# MP10k\_pe

# Summary

#### General

fastp version:	0.19.6 ( <a href="https://github.com/OpenGene/fastp">https://github.com/OpenGene/fastp</a> )
sequencing:	paired end (151 cycles + 151 cycles)
mean length before filtering:	111bp, 112bp
mean length after filtering:	117bp, 115bp
duplication rate:	45.214608%
Insert size peak:	151

## **Before filtering**

total reads:	185.190824 M
total bases:	20.795627 G
Q20 bases:	19.431985 G (93.442648%)
Q30 bases:	17.831500 G (85.746393%)
GC content:	43.291273%

## After filtering

total reads:	153.613798 M
total bases:	17.835487 G
Q20 bases:	16.975903 G (95.180481%)
Q30 bases:	15.675142 G (87.887375%)
GC content:	43.037997%

# Filtering result

reads passed filters:	153.613798 M (82.948925%)
reads with low quality:	12.159456 M (6.565906%)
reads with too many N:	1.128000 K (0.000609%)
reads too short:	19.079170 M (10.302438%)
reads with low complexity:	337.272000 K (0.182121%)

# Adapters

# Adapter or bad ligation of read1

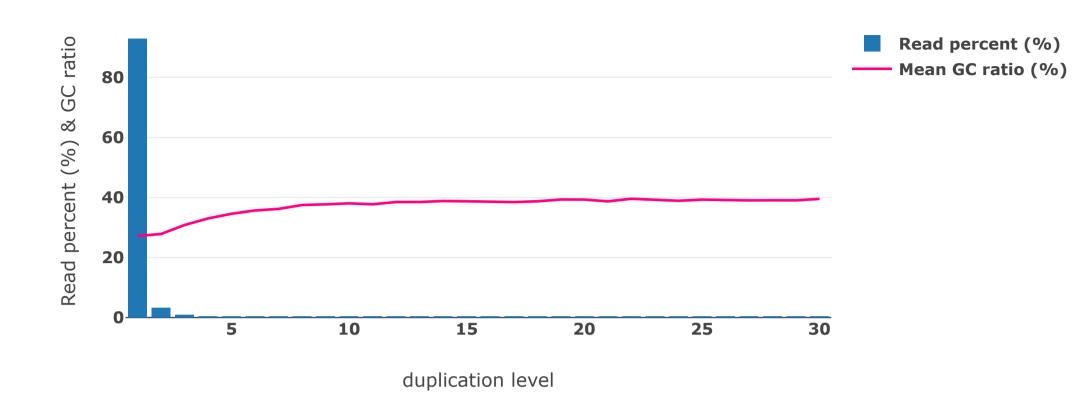
Sequence	0ccurrences
all adapter sequences	9733269

# Adapter or bad ligation of read2

Sequence	Occurrences
all adapter sequences	11069653

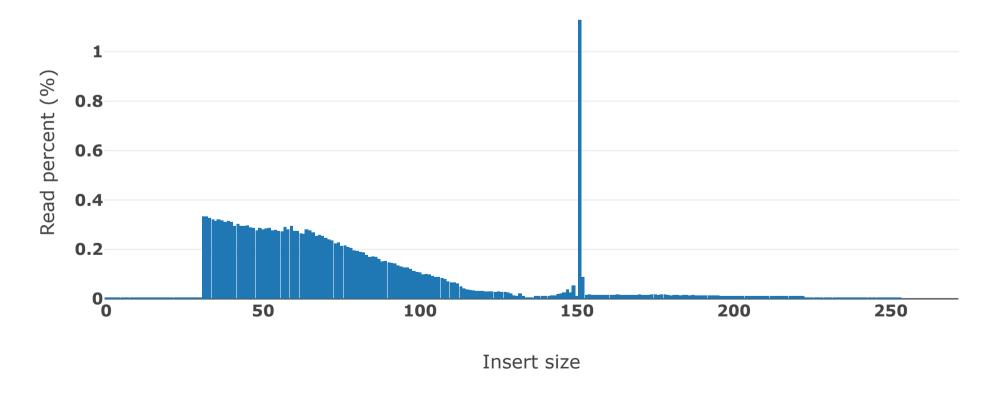
# **Duplication**

duplication rate (45.214608%)



# **Insert size estimation**

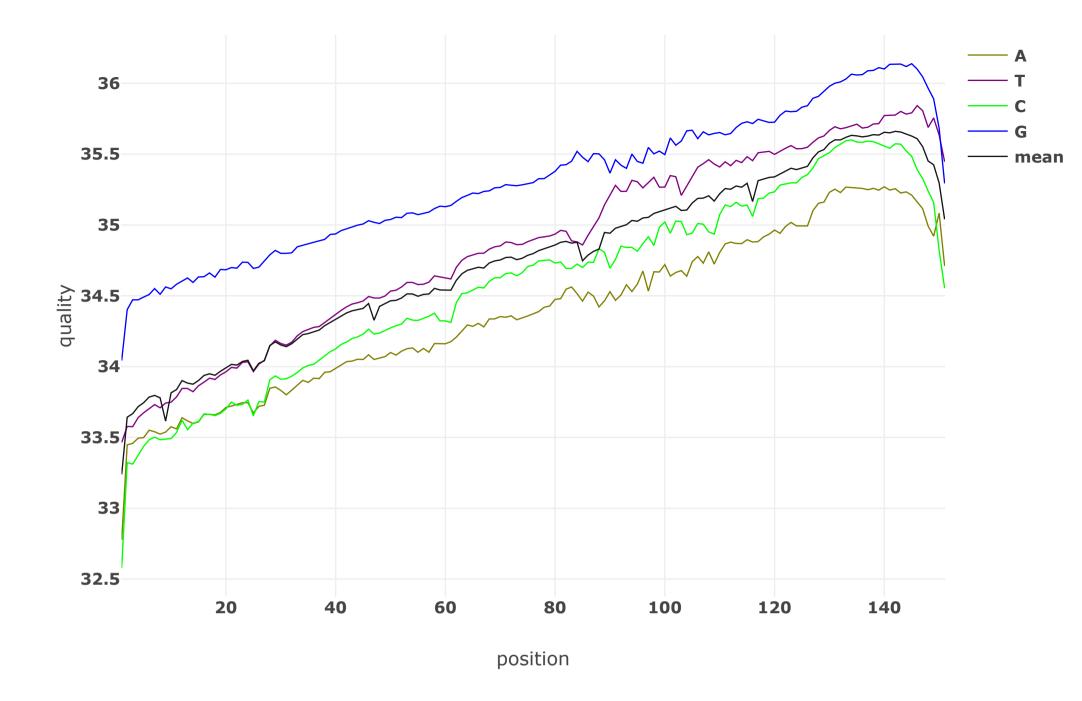
Insert size distribution (79.330470% reads are with unknown length)



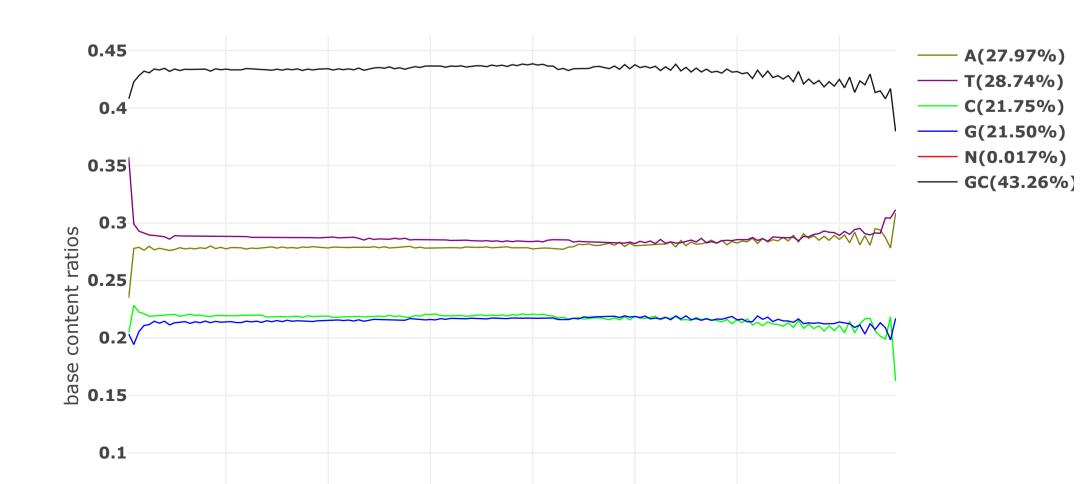
This estimation is based on paired—end overlap analysis, and there are 79.330470% reads found not overlapped. The nonoverlapped read pairs may have insert size <30 or >272, or contain too much sequencing errors to be detected as overlapped.

# **Before filtering**

Before filtering: read1: quality



### Before filtering: read1: base contents





### Before filtering: read1: KMER counting

Darker background means larger counts. The count will be shown on mouse over.

