

## **Supplemental Methods**

### Cell Culture

AS iPSC (AS del 1-0) and PWS iPSC (PWS del 1-7) lines were generated and maintained as previously described(1). Briefly, iPSCs were cultured in hESC medium with the following components. Dulbecco's modified Eagle's medium/F-12, 20% Knock-Out serum replacer, 0.1 mM non-essential amino acids, 1 mM L-glutamine, 0.1 mM b-mercaptoethanol, and 4 ng/mL bFGF. Colonies were grown on mouse embryonic fibroblasts (MEFs) and split mechanically approximately every 7 days.

### ChIP qPCR

ChIP qPCR was performed using Millipore EZ-Magna ChIP G – Chromatin Immunoprecipitation Kit (17-409) following manufacturer's instructions. Briefly, 6-10 million cells were used for fixation. Sonication took place in 0.5 mL of nuclear lysis buffer. 4 µl of ChIPAb+ CTCF (17-10044) antibody was added to 50 µl of sonicated DNA aliquot with 450 µl ChIP dilution buffer for immunoprecipitation overnight. The washed immune-DNA complexes were reverse-crosslinked in 100 µl ChIP Elution buffer followed by removal of magnetic beads. Instead of using provided column for DNA purification, the process was carried out using phenol-chloroform. 200 µl of nuclease-free water and 200 µl of phenol-chloroform were added to the 100 µl reverse-crosslinked ChIP Elution buffer. After centrifugation, aqueous phase was transferred to a new tube. 200 µl of

chloroform was added for extra step of purification. The aqueous phase was transferred to a new tube and the precipitation took place at -20 °C for 30 minutes after adding 1 mL of 100% ethanol, 4 µg of glycogen, and 1/10 of total volume of 5M NaCl. Centrifuged DNA pellet was washed with 75% ethanol. The dry DNA pellet was reconstituted with 50 µl of nuclease-free water. The DNA was further diluted between 1:2 to 1:5 ratio for qPCR. 5 µl of diluted DNA was added to a total 20 µl reaction using SYBR green PCR master mix from Thermo Fisher Scientific (4309155). qPCR primers are list in Suppl. Table 1.

#### ChIP-seq

ChIP material was obtained following the same process in ChIP qPCR. Library preparation and sequencing runs were performed at the Genomics Core of the Yale Stem Cell Center. FASTQ files were mapped to the human genome (hg19) as described previously (2, 3). Normalized signals and CTCF peaks were identified in individual replicates using the ENCODE3 ChIP-Seq pipeline (<https://www.encodeproject.org/pipelines/ENCPL138KID/>). Differential CTCF binding between AS and PWS iPSCs was determined using DiffBind (Ross-Innes et al Nature 2012) (Table S1).

#### CRISPR and single-stranded oligonucleotide (ssODN) design

CRISPR gRNA sequences were designed using CRISPR Genome Engineering Resource (<http://crispr.mit.edu>)(4). The gRNA sequence was cloned in px459 V2

vector following the published protocol(5, 6). ssODNs were designed following the previously described protocol(7). The sequence of CRISPRs and ssODNs used in this paper are listed in Suppl. Table 2.

#### Generation of genome-manipulated AS iPSC clones

6-10 million AS iPSCs were treated with 10  $\mu$ M ROCKi (Calbiochem; Y-27632)(8) 24 hours prior to electroporation. iPSCs were dissociated into single cells by treatment with Accutase for 30 minutes. The cells were resuspended in 800  $\mu$ l of cold PBS. 10  $\mu$ g of each of two CRISPRs flanking the deletion/inversion region were added to the mixture. Electroporation took place using BioRad Gene Pulser Xcell with the following conditions: 250 V, 500  $\mu$ F, 0.4 cm cuvettes. In the case of LoxP insertion, 2 ssODNs were also added along with 2 CRISPRs.

Electroporated cells were transferred to a 15 conical tubes and centrifuged at 1000 rpm for 3 minutes to remove debris. Cells were then resuspended in hESC media and seeded on DR4 MEFs. For the first 24 hours, ROCKi was added to the hESC medium to increase cell survival. For the second 24 hours, ROCKi along with 1  $\mu$ g/ml puromycin were added for positive selection. For the third 24 hours, only puromycin was added to the medium. Regular hESC medium was changed everyday until visible colonies were formed. The total process took about 2 weeks after electroporation. Individual colonies were picked and screened using primer pairs to detect for deletion or inversion. Primers were designed as described<sup>9</sup> and listed in Suppl. Table 3 . To generate the 24kb

deletion iPSCs, LoxP-positive iPSCs were electroporated with 5ug of Cre-IRES-PuroR (Addgene #30205). Cells were selected with puromycin at 24 hours for a total of 48 hours. After the 48 hours of selection regular media was changed daily until colonies were isolated. Recombination of LoxP sites and deletion of the 24kb region was confirmed in the resulting clones by PCR.

#### 4C-seq

For 4C-seq, nuclei were harvested as described previously(2). Briefly, approximately 2 million of iPSCs and iPSC-derived neurons were fixed in formaldehyde (1% final) and quenched in glycine (150 mM final) at room temperature on a shaker for 10 and 5 minutes, respectively. Cells were harvested and centrifuged for 5 minutes at 2000 g at 4 °C. Cell pellets were lysed in 1 mL of cell lysis buffer containing proteinase inhibitor cocktail 3 (Calbiochem) on ice for 20 minutes prior to dounce homogenization with pestle A for 10 strokes and pestle B for 30 strokes. The nuclei were collected at 2000 g, 4 °C for 5 minutes, washed and resuspended in 500 µl of 1x restriction enzyme buffer (NEB Cutsmart). The following circularized chromatin conformation capture (4C) material preparation procedure was adapted from previously described protocols(9). The nuclei in NEB Cutsmart buffer was incubated at 65 °C for 10 minutes on a thermal mixer with 800 rpm after adding 15 µl of 10% SDS. 150 µl of 10% Triton X-100 was added and incubated at 37 °C for 10 minutes on a nutator. 200 units of NlaIII (NEB) and 16.5 uL 10x NEB Cutsmart

were added for the first digestion at 37 °C overnight on a nutator. An additional 50 units of NlaIII was used for an additional 2 hours to ensure complete digestion. NlaIII was heat inactivated prior to splitting into 3 ligation reactions. Each of the ligation solutions were prepared on ice with the following components: 220 µl heat inactivated digested material, 745 µl of 10X T4 Ligase buffer, 745 µl 10% Triton X-100, 800 µl BSA, 5.5 mL nuclease-free water, and 2000 units of NEB T4 DNA ligase. Prepared ligation solutions were incubated at 15 °C overnight. 15 µl of 20 mg/ml proteinase K (NEB) was added to the ligation solution, and incubated at 65 °C overnight to reverse the crosslinking. Reverse-crosslinked 3C material was purified using phenol-chloroform followed by chloroform prior to ethanol precipitation at -80 °C overnight. The 4C library was pelleted, air-dried, and resuspended in 10 mM Tris-HCl (pH 8.0). The second digestion was performed at 37 °C overnight with components listed in the followings: 445 µl of 3C library, 50 µl of 10X DpnII buffer, 150 units of DpnII. After digestion, DpnII was inactivated at 65 °C for 25 minutes. The following components were added to the heat-inactivated material for second ligation at 15 °C for 4 hours: 1.4 mL 10X T4 ligase buffer, 12.6 mL cold nuclease-free water, 6000 units of NEB T4 ligase. The 4C material was ethanol precipitated and column purified using Zymo Research DNA concentrator kit. 150 µl 10 mM Tris-HCL (pH 8.0) was used to elute 4C material.

4C viewpoint primers were selected from human NlaIII - DpnII primer pair database provided by Tayan's group

([http://compgenomics.weizmann.ac.il/tanay/?page\\_id=367](http://compgenomics.weizmann.ac.il/tanay/?page_id=367)) with minor modifications. Primer pair sequences and illumina adapters are listed in Suppl. Table 4. Sequential PCR was performed to construct 4C library using Expand Long Template Polymerase (Roche). Genomic primer pairs of 4C viewpoints were used for the first PCR, and the products were purified by Zymo Research DNA concentrator kit. The purified PCR products were eluted in 10 mM Tris (pH 8.0) as the template for the second PCR. Illumina barcoded adapters were used as primers for the second PCR, and the barcoded 4C library were purified by Zymo Research DNA concentrator kit. Both first and second PCR reactions were done in 8 replicates. 2 nM 4C library from each sample was pooled together before loading on the Illumina NextSeq 500. All samples were done in replicates.

Reads were first de-multiplexed to separate samples and trimmed to remove Illumina adapters using cutadapt. Reads within each sample were then separated according to the genomic sequences and trimmed using cutadapt. Each viewpoint from each sample was mapped to hg19 reference genome using Bowtie 2. The generated bam files were plugged into R package (r3Cseq) to analyze chromatin interactions of each viewpoint(10).

#### RNA isolation and qRT-PCR

RNA was isolated using RNABee (AMSBIO, LLC) following the manufacturer's instructions. 1 µg of RNA was used for reverse transcription using BioRad iScript Advanced cDNA Synthesis Kit. 30 ng of cDNA was loaded in a 20 µl qPCR

reaction. qPCR was performed using BioRad CFX Touch Real-Time PCR Detection System. Relative expression was calculated using the delta delta Ct method.

### Neural differentiation

iPSC-derived 10 wk neurons were differentiated using a monolayer protocol as described(11). Briefly, 2-day post-split iPSCs were switched to N2B27 medium supplemented with 500 ng/mL Noggin (R&D Systems) for 14 days with a complete change of medium every other day. Colonies were split on to poly-ornithine and laminin-coated plates with 1:2 ratio using StemPro EZ Passage tool (Life Technologies) for another week with a complete change of medium every other day. These cells were trypsinized and replated to poly-ornithine and laminin-coated plates and supplemented with ROCKi overnight. Cells were kept in N2B27 for a few more days before switching to neural differentiation medium for a week. For terminal differentiation, neurons were plated at a density of 200,000 cells per well of a 6 well plate. Terminally differentiated neurons were kept in neuron differentiation medium for another 5 weeks to obtain mature neurons.

### PRO-seq

PRO-seq was carried out as described(12-14) with the following modifications. iPSCs grown on 10cm dishes were washed twice with cold PBS, scraped, and pelleted. Pellets were resuspended in ice-cold permeabilization buffer, pulsed

with a dounce homogenizer, and incubated on ice for 5 minutes. Permeabilization was confirmed by trypan blue staining. Permeabilized cells were counted and flash frozen in aliquots of  $1 \times 10^6$  each.

### **PRO-seq library production**

PRO-seq libraries from ~1 million permeabilized cells were constructed as in Mahat et. al. (15), with the following modifications. After the run-on reaction, RNAs were extracted with RNA purification columns (Norgen, product #37500). After the 3'-ligation, the cap-removal, end repair, 5'-ligation, and reverse transcription reactions were all performed on the beads by doubling of reaction volumes. cDNA was eluted from the beads by brief heating to 95°C. A second elution was performed with water, and samples were pre-amplified 5 cycles before storing. Cycling parameters as as in Mahat et. al. Test amplifications of serial dilutions from each pre-amplification were used to determine the number of cycles for full amplification, with a maximum of 15 cycles. Fully amplified libraries were PAGE purified on a 8% PAGE gel, quantified and sized by Qbit and Agilent tapestation, respectively and sequenced on an Illumina NextSeq 500 (75 bp – high throughput kit) at the Center for Genome Innovation (Storrs, CT).

### **Mapping of PRO-seq data**

Adapter sequences were trimmed with FASTX-Toolkit and filtered for a minimum of 15 bases. All reads were then trimmed to a maximum of 36 bases and then



reverse complimented. Reads were first mapped with Bowtie (16) to a copy of the mouse rDNA repeat (GenBank: BK000964.1) with the -K1 option, and unaligned reads were then mapped to the mouse genome (mm10) filtering for unique matches. Only the final 3'-base representing position of the polymerase was reported to output files used in all analyses.

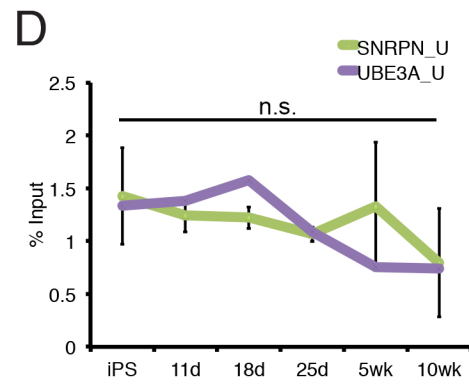
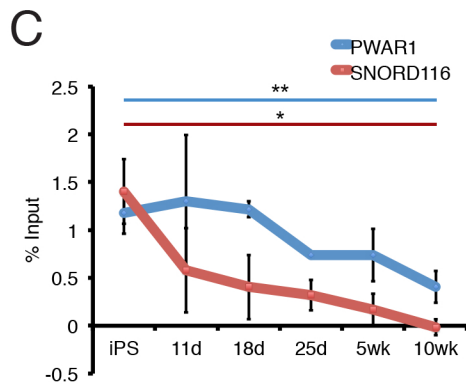
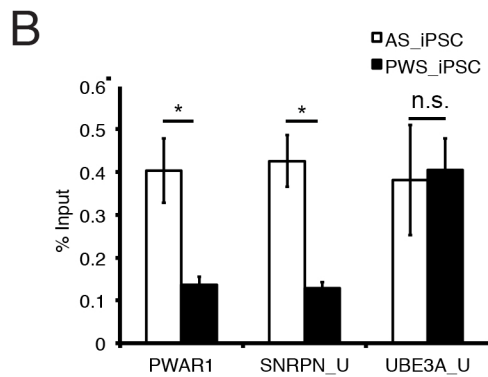
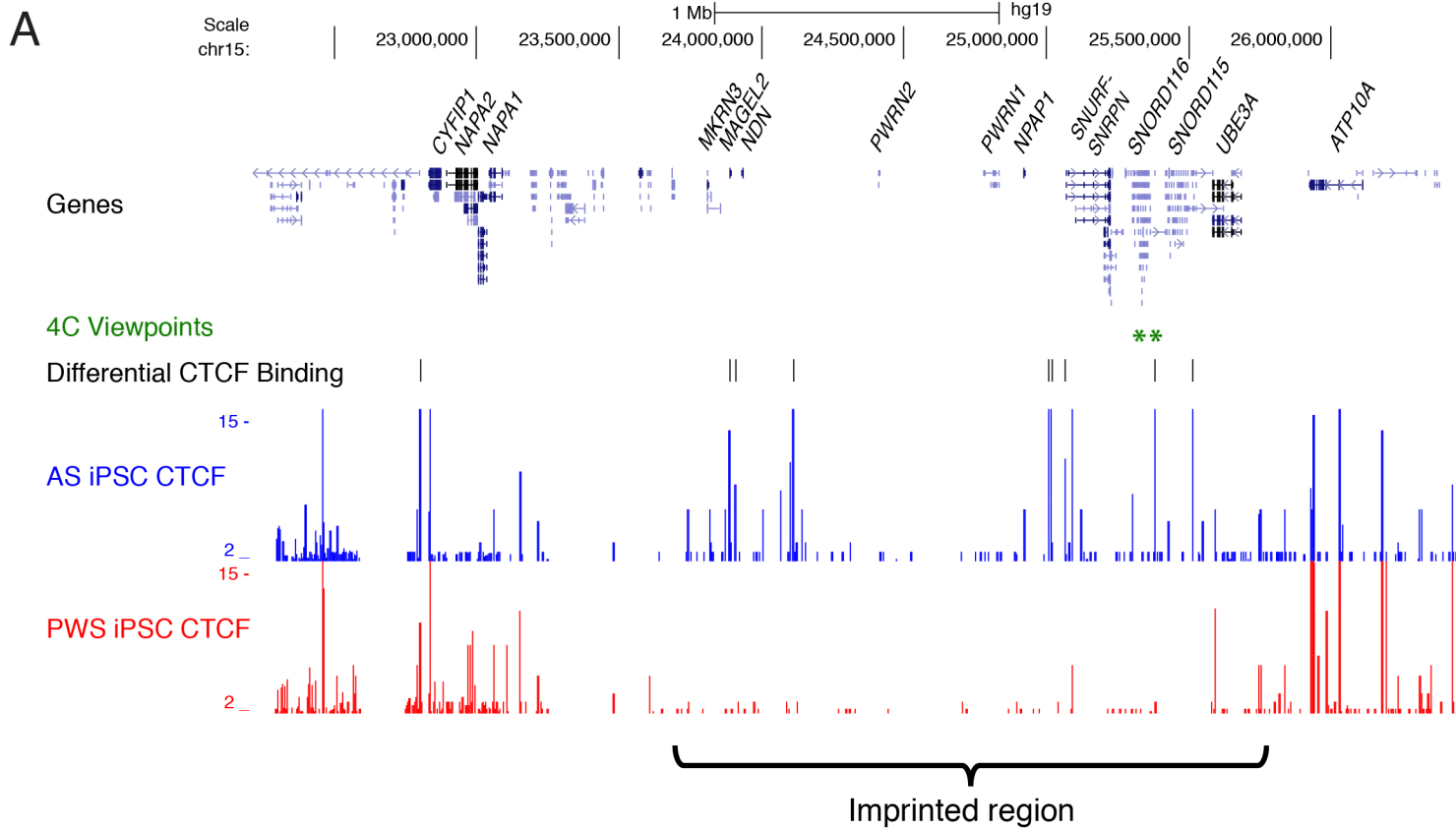
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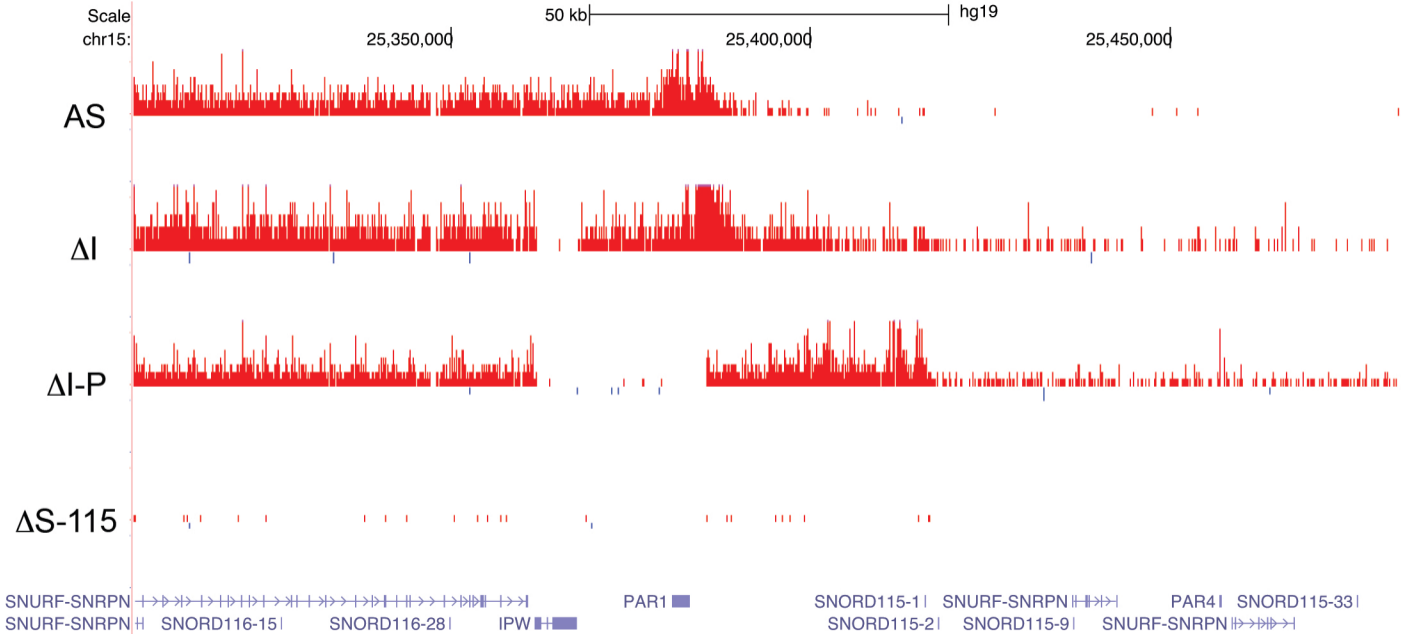
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## Supplemental Figure Legends

**Suppl. Fig. 1. CTCF is enriched on the paternal allele of *PWAR1*.** ChIP-seq for CTCF was performed in AS and PWS iPSCs harboring deletion of the 15q11-q13 region on the maternal and paternal alleles, respectively. CTCF binding on the paternal allele (blue) and maternal allele (red) are shown in A. The imprinted region is designated. Asterisks mark the CTCF sites used as anchors for 4C-seq. Black bars indicate significant differentially bound CTCF sites based on ChIP-Seq data. ChIP-qPCR was used to quantify CTCF enrichment on the paternal and maternal alleles in AS and PWS iPSCs, respectively, in B. ChIP-qPCR was used to quantify CTCF enrichment at *PWAR1* and *SNORD116* sites (C) and at sites upstream of *SNRPN* and upstream of *UBE3A* (D) during a time course of neural differentiation of AS iPSCs.

