				
NODE_68_length_1343_cov_129.199052	1343	77499	57.7059	12.4372
NODE_69_length_1317_cov_64.516129	1317	40609	30.8345	7.6711
NODE_70_length_1211_cov_45.516755	1211	22713	18.7556	5.6822
NODE_71_length_1061_cov_260.126016	1061	109378	103.0895	21.8667
NODE_72_length_1042_cov_27.847668	1042	15750	15.1152	6.05
NODE_73_length_1013_cov_151.543803	1013	63185	62.3741	15.227
NODE_74_length_869_cov_74.214646	869	23656	27.2221	10.0584
NODE_75_length_869_cov_35.061869	869	11054	12.7204	3.4195

NODE_76_length_791_cov_244.456583	791	81216	102.6751	25.976
NODE_77_length_719_cov_161.823988	719	50349	70.0264	27.2824
NODE_78_length_556_cov_61.807933	556	14160	25.4676	9.7494
NODE_79_length_548_cov_263.447983	548	56046	102.2737	31.2386
NODE_80_length_470_cov_65.119593	470	11030	23.4681	10.2079
NODE_81_length_470_cov_24.284987	470	6606	14.0553	6.2872
NODE_82_length_426_cov_31.286533	426	6409	15.0446	9.0684
NODE_83_length_417_cov_27.391176	417	4485	10.7554	6.4516
NODE_84_length_396_cov_38.962382	396	5761	14.548	5.4477
NODE_85_length_391_cov_40.996815	391	6251	15.9872	6.875
NODE_86_length_387_cov	387	4648	12.0103	5.6951

_29.245161				
NODE_87_length_372_cov_120.583051	372	16442	44.1989	13.3098
NODE_88_length_337_cov_32.100000	337	4027	11.9496	4.777
NODE_89_length_334_cov_27.634241	334	4201	12.5778	3.9856
NODE_90_length_323_cov_96.585366	323	10761	33.3158	14.9055
NODE_91_length_299_cov_24.261261	299	2463	8.2375	2.0497
NODE_92_length_293_cov_57.958333	293	6088	20.7782	7.7944
NODE_93_length_286_cov_30.990431	286	2599	9.0874	2.46
NODE_94_length_273_cov_35.244898	273	2958	10.8352	8.1379
NODE_95_length_259_cov_41.192308	259	3048	11.7683	6.7269
NODE_96_length_259_cov_29.428571	259	2301	8.8842	4.6426
NODE_97_le	258	1772	6.8682	1.9995

ngth_258_cov_28.475138				
NODE_98_length_258_cov_27.718232	258	2244	8.6977	4.6939
NODE_99_length_235_cov_25.575949	235	2458	10.4596	2.5718
NODE_100_length_227_cov_103.280000	227	7584	33.4097	14.4345
NODE_101_length_227_cov_30.233333	227	1761	7.7577	3.285
NODE_102_length_224_cov_26.959184	224	1327	5.9241	3.3804
NODE_103_length_224_cov_18.306122	224	365	1.6295	0.9596
NODE_104_length_219_cov_14.654930	219	598	2.7306	2.3767
NODE_105_length_215_cov_43.789855	215	3187	14.8233	6.2711
NODE_106_l	214	2738	12.7944	4.0677

ength_214_cov_37.686131				
NODE_107_length_214_cov_18.321168	214	1176	5.4953	3.1634
NODE_108_length_213_cov_31.338235	213	1084	5.0892	1.925
NODE_109_length_212_cov_15.555556	212	1001	4.7217	2.867
NODE_110_length_206_cov_14.147287	206	1379	6.6942	2.9327
NODE_111_length_205_cov_46.593750	205	1852	9.0341	3.5646
NODE_112_length_205_cov_24.890625	205	2491	12.1512	5.1629
NODE_113_length_204_cov_31.000000	204	1476	7.2353	3.097
NODE_114_length_203_cov_31.30952	203	2264	11.1527	6.1877

4				
NODE_115_length_199_cov_51.836066	199	3881	19.5025	8.4763
NODE_116_length_196_cov_70.235294	196	2972	15.1633	5.3865
NODE_117_length_195_cov_30.991525	195	1877	9.6256	3.7469
NODE_118_length_191_cov_124.614035	191	6016	31.4974	10.7015
NODE_119_length_191_cov_103.017544	191	5136	26.8901	10.6645
NODE_120_length_188_cov_13.045045	188	368	1.9574	1.8817
NODE_121_length_187_cov_96.218182	187	5787	30.9465	11.5873
NODE_122_length_183_cov_19.811321	183	260	1.4208	1.8326

