

Chromatin & Pseudogenes

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Annotation - 8th June 2011

Tools

- Segway segmentation
- Pseudogene.org
- hg19 assembly
- Genome browser

GE2	
GE1	Gene body (end)
GE0	
GM1	Gene body (middle)
GM0	
E/GM	Enhancer/Gene middle
GS	Gene body (start)
TSS	Transcription start site
TF2	
TF1	Transcription factor activity
TF0	
H3K9me1	H3K9me1 only
C1	CTCF (weak)
C0	CTCF (strong)
R5	
R4	
R3	
R2	Repression
R1	
R0	
F1	Low signal in all the observation tracks besides the FAIRE track
F0	
L1	Low signal zone
L0	
D	Dead zone

Duplicated Pgene vs ParentGene

UCSC Genome Browser on Human Feb. 2009 (GRCh37/hg19) Assembly

move <<< << < > >> >>> zoom in 1.5x 3x 10x base zoom out 1.5x 3x 10x

position/search chr1:41,403,774-41,405,432 size 1,659 bp.

chr1 (p34.2)

Scale chr1: 41404000 | 500 bases | 41404500 | 41405000

Segway segmentation of histone modifications, transcription factors, and open chromatin

move start < 2.0 > move end < 2.0 >

track search default tracks default order hide all manage custom tracks configure reverse refresh

collapse all Use drop-down controls below and press refresh to alter tracks displayed. expand all

Tracks with lots of items will automatically be displayed in more compact modes.

UCSC Genome Browser on Human Feb. 2009 (GRCh37/hg19) Assembly

move <<< << < > >> >>> zoom in 1.5x 3x 10x base zoom out 1.5x 3x 10x

position/search chr5:133,530,025-133,561,83 size 31,809 bp.

chr5 (q31.1)

Scale chr5: 133535000 | 10 kb | 133540000 | 133545000 | 133550000 | 133555000 | 133560000

Segway segmentation of histone modifications, transcription factors, and open chromatin