	AA	AT	AC	AG	TA	TT	TC	TG	CA	СТ	CC	CG	GA	GT	GC	GG
AAA	AAAAA	AAAAT	AAAAC	AAAAG	AAATA	AAATT	AAATC	AAATG	AAACA	AAACT	AAACC	AAACG	AAAGA	AAAGT	AAAGC	AAAGG
AAT	AATAA	AATAT	AATAC	AATAG	AATTA	AATTT	AATTC	AATTG	AATCA	AATCT	AATCC	AATCG	AATGA	AATGT	AATGC	AATGG
AAC	AACAA	AACAT	AACAC	AACAG	AACTA	AACTT	AACTC	AACTG	AACCA	AACCT	AACCC	AACCG	AACGA	AACGT	AACGC	AACGG
AAG	AAGAA ATAAA	AAGAT ATAAT	AAGAC ATAAC	AAGAG ATAAG	AAGTA ATATA	AAGTT ATATT	AAGTC ATATC	AAGTG ATATG	AAGCA ATACA	AAGCT ATACT	AAGCC ATACC	AAGCG ATACG	AAGGA ATAGA	AAGGT ATAGT	AAGGC ATAGC	AAGGG ATAGG
ATT	ATAAA	ATTAT	ATTAC	ATTAG	ATTTA	ATTTT	ATTTC	ATTTG	ATTCA	ATTCT	ATTCC	ATACG	ATAGA	ATTGT	ATAGC	ATAGG
ATC	ATCAA	ATCAT	ATCAC	ATCAG	ATCTA	ATCTT	ATCTC	ATCTG	ATCCA	ATCCT	ATCCC	ATTCG	ATCGA	ATCGT	ATCGC	ATTGG
ATG	ATGAA	ATGAT	ATGAC	ATGAG	ATGTA	ATGTT	ATGTC	ATGTG	ATGCA	ATGCT	ATGCC	ATGCG	ATGGA	ATGGT	ATGGC	ATGGG
ACA	ACAAA	ACAAT	ACAAC	ACAAG	ACATA	ACATT	ACATC	ACATG	ACACA	ACACT	ACACC	ACACG	ACAGA	ACAGT	ACAGC	ACAGG
ACT	ACTAA	ACTAT	ACTAC	ACTAG	ACTTA	ACTTT	ACTTC	ACTTG	ACTCA	ACTCT	ACTCC	ACTCG	ACTGA	ACTGT	ACTGC	ACTGG
ACC	ACCAA	ACCAT	ACCAC	ACCAG	ACCTA	ACCTT	ACCTC	ACCTG	ACCCA	ACCCT	ACCCC	ACCCG	ACCGA	ACCGT	ACCGC	ACCGG
ACG	ACGAA	ACGAT	ACGAC	ACGAG	ACGTA	ACGTT	ACGTC	ACGTG	ACGCA	ACGCT	ACGCC	ACGCG	ACGGA	ACGGT	ACGGC	ACGGG
AGA	AGAAA	AGAAT	AGAAC	AGAAG	AGATA	AGATT	AGATC	AGATG	AGACA	AGACT	AGACC	AGACG	AGAGA	AGAGT	AGAGC	AGAGG
AGT	AGTAA	AGTAT	AGTAC	AGTAG	AGTTA	AGTTT	AGTTC	AGTTG	AGTCA	AGTCT	AGTCC	AGTCG	AGTGA	AGTGT	AGTGC	AGTGG
AGC	AGCAA	AGCAT	AGCAC	AGCAG	AGCTA	AGCTT	AGCTC	AGCTG	AGCCA	AGCCT	AGCCC	AGCCG	AGCGA	AGCGT	AGCGC	AGCGG
TAA	AGGAA TAAAA	AGGAT TAAAT	AGGAC TAAAC	AGGAG TAAAG	AGGTA TAATA	AGGTT TAATT	AGGTC TAATC	AGGTG TAATG	AGGCA TAACA	AGGCT TAACT	AGGCC TAACC	AGGCG TAACG	AGGGA TAAGA	AGGGT TAAGT	AGGGC TAAGC	AGGGG TAAGG
TAT	TATAA	TATAT	TATAC	TATAG	TATTA	TATTT	TATTC	TATTG	TATCA	TATCT	TATCC	TATCG	TATGA	TATGT	TATGC	TATGG
TAC	TACAA	TACAT	TACAC	TACAG	TACTA	TACTT	TACTC	TACTG	TACCA	TACCT	TACCC	TACCG	TACGA	TACGT	TACGC	TACGG
TAG	TAGAA	TAGAT	TAGAC	TAGAG	TAGTA	TAGTT	TAGTC	TAGTG	TAGCA	TAGCT	TAGCC	TAGCG	TAGGA	TAGGT	TAGGC	TAGGG
TTA	TTAAA	TTAAT	TTAAC	TTAAG	TTATA	TTATT	TTATC	TTATG	TTACA	TTACT	TTACC	TTACG	TTAGA	TTAGT	TTAGC	TTAGG
TTT	TTTAA	TTTAT	TTTAC	TTTAG	TTTTA	TTTTT	TTTTC	TTTTG	TTTCA	TTTCT	TTTCC	TTTCG	TTTGA	TTTGT	TTTGC	TTTGG
TTC	TTCAA	TTCAT	TTCAC	TTCAG	TTCTA	TTCTT	TTCTC	TTCTG	TTCCA	TTCCT	TTCCC	TTCCG	TTCGA	TTCGT	TTCGC	TTCGG
TTG	TTGAA	TTGAT	TTGAC	TTGAG	TTGTA	TTGTT	TTGTC	TTGTG	TTGCA	TTGCT	TTGCC	TTGCG	TTGGA	TTGGT	TTGGC	TTGGG
TCA	TCAAA	TCAAT	TCAAC	TCAAG	TCATA	TCATT	TCATC	TCATG	TCACA	TCACT	TCACC	TCACG	TCAGA	TCAGT	TCAGC	TCAGG
TCT	TCTAA	TCTAT	TCTAC	TCTAG	TCTTA	TCTTT	TCTTC	TCTTG	TCTCA	TCTCT	TCTCC	TCTCG	TCTGA	TCTGT	TCTGC	TCTGG
TCC	TCCAA TCGAA	TCCAT TCGAT	TCCAC TCGAC	TCCAG TCGAG	TCCTA TCGTA	TCCTT TCGTT	TCCTC TCGTC	TCCTG TCGTG	TCCCA TCGCA	TCCCT TCGCT	TCCCC TCGCC	TCCCG TCGCG	TCCGA TCGGA	TCCGT TCGGT	TCCGC TCGGC	TCCGG TCGGG
TGA	TGAAA	TGAAT	TGAAC	TGAAG	TGATA	TGATT	TGATC	TGATG	TGACA	TGACT	TGACC	TGACG	TGAGA	TGAGT	TGAGC	TGAGG
TGT	TGTAA	TGTAT	TGTAC	TGTAG	TGTTA	TGTTT	TGTTC	TGTTG	TGTCA	TGTCT	TGTCC	TGTCG	TGTGA	TGTGT	TGTGC	TGTGG
TGC	TGCAA	TGCAT	TGCAC	TGCAG	TGCTA	TGCTT	TGCTC	TGCTG	TGCCA	TGCCT	TGCCC	TGCCG	TGCGA	TGCGT	TGCGC	TGCGG
TGG	TGGAA	TGGAT	TGGAC	TGGAG	TGGTA	TGGTT	TGGTC	TGGTG	TGGCA	TGGCT	TGGCC	TGGCG	TGGGA	TGGGT	TGGGC	TGGGG
CAA	CAAAA	CAAAT	CAAAC	CAAAG	CAATA	CAATT	CAATC	CAATG	CAACA	CAACT	CAACC	CAACG	CAAGA	CAAGT	CAAGC	CAAGG
CAT	CATAA	CATAT	CATAC	CATAG	CATTA	CATTT	CATTC	CATTG	CATCA	CATCT	CATCC	CATCG	CATGA	CATGT	CATGC	CATGG
CAC	CACAA	CACAT	CACAC	CACAG	CACTA	CACTT	CACTC	CACTG	CACCA	CACCT	CACCC	CACCG	CACGA	CACGT	CACGC	CACGG
CAG	CAGAA	CAGAT	CAGAC	CAGAG	CAGTA	CAGTT	CAGTC	CAGTG	CAGCA	CAGCT	CAGCC	CAGCG	CAGGA	CAGGT	CAGGC	CAGGG
CTA	CTAAA CTTAA	CTAAT CTTAT	CTAAC CTTAC	CTAAG CTTAG	CTATA CTTTA	CTATT CTTTT	CTATC CTTTC	CTATG CTTTG	CTACA CTTCA	CTACT CTTCT	CTACC CTTCC	CTACG CTTCG	CTAGA CTTGA	CTAGT CTTGT	CTAGC CTTGC	CTAGG CTTGG
CTC	CTCAA	CTCAT	CTCAC	CTCAG	CTCTA	CTCTT	CTCTC	CTCTG	CTCCA	CTCCT	CTCCC	CTCCG	CTCGA	CTCGT	CTCGC	CTCGG
CTG	CTGAA	CTGAT	CTGAC	CTGAG	CTGTA	CTGTT	CTGTC	CTGTG	CTGCA	CTGCT	CTGCC	CTGCG	CTGGA	CTGGT	CTGGC	CTGGG
CCA	CCAAA	CCAAT	CCAAC	CCAAG	CCATA	CCATT	CCATC	CCATG	CCACA	CCACT	CCACC	CCACG	CCAGA	CCAGT	CCAGC	CCAGG
CCT	CCTAA	CCTAT	CCTAC	CCTAG	CCTTA	CCTTT	CCTTC	CCTTG	CCTCA	ССТСТ	ССТСС	CCTCG	CCTGA	CCTGT	CCTGC	CCTGG
CCC	CCCAA	CCCAT	CCCAC	CCCAG	CCCTA	CCCTT	CCCTC	CCCTG	CCCCA	CCCCT	CCCCC	CCCCG	CCCGA	CCCGT	CCCGC	CCCGG
									CCGCA							CCGGG
CGA	CGAAA	CGAAT	CGAAC	CGAAG		CGATT	CGATC	CGATG	CGACA	CGACT	CGACC	CGACG	CGAGA	CGAGT	CGAGC	CGAGG
CGT	CGTAA	CCCAT	CGTAC	CGTAG	CGTTA	CGTTT	CGTTC	CGTTG	CGTCA	CGTCT	CGTCC	CGTCG	CGTGA	CGTGT	CGTGC	CGTGG
CGC	CGCAA CGGAA	CGCAT CGGAT	CGCAC CGGAC	CGCAG CGGAG	CGCTA CGGTA	CGCTT CGGTT	CGCTC CGGTC	CGCTG CGGTG	CGCCA CGGCA	CGCCT CGGCT	CGCCC	CGCCG CGGCG	CGCGA CGGGA	CGCGT	CGCGC	CGCGG CGGGG
GAA	GAAAA	GAAAT	GAAAC	GAAAG	GAATA	GAATT	GAATC	GAATG	GAACA	GAACT	GAACC	GAACG	GAAGA	GAAGT	GAAGC	GAAGG
GAT	GATAA	GATAT	GATAC	GATAG	GATTA	GATTT	GATTC	GATTG	GATCA	GATCT	GATCC	GATCG	GATGA	GATGT	GATGC	GATGG
GAC	GACAA	GACAT	GACAC	GACAG	GACTA	GACTT	GACTC	GACTG	GACCA	GACCT	GACCC	GACCG	GACGA	GACGT	GACGC	GACGG
GAG	GAGAA	GAGAT	GAGAC	GAGAG	GAGTA	GAGTT	GAGTC	GAGTG	GAGCA	GAGCT	GAGCC	GAGCG	GAGGA	GAGGT	GAGGC	GAGGG
GTA	GTAAA	GTAAT	GTAAC	GTAAG	GTATA	GTATT	GTATC	GTATG	GTACA	GTACT	GTACC	GTACG	GTAGA	GTAGT	GTAGC	GTAGG
GTT	GTTAA	GTTAT	GTTAC	GTTAG	GTTTA	GTTTT	GTTTC		GTTCA	GTTCT	GTTCC	GTTCG	GTTGA	GTTGT	GTTGC	GTTGG
GTC		GTCAT	GTCAC	GTCAG	GTCTA	GTCTT	GTCTC	GTCTG	GTCCA	GTCCT	GTCCC	GTCCG	GTCGA	GTCGT	GTCGC	GTCGG
GTG	GTGAA	GTGAT	GTGAC	GTGAG	GTGTA	GTGTT	GTGTC	GTGTG	GTGCA	GTGCT	GTGCC	GTGCG	GTGGA	GTGGT	GTGGC	GTGGG
GCA	GCAAA	GCAAT	GCAAC	GCAAG	GCATA	GCATT	GCATC		GCACA	GCACT	GCACC	GCACG	GCAGA	GCAGT	GCAGC	GCAGG
GCT	GCTAA GCCAA	GCTAT GCCAT	GCTAC GCCAC	GCTAG GCCAG	GCTTA GCCTA	GCTTT GCCTT	GCTTC GCCTC	GCTTG GCCTG	GCTCA GCCCA	GCTCT GCCCT	GCTCC GCCCC	GCTCG GCCCG	GCTGA GCCGA	GCTGT GCCGT	GCTGC GCCGC	GCTGG GCCGG
GCG	GCGAA	GCGAT	GCGAC	GCCAG	GCGTA	GCGTT	GCGTC	GCGTG	GCGCA	GCGCT	GCGCC	GCGCG	GCGGA	GCGGT	GCGGC	GCGGG
GGA	GGAAA	GGAAT	GGAAC	GGAAG	GGATA	GGATT	GGATC	GGATG	GGACA	GGACT	GGACC	GGACG	GGAGA	GGAGT	GGAGC	GGAGG
GGT	GGTAA	GGTAT	GGTAC	GGTAG	GGTTA	GGTTT	GGTTC	GGTTG	GGTCA	GGTCT	GGTCC	GGTCG	GGTGA	GGTGT	GGTGC	GGTGG
GGC	GGCAA	GGCAT	GGCAC	GGCAG	GGCTA	GGCTT	GGCTC	GGCTG	GGCCA	GGCCT	GGCCC	GGCCG	GGCGA	GGCGT	GGCGC	GGCGG
GGG	GGGAA	GGGAT	GGGAC	GGGAG	GGGTA	GGGTT	GGGTC	GGGTG	GGGCA	GGGCT	GGGCC	GGGCG	GGGGA	GGGGT	GGGGC	GGGGG

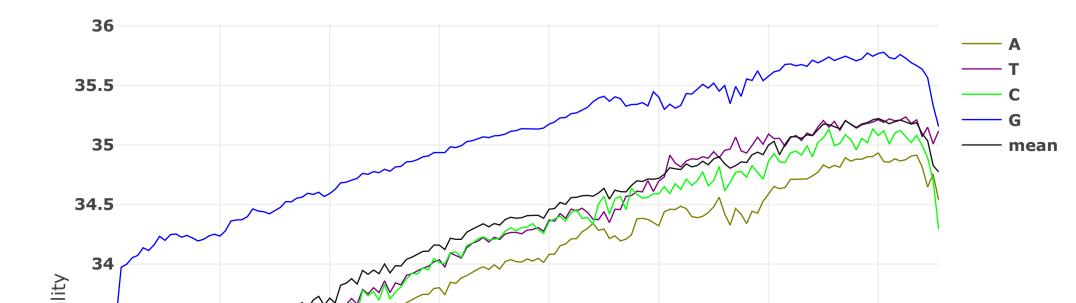
### Before filtering: read1: overrepresented sequences

Sampling rate: 1 / 20

overrepresented sequence	count (% of bases)	distribution: cycle 1 ~ cycle 151
AACACACACACACACACACACACACACACACACACA	7135 (0.055206%)	
AC	11133 (0.086140%)	
ACACACACACACACACACACACACACACACACACACACA	369 (0.002855%)	

ACACACACACACACACACACACACACACACACACACAT	349 (0.002700%)	
AG	2198 (0.017007%)	
CACACACACACACACACACACACACACACACACACA	10100 (0.078147%)	
ccccccccccccccccccccccccccccccccccccccc	19432 (0.150353%)	
ccccccccccccccccccccccccccccccccccccccc	771 (0.014914%)	
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	1384 (0.026771%)	
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	19 (0.000368%)	
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	1245 (0.024083%)	
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	14 (0.000271%)	
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	6 (0.000116%)	
CTCACACACACACACACACACACACACACACACACA	6999 (0.054154%)	
стстстстстстстстстстстстстст	3774 (0.029201%)	
стбтбтбтбтбтбтбтбтбтбтбтбтбтбт	8326 (0.064421%)	
GA	2615 (0.020233%)	
<u>GTGTGTGTGTGTGTGTGTGTGTGTGTGTG</u>	459 (0.003551%)	
<u></u> <u> </u>	17253 (0.133493%)	
TCACACACACACACACACACACACACACACACACAC	2679 (0.020728%)	
тстстстстстстстстстстстстстстстс	4898 (0.037898%)	
TGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTA	254 (0.001965%)	
тстстстстстстстстстстстстстс	7888 (0.061032%)	
ттстстстстстстстстстстстстстст	3641 (0.028172%)	
тттстстстстстстстстстстстстстс	10276 (0.079509%)	

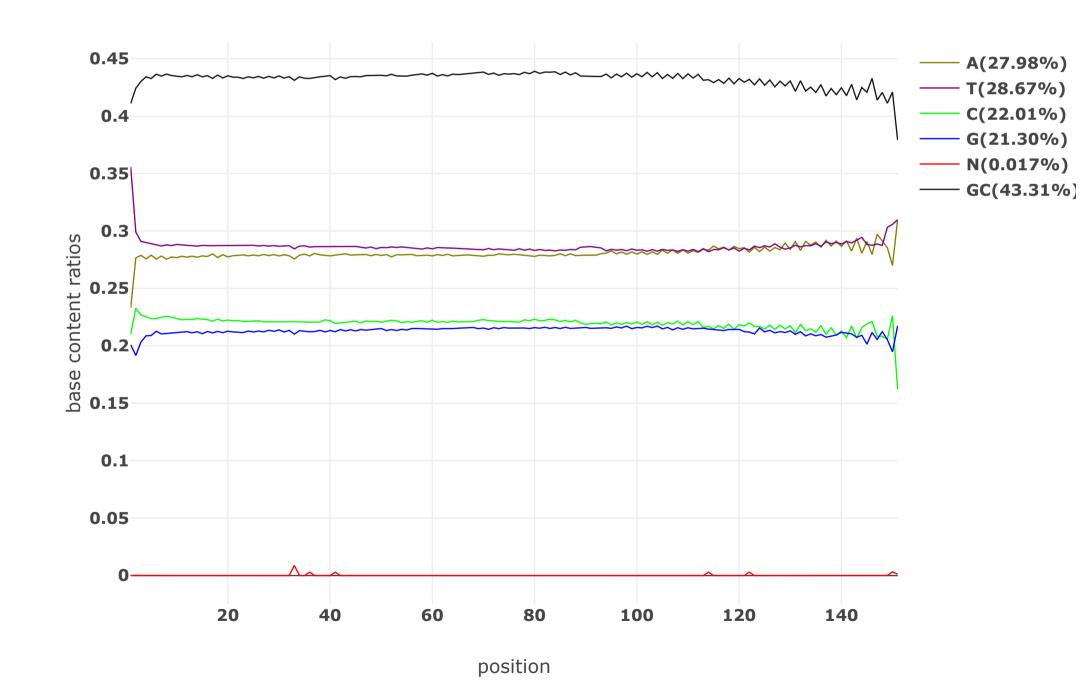
# Before filtering: read2: quality





### Before filtering: read2: base contents

Value of each position will be shown on mouse over.



