

Conserved motifs composition

1 InterProScan predictions

Description: tables below provide InterProScan predictions for each of the different (sub)families.

1.1 B

#	Gene ID	Length	Match ID	Match Name	DB Name	Start	End	Score
1	PVX_033190	357	PF05795	Plasmodium_Vir	PFAM	23	353	9.4E-25
2	PVX_115480	276	PF05795	Plasmodium_Vir	PFAM	24	237	6.6e-23
			coil	coiled-coil	COIL	53	74	NA
3	PVX_025690	351	PF05795	Plasmodium_Vir	PFAM	24	348	2.8E-24
4	PVX_058690	299	PF05795	Plasmodium_Vir	PFAM	27	295	2.1E-22
5	PVX_062190	326	PF05795	Plasmodium_Vir	PFAM	1	322	8.6-17
6	PVX_164265	362	PF05795	Plasmodium_Vir	PFAM	23	358	1.6E-21
7	PVX_180275	236	PF05795	Plasmodium_Vir	PFAM	35	231	4.1E-17
8	PVX_103680	361	PF05795	Plasmodium_Vir	PFAM	24	357	8.2-27
9	PVX_108775	62	PF05795	Plasmodium_Vir	PFAM	1	57	9.5E-7
10	PVX_110305	267	PF05795	Plasmodium_Vir	PFAM	24	239	1.0E-24
11	PVX_088790	467	PF05795	Plasmodium_Vir	PFAM	28	206	9.6E-18
			PF05795	Plasmodium_Vir	PFAM	236	452	1.3E-23
12	PVX_096915	295	PF05795	Plasmodium_Vir	PFAM	62	268	5.5E-22
13	PVX_075195	302	PF05795	Plasmodium_Vir	PFAM	24	242	5.1E-16
14	PVX_086350	397	PF05795	Plasmodium_Vir	PFAM	25	396	3.7E-42
15	PVX_059690							

1.2 C

#	Gene ID	Length	Match ID	Match Name	DB Name	Start	End	Score
1	PVX_004520	363	PF05795	Plasmodium_Vir	PFAM	21	362	1.3E-65
2	PVX_043690	85	PF05795	Plasmodium_Vir	PFAM	6	85	1.2E-10
3	PVX_088800	358	PF05795	Plasmodium_Vir	PFAM	11	355	3.2E-67
4	PVX_169270	346	PF05795	Plasmodium_Vir	PFAM	21	346	2.2E-58
5	PVX_003485	329	PF05795	Plasmodium_Vir	PFAM	37	317	6.7E-54
6	PVX_004510	353	PF05795	Plasmodium_Vir	PFAM	9	326	2.7E-57
7	PVX_044190	61	PF05795	Plasmodium_Vir	PFAM	1	61	7.8E-8
8	PVX_045690	140	PF05795	Plasmodium_Vir	PFAM	21	137	9.1E-17
9	PVX_175270	332	PF05795	Plasmodium_Vir	PFAM	6	332	1.1E-60
10	PVX_179275	238	PF05795	Plasmodium_Vir	PFAM	15	215	4.6e-39
			seg	seg	SEG	1	12	NA
11	PVX_184285	348	SignalP-NN(euk)	signal-peptide	SIGNALP	22	348	7.2E-71
12	PVX_105700	340	PF05795	Plasmodium_Vir	PFAM	21	340	2.5E-63
13	PVX_108770	409	PF05795	Plasmodium_Vir	PFAM	33	405	4.9E-48
14	PVX_113230	440	PF05795	Plasmodium_Vir	PFAM	10	375	3E-49
15	PVX_061190	342	PF05795	Plasmodium_Vir	PFAM	21	342	1.6E-60
16	PVX_066690	352	PF05795	Plasmodium_Vir	PFAM	121	351	1.6e-20
			seg	seg	SEG	286	300	NA
17	PVX_072690	324	PF05795	Plasmodium_Vir	PFAM	3	324	8.9E-48
18	PVX_029190	335	PF05795	Plasmodium_Vir	PFAM	21	335	7.9E-61
19	PVX_030190	325	PF05795	Plasmodium_Vir	PFAM	2	325	2E-58
20	PVX_034190	403	PF05795	Plasmodium_Vir	PFAM	34	400	1.8E-58
21	PVX_037190	404	PF05795	Plasmodium_Vir	PFAM	34	400	6.2E-55
22	PVX_021680	355	PF05795	Plasmodium_Vir	PFAM	23	355	7.3E-71
23	PVX_024690	343	PF05795	Plasmodium_Vir	PFAM	21	340	5.6E-43
24	PVX_026190	353	PF05795	Plasmodium_Vir	PFAM	20	353	2.8E-55
25	PVX_010610	315	PF05795	Plasmodium_Vir	PFAM	24	315	5.3E-50
26	PVX_016140	324	PF05795	Plasmodium_Vir	PFAM	24	324	1.2E-53
27	PVX_019670	172	PF05795	Plasmodium_Vir	PFAM	34	172	3.4E-21
28	PVX_127260	210	PF05795	Plasmodium_Vir	PFAM	21	204	6.8E-35
29	PVX_149260	270	PF05795	Plasmodium_Vir	PFAM	2	269	2.4E-54
30	PVX_159260	527	PF05795	Plasmodium_Vir	PFAM	160	527	8.1e-56
			seg	seg	SEG	69	81	NA
			SignalP-NN(euk)	signal-peptide	SIGNALP	1	22	NA
			tmhmm	transmembrane_regions	TMHMM	24	44	NA
			tmhmm	transmembrane_regions	TMHMM	71	89	NA
			tmhmm	transmembrane_regions	TMHMM	116	136	NA
31	PVX_115475	229	PF05795	Plasmodium_Vir	PFAM	14	212	2E-34
32	PVX_120330	418	PF05795	Plasmodium_Vir	PFAM	16	417	3.1E-56
33	PVX_124700	255	PF05795	Plasmodium_Vir	PFAM	24	219	3.2E-26
34	PVX_124710	313	PF05795	Plasmodium_Vir	PFAM	9	304	3.7E-51

35	PVX_103665	290	PF05795	Plasmodium_Vir	PFAM	8	289	9.5E-38
36	PVX_104185	288	PF05795	Plasmodium_Vir	PFAM	2	287	7.8E-24
37	PVX_101615	361	PF05795	Plasmodium_Vir	PFAM	9	319	1.7E-54
38	PVX_102125	153	PF05795	Plasmodium_Vir	PFAM	6	152	4.5E-16
39	PVX_103660	360	PF05795	Plasmodium_Vir	PFAM	34	348	3.4E-41
40	PVX_096945	314	PF05795	Plasmodium_Vir	PFAM	20	310	1.8E-31
41	PVX_101560	302	PF05795	Plasmodium_Vir	PFAM	6	201	3.5E-25
42	PVX_101600	372	PF05795	Plasmodium_Vir	PFAM	22	369	9.4E-48
43	PVX_095995	315	PF05795	Plasmodium_Vir	PFAM	18	310	2.7E-21
44	PVX_096000	353	PF05795	Plasmodium_Vir	PFAM	22	352	1.1E-58
45	PVX_027690	315	PF05795	Plasmodium_Vir	PFAM	15	315	2.3E-49
46	PVX_028190	284	PF05795	Plasmodium_Vir	PFAM	2	284	1.0E-48
47	PVX_004525	353	PF05795	Plasmodium_Vir	PFAM	20	352	1.4E-41
48	PVX_045355	330	PF05795	Plasmodium_Vir	PFAM	24	327	3.2E-31
49	PVX_006580	351	PF05795	Plasmodium_Vir	PFAM	23	351	1.0E-64
50	PVX_008085	418	PF05795	Plasmodium_Vir	PFAM	33	392	2.6E-54
51	PVX_009090	337	PF05795	Plasmodium_Vir	PFAM	10	337	8.4E-60
52	PVX_051690	334	PF05795	Plasmodium_Vir	PFAM	21	331	5.5E-60
53	PVX_052190	360	PF05795	Plasmodium_Vir	PFAM	146	288	3.5E-18
			seg	seg	SEG	1	12	NA
			tmhmm	transmembrane_regions	TMHMM	4	24	NA
			tmhmm	transmembrane_regions	TMHMM	258	278	NA
			tmhmm	transmembrane_regions	TMHMM	297	315	NA
54	PVX_052690	279	PF05795	Plasmodium_Vir	PFAM	2	276	5.3E-39
55	PVX_076895	325	PF05795	Plasmodium_Vir	PFAM	11	325	4.7E-46
56	PVX_086875	292	PF05795	Plasmodium_Vir	PFAM	13	286	1.2E-29
57	PVX_046190	320	PF05795	Plasmodium_Vir	PFAM	118	237	1.8E-13
			seg	seg	SEG	19	33	NA
			seg	seg	SEG	173	189	NA
			seg	seg	SEG	292	305	NA
			tmhmm	transmembrane_regions	TMHMM	213	233	NA
			tmhmm	transmembrane_regions	TMHMM	248	268	NA
			tmhmm	transmembrane_regions	TMHMM	291	309	NA
58	PVX_050190	340	PF05795	Plasmodium_Vir	PFAM	9	340	1.5E-71
59	PVX_005065	198	PF05795	Plasmodium_Vir	PFAM	18	175	2.2E-20
60	PVX_005580	297	PF05795	Plasmodium_Vir	PFAM	6	280	5.7E-53
61	PVX_090320	212	PF05795	Plasmodium_Vir	PFAM	21	210	3.1E-33
62	PVX_094260	198	PF05795	Plasmodium_Vir	PFAM	4	196	4.5E-20
63	PVX_005575							

1.3 E

#	Gene ID	Length	Match ID	Match Name	DB Name	Start	End	Score
1	PVX_001615	366	PF05795	Plasmodium_Vir	PFAM	18	361	1.2E-61
2	PVX_001645	529	PF05795	Plasmodium_Vir	PFAM	22	518	3.5E-46
3	PVX_003510	453	PF05795	Plasmodium_Vir	PFAM	18	356	3.6E-52
4	PVX_094240	443	PF05795	Plasmodium_Vir	PFAM	31	430	1.0E-75
5	PVX_101620	594	PF05795	Plasmodium_Vir	PFAM	22	588	6.7E-64
6	PVX_102640	441	PF05795	Plasmodium_Vir	PFAM	16	435	1.3E-95
7	PVX_107235	582	PF05795	Plasmodium_Vir	PFAM	16	284	7.4E-71
8	PVX_107735	362	PF05795	Plasmodium_Vir	PFAM	410	576	3.6E-28
9	PVX_107740	304	PF05795	Plasmodium_Vir	PFAM	6	332	9.0E-49
10	PVX_093710	488	PF05795	Plasmodium_Vir	PFAM	12	292	1.1E-48
11	PVX_093720	496	PF05795	Plasmodium_Vir	PFAM	21	448	2.5E-62
12	PVX_086860	447	PF05795	Plasmodium_Vir	PFAM	22	354	7.0E-61
13	PVX_086865	576	PF05795	Plasmodium_Vir	PFAM	418	494	1.5E-8
14	PVX_086895	553	PF05795	Plasmodium_Vir	PFAM	14	444	5.9E-64
15	PVX_088780	446	PF05795	Plasmodium_Vir	PFAM	67	308	1.2E-19
16	PVX_077695	545	PF05795	Plasmodium_Vir	PFAM	314	545	2.1E-49
17	PVX_078195	569	PF05795	Plasmodium_Vir	PFAM	21	246	1.7E-10
18	PVX_073690	433	PF05795	Plasmodium_Vir	PFAM	278	549	1.1E-46
19	PVX_074190	323	PF05795	Plasmodium_Vir	PFAM	20	437	2.5E-49
20	PVX_074690	427	PF05795	Plasmodium_Vir	PFAM	30	539	2.5E-87
21	PVX_018660	493	PF05795	Plasmodium_Vir	PFAM	16	229	3.1E-58
22	PVX_020170	333	PF05795	Plasmodium_Vir	PFAM	397	563	9.2E-27
23	PVX_020680	581	PF05795	Plasmodium_Vir	PFAM	22	430	9.2E-80
24	PVX_009595	392	PF05795	Plasmodium_Vir	PFAM	11	318	4.7E-53
25	PVX_010105	421	PF05795	Plasmodium_Vir	PFAM	22	421	1.9E-77
26	PVX_013620	537	PF05795	Plasmodium_Vir	PFAM	16	276	3.2E-64
27	PVX_002480	616	PF05795	Plasmodium_Vir	PFAM	16	488	3.5E-60
28	PVX_002485	276	PF05795	Plasmodium_Vir	PFAM	1	328	2.9E-57
29	PVX_158260	287	PF05795	Plasmodium_Vir	PFAM	16	276	1.6E-69
30	PVX_170270	332	PF05795	Plasmodium_Vir	PFAM	409	575	3.8E-27
31	PVX_124712	400	PF05795	Plasmodium_Vir	PFAM	20	390	9.7E-72
32	PVX_124715	528	PF05795	Plasmodium_Vir	PFAM	16	416	3.6E-88
33	PVX_119210	540	PF05795	Plasmodium_Vir	PFAM	16	531	2.0E-86
34	PVX_120340	452	PF05795	Plasmodium_Vir	PFAM	254	615	2.8E-82
35	PVX_120845	587	PF05795	Plasmodium_Vir	PFAM	17	234	4.0E-42
36	PVX_112630	650	PF05795	Plasmodium_Vir	PFAM	16	263	2.7E-65
37	PVX_112720	505	PF05795	Plasmodium_Vir	PFAM	16	276	3.2E-64
38	PVX_115485	302	PF05795	Plasmodium_Vir	PFAM	82	386	1.4E-20
39	PVX_115985	574	PF05795	Plasmodium_Vir	PFAM	248	461	5.6E-49
40	PVX_110295	553	PF05795	Plasmodium_Vir	PFAM	11	282	7.4E-14
41	PVX_110300	359	PF05795	Plasmodium_Vir	PFAM	17	446	2.6E-94
42	PVX_104190	426	PF05795	Plasmodium_Vir	PFAM	28	582	1.8E-67
43	PVX_106220	481	PF05795	Plasmodium_Vir	PFAM	34	649	8.1E-47
44	PVX_097540	668	PF05795	Plasmodium_Vir	PFAM	15	246	1.2E-37
45	PVX_097542	560	PF05795	Plasmodium_Vir	PFAM	21	300	1.8E-61
46	PVX_097545	451	PF05795	Plasmodium_Vir	PFAM	29	338	1.8E-52
47	PVX_097555	516	PF05795	Plasmodium_Vir	PFAM	399	568	6.9E-23
48	PVX_097525	508	PF05795	Plasmodium_Vir	PFAM	17	552	9.0E-55
49	PVX_097530	524	PF05795	Plasmodium_Vir	PFAM	26	359	5.4E-75
50	PVX_090315	487	PF05795	Plasmodium_Vir	PFAM	16	426	1.9E-67
51	PVX_090335	435	PF05795	Plasmodium_Vir	PFAM	21	281	5.0E-70
						385	474	1.2E-8
						321	635	2.1E-77
						244	558	2.6E-60
						7	207	2.4E-30
						16	225	9.3E-38
						16	502	3.3E-92
						36	352	1.6E-30
						51	481	5.01E-82
						19	427	9.1E-77