NODE_123_length_181_cov_823.086538	181	37219	205.6298	75.6214
NODE_124_length_174_cov_32.546392	174	1652	9.4943	3.3763
NODE_125_length_167_cov_36.644444	167	1010	6.0479	1.4593
NODE_126_length_166_cov_118.707865	166	1262	7.6024	3.7879
NODE_127_length_160_cov_30.084337	160	1392	8.7	3.2245
NODE_128_length_160_cov_19.108434	160	513	3.2062	1.6167
NODE_129_length_158_cov_45.827160	158	1507	9.538	3.3425
NODE_130_length_158_cov_38.283951	158	2782	17.6076	4.6071
NODE_131_l	155	7360	47.4839	16.9848

ength_155_cov_574.205128				
NODE_132_length_155_cov_361.525641	155	6532	42.1419	15.3717
NODE_133_length_155_cov_120.897436	155	1506	9.7161	3.3519
NODE_134_length_155_cov_107.551282	155	3560	22.9677	6.7513
NODE_135_length_155_cov_79.551282	155	2845	18.3548	5.1151
NODE_136_length_155_cov_53.974359	155	2594	16.7355	4.6657
NODE_137_length_155_cov_44.346154	155	492	3.1742	1.1976
NODE_138_length_155_cov_44.320513	155	1031	6.6516	2.1719
NODE_139_length_155_cov_42.56410	155	88	0.5677	0.9017

3				
NODE_140_length_155_cov_41.987179	155	1303	8.4065	1.8929
NODE_141_length_155_cov_39.038462	155	194	1.2516	0.9678
NODE_142_length_155_cov_36.666667	155	306	1.9742	1.6302
NODE_143_length_155_cov_33.038462	155	264	1.7032	0.6737
NODE_144_length_155_cov_32.653846	155	2609	16.8323	2.7797
NODE_145_length_155_cov_30.987179	155	443	2.8581	1.2414
NODE_146_length_155_cov_29.794872	155	149	0.9613	0.1929
NODE_147_length_155_cov_27.192308	155	480	3.0968	1.7219

NODE_148_length_155_cov_25.538462	155	298	1.9226	0.2904
NODE_149_length_155_cov_25.064103	155	264	1.7032	0.711
NODE_150_length_155_cov_21.679487	155	753	4.8581	1.7244
NODE_151_length_155_cov_20.346154	155	136	0.8774	0.328
NODE_152_length_155_cov_20.000000	155	150	0.9677	0.1767
NODE_153_length_155_cov_17.935897	155	147	0.9484	0.2212
NODE_154_length_155_cov_13.115385	155	247	1.5935	0.9066
NODE_155_length_154_cov_36.493506	154	1983	12.8766	5.121
NODE_156_l	154	1817	11.7987	2.9374

ength_154_cov_29.675325				
NODE_157_length_154_cov_21.857143	154	1489	9.6688	2.856
NODE_158_length_154_cov_18.402597	154	97	0.6299	0.4828
NODE_159_length_153_cov_28.750000	153	609	3.9804	0.918
NODE_160_length_153_cov_25.342105	153	0	0	0
NODE_161_length_152_cov_42.160000	152	1064	7	1.9668
NODE_162_length_152_cov_24.773333	152	1372	9.0263	2.9955
NODE_163_length_151_cov_30.810811	151	1074	7.1126	2.6559
NODE_164_length_151_cov_21.70270	151	349	2.3113	1.0684

3				
NODE_165_length_142_cov_20.492308	142	414	2.9155	1.7218
NODE_166_length_133_cov_55.875000	133	1164	8.7519	2.195
NODE_167_length_130_cov_126.698113	130	2814	21.6462	3.6729
NODE_168_length_129_cov_32.519231	129	338	2.6202	1.1627
NODE_169_length_129_cov_27.980769	129	771	5.9767	0.1507
NODE_170_length_125_cov_53.604167	125	748	5.984	1.4366
NODE_171_length_123_cov_56.826087	123	1267	10.3008	1.0196
NODE_172_length_122_cov_29.266667	122	0	0	0

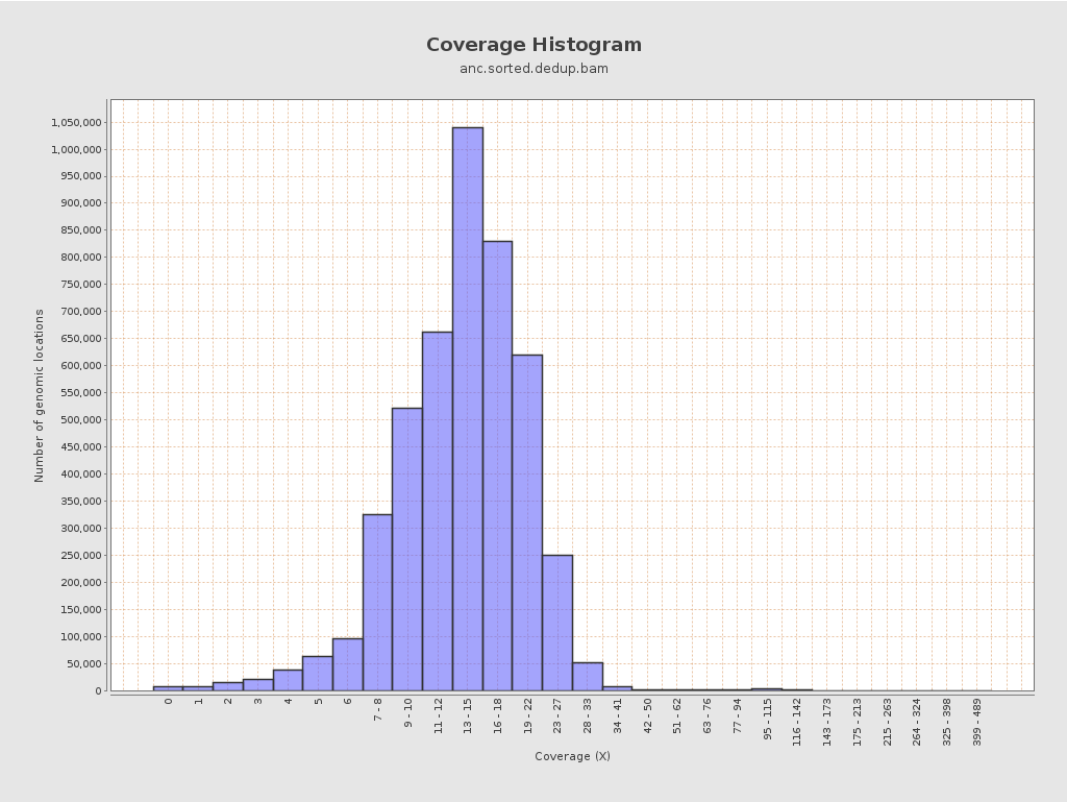
NODE_173_length_121_cov_32.909091	121	92	0.7603	0.9709
NODE_174_length_117_cov_28.350000	117	0	0	0
NODE_175_length_115_cov_67.657895	115	619	5.3826	1.0761
NODE_176_length_112_cov_80.914286	112	224	2	0
NODE_177_length_109_cov_26.468750	109	212	1.945	0.3272
NODE_178_length_107_cov_20.800000	107	0	0	0
NODE_179_length_105_cov_63.857143	105	105	1	0
NODE_180_length_104_cov_22.518519	104	126	1.2115	0.9774
NODE_181_l	99	92	0.9293	0.9975