#### Before filtering: read2: KMER counting

Darker background means larger counts. The count will be shown on mouse over.

	AA	AT	AC	AG	TA	TT	TC	TG	CA	CT	CC	CG	GA	GT	GC	GG
AAA	AAAA	AAAAT	AAAAC	AAAAG	AAATA	AAATT	AAATC	AAATG	AAACA	AAACT	AAACC	AAACG	AAAGA	AAAGT	AAAGC	AAAGG
AAT	AATAA	AATAT	AATAC	AATAG	AATTA	AATTT	AATTC	AATTG	AATCA	AATCT	AATCC	AATCG	AATGA	AATGT	AATGC	AATGG
AAC	AACAA	AACAT	AACAC	AACAG	AACTA	AACTT	AACTC	AACTG	AACCA	AACCT	AACCC	AACCG	AACGA	AACGT	AACGC	AACGG

AAG	AAGAA	AAGAT	AAGAC	AAGAG	AAGTA	AAGTT	AAGTC	AAGTG	AAGCA	AAGCT	AAGCC	AAGCG	AAGGA	AAGGT	AAGGC	AAGGG
ATA	ATAAA	ATAAT	ATAAC	ATAAG	ATATA	ATATT	ATATC	ATATG	ATACA	ATACT	ATACC	ATACG	ATAGA	ATAGT	ATAGC	ATAGG
ATT	ATTAA	ATTAT	ATTAC	ATTAG	ATTTA	ATTTT	ATTTC	ATTTG	ATTCA	ATTCT	ATTCC	ATTCG	ATTGA	ATTGT	ATTGC	ATTGG
ATC	ATCAA	ATCAT	ATCAC	ATCAG	ATCTA	ATCTT	ATCTC	ATCTG	ATCCA	ATCCT	ATCCC	ATCCG	ATCGA	ATCGT	ATCGC	ATCGG
ATG	ATGAA	ATGAT	ATGAC	ATGAG	ATGTA	ATGTT	ATGTC	ATGTG	ATGCA	ATGCT	ATGCC	ATGCG	ATGGA	ATGGT	ATGGC	ATGGG
ACA	ACAAA	ACAAT	ACAAC	ACAAG	ACATA	ACATT	ACATC	ACATG	ACACA	ACACT	ACACC	ACACG	ACAGA	ACAGT	ACAGC	ACAGG
ACT	ACTAA	ACTAT	ACTAC	ACTAG	ACTTA	ACTTT	ACTTC	ACTTG	ACTCA	ACTCT	ACTCC	ACTCG	ACTGA	ACTGT	ACTGC	ACTGG
ACC	ACCAA	ACCAT	ACCAC	ACCAG	ACCTA	ACCTT	ACCTC	ACCTG	ACCCA	ACCCT	ACCCC	ACCCG	ACCGA	ACCGT	ACCGC	ACCGG
ACG	ACGAA	ACGAT	ACGAC	ACGAG	ACGTA	ACGTT	ACGTC	ACGTG	ACGCA	ACGCT	ACGCC	ACGCG	ACGGA	ACGGT	ACGGC	ACGGG
AGA	AGAAA	AGAAT	AGAAC	AGAAG	AGATA	AGATT	AGATC	AGATG	AGACA	AGACT	AGACC	AGACG	AGAGA	AGAGT	AGAGC	AGAGG
AGT	AGTAA	AGTAT	AGTAC	AGTAG	AGTTA	AGTTT	AGTTC	AGTTG	AGTCA	AGTCT	AGTCC	AGTCG	AGTGA	AGTGT	AGTGC	AGTGG
AGC	AGCAA	AGCAT	AGCAC	AGCAG	AGCTA	AGCTT	AGCTC	AGCTG	AGCCA	AGCCT	AGCCC	AGCCG	AGCGA	AGCGT	AGCGC	AGCGG
AGG	AGGAA	AGGAT	AGGAC	AGGAG	AGGTA	AGGTT	AGGTC	AGGTG	AGGCA	AGGCT	AGGCC	AGGCG	AGGGA	AGGGT	AGGGC	AGGGG
TAA	TAAAA	TAAAT	TAAAC	TAAAG	TAATA	TAATT	TAATC	TAATG	TAACA	TAACT	TAACC	TAACG	TAAGA	TAAGT	TAAGC	TAAGG
TAT	TATAA	TATAT	TATAC	TATAG	TATTA	TATTT	TATTC	TATTG	TATCA	TATCT	TATCC	TATCG	TATGA	TATGT	TATGC	TATGG
TAC	TACAA TAGAA	TACAT TAGAT	TACAC TAGAC	TACAG TAGAG	TACTA TAGTA	TACTT TAGTT	TACTC TAGTC	TACTG TAGTG	TACCA TAGCA	TACCT TAGCT	TACCC TAGCC	TACCG TAGCG	TACGA TAGGA	TACGT TAGGT	TACGC TAGGC	TACGG TAGGG
TTA	TTAGAA	TTAGAT	TTAGAC	TTAGAG	TTATA	TTATT	TTATC	TTATG	TTACA	TTACT	TTACC	TTACC	TTAGGA	TTAGT	TTAGC	TTAGG
TTT	TTTAA	TTTAT	TTTAC	TTTAG	TTTTA	TTTTT	TTTTC	TTTTG	TTTCA	TTTCT	TTTCC	TTTCG	TTTGA	TTTGT	TTTGC	TTTGG
TTC	TTCAA	TTCAT	TTCAC	TTCAG	TTCTA	TTCTT	TTCTC	TTCTG	TTCCA	TTCCT	TTCCC	TTCCG	TTCGA	TTCGT	TTCGC	TTCGG
TTG	TTGAA	TTGAT	TTGAC	TTGAG	TTGTA	TTGTT	TTGTC	TTGTG	TTGCA	TTGCT	TTGCC	TTGCG	TTGGA	TTGGT	TTGGC	TTGGG
TCA	TCAAA	TCAAT	TCAAC	TCAAG	TCATA	TCATT	TCATC	TCATG	TCACA	TCACT	TCACC	TCACG	TCAGA	TCAGT	TCAGC	TCAGG
TCT	TCTAA	TCTAT	TCTAC	TCTAG	TCTTA	TCTTT	TCTTC	TCTTG	TCTCA	TCTCT	TCTCC	TCTCG	TCTGA	TCTGT	TCTGC	TCTGG
TCC	TCCAA	TCCAT	TCCAC	TCCAG	TCCTA	TCCTT	ТССТС	TCCTG	TCCCA	TCCCT	TCCCC	TCCCG	TCCGA	TCCGT	TCCGC	TCCGG
TCG	TCGAA	TCGAT	TCGAC	TCGAG	TCGTA	TCGTT	TCGTC	TCGTG	TCGCA	TCGCT	TCGCC	TCGCG	TCGGA	TCGGT	TCGGC	TCGGG
TGA	TGAAA	TGAAT	TGAAC	TGAAG	TGATA	TGATT	TGATC	TGATG	TGACA	TGACT	TGACC	TGACG	TGAGA	TGAGT	TGAGC	TGAGG
TGT	TGTAA	TGTAT	TGTAC	TGTAG	TGTTA	TGTTT	TGTTC	TGTTG	TGTCA	TGTCT	TGTCC	TGTCG	TGTGA	TGTGT	TGTGC	TGTGG
TGC	TGCAA	TGCAT	TGCAC	TGCAG	TGCTA	TGCTT	TGCTC	TGCTG	TGCCA	TGCCT	TGCCC	TGCCG	TGCGA	TGCGT	TGCGC	TGCGG
TGG	TGGAA	TGGAT	TGGAC	TGGAG	TGGTA	TGGTT	TGGTC	TGGTG	TGGCA	TGGCT	TGGCC	TGGCG	TGGGA	TGGGT	TGGGC	TGGGG
CAA	CAAAA	CAAAT	CAAAC	CAAAG	CAATA	CAATT	CAATC	CAATG	CAACA	CAACT	CAACC	CAACG	CAAGA	CAAGT	CAAGC	CAAGG
CAT	CATAA	CATAT	CATAC	CATAG	CATTA	CATTT	CACTC	CATTG	CATCA	CATCT	CATCC	CATCG	CATGA	CATGT	CATGC	CATGG
CAC	CACAA	CACAT	CACAC	CACAG	CACTA	CACTT	CACTC	CACTG	CACCA	CACCT	CACCC	CACCG	CACGA	CACGT	CACGC	CACGG
							ICACTO								CACCC	CACCC
CAG	CAGAA	CAGAT	CAGAC	CAGAG	CAGTA	CAGTT	CAGTC	CAGTG	CAGCA	CAGCT	CAGCC	CAGCG	CAGGA	CAGGT	CAGGC	CAGGG
СТА	СТААА	СТААТ	СТААС	CTAAG	СТАТА	CTATT	CTATC	CTATG	CTACA	CTACT	CTACC	CTACG	CTAGA	CTAGT	CTAGC	CTAGG
CTA CTT	CTAAA CTTAA	CTAAT CTTAT	CTAAC CTTAC	CTAAG CTTAG	CTATA CTTTA	CTATT CTTTT	CTATC CTTTC	CTATG CTTTG	CTACA CTTCA	CTACT CTTCT	CTACC CTTCC	CTACG CTTCG	CTAGA CTTGA	CTAGT CTTGT	CTAGC CTTGC	CTAGG CTTGG
CTA CTT CTC	CTAAA CTTAA CTCAA	CTAAT CTTAT CTCAT	CTAAC CTTAC CTCAC	CTAAG CTTAG CTCAG	CTATA CTTTA CTCTA	CTATT CTTTT CTCTT	CTATC CTTTC CTCTC	CTATG CTTTG CTCTG	CTACA CTTCA CTCCA	CTACT CTTCT CTCCT	CTACC CTTCC CTCCC	CTACG CTTCG CTCCG	CTAGA CTTGA CTCGA	CTAGT CTTGT CTCGT	CTAGC CTTGC CTCGC	CTAGG CTTGG CTCGG
CTA CTT CTC CTG	CTAAA CTTAA	CTAAT CTTAT CTCAT CTGAT	CTAAC CTTAC CTCAC CTGAC	CTAAG CTTAG CTCAG CTGAG	CTATA CTTTA CTCTA CTGTA	CTATT CTTTT	CTATC CTTTC	CTATG CTTTG CTCTG CTGTG	CTACA CTTCA CTCCA CTGCA	CTACT CTTCT CTCCT CTGCT	CTACC CTTCC	CTACG CTTCG CTCCG CTGCG	CTAGA CTTGA CTCGA CTGGA	CTAGT CTTGT CTCGT CTGGT	CTAGC CTTGC CTCGC CTGGC	CTAGG CTTGG CTCGG CTGGG
CTA CTT CTC	CTAAA CTTAA CTCAA CTGAA	CTAAT CTTAT CTCAT	CTAAC CTTAC CTCAC	CTAAG CTTAG CTCAG CTGAG CCAAG	CTATA CTTTA CTCTA	CTATT CTTTT CTCTT CTGTT	CTATC CTTTC CTCTC CTGTC	CTATG CTTTG CTCTG	CTACA CTTCA CTCCA	CTACT CTTCT CTCCT	CTACC CTTCC CTCCC CTGCC	CTACG CTTCG CTCCG	CTAGA CTTGA CTCGA	CTAGT CTTGT CTCGT	CTAGC CTTGC CTCGC	CTAGG CTTGG CTCGG
CTA CTT CTC CTG CCA	CTAAA CTTAA CTCAA CTGAA CCAAA	CTAAT CTTAT CTCAT CTGAT CCAAT	CTAAC CTTAC CTCAC CTGAC CCAAC	CTAAG CTTAG CTCAG CTGAG	CTATA CTTTA CTCTA CTGTA CCATA	CTATT CTTTT CTCTT CTGTT CCATT	CTATC CTTTC CTCTC CTGTC CCATC	CTATG CTTTG CTCTG CTGTG CCATG	CTACA CTTCA CTCCA CTGCA CCACA	CTACT CTTCT CTCCT CTGCT CCACT	CTACC CTTCC CTCCC CTGCC CCACC	CTACG CTTCG CTCCG CTGCG CCACG	CTAGA CTTGA CTCGA CTGGA CCAGA	CTAGT CTTGT CTCGT CTGGT CCAGT	CTAGC CTTGC CTCGC CTGGC CCAGC	CTAGG CTTGG CTCGG CTGGG CCAGG
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CTA CTT CTC CTG CCA CCT CCC CCG CGA CGT CGC CGG GAA GAT GAC GAG GTA	CTAAA CTTAA CTCAA CTGAA CCAAA CCTAA CCCAA CCGAA CGGAA CGGAA CGGAA CGGAA GAAAA GATAA GACAA GACAA	CTAAT CTTAT CTGAT CCAAT CCAAT CCCAT CCGAT CGAAT CGCAT CGCAT CGCAT CGGAT CGCAT CGCAT CGCAT CGCAT CAAAT CAAAT GAAAT GAAAT GACAT GACAT	CTAAC CTTAC CTCAC CTGAC CCAAC CCTAC CCGAC CGGAC	CTAAG CTTAG CTCAG CTGAG CCAAG CCTAG CCGAG CGAAG CGTAG CGCAG	CTATA CTTTA CTCTA CTGTA CCATA CCATA CCCTA CCGTA CGATA CGGTA CGGTA CGGTA CGGTA CGGTA CGGTA GAATA GATTA GACTA GAGTA	CTATT CTTTT CTGTT CCATT CCATT CCGTT CCGTT CGATT CGGTT CGGTT CGGTT CGGTT CGGTT CGGTT GAATT GAATT GATTT GACTT GAGTT	CTATC CTTTC CTGTC CCATC CCATC CCCTC CCGTC CGATC CGGTC CGGTC CGGTC CGGTC CGGTC GAATC GAATC GATC G	CTATG CTTTG CTCTG CTGTG CCATG CCCTG CCGTG CGGTG CGGTG CGGTG CGGTG CGGTG CGGTG CGGTG GAATG GAATG GATTG GACTG GACTG GACTG	CTACA CTTCA CTCCA CTGCA CCACA CCTCA CCGCA CGGCA CGGCA CGGCA CGGCA CGGCA CGGCA CGGCA CGGCA CGGCA GAACA GATCA GACCA GACCA	CTACT CTTCT CTCCT CTGCT CCACT CCTCT CCGCT CCGCT CGACT CGGCT CGCCT CGGCT CGGCT CGGCT GAACT GATCT GACCT GACCT GACCT GACCT	CTACC CTTCC CTCCC CTGCC CCACC CCTCC CCGCC CGGCC CGGCC CGGCC CGGCC CGGCC GAACC GACC	CTACG CTTCG CTCCG CTGCG CCACG CCTCG CCGCG CCGCG CGACG CGGCG CGGCG CGGCG GAACG GAACG GACCG	CTAGA CTTGA CTCGA CTGGA CCAGA CCTGA CCCGA CCGGA CGGGA CGGGA CGGGA CGGGA GAAGA GATGA GACGA GAGGA GAGGA	CTAGT CTTGT CTCGT CTGGT CCAGT CCTGT CCGGT CCGGT CGGGT CGGGT CGGGT CGGGT CGGGT GAAGT GAAGT GACGT GACGT GACGT	CTAGC CTTGC CTGGC CTGGC CCAGC CCTGC CCGGC CCGGC CGGGC CGGGC CGGGC GAAGC GAAGC GAAGC GAAGC GAAGC GAAGC GAAGC GAAGC	CTAGG CTTGG CTCGG CTGGG CCAGG CCTGG CCGGG CCGGG CGAGG CGTGG CGGGG CGGGG CGGGG CGGGG GAAGG GAAGG GATGG GACGG GAGGG
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CTA CTT CTC CTG CCA CCT CCC CCG CGA CGT CGC CGG GAA GAT GAC GAG GTA GTT	CTAAA CTTAA CTCAA CTGAA CCAAA CCTAA CCCAA CCGAA CGGAA CGTAA CGCAA GAAAA GATAA GACAA GATAA GTTAA GTCAA GTGAA	CTAAT CTTAT CTCAT CTGAT CCAAT CCCAT CCGAT CGAAT CGCAT CGGAT CGGAT CGGAT CGGAT GAAAT GATAT GACAT GACAT GACAT GACAT GAGAT GTAAT GTCAT	CTAAC CTTAC CTCAC CTGAC CCAAC CCTAC CCGAC CGGAC CGGAC CGGAC CGGAC CGGAC CGGAC GAAAC GATAC GACAC GATAC GACAC GACAC GACAC GACAC GACAC GACAC GACAC GACAC GACAC	CTAAG CTTAG CTCAG CTGAG CCAAG CCCAG CCGAG CGAAG CGTAG CGCAG CGAAG CGCAG CGAAG CGCAG GAAAG GATAG GACAG GATAG GACAG GATAG GACAG GATAG GACAG GATAG	CTATA CTTTA CTCTA CTGTA CCATA CCATA CCCTA CCGTA CGGTA CGGTA CGGTA CGGTA CGGTA GAATA GATTA GACTA GATTA GACTA GATTA GACTA GTTTA GTTTA GTCTA	CTATT CTTTT CTCTT CTGTT CCATT CCTTT CCGTT CGGTT CGGTT CGGTT CGGTT CGGTT CGGTT GAATT GATTT GACTT GAGTT GAGTT GAGTT GAGTT GAGTT GTTTT GTTTT	CTATC CTTTC CTGTC CCATC CCATC CCGTC CCGTC CGATC CGGTC CGGTC CGGTC CGGTC GAATC GATC G	CTATG CTTTG CTCTG CTGTG CCATG CCATG CCCTG CCGTG CGGTG CGGTG CGGTG CGGTG GAATG GATTG GACTG GATTG	CTACA CTTCA CTCCA CTGCA CCACA CCTCA CCGCA CGGCA CGGCA CGGCA CGGCA GACCA GATCA GATCA GACCA GATCA GATCA GATCA GATCA GATCA GATCA GTTCA GTTCA	CTACT CTTCT CTCCT CTGCT CCACT CCTCT CCGCT CGGCT CGGCT CGGCT CGGCT GAACT GATCT	CTACC CTTCC CTCCC CTGCC CCACC CCTCC CCGCC CGGCC CGGCC CGGCC CGGCC GACC	CTACG CTTCG CTCCG CTCCG CCACG CCTCG CCGCG CGACG CGGCG CGGCG CGCCG CGCCG GACCG	CTAGA CTTGA CTCGA CTGGA CCAGA CCAGA CCCGA CCGGA CGGGA CGGGA CGGGA CGGGA GAAGA GATGA GACGA GATGA GATGA GTTGA GTTGA GTTGA	CTAGT CTTGT CTCGT CTGGT CCAGT CCTGT CCGGT CCGGT CGGGT CGGGT CGGGT CGGGT GAAGT GATGT	CTAGC CTTGC CTGGC CTGGC CCAGC CCTGC CCGGC CCGGC CGGGC CGGGC CGGGC GAAGC GAAGC GAAGC GATGC GACGC	CTAGG CTTGG CTCGG CTGGG CCAGG CCTGG CCGGG CCGGG CGAGG CGGGG CGGGG CGGGG CGGGG GAAGG GATGG GACGG GAGGG GAGGG GAGGG GAGGG GATGG GAGGG