**Suppl. Fig. 2. RNAPII is stalled at *PWAR1* and at the first exon of *SNORD115* in AS iPSCs.** PRO-seq was used to map RNAPII density in AS,  $\Delta I$ ,  $\Delta I$ -P, and  $\Delta S$ -115 iPSCs. Plus strand RNAPII density is shown in red. Minus strand RNAPII density is shown in blue. Absent signals in  $\Delta I$ ,  $\Delta I$ -P, and  $\Delta S$ -115 iPSC lanes reflect engineered deletions.





**Table S1. ChIP-qPCR primers**

Primer name	sequence
SNRPN_U_F	GGTCTCTCAGTTGGCTCCTG
SNRPN_U_R	ATGGTGGATACTTGGCTTGG
PAR1_F	CAGGGAACGCTCTTCAACAT
PAR1_R	AACCAGTTCCAAACCTGACG
UBE3A_U_F	TGCTTCTGAACCCTGAATCC
UBE3A_U_R	CATGGACAAGTGTGTGTTGCT
SNRPN_exon_F	ATCTGTCTGAGGAGCGGTCAGT
SNRPN_exon_R	TCCCCAGGCTGTCTCTTGAG
SNORD116_F	GTTGGTGTTCCTAGCATCC
SNORD116_R	CCTTGCAGGTCTTGAAATC
PAR1_mi_F	CAGGGAAGGGAGTTTGTG
PAR1_mi_R	CGTGGGATTGTTTGATAGTGTG

**Table S2. CRISPR guide RNA sequences for genome engineering**

CRISPR name	sequence
IPW 5' #1	TATACAGAGCAATACGATCATGG
IPW 5' #2	GGAAAGGTTGGATTAAACTAAGG
IPW 5' #4	TCTAAGAATTCCACTGGTGAAGG
IPW 3'	AACTAGCACATACAAGGAACTGG
PAR1 5'	GTTCTGAAGCAAGGTATACCTGG
PAR1 3'	ATATAACCAAATTGTCCGTTAGG
SNRPN_intron 1	CAAGAACCTGGCATATACGAGGG
SNORD115-45	GACTCCATAGATTAACCCCTGG



**Suppl. Table 4. Differentially bound CTCF sites in AS versus PWS iPSCs**

seqnames	start	end	width	strand	Conc	Conc_AS
chr12	130516093	130516527	435	*	5.28	6.07
chr16	6197051	6197452	402	*	4.24	5.22
chr16	6732153	6732787	635	*	4.5	5.39
chr6	57445299	57445881	583	*	4.21	5.14
chr10	109964112	109964501	390	*	4.1	5.02
chr16	5968813	5969124	312	*	3.82	4.79
chr16	76299384	76299720	337	*	3.76	4.73
chr16	84208896	84209269	374	*	3.73	4.7
chr12	130399158	130399511	354	*	3.7	4.67
chr8	35998776	35999110	335	*	3.92	4.83
chr2	22578691	22579084	394	*	3.65	4.6
chr10	132484943	132485347	405	*	3.63	4.6
chr12	130510916	130511600	685	*	3.64	4.61
chr10	108471045	108471498	454	*	3.69	4.66
chr17	44290281	44290650	370	*	5.39	6.11
chr6	86632708	86633170	463	*	4.24	5.12
chr10	108623352	108623607	256	*	3.54	4.5
chr15	25017465	25017772	308	*	3.54	4.5
chr2	21977072	21977444	373	*	3.47	4.43
chr4	9167788	9168086	299	*	3.44	4.4
chr12	129637158	129637765	608	*	3.48	4.43
chr10	107935227	107935930	704	*	3.43	4.39
chr12	127839688	127839974	287	*	3.54	4.47
chr12	127189162	127189494	333	*	3.36	4.32
chr15	25513278	25513641	364	*	3.36	4.32
chr12	129098390	129098661	272	*	3.36	4.32
chr10	47080906	47081326	421	*	6.25	6.9
chr16	75729564	75729986	423	*	3.31	4.27
chr7	23584392	23584959	568	*	3.38	4.34
chrX	155196469	155197058	590	*	3.43	4.36
chr22	48172091	48172389	299	*	3.48	4.44
chr2	21644905	21645259	355	*	3.56	4.47
chr12	128195772	128196087	316	*	3.57	4.48
chr15	53879062	53879389	328	*	3.39	4.32
chr16	5806999	5807295	297	*	3.27	4.22
chr8	140418019	140418598	580	*	4.25	5.07
chr10	108555360	108555692	333	*	3.27	4.21
chr8	140260371	140260656	286	*	3.24	4.19
chr10	108465276	108465696	421	*	4.02	4.89
chr12	128410544	128410865	322	*	3.2	4.15
chr9	80744952	80745240	289	*	3.21	4.16

chr15	29888541	29888856	316 *	3.16	4.11
chr10	47004081	47004642	562 *	5.66	6.31
chr14	22470981	22471492	512 *	4.34	1.94
chr22	48233515	48233781	267 *	3.1	4.05
chr7	153078622	153079086	465 *	3.15	4.09
chr12	128258071	128258499	429 *	3.28	4.2
chr12	126847601	126847895	295 *	3.09	4.03
chr7	154581142	154581392	251 *	3.11	4.06
chr12	127101848	127102241	394 *	3.62	4.51
chr2	22597955	22598363	409 *	3.3	4.25
chr8	126970056	126970416	361 *	3.32	4.22
chr6	64017815	64018215	401 *	3.08	4.02
chr10	133040361	133040618	258 *	3.1	4.04
chr10	109871941	109872388	448 *	3.65	4.53
chr10	108331266	108331702	437 *	3.75	4.62
chr12	128744059	128744438	380 *	3.04	3.99
chr4	155040480	155040939	460 *	3.04	3.99
chr20	40200732	40201016	285 *	2.99	3.93
chr7	154376413	154376701	289 *	2.99	3.93
chr12	128378448	128378722	275 *	3.05	3.99
chr16	6395130	6395425	296 *	2.95	3.89
chr8	139126591	139126984	394 *	3.42	4.32
chr10	109574630	109574876	247 *	2.99	3.94
chr10	107734510	107734896	387 *	2.93	3.87
chr12	129671571	129671807	237 *	2.94	3.88
chr3	950567	950927	361 *	2.9	3.83
chr16	88371784	88372180	397 *	3.92	0.63
chr12	126832052	126832289	238 *	2.88	3.82
chr17	49613184	49613568	385 *	2.87	3.81
chr7	21536799	21537103	305 *	2.87	3.81
chr6	57689903	57690229	327 *	2.86	3.79
chr12	127268817	127269229	413 *	3.12	4.02
chr8	35684945	35685287	343 *	3.02	3.97
chr17	13841927	13842220	294 *	2.95	3.87
chr12	127147818	127148185	368 *	3.73	4.56
chr10	46983358	46984129	772 *	7.38	7.97
chr6	80113934	80114386	453 *	2.83	3.76
chr12	129328826	129329107	282 *	2.83	3.76
chr17	65471529	65471911	383 *	3.92	1.34
chr6	87566524	87567056	533 *	3.85	4.68
chr11	21535668	21536164	497 *	3.73	4.57
chr8	41692138	41692607	470 *	4.58	2.93
chr4	187071181	187071413	233 *	2.85	3.79

chr9	106160184	106160613	430 *	2.77	3.7
chr12	127778026	127778402	377 *	2.95	3.85
chr1	4654435	4654679	245 *	2.74	3.67
chr5	33470761	33470960	200 *	2.74	3.67
chr22	20918549	20919024	476 *	5.39	4.25
chr8	139490998	139491313	316 *	3.26	4.14
chr22	49059178	49059589	412 *	2.79	3.72
chr4	118927035	118927504	470 *	3.55	4.44
chr8	139926663	139927006	344 *	3.01	3.95
chr21	31781283	31781480	198 *	3.11	4
chr16	5683872	5684177	306 *	3.28	4.17
chr12	129460660	129460948	289 *	2.71	3.64
chr3	119139104	119139370	267 *	2.71	3.64
chr15	25006852	25007216	365 *	2.69	3.62
chr16	6410650	6410973	324 *	2.8	3.74
chr8	118874316	118874658	343 *	4.45	5.22
chr8	35913482	35913813	332 *	2.9	3.79
chr22	35567398	35567647	250 *	2.84	3.77
chr12	130770637	130770915	279 *	2.79	3.73
chr10	104374977	104375431	455 *	3.73	0.63
chr10	108770952	108771189	238 *	2.75	3.68
chr8	138859331	138859584	254 *	2.68	3.6
chr8	35744543	35745004	462 *	3.07	3.96
chr17	41400262	41400646	385 *	3.69	0.63
chr19	21651587	21651957	371 *	3.69	0.63
chr10	108369670	108369993	324 *	2.7	3.63
chr16	6464714	6464951	238 *	2.7	3.63
chr10	135422224	135422852	629 *	3.22	4.1
chr12	129015719	129016019	301 *	2.66	3.58
chr12	128044277	128044653	377 *	2.65	3.57
chr8	138946742	138946967	226 *	2.65	3.57
chr1	205641216	205641609	394 *	3.66	0.63
chr8	36634102	36634380	279 *	2.76	3.67
chr15	45866256	45866483	228 *	3.57	4.4
chr8	34748717	34749031	315 *	3.09	3.96
chr8	139712645	139712949	305 *	3.6	4.43
chr12	129675466	129675726	261 *	2.63	3.55
chr13	108739134	108739347	214 *	2.63	3.55
chr2	21638191	21638543	353 *	2.63	3.55
chr7	153769012	153769312	301 *	2.63	3.55
chr8	140353141	140353416	276 *	2.63	3.55
chr22	24326700	24326980	281 *	2.66	3.59
chr11	47395376	47395839	464 *	3.74	0.63

chr16	76702322	76702562	241 *	2.61	3.53
chr2	44271287	44271737	451 *	4.01	1.7
chr10	61435619	61435939	321 *	3.28	4.13
chr12	127593157	127593504	348 *	2.69	3.62
chr10	132139605	132139933	329 *	2.68	3.61
chr19	47082902	47083333	432 *	2.94	3.84
chrX	25987224	25987483	260 *	2.82	3.76
chr3	55475355	55475891	537 *	2.76	3.69
chr16	78512420	78512682	263 *	4.15	4.89
chr3	2806635	2807010	376 *	2.58	3.5
chr5	71542099	71542399	301 *	2.58	3.5
chr7	152810238	152810665	428 *	3.35	4.21
chr7	145794245	145794483	239 *	2.56	3.48
chr16	6066447	6066867	421 *	2.9	3.81
chr6	10954789	10955169	381 *	4.34	2.73
chr11	132009956	132010399	444 *	2.62	3.54
chr17	13602214	13602504	291 *	2.83	3.72
chr8	35715380	35715671	292 *	3.33	4.19
chr12	127618615	127618841	227 *	2.54	3.46
chr16	6131282	6131669	388 *	3.8	4.63
chr20	53596946	53597196	251 *	2.67	3.57
chr10	71645098	71645335	238 *	2.68	3.58
chr8	140035343	140035706	364 *	3.51	4.36
chr2	21595533	21595857	325 *	3.21	4.07
chr12	111332090	111332509	420 *	3.55	0.63
chr6	64632963	64633356	394 *	2.67	3.6
chr18	36125010	36125377	368 *	4.13	4.87
chr8	139711085	139711429	345 *	3.4	4.27
chr1	47995131	47995637	507 *	3.13	3.99
chr15	24112014	24112277	264 *	2.51	3.43
chr2	91814900	91815856	957 *	5.12	3.86
chr1	55755407	55755706	300 *	2.57	3.5
chr12	127459405	127459722	318 *	2.57	3.5
chr10	108160868	108161281	414 *	3.25	4.08
chr5	132623165	132623522	358 *	3.54	0.63
chr15	25381336	25381557	222 *	2.55	3.47
chrX	53076410	53076926	517 *	2.55	3.47
chr9	89612107	89612493	387 *	3.52	0.63
chr1	226591169	226591466	298 *	3.04	3.91
chr22	36617805	36618313	509 *	3.51	0.63
chr6	126573372	126573966	595 *	3.03	3.9
chr11	84658250	84658501	252 *	2.82	3.69
chr6	87739486	87739803	318 *	3.69	4.5

chr4	133739343	133739751	409 *	3.5	0.63
chr8	4695397	4695640	244 *	2.96	3.84
chr2	33780103	33780362	260 *	2.71	3.58
chr8	117863438	117863727	290 *	2.74	3.62
chr4	154949904	154950245	342 *	2.47	3.38
chr2	169231691	169231994	304 *	2.59	3.48
chr3	3237840	3238321	482 *	4.14	4.91
chr12	127847917	127848426	510 *	2.45	3.37
chr16	76191601	76191816	216 *	2.45	3.37
chrX	25739782	25740013	232 *	2.45	3.37
chr19	28464918	28465324	407 *	3.48	0.63
chr6	87646840	87647091	252 *	2.81	3.74
chr12	130886210	130886468	259 *	2.43	3.35
chr6	62421868	62422105	238 *	2.43	3.35
chr1	19988204	19988693	490 *	4.18	4.92
chr7	14344931	14345229	299 *	2.47	3.39
chr10	132134954	132135273	320 *	2.66	3.53
chr11	68495368	68495618	251 *	2.57	3.46
chr8	101678380	101678702	323 *	2.57	3.46
chr8	73199205	73199778	574 *	2.9	3.75
chr12	50469008	50469307	300 *	3.45	0.63
chr17	26881572	26881872	301 *	2.41	3.33
chr8	140418913	140419189	277 *	2.41	3.33
chr1	29529400	29529684	285 *	3.44	0.63
chr16	8405747	8406018	272 *	3.51	4.34
chr3	13503032	13503447	416 *	4.4	2.93
chr14	69291590	69292018	429 *	3.87	1.81
chr10	107451650	107451890	241 *	2.45	3.36
chr12	126373130	126373334	205 *	2.45	3.36
chr8	138505140	138505382	243 *	2.69	3.57
chr2	133408705	133408987	283 *	2.55	3.45
chr3	14832781	14833198	418 *	3.64	1.34
chrX	37161893	37162295	403 *	3.41	0.63
chr13	82901181	82901729	549 *	2.49	3.41
chr20	53674359	53674702	344 *	2.49	3.41
chr10	48586161	48586412	252 *	2.61	3.48
chr8	36631132	36631501	370 *	2.86	3.75
chr6	43726224	43726563	340 *	4.05	2.17
chr16	6227831	6228066	236 *	2.38	3.29
chr2	20391168	20391399	232 *	2.38	3.29
chr2	22849567	22849862	296 *	2.38	3.29
chr18	2985741	2986122	382 *	2.52	3.41
chr8	58094753	58095054	302 *	2.52	3.41

chr1	19717885	19718316	432 *	3.41	0.63
chr20	1569782	1569990	209 *	2.39	3.3
chr12	125382945	125383382	438 *	4.17	2.46
chr3	90401365	90401934	570 *	2.94	3.79
chr8	97340064	97340745	682 *	3.63	1.34
chr12	129156142	129156431	290 *	2.4	3.31
chr3	56741540	56741786	247 *	2.36	3.27
chr19	47207615	47208196	582 *	4.12	2.5
chr3	22282678	22283031	354 *	3.73	4.52
chr12	129129328	129129613	286 *	3.07	3.92
chr8	108376383	108376711	329 *	2.72	3.57
chr2	17352820	17353098	279 *	3.29	4.1
chr16	5654763	5655060	298 *	2.33	3.24
chr5	22319888	22320229	342 *	2.33	3.24
chr6	4384985	4385387	403 *	2.33	3.24
chr12	130549624	130549916	293 *	2.48	3.4
chr17	32846356	32846650	295 *	3.34	0.63
chr16	76888137	76888535	399 *	2.42	3.33
chr4	179928890	179929263	374 *	2.42	3.33
chrX	82890294	82890624	331 *	2.58	3.45
chr10	107557067	107557284	218 *	2.76	3.62
chrX	34293885	34294280	396 *	3.21	4.03
chr10	106684969	106685418	450 *	4.2	4.89
chr2	50763472	50763864	393 *	3.82	4.56
chrX	146885549	146885981	433 *	2.61	3.48
chr13	107954036	107954444	409 *	2.86	3.73
chr14	69408241	69408829	589 *	3.42	0.63
chr5	141137061	141137275	215 *	3.56	1.34
chr19	38874979	38875774	796 *	4.24	2.69
chrX	17857305	17857852	548 *	3.33	0.63
chr10	49867913	49868135	223 *	2.54	3.41
chr12	65386519	65386824	306 *	2.54	3.41
chr7	157091181	157091638	458 *	3.68	1.43
chr12	56099567	56099996	430 *	3.34	0.63
chr11	90663447	90663761	315 *	2.3	3.2
chr14	75040093	75040448	356 *	3.55	1.34
chr7	24755522	24755779	258 *	3.32	0.63
chr12	117908466	117908979	514 *	3.15	3.97
chr15	40223914	40224186	273 *	2.93	3.76
chr19	15979886	15980128	243 *	2.77	3.63
chr20	44174620	44175080	461 *	3	3.83
chr8	27104828	27105262	435 *	3.92	2.17
chr5	58746101	58746430	330 *	2.92	3.77

chr8	138637938	138638220	283 *	2.27	3.18
chr1	14136317	14136637	321 *	2.31	3.22
chr10	109024517	109024729	213 *	2.31	3.22
chr12	128665310	128665569	260 *	2.31	3.22
chr2	21586299	21586625	327 *	2.31	3.22
chr20	49192441	49192714	274 *	3.31	0.63
chr15	55856546	55857020	475 *	3.08	3.89
chr10	106245439	106245720	282 *	2.59	3.46
chr6	86058445	86058649	205 *	2.59	3.46
chr2	30249298	30249787	490 *	3.28	0.63
chr2	64276713	64277284	572 *	4.65	5.31
chr1	96418563	96418915	353 *	2.34	3.25
chr16	5555076	5555426	351 *	2.34	3.25
chr7	129284503	129284740	238 *	2.34	3.25
chr20	58799940	58800334	395 *	2.58	3.45
chr4	308381	308772	392 *	2.84	3.69
chr3	10234519	10234889	371 *	3.07	3.88
chr14	36156321	36156850	530 *	4.07	4.78
chr20	61862178	61862538	361 *	3.51	1.34
chr16	85279093	85279726	634 *	3.29	0.63
chr8	143922156	143922447	292 *	3.51	1.34
chr12	130348551	130348809	259 *	2.25	3.15
chr3	2029749	2030002	254 *	2.25	3.15
chr6	159082216	159082468	253 *	2.25	3.15
chrX	75776251	75776528	278 *	2.83	3.67
chr2	117214125	117214490	366 *	2.39	3.27
chr8	35622513	35622945	433 *	2.68	3.56
chr19	12476734	12476968	235 *	3.26	0.63
chr7	106377512	106377998	487 *	2.53	3.39
chr2	149266894	149267358	465 *	4.89	3.8
chr21	22343586	22344103	518 *	4.04	4.76
chr11	20776575	20776957	383 *	4.22	4.9
chr10	98819325	98819788	464 *	3.59	1.43
chr2	209436159	209436575	417 *	2.72	3.55
chr15	23887643	23887871	229 *	2.57	3.44
chr6	67206650	67206836	187 *	2.57	3.44
chr12	121533742	121534117	376 *	3.52	1.08
chr1	40781013	40781276	264 *	3.26	0.63
chr12	129068038	129068308	271 *	2.68	3.53
chrX	135291344	135291780	437 *	3.72	1.81
chr10	46951237	46951516	280 *	3.53	4.35
chr10	107949040	107949600	561 *	2.23	3.13
chr12	130064509	130064739	231 *	2.23	3.13

chr4	46846420	46846716	297 *	2.23	3.13
chr6	87416111	87416518	408 *	2.23	3.13
chr9	124446504	124446967	464 *	3.25	0.63
chr8	36363232	36363473	242 *	2.21	3.11
chr9	72547763	72548194	432 *	2.21	3.11
chr10	46962514	46962888	375 *	4.21	4.89
chr11	108355500	108355865	366 *	3.11	3.91
chr6	14397491	14397812	322 *	3.38	0.63
chr4	107955207	107955799	593 *	3.5	1.34
chr10	118450317	118450655	339 *	2.51	3.4
chrX	17374097	17374400	304 *	2.51	3.4
chr21	20212534	20212838	305 *	2.52	3.38
chr1	202895803	202896267	465 *	3.21	0.63
chrX	14057417	14057832	416 *	3.21	0.63
chr9	89416901	89417192	292 *	2.78	3.62
chr1	207055942	207056289	348 *	2.19	3.08
chr12	130450676	130450882	207 *	2.19	3.08
chr5	82321658	82321872	215 *	2.19	3.08
chr8	140108612	140108821	210 *	2.19	3.08
chr18	43973148	43973663	516 *	3.46	1.34
chr17	63090139	63090491	353 *	2.93	3.76
chr3	1317170	1317529	360 *	2.26	3.16
chr8	4732782	4733246	465 *	2.26	3.16
chr8	139115082	139115350	269 *	2.67	3.52
chr2	84858277	84858519	243 *	2.51	3.37
chr19	57580586	57580874	289 *	2.23	3.13
chr9	20214868	20215264	397 *	2.23	3.13
chrX	12843108	12843426	319 *	2.23	3.13
chr15	52509325	52509871	547 *	3.45	1.34
chr5	9516771	9517359	589 *	3.37	1.08
chr2	87127876	87128145	270 *	2.49	3.35
chrX	112633861	112634087	227 *	2.49	3.35
chr14	53647669	53648179	511 *	3.73	4.5
chrX	44805062	44805362	301 *	2.88	3.69
chr7	41042640	41043191	552 *	5.17	5.71
chr16	13547753	13548175	423 *	4.03	4.72
chr2	96394539	96394988	450 *	3.15	0.63
chr9	85845969	85846306	338 *	3.17	0.63
chr11	76750305	76750740	436 *	3.42	1.34
chr1	17732495	17732940	446 *	3.21	0.63
chr12	122492272	122492706	435 *	3.16	0.63
chr7	44280480	44280892	413 *	4.34	3
chr10	48119402	48119678	277 *	3.44	4.25