ength_99_cov_17.772727				
NODE_182_length_93_cov_18.750000	93	73	0.7849	0.4109
NODE_183_length_92_cov_38.000000	92	0	0	0
NODE_184_length_86_cov_36.222222	86	0	0	0
NODE_185_length_85_cov_90.125000	85	0	0	0
NODE_186_length_81_cov_41.000000	81	0	0	0
NODE_187_length_79_cov_132.500000	79	0	0	0
NODE_188_length_79_cov_92.500000	79	0	0	0
NODE_189_length_79_cov_54.500000	79	102	1.2911	0.9567
NODE_190_length_79_cov_39.000000	79	0	0	0
NODE_191_length_79_cov_38.000000	79	0	0	0

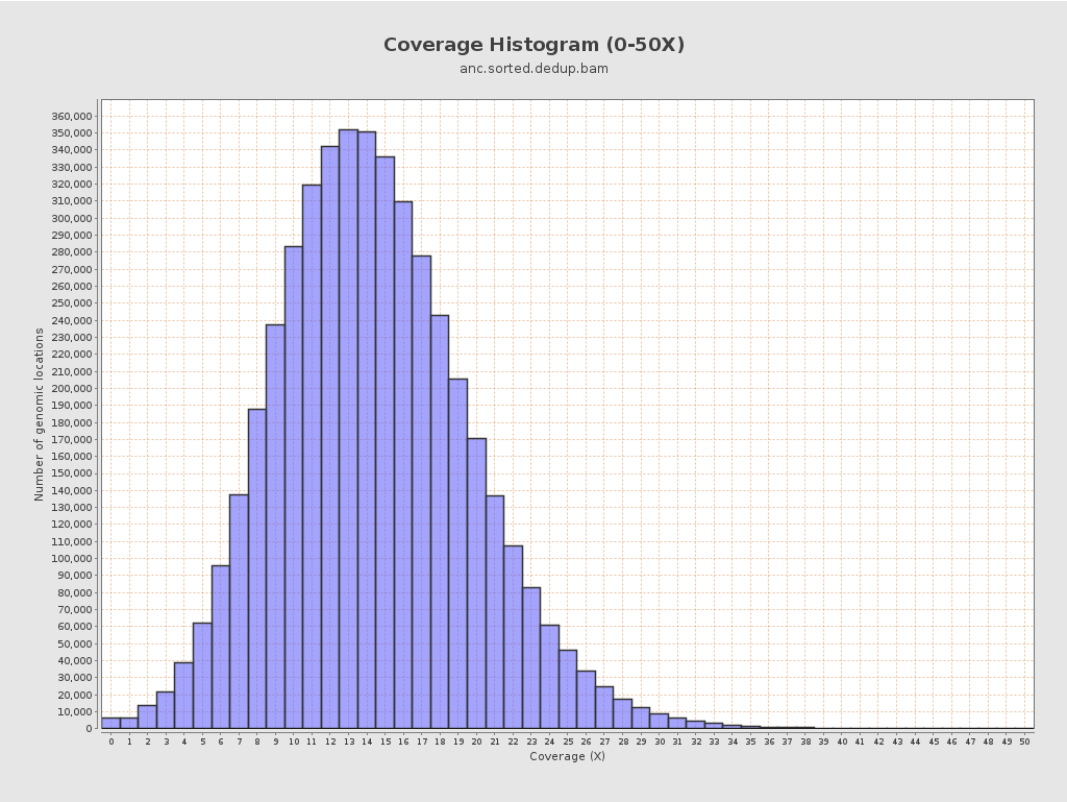
NODE_192_length_78_cov_77.000000	78	0	0	0
NODE_193_length_78_cov_70.000000	78	424	5.4359	2.9508
NODE_194_length_78_cov_69.000000	78	0	0	0
NODE_195_length_78_cov_64.000000	78	0	0	0
NODE_196_length_78_cov_48.000000	78	27	0.3462	0.4757