52	PVX_023185	476	PF05795	Plasmodium_Vir	PFAM	19	471	1.7E-104
53	PVX_024685	419	PF05795	Plasmodium_Vir	PFAM	2	413	3.8E-82
54	PVX_027190	200	PF05795	Plasmodium_Vir	PFAM	19	194	3.9E-30
55	PVX_004495	449	PF05795	Plasmodium_Vir	PFAM	6	443	5.3E-46
56	PVX_004537	466	PF05795	Plasmodium_Vir	PFAM	16	371	1.3E-54
57	PVX_005045	445	PF05795	Plasmodium_Vir	PFAM	22	249	3.5E-54
58	PVX_003495	635	PF05795	Plasmodium_Vir	PFAM	7	229	8.0E-11
59	PVX_003505	414	PF05795	Plasmodium_Vir	PFAM	253	609	2.9E-87
60	PVX_081850	608	PF05795	Plasmodium_Vir	PFAM	140	358	1.1E-51
61	PVX_083575	510	PF05795	Plasmodium_Vir	PFAM	29	262	6.6E-14
62	PVX_083580	575	PF05795	Plasmodium_Vir	PFAM	288	608	6.0E-55
63	PVX_083590	452	PF05795	Plasmodium_Vir	PFAM	11	462	1.5E-64
64	PVX_042190	450	PF05795	Plasmodium_Vir	PFAM	23	235	2.0E-9
65	PVX_049690	366	PF05795	Plasmodium_Vir	PFAM	281	568	1.1E-63
66	PVX_054190	396	PF05795	Plasmodium_Vir	PFAM	23	452	2.1E-97
67	PVX_061690	273	PF05795	Plasmodium_Vir	PFAM	2	445	2.8E-92
68	PVX_015635	529	PF05795	Plasmodium_Vir	PFAM	124	360	2.6E-17
69	PVX_017140	568	PF05795	Plasmodium_Vir	PFAM	4	391	1.2E-86
70	PVX_101565	473	PF05795	Plasmodium_Vir	PFAM	28	268	3.3E-33
71	PVX_106725	469	PF05795	Plasmodium_Vir	PFAM	16	277	3.7E-71
72	PVX_124705	449	PF05795	Plasmodium_Vir	PFAM	411	528	9.5E-9
73	PVX_103155	442	PF05795	Plasmodium_Vir	PFAM	16	292	2.8E-69
74	PVX_104180	386	PF05795	Plasmodium_Vir	PFAM	386	562	2.4E-28
75	PVX_094245	584	PF05795	Plasmodium_Vir	PFAM	22	419	1.7E-57
76	PVX_094250	525	PF05795	Plasmodium_Vir	PFAM	18	257	5.2E-46
77	PVX_090290	288	PF05795	Plasmodium_Vir	PFAM	16	443	3.4E-89
78	PVX_090295	542	PF05795	Plasmodium_Vir	PFAM	22	436	2.1E-80
79	PVX_090305	462	PF05795	Plasmodium_Vir	PFAM	27	243	1.8E-29
80	PVX_090310	449	PF05795	Plasmodium_Vir	PFAM	18	578	3.5E-70
81	PVX_172270	378	PF05795	Plasmodium_Vir	PFAM	10	274	9.0E-16
82	PVX_183280	443	PF05795	Plasmodium_Vir	PFAM	2	280	2.2E-52
83	PVX_214290	771	PF05795	Plasmodium_Vir	PFAM	24	239	3.8E-11
84	PVX_133260	268	PF05795	Plasmodium_Vir	PFAM	269	536	6.4E-52
85	PVX_134260	104	PF05795	Plasmodium_Vir	PFAM	16	457	1.6E-63
86	PVX_157260	315	PF05795	Plasmodium_Vir	PFAM	2	210	6.42E-34
87	PVX_096910	506	PF05795	Plasmodium_Vir	PFAM	10	375	1.7E-64
88	PVX_096920	491	PF05795	Plasmodium_Vir	PFAM	2	437	2.9E-43
89	PVX_088785	314	PF05795	Plasmodium_Vir	PFAM	9	185	5.4E-6
90	PVX_088805	358	PF05795	Plasmodium_Vir	PFAM	203	319	5.0E-21
91	PVX_107745	351	PF05795	Plasmodium_Vir	PFAM	433	625	1.6E-23
92	PVX_107755	657	PF05795	Plasmodium_Vir	PFAM	17	259	3.5E-62
93	PVX_063190	483	PF05795	Plasmodium_Vir	PFAM	17	103	9.0E-21
94	PVX_065690	394	PF05795	Plasmodium_Vir	PFAM	3	173	1.5E-43
95	PVX_037690	67	PF05795	Plasmodium_Vir	PFAM	21	193	4.4E-11
96	PVX_038190	58	PF05795	Plasmodium_Vir	PFAM	174	464	7.4E-63
97	PVX_041690	379	PF05795	Plasmodium_Vir	PFAM	16	308	7.4E-32
98	PVX_034690	404	PF05795	Plasmodium_Vir	PFAM	6	312	1.6E-57
99	PVX_036690	98	PF05795	Plasmodium_Vir	PFAM	17	358	8.45E-76
100	PVX_022185	352	PF05795	Plasmodium_Vir	PFAM	19	351	2.2E-58
101	PVX_022685	630	PF05795	Plasmodium_Vir	PFAM	68	279	2.6E-6
102	PVX_005055	534	PF05795	Plasmodium_Vir	PFAM	290	656	4.0E-94
103	PVX_005060	451	PF05795	Plasmodium_Vir	PFAM	22	478	2.6E-103
104	PVX_007085	321	PF05795	Plasmodium_Vir	PFAM	10	389	1.1E-64
105	PVX_002490	464	PF05795	Plasmodium_Vir	PFAM	1	62	1.1E-17
106	PVX_003490	612	PF05795	Plasmodium_Vir	PFAM	4	53	3.8E-11
107	PVX_001625	460	PF05795	Plasmodium_Vir	PFAM	7	372	1.6E-60
108	PVX_001635	634	PF05795	Plasmodium_Vir	PFAM	5	63	1.4E-9
109	PVX_001640	227	PF05795	Plasmodium_Vir	PFAM	75	399	1.2E-53
110	PVX_124720	545	PF05795	Plasmodium_Vir	PFAM	7	93	1.8E-20
111	PVX_124725	220	PF05795	Plasmodium_Vir	PFAM	13	348	4.6E-55
112	PVX_125726	364	PF05795	Plasmodium_Vir	PFAM	16	624	1.7E-83
113	PVX_075695	436	PF05795	Plasmodium_Vir	PFAM	25	522	3.5E-44
114	PVX_076195	459	PF05795	Plasmodium_Vir	PFAM	16	391	4.0E-79
					PFAM	3	320	2.2E-68
					PFAM	13	452	8.9E-38
					PFAM	24	217	7.2E-14
					PFAM	410	598	1.6E-38
					PFAM	16	452	5.2E-97
					PFAM	24	267	2.5E-28
					PFAM	278	623	1.0E-58
					PFAM	16	178	6.2E-37
					PFAM	19	241	6.5E-43
					PFAM	1	182	2.5E-34
					PFAM	2	359	6.8E-31
					PFAM	22	431	3.2E-78
					PFAM	17	446	1.3E-94

1.4 G

#	Gene ID	Length	Match ID	Match Name	DB Name	Start	End	Score
1	PVX_024185	427	PF05795	Plasmodium_Vir	PFAM	18	289	3.6E-14
2	PVX_035190	410	PF05795	Plasmodium_Vir	PFAM	7	179	6.1E-7
3	PVX_079195	427	PF05795	Plasmodium_Vir	PFAM	35	390	9.5E-14
4	PVX_007080	451	PF05795	Plasmodium_Vir	PFAM	13	451	3.4E-16
5	PVX_039190	438	PF05795	Plasmodium_Vir	PFAM	13	422	2.1E-19
6	PVX_048690	408	PF05795	Plasmodium_Vir	PFAM	17	408	3.3E-41
7	PVX_007585	447	PF05795	Plasmodium_Vir	PFAM	32	446	4.0E-13
8	PVX_012115	506	PF05795	Plasmodium_Vir	PFAM	32	501	1.9E-13
9	PVX_014125	498	coil	coiled-coil	COIL	259	307	NA
			seg	seg	SEG	76	86	NA
			seg	seg	SEG	92	106	NA
			seg	seg	SEG	217	234	NA
			seg	seg	SEG	253	305	NA
			seg	seg	SEG	333	344	NA
			seg	seg	SEG	411	423	NA
			tmhmm	transmembrane_regions	TMHMM	21	39	NA
			tmhmm	transmembrane_regions	TMHMM	45	67	NA
			tmhmm	transmembrane_regions	TMHMM	101	121	NA
			tmhmm	transmembrane_regions	TMHMM	436	456	NA
10	PVX_102130	456	PF05795	Plasmodium_Vir	PFAM	60	253	3.0E-10
11	PVX_103670	459	PF05795	Plasmodium_Vir	PFAM	48	449	1.4E-6
12	PVX_106210	434	PF05795	Plasmodium_Vir	PFAM	12	215	7.8E-7
13	PVX_108255	442	PF05795	Plasmodium_Vir	PFAM	18	409	1.7E-14

14	PVX_059190	438	PF05795	Plasmodium_Vir	PFAM	13	408	1.1E-16
15	PVX_063690	456	PF05795	Plasmodium_Vir	PFAM	34	440	7.1E-19
16	PVX_028690	464	PF05795	Plasmodium_Vir	PFAM	53	431	3.5E-8
17	PVX_032190	497	PF05795	Plasmodium_Vir	PFAM	76	492	2.3E-22
18	PVX_014630	464	PF05795	Plasmodium_Vir	PFAM	20	430	6.3E-8
19	PVX_018655	515	PF05795	Plasmodium_Vir	PFAM	34	510	5.0E-19
20	PVX_112115	320	PF05795	Plasmodium_Vir	PFAM	20	313	2.2E-9
21	PVX_121345	449	PF05795	Plasmodium_Vir	PFAM	15	443	1.0E-14
22	PVX_174270	458	seg	seg	SEG	149	165	NA
			seg	seg	SEG	219	230	NA
			seg	seg	SEG	384	399	NA
			seg	seg	SEG	406	417	NA
			tmhmm	transmembrane_regions	TMHMM	155	175	NA
			tmhmm	transmembrane_regions	TMHMM	189	207	NA
			tmhmm	transmembrane_regions	TMHMM	353	371	NA
			tmhmm	transmembrane_regions	TMHMM	375	395	NA
23	PVX_050690							
24	PVX_047190							
25	PVX_071190							
26	PVX_026690							
27	PVX_033690							
28	PVX_073190							
29	PVX_031190							
30	PVX_030690							
31	PVX_029690							
32	PVX_070190							
33	PVX_104695							
34	PVX_057190							
35	PVX_056190							
36	PVX_040190							
37	PVX_060190							
38	PVX_102645							