chr15	31151424	31151937	514 *	4.32	4.97
chr17	5035846	5036228	383 *	3.16	0.63
chr5	101919336	101919855	520 *	3.24	4.02
chrX	12516014	12516307	294 *	3.35	1.08
chr10	111533682	111533881	200 *	2.47	3.33
chr10	133619386	133619823	438 *	4.35	4.99
chr1	34628547	34629116	570 *	3.18	0.63
chr21	29423876	29424321	446 *	2.31	3.18
chr10	92539266	92539649	384 *	3.3	4.07
chr11	35433861	35434210	350 *	4.04	4.73
chr1	208780866	208781078	213 *	2.16	3.06
chr12	130677521	130677833	313 *	2.16	3.06
chr20	11566413	11566691	279 *	2.16	3.06
chr6	164132647	164133025	379 *	2.16	3.06
chr16	73230658	73231238	581 *	3.9	2.13
chr21	31640946	31641280	335 *	4.46	5.07
chr12	116979849	116980144	296 *	2.14	3.04
chr6	32399706	32400137	432 *	2.14	3.04
chr12	110365385	110365751	367 *	4.6	5.21
chr2	28817099	28817488	390 *	3.41	1.34
chrX	64520307	64520782	476 *	2.88	3.7
chr12	129266891	129267196	306 *	3.01	3.81
chr2	23126920	23127334	415 *	4.51	5.11
chr8	139698802	139699069	268 *	3.27	4.07
chr12	78864432	78864834	403 *	3.4	4.2
chr17	50248331	50248667	337 *	4.17	4.87
chr12	129192067	129192498	432 *	2.12	3.01
chr18	68266123	68266498	376 *	2.12	3.01
chr2	22438424	22438718	295 *	2.12	3.01
chr21	48059767	48060175	409 *	2.12	3.01
chr6	72512883	72513301	419 *	2.12	3.01
chr6	86466779	86467024	246 *	2.12	3.01
chrX	109664399	109664611	213 *	2.12	3.01
chr12	128465117	128465432	316 *	2.72	3.55
chr2	178664314	178664677	364 *	4.23	4.92
chr12	53459589	53460161	573 *	3.8	2.08
chrX	155087207	155087612	406 *	2.59	3.43
chr7	120627711	120628042	332 *	3.31	1.08
chr15	78469635	78470158	524 *	3.99	2.46
chr10	109169313	109169624	312 *	2.17	3.07
chr6	64062977	64063278	302 *	2.17	3.07
chr9	82761445	82761956	512 *	2.76	3.57
chr11	61394335	61394622	288 *	3.1	0.63

chr8	112376506	112376724	219 *	2.28	3.15
chr12	59838780	59839058	279 *	2.5	3.33
chr11	126875612	126875935	324 *	2.78	3.59
chr1	155057158	155057427	270 *	4.31	3
chr18	34874900	34875386	487 *	3.78	2.08
chr4	122386094	122386525	432 *	2.57	3.41
chr2	45956886	45957239	354 *	3.37	4.13
chr2	23862503	23862830	328 *	3.1	3.88
chr16	6399835	6400048	214 *	2.42	3.27
chr5	145239556	145239753	198 *	2.42	3.27
chr6	50160552	50160877	326 *	3.86	4.6
chr22	48022701	48022922	222 *	2.2	3.1
chr12	53264157	53264595	439 *	3.36	1.34
chr10	16958580	16958809	230 *	2.09	2.98
chr15	25064851	25065106	256 *	2.09	2.98
chr16	78553603	78553865	263 *	2.09	2.98
chr6	63601011	63601274	264 *	2.09	2.98
chr7	4542922	4543306	385 *	2.09	2.98
chr7	133793614	133793850	237 *	2.09	2.98
chr8	139709379	139709634	256 *	2.09	2.98
chr3	52157099	52157536	438 *	3.61	1.81
chr22	23035190	23035708	519 *	3.72	2.03
chr4	93084609	93084898	290 *	3.65	4.42
chr4	146812978	146813532	555 *	3.06	0.63
chr12	67555149	67555475	327 *	3.94	4.69
chr4	125865160	125865439	280 *	3.06	0.63
chr2	20335420	20335884	465 *	3.35	1.34
chr15	91576328	91576756	429 *	3.97	2.46
chr19	14429668	14430172	505 *	3.09	0.63
chr20	3332104	3332322	219 *	2.24	3.11
chr12	130395951	130396581	631 *	2.44	3.32
chr12	106751135	106751566	432 *	3.06	0.63
chr1	222942547	222942836	290 *	2.95	3.76
chr17	78623886	78624231	346 *	3.59	1.81
chr19	30185447	30185920	474 *	3.16	0.63
chr3	38521380	38521757	378 *	3.45	1.43
chr2	131752908	131753124	217 *	2.74	3.57
chr5	60517540	60517773	234 *	2.14	3.03
chr17	16266910	16267537	628 *	5.06	5.62
chr7	157030881	157031151	271 *	3.04	0.63
chr18	68245855	68246061	207 *	2.32	3.19
chr11	64455841	64456609	769 *	5.19	4.33
chr11	57835964	57836454	491 *	3	3.78

chr16	18015178	18015785	608 *	3.04	0.63
chr8	10948471	10948752	282 *	2.94	3.73
chr9	16192088	16192548	461 *	3.38	1.34
chr19	49298445	49298830	386 *	3.54	1.63
chr5	153801343	153801834	492 *	3.24	1.08
chr2	185476207	185476558	352 *	3.02	0.63
chr19	45615761	45616221	461 *	3.02	0.63
chr7	53276831	53277312	482 *	3.02	0.63
chr6	31564638	31565154	517 *	3.03	0.63
chr4	131109803	131110024	222 *	2.62	3.44
chr12	100948333	100948852	520 *	5.31	5.82
chr10	107710173	107710416	244 *	3.43	4.17
chr1	4377364	4377564	201 *	2.22	3.08
chr19	53095559	53095865	307 *	2.29	3.16
chr11	107787318	107788067	750 *	4.78	3.8
chr5	153989891	153990201	311 *	3.04	0.63
chr3	81055164	81055504	341 *	2.66	3.48
chr2	115526719	115526991	273 *	2.69	3.51
chr8	130738526	130738937	412 *	4.54	5.13
chr18	75781300	75781553	254 *	2.05	2.94
chr3	194709207	194709516	310 *	2.05	2.94
chr6	63831191	63831571	381 *	2.05	2.94
chr10	73821174	73821687	514 *	3.57	1.81
chr4	49650577	49650855	279 *	3.09	3.9
chr14	82176657	82176963	307 *	3.42	4.2
chr12	128084815	128085111	297 *	2.57	3.38
chr22	41922691	41923050	360 *	3.38	1.34
chr12	6574660	6575083	424 *	5.16	5.71
chrX	25361257	25361519	263 *	2.71	3.54
chr10	132345767	132345980	214 *	2.07	2.96
chrX	56790860	56791187	328 *	3.59	4.33
chr5	139737284	139737529	246 *	3.02	0.63
chr8	70602279	70602577	299 *	3.29	0.63
chr4	48087135	48087484	350 *	2.85	3.67
chr5	81790789	81791104	316 *	2.08	2.96
chr13	52549958	52550358	401 *	2.02	2.91
chr18	29652416	29652750	335 *	2.02	2.91
chr2	241984074	241984302	229 *	2.02	2.91
chr6	87569372	87569583	212 *	2.02	2.91
chr8	2034482	2034836	355 *	2.02	2.91
chr16	15313873	15314169	297 *	3.31	1.34
chr21	37851218	37851537	320 *	2.99	0.63
chr10	7664940	7665286	347 *	3.46	1.63

chr5	176087748	176088177	430 *	3.99	2.46
chr1	231726325	231726740	416 *	4.44	5.11
chr8	138738176	138738506	331 *	3.33	4.09
chr12	52477222	52477580	359 *	3.94	2.31
chr8	98607968	98608392	425 *	4.87	5.44
chr6	109159324	109159562	239 *	2.99	0.63
chr11	129233823	129234457	635 *	5.37	4.51
chr1	100816649	100817101	453 *	3.56	1.81
chr8	15235553	15236519	967 *	5.73	6.19
chr8	139739645	139740020	376 *	4.97	5.5
chr6	55141498	55141953	456 *	4.12	4.77
chr11	117466107	117466563	457 *	2.97	0.63
chrX	118551793	118552119	327 *	2.97	0.63
chr5	137785645	137786127	483 *	3.26	1.08
chr9	36995879	36996201	323 *	2.97	0.63
chr9	106082368	106082641	274 *	2.27	3.11
chr6	44081007	44081499	493 *	2.66	3.49
chr8	35345914	35346327	414 *	3.32	4.09
chr2	171823256	171823851	596 *	2.97	0.63
chr16	76673834	76674292	459 *	2.81	3.63
chr8	139963733	139963978	246 *	2.34	3.18
chr8	36716461	36716743	283 *	4.06	4.74
chr14	93500740	93501049	310 *	3.06	0.63
chr7	154432298	154432559	262 *	2.37	3.22
chrX	78337402	78337663	262 *	2.37	3.22
chr15	43517622	43518001	380 *	4.66	5.25
chr9	79611699	79612002	304 *	4.21	2.96
chr8	59447404	59447832	429 *	3	0.63
chr6	62860064	62860279	216 *	3.1	3.85
chr11	104127262	104127598	337 *	2.95	3.72
chr1	156426237	156426523	287 *	3.83	2.13
chr1	171214504	171215053	550 *	4.37	4.96
chr2	117709645	117710290	646 *	4.01	4.75
chrX	40398429	40398874	446 *	2.95	0.63
chr4	12597684	12597959	276 *	3.88	4.57
chr17	74394059	74394416	358 *	3.53	1.81
chr15	98288739	98289077	339 *	3.94	4.62
chrX	51079387	51079740	354 *	2.67	3.46
chr3	172207976	172208258	283 *	3.58	4.3
chr12	1086406	1086825	420 *	2.57	3.41
chr1	120217462	120217898	437 *	2.97	0.63
chr5	161636023	161636378	356 *	4.58	5.16
chr18	47883602	47884019	418 *	2.95	0.63

chr17	65659629	65659840	212 *	2.25	3.08
chr12	129552157	129552376	220 *	1.99	2.88
chr15	23908445	23908674	230 *	1.99	2.88
chr15	85554004	85554217	214 *	1.99	2.88
chr16	6328135	6328380	246 *	1.99	2.88
chr17	38080800	38080967	168 *	1.99	2.88
chr2	22960090	22960321	232 *	1.99	2.88
chr3	106014592	106014850	259 *	1.99	2.88
chr3	173720432	173720646	215 *	1.99	2.88
chr4	148515243	148515650	408 *	1.99	2.88
chr9	125600875	125601095	221 *	1.99	2.88
chr4	101856189	101856630	442 *	2.67	3.47
chr14	67826550	67826986	437 *	3.26	1.34
chr1	25495056	25495355	300 *	2.39	3.2
chr16	46963594	46963985	392 *	2.95	0.63
chr1	38355866	38356472	607 *	4.2	4.91
chr2	21398468	21399033	566 *	2.32	3.16
chr1	177400323	177400746	424 *	2.46	3.29
chr14	35610033	35610286	254 *	2.46	3.29
chr3	127813912	127814421	510 *	2.97	0.63
chr12	11362057	11362335	279 *	2.2	3.07
chr16	76687311	76687749	439 *	2.96	3.73
chr3	63218447	63218951	505 *	2.96	3.75
chr20	15624387	15624759	373 *	2.99	3.76
chr19	13140781	13141215	435 *	3.52	1.7
chr4	143906331	143906707	377 *	2.97	3.76
chr3	2197919	2198350	432 *	2.77	3.63
chr8	140495546	140495951	406 *	2.93	3.74
chr1	37486280	37486580	301 *	2.93	0.63
chr9	93767414	93767774	361 *	2.48	3.3
chr7	83104705	83105041	337 *	2.91	0.63
chr17	5972229	5972538	310 *	3.23	1.34
chr4	94928477	94928755	279 *	2.31	3.15
chr16	87712238	87712471	234 *	2.91	0.63
chr3	23930110	23930594	485 *	3.66	1.94
chr1	24717776	24718179	404 *	4.15	2.93
chr2	121310497	121310780	284 *	2.94	0.63
chr4	174281696	174282176	481 *	3.27	1.34
chr15	45560205	45560703	499 *	4.11	4.74
chr6	111577856	111578164	309 *	3.15	3.93
chr2	128795237	128795578	342 *	2.49	3.29
chr8	9688277	9688901	625 *	6.12	6.63
chr11	106423636	106423843	208 *	2.04	2.93

chr12	130534306	130534592	287 *	2.04	2.93
chr14	23322238	23323060	823 *	4.69	3.65
chr3	5649385	5649613	229 *	2.13	2.98
chr17	2833362	2833638	277 *	3.53	1.81
chrX	129159297	129159631	335 *	3.72	2.17
chr12	49782950	49783217	268 *	2.93	0.63
chr5	174163006	174163417	412 *	2.91	0.63
chr10	47600391	47600860	470 *	4.8	5.36
chr6	91186309	91187044	736 *	4.73	5.31
chr2	71222453	71223016	564 *	2.89	0.63
chr2	152525212	152525609	398 *	3.1	3.9
chr17	48164813	48165165	353 *	3.86	2.27
chr4	168998174	168998501	328 *	4.54	5.11
chr22	49178822	49179358	537 *	3.53	4.27
chr1	79788370	79788618	249 *	1.95	2.82
chr1	152505770	152506084	315 *	1.95	2.82
chr3	509865	510226	362 *	1.95	2.82
chr7	10071163	10071476	314 *	1.95	2.82
chrX	110609113	110609330	218 *	1.95	2.82
chr4	69434821	69435080	260 *	2.72	3.52
chr7	51068628	51069092	465 *	3.53	4.25
chr16	6385031	6385431	401 *	3.01	3.81
chr22	23520673	23520980	308 *	3.21	1.34
chr10	49717977	49718265	289 *	2.28	3.11
chr18	42594084	42594629	546 *	2.51	3.31
chr17	40580401	40580877	477 *	4.78	5.35
chr1	204683929	204684230	302 *	2.91	0.63
chr4	32776698	32777057	360 *	3.51	1.7
chr1	27462360	27462840	481 *	3.73	2.22
chr13	101259296	101259474	179 *	2.41	3.26
chr4	64432289	64432776	488 *	1.97	2.85
chr2	143919795	143920227	433 *	3.11	1.08
chr12	55096064	55096425	362 *	2.93	3.72
chr3	197254010	197254184	175 *	2.23	3.06
chr5	159787150	159787697	548 *	2.23	3.06
chr6	139073155	139073623	469 *	3.49	1.81
chr19	46991130	46991428	299 *	2.91	0.63
chr12	125256339	125256693	355 *	2.94	0.63
chr8	90425625	90425913	289 *	2.42	3.24
chr18	69753605	69753988	384 *	2.21	3.04
chr2	64782764	64783016	253 *	2.21	3.04
chr1	189189934	189190257	324 *	2.87	0.63
chr3	38569967	38570284	318 *	2.87	0.63

chr3	42588906	42589375	470 *	3.86	2.38
chr11	4208213	4208473	261 *	3.19	1.34
chr15	63385819	63386221	403 *	3.95	2.63
chr8	34541665	34541995	331 *	3.47	4.23
chr7	157021545	157022015	471 *	3.49	1.7
chr16	67975942	67976553	612 *	4.06	2.7
chr3	138047217	138047519	303 *	3.02	3.79
chr4	78499312	78499637	326 *	3.04	3.78
chr13	61576910	61577185	276 *	1.92	2.79
chr13	80077368	80077705	338 *	1.92	2.79
chr14	46340245	46340511	267 *	1.92	2.79
chr3	2682491	2682723	233 *	1.92	2.79
chr3	112994721	112995169	449 *	1.92	2.79
chr4	173792519	173792776	258 *	1.92	2.79
chr5	71378015	71378335	321 *	1.92	2.79
chr5	121226229	121226545	317 *	1.92	2.79
chr8	20325118	20325309	192 *	1.92	2.79
chr8	139654382	139654584	203 *	1.92	2.79
chr20	19769638	19770506	869 *	3.48	4.19
chr11	61284295	61284738	444 *	3.91	2.46
chr16	75823062	75823514	453 *	3.99	4.69
chr15	29860987	29861497	511 *	3.85	4.51
chr10	133252443	133252621	179 *	1.97	2.85
chr19	14167610	14167881	272 *	1.97	2.85
chr8	137382269	137382452	184 *	1.97	2.85
chr14	38666333	38666848	516 *	3.73	4.41
chr11	130301184	130301555	372 *	3.95	4.6
chr3	53144233	53144633	401 *	3.88	2.43
chr1	180592933	180593446	514 *	2.32	3.16
chr10	119212109	119212471	363 *	2.32	3.16
chr4	182919805	182920109	305 *	2.32	3.16
chrX	56274729	56275382	654 *	3.98	4.69
chr2	157013196	157013615	420 *	3.63	1.94
chr2	241929232	241929521	290 *	3.69	2.17
chr16	58131172	58131418	247 *	3.29	1.34
chr6	39699353	39699613	261 *	2.45	3.24
chr6	135827472	135827869	398 *	2.85	0.63
chr4	47492637	47492943	307 *	2.88	0.63
chr17	44272264	44272888	625 *	4.49	5.15
chr14	73698538	73698977	440 *	2.84	0.63
chrX	38025574	38026281	708 *	2.84	0.63
chr3	5772839	5773135	297 *	3.4	4.12
chr6	37274652	37274938	287 *	2.55	3.33

chrX	77347747	77348251	505 *	3.07	1.08
chr2	71016752	71017093	342 *	3.85	2.31
chr11	69696790	69697115	326 *	3	3.78
chr6	50232735	50233055	321 *	3	3.78
chr1	158087579	158087976	398 *	3.76	2.27
chr15	88878408	88878698	291 *	2.84	0.63
chr15	89013923	89014425	503 *	2.29	3.13
chr17	79014676	79015000	325 *	3.31	1.43
chr1	201417192	201417581	390 *	3.07	1.08
chr17	70475303	70475692	390 *	2.82	0.63
chr19	54096275	54096486	212 *	2.82	0.63
chr6	157505262	157505776	515 *	2.82	0.63
chr1	202243714	202244091	378 *	2.83	0.63
chr11	11177608	11177932	325 *	3.46	1.81
chr19	18302678	18303043	366 *	2.67	3.46
chr5	158846656	158846949	294 *	3.06	3.8
chr1	90228580	90228975	396 *	3.42	1.34
chr6	29596456	29596712	257 *	2.88	0.63
chr2	67549812	67550138	327 *	3.42	4.14
chr22	29985936	29986284	349 *	5.08	5.58
chr10	87077693	87077940	248 *	2.33	3.13
chr1	246859757	246860099	343 *	3.71	2.17
chr2	112448147	112448416	270 *	2.31	3.11
chr5	78629950	78630277	328 *	2.94	3.7
chr11	45361560	45361922	363 *	3.89	2.46
chr16	79192256	79192455	200 *	2.1	2.96
chr13	111471766	111472245	480 *	3.18	1.34
chr13	30304370	30304672	303 *	2.52	3.33
chr3	133864087	133864287	201 *	2.52	3.33
chr8	140049698	140050200	503 *	2.76	3.55
chr16	55205016	55205454	439 *	2.11	2.96
chr8	5215208	5215757	550 *	2.11	2.96
chr4	40311073	40311703	631 *	3.16	1.34
chr2	33895554	33896071	518 *	3.32	4.03
chr1	34189897	34190226	330 *	2.82	0.63
chr17	46801976	46802556	581 *	2.82	0.63
chr17	76783423	76783732	310 *	2.82	0.63
chr8	29873655	29873902	248 *	2.89	3.65
chr12	120773300	120773563	264 *	3.27	1.43
chr16	56366507	56366958	452 *	2.9	0.63
chr7	132892535	132892823	289 *	3.13	3.87
chr12	127232079	127232594	516 *	2.66	3.43
chr15	90836517	90837059	543 *	4.87	4.01