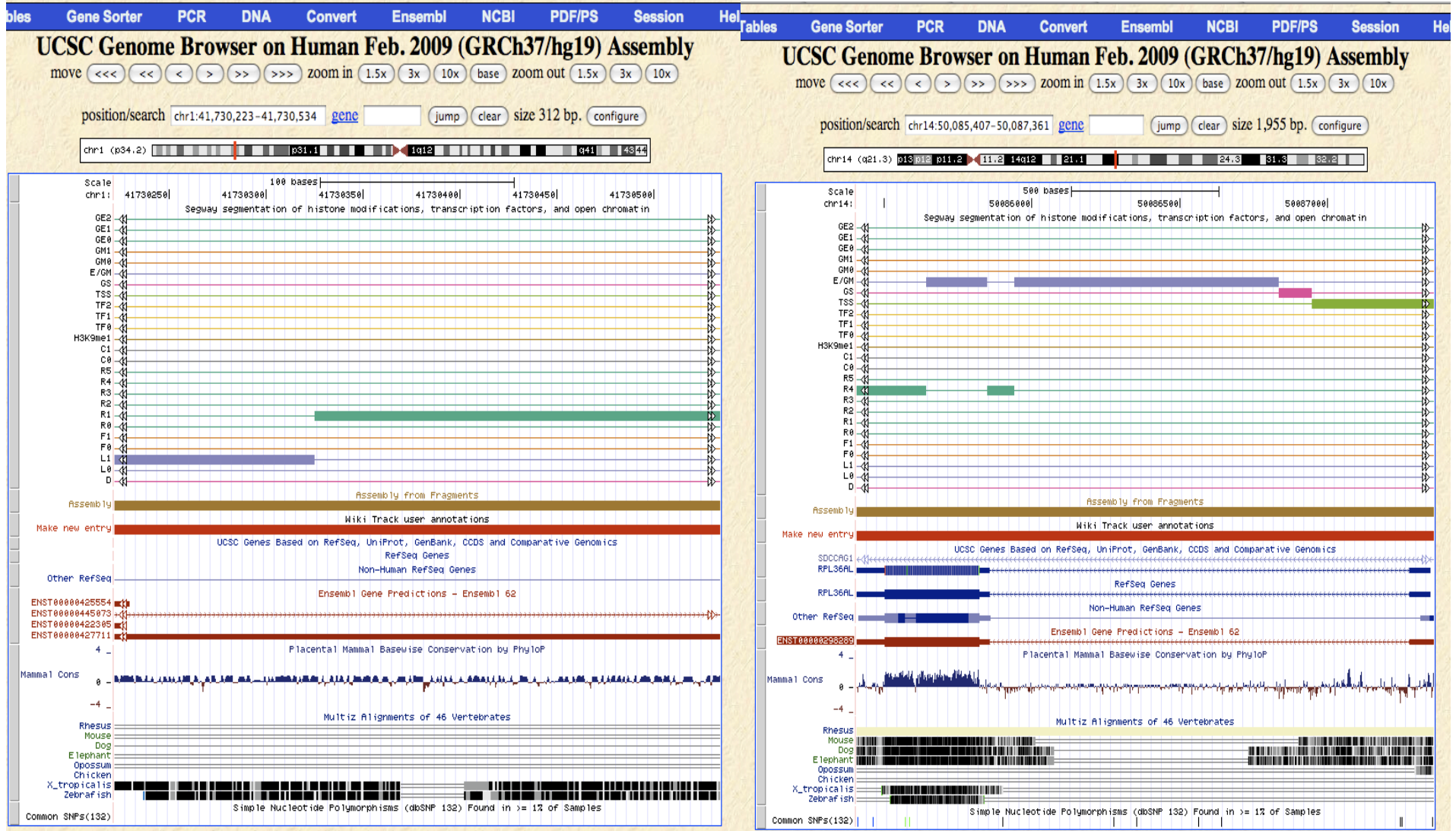
move start < 2.0 > move end < 2.0 >

track search default tracks default order hide all manage custom tracks configure reverse refresh

collapse all Use drop-down controls below and press refresh to alter tracks displayed. expand all

Tracks with lots of items will automatically be displayed in more compact modes.

Processed Pgene vs ParentGene



Distribution of Chromatin Segments

(1 – Processed)

Label\ Chromosome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	X
GE2	69	14	14	19	21	28	21	22	8	16	10	13	4	6	14	9	13	1	12	4	10	7	1
GE1	155	49	56	38	52	75	74	53	38	34	87	51	12	17	41	28	35	8	21	19	19	10	3
GE0	152	124	105	85	98	94	93	83	67	71	126	118	51	80	73	28	64	29	84	24	8	23	57
GM1	124	42	47	40	42	89	69	22	18	41	42	22	15	9	25	11	26	7	14	7	15	66	11
GM0	127	36	45	44	42	81	62	11	13	36	53	27	15	13	22	14	14	15	8	9	10	13	13
e/GM	16	7	18	16	7	13	10	2	2	9	8	15	3	4	11	5	16	4	7	7	3	2	6
GS	14	7	17	14	8	14	17	2	3	6	8	9	7	5	9	4	10	1	7	3	5	32	4
TSS	3	3	3	1	3	3	8	1	0	3	5	5	3	1	5	2	1	1	3	2	1	7	2
TF2	99	94	63	68	65	67	67	53	47	48	93	56	31	45	58	32	54	14	51	23	10	14	26
TF1	292	221	167	141	164	200	166	115	84	106	224	158	43	94	77	55	98	42	64	40	21	31	64
TF0	198	208	195	149	185	149	167	121	122	69	181	132	83	104	74	78	76	50	60	49	25	37	209
H3K9me1	142	146	126	136	101	76	125	68	102	76	110	83	87	99	72	34	64	40	55	49	10	33	195
C1	46	25	29	26	35	35	34	20	15	17	29	26	9	31	16	11	15	5	9	8	9	7	22
C0	12	8	8	7	5	15	5	3	0	3	3	8	2	4	2	1	6	3	1	0	2	16	3
R5	322	163	138	108	177	256	186	88	48	91	174	89	22	38	98	53	72	40	48	40	36	27	29
R4	139	90	63	74	63	88	75	32	37	55	71	64	19	48	47	25	42	17	31	35	18	11	43
R3	234	216	149	159	199	196	139	152	100	89	219	121	73	106	102	62	80	50	74	54	19	46	152
R2	200	150	105	122	161	168	90	107	44	80	133	91	30	31	76	29	44	22	47	34	12	15	54
R1	291	170	118	105	130	250	168	107	46	79	174	95	31	46	95	36	62	33	40	31	24	17	35
R0	134	197	188	163	130	110	113	127	148	111	185	134	136	141	79	42	50	38	72	40	17	28	307
F1	100	152	175	131	104	82	69	95	96	89	197	101	125	121	53	28	30	48	72	19	21	18	343
F0	113	123	123	109	126	78	71	79	67	63	137	90	54	72	42	44	20	29	51	24	10	14	154
L1	252	251	203	227	211	165	183	166	100	104	300	188	106	128	59	55	58	52	75	43	22	27	220
L0	183	216	230	176	148	139	187	112	190	95	217	136	156	165	70	65	75	80	81	55	29	40	357
D	163	214	185	123	101	60	178	95	261	116	154	75	136	149	94	48	60	69	73	48	28	52	388

Distribution of Chromatin Segments

(2 – Duplicated)