1.5 I

#	Gene ID	Length	Match ID	Match Name	DB Name	Start	End	Score
1	7077_PVX_014625	375	PF05795	Plasmodium_Vir	PFAM	13	362	2.7E-40
2	7077_PVX_064190	364	PF05795	Plasmodium_Vir	PFAM	13	363	4.6E-42
3	7077_PVX_002495	324	PF05795	Plasmodium_Vir	PFAM	18	310	1.5E-40
4	7077_PVX_023685	292	PF05795	Plasmodium_Vir	PFAM	2	291	4.2e-31
5	7077_PVX_032690	156	PF05795	Plasmodium_Vir	PFAM	20	155	8.1E-12
6	7077_PVX_072190	362	PF05795	Plasmodium_Vir	PFAM	13	361	2.5E-41
7	7077_PVX_102630	345	PF05795	Plasmodium_Vir	PFAM	44	343	3.6e-23
8	7077_PVX_064690	363	SignalP-NN(euk)	signal-peptide	SIGNALP	1	22	NA
9	7077_PVX_069190	343	PF05795	Plasmodium_Vir	PFAM	13	361	6.0E-40
10	7077_PVX_048190	117	PF05795	Plasmodium_Vir	PFAM	31	343	1.4E-29
11	7077_PVX_053190	344	PF05795	Plasmodium_Vir	PFAM	13	111	6.1E-10
12	7077_PVX_055690	192	PF05795	Plasmodium_Vir	PFAM	16	342	2.5E-35
13	7077_PVX_150260	192	PF05795	Plasmodium_Vir	PFAM	3	190	1.7E-8
14	7077_PVX_177275	361	PF05795	Plasmodium_Vir	PFAM	17	360	2.4E-37
15	7077_PVX_248300	328	PF05795	Plasmodium_Vir	PFAM	11	326	4.2E-31
		396	PF05795	Plasmodium_Vir	PFAM	16	396	1.4e-40
			seg	seg	SEG	284	300	NA
			seg	seg	SEG	333	344	NA
			tmhmm	transmembrane_regions	TMHMM	308	328	NA
			tmhmm	transmembrane_regions	TMHMM	333	353	NA
16	PVX_054690							
17	PVX_039690							

1.6 J

#	Gene ID	Length	Match ID	Match Name	DB Name	Start	End	Score
1	PVX_010605	286	PF05795	Plasmodium_Vir	PFAM	16	187	1.1E-8
			PF05795	Plasmodium_Vir	PFAM	200	283	1.2E-8
2	PVX_107750	301	PF05795	Plasmodium_Vir	PFAM	19	210	6.6E-22
			PF05795	Plasmodium_Vir	PFAM	214	297	2.0E-8
3	PVX_000020	234	PF05795	Plasmodium_Vir	PFAM	22	182	1.3E-10
4	PVX_057690	301	PF05795	Plasmodium_Vir	PFAM	22	201	6.9E-7
5	PVX_067690	266	PF05795	Plasmodium_Vir	PFAM	28	202	1.3E-7
6	PVX_109795	301	PF05795	Plasmodium_Vir	PFAM	19	199	6.6E-10
			PF05795	Plasmodium_Vir	PFAM	224	298	2.7E-6
7	PVX_167265	278	PF05795	Plasmodium_Vir	PFAM	10	193	2.1E-11
			PF05795	Plasmodium_Vir	PFAM	201	277	4.9E-8
8	PVX_168270	334	PF05795	Plasmodium_Vir	PFAM	16	330	3.3e-08
			seg	seg	SEG	277	288	NA
			tmhmm	transmembrane_regions	TMHMM	240	260	NA
			tmhmm	transmembrane_regions	TMHMM	270	288	NA
9	PVX_185285	343	PF05795	Plasmodium_Vir	PFAM	58	224	1.3e-06
			seg	seg	SEG	2	12	NA
			seg	seg	SEG	231	251	NA
			seg	seg	SEG	255	264	NA
			SignalP-NN(euk)	signal-peptide	SIGNALP	1	18	NA
			tmhmm	transmembrane_regions	TMHMM	4	24	NA
			tmhmm	transmembrane_regions	TMHMM	232	252	NA
			tmhmm	transmembrane_regions	TMHMM	280	300	NA
10	PVX_096935	304	PF05795	Plasmodium_Vir	PFAM	38	302	5.7E-19
11	PVX_105705	191	PF05795	Plasmodium_Vir	PFAM	23	185	3.4E-13
12	PVX_105710	245	PF05795	Plasmodium_Vir	PFAM	28	202	1.1E-11
13	PVX_070690	260	PF05795	Plasmodium_Vir	PFAM	3	165	7.4E-10
14	PVX_096005	367	PF05795	Plasmodium_Vir	PFAM	56	333	8.5E-9
15	PVX_096925	287	seg	seg	SEG	194	217	NA
			tmhmm	transmembrane_regions	TMHMM	196	218	NA
			tmhmm	transmembrane_regions	TMHMM	247	267	NA
16	PVX_096930	248	PF05795	Plasmodium_Vir	PFAM	18	199	5.5E-8
17	PVX_121355							
18	PVX_106720							
19	PVX_186290							

1.7 K

#	Gene ID	Length	Match ID	Match Name	DB Name	Start	End	Score
1	PVX_001610	338	PF05795	Plasmodium_Vir	PFAM	10	336	6.6E-16
2	PVX_042690	337	PF05795	Plasmodium_Vir	PFAM	35	336	2.6E-10
3	PVX_086885	266	PF05795	Plasmodium_Vir	PFAM	11	220	2.3E-8
4	PVX_115990	271	PF05795	Plasmodium_Vir	PFAM	42	243	1.5E-11
5	PVX_145260	305	PF05795	Plasmodium_Vir	PFAM	23	304	4.6E-6
6	PVX_163265	341	seg	seg	SEG	246	258	NA
7	PVX_056690							
8	PVX_053690							
9	PVX_031690							
10	PVX_005565							

1.8 PvPIRA

#	Gene ID	Length	Match ID	Match Name	DB Name	Start	End	Score
1	PVX_011810	362	PF05795	Plasmodium_Vir	PFAM	26	359	1.6E-9
2	PVX_141260	385	PF05795	Plasmodium_Vir	PFAM	11	382	7.7E-9
3	PVX_144260	403	seg	seg	SEG	27	48	NA
			seg	seg	SEG	165	177	NA
			seg	seg	SEG	318	336	NA
			SignalP-NN(euk)	signal-peptide	SIGNALP	1	38	NA
			tmhmm	transmembrane_regions	TMHMM	19	41	NA
			tmhmm	transmembrane_regions	TMHMM	130	150	NA
			tmhmm	transmembrane_regions	TMHMM	181	201	NA
			tmhmm	transmembrane_regions	TMHMM	302	320	NA
			tmhmm	transmembrane_regions	TMHMM	339	359	NA
4	PVX_155260	359	seg	seg	SEG	265	276	NA
			seg	seg	SEG	283	296	NA
			seg	seg	SEG	299	310	NA
			seg	seg	SEG	338	350	NA
5	PVX_015135	383	PF05795	Plasmodium_Vir	PFAM	20	380	4.2E-15
6	PVX_019160	394	PF05795	Plasmodium_Vir	PFAM	2	385	1.5E-15
7	PVX_139260	359	seg	seg	SEG	281	292	NA
			seg	seg	SEG	298	311	NA
			tmhmm	transmembrane_regions	TMHMM	253	271	NA
			tmhmm	transmembrane_regions	TMHMM	281	303	NA
8	PVX_186285	305	seg	seg	SEG	178	189	NA
			seg	seg	SEG	286	298	NA
			SignalP-NN(euk)	signal-peptide	SIGNALP	1	17	NA
			tmhmm	transmembrane_regions	TMHMM	279	297	NA
9	PVX_171270	244	seg	seg	SEG	211	218	NA
10	PVX_181275	470	seg	seg	SEG	17	35	NA
			seg	seg	SEG	430	449	NA
11	PVX_161260							
12	PVX_160260							
13	PVX_112645							
14	PVX_018155							
15	PVX_153260							

1.9 PvPIRD

#	Gene ID	Length	Match ID	Match Name	DB Name	Start	End	Score
1	PVX_038690	199	PF12420	DUF3671	PFAM	99	171	1.4E-18
2	PVX_047690	267	PF12420	DUF3671	PFAM	128	242	9.5E-35
3	PVX_074695	257	PF12420	DUF3671	PFAM	115	237	1.3E-29
4	PVX_102635	198	PF12420	DUF3671	PFAM	79	196	1.5E-24
5	PVX_103160	254	PF12420	DUF3671	PFAM	116	230	4.3E-29
6	PVX_017645	230	PF12420	DUF3671	PFAM	94	208	1.9E-28
7	PVX_019665	282	PF12420	DUF3671	PFAM	123	260	1.8E-37
8	PVX_108760	261	PF12420	DUF3671	PFAM	114	253	1.0E-34
9	PVX_109778	240	PF12420	DUF3671	PFAM	123	232	9.1E-19
10	PVX_109780	266	PF12420	DUF3671	PFAM	106	244	5.6E-37
11	PVX_146260	239	PF12420	DUF3671	PFAM	122	190	4.5E-26
12	PVX_178275	267	PF12420	DUF3671	PFAM	122	240	1.7E-32
13	PVX_182275	151	PF12420	DUF3671	PFAM	10	129	3.4E-29
14	PVX_103145	168	PF12420	DUF3671	PFAM	94	143	9.3E-11
15	PVX_086850	245	PF12420	DUF3671	PFAM	105	220	2.3E-33
16	PVX_058190	123	PF12420	DUF3671	PFAM	24	99	2E-20
17	PVX_067190	235	PF12420	DUF3671	PFAM	78	213	1.2E-34
18	PVX_040690	166	PF12420	DUF3671	PFAM	115	165	2.5E-13
19	PVX_041190	144	PF12420	DUF3671	PFAM	6	119	3.3E-37
20	PVX_109785	261	PF12420	DUF3671	PFAM	123	236	2.8E-38
21	PVX_143260	248	PF12420	DUF3671	PFAM	112	226	5.6E-30

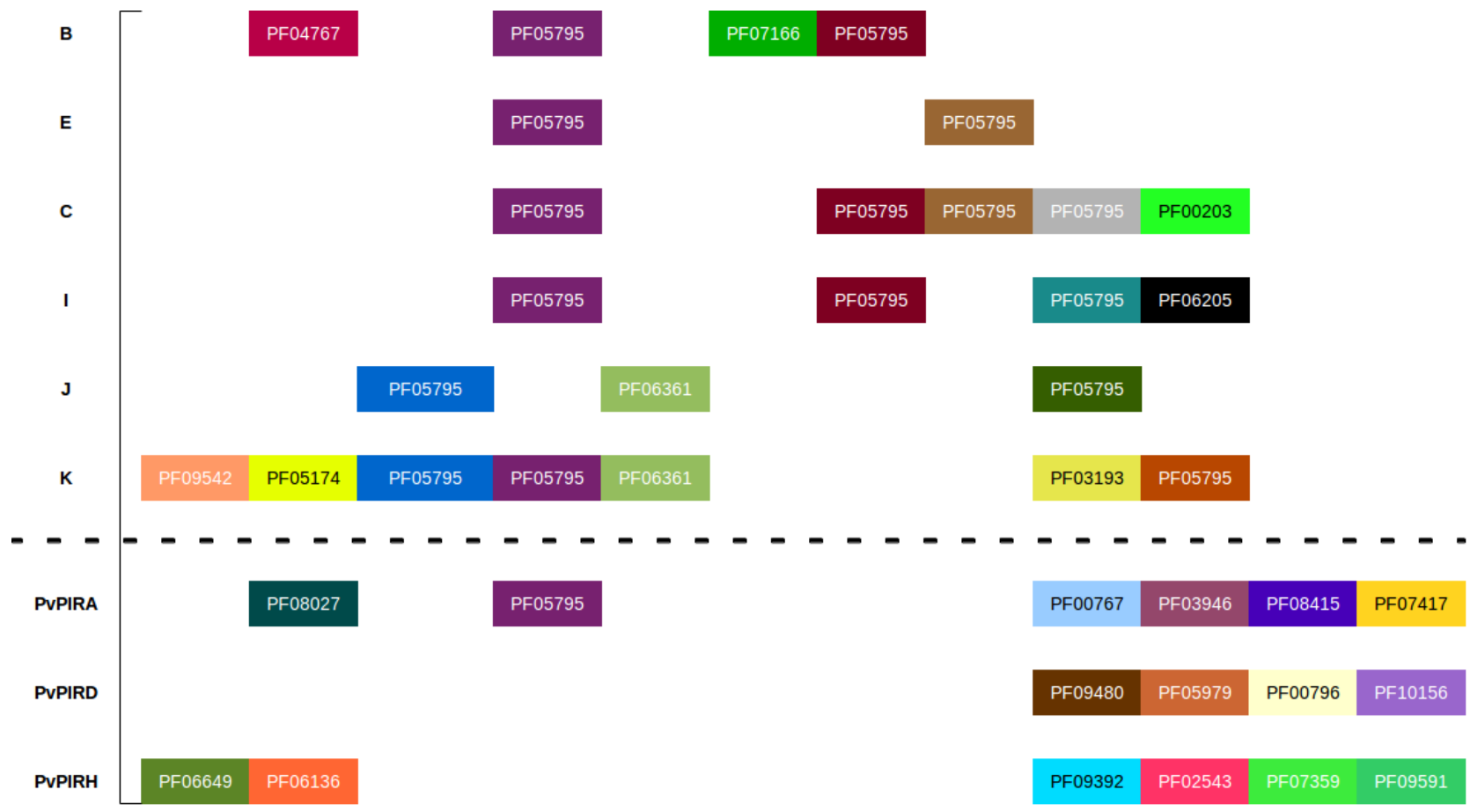
1.10 PvPIRH

NO MATCHES

2 Homology Blocks summary

Description: illustrative summary of the representative HBs in each (sub)family. In order to create this figure, *representative* HBs were considered to be those present in at least the 50% of the sequences in the (sub)family. In other words, for each (sub)family, those HBs that appear in at least the 50% of sequences were selected and printed in the figure. Note that this does **not** mean that these *representative* HBs are specific of the (sub)family. In addition, PFAM domains which yielded the highest similarity to these HBs are indicated. Most of them correspond to a “*Plasmodium* Vir domain” entry in PFAM and domains of unknown function. Finally, note that this is just an illustration which intends to reflect the main similarities/differences among the (sub)families. Boxes representing the same motif appear aligned and filled with the same color. Further details can be found in Additional files 4, 5 and in the table below.