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CTA CTT CTC CTG CCA CCT CCC CCG CGA CGT CGC CGG GAA GAT GAC GAG GTA GTT GTC GTG GCA	CTAAA CTTAA CTCAA CTGAA CCAAA CCTAA CCCAA CCGAA CGGAA CGTAA CGCAA CGGAA GAAAA GATAA GACAA GATAA GTTAA GTCAA GTGAA GTGAA	CTAAT CTTAT CTCAT CTGAT CCAAT CCCAT CCGAT CGAAT CGGAT CGGAT CGGAT CGGAT GAAAT GATAT GACAT GACAT GTAAT GTCAT GTCAT	CTAAC CTTAC CTCAC CTGAC CCAAC CCTAC CCGAC CGGAC CGGAC CGGAC CGGAC CGGAC GAAAC GATAC GACAC	CTAAG CTTAG CTCAG CTGAG CCAAG CCTAG CCCAG CCGAG CGAAG CGTAG CGCAG CGGAG GAAAG GATAG GACAG GATAG GACAG GTAAG GTAAG GTAAG GTAAG GTAAG GTAAG	CTATA CTTTA CTCTA CTGTA CCATA CCATA CCCTA CCGTA CGGTA CGGTA CGGTA CGGTA CGGTA GAATA GATTA GACTA GATTA GACTA GTTTA GTTTA GTCTA GTGTA	CTATT CTTTT CTCTT CTGTT CCATT CCTTT CCGTT CGGTT CGGTT CGGTT CGGTT CGGTT GAATT GATTT GACTT GAGTT GAGTT GTTTT GTTTT GTCTT GTGTT GTGTT	CTATC CTTTC CTGTC CCATC CCATC CCGTC CCGTC CGGTC CGGTC CGGTC CGGTC GAATC GATTC GACTC GATTC GACTC GATTC GACTC	CTATG CTTTG CTCTG CTGTG CCATG CCATG CCCTG CCGTG CGATG CGGTG CGGTG CGGTG GAATG GATTG GACTG GATTG	CTACA CTTCA CTCCA CTGCA CCACA CCTCA CCGCA CGGCA CGGCA CGGCA GACA GA	CTACT CTTCT CTCCT CTGCT CCACT CCACT CCGCT CGGCT CGGCT CGGCT CGCCT CGGCT GAACT GATCT	CTACC CTTCC CTCCC CTGCC CCACC CCGCC CGGCC CGGCC CGGCC CGGCC GACC	CTACG CTTCG CTCCG CTCCG CCACG CCCCG CCGCG CGACG CGCCG CGCCG CGCCG GACCG	CTAGA CTTGA CTCGA CTGGA CCAGA CCAGA CCCGA CCGGA CGGGA CGGGA CGGGA CGGGA GAAGA GATGA GACGA GATGA GATGA GTTGA GTTGA GTTGA GTTGA	CTAGT CTTGT CTCGT CTGGT CCAGT CCTGT CCGGT CCGGT CGGGT CGGGT CGGGT CGGGT GAAGT GATGT	CTAGC CTTGC CTGGC CTGGC CCAGC CCGGC CCGGC CGGGC CGGGC CGGGC GAGC GAAGC GATGC GACGC	CTAGG CTTGG CTCGG CTGGG CCAGG CCAGG CCGGG CGAGG CGAGG CGGGG CGGGG CGGGG GAAGG GATGG GACGG GAGGG GATGG GAGGG
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CTA CTT CTC CTG CCA CCT CCC CCG CGA CGT CGC CGG GAA GAT GAC GAG GTA GTT GTC GTG GCA GCT	CTAAA CTTAA CTCAA CTGAA CCAAA CCTAA CCCAA CCGAA CGGAA CGTAA CGCAA GAAAA GATAA GACAA GTTAA GTCAA GTCAA GTCAA GTCAA GCCAA GCCAA GCCAA GCCAA	CTAAT CTTAT CTCAT CTGAT CCAAT CCCAT CCGAT CGGAT CGGAT CGGAT CGGAT GAAAT GATAT	CTAAC CTTAC CTCAC CTGAC CCAAC CCTAC CCGAC CGGAC CGGAC CGGAC GGAAC GATAC	CTAAG CTTAG CTCAG CTGAG CCAAG CCTAG CCCAG CCGAG CGAAG CGTAG CGCAG GAAAG GATAG GATAG GATAG GTTAG GTTAG GTTAG GTCAG GTTAG GTCAG GTAG GT	CTATA CTTTA CTCTA CTGTA CCATA CCATA CCCTA CCGTA CGGTA CGGTA CGGTA CGGTA GATTA GATTA GATTA GATTA GTTTA GTTTA GTTTA GCATA GCATA GCATA GCATA GCATA GCATA GCATA	CTATT CTTTT CTCTT CTGTT CCATT CCATT CCGTT CCGTT CGATT CGGTT CGGTT CGGTT GAATT GATTT GACTT GATTT GACTT GTTTT GTTTT GTCTT GTGTT GCATT GCATT GCATT GCATT GCATT GCATT GCATT	CTATC CTTTC CTTCC CTGTC CCATC CCATC CCGTC CCGTC CGGTC CGGTC CGGTC GAATC GATTC GATTC GATTC GATTC GATTC GATTC GATTC GATTC GATTC GTTTC GTTTC GTTTC GTTTC GCATC GCATC GCATC GCATC GCATC	CTATG CTTTG CTTTG CTCTG CTGTG CCATG CCTTG CCGTG CGGTG CGGTG CGGTG GAATG GATTG GATTG GATTG GATTG GATTG GATTG GATTG GTTTG GTTTG GTTTG GTTTG GCTTG GCTTG GCTTG GCTTG GCTTG GCTTG	CTACA CTTCA CTCCA CTGCA CCACA CCACA CCGCA CGGCA CGGCA CGGCA GACA GATCA GATCA GATCA GTTCA	CTACT CTTCT CTCCT CTGCT CCACT CCACT CCGCT CGGCT CGGCT CGGCT CGCCT CGGCT GAACT GATCT GATCT GATCT GATCT GTCT G	CTACC CTTCC CTCCC CTGCC CCACC CCGCC CGGCC CGGCC CGGCC GACC GCACC GCACC	CTACG CTTCG CTCCG CTCCG CCACG CCACG CCCCG CCGCG CGACG CGCCG CGCCG GACCG GCACG GCACG	CTAGA CTTGA CTCGA CTGGA CCAGA CCAGA CCCGA CCGGA CGGGA CGGGA CGGGA GAGGA GATGA GATGA GTTGA	CTAGT CTTGT CTCGT CTGGT CCAGT CCAGT CCGGT CCGGT CGGGT CGGGT CGGGT GAAGT GATGT	CTAGC CTTGC CTTGC CTGGC CCAGC CCAGC CCGGC CCGGC CGGGC CGGGC CGGGC GAAGC GATGC GATGC GATGC GATGC GATGC GATGC GATGC GTTGC GCGC GCAGC GCGC GC	CTAGG CTTGG CTCGG CTGGG CCAGG CCAGG CCGGG CCGGG CGAGG CGGGG CGGGG CGGGG GAAGG GATGG GAGGG GTTGG GTGGG GCAGG GCAGG GCAGG
CTA CTT CTC CTG CCA CCT CCC CCG CGA CGT CGC CGG GAA GAT GAC GAG GTA GTT GTC GTG GCA GCT GCC GCG GGA GGT	CTAAA CTTAA CTCAA CTGAA CCAAA CCTAA CCCAA CCGAA CGGAA CGTAA CGCAA GAAAA GATAA GACAA GTTAA GTCAA GTCAA GTCAA GCCAA GCCAA GCCAA GCCAA GCCAA GCCAA	CTAAT CTTAT CTCAT CTGAT CCAAT CCCAT CCCAT CCGAT CGAAT CGCAT CGAT CG	CTAAC CTTAC CTCAC CTGAC CCAAC CCCAC CCGAC CGGAC CGGAC CGGAC GGAAC GATAC	CTAAG CTTAG CTCAG CTGAG CCAAG CCCAG CCGAG CGAAG CGTAG CGCAG CGAAG CGTAG GAAAG GATAG GATAG GATAG GTAAG	CTATA CTTTA CTCTA CTGTA CCATA CCATA CCCTA CCGTA CGGTA CGGTA CGGTA CGGTA GAATA GACTA GATTA GACTA GATTA GACTA GATTA GACTA GTTA GT	CTATT CTTTT CTCTT CTGTT CCATT CCATT CCGTT CCGTT CGATT CGGTT CGGTT CGGTT CGGTT GAATT GATTT GACTT GATTT GATTT GTTTT GTCTT GTGTT GCGTT GCGTT GCGTT GCGTT GCGTT GCGTT GCGTT GCGTT	CTATC CTTTC CTTCC CTGTC CCATC CCATC CCGTC CCGTC CGATC CGGTC CGGTC CGGTC GATC GA	CTATG CTTTG CTCTG CTGTG CCATG CCATG CCCTG CCGTG CGATG CGGTG CGGTG CGGTG GAATG GATTG GATTG GATTG GATTG GATTG GTTTG GTTTG GTTTG GCTTG GCTTG GCTTG GCTTG GCTTG GCTTG GCTTG GCTTG	CTACA CTTCA CTCCA CTGCA CCACA CCACA CCGCA CCGCA CGGCA CGGCA CGGCA GACCA GATCA GATCA GATCA GTTCA GTTCA GTTCA GTTCA GTTCA GTTCA GTTCA GCACA	CTACT CTTCT CTCCT CTGCT CCACT CCACT CCGCT CGGCT CGGCT CGGCT CGCCT CGGCT GAACT GATCT GATCT GATCT GATCT GTCT G	CTACC CTTCC CTCCC CTGCC CCACC CCGCC CGGCC CGGCC CGGCC GACC GCACC GCACC GCACC GCACC GCACC GCACC GCACC	CTACG CTTCG CTCCG CTCCG CCACG CCACG CCCCG CCGCG CGACG CGCCG CGCCG GACCG GCACG GCACG	CTAGA CTTGA CTCGA CTGGA CCAGA CCAGA CCCGA CCGGA CGGGA CGGGA CGGGA GAGGA GATGA GATGA GTTGA GTTGA GTTGA GTTGA GTTGA GTTGA GTTGA GTTGA GCGGA GCGGA GCGGA GCGGA GCGGA GCGGA GCGGA	CTAGT CTTGT CTCGT CTGGT CCAGT CCAGT CCGGT CCGGT CGGGT CGGGT CGGGT GAAGT GATGT	CTAGC CTTGC CTTGC CTGGC CCAGC CCAGC CCGGC CCGGC CGGGC CGGGC CGGGC GAAGC GATGC GATGC GATGC GATGC GATGC GATGC GATGC GTTGC	CTAGG CTTGG CTCGG CTGGG CCAGG CCAGG CCGGG CCGGG CGAGG CGAGG CGGGG CGGGG GAAGG GATGG GAGGG GTTGG GTGG G
CTA CTT CTC CTG CCA CCT CCC CCG CGA CGT CGC CGG GAA GAT GAC GAG GTA GTT GTC GTG GCA GCT GCC GCG GGA GCT GCC GCG GGA	CTAAA CTTAA CTCAA CTGAA CCAAA CCCAA CCCAA CCGAA CGGAA CGTAA CGCAA CGGAA GAAAA GATAA GACAA GTAAA GTAAA GTCAA GTCAA GCCAA GCAAA GTAAA GTCAA GCCAA GCAAA GCAAA GCAAA GCAAA	CTAAT CTTAT CTCAT CTGAT CCAAT CCCAT CCCAT CCGAT CGAAT CGCAT CGAT CG	CTAAC CTTAC CTCAC CTGAC CCAAC CCCAC CCGAC CGAAC CGGAC CGAAC CGAAC GAAAC GATAC GACAC GATAC GACAC GCCAC	CTAAG CTTAG CTCAG CTGAG CCAAG CCCAG CCCAG CCGAG CGAAG CGTAG CGAG GAAAG GATAG GACAG GATAG GACAG GTAAG	CTATA CTTTA CTCTA CTGTA CCATA CCATA CCCTA CCGTA CGGTA CGGTA CGGTA CGGTA GAATA GACTA GACTA GACTA GACTA GACTA GACTA GACTA GTTA GT	CTATT CTTTT CTCTT CTGTT CCATT CCATT CCGTT CCGTT CGATT CGGTT CGGTT CGGTT CGGTT GAATT GACTT	CTATC CTTTC CTGTC CCATC CCATC CCCTC CCGTC CGATC CGATC CGATC CGATC CGATC CGATC CGATC GAATC GAATC GACTC GCATC GCATC GCATC GCATC GCATC GCATC	CTATG CTTTG CTTTG CTCTG CTGTG CCATG CCCTG CCGTG CGATG CGATG CGTTG CGATG CGATG CGTTG CGATG GAATG GAATG GATTG GACTG GAGTG GGGTG GGATG GCTTG GCTG	CTACA CTTCA CTCCA CTGCA CCACA CCTCA CCCCA CCCCA CCGCA CGACA CGTCA CGCCA GACCA GATCA GATCA GATCA GATCA GATCA GTCCA GCCCA GCCCA GCCCA GCCCA GCCCA GCCCA	CTACT CTTCT CTCCT CTGCT CCACT CCACT CCCCT CCGCT CGACT CGACT CGCT CG	CTACC CTTCC CTCCC CTGCC CCACC CCCCC CCGCC CGACC CGACC CGACC CGACC GACC GCCC	CTACG CTTCG CTCCG CTCCG CCACG CCCCG CCCCG CCGCG CGACG CGACG CGCG GAACG GATCG GACCG GCCCG GCCCG	CTAGA CTTGA CTCGA CTGGA CCAGA CCAGA CCCGA CCGGA CGGGA CGGGA CGGGA GAGGA GATGA GATGA GTGGA GCGGA GCGGA GCGGA GCGGA	CTAGT CTTGT CTCGT CTGGT CCAGT CCAGT CCGGT CCGGT CGGGT CGGGT CGGGT CGGGT GAAGT GATGT	CTAGC CTTGC CTTGC CTGGC CCAGC CCAGC CCGGC CCGGC CGGGC CGAGC CGGGC GAAGC GATGC GCAGC	CTAGG CTTGG CTCGG CTGGG CCAGG CCAGG CCGGG CCGGG CGAGG CGGGG CGAGG CGGGG CGGGG CGGGG GAAGG GATGG GATGG GTTGG GTTGG GTTGG GTTGG GTTGG GTCGG GCGGG GCAGG GCAGG GCAGG GCAGG GCAGG GCAGG GCAGG
CTA CTT CTC CTG CCA CCT CCC CCG CGA CGT CGC CGG GAA GAT GAC GAG GTA GTT GTC GTG GCA GCT GCC GCG GGA GGT	CTAAA CTTAA CTCAA CTGAA CCAAA CCTAA CCCAA CCGAA CGGAA CGTAA CGCAA GAAAA GATAA GATAA GTTAA GTCAA GTCAA GCCAA GCAAA GCAAA GCAAA GCAAA GCAAA GCAAA GCAAA	CTAAT CTTAT CTCAT CTGAT CCAAT CCCAT CCCAT CCGAT CGAAT CGCAT CGAT CG	CTAAC CTTAC CTCAC CTGAC CCAAC CCCAC CCGAC CGGAC CGGAC CGGAC GGAAC GATAC	CTAAG CTTAG CTCAG CTGAG CCAAG CCCAG CCGAG CGAAG CGTAG CGCAG CGAAG CGTAG GAAAG GATAG GATAG GATAG GTAAG	CTATA CTTTA CTCTA CTGTA CCATA CCATA CCCTA CCGTA CGGTA CGGTA CGGTA CGGTA GAATA GACTA GATTA GACTA GATTA GACTA GATTA GACTA GTTA GT	CTATT CTTTT CTCTT CTGTT CCATT CCATT CCGTT CCGTT CGATT CGGTT CGGTT CGGTT CGGTT GAATT GATTT GACTT GATTT GACTT GTTTT GTCTT GTCTT GTCTT GCATT	CTATC CTTTC CTTCC CTGTC CCATC CCATC CCGTC CCGTC CGATC CGGTC CGGTC CGGTC GATC GA	CTATG CTTTG CTCTG CTGTG CCATG CCATG CCCTG CCGTG CGATG CGGTG CGGTG CGGTG GAATG GATTG GATTG GATTG GATTG GATTG GTTTG GTTTG GTTTG GCTTG GCTTG GCTTG GCTTG GCTTG GCTTG GCTTG GCTTG	CTACA CTTCA CTCCA CTGCA CCACA CCACA CCGCA CCGCA CGGCA CGGCA CGGCA GACCA GATCA GATCA GATCA GTTCA GTTCA GTTCA GTTCA GTTCA GTTCA GTTCA GCACA	CTACT CTTCT CTCCT CTGCT CCACT CCACT CCGCT CGGCT CGGCT CGGCT CGCCT CGGCT GAACT GATCT GATCT GATCT GATCT GTCT G	CTACC CTTCC CTCCC CTGCC CCACC CCGCC CGGCC CGGCC CGGCC GACC GCACC GCACC GCACC GCACC GCACC GCACC GCACC	CTACG CTTCG CTCCG CTCCG CCACG CCACG CCCCG CCGCG CGACG CGCCG CGCCG GACCG GCACG GCACG	CTAGA CTTGA CTCGA CTGGA CCAGA CCAGA CCCGA CCGGA CGGGA CGGGA CGGGA GAGGA GATGA GATGA GTTGA GTTGA GTTGA GTTGA GTTGA GTTGA GTTGA GTTGA GCGGA GCGGA GCGGA GCGGA GCGGA GCGGA GCGGA	CTAGT CTTGT CTCGT CTGGT CCAGT CCAGT CCGGT CCGGT CGGGT CGGGT CGGGT GAAGT GATGT	CTAGC CTTGC CTTGC CTGGC CCAGC CCAGC CCGGC CCGGC CGGGC CGGGC CGGGC GAAGC GATGC GATGC GATGC GATGC GATGC GATGC GATGC GTTGC	CTAGG CTTGG CTCGG CTGGG CCAGG CCAGG CCGGG CCGGG CGAGG CGAGG CGGGG CGGGG GAAGG GATGG GAGGG GTTGG GTGG G