chr20	16646878	16647227	350 *	3.08	3.85
chr2	190042876	190043083	208 *	2.16	2.98
chr22	23126767	23127000	234 *	2.16	2.98
chr2	168940937	168941242	306 *	2.48	3.28
chr5	179297557	179297995	439 *	3.14	1.34
chrX	21951272	21951680	409 *	3.14	1.34
chrX	44929513	44930008	496 *	3.67	4.41
chr17	78873100	78873513	414 *	2.85	0.63
chr1	109819966	109820406	441 *	4.25	3.15
chr1	65289821	65290260	440 *	4.13	4.82
chr21	23293898	23294275	378 *	2.83	0.63
chr10	115870355	115870638	284 *	3.07	1.08
chr16	782950	783258	309 *	3.07	1.08
chr2	60886208	60886486	279 *	2.37	3.18
chr22	48888232	48888488	257 *	3.99	4.62
chr4	118629521	118629806	286 *	2.88	3.64
chr14	21402245	21402722	478 *	3.16	1.34
chrX	129213741	129214140	400 *	3.87	2.53
chr11	14929120	14929641	522 *	3.13	1.34
chr2	233309146	233309492	347 *	3.13	1.34
chr20	62765533	62765951	419 *	2.81	0.63
chr1	105560358	105560534	177 *	1.89	2.76
chr10	107439573	107439867	295 *	1.89	2.76
chr11	35163980	35164161	182 *	1.89	2.76
chr11	93840647	93840877	231 *	1.89	2.76
chr11	107638299	107638494	196 *	1.89	2.76
chr12	128174794	128175003	210 *	1.89	2.76
chr17	45853317	45853513	197 *	1.89	2.76
chr2	135540418	135540612	195 *	1.89	2.76
chr2	175501716	175501990	275 *	1.89	2.76
chr3	118543531	118543764	234 *	1.89	2.76
chr4	65040071	65040241	171 *	1.89	2.76
chr4	69241253	69241436	184 *	1.89	2.76
chr4	166440368	166440642	275 *	1.89	2.76
chr9	4355173	4355418	246 *	1.89	2.76
chrX	13960804	13961071	268 *	1.89	2.76
chrX	114380687	114381096	410 *	1.89	2.76
chr3	142650073	142650405	333 *	2.8	0.63
chr3	193885990	193886342	353 *	3.07	3.83
chr22	21457140	21457517	378 *	3.8	2.38
chr17	2752115	2752552	438 *	4.31	3.24
chr10	135164957	135165357	401 *	2.88	0.63
chr1	108329885	108330419	535 *	4.54	5.13

chr10	13116757	13117369	613 *	4.38	3.36
chr10	82203337	82203652	316 *	2.78	0.63
chr5	33300021	33300375	355 *	2.78	0.63
chr6	160940834	160941318	485 *	2.78	0.63
chr19	2613753	2614120	368 *	3.99	2.69
chrX	86593404	86594061	658 *	2.43	3.25
chr7	152530395	152530743	349 *	3.86	4.54
chr7	5405585	5405983	399 *	5.14	5.66
chr4	164469683	164470084	402 *	4.19	4.8
chr6	166272022	166272428	407 *	2.78	0.63
chrX	109656361	109656671	311 *	4.91	4.09
chr22	30822439	30822798	360 *	3.13	1.34
chr1	153590127	153590401	275 *	2.82	0.63
chr11	57224887	57225198	312 *	3.67	2.17
chr2	161285830	161286270	441 *	3.63	4.31
chr10	27945502	27946177	676 *	4.09	4.72
chr6	168472251	168472645	395 *	3.84	2.46
chr20	35823791	35824322	532 *	5.06	5.57
chr6	57540425	57540728	304 *	3.86	4.51
chrX	69253244	69253702	459 *	3.02	1.08
chr12	32810570	32810861	292 *	2.78	0.63
chr1	23000546	23001099	554 *	4.39	4.98
chr3	72900421	72900822	402 *	3.02	1.08
chr1	182570477	182570971	495 *	3.3	1.63
chr3	133629224	133629570	347 *	3.78	4.46
chr7	150820887	150821470	584 *	4.83	3.99
chr12	84217407	84217738	332 *	3.73	4.43
chr10	45360084	45360656	573 *	2.8	0.63
chr15	22802993	22803204	212 *	3.07	3.81
chr4	121693135	121693416	282 *	2.19	3.01
chr4	154267821	154268055	235 *	2.19	3.01
chr16	66376233	66376537	305 *	4.03	2.69
chr16	33963012	33963207	196 *	2.92	0.63
chr20	37063944	37064390	447 *	2.92	0.63
chr7	114996223	114996507	285 *	3.3	4.01
chr6	23592108	23592384	277 *	2.65	3.44
chrX	62348071	62348304	234 *	2.65	3.44
chr5	149217242	149217581	340 *	4.18	3.06
chr8	146252123	146252497	375 *	3.9	4.55
chr3	4287294	4287621	328 *	2.51	3.31
chr3	122018768	122019091	324 *	4.02	4.66
chr15	60286031	60286510	480 *	2.76	0.63
chr20	6054855	6055166	312 *	2.76	0.63

chr19	34258687	34259069	383 *	3.11	1.34
chr4	123835537	123835798	262 *	3.02	1.08
chr17	1998322	1998653	332 *	2.76	0.63
chr19	38389346	38389636	291 *	2.76	0.63
chr1	43888035	43888332	298 *	2.76	0.63
chr10	104429564	104429842	279 *	2.76	0.63
chr14	29220570	29220978	409 *	3.42	1.7
chr5	19262022	19262273	252 *	2.5	3.3
chr22	29552548	29552926	379 *	3.21	1.34
chr11	61021942	61022335	394 *	4.64	3.73
chrX	134730438	134730808	371 *	3.4	1.81
chr12	130531979	130532151	173 *	2.03	2.88
chr21	19894588	19894804	217 *	2.03	2.88
chr8	70986758	70987039	282 *	2.03	2.88
chrX	81473790	81474339	550 *	2.03	2.88
chr2	49717735	49718325	591 *	4.86	5.44
chr7	107514978	107515487	510 *	3.62	4.34
chr2	241133716	241134154	439 *	2.71	3.49
chr6	67776398	67776661	264 *	2.64	3.41
chr12	58150530	58150928	399 *	3.46	1.81
chr8	15718187	15718544	358 *	2.76	0.63
chr8	2671976	2672357	382 *	3.42	4.12
chr10	95493276	95493666	391 *	1.87	2.74
chr10	133286139	133286463	325 *	1.87	2.74
chr15	35182324	35182611	288 *	1.87	2.74
chr18	5794935	5795323	389 *	1.87	2.74
chr6	164767659	164768018	360 *	1.87	2.74
chr7	14774809	14775202	394 *	1.87	2.74
chr9	1709407	1709680	274 *	1.87	2.74
chrX	17025286	17025573	288 *	1.87	2.74
chrX	119903890	119904258	369 *	1.87	2.74
chr17	66196834	66197164	331 *	2.78	0.63
chr11	71274463	71274902	440 *	3.96	4.62
chr12	118160749	118160988	240 *	1.84	2.7
chr13	23143960	23144267	308 *	1.84	2.7
chrX	8541790	8542165	376 *	1.84	2.7
chr3	48474135	48474800	666 *	3.02	1.08
chr19	3326932	3327297	366 *	5.15	5.65
chr21	26655912	26656509	598 *	2.81	0.63
chr7	128523622	128524010	389 *	3.02	1.08
chr3	4763623	4764140	518 *	2.76	0.63
chr2	70872981	70873224	244 *	2.94	3.71
chr1	19975254	19975593	340 *	4.03	2.79

chr3	49131944	49132352	409 *	3.64	2.17
chr11	47464636	47464969	334 *	2.01	2.9
chr16	6661608	6661819	212 *	2.01	2.9
chrX	26667713	26667983	271 *	2.76	3.52
chr11	61245160	61245526	367 *	3.05	1.08
chr12	10078414	10079008	595 *	3	1.08
chr9	104554234	104554558	325 *	2.96	3.69
chr13	104414875	104415517	643 *	2.98	3.7
chr12	56907439	56908079	641 *	4.41	4.98
chr1	38260545	38260962	418 *	2.78	0.63
chr14	34800821	34801236	416 *	3.9	2.47
chr11	42799788	42800136	349 *	2.76	0.63
chr2	142938739	142939158	420 *	2.74	0.63
chr3	153688538	153688871	334 *	2.74	0.63
chr7	104524107	104524453	347 *	4.34	3.2
chr9	26975672	26976020	349 *	2.94	3.69
chr5	148648507	148648944	438 *	2.89	3.67
chr17	49811831	49812172	342 *	2.74	0.63
chr5	8473954	8474343	390 *	3.25	3.95
chrX	118646431	118646781	351 *	3.75	2.38
chr8	33663267	33663691	425 *	4.09	4.74
chr6	110213815	110213974	160 *	1.94	2.81
chr9	29461164	29461446	283 *	1.94	2.81
chr5	134797939	134798416	478 *	3.07	1.34
chr17	2148033	2148450	418 *	3.94	2.73
chr17	76989126	76989819	694 *	2.74	0.63
chr21	20880127	20880409	283 *	2.93	3.69
chr21	34499326	34500065	740 *	5.06	5.55
chr16	78128014	78128356	343 *	2.68	3.43
chr19	39600995	39601404	410 *	3.21	1.43
chr3	117268340	117268832	493 *	2.37	3.15
chr6	62596407	62596800	394 *	2.37	3.15
chr10	11207921	11208413	493 *	2.76	0.63
chr18	29557069	29557681	613 *	4.01	4.63
chr6	114200677	114201034	358 *	2.98	1.08
chr19	23466750	23467150	401 *	3.82	2.43
chr16	7075719	7075969	251 *	2.09	2.91
chr3	21588883	21589142	260 *	3.13	3.87
chr3	188865823	188866179	357 *	3.36	4.08
chr1	19210639	19211017	379 *	3.88	2.6
chr3	52854710	52855123	414 *	3.95	2.73
chr11	56289471	56289734	264 *	2.15	2.96
chr17	34959381	34959677	297 *	4.49	5.04

chr22	23110344	23110777	434 *	3.4	1.81
chr11	61103563	61104274	712 *	2.78	0.63
chr16	69373394	69373679	286 *	2.78	0.63
chr4	9150419	9150747	329 *	2.5	3.27
chr10	135121269	135121565	297 *	3.07	1.34
chr6	408673	409145	473 *	4.14	4.76
chr1	210413100	210413727	628 *	3.78	4.5
chr6	120992723	120993083	361 *	2.59	3.35
chr7	41281191	41281593	403 *	2.59	3.35
chr16	30441503	30442118	616 *	2.98	1.08
chr4	17325866	17326329	464 *	3.07	1.34
chr13	108829085	108829383	299 *	3.6	4.3
chr6	30421317	30421735	419 *	4.46	3.41
chr5	112999607	112999930	324 *	4.31	4.9
chr12	100314401	100314923	523 *	2.55	3.33
chr7	22143303	22143700	398 *	4.16	4.75
chr12	92537814	92538205	392 *	2.74	0.63
chr3	13254089	13254337	249 *	2.16	2.98
chr13	87932467	87932740	274 *	2.31	3.11
chrX	16689201	16689506	306 *	3.41	4.1
chr2	220298515	220299007	493 *	5.06	5.55
chr4	96558182	96558598	417 *	4.03	4.65
chr2	165512357	165512550	194 *	2.44	3.26
chr13	75147830	75148275	446 *	3.19	1.43
chr1	212922985	212923646	662 *	5.02	5.59
chr17	21066533	21066751	219 *	2.08	2.93
chr22	42337323	42337668	346 *	2.8	0.63
chr11	116293684	116294028	345 *	2.76	0.63
chr21	44598555	44599046	492 *	2.73	0.63
chr16	88821932	88822203	272 *	3.25	1.63
chr8	110463115	110463552	438 *	2.71	0.63
chr5	75897286	75897661	376 *	4.92	5.41
chr12	17410476	17410714	239 *	1.8	2.67
chr12	40860745	40861113	369 *	1.8	2.67
chr17	13894371	13894567	197 *	1.8	2.67
chr17	43584829	43585006	178 *	1.8	2.67
chr18	69986540	69986793	254 *	1.8	2.67
chr2	192214857	192215094	238 *	1.8	2.67
chr3	175889240	175889440	201 *	1.8	2.67
chr4	163786376	163786597	222 *	1.8	2.67
chr5	43944541	43944788	248 *	1.8	2.67
chr6	56792995	56793162	168 *	1.8	2.67
chr6	57310596	57310839	244 *	1.8	2.67

chr6	65179396	65179616	221 *	1.8	2.67
chrX	73102716	73103050	335 *	1.8	2.67
chr16	75798035	75798374	340 *	2.57	3.35
chr2	84054835	84055314	480 *	2.57	3.35
chr3	164110775	164111280	506 *	2.57	3.35
chr5	166064092	166064375	284 *	2.57	3.35
chr6	63604998	63605339	342 *	1.99	2.82
chr4	135786848	135787330	483 *	2.91	3.67
chr1	185425994	185426305	312 *	2.45	3.24
chr6	153884213	153884473	261 *	2.45	3.24
chr8	37709008	37709318	311 *	3.79	2.31
chr15	33967428	33967890	463 *	3.79	4.46
chr7	33225317	33225687	371 *	4.3	4.88
chr16	21813077	21813660	584 *	3.67	4.34
chr16	86868118	86868616	499 *	3.05	1.34
chr6	37659809	37660150	342 *	2.78	0.63
chr11	64257144	64257722	579 *	2.71	0.63
chr22	46751359	46751633	275 *	2.71	0.63
chr11	72504428	72505114	687 *	3.11	1.34
chr16	77410235	77410637	403 *	3.67	2.13
chr9	2991356	2991613	258 *	2.61	3.37
chr5	148644309	148644659	351 *	2.96	1.08
chr10	99519192	99519603	412 *	4.48	3.48
chr21	31630173	31630443	271 *	3.56	4.23
chr7	25748729	25748961	233 *	2.01	2.85
chr9	108720978	108721354	377 *	2.01	2.85
chr11	55710253	55710617	365 *	4.22	4.8
chr4	35409351	35409621	271 *	2.73	0.63
chr14	77519613	77520040	428 *	3.16	1.34
chr21	43960030	43960337	308 *	3.16	1.34
chr15	101810052	101810400	349 *	2.72	0.63
chr12	33580011	33580336	326 *	3.02	3.75
chr14	21341742	21342109	368 *	3.05	1.34
chr2	173860703	173860969	267 *	2.34	3.11
chr4	21791991	21792539	549 *	2.36	3.13
chr10	69916126	69916473	348 *	5.05	5.54
chr19	41250431	41250765	335 *	2.71	0.63
chr6	30332452	30332835	384 *	3.41	4.1
chr7	109484397	109484780	384 *	4.01	4.63
chr17	38242692	38243010	319 *	2.76	0.63
chr20	38879908	38880339	432 *	4.11	2.98
chrX	102205912	102206817	906 *	4.3	4.91
chr6	27763531	27764012	482 *	4.12	4.72

chr20	46249929	46250346	418 *	3.84	4.48
chr1	202691256	202691645	390 *	1.86	2.73
chr12	128743570	128743794	225 *	1.86	2.73
chr2	163708802	163708981	180 *	1.86	2.73
chr4	9160103	9160378	276 *	1.86	2.73
chr4	127827648	127827917	270 *	1.86	2.73
chr5	103123872	103124224	353 *	1.86	2.73
chr6	62511904	62512099	196 *	1.86	2.73
chr16	85693429	85693727	299 *	3.6	2.17
chr14	82475240	82475824	585 *	2.69	3.46
chr20	7356506	7356938	433 *	2.69	3.46
chr9	116117466	116117836	371 *	2.35	3.16
chr3	66124245	66124738	494 *	4.86	5.35
chr5	136226931	136227139	209 *	2.61	3.36
chr2	218852665	218853065	401 *	3.08	1.34
chrX	9587673	9587966	294 *	2.69	0.63
chr2	177921216	177921578	363 *	3.65	4.34
chr18	69451948	69452303	356 *	2.21	3.03
chr17	7124262	7124613	352 *	2.69	0.63
chr3	64666680	64667202	523 *	2.69	0.63
chr6	100624136	100624880	745 *	2.94	1.08
chrX	34076126	34076441	316 *	3.53	4.21
chr10	45730700	45730995	296 *	3	3.75
chr5	129579382	129579633	252 *	2.63	3.39
chr9	133928623	133929027	405 *	2.94	1.08
chr3	674304	674637	334 *	3.01	3.72
chr1	221047622	221047916	295 *	2.71	0.63
chr14	97893170	97893403	234 *	2.71	0.63
chr2	47600912	47601396	485 *	3.71	4.37
chr16	21167923	21168367	445 *	3.26	3.98
chr8	145150921	145151337	417 *	2.73	0.63
chr12	132819953	132820219	267 *	2.78	0.63
chr15	98392467	98392730	264 *	2.28	3.08
chr5	169765910	169766277	368 *	4.87	4.08
chr3	40233321	40233720	400 *	3.57	4.24
chr2	60229361	60229927	567 *	2.36	3.13
chr3	72704961	72705374	414 *	3.59	2.17
chr19	54941280	54941496	217 *	2.41	3.19
chr1	12091354	12091685	332 *	2.69	0.63
chr5	134252720	134253102	383 *	2.69	0.63
chr10	98956219	98956660	442 *	3.4	1.88
chr7	158118805	158119107	303 *	3.37	1.81
chrX	109411120	109411621	502 *	3.55	2.08

chr6	67372129	67372458	330 *	1.96	2.79
chrX	147634271	147634652	382 *	1.96	2.79
chr1	17563399	17563890	492 *	2.75	0.63
chr9	101737176	101737667	492 *	2.75	0.63
chr11	31892690	31892895	206 *	3.16	1.43
chr16	26776475	26777056	582 *	2.42	3.2
chr18	56067262	56067733	472 *	4.03	2.88
chr11	65990167	65990520	354 *	5.69	5.06
chr4	39977982	39978357	376 *	3.14	1.34
chr2	96658528	96659001	474 *	5.05	5.58
chr13	53806706	53806914	209 *	2.01	2.85
chr4	49120846	49121386	541 *	2.91	3.69
chr16	85336676	85337212	537 *	3.22	1.34
chr8	123691149	123691430	282 *	3.17	1.43
chr1	32254883	32255222	340 *	2.73	0.63
chr7	52156029	52156272	244 *	2.73	0.63
chr11	34813796	34813997	202 *	2.82	3.57
chr7	3937021	3937517	497 *	4.33	4.9
chr17	50675698	50676064	367 *	2.31	3.08
chr16	79084607	79084828	222 *	2.32	3.13
chr7	115807199	115807550	352 *	2.89	3.64
chr17	73422222	73422820	599 *	4.92	5.42
chr3	54985415	54985812	398 *	2.92	1.08
chr19	17606986	17607523	538 *	4.24	3.18
chr2	26214459	26214763	305 *	3.95	4.56
chr16	67011383	67011941	559 *	3.94	2.73
chr15	84049379	84049690	312 *	2.67	0.63
chr8	110294246	110294727	482 *	2.67	0.63
chr9	100161483	100161852	370 *	2.88	0.63
chr4	37133966	37134304	339 *	3.19	3.89
chr10	129514026	129514374	349 *	2.67	0.63
chr3	48545073	48545348	276 *	2.67	0.63
chr6	107957765	107958226	462 *	2.67	0.63
chr11	76518464	76518892	429 *	4.18	3.13
chr9	116559423	116559677	255 *	2.72	3.5
chr3	133142455	133142833	379 *	3.02	1.34
chr2	117267590	117268055	466 *	4.02	4.64
chr6	96267937	96268215	279 *	2.87	3.62
chr2	85358232	85358735	504 *	3.99	4.62
chr2	60777492	60777987	496 *	2.67	0.63
chr12	17962224	17962574	351 *	3.4	4.07
chr2	233198081	233198705	625 *	3.19	1.43
chr5	8394990	8395386	397 *	3.63	4.29