Z




















































3 Homology Blocks detailed view

Description: composition of clusters and the conserved motif structure of each of the proteins in the original VIR set, as well as the hypothetical proteins grouped with them. A table is shown with the following columns:



- #: counter. Colors in this column indicate the membership to a certain cluster.
- Subfam.: indicates the original subfamily to which the corresponding gene was associated.
- Gene ID: PlasmoDB identifier.
- Name: annotation obtained from PlasmoDB 7.2.
- Length: number of aa.
- Graphic: represents the HB structure of the protein. Colored boxes indicate the presence of an HB. The thicker the box, the higher is the number of proteins found containing the corresponding HB.
- HB color: each row in this column corresponds to one of the HBs painted in the "Graphic" column.
- Starts, Ends: coordinates (in aa) that indicate the exact position of the HB in the protein. Note that HBs may overlap. Moreover, some of them may seem to be repeated, but actually represent HBs that present slight differences among them.
- Score: the number of proteins found to contain the corresponding HB.


#	Subfam.	Gene ID	Name	Length	Graphic	HB color	Starts	Ends	Score
1	E	PVX_074690	variable surface protein Vir4-related	427		140	162	39	
						10	29	7	
						405	427	30	
						389	403	32	
						389	404	32	
						347	365	5	
						30	74	21	
						389	403	32	
						389	403	32	
						405	427	30	
						171	197	40	
						175	197	40	
						389	403	32	
						389	403	32	
						348	365	5	
						202	224	46	
						227	267	9	
						202	228	46	
						369	384	5	
						84	95	72	
103	135	18							
84	94	72							
2	E	PVX_073690	variable surface protein Vir12- related	433		140	162	39	
						10	29	7	
						422	433	30	
						406	420	32	
						406	421	32	
						347	365	5	
						83	95	72	
						35	74	21	
						30	74	21	
						406	420	32	
						406	420	32	
						422	433	30	
						172	197	40	
						175	197	40	
						406	420	32	
						406	420	32	
						348	365	5	
						204	224	46	
						366	375	4	
						227	270	9	
16	34	7							



3	E	PVX_103155	variable surface protein Vir12-related	442		202	226	46
						381	401	5
						82	95	72
						103	136	18
						84	94	72
						139	161	39
						10	29	7
						420	442	30
						404	418	32
						404	419	32
						345	363	5
						83	98	72
						60	98	72
						30	75	21
						404	418	32
						404	418	32
						420	442	30
						174	195	40
						404	418	32
						404	418	32
						346	363	5
201	222	46						
364	373	4						
225	264	9						
82	97	72						
379	399	5						
83	98	72						
102	134	18						
84	95	72						
137	159	39						
4	E	PVX_090335	variable surface protein Vir12-like	435		119	146	13
						411	435	30
						167	187	40
						393	408	32
						393	408	32
						346	364	5
						79	95	72
						57	98	72
						393	408	32
						393	408	32
						411	435	30
						52	66	21
						393	408	32
						393	408	32
						348	364	5


							207	224	46
							365	374	4
							227	262	9
							81	94	72
							13	32	7
							376	390	5
							78	95	72
							101	135	18
							81	92	72
							173	186	40
5	L	PVX_024685	variable surface protein Vir12-related	419			116	135	39
							91	125	13
							397	419	30
							379	395	32
							379	396	32
							323	340	5
							59	74	72
							181	197	46
							181	197	46
							35	98	72
							5	46	21
							379	395	32
							379	395	32
							397	419	30
							146	174	40
							30	43	21
							379	395	32
							401	419	30
							379	395	32
							324	340	5
							341	350	4
							206	245	9
							58	73	72
							356	376	5
	57	74	72						
	79	112	18						
	60	71	72						
6	C	PVX_124705	variable surface protein Vir12-related	449			173	189	40
							135	156	39
							339	390	30
							407	426	32
							407	428	32
							25	69	21
							407	426	32
							408	426	32

									51	59	21
									409	426	32
									430	449	30
									409	426	32
									198	222	46
									223	293	9
									10	28	7
									78	92	72
									103	131	18
									78	89	72
									170	189	40
									163	184	39
									373	416	30
									190	213	40
									445	464	32
									445	466	32
									106	122	72
									122	155	18
									56	101	21
									445	464	32
									446	464	32
									196	218	40
									198	218	40
									447	464	32
									468	487	30
									447	464	32
									108	121	72
									104	122	72
									127	155	18
									108	119	72
									16	35	32
									16	35	32
									16	35	32
									17	35	32
									18	35	32
									39	55	30
									18	35	32
									163	183	40
									135	152	39
									49	60	28
									280	326	30
									10	25	23
									13	40	23
									102	163	39
									359	373	32
7	E	PVX_090315	variable surface protein Vir12-like	487							
8		PVX_038190	hypothetical protein	58							
9	E	PVX_005060	variable surface protein Vir12-like	451							





						359	373	32
						359	373	32
						359	373	32
						159	182	40
						359	373	32
						380	393	30
						395	402	30
						359	373	32
						1	9	9
						1	11	9
						164	184	40
10	E	PVX_042190	variable surface protein Vir12-related, truncated	450		382	396	27
						382	396	27
						382	396	27
						110	132	39
						329	379	30
						382	397	27
						86	119	13
						382	396	27
						382	397	27
						143	159	40
						408	427	32
						408	429	32
						31	78	72
						13	44	21
						408	427	32
						409	427	32
						382	396	27
						26	39	21
						410	427	32
						431	447	30
						410	427	32
						382	396	27
						382	397	27
						199	269	9
						55	67	72
						177	197	46
						55	67	72
						75	108	18
						55	66	72
11	E	PVX_023185	variable surface protein Vir12-related	476		408	422	27
						408	422	27
						408	422	27
						136	158	39
						354	405	30

						408	423	27
						408	422	27
						408	423	27
						169	186	40
						434	453	32
						434	455	32
						202	217	46
						201	217	46
						57	116	72
						27	68	21
						434	453	32
						435	453	32
						408	422	27
						52	66	21
						436	453	32
						457	476	30
						436	453	32
						408	422	27
						408	423	27
						224	292	9
						81	93	72
						13	32	7
						202	222	46
						78	94	72
						100	134	18
						81	92	72
						172	191	40
						415	429	27
						415	429	27
						415	429	27
						143	163	39
						374	412	30
						415	430	27
						415	429	27
						415	430	27
						171	190	40
						441	460	32
						85	92	72
						441	462	32
						83	96	72
						103	127	18
						208	225	46
						60	98	72
						36	75	21
						441	460	32
12	L	PVX_063190	variable surface protein Vir12-related	483				

							442	460	32
							415	429	27
							443	460	32
							463	480	30
							443	460	32
							415	429	27
							415	430	27
							232	301	9
							85	97	72
							16	33	7
							209	229	46
							82	98	72
							105	139	18
							85	96	72
							353	367	27
							353	367	27
							353	367	27
							78	92	72
							133	155	39
							300	350	30
							353	367	27
							353	367	27
							353	367	27
							46	59	28
							382	398	32
							382	398	32
							92	125	18
							26	65	21
							382	398	32
							382	398	32
							353	367	27
							166	188	40
							382	398	32
							402	418	30
							382	398	32
							353	367	27
							353	367	27
							77	90	72
							200	258	46
							202	222	46
							77	92	72
							98	127	18
							78	89	72
							328	342	27
							328	342	27
13	L	PVX_010105	variable surface protein Vir12-related	421					
14	L	PVX_054190	variable surface protein Vir14-	396					

							328	342	27
							108	130	39
							275	325	30
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			related, truncated				141	163	40
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							50	62	21
							412	429	32
							433	452	30
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15	E	PVX_120340	variable surface protein Vir12-related	452					

						384	398	27
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						384	399	27
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						384	398	27
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						25	67	21
						410	429	32
						411	429	32
						384	398	27
						167	187	40
						49	61	21
						412	429	32
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						412	429	32
						384	398	27
						197	221	46
						384	393	27
						74	89	72
						75	90	72
						101	128	18
						76	87	72
						368	382	27
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						316	365	30
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						368	382	27
						368	383	27
						394	413	32
						394	413	32
						59	122	72
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16	E	PVX_076195	variable surface protein Vir12-related	459				
17	E	PVX_075695	variable surface protein Vir12/22/24-related	436				

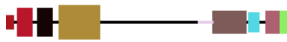
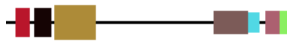
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						104	136	18
						84	95	72
						177	196	40
18	L	PVX_083590	variable surface protein Vir12, putative	452		22	36	40
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19		PVX_074190	hypothetical protein	323				



						201	252	30
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						255	270	27
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						281	302	32
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						282	300	32
						255	269	27
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						261	275	74
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PVX_020170 hypothetical protein



333





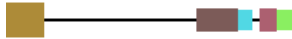

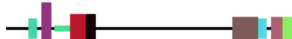
21	Not clustered	PVX_183280	variable surface protein Vir12-related	443		59	79	46
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						402	419	32
						402	419	32
						376	387	27
						49	73	40
						403	419	32
						424	443	30
						403	419	32
375	389	27						
375	390	27						
84	144	46						
22		PVX_004495	hypothetical protein, conserved	449		381	395	27
						382	393	27
						382	393	27
						16	38	39
						327	378	30
						381	396	27
						381	395	27
						381	396	27
						47	66	40
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						408	428	32
						408	426	32
						408	426	32
						382	393	27
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						430	449	30
						409	426	32
						381	395	27
						381	396	27
						78	140	46

23	Not clustered	PVX_120845	variable surface protein Vir12-related	587		519	533	27
						520	531	27
						520	531	27
						88	97	72
						139	161	39
						465	516	30
						519	534	27
						56	102	11
						519	533	27
						519	534	27
						443	462	4
						57	67	28
						163	188	40
						546	563	32
						546	566	32
						98	133	18
						97	133	18
						61	96	72
						52	72	21
						546	563	32
						546	563	32
						520	531	27
						171	193	40
57	70	21						
547	563	32						
568	587	30						
547	563	32						
519	533	27						
519	534	27						
203	265	46						
83	96	72						
24	E	PVX_101620	variable surface protein Vir16-related	594		526	540	27
						527	538	27
						527	538	27
						133	155	39
						472	523	30
						526	541	27
						48	95	11
						526	540	27
						526	541	27
						450	469	4
						157	182	40
						553	570	32
						553	573	32
						90	127	18



							54	89	72
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							553	570	32
							553	570	32
							527	538	27
							165	187	40
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							575	594	30
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							452	503	30
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							506	520	27
							506	521	27
							429	451	4
							172	187	40
							533	551	32
							533	553	32
							97	134	18
							30	72	21
							533	551	32
							533	551	32
							507	518	27
							172	194	40
							56	69	21
							534	551	32
							555	574	30
							534	551	32
							506	520	27
							506	521	27
							203	265	46
							81	95	72
							84	95	72
							100	116	40
25	Not clustered	PVX_115985	variable surface protein Vir, putative	574			326	340	27
26		PVX_065690	hypothetical protein	394			326	340	27



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							62	82	39
							272	323	30
							326	341	27
							326	340	27
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							352	371	32
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							148	174	46
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27		PVX_034690	hypothetical protein	404					
28		PVX_036690	hypothetical	98			30	44	27

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						131	146	27
						158	178	32
						158	177	32
						158	177	32
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29	PVX_061690	hypothetical protein	273					
30	PVX_027190	hypothetical protein	200					





						131	145	27				
						160	179	32				
						180	200	30				
						160	177	32				
						131	145	27				
						131	146	27				
						55	77	6				
31	PVX_049690	hypothetical protein	366		298	312	27					
					299	310	27					
					299	310	27					
					244	295	30					
					298	313	27					
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					298	313	27					
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					299	310	27					
					326	343	32					
					347	366	30					
					326	343	32					
					298	312	27					
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					32	PVX_037690	hypothetical protein	67		1	13	27
										1	13	27
1	13	27										
1	14	27										
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25	44	32										
25	46	32										
25	44	32										
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27	44	32										
48	64	30										
27	44	32										
1	13	27										
33	Not clustered	PVX_094245	variable surface protein Vir12-like	584		515	529	27				
						515	529	27				
						134	162	39				





35	E	PVX_106220	variable surface protein Vir12, putative	481			1	9	9
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							196	214	46
							75	86	72
							163	183	40
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							465	479	27
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							51	75	28
							50	67	28
							250	319	4
							413	462	30
							465	474	27
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							465	479	27
							465	474	27
							16	48	23
							54	64	28
							103	167	39
							194	216	46
							17	31	23
							198	217	46
							56	104	72
							465	479	27
							226	244	5
							225	248	5
							465	479	27
							465	474	27
							261	317	4
	93	102	4						
	251	319	4						
	389	411	6						
	201	219	46						
	80	91	72						
	168	188	40						
36	E	PVX_017140	variable surface protein Vir12-like	568			499	513	27
							499	513	27
							499	513	27
							47	61	28
							46	66	28
							244	313	4
							447	496	30
							499	514	27
							12	25	23
							243	313	4