3. Results : Coverage across reference

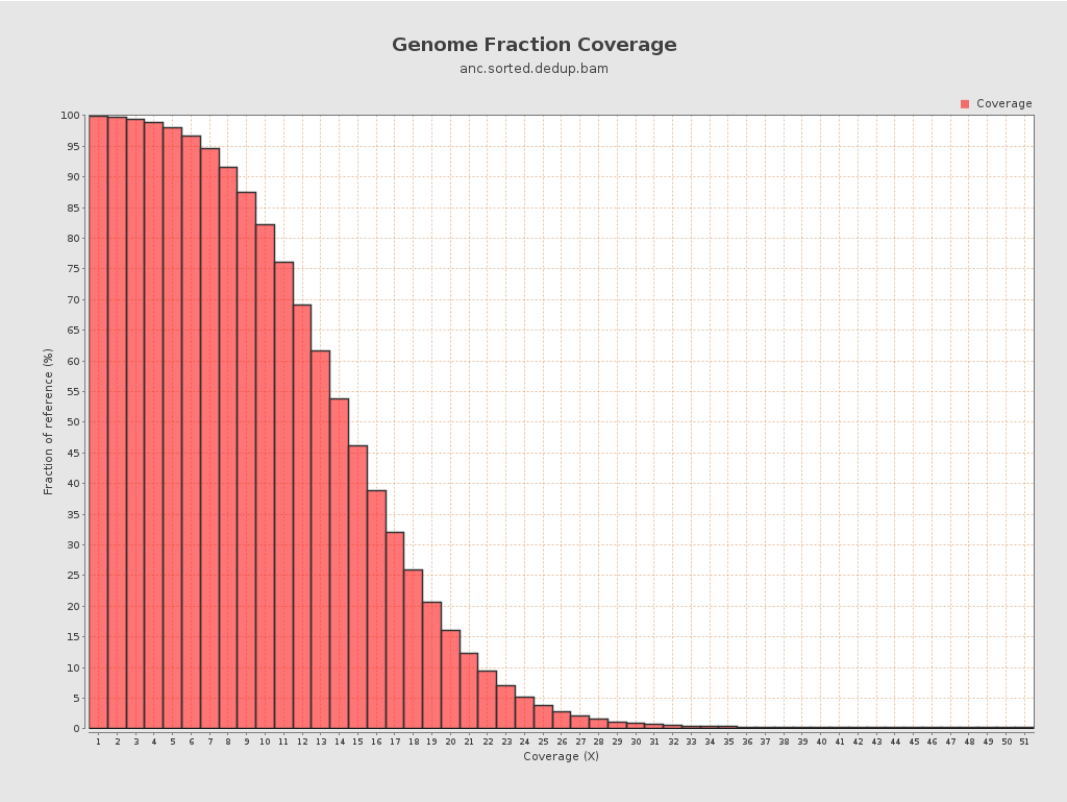
4. Results : Coverage Histogram



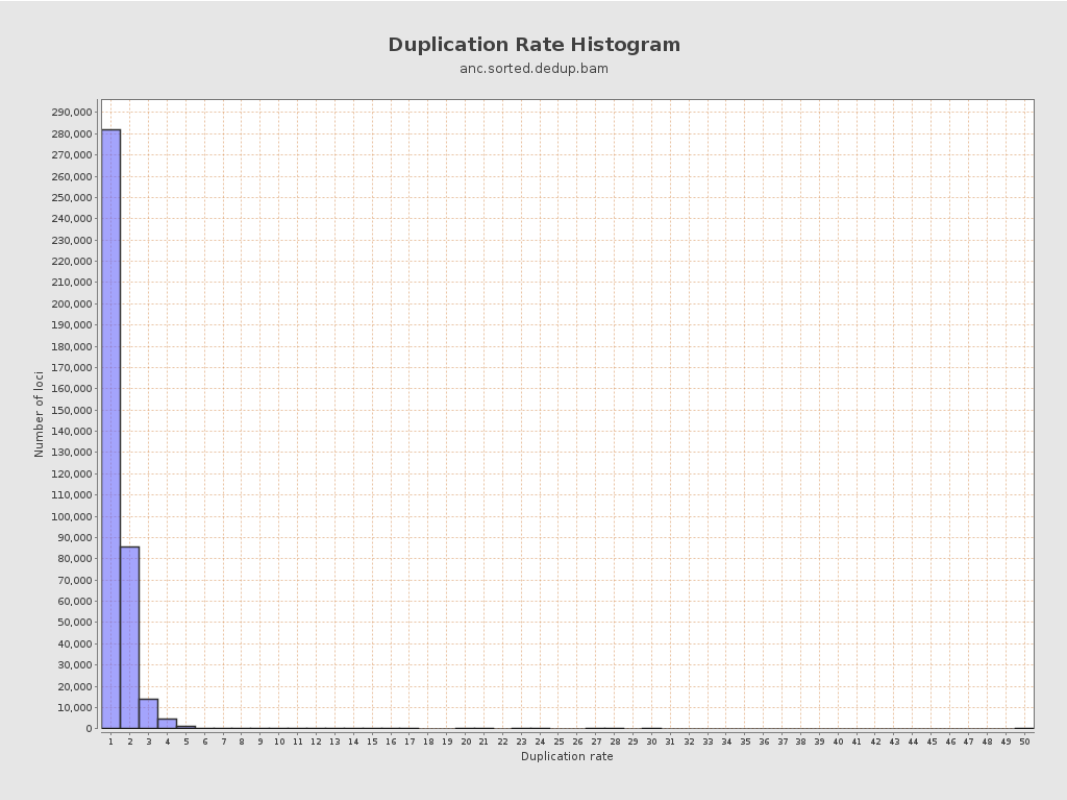
5. Results : Coverage Histogram (0-50X)