chr18	75423132	75423422	291 *	2.15	2.96
chr21	9826975	9827622	648 *	5.46	0.63
chr20	43312198	43312503	306 *	3.83	4.54
chr3	86438162	86438389	228 *	2.18	3
chr1	6403507	6403909	403 *	4.56	3.67
chr7	121198427	121198759	333 *	2.38	3.16
chr4	159339915	159340185	271 *	2.4	3.18
chr16	77076890	77077351	462 *	2.73	3.49
chr10	71476679	71477206	528 *	3.65	2.13
chr6	112484527	112484841	315 *	2.9	1.08
chr3	164924428	164924841	414 *	2.73	0.63
chrX	75675054	75675391	338 *	3.11	3.82
chrX	125904223	125904559	337 *	2.69	0.63
chr3	190854161	190854528	368 *	3.27	3.99
chr11	35413818	35414100	283 *	2.66	0.63
chr5	85796819	85797067	249 *	2.66	0.63
chr13	46721070	46721409	340 *	2.64	0.63
chr22	50690626	50690901	276 *	2.64	0.63
chr2	20762314	20762710	397 *	2.97	3.72
chr2	60379372	60379708	337 *	2.97	3.72
chr15	84777531	84777812	282 *	2.43	3.22
chr7	25514032	25514500	469 *	2.25	3.08
chr13	40258694	40259002	309 *	2.62	3.35
chr9	80559808	80559981	174 *	2.1	2.91
chr9	80103473	80103880	408 *	4.15	4.72
chr14	22508548	22508794	247 *	2.9	1.08
chr19	13915672	13915967	296 *	2.64	0.63
chr12	127358763	127359291	529 *	3.32	4.03
chr9	97316703	97316913	211 *	2.8	3.57
chrX	7978130	7978525	396 *	3.05	3.79
chr10	102503346	102503701	356 *	2.71	0.63
chr4	164822189	164822782	594 *	2.46	3.25
chr10	74087776	74088320	545 *	3.03	1.34
chr15	67066582	67067157	576 *	5.08	4.26
chr9	4432285	4432559	275 *	2.62	3.35
chr12	262238	262748	511 *	4.63	3.78
chr14	104274693	104275163	471 *	4.47	3.5
chr5	6820995	6821379	385 *	5.05	5.51
chr10	132053006	132053280	275 *	1.77	2.63
chr11	17434402	17434728	327 *	1.77	2.63
chr11	39480049	39480243	195 *	1.77	2.63
chr11	129150723	129151025	303 *	1.77	2.63
chr13	39391635	39391862	228 *	1.77	2.63

chr15	34453044	34453344	301 *	1.77	2.63
chr15	38552291	38552526	236 *	1.77	2.63
chr2	172429149	172429328	180 *	1.77	2.63
chr3	40283776	40283991	216 *	1.77	2.63
chr3	40889110	40889302	193 *	1.77	2.63
chr4	122744097	122744360	264 *	1.77	2.63
chr5	79393514	79393673	160 *	1.77	2.63
chr5	143947043	143947270	228 *	1.77	2.63
chr9	26817683	26817890	208 *	1.77	2.63
chr13	40174827	40175201	375 *	2.64	0.63
chr11	103408617	103409011	395 *	4.2	4.79
chr11	103552984	103553394	411 *	4.72	5.22
chr15	74004529	74004822	294 *	2.64	0.63
chrX	105001568	105001800	233 *	2.52	3.29
chr5	58631313	58631652	340 *	2.91	3.62
chr15	57598728	57599146	419 *	2.82	0.63
chr12	130820129	130820439	311 *	2.88	3.6
chr20	49094720	49095175	456 *	3.55	2.17
chr18	55861247	55861648	402 *	3.48	1.94
chr12	39497379	39497708	330 *	3.8	4.47
chr3	103129013	103129440	428 *	2.66	0.63
chr3	139491846	139492187	342 *	2.11	2.93
chr9	102447660	102447941	282 *	2.11	2.93
chr14	44116562	44116833	272 *	3.17	3.88
chr12	6464703	6465025	323 *	3.31	1.7
chr1	38826497	38826794	298 *	2.64	0.63
chr15	27083902	27084206	305 *	2.64	0.63
chr8	52438590	52438998	409 *	2.64	0.63
chr1	4886138	4886428	291 *	3.5	4.22
chr1	114519459	114519903	445 *	2.96	3.7
chr7	11371407	11371661	255 *	2.02	2.82
chr12	109831448	109831936	489 *	5.2	5.68
chr15	65325374	65325866	493 *	5.07	4.3
chr8	6792330	6792767	438 *	3.49	4.23
chr12	94496026	94496332	307 *	3.3	1.81
chr17	75910848	75911104	257 *	3.3	1.81
chr1	52515651	52515927	277 *	1.75	2.61
chr21	31277248	31277462	215 *	1.75	2.61
chr4	166267250	166267436	187 *	1.75	2.61
chr6	63158957	63159248	292 *	1.75	2.61
chr8	83960967	83961388	422 *	1.75	2.61
chr8	139084135	139084452	318 *	1.75	2.61
chr9	122429460	122429753	294 *	1.75	2.61

chr9	103938630	103938988	359 *	3.25	3.99
chr2	116815095	116815447	353 *	2.24	3.04
chr1	173660379	173660569	191 *	2.26	3.06
chr1	18812689	18813406	718 *	3.65	2.34
chr1	246166242	246166885	644 *	4.33	4.9
chr11	87589191	87589562	372 *	4.14	4.72
chr12	114256623	114256994	372 *	3.83	2.6
chr6	78330071	78330405	335 *	4.01	4.63
chr1	171236079	171236462	384 *	2.62	0.63
chr10	104299796	104300146	351 *	2.62	0.63
chr16	67875643	67875939	297 *	2.62	0.63
chr2	95955107	95955340	234 *	2.62	0.63
chr11	66346473	66346877	405 *	4.07	2.9
chr19	13345317	13345723	407 *	4.07	2.9
chr5	79220808	79221155	348 *	3.29	1.81
chr1	47000553	47001077	525 *	2.64	0.63
chr11	103209899	103210214	316 *	2.64	0.63
chr8	91013084	91013370	287 *	2.66	0.63
chrX	97703620	97703955	336 *	2.66	0.63
chr4	61066832	61067272	441 *	4.68	5.22
chr4	169104919	169105320	402 *	4.33	4.88
chr1	97307739	97308189	451 *	3.1	1.43
chr4	59960285	59960603	319 *	2.71	3.43
chr12	9202080	9202576	497 *	2.62	0.63
chr18	63455677	63456183	507 *	2.05	2.85
chr5	138473427	138473990	564 *	2.85	3.63
chr3	119963043	119963659	617 *	4.44	5.01
chr11	12599876	12600156	281 *	2.5	3.27
chrX	117360042	117360384	343 *	2.9	1.08
chr20	25450719	25451062	344 *	3.3	1.81
chr12	12044980	12045226	247 *	2.69	3.41
chr18	24201324	24201866	543 *	2.65	0.63
chr20	3474983	3475184	202 *	1.93	2.76
chr1	41239748	41240358	611 *	3.74	2.31
chrX	151511788	151512069	282 *	3.08	3.8
chr1	77153118	77153386	269 *	1.72	2.57
chr12	86769954	86770116	163 *	1.72	2.57
chr12	130102490	130102735	246 *	1.72	2.57
chr12	130499047	130499266	220 *	1.72	2.57
chr16	33967996	33968298	303 *	1.72	2.57
chr18	75640145	75640371	227 *	1.72	2.57
chr2	43441377	43441579	203 *	1.72	2.57
chr3	69477554	69477999	446 *	1.72	2.57

chr7	14486702	14486913	212 *	1.72	2.57
chr7	48930960	48931161	202 *	1.72	2.57
chr7	144731626	144731890	265 *	1.72	2.57
chr8	34501501	34501834	334 *	1.72	2.57
chrX	25460709	25460900	192 *	1.72	2.57
chrX	61732706	61732892	187 *	1.72	2.57
chr11	132149135	132149562	428 *	2.62	0.63
chr3	14190096	14190551	456 *	4.07	2.9
chr17	61912168	61912825	658 *	3.67	2.13
chr11	2216168	2216396	229 *	2.69	0.63
chr22	43742401	43742754	354 *	2.69	0.63
chr2	30893424	30893665	242 *	2.22	3.01
chr10	47644875	47645142	268 *	2.77	3.48
chr9	98506504	98506922	419 *	2.77	3.48
chr19	40030781	40031083	303 *	2.96	1.08
chrX	28719351	28719615	265 *	2.29	3.06
chr22	39162033	39162608	576 *	3.75	2.46
chr2	130693853	130694300	448 *	2.48	3.25
chr7	150475450	150476198	749 *	5.04	5.51
chr6	15058638	15059036	399 *	2.71	3.49
chr6	91877612	91877956	345 *	3.32	4
chr3	68498158	68498483	326 *	3.37	4.07
chr7	73140097	73140381	285 *	3.88	2.73
chr10	6880053	6880485	433 *	2.62	0.63
chr4	89580441	89581001	561 *	4.46	5
chr10	89877906	89878392	487 *	4.19	4.77
chr11	18166514	18166904	391 *	2.93	3.67
chr14	94754995	94755335	341 *	2.93	3.67
chr4	175795170	175795536	367 *	3.55	4.2
chr6	149511406	149511816	411 *	3.99	4.59
chr19	46425693	46426196	504 *	3.78	4.45
chr11	14396573	14396805	233 *	2.88	3.58
chr16	30420679	30421104	426 *	4.7	3.81
chr1	66902063	66902335	273 *	3.46	4.13
chr11	73642304	73642830	527 *	2.96	1.34
chr1	31867357	31867885	529 *	2.8	0.63
chr15	89985994	89986291	298 *	3.73	2.46
chr21	21943273	21943620	348 *	3.01	3.72
chr10	71152221	71152636	416 *	3.88	2.73
chr18	72956281	72956554	274 *	2.37	3.15
chr3	167806228	167806525	298 *	3.48	4.14
chr2	105028802	105029211	410 *	4.57	5.11
chr13	42790205	42790639	435 *	4.29	4.89

chr12	6532685	6533077	393 *	3.89	2.73
chr8	108920568	108921174	607 *	4.58	5.11
chr6	34941342	34941593	252 *	2.61	3.37
chr15	32971627	32972198	572 *	2	2.79
chr7	92722021	92722412	392 *	4.24	4.81
chr1	40265349	40265637	289 *	2.59	0.63
chr19	42363569	42363978	410 *	2.59	0.63
chr9	130887225	130887654	430 *	4.31	3.24
chr13	66252110	66252490	381 *	2.5	3.24
chrX	49148389	49148819	431 *	3.42	2.03
chr12	48195017	48195214	198 *	2.04	2.85
chr2	150343576	150343885	310 *	2.04	2.85
chr1	93088758	93089073	316 *	2.59	0.63
chr5	45797107	45797357	251 *	2.84	3.58
chr3	6246707	6246898	192 *	2.25	3.01
chr1	57483365	57483761	397 *	4.28	4.84
chr12	111374767	111375237	471 *	2.62	0.63
chrX	135282557	135282945	389 *	3.61	2.13
chrX	106568263	106568750	488 *	3.63	2.34
chr7	114062523	114062840	318 *	2.59	0.63
chr13	101797186	101797501	316 *	4.19	4.76
chr13	54879600	54879816	217 *	3.02	3.75
chr11	47182541	47182905	365 *	4.18	3.08
chr19	58740720	58740960	241 *	2.64	0.63
chr3	104397300	104397548	249 *	2.07	2.88
chr9	104473653	104473965	313 *	4.69	5.19
chr14	66869976	66870286	311 *	3.85	4.48
chr19	49934045	49934326	282 *	2.94	1.34
chr5	90162172	90162637	466 *	2.56	3.33
chr20	45211434	45211653	220 *	2.81	3.55
chr15	45490896	45491405	510 *	3	1.34
chr6	33553464	33553793	330 *	3.54	2.17
chr11	112426477	112426891	415 *	3.53	2.17
chr10	99663499	99663759	261 *	2.59	0.63
chr6	91188090	91188451	362 *	2.59	0.63
chr10	69417568	69417927	360 *	2.81	3.55
chr6	110016595	110017182	588 *	4.11	4.77
chr10	35790936	35791229	294 *	1.91	2.74
chr3	33266141	33266597	457 *	1.91	2.74
chr22	30085886	30086200	315 *	3.59	2.13
chr17	40219128	40220243	1116 *	5.29	4.65
chrX	15484408	15484774	367 *	2.94	1.34
chr13	31155663	31155994	332 *	2.6	0.63

chr7	152091406	152091632	227 *	2.29	3.06
chr11	12068937	12069312	376 *	3.25	1.81
chr1	38325787	38326271	485 *	4.12	2.9
chr11	45254834	45255318	485 *	4.13	3.13
chr22	35979026	35979448	423 *	4.37	3.46
chr2	97626154	97626466	313 *	4.28	3.26
chr13	53542129	53542576	448 *	5.37	4.72
chr1	26070530	26070906	377 *	2.62	0.63
chr2	12313748	12314015	268 *	2.54	3.28
chr11	128647512	128647851	340 *	2.86	1.08
chr9	130680641	130680922	282 *	2.61	0.63
chr11	111704271	111704629	359 *	2.84	1.08
chr3	187036529	187036994	466 *	4.78	5.28
chr6	115987223	115987428	206 *	2.72	3.44
chr2	46877685	46878004	320 *	4.52	5.04
chr12	126554097	126554373	277 *	2.48	3.24
chr2	71384512	71384908	397 *	3.52	2.17
chr4	87712341	87712633	293 *	2.59	0.63
chr3	184894586	184894948	363 *	3.25	3.94
chr3	149901974	149902418	445 *	3.07	1.43
chr6	50152737	50153168	432 *	3.81	4.43
chr2	154019607	154019944	338 *	4.38	4.92
chr18	75414711	75414991	281 *	2.47	3.26
chr2	104455478	104455739	262 *	2.47	3.26
chr14	75372369	75373052	684 *	4.16	3.08
chr1	220986334	220986664	331 *	2.57	0.63
chr5	1763684	1764078	395 *	2.57	0.63
chr20	44615946	44616215	270 *	3.27	1.81
chr13	53772256	53772460	205 *	2.64	0.63
chr17	43462710	43463291	582 *	4.55	3.72
chr10	129772257	129772489	233 *	3.14	1.63
chr8	142044584	142044929	346 *	3.15	1.63
chr10	45485874	45486210	337 *	2.57	0.63
chr12	118041614	118041951	338 *	2.57	0.63
chr14	73750705	73751010	306 *	2.57	0.63
chr22	23152480	23152830	351 *	2.57	0.63
chr8	136774295	136774770	476 *	2.57	0.63
chr10	123583456	123584025	570 *	4.16	4.73
chr13	107173022	107173252	231 *	2.25	3.01
chr16	58790254	58790733	480 *	3.78	2.53
chr16	8424081	8424369	289 *	2.93	3.69
chr9	97878255	97878711	457 *	4.43	4.95
chr1	160016305	160016895	591 *	3.88	2.69

chr6	153874550	153875252	703 *	4.54	5.05
chr12	121441407	121441922	516 *	2.57	0.63
chr15	86837075	86837302	228 *	2.05	2.9
chr9	77192976	77193274	299 *	3.94	4.56
chr16	58066158	58066564	407 *	3.72	2.43
chr5	32942546	32943116	571 *	2.89	3.63
chr5	132082593	132082871	279 *	4.47	4.99
chr11	90275291	90275543	253 *	2.2	2.98
chr16	13425865	13426155	291 *	2.2	2.98
chr21	43887436	43887777	342 *	2.57	0.63
chrX	135793386	135793665	280 *	3.07	1.43
chr2	99185655	99186065	411 *	3.73	2.46
chr22	40543352	40543709	358 *	4.94	5.42
chr2	79268095	79268671	577 *	4.23	4.8
chr17	71425561	71425940	380 *	3.53	2.17
chr4	149625451	149625943	493 *	4.09	4.66
chr15	74614792	74615229	438 *	3.51	2.17
chr2	239152454	239152670	217 *	2.54	3.28
chr22	45478670	45479079	410 *	3.93	2.81
chr2	49271741	49272227	487 *	3.31	3.98
chr19	11784341	11784776	436 *	4.53	3.67
chr6	54582574	54583022	449 *	3.87	4.47
chr1	196866692	196866897	206 *	1.68	2.53
chr11	18690110	18690382	273 *	1.68	2.53
chr11	95553855	95554229	375 *	1.68	2.53
chr13	20986870	20987135	266 *	1.68	2.53
chr13	49049347	49049600	254 *	1.68	2.53
chr13	109860100	109860259	160 *	1.68	2.53
chr14	99351433	99351700	268 *	1.68	2.53
chr15	39804987	39805346	360 *	1.68	2.53
chr16	6347760	6347928	169 *	1.68	2.53
chr17	37646574	37646755	182 *	1.68	2.53
chr18	9141739	9141913	175 *	1.68	2.53
chr2	52466008	52466313	306 *	1.68	2.53
chr2	52935126	52935469	344 *	1.68	2.53
chr2	157410502	157410874	373 *	1.68	2.53
chr4	95005040	95005210	171 *	1.68	2.53
chr6	33535893	33536125	233 *	1.68	2.53
chr6	38247209	38247475	267 *	1.68	2.53
chr7	7653654	7653846	193 *	1.68	2.53
chr7	82445631	82445851	221 *	1.68	2.53
chr7	112466826	112467024	199 *	1.68	2.53
chr7	124275596	124275787	192 *	1.68	2.53

chr9	28394088	28394316	229 *	1.68	2.53
chr9	88015903	88016105	203 *	1.68	2.53
chr9	107850759	107851188	430 *	1.68	2.53
chr19	741657	741848	192 *	3.11	3.8
chr13	72453376	72453724	349 *	4.11	4.68
chr17	74502486	74502849	364 *	3.5	2.17
chr6	136080987	136081354	368 *	3.3	3.97
chr19	58518651	58519131	481 *	3.9	2.61
chr2	144610281	144610679	399 *	2.57	0.63
chr2	238330125	238330530	406 *	2.57	0.63
chr4	6909500	6909887	388 *	2.57	0.63
chr5	41856780	41857083	304 *	4.35	4.88
chr5	156739437	156739866	430 *	3.66	4.29
chr8	102482707	102482919	213 *	2.66	3.42
chr5	123296944	123297408	465 *	2.91	3.62
chr17	66907797	66908261	465 *	4.23	4.78
chr7	52235761	52236223	463 *	4.72	5.26
chr10	7302403	7302707	305 *	3.5	4.16
chrX	56810074	56810327	254 *	2.41	3.19
chr2	188707923	188708259	337 *	3.51	4.18
chr4	22963993	22964416	424 *	3.66	4.31
chr6	8481957	8482345	389 *	3.22	3.89
chr22	31030332	31030806	475 *	3.78	2.6
chr2	51732611	51733000	390 *	3.25	3.97
chr1	5700947	5701250	304 *	2.8	3.53
chr8	58026192	58026559	368 *	2.82	1.08
chr13	99828819	99829285	467 *	4.23	3.28
chr13	85145451	85145840	390 *	3.22	3.95
chr10	7343436	7343755	320 *	2.23	2.98
chr3	5288448	5288698	251 *	2.23	2.98
chr8	33240582	33241036	455 *	3.55	4.2
chr2	82121752	82122023	272 *	2.11	2.93
chr15	82395902	82396254	353 *	2.57	0.63
chr6	4920625	4920896	272 *	2.57	0.63
chr7	73021337	73021643	307 *	2.57	0.63
chr7	154490502	154490731	230 *	2.33	3.1
chr15	61994762	61995163	402 *	2.54	0.63
chr8	97295087	97295460	374 *	3.33	4.07
chr1	220699717	220699960	244 *	2.54	0.63
chr8	17637377	17637765	389 *	2.54	0.63
chr18	75445278	75445578	301 *	2.46	3.23
chr8	93081376	93081725	350 *	2.51	3.28
chr21	31444860	31445165	306 *	2.9	1.34



chr1	17011373	17011655	283 *	2.44	3.2
chr2	101505671	101505895	225 *	2.44	3.2
chr3	55468691	55469091	401 *	4.22	4.78
chr18	74517130	74517526	397 *	2.05	2.85
chr4	130848145	130848431	287 *	2.05	2.85
chr1	1311710	1312046	337 *	2.54	0.63
chr19	7004290	7004651	362 *	2.54	0.63
chr7	92861061	92861294	234 *	2.54	0.63
chr11	28719496	28719831	336 *	3.76	4.39
chr14	57153303	57153626	324 *	2.54	0.63
chr16	55068947	55069276	330 *	3.84	4.46
chr2	120963849	120964298	450 *	3.91	2.69
chr8	87905123	87905490	368 *	5.08	5.52
chr1	112050889	112051152	264 *	3.45	2.08
chr6	33086341	33086719	379 *	4.22	4.77
chr18	74559957	74560213	257 *	2.32	3.08
chr2	120399159	120399486	328 *	3.89	2.61
chr2	191184558	191185029	472 *	3.46	1.94
chr5	9922911	9923291	381 *	3.57	4.27
chr20	37897622	37898105	484 *	3.7	2.46
chr13	28633403	28633758	356 *	3.31	1.88
chr6	41196357	41196688	332 *	3.05	1.43
chr5	141071701	141072061	361 *	2.61	0.63
chr2	172968652	172968875	224 *	2.88	1.08
chr12	38778462	38778769	308 *	3.01	3.7
chr16	14343400	14343747	348 *	4.58	5.09
chr17	73649000	73649481	482 *	3.69	2.46
chr8	117920192	117920727	536 *	2.54	0.63
chr12	77500975	77501286	312 *	1.85	2.67
chr2	76851630	76851900	271 *	1.85	2.67
chrX	88836934	88837124	191 *	1.85	2.67
chr3	97907420	97907751	332 *	2.54	0.63
chr16	68470531	68471050	520 *	3.15	3.87
chr4	112727552	112727827	276 *	2.8	1.08
chr1	28266875	28267191	317 *	2.8	1.08
chr14	91604838	91605195	358 *	4.29	4.85
chrX	27204760	27205205	446 *	3.42	4.13
chr5	178266406	178266670	265 *	3.1	1.63
chr7	32246624	32246960	337 *	3.1	1.63
chr17	50674877	50675043	167 *	1.97	2.76
chr17	40825870	40826348	479 *	2.56	0.63
chr16	85449951	85450384	434 *	3.25	1.7
chr11	120503327	120503669	343 *	3.17	3.85