						500	514	27
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						529	546	32
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						210	251	4
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						1	12	9
						75	88	72
						75	86	72
						162	182	40
39	E	PVX_013620	variable surface protein Vir12-like	537		468	482	27
						468	482	27
						468	482	27
						380	413	4
						415	465	30
						468	483	27
						468	482	27
						468	483	27
						13	44	23
						267	276	8
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						495	515	32
						139	149	39
						495	514	32
						191	209	46
						300	325	4
						52	97	72
						495	514	32
						496	514	32
						468	482	27
497	516	32						
517	537	30						
497	514	32						
468	482	27						
210	266	4						
468	483	27						
1	12	9						
75	86	72						
162	182	40						
40	E	PVX_077695	variable surface protein Vir12-like	545		476	490	27
						476	490	27
						476	490	27
						46	67	28








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						610	630	30
						590	607	32
						561	575	27
						561	575	27
						76	89	72
						1	12	9
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						163	182	40
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						439	453	27
						45	69	28
						48	60	28
						389	436	30
						439	454	27
						15	25	23
						439	453	27
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						372	386	27
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42	E	PVX_097525	variable surface protein Vir 12, putative	508				
43	L	PVX_102640	variable surface protein Vir12-related	441				





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						219	277	5
						278	301	4
						144	154	39
						313	331	8
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						144	155	39
						104	134	6
						49	73	28
						29	45	4
						313	331	8
						76	89	72
						297	311	7
						297	311	7
						199	217	46
						167	180	40
						79	95	40
						45	74	39
						1	13	72
						286	299	7
						247	260	7
						129	186	5
						129	186	5
						188	211	4
						300	315	8
						223	244	8
						262	284	8
						14	44	6
						301	315	8
						223	243	8
						262	284	8
						246	260	7
						286	299	7
						208	221	7
						286	299	7
						246	260	7
						208	221	7
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						30	43	4
						76	104	72
						18	29	4
						53	101	72
50	Not clustered	PVX_157260	variable surface protein Vir12, truncated, putative	315				
51	Not clustered	PVX_134260	variable surface protein Vir12, putative, truncated	104				

60	E	PVX_009595	variable surface protein Vir22, putative	392		65	85	72
						141	159	39
						51	73	28
						114	146	13
						334	354	74
						55	108	72
						335	343	74
						75	95	72
						173	196	40
						293	310	74
61	E	PVX_110300	variable surface protein Vir 12/22/24-like	359		293	310	74
						4	45	7
						4	46	7
						350	357	4
						110	148	13
						149	159	39
						301	321	74
						149	161	39
						203	226	46
						304	313	74
62	E	PVX_007085	variable surface protein Vir24-related	321		46	72	28
						78	98	72
						139	160	40
						259	276	74
						259	276	74
						308	319	4
						266	283	74
						113	121	39
						50	62	72
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63	E	PVX_088805	variable surface protein Vir22/24-like	358		168	190	46
						24	84	72
						269	279	74
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102	140	13						
14	40	23						
292	305	13						
199	217	46						
301	316	74						





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							162	184	40						
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64	E	PVX_081850	variable surface protein Vir22/23-related	608			432	455	40						
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							554	562	74						
							89	101	72						
							343	357	72						
							431	453	74						
65	E	PVX_093720	variable surface protein Vir24-like	496			66	82	28						
							431	453	74						
							439	456	74						
							114	178	39						
							155	165	39						
							210	227	46						
							439	459	74						
							212	228	46						
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							257	330	6						
							88	100	72						
							402	425	40						
							130	167	17						
66	E	PVX_002480	variable surface protein Vir12/24-related	616			346	376	13						
							250	280	23						
							288	300	28						
							558	573	74						
							435	457	46						
							561	569	74						
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							86	98	72						
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68	Not clustered	PVX_086855	variable surface protein Vir24-like	721		174	187	40
						468	488	40
						201	226	5
						434	456	39
						301	319	28
						143	165	17
						272	282	23
						300	316	28
						657	678	74
						307	358	72
						292	322	21
						174	189	10
						88	99	72
						331	346	72
						467	488	40
69	C	PVX_101565	variable surface protein Vir24-related	473		176	195	40
						57	74	28
						16	33	23
						18	27	23
						171	194	40
70	E	PVX_086860	variable surface protein Vir24-related	447		176	195	40
						136	154	39
						78	98	72
						8	23	23
						56	64	28
						116	153	39
						142	152	39
						10	21	23
						191	213	46
						56	116	72
52	64	28						
233	309	6						
77	91	72						
433	445	13						
75	91	72						



71	E	PVX_083575	variable surface protein Vir24-related	510		7	17	23
						98	148	39
						138	148	39
						10	23	23
						51	96	72
						47	59	28
						234	310	6
72	E	PVX_097530	variable surface protein Vir22/12-related	524		31	47	23
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73	E	PVX_097555	variable surface protein Vir12/16-related	516		44	58	28
						11	26	23
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74	E	PVX_124715	variable surface protein Vir5-related	528		398	420	40
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						427	450	46
75		PVX_125726	hypothetical protein	364		91	114	40
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76	Not clustered	PVX_088780	variable surface protein Vir24-related	446		149	161	39
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77	Not clustered	PVX_112720	variable surface protein Vir12-related	505		134	156	39
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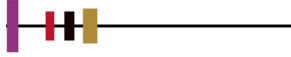
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78	E	PVX_106725	variable surface protein Vir12, putative	469		57	68	28
						202	225	33
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79		PVX_124725	hypothetical protein	220		58	81	46
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81	E	PVX_003510	variable surface protein Vir24-related	453		157	177	40
82	E	PVX_104190	variable surface	426				





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83		PVX_090295	hypothetical protein	542				
84	E	PVX_097540	variable surface protein Vir24-related	668				
85	Unavailable	PVX_096910	variable surface protein Vir23-related	506				

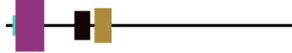


















































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							441	460	40
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							230	265	13
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							322	345	46
							179	218	72
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							200	216	72
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86	E	PVX_115485	variable surface protein Vir24-related	302		410	432	40	
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88	E	PVX_003505	variable surface protein Vir24-related	414					
89	E	PVX_119210	variant surface	540					



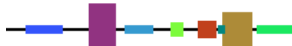


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90	PVX_094250	hypothetical protein	525		397	420	40	
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					283	347	72	
					395	416	40	
					306	319	72	
					306	319	72	
					308	319	72	
91	PVX_086865	hypothetical protein	576		468	490	40	
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					291	351	7	
					308	324	23	
					136	145	72	
					443	453	39	
					135	150	72	
					499	517	46	
					353	418	72	
					465	486	40	
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					378	390	72	
92	PVX_097542	hypothetical protein	560		396	418	40	
					167	278	7	
					373	382	39	
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93	PVX_086895	hypothetical	553		432	453	40	



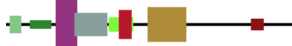


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94		PVX_001635	hypothetical protein, conserved	634		171	184	40
						487	509	40
						454	477	39
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						134	165	17
						463	472	39
						519	533	46
						518	540	46
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						315	329	72
						596	614	13
						314	331	72
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96	Not clustered	PVX_083580	variable surface protein Vir24-related	575		344	360	72
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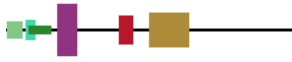
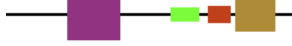
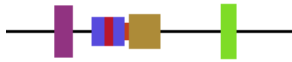




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101 E	PVX_022185	variable surface protein Vir12-related	352				12	23	23
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							190	211	46
							48	95	72
							160	172	40
							71	82	72
							161	180	40
102 E	PVX_090290	variable surface protein Vir12, putative	288				30	52	28
							119	135	39
							91	136	39
							125	131	39
							180	203	46
							35	99	72
							144	167	40
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							262	288	13
							59	74	72
103	PVX_004537	hypothetical protein	466				132	157	17
							141	150	39
							77	91	72
							193	210	46
							194	216	46
							55	93	72
							159	178	40
							164	183	40
104	PVX_005055	hypothetical protein	534				89	104	72
							90	104	72
							89	105	72
							209	225	46
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							509	526	13
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							178	200	40
105	PVX_090310	hypothetical protein, conserved	449				63	76	39
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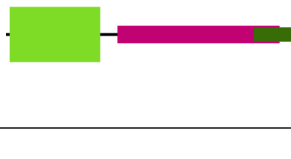


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106	E	PVX_001645	variable surface protein Vir12-related	529			144	160	39
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107	Unavailable	PVX_005045	variable surface protein Vir12-related	445			136	154	39
							78	92	72
							199	216	46
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							165	194	40
							204	217	46
							78	92	72
							200	216	46
							78	93	72
							99	132	18
							79	90	72
108	E	PVX_090305	variable surface protein Vir12-related	462			138	162	39
							135	157	39
							201	216	46
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							56	105	72
							78	91	72
							12	28	7
							201	221	46
							78	91	72
							103	131	18
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109	E	PVX_093710	variable surface protein Vir24-related	488			145	162	39
							52	73	28
							18	31	23
							414	425	13
							149	159	39
							82	96	72
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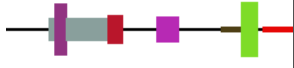
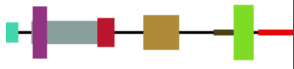
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111	E	PVX_018660	variable surface protein Vir24-like	493			49	73	28
							79	93	72
							10	27	23
							107	143	13
							145	155	39
							192	215	46
							199	217	46
							55	99	72
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							79	90	72
	169	189	40						
112	E	PVX_094240	variable surface protein Vir12/24-related	443			206	225	39
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							259	277	46
							259	282	46
							68	130	72
							92	107	72
							263	280	46
							232	254	40
							51	72	28
							106	162	39
113	E	PVX_001615	variable surface protein Vir12/24-related	366			140	150	39
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							192	212	46
							53	89	72
							348	366	30
							195	212	46
							164	182	40
							57	71	28
							80	96	72
							527	540	13
114	Not clustered	PVX_124720	variable surface protein Vir12-related	545			12	31	23
							199	219	46
							57	107	72
							78	93	72
							202	219	46



115	E	PVX_096920	variable surface protein Vir12-related	491		170	191	40
						165	181	40
						163	179	40
1	Not clustered	PVX_004535	variable surface protein Vir, putative	330		170	186	24
						73	95	72
						222	306	11
						24	48	10
						145	156	17
						105	130	11
						195	216	46
						195	216	46
						17	49	10
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2		PVX_124700	hypothetical protein	255		74	97	72
						224	254	11
						25	49	10
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						189	194	9
						106	131	11
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3	C	PVX_024690	variable surface protein Vir12-related	343		173	190	24
						75	102	72
						228	293	11
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4	C	PVX_101600	variable surface protein Vir16/32-related	372		200	219	46
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						192	199	9
						59	70	10
						21	56	10
						176	192	24
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151	168	17						
139	150	8						





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13		PVX_090320	hypothetical protein	212		174	190	24
						76	101	72
						144	167	17
						28	56	10
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						59	113	72
						105	128	11
						48	65	28
						59	72	10
						21	54	10
14		PVX_005065	hypothetical protein	198		68	91	72
						19	43	10
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						100	125	11
						12	44	10
15	C	PVX_101615	variable surface protein Vir14-related	361		64	90	72
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						79	127	31
						6	19	23
						31	56	10
						72	84	72
						143	158	39
						180	227	46
						180	227	46
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16	C	PVX_124710	variable surface protein Vir4-related	313		63	84	72
						73	128	31
						3	19	23
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						143	156	39
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165	177	10						
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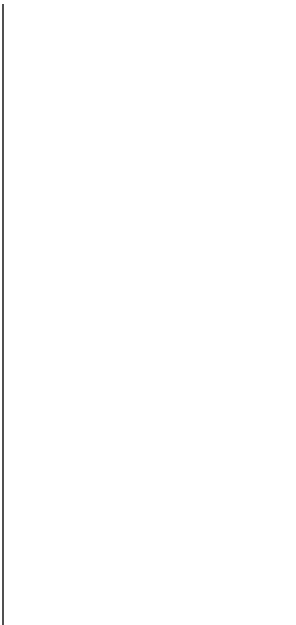
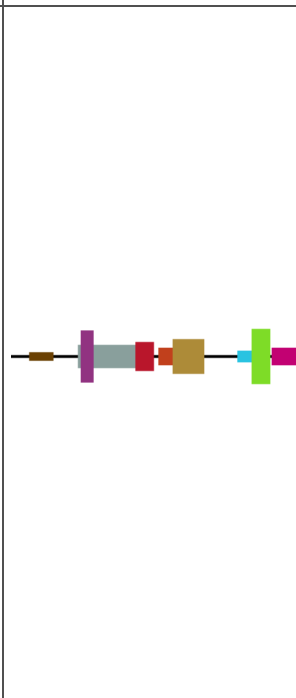
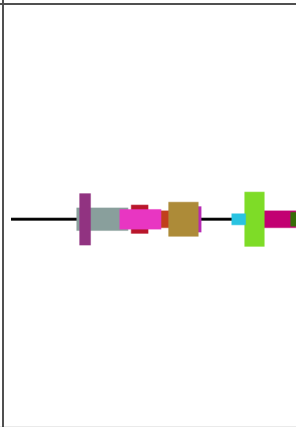
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19	C	PVX_115475	variable surface protein Vir14, putative	229			162	179	24
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							132	154	17
							50	87	72
							184	215	46
							184	215	46
							173	189	24
							75	102	72
							142	165	17
							134	182	40
20	C	PVX_113230	variable surface protein Vir14-related	440			83	95	72
							330	354	74
							152	163	39
							190	236	46
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							190	236	46
							16	31	17
21		PVX_094260	hypothetical protein	198			18	32	39
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							60	94	46
							39	105	11
22	C	PVX_095995	variable surface protein Vir16/32-related	315			289	313	8
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							328	351	8
							162	179	40
23	C	PVX_004525	variable surface protein Vir16/32-related	353			80	97	72
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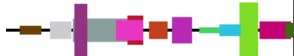
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26	C	PVX_043690	variable surface protein Vir32, truncated, putative	85			10	21	14
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27	Not clustered	PVX_044190	variable surface protein Vir32, putative	61			6	17	74
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							24	51	22
							1	20	74
							53	61	17
28	C	PVX_009090	variable surface protein Vir14-like	337			132	147	39
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							70	85	72
29	C	PVX_072690	variable surface protein Vir4/14-related	324			127	143	39
							274	284	74
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							273	288	74