# Before filtering: read2: overrepresented sequences

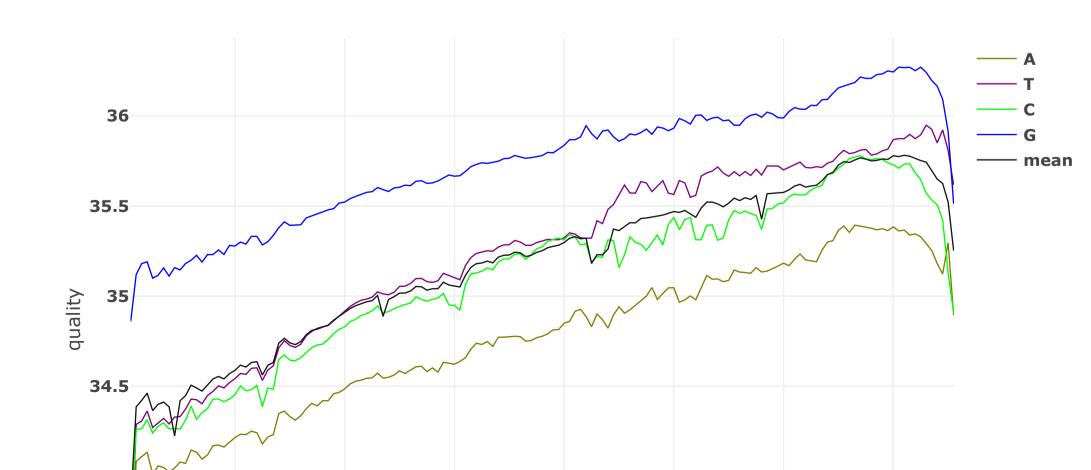
Sampling rate: 1 / 20

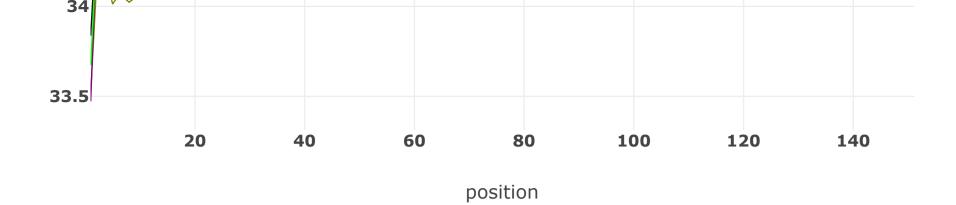
overrepresented sequence	count (% of bases)	distribution: cycle 1 ~ cycle 151
AC	15737 (0.120403%)	
AG	3056 (0.023381%)	
ATCTATCTATCTATCTATCTATCTATCTATCT	129 (0.000987%)	
CACACACACACACACACACACACACACACACACACACA	9005 (0.068897%)	
ccccccccccccccccccccccccccccccccccccccc	24345 (0.186263%)	
ccccccccccccccccccccccccccccccccccccccc	2531 (0.048411%)	
ccccccccccccccccccccccccccccccccccccccc	1825 (0.052012%)	
ссссссссссссссссссссссссс	19 (0.000145%)	
СТАТСТАТСТАТСТАТСТАТСТАТСТАТСТАТ	69 (0.000528%)	
CTCACACACACACACACACACACACACACACACACACAC	7367 (0.056365%)	
стстстстстстстстстстстстстстст	3588 (0.027452%)	

CTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGT	2823 (0.021599%)	
GA	3201 (0.024491%)	
GTGTGTGTGTGTGTGTGTGTGTGTGTGTGTG	472 (0.003611%)	
GTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGT	15692 (0.120059%)	
GTGTTTGTGTGTGTGTGTGTGTGTGTGTGTGTGT	4614 (0.035302%)	
GTTTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGT	822 (0.006289%)	
TATCTATCTATCTATCTATCTATCTATCTATC	530 (0.004055%)	
TCACACACACACACACACACACACACACACACACACACA	2459 (0.018814%)	
TCTATCTATCTATCTATCTATCTATCTATCTA	161 (0.001232%)	
тстстстстстстстстстстстстстстстс	4497 (0.034406%)	
TCTGTGTGTGTGTGTGTGTGTGTGTGTGTGTG	5530 (0.042310%)	
TGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTA	197 (0.001507%)	
TGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTG	6641 (0.050810%)	
TGTTTGTGTGTGTGTGTGTGTGTGTGTGTGTGTG	1447 (0.011071%)	
TTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGT	3241 (0.024797%)	
TTTGTGTGTGTGTGTGTGTGTGTGTGTGTGTG	4072 (0.031155%)	
TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT	973 (0.007444%)	

# After filtering

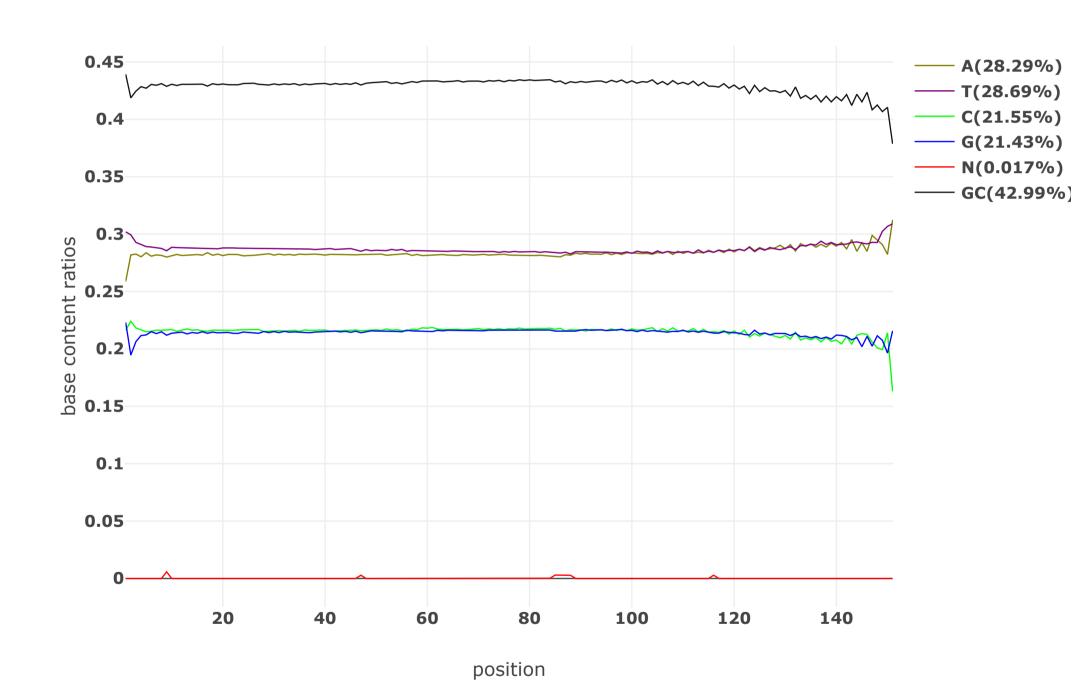
# After filtering: read1: quality





#### After filtering: read1: base contents

Value of each position will be shown on mouse over.



#### After filtering: read1: KMER counting

Darker background means larger counts. The count will be shown on mouse over.

	AA	AT	AC	AG	TA	TT	TC	TG	CA	CT	CC	CG	GA	GT	GC	GG
AAA	AAAA	AAAAT	AAAAC	AAAAG	AAATA	AAATT	AAATC	AAATG	AAACA	AAACT	AAACC	AAACG	AAAGA	AAAGT	AAAGC	AAAGG
AAT	AATAA	AATAT	AATAC	AATAG	AATTA	AATTT	AATTC	AATTG	AATCA	AATCT	AATCC	AATCG	AATGA	AATGT	AATGC	AATGG
AAC	AACAA	AACAT	AACAC	AACAG	AACTA	AACTT	AACTC	AACTG	AACCA	AACCT	AACCC	AACCG	AACGA	AACGT	AACGC	AACGG
AAG	AAGAA	AAGAT	AAGAC	AAGAG	AAGTA	AAGTT	AAGTC	AAGTG	AAGCA	AAGCT	AAGCC	AAGCG	AAGGA	AAGGT	AAGGC	AAGGG
ATA	ATAAA	ATAAT	ATAAC	ATAAG	ATATA	ATATT	ATATC	ATATG	ATACA	ATACT	ATACC	ATACG	ATAGA	ATAGT	ATAGC	ATAGG
ATT	ATTAA	ATTAT	ATTAC	ATTAG	ATTTA	ATTTT	ATTTC	ATTTG	ATTCA	ATTCT	ATTCC	ATTCG	ATTGA	ATTGT	ATTGC	ATTGG
ATC	ATCAA	ATCAT	ATCAC	ATCAG	ATCTA	ATCTT	ATCTC	ATCTG	ATCCA	ATCCT	ATCCC	ATCCG	ATCGA	ATCGT	ATCGC	ATCGG
ATG	ATGAA	ATGAT	ATGAC	ATGAG	ATGTA	ATGTT	ATGTC	ATGTG	ATGCA	ATGCT	ATGCC	ATGCG	ATGGA	ATGGT	ATGGC	ATGGG
ACA	ACAAA	ACAAT	ACAAC	ACAAG	ACATA	ACATT	ACATC	ACATG	ACACA	ACACT	ACACC	ACACG	ACAGA	ACAGT	ACAGC	ACAGG
ACT	ACTAA	ACTAT	ACTAC	ACTAG	ACTTA	ACTTT	ACTTC	ACTTG	ACTCA	ACTCT	ACTCC	ACTCG	ACTGA	ACTGT	ACTGC	ACTGG
ACC	ACCAA	ACCAT	ACCAC	ACCAG	ACCTA	ACCTT	ACCTC	ACCTG	ACCCA	ACCCT	ACCCC	ACCCG	ACCGA	ACCGT	ACCGC	ACCGG
ACG	ACGAA	ACGAT	ACGAC	ACGAG	ACGTA	ACGTT	ACGTC	ACGTG	ACGCA	ACGCT	ACGCC	ACGCG	ACGGA	ACGGT	ACGGC	ACGGG
AGA	AGAAA	AGAAT	AGAAC	AGAAG	AGATA	AGATT	AGATC	AGATG	AGACA	AGACT	AGACC	AGACG	AGAGA	AGAGT	AGAGC	AGAGG
AGT	AGTAA	AGTAT	AGTAC	AGTAG	AGTTA	AGTTT	AGTTC	AGTTG	AGTCA	AGTCT	AGTCC	AGTCG	AGTGA	AGTGT	AGTGC	AGTGG

AGC	AGCAA	AGCAT	AGCAC	AGCAG	AGCTA	AGCTT	AGCTC	AGCTG	AGCCA	AGCCT	AGCCC	AGCCG	AGCGA	AGCGT	AGCGC	AGCGG
AGG	AGGAA	AGGAT	AGGAC	AGGAG	AGGTA	AGGTT	AGGTC	AGGTG	AGGCA	AGGCT	AGGCC	AGGCG	AGGGA	AGGGT	AGGGC	AGGGG
TAA	TAAAA	TAAAT	TAAAC	TAAAG	TAATA	TAATT	TAATC	TAATG	TAACA	TAACT	TAACC	TAACG	TAAGA	TAAGT	TAAGC	TAAGG
TAT	TATAA	TATAT	TATAC	TATAG	TATTA	TATTT	TATTC	TATTG	TATCA	TATCT	TATCC	TATCG	TATGA	TATGT	TATGC	TATGG
TAC	TACAA	TACAT	TACAC	TACAG	TACTA	TACTT	TACTC	TACTG	TACCA	TACCT	TACCC	TACCG	TACGA	TACGT	TACGC	TACGG
TAG	TAGAA	TAGAT	TAGAC	TAGAG	TAGTA	TAGTT	TAGTC	TAGTG	TAGCA	TAGCT	TAGCC	TAGCG	TAGGA	TAGGT	TAGGC	TAGGG
TTA	TTAAA	TTAAT	TTAAC	TTAAG	TTATA	TTATT	TTATC	TTATG	TTACA	TTACT	TTACC	TTACG	TTAGA	TTAGT	TTAGC	TTAGG
TTT	TTTAA	TTTAT	TTTAC	TTTAG	TTTTA	TTTTT	TTTTC	TTTTG	TTTCA	TTTCT	TTTCC	TTTCG	TTTGA	TTTGT	TTTGC	TTTGG
TTC	TTCAA	TTCAT	TTCAC	TTCAG	TTCTA	TTCTT	TTCTC	TTCTG	TTCCA	TTCCT	TTCCC	TTCCG	TTCGA	TTCGT	TTCGC	TTCGG
TTG	TTGAA	TTGAT	TTGAC	TTGAG	TTGTA	TTGTT	TTGTC	TTGTG	TTGCA	TTGCT	TTGCC	TTGCG	TTGGA	TTGGT	TTGGC	TTGGG
TCA	TCAAA	TCAAT	TCAAC	TCAAG	TCATA	TCATT	TCATC	TCATG	TCACA	TCACT	TCACC	TCACG	TCAGA	TCAGT	TCAGC	TCAGG
TCT	TCTAA	TCTAT	TCTAC	TCTAG	TCTTA	TCTTT	TCTTC	TCTTG	TCTCA	TCTCT	TCTCC	TCTCG	TCTGA	TCTGT	TCTGC	TCTGG
TCC	TCCAA	TCCAT	TCCAC	TCCAG	TCCTA	TCCTT	TCCTC	TCCTG	TCCCA	TCCCT	TCCCC	TCCCG	TCCGA	TCCGT	TCCGC	TCCGG
TCG	TCGAA	TCGAT	TCGAC	TCGAG	TCGTA	TCGTT	TCGTC	TCGTG	TCGCA	TCGCT	TCGCC	TCGCG	TCGGA	TCGGT	TCGGC	TCGGG
TGA	TGAAA	TGAAT	TGAAC	TGAAG	TGATA	TGATT	TGATC	TGATG	TGACA	TGACT	TGACC	TGACG	TGAGA	TGAGT	TGAGC	TGAGG
TGT	TGTAA	TGTAT	TGTAC	TGTAG	TGTTA	TGTTT	TGTTC	TGTTG	TGTCA	TGTCT	TGTCC	TGTCG	TGTGA	TGTGT	TGTGC	TGTGG
TGC	TGCAA	TGCAT	TGCAC	TGCAG	TGCTA	TGCTT	TGCTC	TGCTG	TGCCA	TGCCT	TGCCC	TGCCG	TGCGA	TGCGT	TGCGC	TGCGG
TGG	TGGAA	TGGAT	TGGAC	TGGAG	TGGTA	TGGTT	TGGTC	TGGTG	TGGCA	TGGCT	TGGCC	TGGCG	TGGGA	TGGGT	TGGGC	TGGGG
CAA	CAAAA	CAAAT	CAAAC	CAAAG	CAATA	CAATT	CAATC	CAATG	CAACA	CAACT	CAACC	CAACG	CAAGA	CAAGT	CAAGC	CAAGG
CAT	CATAA	CATAT	CATAC	CATAG	CATTA	CATTT	CATTC	CATTG	CATCA	CATCT	CATCC	CATCG	CATGA	CATGT	CATGC	CATGG
CAC	CACAA	CACAT	CACAC	CACAG	CACTA	CACTT	CACTC	CACTG	CACCA	CACCT	CACCC	CACCG	CACGA	CACGT	CACGC	CACGG
CAG	CAGAA	CAGAT	CAGAC	CAGAG	CAGTA	CAGTT	CAGTC	CAGTG	CAGCA	CAGCT	CAGCC	CAGCG	CAGGA	CAGGT	CAGGC	CAGGG
CTA	CTAAA	CTAAT	CTAAC	CTAAG	CTATA	CTATT	CTATC	CTATG	CTACA	CTACT	CTACC	CTACG	CTAGA	CTAGT	CTAGC	CTAGG
CTT	CTTAA	CTTAT	CTTAC	CTTAG	CTTTA	CTTTT	CTTTC	CTTTG	CTTCA	СТТСТ	CTTCC	CTTCG	CTTGA	CTTGT	CTTGC	CTTGG
CTC	CTCAA	CTCAT	CTCAC	CTCAG	CTCTA	СТСТТ	стстс	CTCTG	CTCCA	СТССТ	стссс	CTCCG	CTCGA	CTCGT	CTCGC	CTCGG
CTG	CTGAA	CTGAT	CTGAC	CTGAG	CTGTA	CTGTT	CTGTC	CTGTG	CTGCA	CTGCT	CTGCC	CTGCG	CTGGA	CTGGT	CTGGC	CTGGG
CCA	CCAAA	CCAAT	CCAAC	CCAAG	CCATA	CCATT	CCATC	CCATG	CCACA	CCACT	CCACC	CCACG	CCAGA	CCAGT	CCAGC	CCAGG
CCT	CCTAA	CCTAT	CCTAC	CCTAG	CCTTA	CCTTT	ССТТС	CCTTG	CCTCA	ССТСТ	ССТСС	CCTCG	CCTGA	CCTGT	CCTGC	CCTGG
CCC	CCCAA	CCCAT	CCCAC	CCCAG	CCCTA	CCCTT	СССТС	CCCTG	CCCCA	CCCCT	CCCCC	CCCCG	CCCGA	CCCGT	CCCGC	CCCGG
CCG	CCGAA	CCGAT	CCGAC	CCGAG	CCGTA	CCGTT	CCGTC	CCGTG	CCGCA	CCGCT	CCGCC	CCGCG	CCGGA	CCGGT	CCGGC	CCGGG
CGA	CGAAA	CGAAT	CGAAC	CGAAG	CGATA	CGATT	CGATC	CGATG	CGACA	CGACT	CGACC	CGACG	CGAGA	CGAGT	CGAGC	CGAGG
CGT	CGTAA	CGTAT	CGTAC	CGTAG	CGTTA	CGTTT	CGTTC	CGTTG	CGTCA	CGTCT	CGTCC	CGTCG	CGTGA	CGTGT	CGTGC	CGTGG
CGC	CGCAA	CGCAT	CGCAC	CGCAG	CGCTA	CGCTT	CGCTC	CGCTG	CGCCA	CGCCT	CGCCC	CGCCG	CGCGA	CGCGT	CGCGC	CGCGG
CGG	CGGAA	CGGAT	CGGAC	CGGAG	CGGTA	CGGTT	CGGTC	CGGTG	CGGCA	CGGCT	CGGCC	CGGCG	CGGGA	CGGGT	CGGGC	CGGGG
GAA	GAAAA	GAAAT	GAAAC	GAAAG	GAATA	GAATT	GAATC	GAATG	GAACA	GAACT	GAACC	GAACG	GAAGA	GAAGT	GAAGC	GAAGG
GAT	GATAA	GATAT	GATAC	GATAG	GATTA	GATTT	GATTC	GATTG	GATCA	GATCT	GATCC	GATCG	GATGA	GATGT	GATGC	GATGG
GAC	GACAA	GACAT	GACAC	GACAG	GACTA	GACTT	GACTC	GACTG	GACCA	GACCT	GACCC	GACCG	GACGA	GACGT	GACGC	GACGG
GAG	GAGAA	GAGAT	GAGAC	GAGAG	GAGTA	GAGTT	GAGTC	GAGTG	GAGCA	GAGCT	GAGCC	GAGCG	GAGGA	GAGGT	GAGGC	GAGGG
GTA	GTAAA	GTAAT	GTAAC	GTAAG	GTATA	GTATT	GTATC	GTATG	GTACA	GTACT	GTACC	GTACG	GTAGA	GTAGT	GTAGC	GTAGG
GTT	GTTAA	GTTAT	GTTAC	GTTAG	GTTTA	GTTTT	GTTTC	GTTTG	GTTCA	GTTCT	GTTCC	GTTCG	GTTGA	GTTGT	GTTGC	GTTGG
GTC	GTCAA	GTCAT	GTCAC	GTCAG	GTCTA	GTCTT	GTCTC	GTCTG	GTCCA	GTCCT	GTCCC	GTCCG	GTCGA	GTCGT	GTCGC	GTCGG
GTG	GTGAA	GTGAT	GTGAC	GTGAG	GTGTA	GTGTT	GTGTC	GTGTG	GTGCA	GTGCT	GTGCC	GTGCG	GTGGA	GTGGT	GTGGC	GTGGG
GCA	GCAAA	GCAAT	GCAAC	GCAAG	GCATA	GCATT	GCATC	GCATG	GCACA	GCACT	GCACC	GCACG	GCAGA	GCAGT	GCAGC	GCAGG
GCT	GCTAA	GCTAT	GCTAC	GCTAG	GCTTA	GCTTT	GCTTC	GCTTG	GCTCA	GCTCT	GCTCC	GCTCG	GCTGA	GCTGT	GCTGC	GCTGG
GCC	GCCAA	GCCAT	GCCAC	GCCAG	GCCTA	GCCTT	GCCTC	GCCTG	GCCCA	GCCCT	GCCCC	GCCCG	GCCGA	GCCGT	GCCGC	GCCGG
GCG	GCGAA	GCGAT	GCGAC	GCGAG	GCGTA	GCGTT	GCGTC	GCGTG	GCGCA	GCGCT	GCGCC	GCGCG	GCGGA	GCGGT	GCGGC	GCGGG
GGA	GGAAA	GGAAT	GGAAC	GGAAG	GGATA	GGATT	GGATC	GGATG	GGACA	GGACT	GGACC	GGACG	GGAGA	GGAGT	GGAGC	GGAGG
GGT	GGTAA	GGTAT	GGTAC	GGTAG	GGTTA	GGTTT	GGTTC	GGTTG	GGTCA	GGTCT	GGTCC	GGTCG	GGTGA	GGTGT	GGTGC	GGTGG
GGC	GGCAA	GGCAT	GGCAC	GGCAG	GGCTA	GGCTT	GGCTC	GGCTG	GGCCA	GGCCT	GGCCC	GGCCG	GGCGA	GGCGT	GGCGC	GGCGG
GGG	GGGAA	GGGAT	GGGAC	GGGAG	GGGTA	GGGTT	GGGTC	GGGTG	GGGCA	GGGCT	GGGCC	GGGCG	GGGGA	GGGGT	GGGGC	GGGGG