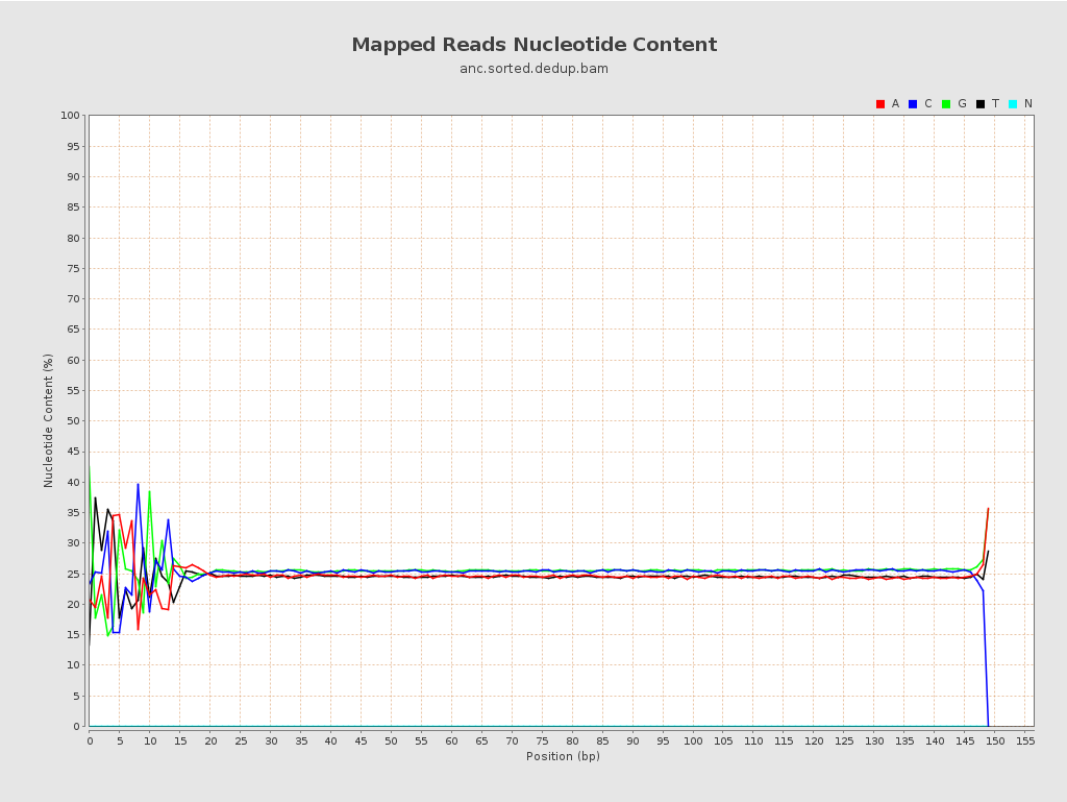
6. Results : Genome Fraction Coverage



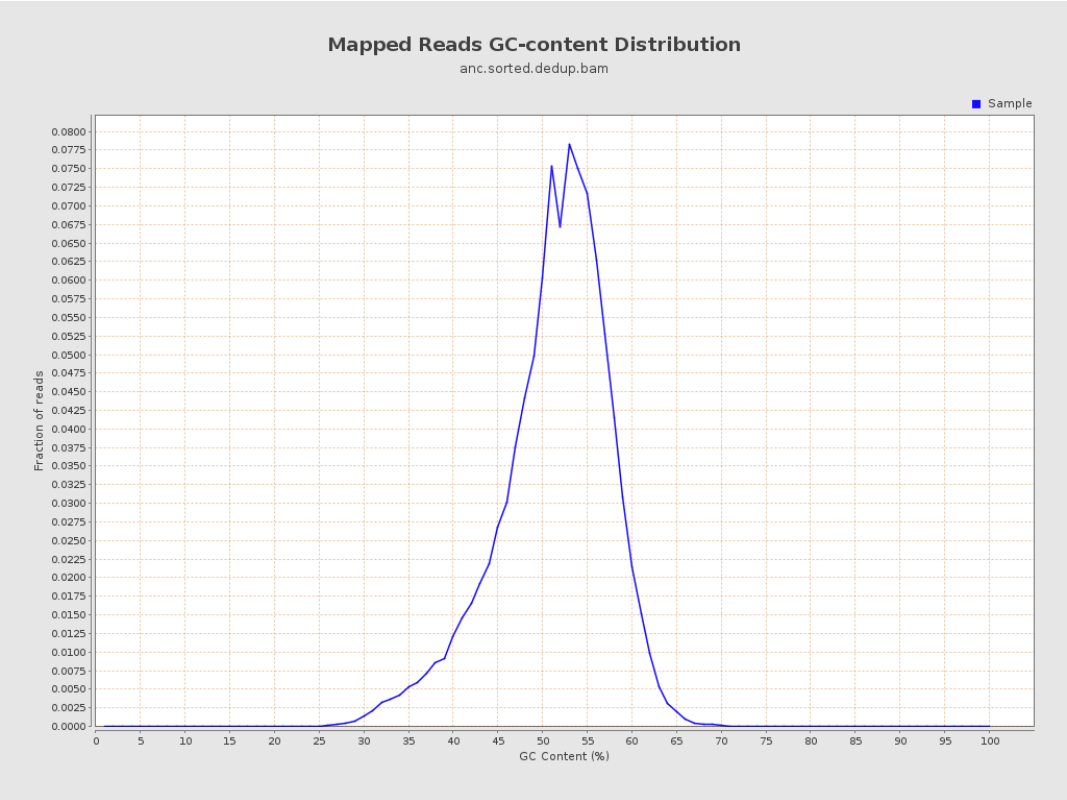