chr20	25650870	25651145	276 *	2.44	3.24
chr15	46082519	46082856	338 *	3.09	3.8
chr4	76837076	76837656	581 *	4.45	4.97
chr15	78202693	78203385	693 *	4.86	4.08
chr1	110333508	110333795	288 *	3.43	2.03
chr10	126254386	126254694	309 *	2.54	0.63
chr19	57988936	57989275	340 *	2.54	0.63
chr5	100926045	100926493	449 *	3.01	3.72
chr22	39955779	39956158	380 *	2.9	1.34
chr11	125549434	125549688	255 *	1.74	2.6
chr12	126728434	126728644	211 *	1.74	2.6
chr12	128675152	128675418	267 *	1.74	2.6
chr13	26426540	26426796	257 *	1.74	2.6
chr13	78099381	78099638	258 *	1.74	2.6
chr2	120746872	120747085	214 *	1.74	2.6
chr22	48399819	48400050	232 *	1.74	2.6
chr8	139889154	139889366	213 *	1.74	2.6
chr6	693388	693765	378 *	3.22	1.81
chr19	59031428	59031987	560 *	2.66	0.63
chr5	160397760	160398183	424 *	2.93	3.67
chr16	20394805	20395252	448 *	4.56	5.06
chrX	130760811	130761252	442 *	4.69	5.19
chr10	54074217	54074495	279 *	2.39	3.17
chr11	28551103	28551552	450 *	3.21	3.92
chr22	33190502	33190883	382 *	2.81	3.52
chr13	32738815	32739188	374 *	4.64	5.15
chr1	160633180	160633501	322 *	2.35	3.13
chr11	64046759	64047041	283 *	2.35	3.13
chr9	80729761	80730411	651 *	4.86	5.32
chr11	11988367	11988746	380 *	4.46	3.63
chr1	35012528	35013006	479 *	4.33	4.87
chr1	156449718	156450037	320 *	2.23	2.98
chr1	49335229	49335676	448 *	3.97	4.54
chr2	232578555	232579038	484 *	3.68	2.46
chr7	121203338	121203567	230 *	2.27	3.03
chr7	142023359	142023766	408 *	2.92	1.34
chr2	51651623	51652011	389 *	2.44	3.19
chr1	9675638	9675968	331 *	3.84	2.73
chr1	110074911	110075344	434 *	3.84	2.73
chr3	73046794	73047154	361 *	2.52	0.63
chr14	96692211	96692468	258 *	2.7	3.42
chr10	65484713	65485078	366 *	2.7	3.44
chr2	59252294	59252815	522 *	4.31	3.42

chr19	40404204	40404468	265 *	3.54	2.13
chr14	29691909	29692194	286 *	2.52	0.63
chr2	172783178	172783340	163 *	2.42	3.18
chr17	77948631	77949107	477 *	4.05	3
chr11	69536526	69536869	344 *	2.54	0.63
chr13	52371894	52372188	295 *	2.54	0.63
chr1	25174458	25174731	274 *	2.56	0.63
chr22	40832569	40833324	756 *	2.56	0.63
chr7	158200676	158201026	351 *	2.56	0.63
chr11	129793182	129793528	347 *	4.21	4.78
chr2	25048838	25049359	522 *	2.51	0.63
chr5	164924634	164925116	483 *	2.51	0.63
chrX	20085270	20085678	409 *	2.51	0.63
chrX	39916701	39916976	276 *	2.51	0.63
chr19	9958802	9959311	510 *	2.61	0.63
chrX	106242088	106242419	332 *	2.79	3.5
chr19	31276619	31277164	546 *	2.63	3.36
chr2	43804404	43804950	547 *	5.34	5.82
chr3	43880410	43880814	405 *	2.97	3.67
chr13	51644206	51644543	338 *	3.09	1.63
chr2	115735448	115735656	209 *	2.48	3.25
chr17	26124456	26124723	268 *	2.52	0.63
chr11	67415546	67415910	365 *	3.24	1.81
chr5	102309856	102310183	328 *	2.53	3.24
chr21	21354316	21354566	251 *	2.34	3.08
chr1	91852692	91853124	433 *	4.93	0.63
chr21	15492386	15492804	419 *	3.22	1.7
chr5	109026740	109027117	378 *	3.21	1.81
chr12	49318283	49318692	410 *	2.51	0.63
chr5	153921300	153921580	281 *	2.51	0.63
chr22	34192453	34192856	404 *	3.85	4.49
chr18	21993121	21993541	421 *	4.31	4.85
chr9	91615939	91616286	348 *	2.59	0.63
chr2	192163830	192164118	289 *	3.04	3.74
chr7	105817161	105817505	345 *	3.99	2.9
chr4	110971077	110971487	411 *	4.27	4.86
chr2	17081454	17082052	599 *	6.07	6.51
chr3	111855825	111856319	495 *	4.62	5.14
chr5	60653598	60654013	416 *	3.71	4.34
chr13	39104754	39104976	223 *	2.18	2.96
chr14	30655019	30655367	349 *	2.18	2.96
chr15	42508470	42508994	525 *	2.18	2.96
chr3	188001177	188001477	301 *	2.18	2.96

chr4	49152396	49153065	670 *	2.18	2.96
chr1	149192760	149193067	308 *	3.19	1.81
chr8	125601638	125601953	316 *	4.03	2.9
chr20	48785816	48786319	504 *	4.44	4.98
chr11	662742	663036	295 *	3.25	1.81
chr8	6188789	6189120	332 *	2.52	0.63
chr11	70660983	70661409	427 *	3.51	2.17
chr17	56277465	56277785	321 *	2.54	0.63
chr2	70613072	70613428	357 *	2.54	0.63
chr3	72636457	72636905	449 *	2.54	0.63
chr17	42610855	42611193	339 *	3.2	1.81
chr9	119351649	119352176	528 *	6.08	6.46
chr3	68915272	68915634	363 *	3.38	4.03
chr19	45113827	45114109	283 *	2.87	3.57
chr19	7846056	7846373	318 *	2.51	0.63
chr5	176809707	176809977	271 *	2.51	0.63
chr5	165768749	165769134	386 *	3.09	3.75
chr6	163541316	163541559	244 *	3.07	3.75
chr9	101127343	101127833	491 *	1.95	2.74
chr10	60400982	60401339	358 *	1.92	2.7
chr12	17357317	17357552	236 *	1.92	2.7
chr6	50348774	50349213	440 *	4.68	5.15
chr2	233230363	233230739	377 *	2.56	0.63
chr3	136936337	136936938	602 *	4.96	5.47
chr6	64722170	64722672	503 *	4.07	4.64
chrX	63862408	63862940	533 *	2.89	3.59
chr7	123356985	123357278	294 *	2.81	3.5
chr2	161850991	161851249	259 *	2.79	1.08
chr4	170290885	170291390	506 *	2.17	2.96
chr22	26566860	26567210	351 *	3.56	2.27
chr20	33061171	33061606	436 *	2.49	0.63
chr7	116442770	116443217	448 *	2.49	0.63
chr8	11703112	11703377	266 *	2.49	0.63
chrX	104434891	104435406	516 *	3.95	4.53
chr12	15148823	15149169	347 *	3.11	3.78
chr7	9640652	9640942	291 *	2.87	3.59
chrX	129162120	129162763	644 *	3.34	2.03
chr16	10063461	10063709	249 *	2.49	0.63
chr7	79370843	79371336	494 *	2.49	0.63
chrX	31311469	31311836	368 *	2.49	0.63
chr11	24801311	24801712	402 *	4.18	4.74
chr10	76498625	76499076	452 *	2.49	0.63
chr11	75207363	75207675	313 *	2.49	0.63

chr8	107858121	107858576	456 *	3.65	4.27
chr7	48048905	48049170	266 *	2.27	3.03
chr14	29485367	29485823	457 *	3.6	2.27
chr19	57058849	57059266	418 *	2.8	1.08
chr17	15349394	15349754	361 *	3.56	2.27
chr21	19741306	19741717	412 *	3.52	4.18
chr7	135046472	135047011	540 *	3.27	1.81
chr17	69955332	69955640	309 *	2.88	3.58
chr15	75745227	75745528	302 *	3.2	1.7
chr10	25315444	25315739	296 *	2.49	0.63
chr2	236044676	236044933	258 *	2.49	0.63
chr5	126378331	126378599	269 *	2.49	0.63
chr7	44470986	44471247	262 *	2.49	0.63
chr12	81104052	81104723	672 *	5.03	5.47
chr1	19171494	19171760	267 *	2.43	3.15
chr2	73439627	73440000	374 *	3.2	1.7
chrX	53122339	53122583	245 *	2.51	0.63
chr1	176042726	176043038	313 *	2.86	1.34
chr11	133705082	133705439	358 *	2.75	1.08
chr1	53731737	53732028	292 *	2.78	1.08
chr6	39780965	39781270	306 *	2.28	3.04
chr16	17352756	17353008	253 *	2.54	0.63
chr21	34025668	34026087	420 *	4.81	5.27
chr1	64678132	64678598	467 *	1.62	2.47
chr1	116606726	116607151	426 *	1.62	2.47
chr11	107021278	107021517	240 *	1.62	2.47
chr12	98097753	98098149	397 *	1.62	2.47
chr2	187840057	187840430	374 *	1.62	2.47
chr3	35333287	35333646	360 *	1.62	2.47
chr3	62873888	62874131	244 *	1.62	2.47
chr4	60786149	60786386	238 *	1.62	2.47
chr4	73856565	73857040	476 *	1.62	2.47
chr4	86669707	86670284	578 *	1.62	2.47
chr5	106291941	106292177	237 *	1.62	2.47
chr8	125170930	125171287	358 *	1.62	2.47
chr4	24062600	24062815	216 *	2.61	3.34
chr15	64978299	64978737	439 *	4.44	4.99
chr2	124960770	124961129	360 *	2.86	3.55
chr10	105358535	105358892	358 *	4.27	4.85
chr4	148082039	148082416	378 *	4.18	4.75
chr19	17684818	17685229	412 *	4.06	3.01
chr4	114682926	114683233	308 *	2.75	1.08
chr20	38027400	38027667	268 *	2.29	3.06

chr3	94267832	94268120	289 *	2.29	3.06
chr9	137341380	137341768	389 *	4.5	3.7

Conc_PWS	Fold change	p.value	FDR
3.39	2.67	7.25E-07	0.00963
-0.67	5.88	8.09E-07	0.00963
1.84	3.55	1.11E-06	0.00963
0.92	4.21	3.42E-06	0.0223
0.92	4.1	5.55E-06	0.029
-0.67	5.46	1.31E-05	0.057
-0.67	5.39	2.23E-05	0.0754
-0.67	5.37	2.56E-05	0.0754
-0.67	5.34	2.60E-05	0.0754
0.92	3.91	3.53E-05	0.081
-0.25	4.85	4.08E-05	0.081
-0.67	5.26	4.15E-05	0.081
-0.67	5.27	4.31E-05	0.081
-0.67	5.32	4.43E-05	0.081
3.88	2.23	4.66E-05	0.081
1.65	3.47	5.06E-05	0.0825
-0.67	5.17	6.76E-05	0.098
-0.67	5.17	6.76E-05	0.098
-0.67	5.09	9.10E-05	0.124
-0.67	5.06	9.84E-05	0.124
-0.25	4.68	1.00E-04	0.124
-0.67	5.06	0.000106	0.125
0.07	4.4	0.000129	0.145
-0.67	4.98	0.00014	0.145
-0.67	4.98	0.00014	0.145
-0.67	4.99	0.000145	0.145
5.05	1.85	0.000162	0.151
-0.67	4.93	0.000166	0.151
-0.67	5.01	0.000168	0.151
0.07	4.29	0.000187	0.159
-0.67	5.11	0.000189	0.159
0.55	3.92	0.000196	0.16
0.56	3.92	0.000204	0.162
0.07	4.25	0.00022	0.163
-0.67	4.89	0.000231	0.163
2.15	2.92	0.000236	0.163
-0.25	4.46	0.000242	0.163
-0.67	4.85	0.000242	0.163
1.46	3.43	0.000243	0.163
-0.67	4.82	0.000259	0.169
-0.67	4.82	0.000266	0.17

-0.67	4.77	0.000312	0.194
4.44	1.87	0.000329	0.2
5.19	-3.26	0.000344	0.2
-0.67	4.72	0.000357	0.2
-0.67	4.76	0.000359	0.2
0.07	4.13	0.000373	0.2
-0.67	4.7	0.000373	0.2
-0.67	4.73	0.000378	0.2
0.75	3.76	0.000383	0.2
-0.67	4.92	0.000412	0.207
0.33	3.89	0.000413	0.207
-0.67	4.69	0.000432	0.212
-0.67	4.71	0.000443	0.214
0.92	3.61	0.000463	0.22
1.21	3.41	0.000532	0.248
-0.67	4.66	0.000537	1
-0.67	4.66	0.000537	1
-0.67	4.6	0.000539	1
-0.67	4.6	0.000539	1
-0.67	4.66	0.000551	1
-0.67	4.56	0.000603	1
0.56	3.75	0.000616	0.282
-0.67	4.6	0.000622	1
-0.67	4.53	0.000691	1
-0.67	4.55	0.000724	1
-0.67	4.5	0.000731	1
4.84	-4.21	0.000784	0.353
-0.67	4.49	0.000809	1
-0.67	4.48	0.000822	1
-0.67	4.48	0.000822	1
-0.67	4.46	0.000837	1
0.07	3.95	0.000885	0.391
-0.67	4.63	0.00092	1
-0.25	4.12	0.000943	1
1.56	3.01	0.000964	0.419
6.38	1.59	0.00099	0.423
-0.67	4.43	0.00101	1
-0.67	4.43	0.00101	1
4.79	-3.45	0.00104	0.426
1.66	3.02	0.00105	0.426
1.45	3.11	0.00105	0.426
5.33	-2.4	0.00106	0.426
-0.67	4.46	0.00116	1



-0.67	4.37	0.00121	1
0.07	3.78	0.00122	1
-0.67	4.34	0.00127	1
-0.67	4.34	0.00127	1
6.02	-1.77	0.00127	0.5
0.56	3.58	0.00128	0.5
-0.67	4.39	0.00129	1
0.75	3.69	0.00131	0.502
-0.67	4.62	0.00133	1
0.34	3.66	0.00138	0.523
0.56	3.61	0.00142	0.528
-0.67	4.31	0.00147	1
-0.67	4.31	0.00147	1
-0.67	4.29	0.00148	1
-0.67	4.4	0.00148	1
2.71	2.51	0.00148	0.546
0.07	3.73	0.00149	1
-0.67	4.44	0.00151	1
-0.67	4.39	0.00151	1
4.64	-4.01	0.00153	0.554
-0.67	4.35	0.00156	1
-0.67	4.27	0.00159	1
0.34	3.62	0.00164	1
4.6	-3.96	0.00164	0.58
4.6	-3.96	0.00164	0.58
-0.67	4.3	0.00165	1
-0.67	4.3	0.00165	1
0.56	3.54	0.00178	0.602
-0.67	4.25	0.0018	1
-0.67	4.24	0.0018	1
-0.67	4.24	0.0018	1
4.57	-3.94	0.0018	0.602
-0.25	3.92	0.00181	1
1.33	3.07	0.00181	0.602
0.56	3.4	0.00181	0.602
1.45	2.98	0.00182	0.602
-0.67	4.22	0.00185	1
-0.67	4.22	0.00185	1
-0.67	4.22	0.00185	1
-0.67	4.22	0.00185	1
-0.67	4.22	0.00185	1
-0.67	4.26	0.00186	1
4.65	-4.02	0.0019	0.618

-0.67	4.2	0.00202	1
4.86	-3.15	0.00203	0.652
0.92	3.21	0.00205	0.652
-0.67	4.28	0.00205	1
-0.67	4.28	0.00208	1
0.07	3.77	0.00208	1
-0.67	4.42	0.00214	1
-0.67	4.36	0.00218	1
2.56	2.33	0.00223	0.701
-0.67	4.17	0.00223	1
-0.67	4.17	0.00223	1
0.92	3.29	0.00228	0.707
-0.67	4.15	0.00234	1
-0.25	4.06	0.0024	1
5.08	-2.35	0.00242	0.743
-0.67	4.21	0.00249	1
0.07	3.64	0.00251	1
0.92	3.26	0.00257	0.781
-0.67	4.13	0.0026	1
1.66	2.97	0.00261	0.782
-0.25	3.82	0.00263	1
-0.25	3.83	0.00263	1
1.21	3.14	0.00267	0.782
0.75	3.32	0.00267	0.782
4.45	-3.82	0.00272	0.782
-0.67	4.27	0.00273	1
2.56	2.31	0.00275	0.782
0.92	3.34	0.00279	0.782
0.75	3.24	0.00279	0.782
-0.67	4.09	0.00281	1
5.78	-1.93	0.00285	0.792
-0.67	4.16	0.00286	1
-0.67	4.16	0.00286	1
1.07	3.01	0.00293	0.806
4.44	-3.8	0.003	0.817
-0.67	4.13	0.00303	1
-0.67	4.13	0.00303	1
4.42	-3.79	0.00309	0.83
0.56	3.34	0.00312	1
4.41	-3.78	0.00317	0.845
0.56	3.34	0.00317	1
0.33	3.35	0.0032	1
1.66	2.84	0.00327	0.862

4.39	-3.76	0.00332	0.866
0.34	3.5	0.00332	1
0.07	3.52	0.00333	1
0.07	3.55	0.0034	1
-0.67	4.05	0.00341	1
-0.25	3.73	0.00347	1
2.4	2.51	0.00352	0.909
-0.67	4.04	0.00353	1
-0.67	4.04	0.00353	1
-0.67	4.04	0.00353	1
4.38	-3.75	0.00355	0.909
-0.67	4.41	0.00356	1
-0.67	4.02	0.00359	1
-0.67	4.02	0.00359	1
2.56	2.36	0.0036	0.913
-0.67	4.06	0.00373	1
0.07	3.47	0.00376	1
-0.25	3.71	0.00388	1
-0.25	3.71	0.00388	1
0.55	3.2	0.00389	1
4.35	-3.71	0.0039	0.98
-0.67	3.99	0.00391	1
-0.67	3.99	0.00391	1
4.34	-3.7	0.00396	0.984
1.34	3	0.00401	0.985
5.11	-2.19	0.00407	0.985
4.69	-2.87	0.00408	0.985
-0.67	4.03	0.00413	1
-0.67	4.03	0.00413	1
0.07	3.5	0.00418	1
-0.25	3.7	0.00422	1
4.49	-3.15	0.00423	1
4.3	-3.67	0.00437	1
-0.67	4.08	0.00438	1
-0.67	4.08	0.00438	1
0.07	3.41	0.0044	1
0.07	3.68	0.0044	1
4.83	-2.66	0.00441	1
-0.67	3.96	0.00449	1
-0.67	3.96	0.00449	1
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-0.25	3.66	0.00451	1

4.3	-3.67	0.00454	1
-0.67	3.97	0.00455	1
4.94	-2.48	0.00458	1
0.56	3.23	0.00461	1
4.48	-3.13	0.00463	1
-0.67	3.98	0.00466	1
-0.67	3.93	0.00467	1
4.87	-2.37	0.00475	1
1.84	2.68	0.00479	1
0.75	3.17	0.00483	1
0.33	3.24	0.00493	1
1.33	2.76	0.00501	1
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-0.67	3.91	0.0052	1
-0.67	3.91	0.0052	1
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4.23	-3.59	0.00532	1
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0.07	3.38	0.00539	1
0.34	3.28	0.0054	1
1.07	2.96	0.00543	1
2.84	2.06	0.00545	1
2.21	2.35	0.00547	1
0.07	3.41	0.00553	1
0.34	3.39	0.00558	1
4.31	-3.68	0.00558	1
4.39	-3.05	0.00558	1
4.97	-2.28	0.00559	1
4.21	-3.58	0.0056	1
0.07	3.34	0.0057	1
0.07	3.34	0.0057	1
4.52	-3.09	0.00571	1
4.22	-3.59	0.00572	1
-0.67	3.87	0.0058	1
4.38	-3.04	0.00587	1
4.21	-3.57	0.00588	1
1.07	2.9	0.00598	1
0.75	3.01	0.00602	1
0.34	3.3	0.00608	1
0.75	3.08	0.0061	1
4.69	-2.52	0.00613	1
0.55	3.22	0.00613	1