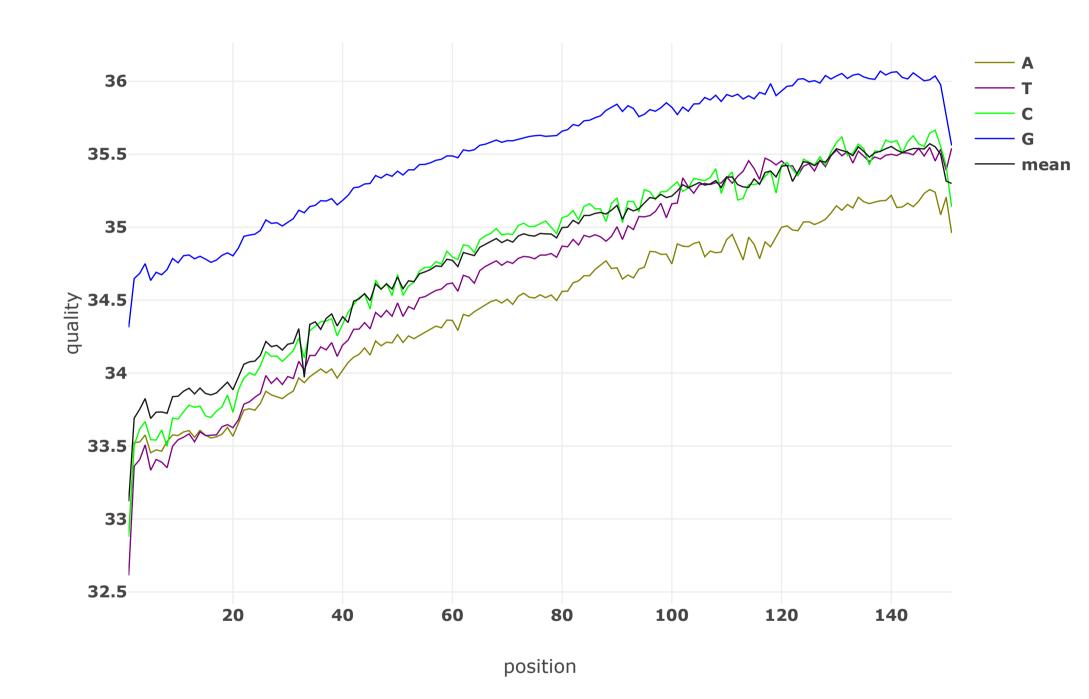
# After filtering: read1: overrepresented sequences Sampling rate: 1 / 20

Sampling rate: 1 / 20		
overrepresented sequence	count (% of bases)	distribution: cycle 1 ~ cycle 151
AACACACACACACACACACACACACACACACACACACACA	5426 (0.048288%)	
AC	9452 (0.084117%)	
AC	314 (0.002794%)	
AC	325 (0.002892%)	
AG	1736 (0.015449%)	
CACACACACACACACACACACACACACACACACACA	8308 (0.073936%)	
ccccccccccccccccccccccccccccccccccccccc	436 (0.003880%)	
CTCACACACACACACACACACACACACACACACACACA	5330 (0.047434%)	
стстстстстстстстстстстстстстст	3240 (0.028834%)	
CTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGT	6391 (0.056876%)	
GA	1769 (0.015743%)	
GTGTGTGTGTGTGTGTGTGTGTGTGTGTGTG	336 (0.002990%)	
GTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGT	13506 (0.120195%)	
TCACACACACACACACACACACACACACACACACACACA	2111 (0.018787%)	
тстстстстстстстстстстстстстстстс	4102 (0.036505%)	

TGTGTGTGTGTGTGTGTGTGTGTGTGTGTA	199 (0.001771%)	
тстстстстстстстстстстстстстстстс	6609 (0.058816%)	
TTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGT	2589 (0.023040%)	
тттстстстстстстстстстстстстстстс	7157 (0.063693%)	

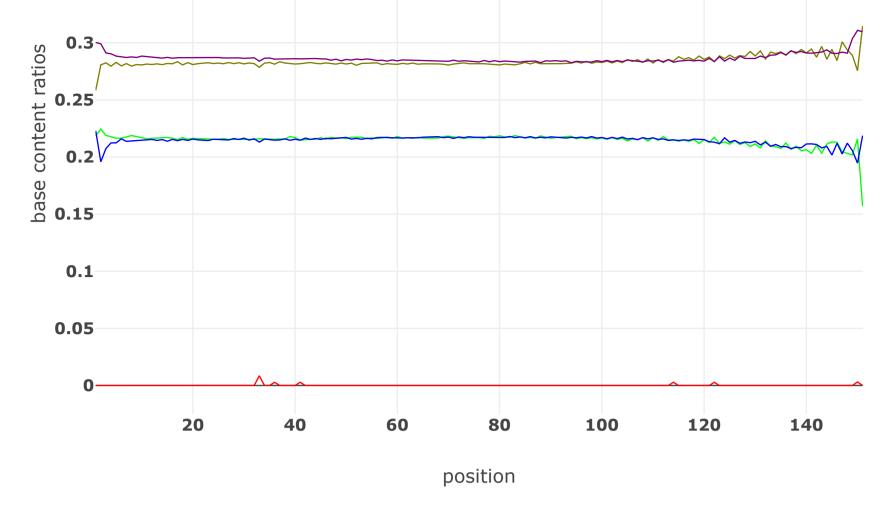
## After filtering: read2: quality

Value of each position will be shown on mouse over.



## After filtering: read2: base contents





# After filtering: read2: KMER counting

Darker background means larger counts. The count will be shown on mouse over.