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30	C	PVX_026190	variable surface protein Vir14, putative	353		145	160	39
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31	C	PVX_076695	variable surface protein Vir14/32-related	325		116	132	39
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32	C	PVX_028190	variable surface protein Vir4, putative	284		91	107	39
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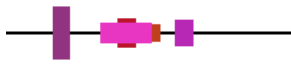
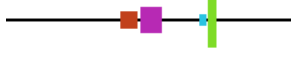






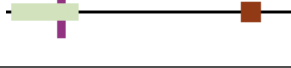
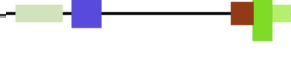
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33	C	PVX_103665	variable surface protein Vir4/32-like	290			115	131	39
							142	164	24
							56	69	72
							50	114	31
							228	241	6
							142	157	24
							168	193	33
							257	290	6
							55	65	72
							159	193	46
							159	193	46
							256	290	6
							55	64	72
							290	308	74
							290	308	74
							6	31	23
							190	217	33
							75	87	72
							298	325	74
							143	158	39
							51	109	72
							181	216	46
							298	306	74
							181	216	46
							44	58	28
							76	84	72
							75	87	72
							76	82	72
							75	90	72
							76	88	72
							141	159	39
							168	187	24
							75	138	31
							18	44	12
							194	217	33
							79	91	72
							147	160	39
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							127	175	25
							116	132	39
36	C	PVX_102125	variable surface protein Vir32,	153		51	115	31	

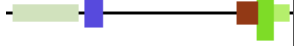
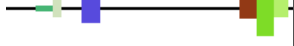
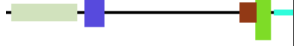
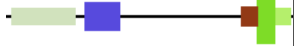
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							215	243	33
							100	115	72
							207	240	46
							308	317	74
							207	240	46
							72	89	21
							100	111	72
							159	182	25
							149	197	25
							146	162	39
							172	194	24
							84	144	31
							26	47	12
							201	212	33
							196	225	33
							84	97	72
							313	350	22
							290	311	74
							56	69	21
							84	95	72
							133	179	25
							18	44	12
							84	97	72
							128	146	39
							155	176	24
							63	127	31
							155	169	24
							182	206	33
							257	269	14
							64	77	72
							134	146	39
							271	280	74
							40	53	21
							258	269	14
							66	78	72
							114	163	25
							144	161	39
							171	193	24
37	C	PVX_003485	variable surface protein Vir4, putative	329					
38	C	PVX_096000	variable surface protein Vir4, putative	353					
39	C	PVX_005580	variable surface protein Vir4, putative	297					
40	C	PVX_105700	variable surface protein Vir32/4,	340					

			putative				81	143	31
							24	47	12
							197	224	33
							267	278	14
							84	94	72
							287	298	74
							303	337	22
							188	223	46
							306	329	22
							280	300	74
							188	223	46
							332	340	17
							262	278	14
							84	94	72
							82	96	72
							130	173	25
41	C	PVX_051690	variable surface protein Vir32, putative	334			146	163	39
							173	194	24
							80	145	31
							23	49	12
							205	215	33
							200	225	33
							266	279	14
							84	95	72
							288	299	74
							304	332	22
							152	166	39
							190	224	46
							307	333	22
							281	302	74
							190	224	46
							264	280	14
							84	96	72
							82	93	72
42	C	PVX_061190	variable surface protein Vir32, putative	342			145	163	39
							172	193	24
							80	139	31
							202	214	33
							197	226	33
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							305	332	22


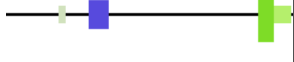
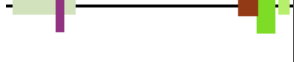
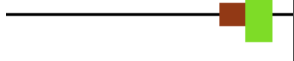
						171	192	24
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						196	228	33
						279	290	74
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						298	324	22
						272	293	74
						327	335	17
						55	69	21
						256	268	14
						82	91	72
						17	44	12
46	C	PVX_175270	variable surface protein Vir14, truncated, putative	332		129	142	39
						156	178	24
						35	59	21
						64	128	31
						282	302	15
						156	170	24
						182	212	33
						255	269	14
						67	79	72
						294	329	22
						173	207	46
						297	323	22
						271	291	74
						173	207	46
						324	332	17
						256	270	14
						67	78	72
						123	163	25
						2	29	12
47	C	PVX_184285	variable surface protein Vir4, putative	348		148	166	39
						175	196	24
						83	147	31
						236	259	6
						236	260	6
						175	189	24
						204	215	33
						202	225	33
						84	97	72
						309	345	22
						311	338	22
						285	306	74

						85	96	72
						330	360	22
						201	224	46
						333	349	22
						301	322	74
						355	361	17
						53	76	21
						286	299	14
						85	96	72
51	Unavailable	PVX_159260	variable surface protein Vir14, pseudogene, putative	541		297	315	39
						208	227	21
						232	296	31
						392	420	6
						390	420	6
						324	338	24
						382	420	6
						349	378	33
						424	436	14
						235	247	72
						501	538	22
						341	375	46
						504	531	22
						438	447	74
						484	499	74
						341	375	46
						391	420	6
						533	541	17
						390	420	6
						235	246	72
						292	331	25
						169	196	12
						123	138	39
						150	172	24
						29	52	21
						57	122	31
						226	246	6
						225	246	6
						150	164	24
						210	246	6
						180	191	33
						175	204	33
						248	262	14
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						167	200	46
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52	C	PVX_030190	variable surface protein Vir14, truncated, putative	325				

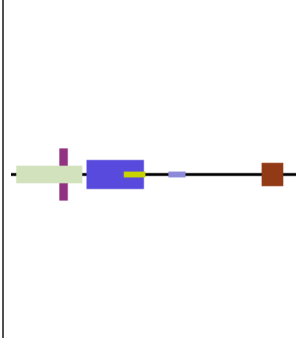
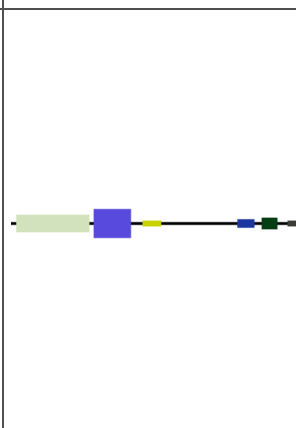

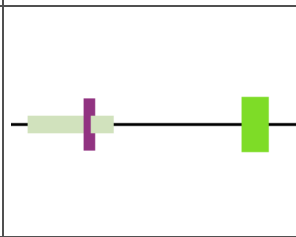

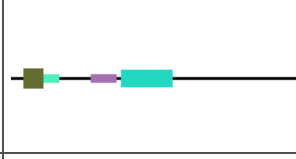

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							189	220	33
							78	90	72
							278	312	22
							255	275	74
							123	169	25
59	C	PVX_101560	variable surface protein Vir4-related	302			119	137	39
							146	163	24
							146	161	24
							179	197	33
							50	67	72
							100	153	25
60	Unavailable	PVX_046190	variable surface protein Vir32, putative; Truncated due to end of contig.	353			142	161	24
							168	180	33
							166	191	33
							240	247	14
							249	258	74
61	C	PVX_096945	variable surface protein Vir4-related	314			25	38	72
							21	82	31
							133	159	33
							20	32	72
							21	29	21
							24	32	72
62	Not clustered	PVX_086875	variable surface protein Vir27-related	292			265	285	9
							265	285	9
							134	161	12
							266	285	9
63		PVX_005575	hypothetical protein	138					
1	Not clustered	PVX_056190	variable surface protein Vir6-related	407			123	165	40
							123	151	40
							10	110	21
							370	400	29
2	Unavailable	PVX_014125	variable surface protein Vir6-like, pseudogene	523			182	224	40
							183	199	40
							398	428	29
3		PVX_060190	hypothetical protein	84			1	16	29
4	Not clustered	PVX_070190	variable surface protein Vir28, truncated, putative	182			83	114	29
5	Not clustered	PVX_106210	variable surface protein Vir6, putative	434			79	89	72
							10	109	21
							356	386	29
6	G	PVX_050690	variable surface	405			46	59	21











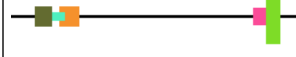

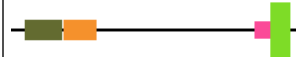

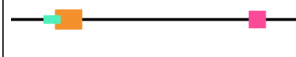

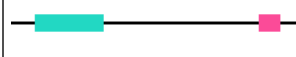

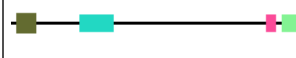



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						365	395	29
10	Not clustered	PVX_028690	variable surface protein Vir6, putative	464		86	95	21
						81	95	21
						407	433	74
						86	95	21
						86	95	21
						128	156	40
						86	95	21
						86	94	21
						12	116	21
						435	458	21
						375	406	29
11	G	PVX_103670	variable surface protein Vir6-like	459		79	89	21
						76	87	21
						402	428	74
						79	89	21
						50	71	7
						79	89	21
						123	150	40
						50	74	7
						79	89	21
						78	87	21
						430	452	21
375	401	29						
12	G	PVX_007585	variable surface protein Vir28, putative	447		79	91	21
						420	446	8
						419	446	8
						76	87	21
						391	413	74
						79	91	21
						50	72	7
						79	91	21
						390	405	74
						125	152	40
						50	74	7
79	91	21						
77	87	21						
11	111	21						
365	389	29						
13	Not clustered	PVX_063690	variable surface protein Vir6-like	456		401	427	74
						126	182	40
						11	111	21
						429	452	21
						375	400	29



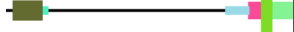

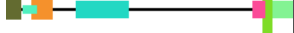
14	Not clustered	PVX_121345	variable surface protein Vir6, putative	449		394	420	74
						125	179	40
						422	445	21
						370	393	29
						403	429	74
15	G	PVX_026690	variable surface protein Vir6, putative	460		121	151	40
						121	147	40
						75	84	21
						12	108	21
						434	452	21
						376	401	29
16	G	PVX_071190	variable surface protein Vir28-related	437		388	406	74
						124	180	40
						124	152	40
						78	84	6
						11	110	21
						411	431	21
						362	387	29
17		PVX_108255	hypothetical protein	442		387	413	74
						46	66	7
						120	162	40
						120	148	40
						46	69	7
						7	107	21
						415	438	21
						355	386	29
18	Not clustered	PVX_029690	variable surface protein Vir6, putative	399		100	179	40
						352	370	74
						93	134	40
						93	122	40
						10	94	21
						372	395	21
19	G	PVX_035190	variable surface protein Vir6, truncated, putative	410		71	172	40
						34	44	21
						355	381	74
						354	368	74
						77	105	40
						4	66	21
						383	406	21
						324	354	29
20	Not clustered	PVX_073190	variable surface protein Vir6-like	492		124	210	40
						78	85	21
						436	462	74
						123	150	40
						10	111	21






							464	486	21
							404	435	29
21	Not clustered	PVX_104695	variable surface protein Vir6-like	435			108	202	40
							67	76	21
							378	404	74
							377	390	74
							110	138	40
							409	428	21
							346	376	29
							81	89	21
22	Not clustered	PVX_024185	variable surface protein Vir6-like	427			377	398	74
							125	153	40
							400	423	21
							77	89	72
							79	87	72
							397	423	74
							396	410	74
							123	151	40
							77	84	21
							10	105	21
							425	438	21
							77	84	72
							365	396	29
							82	93	72
							408	434	74
							407	420	74
24	G	PVX_014630	variable surface protein Vir6, putative	464			13	113	21
							441	458	21
							376	406	29
							82	93	72
							50	76	74
							49	63	74
							78	101	21
							18	49	29
							129	155	74
							129	147	74
							160	178	21
							97	128	29
							264	290	74
							263	277	74
							292	315	21
							237	263	29
							224	247	74
							223	243	74
28	Not clustered	PVX_040190	variable surface protein Vir6, truncated, putative	266			199	222	29

29	G	PVX_047190	variable surface protein Vir28-like	325		270	296	74
						2	45	40
						269	283	74
						2	19	40
						298	321	21
						241	269	29
30	Not clustered	PVX_057190	variable surface protein Vir6, truncated, putative	118		110	116	8
						86	117	8
						61	87	74
						60	74	74
						29	60	29
						76	89	72
31	Not clustered	PVX_018655	variable surface protein Vir28-like	515		184	208	6
						123	210	40
						479	510	8
						78	86	72
						224	250	6
						250	272	6
						74	83	21
						453	476	74
						118	169	40
						177	210	6
						453	476	74
						119	148	40
7	110	21						
32	Not clustered	PVX_032190	variable surface protein Vir28-related	497		421	451	29
						79	92	72
						188	212	6
						121	212	40
						461	492	8
						81	89	72
						227	255	6
						259	276	6
						435	460	74
						122	177	40
						181	214	6
						122	151	40
10	113	21						
33	Not clustered	PVX_012115	variable surface protein Vir 28/6-related	506		403	433	29
						78	89	72
						185	210	6
						122	207	40
						470	501	8
						78	87	72
224	252	6						