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4.19	-3.56	0.00619	1
1.07	2.82	0.0062	1
0.07	3.39	0.0062	1
0.07	3.39	0.0062	1
4.16	-3.53	0.00635	1
3.4	1.91	0.00647	1
-0.67	3.92	0.00666	1
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0.07	3.37	0.00669	1
0.56	3.12	0.00671	1
1.07	2.81	0.00676	1
2.61	2.17	0.00681	1
4.33	-2.99	0.00686	1
4.17	-3.54	0.00691	1
4.33	-2.99	0.00694	1
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0.56	3.11	0.00708	1
-0.25	3.52	0.00714	1
0.07	3.48	0.00721	1
4.14	-3.51	0.00723	1
0.07	3.32	0.00727	1
5.5	-1.7	0.00728	1
2.56	2.2	0.00729	1
2.92	1.98	0.0073	1
4.42	-2.99	0.00732	1
0.55	3	0.00734	1
0.07	3.37	0.0074	1
0.07	3.37	0.0074	1
4.38	-3.29	0.00742	1
4.14	-3.51	0.00746	1
0.34	3.2	0.00747	1
4.52	-2.7	0.00747	1
1.46	2.9	0.00755	1
-0.67	3.8	0.00761	1
-0.67	3.8	0.00761	1

-0.67	3.8	0.00761	1
-0.67	3.8	0.00761	1
4.12	-3.49	0.00763	1
-0.67	3.78	0.00764	1
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2.88	2.01	0.00779	1
1.21	2.7	0.00795	1
4.27	-3.63	0.00806	1
4.33	-2.99	0.00821	1
-0.25	3.65	0.00821	1
-0.25	3.65	0.00821	1
0.07	3.31	0.00822	1
4.09	-3.45	0.00825	1
4.09	-3.45	0.00825	1
0.56	3.06	0.0083	1
-0.67	3.75	0.00831	1
-0.67	3.75	0.00831	1
-0.67	3.75	0.00831	1
-0.67	3.75	0.00831	1
4.29	-2.95	0.00832	1
0.75	3.01	0.00837	1
-0.67	3.83	0.00839	1
-0.67	3.83	0.00839	1
0.34	3.18	0.00839	1
0.07	3.3	0.00845	1
-0.67	3.8	0.00859	1
-0.67	3.8	0.00859	1
-0.67	3.8	0.00859	1
4.27	-2.93	0.00861	1
4.21	-3.13	0.00862	1
0.07	3.27	0.00863	1
0.07	3.27	0.00863	1
2	2.49	0.00873	1
0.92	2.77	0.00878	1
4.28	1.44	0.00895	1
2.66	2.06	0.00909	1
4.02	-3.38	0.00911	1
4.04	-3.4	0.00911	1
4.24	-2.9	0.00913	1
4.09	-3.45	0.00915	1
4.03	-3.4	0.00918	1
5.02	-2.01	0.00919	1
1.45	2.8	0.00924	1

3.11	1.86	0.00933	1
4.03	-3.4	0.00942	1
1.45	2.58	0.00945	1
4.19	-3.11	0.00946	1
0.07	3.25	0.00946	1
3.18	1.81	0.00946	1
4.05	-3.42	0.00949	1
-0.25	3.43	0.00953	1
1.55	2.52	0.00957	1
2.7	2.02	0.00968	1
-0.67	3.73	0.00971	1
-0.67	3.73	0.00971	1
-0.67	3.73	0.00971	1
-0.67	3.73	0.00971	1
4.67	-2.53	0.00972	1
3.36	1.71	0.00979	1
-0.67	3.71	0.00999	1
-0.67	3.71	0.00999	1
3.53	1.67	0.00999	1
4.23	-2.89	0.01	1
0.75	2.95	0.01	1
1.07	2.73	0.01	1
3.45	1.66	0.0101	1
1.33	2.73	0.0101	1
1.46	2.75	0.0102	1
2.75	2.12	0.0102	1
-0.67	3.68	0.0103	1
-0.67	3.68	0.0103	1
-0.67	3.68	0.0103	1
-0.67	3.68	0.0103	1
-0.67	3.68	0.0103	1
-0.67	3.68	0.0103	1
-0.67	3.68	0.0103	1
0.56	2.99	0.0104	1
2.84	2.08	0.0104	1
4.56	-2.47	0.0104	1
0.34	3.09	0.0104	1
4.14	-3.06	0.0104	1
4.72	-2.26	0.0105	1
-0.67	3.73	0.0107	1
-0.67	3.73	0.0107	1
0.75	2.82	0.0107	1
3.96	-3.32	0.0108	1

-0.25	3.4	0.0109	1
0.33	2.99	0.011	1
0.75	2.84	0.0111	1
4.98	-1.97	0.0111	1
4.54	-2.46	0.0112	1
0.34	3.07	0.0112	1
1.66	2.47	0.0112	1
1.33	2.54	0.0113	1
0.07	3.19	0.0113	1
0.07	3.19	0.0113	1
2.28	2.32	0.0113	1
-0.67	3.77	0.0114	1
4.18	-2.83	0.0114	1
-0.67	3.65	0.0114	1
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-0.67	3.65	0.0114	1
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-0.67	3.65	0.0114	1
-0.67	3.65	0.0114	1
-0.67	3.65	0.0114	1
4.38	-2.57	0.0115	1
4.48	-2.45	0.0115	1
1.84	2.58	0.0116	1
3.92	-3.29	0.0116	1
2.28	2.41	0.0116	1
3.92	-3.29	0.0117	1
4.16	-2.82	0.0117	1
4.69	-2.24	0.0117	1
3.96	-3.32	0.0118	1
-0.25	3.36	0.0118	1
-0.25	3.57	0.012	1
3.92	-3.28	0.0121	1
0.92	2.84	0.0121	1
4.37	-2.55	0.0121	1
4.03	-3.4	0.0121	1
4.26	-2.83	0.0122	1
0.56	3	0.0122	1
-0.67	3.7	0.0122	1
4.15	1.47	0.0122	1
3.9	-3.27	0.0123	1
-0.25	3.44	0.0124	1
5.72	-1.39	0.0124	1
1.21	2.57	0.0124	1



3.9	-3.27	0.0125	1
1.07	2.66	0.0125	1
4.19	-2.85	0.0125	1
4.33	-2.7	0.0126	1
4.07	-2.99	0.0127	1
3.88	-3.25	0.0127	1
3.88	-3.25	0.0127	1
3.88	-3.25	0.0128	1
3.88	-3.25	0.0128	1
0.56	2.88	0.0129	1
4.49	1.33	0.0129	1
1.83	2.33	0.0129	1
-0.25	3.33	0.0129	1
-0.25	3.41	0.013	1
5.35	-1.55	0.013	1
3.9	-3.26	0.0131	1
0.56	2.92	0.0131	1
0.56	2.95	0.0132	1
3.51	1.62	0.0132	1
-0.67	3.6	0.0134	1
-0.67	3.6	0.0134	1
-0.67	3.6	0.0134	1
4.33	-2.52	0.0134	1
1.08	2.82	0.0134	1
1.56	2.64	0.0134	1
0.55	2.83	0.0135	1
4.19	-2.85	0.0137	1
4.26	1.45	0.0137	1
0.56	2.98	0.0137	1
-0.67	3.62	0.0137	1
2	2.33	0.0138	1
3.88	-3.24	0.0138	1
4.17	-3.54	0.0139	1
0.75	2.92	0.014	1
-0.67	3.63	0.014	1
-0.67	3.57	0.0141	1
-0.67	3.57	0.0141	1
-0.67	3.57	0.0141	1
-0.67	3.57	0.0141	1
-0.67	3.57	0.0141	1
4.11	-2.77	0.0141	1
3.84	-3.2	0.0142	1
4.24	-2.61	0.0142	1

4.71	-2.26	0.0142	1
3.15	1.96	0.0142	1
1.66	2.43	0.0143	1
4.69	-2.38	0.0143	1
3.92	1.51	0.0144	1
3.84	-3.2	0.0144	1
5.9	-1.39	0.0144	1
4.32	-2.51	0.0145	1
5.04	1.14	0.0145	1
4.11	1.39	0.0146	1
2.92	1.85	0.0147	1
3.82	-3.18	0.0147	1
3.82	-3.18	0.0147	1
4.09	-3	0.0147	1
3.82	-3.18	0.0148	1
0.07	3.04	0.0148	1
0.55	2.94	0.0148	1
1.56	2.53	0.0148	1
3.82	-3.18	0.0149	1
0.75	2.88	0.015	1
0.07	3.1	0.015	1
2.71	2.04	0.0151	1
3.92	-3.28	0.0151	1
0.07	3.14	0.0152	1
0.07	3.14	0.0152	1
3.66	1.59	0.0152	1
4.87	-1.91	0.0152	1
3.86	-3.22	0.0152	1
1.45	2.4	0.0153	1
1.21	2.51	0.0154	1
4.59	-2.45	0.0155	1
3.33	1.63	0.0155	1
2.46	2.29	0.0155	1
3.79	-3.16	0.0156	1
2.51	2.06	0.0156	1
4.29	-2.47	0.0157	1
2.61	2.02	0.0157	1
0.75	2.71	0.0157	1
2.07	2.22	0.0157	1
0.34	3.07	0.0159	1
3.82	-3.19	0.016	1
3.58	1.58	0.0161	1
3.79	-3.16	0.0161	1

0.07	3.02	0.0161	1
-0.67	3.54	0.0161	1
-0.67	3.54	0.0161	1
-0.67	3.54	0.0161	1
-0.67	3.54	0.0161	1
-0.67	3.54	0.0161	1
-0.67	3.54	0.0161	1
-0.67	3.54	0.0161	1
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-0.67	3.54	0.0161	1
0.75	2.72	0.0161	1
4.05	-2.71	0.0163	1
0.33	2.87	0.0164	1
3.79	-3.16	0.0165	1
2.71	2.2	0.0165	1
0.07	3.09	0.0165	1
0.34	2.95	0.0166	1
0.34	2.95	0.0166	1
3.82	-3.19	0.0166	1
-0.25	3.32	0.0166	1
1.2	2.53	0.0167	1
1.08	2.67	0.0167	1
1.21	2.55	0.0167	1
4.3	-2.6	0.0168	1
1.08	2.69	0.0168	1
0.34	3.29	0.0169	1
0.92	2.81	0.0169	1
3.77	-3.14	0.017	1
0.34	2.97	0.017	1
3.75	-3.12	0.0171	1
4.02	-2.68	0.0171	1
0.07	3.08	0.0172	1
3.75	-3.12	0.0172	1
4.42	-2.49	0.0173	1
4.81	-1.88	0.0175	1
3.79	-3.16	0.0176	1
4.07	-2.73	0.0176	1
2.96	1.78	0.0176	1
1.34	2.59	0.0177	1
0.55	2.74	0.0177	1
5.32	1.31	0.0177	1
-0.67	3.59	0.0178	1

-0.67	3.59	0.0178	1
5.3	-1.65	0.0179	1
-0.25	3.23	0.0179	1
4.29	-2.47	0.0179	1
4.45	-2.28	0.0179	1
3.77	-3.14	0.018	1
3.75	-3.11	0.018	1
3.88	1.48	0.0181	1
3.73	1.58	0.0181	1
3.73	-3.09	0.0181	1
1.21	2.68	0.0181	1
4.6	-2.34	0.0182	1
3.61	1.5	0.0182	1
1.92	2.34	0.0183	1
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-0.67	3.49	0.0183	1
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0.75	2.77	0.0183	1
2.07	2.18	0.0184	1
1.07	2.74	0.0184	1
4	-2.66	0.0184	1
0.07	3.04	0.0185	1
0.55	2.76	0.0185	1
3.84	1.51	0.0185	1
3.75	-3.11	0.0185	1
4.29	-2.58	0.0186	1
4.45	-2.23	0.0187	1
0.07	3.19	0.0187	1
-0.67	3.52	0.0187	1
3.92	-2.84	0.0187	1
1.08	2.64	0.0188	1
0.07	2.99	0.0188	1
0.07	2.99	0.0188	1
4.24	-2.43	0.0189	1
3.75	-3.11	0.0192	1
3.79	-3.16	0.0192	1
0.34	2.9	0.0194	1
0.07	2.97	0.0194	1
0.07	2.97	0.0194	1
3.7	-3.07	0.0194	1
3.7	-3.07	0.0194	1

4.58	-2.19	0.0195	1
3.98	-2.64	0.0195	1
4.63	-2	0.0195	1
1.76	2.47	0.0195	1
4.26	-2.56	0.0195	1
4.75	-2.05	0.0196	1
1.21	2.58	0.0197	1
1.45	2.33	0.0197	1
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2	2.19	0.0198	1
4.62	-2.16	0.0198	1
2.56	2.13	0.0198	1
2.56	1.96	0.0198	1
-0.67	3.51	0.0199	1
-0.67	3.51	0.0199	1
-0.67	3.51	0.0199	1
2.39	2.02	0.0199	1
2.71	1.9	0.0199	1
4.58	-2.16	0.0199	1
0.07	3.09	0.02	1
0.07	3.09	0.02	1
0.07	3.09	0.02	1
2.56	2.12	0.02	1
4.39	-2.46	0.0202	1
4.41	-2.24	0.0202	1
4.09	-2.74	0.0202	1
0.55	2.69	0.0203	1
3.68	-3.05	0.0203	1
3.72	-3.09	0.0204	1
3.25	1.91	0.0204	1
3.68	-3.05	0.0206	1
3.68	-3.05	0.0206	1
1.92	2.2	0.0206	1
0.75	2.58	0.0206	1

3.88	-2.8	0.0207	1
4.58	-2.27	0.0207	1
1.21	2.56	0.021	1
1.21	2.56	0.021	1
4.48	-2.21	0.021	1
3.68	-3.05	0.021	1
0.07	3.05	0.021	1
4.11	-2.68	0.0211	1
3.88	-2.79	0.0211	1
3.66	-3.02	0.0211	1
3.66	-3.02	0.0211	1
3.66	-3.02	0.0211	1
3.66	-3.02	0.0211	1
4.21	-2.39	0.0212	1
0.75	2.71	0.0212	1
1.45	2.36	0.0212	1
4.24	-2.89	0.0212	1
3.72	-3.09	0.0213	1
1.92	2.22	0.0213	1
4.32	1.26	0.0213	1
0.33	2.8	0.0213	1
4.43	-2.26	0.0214	1
0.33	2.78	0.0214	1
1.21	2.49	0.0215	1
4.59	-2.14	0.0215	1
-0.25	3.21	0.0216	1
3.96	-2.62	0.0216	1
0.56	2.77	0.0217	1
0.56	2.77	0.0217	1
0.91	2.63	0.0217	1
-0.25	3.21	0.0217	1
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3.94	-2.6	0.0218	1
1.84	2.2	0.0218	1
3.66	-3.02	0.0219	1
3.66	-3.02	0.0219	1
3.66	-3.02	0.0219	1
1.2	2.45	0.0219	1
4.05	-2.63	0.022	1
3.75	-3.11	0.022	1
1.56	2.31	0.022	1
0.91	2.51	0.0221	1
5.41	-1.4	0.0221	1

1.34	2.51	0.0221	1
0.07	2.92	0.0221	1
0.07	2.92	0.0221	1
0.55	2.73	0.0221	1
3.92	-2.58	0.0221	1
3.92	-2.58	0.0221	1
2.08	2.33	0.0223	1
3.68	-3.05	0.0224	1
4.87	-1.72	0.0225	1
2.76	2.07	0.0226	1
3.66	-3.03	0.0226	1
3.88	-2.79	0.0227	1
3.88	-2.79	0.0227	1
0.34	2.84	0.0227	1
2.84	1.78	0.0227	1
1.2	2.44	0.0229	1
3.94	-2.6	0.0229	1
4.56	-2.02	0.023	1
3.9	-2.56	0.0231	1
3.9	-2.56	0.0231	1
3.64	-3	0.0231	1
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3.63	-3	0.0232	1
1.34	2.49	0.0233	1
4.5	-2.12	0.0233	1
4.92	-1.68	0.0234	1
3.72	-3.09	0.0236	1
3.53	1.59	0.0236	1

4.97	-1.61	0.0236	1
3.61	-2.97	0.0236	1
3.61	-2.97	0.0236	1
3.61	-2.97	0.0236	1
4.67	-1.97	0.0237	1
0.34	2.91	0.0238	1
2.51	2.03	0.0238	1
4.34	1.32	0.0238	1
3.11	1.69	0.0238	1
3.61	-2.97	0.0238	1
5.42	-1.33	0.0238	1
3.9	-2.56	0.0239	1
3.65	-3.02	0.0239	1
4.39	-2.22	0.0239	1
2.33	1.97	0.024	1
2.96	1.75	0.024	1
4.53	-2.07	0.024	1
4.29	1.27	0.024	1
2.66	1.85	0.0241	1
3.82	-2.73	0.0241	1
3.61	-2.97	0.0242	1
3.4	1.58	0.0242	1
3.82	-2.73	0.0242	1
4.05	-2.42	0.0243	1
2.45	2.01	0.0243	1
5.36	-1.36	0.0245	1
2.34	2.09	0.0245	1
3.63	-3	0.0246	1
1.45	2.35	0.0246	1
0.07	2.94	0.0247	1
0.07	2.94	0.0247	1
4.71	-2.02	0.0247	1
3.77	-3.13	0.0248	1
3.77	-3.13	0.0248	1
1.83	2.17	0.0248	1
0.75	2.69	0.0248	1
0.75	2.69	0.0248	1
4.8	-1.75	0.0248	1
2.66	1.89	0.0249	1
0.56	2.75	0.0249	1
2.84	1.82	0.0249	1
3.58	-2.95	0.0249	1
3.58	-2.95	0.0249	1



3.88	-2.54	0.0249	1
3.81	-2.73	0.025	1
3.58	-2.95	0.025	1
3.58	-2.95	0.025	1
3.58	-2.95	0.025	1
3.58	-2.95	0.025	1
4.18	-2.47	0.0251	1
0.56	2.74	0.0251	1
3.99	-2.65	0.0251	1
5.19	-1.47	0.0251	1
4.14	-2.33	0.0252	1
-0.25	3.13	0.0252	1
-0.25	3.13	0.0252	1
-0.25	3.13	0.0252	1
-0.25	3.13	0.0252	1
3.88	1.56	0.0252	1
2.15	2.19	0.0252	1
0.92	2.57	0.0252	1
0.92	2.48	0.0253	1
4.21	-2.39	0.0253	1
3.58	-2.95	0.0253	1
2	2.12	0.0253	1
-0.67	3.4	0.0254	1
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3.61	-2.97	0.0254	1
2.71	1.91	0.0254	1
-0.67	3.37	0.0255	1
-0.67	3.37	0.0255	1
-0.67	3.37	0.0255	1
3.82	-2.74	0.0255	1
4.37	1.28	0.0256	1
3.64	-3	0.0256	1
3.81	-2.73	0.0256	1
3.58	-2.95	0.0257	1
1.21	2.5	0.0258	1
4.69	-1.9	0.0258	1

4.35	-2.18	0.026	1
-0.67	3.57	0.026	1
-0.67	3.57	0.026	1
1.07	2.45	0.0261	1
3.86	-2.77	0.0261	1
3.8	-2.71	0.0261	1
1.45	2.24	0.0261	1
1.45	2.26	0.0261	1
3.42	1.56	0.0262	1
3.61	-2.97	0.0262	1
4.61	-2.14	0.0263	1
3.58	-2.95	0.0263	1
3.56	-2.92	0.0264	1
3.56	-2.92	0.0264	1
4.97	-1.77	0.0264	1
1.34	2.35	0.0266	1
1.08	2.6	0.0266	1
3.56	-2.93	0.0266	1
1.84	2.11	0.0266	1
4.44	-2.05	0.0267	1
2.88	1.85	0.0267	1
-0.67	3.48	0.0267	1
-0.67	3.48	0.0267	1
3.84	-2.5	0.0268	1
4.6	-1.87	0.0269	1
3.56	-2.92	0.0269	1
1.21	2.47	0.0269	1
4.29	1.26	0.0269	1
1.07	2.36	0.0269	1
3.98	-2.55	0.027	1
0.55	2.6	0.027	1
0.55	2.6	0.027	1
3.59	-2.95	0.027	1
2.92	1.71	0.027	1
3.77	-2.69	0.0271	1
4.52	-2.09	0.0271	1
0.07	2.84	0.0271	1
1.56	2.3	0.0271	1
1.84	2.24	0.0272	1
4.54	-1.95	0.0272	1
4.6	-1.87	0.0272	1
0.07	2.9	0.0272	1
3.58	1.46	0.0273	1