7. Results : Duplication Rate Histogram



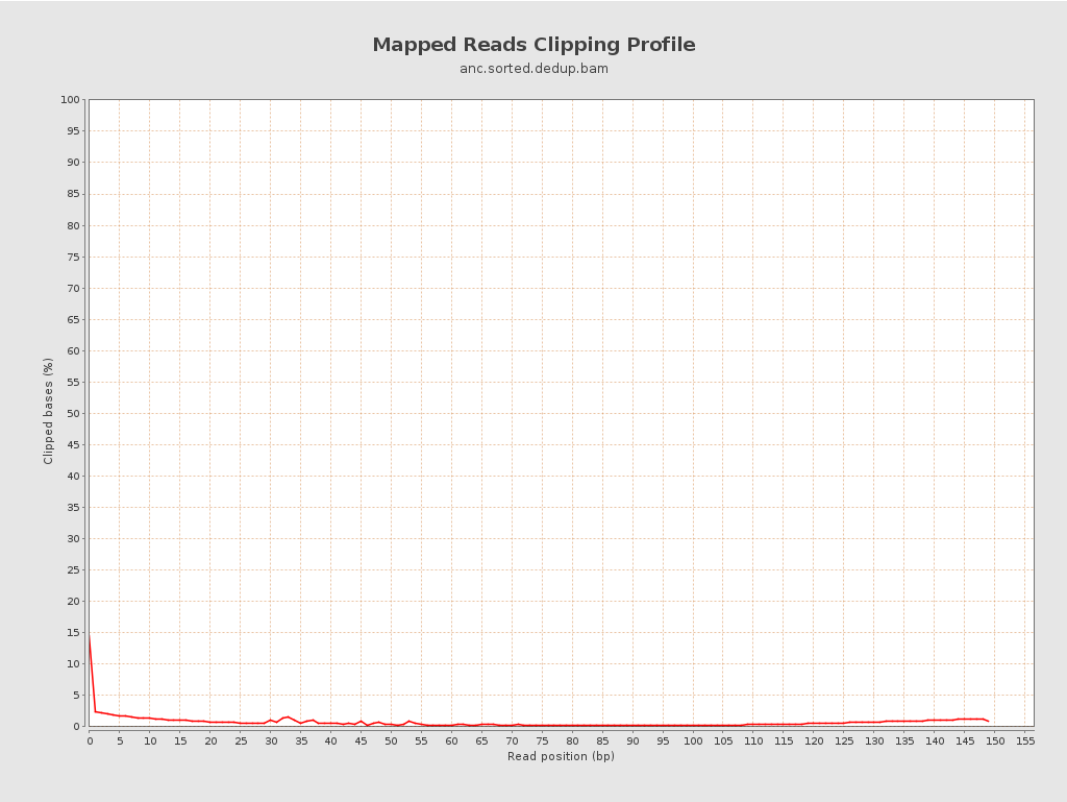
8. Results : Mapped Reads Nucleotide Content