						257	273	6
						443	469	74
						178	211	6
						442	471	74
						120	148	40
						7	110	21
						412	442	29
34		PVX_102130	hypothetical protein	456		79	91	72
						188	213	6
						126	210	40
						252	277	6
						121	178	40
						181	214	6
						122	151	40
						10	113	21
						401	431	29
35	Not clustered	PVX_048690	variable surface protein Vir7-like	408		324	345	9
						189	214	6
						324	345	9
						394	406	8
						358	379	15
						119	170	40
						189	214	6
						325	345	9
						358	370	15
						119	145	40
						9	112	21
36		PVX_102645	hypothetical protein	92		67	89	8
						39	59	74
37	Not clustered	PVX_112115	variable surface protein Vir6, putative	320		82	90	72
						84	93	72
						258	287	74
						260	271	74
						20	115	21
						82	89	72
38	Unavailable	PVX_174270	variable surface protein Vir6-like, pseudogene	475		77	89	21
						52	70	7
						52	74	7
						78	87	21
1	H	PVX_112125	variable surface protein Vir18, putative	423		120	155	10
						164	238	21
						50	71	10
						20	47	28
2		PVX_106215	hypothetical protein	328		170	230	21
						47	67	10

							16	52	28
3	Not clustered	PVX_006080	variable surface protein Vir18-related	577			64	101	25
							161	238	21
							14	61	28
4	Unavailable	PVX_013625	variable surface protein Vir18, putative	381			64	96	25
							164	234	21
							19	57	28
5	Not clustered	PVX_015640	variable surface protein Vir18-related	427			63	99	25
							103	151	10
							160	231	21
							49	70	10
							16	60	28
6		PVX_107230	hypothetical protein	416			235	275	7
							63	100	25
							106	151	10
							160	234	21
							47	70	10
							16	51	28
7	Not clustered	PVX_045190	variable surface protein Vir18-related	130			63	100	25
							46	70	10
							15	50	28
8	Not clustered	PVX_120335	variable surface protein Vir18-related	485			418	434	23
							412	433	23
							433	454	74
							84	115	25
							69	91	10
							43	70	28
9	Not clustered	PVX_093705	variable surface protein Vir18, putative	318			271	292	23
							289	310	74
							59	95	25
							16	56	28
10	Not clustered	PVX_121855	variable surface protein Vir18, putative	402			335	356	23
							63	99	25
							47	70	10
11		PVX_035690	hypothetical protein	298			258	280	23
							268	280	23
							26	96	21
12	Not clustered	PVX_060690	variable surface protein Vir18-related	656			620	654	21
							584	605	23
							159	236	21
							16	57	28
13	H	PVX_068190	variable surface protein Vir18, putative	511			456	468	19
							437	456	23
							289	396	4
							245	286	7









16	H	PVX_021180	variable surface protein Vir18, putative	467		413	424	19
						283	389	4
						425	460	21
						234	282	7
						63	100	25
						283	390	4
						283	390	4
						13	60	28
						137	230	21
17	H	PVX_020675	variable surface protein Vir18, putative	495		441	452	19
						417	440	23
						453	488	21
						426	439	23
						437	454	74
						389	415	12
						166	226	21
						45	69	10
						14	44	28
18	H	PVX_011110	variable surface protein Vir18-like	475		426	438	19
						403	426	23
						439	475	21
						413	425	23
						423	441	74
						365	402	12
						46	70	10
						14	60	28
						498	510	19
19	H	PVX_083585	variable surface protein Vir18-related	548		475	498	23
						512	547	21
						511	547	21
						494	511	74
						485	497	23
						442	474	12
						47	71	10
						16	44	28
						477	489	19
20	H	PVX_101625	variable surface protein Vir18-like	527		454	477	23
						490	526	21
						473	489	74
						464	476	23
						49	85	25
						149	224	21
						34	56	10
						2	27	28
						130	202	21

21	H	PVX_017650	variable surface protein Vir18, putative	502		453	465	19
						430	453	23
						470	502	21
						440	452	23
						64	101	25
						102	158	10
						393	429	12
						163	239	21
						15	61	28
22	H	PVX_016640	variable surface protein Vir18-like	483		434	446	19
						411	434	23
						447	483	21
						421	433	23
						64	100	25
						107	136	10
						371	410	12
						166	235	21
						17	61	28
23	H	PVX_018150	variable surface protein Vir18, putative	510		456	467	19
						432	455	23
						470	503	21
						441	454	23
						238	388	5
						63	100	25
						106	151	10
						391	415	12
						159	237	21
13	60	28						
24	H	PVX_065190	variable surface protein Vir18, truncated, putative	442		387	399	19
						368	387	23
						401	436	21
						373	386	23
						175	326	5
						1	37	25
						38	93	10
						96	174	21
						429	441	19
25	H	PVX_010100	variable surface protein Vir18, putative	478		443	478	21
						102	151	10
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						57	94	25
						99	149	10
						385	424	12
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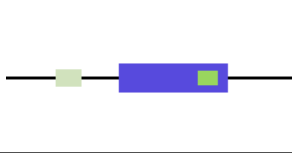
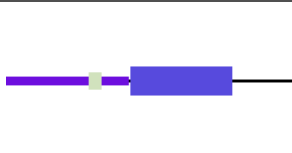


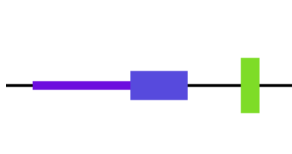

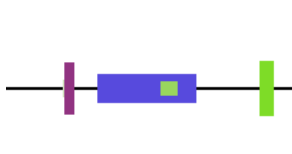
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26	Not clustered	PVX_015130	variable surface protein Vir18-like	459		431	448	23	
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						60	97	25	
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						390	413	12	
						158	236	21	
						12	57	28	
27	H	PVX_068690	variable surface protein Vir18, putative	529		474	485	19	
						451	474	23	
						491	522	21	
						461	473	23	
						60	96	25	
						435	446	5	
						10	57	28	
28	H	PVX_013120	variable surface protein Vir18, putative	475		421	432	19	
						400	420	23	
						433	468	21	
						406	419	23	
						417	434	74	
						60	96	25	
						381	392	5	
11	57	28							
29	H	PVX_017145	variable surface protein Vir18, putative	478		430	441	19	
						406	429	23	
						241	280	7	
						442	478	21	
						108	160	10	
						415	428	23	
						426	443	74	
						63	100	25	
						105	137	10	
						239	282	7	
389	401	5							
162	228	21							
18	56	28							
30	H	PVX_062690	variable surface protein Vir18, putative	462		414	425	19	
						390	413	23	
						212	252	7	
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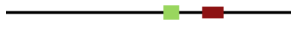
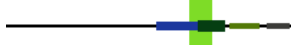


						210	253	7
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31	H	PVX_241295	variable surface protein Vir18, putative	489		435	446	19
						411	434	23
						245	288	7
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410	432	23						
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244	287	7						
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111	164	10						
419	432	23						
63	100	25						
108	154	10						
246	286	7						
166	243	21						
18	60	28						
33	H	PVX_055190	variable surface protein Vir18, truncated, putative	378				
						210	253	7
						77	130	10
						355	368	23
						29	66	25
						212	252	7
						135	208	21
						1	24	28
						441	459	23
						451	460	23
						407	434	12
						29	53	10
						126	214	21
34	Not clustered	PVX_066190	variable surface protein Vir18-like	463		232	257	14
						122	135	20
						122	135	20
1	D	PVX_074695	variable surface protein Vir10, putative	257		90	121	18

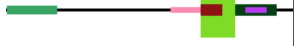



							87	109	18
							152	178	11
2	D	PVX_109785	variable surface protein Vir35, putative	261			231	258	14
							130	157	20
							130	150	20
							96	129	18
							94	116	18
							162	183	11
3	D	PVX_103160	variable surface protein Vir10-like	254			225	252	14
							122	135	20
							122	135	20
							89	120	18
							88	109	18
							152	178	11
4	D	PVX_182275	variable surface protein Vir11, truncated, putative	151			124	151	14
							17	44	20
							17	42	20
							1	16	18
							47	73	11
5	D	PVX_019665	variable surface protein Vir11, putative	282			255	282	14
							130	157	20
							130	154	20
							95	129	18
							160	186	11
6	D	PVX_178275	variable surface protein Vir11, putative	267			235	262	14
							128	155	20
							128	151	20
							93	127	18
							158	181	11
7	D	PVX_146260	variable surface protein Vir11, putative	239			218	236	14
							129	156	20
							129	151	20
							94	128	18
							159	182	11
8	D	PVX_041190	variable surface protein Vir35, truncated, putative	144			114	141	14
							13	40	20
							13	33	20
							45	69	11
9	D	PVX_086850	variable surface protein Vir35, putative	245			215	242	14
							113	139	20
							113	136	20
							78	111	18
10	D	PVX_109780	variable surface protein Vir35, putative	266			239	266	14
							114	140	20
							114	136	20



						82	110	18
						82	99	18
						227	243	7
						144	168	11
						85	96	4
11	D	PVX_108760	variable surface protein Vir35, putative	261		122	148	20
						125	145	20
						87	120	18
						236	252	7
						158	176	11
						94	104	4
12	D	PVX_067190	variable surface protein Vir35, putative	235		208	234	14
						85	112	20
						85	107	20
						51	80	18
						50	70	18
						57	68	4
13	Unavailable	PVX_109778	variable surface protein Vir, putative	240		130	153	20
						130	153	20
						95	129	18
14	D	PVX_040690	variable surface protein Vir35, putative	166		122	149	20
						122	146	20
						91	117	18
						94	105	4
15	D	PVX_143260	variable surface protein Vir35, putative	248		119	145	20
						119	141	20
						86	118	18
						83	106	18
						205	225	7
16	D	PVX_017645	variable surface protein Vir35, putative	230		101	127	20
						101	122	20
						68	100	18
						65	88	18
						187	207	7
17	D	PVX_103145	variable surface protein Vir10, putative	168		101	128	20
						101	126	20
						68	100	18
						65	88	18
						134	145	7
18	D	PVX_047690	variable surface protein Vir10, truncated, putative	267		237	264	14
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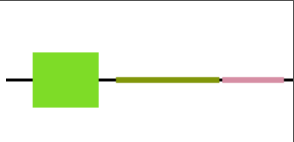
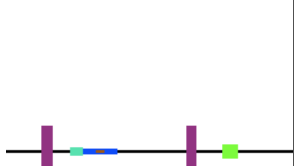



19	D	PVX_038690	variable surface protein Vir35-like	199		105	128	20
						105	122	20
						73	103	18
						71	90	18
20	D	PVX_102635	variable surface protein Vir10-related	198		85	108	20
						85	102	20
						53	70	18
21	Not clustered	PVX_058190	variable surface protein Vir10/35, truncated, putative	123		94	121	14
1	Not clustered	PVX_096005	variable surface protein Vir15-related	367		1	15	11
						97	104	72
						96	105	72
						98	106	72
2	Not clustered	PVX_121355	variable surface protein Vir15-like	222		284	303	74
						132	158	5
						165	195	74
3	J	PVX_057690	variable surface protein Vir33, putative	301		80	92	21
						120	199	40
						80	92	21
						80	92	21
						7	69	11
						122	179	40
						241	271	74
						80	92	21
184	202	17						
4	J	PVX_109795	variable surface protein Vir33, putative	301		77	93	21
						76	94	21
						77	94	21
						7	69	11
						122	179	40
						241	271	74
5	J	PVX_070690	variable surface protein Vir33, truncated, putative	260		77	94	21
						184	202	17
						42	58	21
						42	54	21
						41	59	21
						42	59	21
6	J	PVX_067690	variable surface protein Vir1-like	266		2	33	11
						87	144	40
						42	59	21
						149	167	17
7	J	PVX_105710	variable surface	245		6	110	11
						112	171	40
						175	192	17
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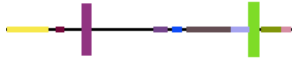

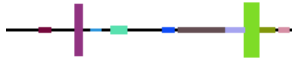
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8	J	PVX_000020	variable surface protein Vir9-like	234			99	181	40
							41	61	21
							93	150	40
							157	173	17
9	J	PVX_096930	variable surface protein Vir1-related, truncated	248			1	106	11
							112	195	40
							73	82	21
							108	167	40
10	Not clustered	PVX_106720	variable surface protein Vir33 (truncated), putative	220			166	182	74
							166	182	74
							168	183	74
							9	39	40
							168	181	74
							171	183	74
							115	127	17
11	J	PVX_096935	variable surface protein Vir9-related	304			250	266	74
							250	266	74
							29	131	11
							133	192	40
							254	269	74
							256	266	74
							257	269	74
							257	269	74
12	Unavailable	PVX_096925	variable surface protein Vir15-like	289			93	191	40
							98	153	40
							60	68	72
							257	269	74
							258	269	74
							59	68	21
							60	68	72
							157	172	17
13	J	PVX_167265	variable surface protein Vir15, truncated, putative	278			195	216	5
							108	184	40
							223	248	74
							107	162	40
							223	251	74
							168	184	17
14	J	PVX_010605	variable surface protein Vir15, putative	286			194	221	5
							228	253	74
							110	165	40
							227	257	74