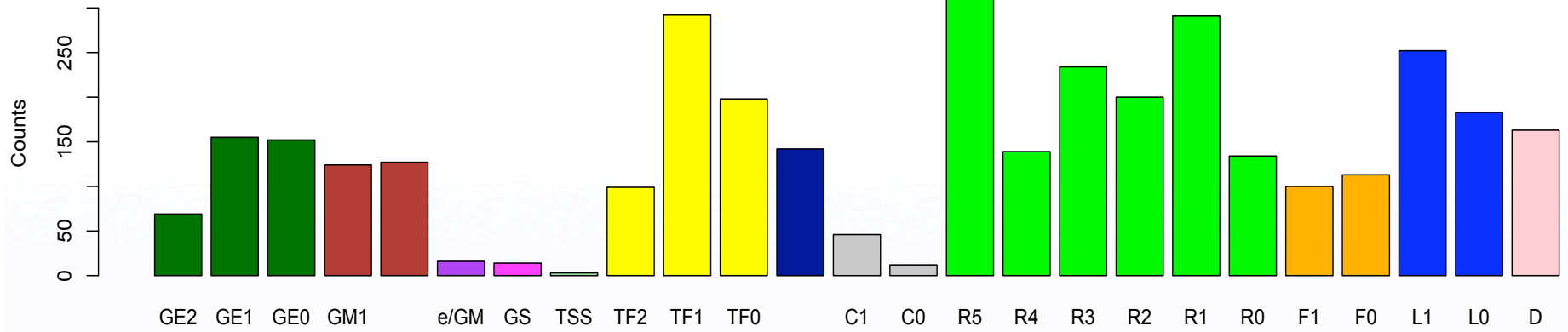
Label\ Chromosome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	X
GE2		13	7	4	0	4	15	2	2	1	4	4	0	0	4	27	11	0	5	2	3	19	3
GE1		129	15	11	12	18	34	4	9	10	29	8	1	2	11	6	14	12	19	5	9	7	7
GE0		122	47	44	43	20	49	24	27	43	162	17	13	14	21	20	32	17	50	9	10	14	32
GM1		12	15	9	2	21	19	6	9	7	81	6	1	2	10	14	25	2	14	3	2	53	6
GM0		30	29	8	3	16	19	5	12	10	18	19	1	3	9	7	24	10	10	3	6	17	4
e/GM		4	8	2	0	7	3	2	5	4	9	4	0	0	2	8	10	2	11	0	3	1	2
GS		4	6	4	0	5	2	1	4	2	18	4	1	0	2	5	6	0	10	2	1	15	2
TSS		3	5	1	0	1	2	0	10	1	46	0	0	0	0	3	2	0	3	2	0	5	0
TF2		50	42	13	14	15	30	6	11	8	2	8	9	6	30	46	46	5	19	10	8	39	11
TF1		76	73	31	36	47	43	13	31	40	11	33	9	5	42	41	46	13	47	5	10	14	28
TF0		67	82	31	41	62	47	52	50	35	51	42	25	25	68	66	83	24	102	10	11	43	63
H3K9me1		51	58	29	35	23	70	22	34	47	58	44	26	29	53	40	41	18	51	6	12	18	83
C1		16	15	8	6	7	7	13	2	10	19	12	1	4	14	5	16	1	13	3	0	9	9
C0		1	4	3	1	4	3	2	1	0	5	2	0	0	4	1	7	0	3	0	0	10	2
R5		63	61	28	34	74	55	28	22	32	29	30	2	8	32	44	60	14	67	10	13	42	12
R4		20	32	16	10	21	28	14	25	27	3	18	6	11	13	19	29	6	19	2	5	6	24
R3		67	53	31	40	71	40	47	32	70	21	56	15	16	49	43	61	16	63	10	20	25	48
R2		76	49	30	32	43	52	33	21	61	7	40	12	12	26	26	20	16	26	4	13	17	34
R1		127	58	23	31	52	54	30	17	35	53	40	5	7	28	39	28	22	38	4	19	16	23
R0		96	67	61	29	31	74	64	59	65	20	48	57	30	50	53	45	18	82	13	12	27	147
F1		62	44	90	36	19	93	52	66	48	21	26	57	24	36	39	32	21	70	6	21	14	141
F0		52	37	68	30	23	61	42	35	53	17	29	31	13	18	33	21	7	54	3	16	11	83
L1		70	54	80	49	35	55	67	44	58	8	45	39	23	28	37	24	15	71	12	15	17	76
L0		72	64	56	46	43	122	50	65	43	60	42	51	32	75	58	73	23	71	11	10	45	106
D		206	56	79	90	37	322	120	271	163	80	51	84	64	382	444	189	33	89	11	30	112	201