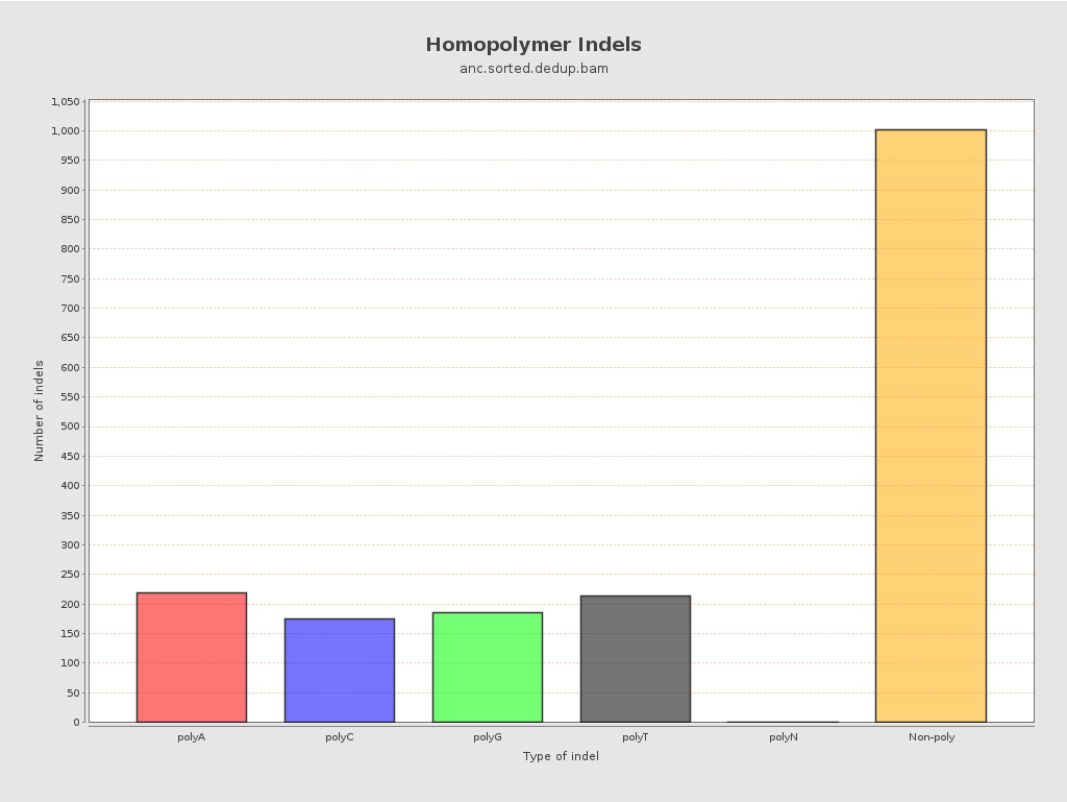
9. Results : Mapped Reads GC-content Distribution



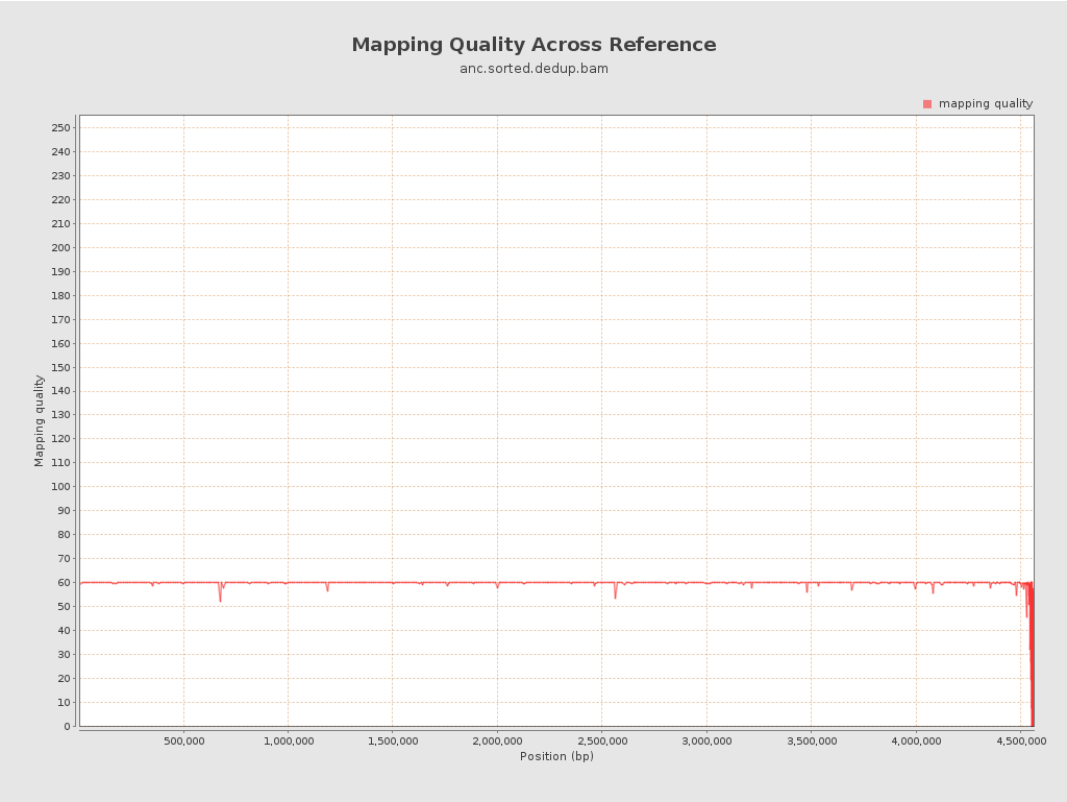
10. Results : Mapped Reads Clipping Profile