-0.67	3.34	0.0283	1
-0.67	3.34	0.0283	1
0.75	2.59	0.0283	1
0.75	2.59	0.0283	1
0.75	2.59	0.0283	1
0.75	2.59	0.0283	1
-0.25	3.07	0.0283	1
1.21	2.45	0.0283	1
0.56	2.68	0.0283	1
0.56	2.68	0.0283	1
4.5	-2.19	0.0284	1
2.51	1.95	0.0284	1
3.31	1.57	0.0285	1
2.4	1.94	0.0285	1
3.82	-2.47	0.0286	1
3.6	-2.97	0.0286	1
3.53	-2.9	0.0286	1
3.53	-2.9	0.0286	1
3.88	-2.53	0.0286	1
4.4	-2.26	0.0287	1
0.92	2.45	0.0288	1
3.75	-2.67	0.0288	1
5.06	-1.59	0.0288	1
2.27	1.96	0.0288	1
-0.25	3.1	0.0288	1
-0.25	3.1	0.0288	1
3.24	1.56	0.029	1
3.55	-2.92	0.029	1
3.94	-2.59	0.029	1
3.94	-2.59	0.029	1
3.53	-2.9	0.029	1
1.45	2.29	0.0291	1
3.81	-2.47	0.0291	1
0.55	2.56	0.0292	1
0.55	2.58	0.0292	1
4.32	1.21	0.0292	1
3.53	-2.9	0.0292	1
2.07	2.02	0.0292	1
2.92	1.71	0.0292	1
3.58	-2.95	0.0293	1
4.74	-1.75	0.0293	1
3.25	1.66	0.0293	1
3.07	1.65	0.0293	1

2.66	1.82	0.0294	1
-0.67	3.39	0.0294	1
-0.67	3.39	0.0294	1
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-0.67	3.39	0.0294	1
-0.67	3.39	0.0294	1
-0.67	3.39	0.0294	1
4.3	-2.13	0.0294	1
0.92	2.54	0.0295	1
0.92	2.54	0.0295	1
0.34	2.82	0.0295	1
4.11	1.24	0.0295	1
0.92	2.45	0.0295	1
3.84	-2.5	0.0296	1
3.51	-2.87	0.0296	1
2.28	2.07	0.0296	1
0.07	2.96	0.0297	1
3.51	-2.87	0.0297	1
3.51	-2.87	0.0297	1
3.73	-2.64	0.0297	1
2.21	2	0.0298	1
1.34	2.41	0.0298	1
0.92	2.47	0.0299	1
3.73	-2.64	0.0299	1
1.55	2.16	0.0299	1
3.53	-2.9	0.03	1
3.53	-2.9	0.03	1
2.45	1.92	0.03	1
1.75	2.23	0.03	1
3.55	-2.92	0.0301	1
3.6	-2.97	0.0302	1
0.34	2.75	0.0302	1
5.38	-1.3	0.0302	1
2.27	1.97	0.0303	1
0.56	2.58	0.0303	1
4.29	-2.12	0.0304	1
0.55	2.64	0.0305	1
3.5	-2.87	0.0305	1
3.5	-2.87	0.0305	1
4.13	-2.25	0.0306	1
4.1	-2.29	0.0307	1
4.26	-2.17	0.0307	1

-0.25	3.04	0.0307	1
-0.25	3.04	0.0307	1
3.58	-2.95	0.0308	1
3.58	-2.95	0.0308	1
3.92	-2.49	0.0308	1
0.56	2.64	0.0308	1
4.67	-1.79	0.0309	1
6.13	-1.07	0.0309	1
3.92	-2.57	0.031	1
4.2	1.38	0.0311	1
-0.25	3.1	0.0311	1
1.08	2.61	0.0312	1
4.01	-2.67	0.0312	1
3.94	-2.51	0.0313	1
3.55	-2.92	0.0314	1
3.55	-2.92	0.0314	1
1.2	2.36	0.0315	1
3.37	1.53	0.0315	1
0.55	2.53	0.0315	1
0.34	2.79	0.0315	1
1.21	2.42	0.0315	1
4.16	1.26	0.0316	1
3.7	-2.62	0.0317	1
4.85	-1.67	0.0317	1
2.88	1.68	0.0318	1
4.59	-1.87	0.0318	1
3.48	-2.85	0.0318	1
3.48	-2.85	0.0318	1
3.72	-3.09	0.0318	1
1.75	2.14	0.0318	1
3.48	-2.84	0.0319	1
3.48	-2.84	0.0319	1
3.48	-2.84	0.0319	1
4.78	-1.65	0.032	1
0.92	2.57	0.032	1
3.77	-2.43	0.032	1
2.92	1.72	0.0321	1
1.21	2.41	0.0322	1
2.84	1.78	0.0322	1
3.48	-2.84	0.0325	1
2.07	2	0.0325	1
3.96	-2.53	0.0326	1
2.39	1.9	0.0326	1









-0.67	3.24	0.0362	1
-0.67	3.24	0.0362	1
-0.67	3.24	0.0362	1
-0.67	3.24	0.0362	1
-0.67	3.24	0.0362	1
-0.67	3.24	0.0362	1
3.42	-2.79	0.0363	1
4.7	-1.8	0.0363	1
4.4	-2.26	0.0363	1
3.5	-2.87	0.0364	1
3.5	-2.87	0.0364	1
0.34	2.67	0.0365	1
1.33	2.15	0.0365	1
1.33	2.15	0.0365	1
3.75	-2.66	0.0365	1
0.55	2.51	0.0365	1
4.42	-1.97	0.0365	1
0.75	2.5	0.0366	1
4.35	1.16	0.0366	1
0.92	2.56	0.0366	1
2	2	0.0367	1
1.92	2.15	0.0369	1
4.52	-1.79	0.0369	1
3.43	-2.79	0.0369	1
3.58	1.41	0.0369	1
3.21	1.56	0.0369	1
1.34	2.33	0.037	1
1.34	2.33	0.037	1
2.33	1.86	0.037	1
2.92	1.67	0.037	1
2.51	1.94	0.0371	1
1.45	2.14	0.0371	1
5.24	-1.43	0.0373	1
2.14	1.99	0.0373	1
3.7	-2.36	0.0373	1
3.63	-2.99	0.0373	1
4.39	-1.94	0.0373	1
1.56	2.16	0.0373	1
4.52	-1.79	0.0374	1
0.56	2.59	0.0374	1
2.21	1.93	0.0374	1
3.68	1.43	0.0375	1
3.21	1.68	0.0375	1

4.53	-1.8	0.0376	1
3.73	1.38	0.0376	1
0.92	2.44	0.0376	1
0.07	2.73	0.0376	1
3.3	1.51	0.0377	1
3.39	-2.76	0.0378	1
3.39	-2.76	0.0378	1
4.92	-1.68	0.0378	1
0.91	2.33	0.0379	1
4.11	-2.08	0.038	1
0.07	2.78	0.0381	1
0.07	2.78	0.0381	1
3.39	-2.76	0.0381	1
1.21	2.37	0.0382	1
0.55	2.46	0.0382	1
3.34	1.51	0.0382	1
3.42	-2.79	0.0382	1
4.32	-2.18	0.0382	1
4.3	-1.96	0.0382	1
3.4	-2.76	0.0382	1
3.21	1.55	0.0383	1
1.46	2.29	0.0383	1
4.8	-1.73	0.0383	1
3.45	-2.81	0.0383	1
0.07	2.8	0.0383	1
3.94	1.25	0.0384	1
2.71	1.77	0.0384	1
3.68	-2.34	0.0384	1
0.75	2.58	0.0384	1
1.2	2.34	0.0385	1
3.75	-2.4	0.0385	1
4.22	-2.05	0.0385	1
4.21	-2.04	0.0388	1
3.39	-2.76	0.0388	1
3.39	-2.76	0.0388	1
1.21	2.34	0.0388	1
2.88	1.88	0.0388	1
-0.25	2.99	0.0388	1
-0.25	2.99	0.0388	1
4.3	-2.17	0.0389	1
5.73	-1.08	0.0389	1
3.68	-2.34	0.0389	1
3.4	-2.76	0.039	1

0.56	2.5	0.0391	1
3.96	-2.15	0.0392	1
4.77	-1.87	0.0392	1
4.72	-1.59	0.0393	1
4.93	-1.47	0.0393	1
4.87	-1.61	0.0393	1
5.81	-1.09	0.0393	1
3.43	-2.79	0.0394	1
0.92	2.36	0.0395	1
3.63	-2.55	0.0395	1
3.42	-2.79	0.0395	1
3.61	-2.52	0.0395	1
4.02	1.26	0.0396	1
1.21	2.23	0.0396	1
3.68	1.36	0.0396	1
0.75	2.49	0.0397	1
4.21	-2.04	0.0397	1
3.39	-2.76	0.0397	1
1.92	2.02	0.0398	1
3.82	-2.39	0.0398	1
2.71	1.72	0.0398	1
3.51	1.41	0.0399	1
0.56	2.7	0.0399	1
0.56	2.7	0.0399	1
4.77	-1.7	0.0399	1
3.37	-2.73	0.04	1
3.37	-2.73	0.04	1
3.98	-2.16	0.0401	1
3.45	-2.81	0.0402	1
5.08	-1.37	0.0402	1
3.86	-2.22	0.0402	1
3.88	-2.24	0.0402	1
3.36	-2.73	0.0402	1
3.36	-2.73	0.0402	1
3.36	-2.73	0.0402	1
3.36	-2.73	0.0402	1
3.36	-2.73	0.0402	1
3.21	1.53	0.0403	1
0.56	2.46	0.0404	1
4.43	-1.9	0.0404	1
1.21	2.48	0.0404	1
3.61	1.34	0.0404	1
4.52	-1.83	0.0405	1



-0.67	3.2	0.0412	1
-0.67	3.2	0.0412	1
-0.67	3.2	0.0412	1
1.75	2.05	0.0413	1
3.14	1.53	0.0413	1
4.18	-2.01	0.0414	1
2	1.97	0.0414	1
4.57	-1.96	0.0415	1
3.36	-2.73	0.0415	1
3.36	-2.73	0.0415	1
3.36	-2.73	0.0415	1
3.5	1.38	0.0415	1
2.5	1.78	0.0415	1
0.92	2.5	0.0415	1
1.45	2.17	0.0416	1
3.33	1.44	0.0416	1
3.86	1.39	0.0416	1
2.27	1.88	0.0417	1
0.56	2.63	0.0417	1
2.21	1.96	0.0417	1
2.45	1.86	0.0418	1
1.92	1.97	0.0418	1
4.42	-1.82	0.0419	1
1.76	2.22	0.042	1
1.21	2.32	0.042	1
3.58	-2.5	0.042	1
4.8	-1.52	0.042	1
1.66	2.29	0.0421	1
0.55	2.43	0.0422	1
0.55	2.43	0.0422	1
2.34	1.87	0.0423	1
0.07	2.85	0.0425	1
3.36	-2.73	0.0426	1
3.36	-2.73	0.0426	1
3.36	-2.73	0.0426	1
0.55	2.55	0.0426	1
3.34	-2.7	0.0427	1
1.76	2.31	0.0427	1
3.34	-2.7	0.0427	1
3.34	-2.7	0.0427	1
0.75	2.47	0.0428	1
0.75	2.53	0.0428	1
3.63	-2.29	0.0428	1

0.75	2.45	0.0429	1
0.75	2.45	0.0429	1
3.28	1.51	0.0429	1
0.07	2.78	0.0429	1
0.07	2.78	0.0429	1
3.33	-2.7	0.043	1
3.33	-2.7	0.043	1
3.33	-2.7	0.043	1
2.61	1.78	0.043	1
3.34	-2.7	0.043	1
2.71	1.75	0.043	1
4.55	-1.86	0.043	1
4.44	1.08	0.0431	1
4.14	-2.06	0.0431	1
3.31	1.46	0.0431	1
0.56	2.52	0.0432	1
4.56	-1.95	0.0433	1
4.19	-2.25	0.0433	1
2.15	2.12	0.0433	1
4.36	-1.91	0.0433	1
4.02	-2.14	0.0433	1
3.79	-2.37	0.0433	1
3.42	-2.78	0.0434	1
3.65	-2.57	0.0434	1
1.66	2.04	0.0435	1
3.77	1.32	0.0435	1
4.35	-1.9	0.0435	1
3.33	-2.7	0.0436	1
-0.25	2.92	0.0436	1
-0.25	2.92	0.0436	1
-0.25	2.92	0.0436	1
3.34	-2.7	0.0437	1
1.65	2.22	0.0438	1
3.56	-2.47	0.0438	1
3.56	-2.47	0.0439	1
3.37	1.48	0.0439	1
1.93	2.21	0.044	1
3.82	-2.18	0.044	1
3.82	-2.18	0.044	1
0.07	2.69	0.044	1
3.36	-2.73	0.044	1
3.98	-2.27	0.0441	1
1.84	2.01	0.0441	1

0.55	2.68	0.0441	1
1.66	2.14	0.0442	1
3.63	1.34	0.0442	1
5.36	-1.28	0.0443	1
4.12	-2.09	0.0444	1
3.33	-2.7	0.0445	1
3.33	-2.7	0.0445	1
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3.92	-2.11	0.0446	1
3.47	-2.84	0.0447	1
1.34	2.33	0.0447	1
3.79	1.26	0.0447	1
3.92	1.27	0.0447	1
0.56	2.61	0.0447	1
1.75	2.18	0.0448	1
1.34	2.18	0.0448	1
3.86	1.29	0.0449	1
0.56	2.57	0.0449	1
0.56	2.57	0.0449	1
4.18	1.15	0.0449	1
4.99	-1.35	0.0449	1
3.48	1.39	0.045	1
0.56	2.43	0.0451	1
3	1.55	0.0451	1
4.34	-1.88	0.0451	1
0.55	2.48	0.0452	1
3.66	-2.32	0.0452	1
0.75	2.44	0.0453	1
4.46	-1.74	0.0454	1
4.46	-1.74	0.0454	1
3.31	-2.67	0.0455	1
1.21	2.21	0.0456	1
1.08	2.36	0.0456	1
4.86	-1.44	0.0457	1



4.24	-2.11	0.0457	1
3.31	-2.67	0.0457	1
0.75	2.42	0.0457	1
4.64	-1.64	0.0457	1
3.33	-2.7	0.0458	1
3.33	-2.7	0.0458	1
3.36	-2.73	0.0458	1
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3.36	-2.73	0.0458	1
3.28	1.5	0.0459	1
3.3	-2.67	0.0459	1
3.3	-2.67	0.0459	1
3.3	-2.67	0.0459	1
3.3	-2.67	0.0459	1
3.42	-2.78	0.0459	1
1.33	2.17	0.046	1
1.07	2.29	0.046	1
4.6	1.23	0.0461	1
1.56	2.11	0.0462	1
3.8	-2.16	0.0462	1
0.75	2.49	0.0463	1
3.31	-2.67	0.0463	1
3.94	-2.12	0.0463	1
1.07	2.18	0.0464	1
0.75	2.33	0.0465	1
5.9	-5.26	0.0465	1
3.94	-2.24	0.0465	1
3.9	-2.09	0.0466	1
3.3	-2.67	0.0466	1
3.3	-2.67	0.0466	1
2.66	1.83	0.0467	1
3.42	1.43	0.0468	1
3.39	-2.76	0.0469	1
1.65	2.08	0.0469	1
4.61	-1.71	0.047	1
3.28	1.58	0.047	1
5.45	1.05	0.0471	1
3.8	1.34	0.0471	1
2.56	1.78	0.0471	1
0.34	2.63	0.0472	1
0.34	2.63	0.0472	1
0.34	2.63	0.0472	1
0.34	2.63	0.0472	1

0.34	2.63	0.0472	1
3.88	-2.07	0.0472	1
4.65	-1.76	0.0473	1
3.56	1.42	0.0473	1
3.96	-2.14	0.0473	1
3.31	-2.67	0.0473	1
4.19	-2.02	0.0474	1
3.33	-2.7	0.0474	1
3.33	-2.7	0.0474	1
3.33	-2.7	0.0474	1
3.9	-2.08	0.0474	1
5.56	0.9	0.0475	1
2.14	1.89	0.0475	1
1.45	2.12	0.0477	1
3.3	-2.67	0.0478	1
3.3	-2.67	0.0478	1
1.84	1.91	0.0478	1
1.75	2	0.0478	1
0.07	2.67	0.0479	1
0.07	2.64	0.048	1
0.07	2.64	0.048	1
3.96	1.2	0.048	1
3.36	-2.73	0.048	1
4.15	1.33	0.0481	1
3.11	1.53	0.0481	1
1.45	2.14	0.0481	1
1.45	2.05	0.0481	1
3.55	-2.47	0.0482	1
0.34	2.62	0.0484	1
4.23	-1.96	0.0484	1
3.27	-2.64	0.0484	1
3.27	-2.64	0.0484	1
3.27	-2.64	0.0484	1
2.96	1.57	0.0484	1
1.84	1.94	0.0485	1
1.34	2.25	0.0486	1
4.02	-1.99	0.0486	1
3.27	-2.64	0.0486	1
3.27	-2.64	0.0486	1
3.27	-2.64	0.0486	1
3.24	1.5	0.0486	1
3.28	-2.64	0.0486	1
3.28	-2.64	0.0486	1

2.56	1.71	0.0486	1
0.56	2.47	0.0486	1
4.29	-2.02	0.0486	1
3.56	-2.48	0.0487	1
4.23	-1.96	0.0489	1
2.28	1.9	0.0489	1
3.97	-2.16	0.049	1
1.45	2.13	0.049	1
3.92	-2.22	0.0491	1
3.27	-2.64	0.0491	1
3.27	-2.64	0.0491	1
3.27	-2.64	0.0491	1
3.27	-2.64	0.0491	1
4.39	1.08	0.0492	1
0.91	2.24	0.0492	1
3.92	-2.22	0.0492	1
3.3	-2.67	0.0492	1
3.59	-2.24	0.0492	1
3.51	-2.42	0.0494	1
3.53	-2.45	0.0494	1
0.56	2.48	0.0494	1
3.33	-2.7	0.0494	1
4.12	1.15	0.0495	1
-0.67	3.13	0.0495	1
-0.67	3.13	0.0495	1
-0.67	3.13	0.0495	1
-0.67	3.13	0.0495	1
-0.67	3.13	0.0495	1
-0.67	3.13	0.0495	1
-0.67	3.13	0.0495	1
-0.67	3.13	0.0495	1
-0.67	3.13	0.0495	1
-0.67	3.13	0.0495	1
-0.67	3.13	0.0495	1
1.07	2.27	0.0495	1
3.56	1.43	0.0496	1
1.45	2.1	0.0496	1
3.28	1.57	0.0496	1
3.21	1.54	0.0498	1
4.66	-1.64	0.0498	1
3.5	-2.42	0.0499	1
0.56	2.5	0.0499	1

0.56	2.5	0.0499	1
5.01	-1.31	0.05	1

**Table S5. 4C viewpoint primers for 4C-seq library preparation (1<sup>st</sup> PCR)**

Genomic primer	sequence
SNRPN_U_Nlalll	<b>ACACTCTTTCCTACACGACGCTCTTCCGATCTTCATAAGAAGTTGAAGCATG</b>
IPW_Nlalll	<b>ACACTCTTTCCTACACGACGCTCTTCCGATCTGCTTTCTGGGAGAAGCCATG</b>
PWAR1_Nlalll	<b>ACACTCTTTCCTACACGACGCTCTTCCGATCTATATGCCACATTCACATG</b>
UBE3A_U_Nlalll	<b>ACACTCTTTCCTACACGACGCTCTTCCGATCTTTTGGATACCTTTCATCATG</b>
SNRPN_DpnII	<b>GTGACTGGAGTTCAGACGTGTGCTCTTCCGATCTCAGTTGGCTCCTGTATCATT</b>
IPW_DpnII	<b>GTGACTGGAGTTCAGACGTGTGCTCTTCCGATCTCCATAACCATCTAGTCCACAA</b>
PWAR1_DpnII	<b>GTGACTGGAGTTCAGACGTGTGCTCTTCCGATCTGCCCCAGGGAAAATAGTACC</b>
UBE3A_U_DpnII	<b>GTGACTGGAGTTCAGACGTGTGCTCTTCCGATCTTACTGTGGGTTTTTGGTTTT</b>

**Table S6. Illumina HT adapter primers (2<sup>nd</sup> PCR)**

Illumina HT adapters	
Truseq_HT_D504	AATGATACGGCGACCACCGAGATCTACACGGCTCTGAACACTCTTTCCTACACGACGCTCTTCCGATCT
Truseq_HT_D505	AATGATACGGCGACCACCGAGATCTACACAGGCGAAGACACTCTTTCCTACACGACGCTCTTCCGATCT
Truseq_HT_D506	AATGATACGGCGACCACCGAGATCTACACTAATCTTAACACTCTTTCCTACACGACGCTCTTCCGATCT
Truseq_HT_D507	AATGATACGGCGACCACCGAGATCTACACCAGGACGTACACTCTTTCCTACACGACGCTCTTCCGATCT
Truseq_HT_D705_revcom	CAAGCAGAAGACGGCATAACGAGATTTCTGAATGTGACTGGAGTTCAGACGTGTGCTCTTCCGATCT
Truseq_HT_D706_revcom	CAAGCAGAAGACGGCATAACGAGATACGAATTCGTGACTGGAGTTCAGACGTGTGCTCTTCCGATCT
Truseq_HT_D707_revcom	CAAGCAGAAGACGGCATAACGAGATCTGAAGCTGTGACTGGAGTTCAGACGTGTGCTCTTCCGATCT