							224	244	74
							172	188	17
15	Not clustered	PVX_186290	variable surface protein Vir15-related, truncated	133			42	68	5
							3	40	40
							75	96	74
							70	88	74
							21	33	17
16	Unavailable	PVX_168270	variable surface protein Vir15, pseudogene, putative	343			290	308	74
							129	184	40
							191	207	17
17	J	PVX_107750	variable surface protein Vir2/15-like	301			207	232	5
							8	102	11
							7	65	11
							124	178	40
							240	270	74
							167	178	40
							183	201	17
							80	88	72
							6	110	11
							78	87	21
18		PVX_105705	hypothetical protein	191			114	172	40
							78	90	72
							78	86	21
							78	86	72
							78	84	72
							78	88	72
							78	87	72
19	Unavailable	PVX_185285	variable surface protein Vir2, truncated, putative	345			238	262	13
							191	208	17
1	Not clustered	PVX_032690	variable surface protein Vir7, putative	156			100	112	74
							82	103	9
							100	112	74
							82	104	9
							142	154	8
							83	104	9
							105	119	15
							122	138	6
2	Not clustered	PVX_054690	variable surface protein Vir29, truncated, putative	51			37	49	8
							2	26	15
							1	15	15
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3	I	PVX_150260	variable surface protein Vir27, truncated,	361			60	66	8
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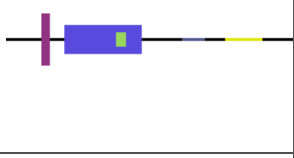



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							283	297	13
							80	192	12
7	Not clustered	PVX_055690	variable surface protein Vir27, truncated, putative	192		131	153	74	
						131	153	74	
						154	181	15	
						145	181	15	
						161	174	6	
						111	130	6	
						141	153	74	
						1	34	12	
						131	144	13	
						1	34	12	
8	I	PVX_002495	variable surface protein Vir7-like	324		130	146	39	
						17	53	8	
						76	85	72	
						184	210	6	
						136	147	39	
						184	210	6	
						97	206	12	
						97	206	12	
						74	85	72	
						61	68	8	
9	Not clustered	PVX_048190	variable surface protein Vir27, truncated, putative	117		1	57	8	
						19	42	8	
						81	92	72	
						29	50	8	
						101	115	12	
						101	117	12	
						81	93	72	
						30	46	8	
						3	27	8	
						265	285	9	
10	I	PVX_177275	variable surface protein Vir7, putative	328		265	286	9	
						265	286	9	
						102	131	12	
						265	286	9	
						287	300	15	
						49	59	72	
						132	152	6	
						156	190	6	
						156	190	6	
						71	183	12	
63	100	5							
71	183	12							
63	100	5							




11	I	PVX_064190	variable surface protein Vir7, putative	364		303	319	6
						56	68	8
						1	54	8
						290	311	9
						290	312	9
						350	362	8
						129	159	12
						291	312	9
						313	327	15
						76	85	72
						160	180	6
						181	215	6
						181	215	6
						97	208	12
						89	127	5
						97	208	12
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292	316	74						
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348	360	8						
312	329	15						
128	158	12						
289	310	9						
311	325	15						
75	85	72						
159	179	6						
180	214	6						
180	214	6						
111	207	12						
89	126	5						
115	207	12						
13	I	PVX_014625	variable surface protein Vir7, putative	375		327	346	6
						56	71	8
						1	54	8
						289	310	9
						293	319	74
						289	311	9
						349	360	8
						128	156	12
						290	311	9

17	Not clustered	PVX_039690	variable surface protein Vir27, truncated, putative	66		19 35 56	55 48 64	15 6 8
1	B	PVX_086350	variable surface protein Vir21, putative	397		341 339 342	351 352 350	74 74 74
2	Not clustered	PVX_108775	variable surface protein Vir26, truncated, putative	62		24 6 7	46 18 20	8 74 74
3	B	PVX_088790	variable surface protein Vir21-like	467		127 353 296	181 376 309	7 17 72
						149 107 298	161 126 305	4 12 72
						60 296 64	75 310 74	72 72 72
4	B	PVX_096915	variable usrface prootein Vir21-related	295		188 210 168	242 222 187	7 4 12
						126 126 126	137 136 135	72 72 72
5	B	PVX_110305	variable surface protein Vir21, putative	267		152 152 204	203 207 213	7 7 6
						177 132	187 151	4 12
						90 90 90 90	100 101 101 101	72 72 72 72
6	B	PVX_115480	variable surface protein Vir21, putative	276		153 178 133	209 188 152	7 4 12
						90 88 91	102 100 102	72 72 72
7	B	PVX_180275	variable surface protein Vir26-like, truncated	236		201 27 155	213 66 172	6 7 12
						191	200	6




							190	211	6
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							102	111	72
							63	76	8
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							208	219	7
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							245	257	74
							152	164	7
							129	151	6
							246	259	74
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							284	297	7
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							225	245	6
							121	128	6
							130	151	6
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							235	248	13
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							178	191	7
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							120	137	12
							311	322	7
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11	B	PVX_033190	variable surface protein Vir21, putative	357					
12	B	PVX_058690	variable surface protein Vir21, truncated, putative	299					
13	B	PVX_062190	variable surface protein Vir21, truncated, putative	326					

14	B	PVX_164265	variable surface protein Vir21, putative	362		117	129	4
						225	279	6
						326	346	8
						208	219	7
						4	58	7
						140	157	12
						348	359	7
						176	184	6
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						287	313	13
			96	107	72			
			96	108	72			
			61	69	8			
15	Not clustered	PVX_059690	variable surface protein Vir26, putative	88		1	62	7
						21	31	30
						65	75	8
1	K	PVX_053690	variable surface protein Vir30, putative	309		10	26	5
						271	309	4
						278	306	4
						130	208	40
						37	68	6
						189	210	17
						253	265	74
252	264	74						
			195	207	17			
2	K	PVX_042690	variable surface protein Vir30, putative	337		36	54	5
						299	337	4
						305	334	4
						155	237	40
						63	90	6
						218	238	17
						111	127	72
						281	295	74
						183	214	5
						280	292	74
3	Unavailable	PVX_163265	variable surface protein Vir30, pseudogene, putative	345		1	19	5
						307	345	4
						314	342	4
						78	88	72
						28	59	6
						185	207	17
						78	89	72
			126	146	40			
			150	181	5			
4	K	PVX_145260	variable surface	305		267	305	4

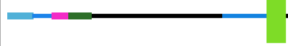



							273	302	4
							38	67	6
							186	207	17
							84	99	72
							138	152	40
							153	185	5
5	K	PVX_031690	variable surface protein Vir30, putative	268			14	24	5
							134	215	40
							40	71	6
							192	214	17
							89	105	72
							137	158	40
							159	191	5
6	K	PVX_056690	variable surface protein Vir30, truncated, putative	190			3	19	5
							123	187	40
							30	59	6
							80	95	72
							159	181	5
7	Not clustered	PVX_021685	variable surface protein Vir5, putative	426			117	218	40
							85	95	72
							275	305	4
							332	369	4
8	Not clustered	PVX_093715	variable surface protein Vir5-like	499			144	256	40
							338	366	4
							395	443	4
9	Unavailable	PVX_156260	variable surface protein Vir5, pseudogene, putative; truncated due to end of contig at 3'. 5' interrupted.	213			14	44	4
							71	108	4
10	Not clustered	PVX_101570	variable surface protein Vir5-related	386			51	59	72
							81	182	40
							239	267	4
							50	59	72
							296	344	4
							150	162	17
11	Not clustered	PVX_009600	variable surface protein Vir5-related	259			115	214	40
							82	92	72
12		PVX_005565	hypothetical protein	209			103	194	40
							70	79	72
							70	79	72
13		PVX_086885	hypothetical protein	266			159	247	7
							87	192	40
							56	66	72

							110	126	7
							83	100	72
							89	98	72
							89	96	72
							89	98	72
							192	221	13
							343	366	6
							368	381	8
							343	367	6
							343	366	6
							330	342	9
							328	342	9
							3	57	6
							162	182	8
							302	329	9
							116	148	11
							3	58	6
							62	83	72
							343	367	6
							3	58	6
							69	78	72
							170	200	13
							322	345	6
							347	360	8
							322	346	6
							322	345	6
							309	321	9
							307	321	9
							1	45	6
							140	160	8
							281	308	9
							112	126	11
							1	49	6
							85	95	7
							54	73	72
							322	346	6
							1	48	6
							59	68	72
							193	227	13
							345	368	6
							370	383	8
							345	369	6
							345	368	6
							333	344	9
							330	344	9
6	A	PVX_015135	variable surface protein Vir17, truncated, putative	383					
7	A	PVX_011610	variable surface protein Vir17, putative	362					
8	A	PVX_141260	variable surface protein Vir17, putative	385					

			pseudogene, putative			342	367	9
						171	194	11
						51	107	6
						110	132	72
						51	105	6
						117	126	72
12	Not clustered	PVX_153260	variable surface protein Vir17, truncated, putative	67		27	50	6
						52	65	8
						27	51	6
						27	50	6
						12	26	9
						27	51	6
13	Unavailable	PVX_171270	variable surface protein Vir17, pseudogene, putative	253		19	56	13
						199	213	9
						136	150	9
						152	161	9
14	Not clustered	PVX_144260	variable surface protein Vir17, putative, pseudogene	430		314	339	9
15	A	PVX_112645	variable surface protein Vir17-like	321		208	227	13
1	Not clustered	PVX_096980	variable surface protein Vir, putative	396		163	179	4
						281	295	74
						284	291	74
2	Not clustered	PVX_096970	variable surface protein Vir8-related	491		166	184	4
						285	304	74
						287	296	74
3	Not clustered	PVX_176270	variable surface protein Vir8	339		60	70	28
						281	300	74
						279	287	74
4		PVX_096975	hypothetical protein	556		172	183	4
						281	302	74
5		PVX_096965	hypothetical protein	285		119	136	4
6	Not clustered	PVX_096985	variable surface protein Vir, putative	387		260	276	74
						146	165	4
						268	292	74
						268	284	74
7	Not clustered	PVX_120840	variable surface protein Vir8-related	324		163	174	4
						145	208	40
						50	59	28
8		PVX_123205	CAF1 ribonuclease domain containing protein	2024				

9		PVX_092630	hypothetical protein, conserved	2712					
10		PVX_119620	hypothetical protein, conserved	1384					
11		PVX_183275	hypothetical protein	391					
12	Not clustered	PVX_086890	variable surface protein Vir8-like	271					
1	Not clustered	PVX_173270	variable surface protein Vir23, putative	346		336	345	5	
						70	87	4	
						146	172	17	
						31	67	4	
						207	238	5	
						258	290	6	
						275	290	6	
						275	293	6	
						113	145	7	
						113	147	7	
						178	206	10	
						291	301	74	
						302	334	5	
						181	199	10	
96	104	72							
2	Not clustered	PVX_011615	variable surface protein vir23, putative	351		341	351	5	
						75	91	4	
						152	178	17	
						40	72	4	
						212	244	5	
						263	295	6	
						280	295	6	
						280	298	6	
						117	151	7	
						117	152	7	
						183	211	10	
						296	306	74	
						307	339	5	
						186	204	10	
96	112	72							
101	113	72							
3	Not clustered	PVX_051190	variable surface protein Vir23, truncated, putative	286		276	286	5	
						36	53	4	
						116	139	17	
						1	33	4	
						173	205	5	
						206	230	6	
205	230	6							

							215	233	6
							35	78	72
							78	113	7
							144	172	10
							242	274	5
							147	165	10
							57	73	72
							62	74	72
4	Unavailable	PVX_103675	variable surface protein Vir23, pseudogene, putative	462		452	461	5	
						154	169	4	
						129	149	4	
						340	372	6	
						357	375	6	
						194	229	7	
						260	281	10	
						418	450	5	
						263	274	10	
						315	323	5	
5	Not clustered	PVX_069690	variable surface protein Vir23, putative	327		208	239	5	
						258	272	6	
						120	147	7	
						178	206	10	
						281	313	5	
						181	199	10	
6	Unavailable	PVX_005047	variable surface protein Vir22/23-related	527		458	478	5	
						144	167	17	
						391	425	17	
						174	186	10	
						90	100	72	
7	Not clustered	PVX_086880	variable surface protein Vir23-like	268		129	164	17	
						173	186	10	
						172	186	40	
8	Not clustered	PVX_096940	variable surface protein Vir24-related	292		87	94	72	
						89	99	72	
						257	284	13	
						89	101	72	
9	Not clustered	PVX_093725	variable surface protein Vir24-related	392		90	99	72	
						332	344	74	
						90	105	72	
						330	344	74	
						334	343	74	
						92	101	72	
						333	351	74	
						90	98	72	
						90	102	72	

1	Not clustered	PVX_131260	variable surface protein Vir12, truncated, putative	278		90	104	72	
						255	272	74	
						211	253	4	
						49	58	7	
						45	58	7	
						254	272	74	
						1	24	5	
						1	24	5	
						25	48	4	
						59	82	8	
						60	82	8	
						44	58	7	
						44	58	7	
						273	300	74	
2	Not clustered	PVX_043190	variable surface protein Vir12, truncated, putative	319		229	271	4	
						65	77	7	
						26	39	7	
						272	300	74	
						40	63	8	
						79	101	8	
						2	22	8	
						308	317	4	
						41	63	8	
						80	101	8	
						2	22	8	
						25	39	7	
						65	77	7	
						25	39	7	
65	77	7							
3	Not clustered	PVX_130260	variable surface protein Vir12, truncated, putative	108		45	65	74	
						1	43	4	
						44	65	74	
4	Not clustered	PVX_129260	variable surface protein Vir12, putative	59		73	84	4	
						1	16	74	
						1	16	74	
						24	35	4	
							8	16	74