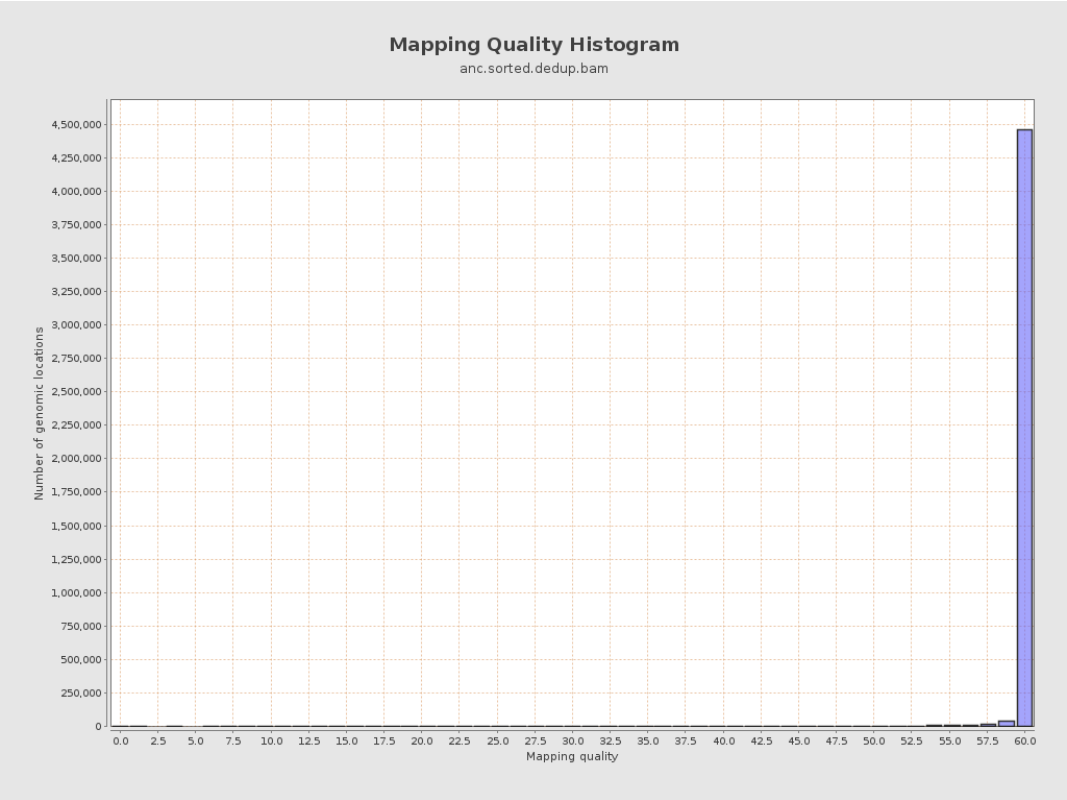
11. Results : Homopolymer Indels



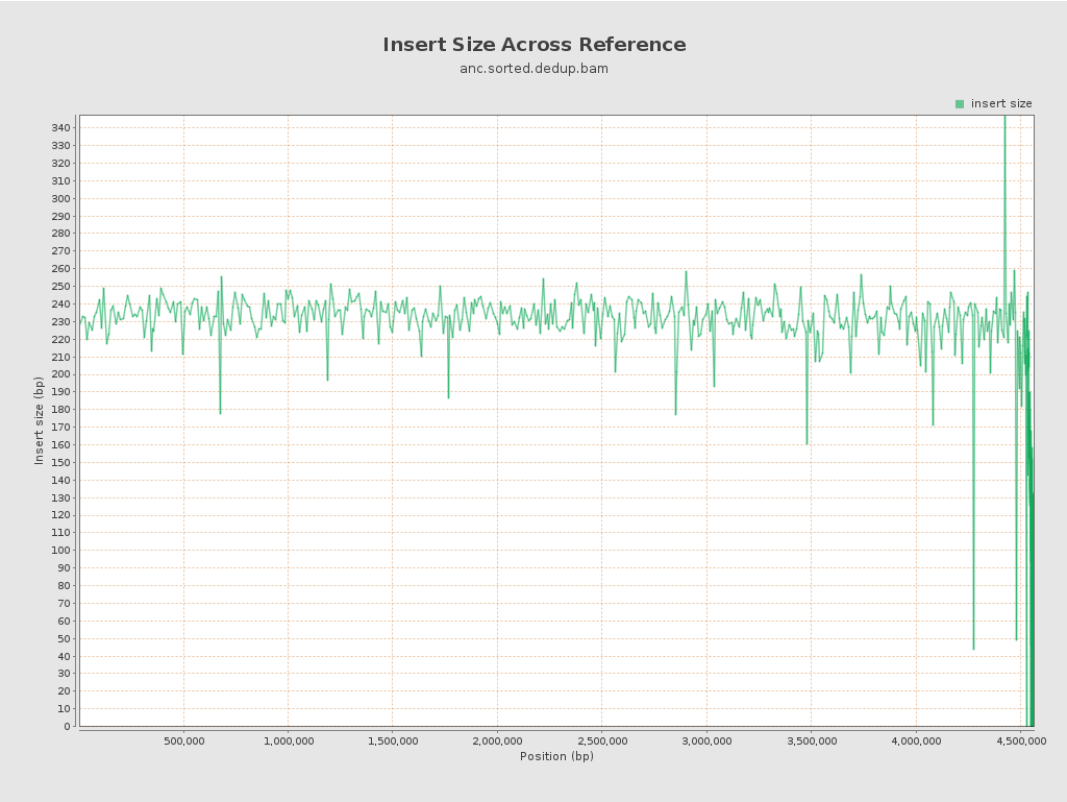
12. Results : Mapping Quality Across Reference



13. Results : Mapping Quality Histogram



14. Results : Insert Size Across Reference



15. Results : Insert Size Histogram