Distribution of Chromatin Segments

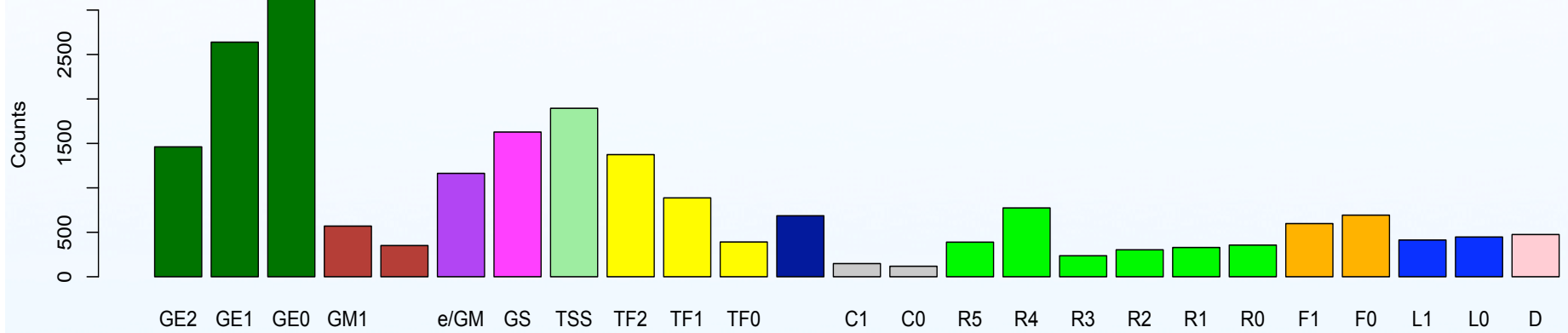
(3 – Ambiguous)

Label\ Chromosome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	X
GE2	18	4	17	0	6	10	13	7	11	3	13	16	0	3	8	13	2	1	21	8	3	2	3
GE1	56	23	26	22	20	38	19	11	12	16	16	25	4	5	10	21	16	11	27	6	2	3	6
GE0	76	73	39	37	47	44	46	27	17	31	31	36	22	21	13	22	23	16	65	11	6	8	40
GM1	55	14	23	12	13	30	35	5	17	7	20	13	2	3	7	15	10	3	29	9	6	35	5
GM0	54	22	24	27	15	42	20	8	14	6	16	20	3	2	8	8	5	6	10	4	5	3	3
e/GM	7	6	8	7	1	11	8	5	1	5	4	8	1	0	5	1	3	1	8	0	2	1	6
GS	8	2	5	4	1	12	12	3	10	1	5	6	3	2	8	11	6	0	20	5	1	10	6
TSS	0	1	0	3	2	7	3	0	4	1	4	3	1	0	4	5	2	0	8	0	0	2	3
TF2	55	29	26	18	17	17	49	20	32	23	20	33	7	10	12	26	21	8	61	8	3	11	10
TF1	109	61	51	46	51	50	62	27	26	34	42	49	14	21	31	26	37	16	66	10	9	15	33
TF0	80	88	59	55	65	35	77	43	49	59	67	58	33	39	33	42	48	27	101	31	13	28	61
H3K9me1	62	46	21	47	19	23	43	25	37	39	15	23	25	25	24	21	24	10	42	10	6	13	54
C1	18	18	10	10	9	15	16	13	7	6	9	11	2	8	8	6	5	3	11	3	2	2	13
C0	7	2	2	1	4	5	7	6	3	1	2	1	0	0	0	2	1	1	2	2	2	5	0
R5	159	63	71	42	49	89	105	24	28	33	52	41	2	9	32	36	38	19	84	16	12	17	13
R4	38	42	26	25	13	33	17	16	15	16	25	22	8	9	16	13	25	7	18	3	5	2	18
R3	60	67	52	46	67	56	37	42	40	53	42	44	21	21	43	24	33	20	70	32	12	19	41
R2	66	81	33	30	51	66	59	38	19	36	38	43	8	12	21	32	19	12	35	22	11	10	26
R1	116	84	40	33	43	90	85	27	18	41	52	41	8	8	14	39	27	18	50	17	8	12	17
R0	56	89	45	57	45	30	31	50	49	43	46	52	50	44	34	28	40	30	60	38	12	18	116
F1	60	90	57	91	53	30	75	50	61	38	69	52	61	47	17	30	26	29	78	22	11	7	158
F0	48	58	43	62	55	37	56	50	40	42	38	45	44	29	21	22	19	20	56	19	8	8	78
L1	103	119	68	91	77	84	105	91	50	67	85	77	46	43	29	45	24	22	105	35	13	18	98
L0	65	83	56	81	52	37	78	59	63	66	48	48	55	66	26	35	39	45	85	29	12	20	103
D	162	118	67	86	59	32	137	40	177	63	73	33	75	77	127	73	102	45	62	24	20	50	200

Processed Pgenes Chr01



Parent Genes of Processed Pgenes Chr01



Total

- Processed
- Duplicated
- Ambiguous

