

## Compare between hs19 ver73 and ver51

The follow content includes comparison between ver51 and ver73 dating result and explanations.

### 1. Gene number comparison

Table 1 overall gene number comparison

	ver51	ver73
0	12058	11806
1	1013	2197
2	1393	616
3	1018	1213
4	945	1101
5	1214	1068
6	336	118
7	130	55
8	314	154
9	286	114
10	392	70
11	447	75
12	389	150
13		176
total	19935	18913

### 2. Filtered gene number in ver73

Table 2 gene number of filtered process

operation	Reduce num	Retain num	table
start	0	22695	Axt_branch
Filter note! ="NA" or pep_seq=""	<b>2512</b>	20183	axt_branch_final
Filter genes of chrY and M	60	20123	axt_branch_gene_1
Filter pre, post pair	<b>1210</b>	18913	axt_branch_gene

### 2.1 Supplementary information of table 2

Fig 1 filter gene number according to (pre, post) value

branch	pre	post	count (*)
0	0	0	75
0	1	0	349
1	0	0	64
1	0	1	27
1	1	0	179
1	1	1	76
2	0	0	13
2	0	1	7
2	1	1	28
3	0	0	11
3	1	1	44
4	0	0	6
4	1	0	13
4	1	1	6
4	2	1	11
4	3	1	17
5	0	0	8
5	1	0	15
5	2	0	26
6	0	0	12
6	1	0	21
7	0	0	4
7	0	1	5
7	1	1	4
8	0	0	6
8	0	1	9
8	0	2	2
8	1	0	25
8	1	1	20
8	2	2	14
9	0	0	11
9	0	1	2
9	0	0	11
9	0	1	2
9	0	2	1
9	1	1	15
9	1	2	7
9	2	2	7
10	0	0	23
11	0	0	47

### 3. Detailed gene number comparison and explanation

#### 3.1 comparison and explanation between hg19\_ver78 and hg19\_ver51

Table3 detailed comparison between hg19\_ver78 and hg19\_ver51

		hs19_ver51												count	ver73 total	ver73 only	
		0	1	2	3	4	5	6	7	8	9	10	11				12
ver73	0	10566	102	67	23	42	64	7	3	2	3	4	6	2	10891	11806	915
	1	799	749	293	23	13	25	6	0	1	0	2	9	0	1920	2197	277
	2	23	23	384	9	5	5	1	0	2	1	1	2	1	457	616	159
	3	14	7	293	612	31	14	22	4	2	2	3	0	1	1005	1213	208
	4	20	4	119	16	494	155	17	3	4	9	13	10	1	865	1101	236
	5	4	1	4	13	41	578	88	9	5	8	10	3	4	768	1068	300
	6	2	0	0	0	4	38	20	1	2	0	2	2	2	73	118	45
	7	1	1	0	1	2	2	5	22	1	0	1	3	0	39	55	16
	8	3	2	0	0	3	0	1	11	65	14	2	0	3	104	154	50
	9	0	1	0	0	0	1	1	3	14	41	13	0	6	80	114	34
	10	1	0	0	0	0	0	1	0	2	7	14	14	4	43	70	27
	11	1	0	2	0	1	1	3	1	6	3	30	4	1	53	75	22
	12	0	0	1	1	2	3	0	1	0	2	8	76	7	101	150	49
	13	0	0	0	0	1	1	0	1	0	1	11	13	68	96	176	80
count	11434	890	1163	698	639	887	172	59	106	91	114	142	100	16495	18913	2418	
ver51 total	12058	1013	1393	1018	945	1214	336	130	314	286	392	447	389	19935			
ver51 only	624	123	230	320	306	327	164	71	208	195	278	305	289	3440			
young_gene identity: (749+384+612+494+378+20+22+65+41+14+30+76+68)/(16495-11434)=0.62																	
primate gene identity: 429/553=0.78																	

#### 4. Explanations

##### 4.1 Different species

Table 4 dating species

number	Ver 51 species	Age	Ver 73 Species	Age
1	Hg18	12	Hg19	13
	panTro2	11		
2	ponAbe2	10	panTro3	12
3	Rhemac2	9	ponAbe2	11
4	calJac1	8	nomLeu3	10
5	Mm9	7	rhemac3	9
6	cavPor3		calJac3	8
7	bosTau4	6	mm10	7
8	canFam2		Rn5	
9	echTel1	5	cavPor3	6
10	dasNov1		oryCun2	
11	monDom4	4	bosTau7	6
12	ornAna1	3	equCab2	
13	galGal3	2	canFam3	5
14	anoCar1		loxAfr3	
15	xenTro2	1	monDom5	4
16	Fr2	0	ornAna1	3
17	danRer5		anoCar2	2
18			galGal3	
19			taeGut1	1
20			xenTro3	
21			tetNig2	0
22			gasAcu1	
23			danRer7	

## 4.2 Different gene detailed information of these two versions

Table5 Different gene detailed information of these two versions

<b>Explanation of only exist in ver78 or ver54 gene</b>		
	num	reason
Only in ver51	1263	Only in ver51 , changed or delete in ver73
	1281	In ver51 are coding, other type gene in ver73
	880	In ver73 filtered accord to (pre, post) value
	98	In ver73 filtered accord to note ! =”NA” or pep_seq=”“
Only in ver73	1594	Only in ver73 new geneID
	21	From pseudogene or retrotransposed gene to coding gene
Ver51 primate specificity	Ver73	
1828	429	Primate specific Coding gene
	408	Delete in ver73
	124	Branch<=7
	157	Deleted accord to Pre, post
	701	Biotype changed
Difference explanation between ver73 and ver51		
From ver51->ver73	Branch change	reason
	1->0	Added a transcripts
	1->2	Added two transcripts
	9->0	Added three transcripts
	9->10	Added two transcripts