	AA	AT	AC	AG	TA	TT	TC	TG	CA	CT	CC	CG	GA	GT	GC	GG
۱A	AAAAA	AAAAT	AAAAC	AAAAG	AAATA	AAATT	AAATC	AAATG	AAACA	AAACT	AAACC	AAACG	AAAGA	AAAGT	AAAGC	AAAG
AT	AATAA	AATAT	AATAC	AATAG	AATTA	AATTT	AATTC	AATTG	AATCA	AATCT	AATCC	AATCG	AATGA	AATGT	AATGC	AATG
AC	AACAA	AACAT	AACAC	AACAG	AACTA	AACTT	AACTC	AACTG	AACCA	AACCT	AACCC	AACCG	AACGA	AACGT	AACGC	AACG
٩G	AAGAA	AAGAT	AAGAC	AAGAG	AAGTA	AAGTT	AAGTC	AAGTG	AAGCA	AAGCT	AAGCC	AAGCG	AAGGA	AAGGT	AAGGC	AAGG
ГА 🛮	ATAAA	ATAAT	ATAAC	ATAAG	ATATA	ATATT	ATATC	ATATG	ATACA	ATACT	ATACC	ATACG	ATAGA	ATAGT	ATAGC	ATAG
ГΤ	ATTAA	ATTAT	ATTAC	ATTAG	ATTTA	ATTTT	ATTTC	ATTTG	ATTCA	ATTCT	ATTCC	ATTCG	ATTGA	ATTGT	ATTGC	ATTG
ГС	ATCAA	ATCAT	ATCAC	ATCAG	ATCTA	ATCTT	ATCTC	ATCTG	ATCCA	ATCCT	ATCCC	ATCCG	ATCGA	ATCGT	ATCGC	ATCG
ΓG	ATGAA	ATGAT	ATGAC	ATGAG	ATGTA	ATGTT	ATGTC	ATGTG	ATGCA	ATGCT	ATGCC	ATGCG	ATGGA	ATGGT	ATGGC	ATGG
CA	ACAAA	ACAAT	ACAAC	ACAAG	ACATA	ACATT	ACATC	ACATG	ACACA	ACACT	ACACC	ACACG	ACAGA	ACAGT	ACAGC	ACAG
CT	ACTAA	ACTAT	ACTAC	ACTAG	ACTTA	ACTTT	ACTTC	ACTTG	ACTCA	ACTCT	ACTCC	ACTCG	ACTGA	ACTGT	ACTGC	ACTG
CC I	ACCAA	ACCAT	ACCAC	ACCAG	ACCTA	ACCTT	ACCTC	ACCTG	ACCCA	ACCCT	ACCCC	ACCCG	ACCGA	ACCGT	ACCGC	ACCG
CG	ACGAA	ACGAT	ACGAC	ACGAG	ACGTA	ACGTT	ACGTC	ACGTG	ACGCA	ACGCT	ACGCC	ACGCG	ACGGA	ACGGT	ACGGC	ACGG
GA	AGAAA	AGAAT	AGAAC	AGAAG	AGATA	AGATT	AGATC	AGATG	AGACA	AGACT	AGACC	AGACG	AGAGA	AGAGT	AGAGC	AGAG
Τ	AGTAA	AGTAT	AGTAC	AGTAG	AGTTA	AGTTT	AGTTC	AGTTG	AGTCA	AGTCT	AGTCC	AGTCG	AGTGA	AGTGT	AGTGC	AGTG
GC	AGCAA	AGCAT	AGCAC	AGCAG	AGCTA	AGCTT	AGCTC	AGCTG	AGCCA	AGCCT	AGCCC	AGCCG	AGCGA	AGCGT	AGCGC	AGCG
G G	AGGAA	AGGAT	AGGAC	AGGAG	AGGTA	AGGTT	AGGTC	AGGTG	AGGCA	AGGCT	AGGCC	AGGCG	AGGGA	AGGGT	AGGGC	AGGG
AA	TAAAA	TAAAT	TAAAC	TAAAG	TAATA	TAATT	TAATC	TAATG	TAACA	TAACT	TAACC	TAACG	TAAGA	TAAGT	TAAGC	TAAG
T	TATAA	TATAT	TATAC	TATAG	TATTA	TATTT	TATTC	TATTG	TATCA	TATCT	TATCC	TATCG	TATGA	TATGT	TATGC	TATG
C	TACAA	TACAT	TACAC	TACAG	TACTA	TACTT	TACTC	TACTG	TACCA	TACCT	TACCC	TACCG	TACGA	TACGT	TACGC	TACG
G	TAGAA	TAGAT	TAGAC	TAGAG	TAGTA	TAGTT	TAGTC	TAGTG	TAGCA	TAGCT	TAGCC	TAGCG	TAGGA	TAGGT	TAGGC	TAGO
A	TTAAA	TTAGAT	TTAGAC	TTAGAG	TTATA	TTATT	TTATC	TTATG	TAGCA	TTACT	TTACC	TTACC	TTAGGA	TTAGGT	TTAGGC	TTAGG
T	TTTAAA	TTTAT	TTTAC	TTTAG	TTTTA	TTTTT	TTTTC	TTTTG	TTTCA	TTTCT	TTTCC	TTTCG	TTTGA	TTTGT	TTTGC	TTTG
-	TTCAA	TTCAT	TTCAC	TTCAG		TTCTT	TTCTC		TTCCA	TTCCT	TTCCC	TTCCG	TTCGA		TTCGC	TTCG
G	TTGAA	TTGAT	TTGAC	TTGAG	TTCTA TTGTA		TTGTC	TTCTG TTGTG	TTGCA		TTGCC	TTGCG	TTGGA	TTCGT		TTGG
-					-	TTGTT				TTGCT		-		TTGGT	TCACC	
A	TCAAA	TCAAT	TCAAC	TCAAG	TCATA	TCATT	TCATC	TCATG	TCACA	TCACT	TCACC	TCACG	TCAGA	TCAGT	TCAGC	TCAG
T	TCTAA	TCTAT	TCTAC	TCTAG	TCTTA	TCTTT	TCTTC	TCTTG	TCTCA	TCTCT	TCTCC	TCTCG	TCTGA	TCTGT	TCTGC	TCTG
C	TCCAA	TCCAT	TCCAC	TCCAG	TCCTA	TCCTT	TCCTC	TCCTG	TCCCA	TCCCT	TCCCC	TCCCG	TCCGA	TCCGT	TCCGC	TCCG
G	TCGAA	TCGAT	TCGAC	TCGAG	TCGTA	TCGTT	TCGTC	TCGTG	TCGCA	TCGCT	TCGCC	TCGCG	TCGGA	TCGGT	TCGGC	TCGG
A	TGAAA	TGAAT	TGAAC	TGAAG	TGATA	TGATT	TGATC	TGATG	TGACA	TGACT	TGACC	TGACG	TGAGA	TGAGT	TGAGC	TGAG
Т	TGTAA	TGTAT	TGTAC	TGTAG	TGTTA	TGTTT	TGTTC	TGTTG	TGTCA	TGTCT	TGTCC	TGTCG	TGTGA	TGTGT	TGTGC	TGTG
C	TGCAA	TGCAT	TGCAC	TGCAG	TGCTA	TGCTT	TGCTC	TGCTG	TGCCA	TGCCT	TGCCC	TGCCG	TGCGA	TGCGT	TGCGC	TGCG
G	TGGAA	TGGAT	TGGAC	TGGAG	TGGTA	TGGTT	TGGTC	TGGTG	TGGCA	TGGCT	TGGCC	TGGCG	TGGGA	TGGGT	TGGGC	TGGG
Α	CAAAA	CAAAT	CAAAC	CAAAG	CAATA	CAATT	CAATC	CAATG	CAACA	CAACT	CAACC	CAACG	CAAGA	CAAGT	CAAGC	CAAG
T	CATAA	CATAT	CATAC	CATAG	CATTA	CATTT	CATTC	CATTG	CATCA	CATCT	CATCC	CATCG	CATGA	CATGT	CATGC	CATO
C	CACAA	CACAT	CACAC	CACAG	CACTA	CACTT	CACTC	CACTG	CACCA	CACCT	CACCC	CACCG	CACGA	CACGT	CACGC	CACG
G	CAGAA	CAGAT	CAGAC	CAGAG	CAGTA	CAGTT	CAGTC	CAGTG	CAGCA	CAGCT	CAGCC	CAGCG	CAGGA	CAGGT	CAGGC	CAGG
Α	CTAAA	CTAAT	CTAAC	CTAAG	CTATA	CTATT	CTATC	CTATG	CTACA	CTACT	CTACC	CTACG	CTAGA	CTAGT	CTAGC	CTAG
Т	CTTAA	CTTAT	CTTAC	CTTAG	CTTTA	CTTTT	CTTTC	CTTTG	CTTCA	CTTCT	CTTCC	CTTCG	CTTGA	CTTGT	CTTGC	CTTG
C	CTCAA	CTCAT	CTCAC	CTCAG	СТСТА	CTCTT	СТСТС	CTCTG	CTCCA	СТССТ	СТССС	CTCCG	CTCGA	CTCGT	CTCGC	CTC
G	CTGAA	CTGAT	CTGAC	CTGAG	CTGTA	CTGTT	CTGTC	CTGTG	CTGCA	CTGCT	CTGCC	CTGCG	CTGGA	CTGGT	CTGGC	CTGG
Α	CCAAA	CCAAT	CCAAC	CCAAG	CCATA	CCATT	CCATC	CCATG	CCACA	CCACT	CCACC	CCACG	CCAGA	CCAGT	CCAGC	CCAG
Т	CCTAA	CCTAT	CCTAC	CCTAG	CCTTA	CCTTT	CCTTC	CCTTG	CCTCA	ССТСТ	ССТСС	CCTCG	CCTGA	CCTGT	CCTGC	CCTG
C	CCCAA	CCCAT	CCCAC	CCCAG	CCCTA	CCCTT	СССТС	CCCTG	CCCCA	CCCCT	ccccc	CCCCG	CCCGA	CCCGT	CCCGC	CCCG
G	CCGAA	CCGAT	CCGAC	CCGAG	CCGTA	CCGTT	CCGTC	CCGTG	CCGCA	CCGCT	CCGCC	CCGCG	CCGGA	CCGGT	CCGGC	CCGG
A	CGAAA	CGAAT	CGAAC	CGAAG	CGATA	CGATT	CGATC	CGATG	CGACA	CGACT	CGACC	CGACG	CGAGA	CGAGT	CGAGC	CGAG
Τĺ	CGTAA	CGTAT	CGTAC	CGTAG	CGTTA	CGTTT	CGTTC	CGTTG	CGTCA	CGTCT	CGTCC	CGTCG	CGTGA	CGTGT	CGTGC	CGTG
С	CGCAA	CGCAT	CGCAC	CGCAG	CGCTA	CGCTT	CGCTC	CGCTG	CGCCA	CGCCT	CGCCC	CGCCG	CGCGA	CGCGT	CGCGC	CGCG
G	CGGAA	CGGAT	CGGAC	CGGAG	CGGTA	CGGTT	CGGTC	CGGTG	CGGCA	CGGCT	CGGCC	CGGCG	CGGGA	CGGGT	CGGGC	CGGG
A	GAAAA	GAAAT	GAAAC	GAAAG	GAATA	GAATT	GAATC	GAATG	GAACA	GAACT	GAACC	GAACG	GAAGA	GAAGT	GAAGC	GAAG
T	GATAA	GATAT	GATAC	GATAG	GATTA	GATTT	GATTC	GATTG	GATCA	GATCT	GATCC	GATCG	GATGA	GATGT	GATGC	GATO
C	GACAA	GACAT	GACAC	GACAG	GACTA	GACTT	GACTC	GACTG	GACCA	GACCT	GACCC	GACCG	GACGA	GACGT	GACGC	GACG
G	GAGAA	GAGAT	GAGAC	GAGAG	GAGTA	GAGTT	GAGTC	GAGTG	GAGCA	GAGCT	GAGCC	GAGCG	GAGGA	GAGGT	GAGGC	GAGG
A	GTAAA	GTAAT	GTAAC	GTAAG	GTATA	GTATT	GTATC	GTATG	GTACA	GTACT	GTACC	GTACG	GTAGA	GTAGT	GTAGC	GTAG
T	GTTAA	GTTAT	GTTAC	GTTAG	GTTTA	GTTTT	GTTTC	GTTTG	GTTCA	GTTCT	GTTCC	GTTCG	GTTGA	GTTGT	GTTGC	GTTG
	GTCAA	GTCAT	GTCAC	GTCAG	GTCTA	GTCTT	GTCTC	GTCTG	GTCCA	GTCCT	GTCCC	GTCCG	GTCGA	GTCGT	GTCGC	GTCG
C													GTGGA			
G	GTGAA	GTGAT	GTGAC	GTGAG	GTGTA	GTGTT	GTGTC	GTGTG	GTGCA	GTGCT	GTGCC	GTGCG	1	GTGGT	GTGGC	GTGG
A T	GCAAA	GCAAT	GCAAC	GCAAG	GCATA	GCATT	GCATC	GCATG	GCACA	GCACT	GCACC	GCACG	GCAGA	GCAGT	GCAGC	GCAG
. 1	GCTAA	GCTAT	GCTAC	GCTAG	GCTTA	GCTTT	GCTTC	GCTTG	GCTCA	GCTCT	GCTCC	GCTCG	GCTGA	GCTGT	GCTGC	GCTG

GCC	GCCAA	GCCAT	GCCAC	GCCAG	GCCTA	GCCTT	GCCTC	GCCTG	GCCCA	GCCCT	GCCCC	GCCCG	GCCGA	GCCGT	GCCGC	GCCGG
GCG	GCGAA	GCGAT	GCGAC	GCGAG	GCGTA	GCGTT	GCGTC	GCGTG	GCGCA	GCGCT	GCGCC	GCGCG	GCGGA	GCGGT	GCGGC	GCGGG
GGA	GGAAA	GGAAT	GGAAC	GGAAG	GGATA	GGATT	GGATC	GGATG	GGACA	GGACT	GGACC	GGACG	GGAGA	GGAGT	GGAGC	GGAGG
GGT	GGTAA	GGTAT	GGTAC	GGTAG	GGTTA	GGTTT	GGTTC	GGTTG	GGTCA	GGTCT	GGTCC	GGTCG	GGTGA	GGTGT	GGTGC	GGTGG
GGC	GGCAA	GGCAT	GGCAC	GGCAG	GGCTA	GGCTT	GGCTC	GGCTG	GGCCA	GGCCT	GGCCC	GGCCG	GGCGA	GGCGT	GGCGC	GGCGG
GGG	GGGAA	GGGAT	GGGAC	GGGAG	GGGTA	GGGTT	GGGTC	GGGTG	GGGCA	GGGCT	GGGCC	GGGCG	GGGGA	GGGGT	GGGGC	GGGGG

#### After filtering: read2: overrepresented sequences

Sampling rate: 1 / 20

Sampling rate: 1 / 20		
overrepresented sequence	count (% of bases)	distribution: cycle 1 ~ cycle 151
AC	12683 (0.114699%)	
AG	2534 (0.022916%)	
ATCTATCTATCTATCTATCTATCTATCTATCT	107 (0.000968%)	
CACACACACACACACACACACACACACACACACACACA	7352 (0.066488%)	
ccccccccccccccccccccccccccccccccccccccc	429 (0.003880%)	
СТАТСТАТСТАТСТАТСТАТСТАТСТАТСТАТ	66 (0.000597%)	
CTCACACACACACACACACACACACACACACACACA	5430 (0.049107%)	
стстстстстстстстстстстстстстстст	2864 (0.025901%)	
стбтбтбтбтбтбтбтбтбтбтбтбтбтбтбт	2195 (0.019851%)	
GA	2539 (0.022962%)	
GTGTGTGTGTGTGTGTGTGTGTGTGTGTGC	333 (0.003012%)	
GTGTGTGTGTGTGTGTGTGTGTGTGTGTGT	12889 (0.116562%)	
GTGTTTGTGTGTGTGTGTGTGTGTGTGTGTGT	3609 (0.032638%)	
GTTTGTGTGTGTGTGTGTGTGTGTGTGTGTGT	598 (0.005408%)	
TATCTATCTATCTATCTATCTATCTATCTATC	443 (0.004006%)	
TCACACACACACACACACACACACACACACACACACACA	1786 (0.016152%)	
ТСТАТСТАТСТАТСТАТСТАТСТАТСТАТСТА	123 (0.001112%)	
тстстстстстстстстстстстстстстстс	3466 (0.031345%)	
тстстстстстстстстстстстстстстс	4319 (0.039059%)	
TGTGTGTGTGTGTGTGTGTGTGTGTGTGTA	164 (0.001483%)	
тстстстстстстстстстстстстстс	6067 (0.054867%)	
тстттстстстстстстстстстстстстс	1068 (0.009659%)	
TTGTGTGTGTGTGTGTGTGTGTGTGTGTGT	2443 (0.022093%)	
ТТТGTGTGTGTGTGTGTGTGTGTGTGTGTG	2962 (0.026787%)	
TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT	31 (0.000280%)	