

Pham 195565

1: Bernie_16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly with annotated starts, the track will be further scaled to only show that region of the ORF with annotated starts. This action will be indicated by adding "Zoomed" to the title. For starts, yellow indicates the location of called starts comprised solely of Glimmer/GeneMark auto-annotations, green indicates the location of called starts with at least 1 manual gene annotation.

Pham 195565 Report

This analysis was run 12/09/24 on database version 580.

Pham number 195565 has 70 members, 12 are drafts.

Phages represented in each track:

- Track 1 : Berrie_16
- Track 2 : YesChef_16, AGrandiflora_16, Powerpuff_16
- Track 3 : JuneStar_16
- Track 4 : Joemato_16, Simpson_18, Kaylissa_16
- Track 5 : Lizalica_16
- Track 6 : Cassia_16
- Track 7 : Iter_16, Ascela_16
- Track 8 : TforTroy_16
- Track 9 : Adumb2043_16, AEgle_16, Turab_16
- Track 10 : Crewmate_17, ObiToo_16
- Track 11 : Tallboi_16
- Track 12 : Elezi_16
- Track 13 : Nitro_16
- Track 14 : Niobe_16, Jstan_16, Asa16_16, London_16
- Track 15 : Pumpkins_16
- Track 16 : JohnDoe_16, Cyan_16
- Track 17 : Yang_16
- Track 18 : Pixelle_16
- Track 19 : Amyev_16, Tian_16
- Track 20 : Lego_16
- Track 21 : Mudpuppy_16, Warda_16, Tbone_16
- Track 22 : Tutumahutu_16
- Track 23 : Eraser_16
- Track 24 : IttyBittyPiggy_16
- Track 25 : Sue2_16
- Track 26 : Phives_17
- Track 27 : Wildwest_17
- Track 28 : MaGuCo_15
- Track 29 : Liebe_15, Maureen_15
- Track 30 : Tweety19_16, Snek_16
- Track 31 : Emotion_15
- Track 32 : VroomVroom_15
- Track 33 : MiniMommy_15
- Track 34 : ShakeltOph_16, JasmineDragon_15
- Track 35 : Typher_21
- Track 36 : Sucha_16
- Track 37 : TurboVicky_19

- Track 38 : SBlackberry_19
- Track 39 : Benry_19
- Track 40 : Goodman_20, Johann_20
- Track 41 : FireCastle_19
- Track 42 : Cicada_21
- Track 43 : Rasovi_19, Htur_19
- Track 44 : PermaG_20
- Track 45 : IndiRoo_20
- Track 46 : Jera_20
- Track 47 : Milani_20
- Track 48 : Zanella_19
- Track 49 : AnnabelLee_17
- Track 50 : TMaxx_17

Summary of Final Annotations (See graph section above for start numbers):

The start number called the most often in the published annotations is 4, it was called in 43 of the 58 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AEgle_16, AGrandiflora_16, Adumb2043_16, Amyev_16, Asa16_16, Ascela_16, Berrie_16, Cassia_16, Crewmate_17, Cyan_16, Elezi_16, Emotion_15, Eraser_16, Iter_16, IttyBittyPiggy_16, JasmineDragon_15, Joemato_16, JohnDoe_16, Jstan_16, JuneStar_16, Kaylissa_16, Lego_16, Liebe_15, Lizalica_16, London_16, MaGuCo_15, Maureen_15, MiniMommy_15, Mudpuppy_16, Niobe_16, Nitro_16, ObiToo_16, Phives_17, Pixelle_16, Powerpuff_16, Pumpkins_16, ShakeltOph_16, Simpson_18, Snek_16, Sue2_16, Tallboi_16, Tbone_16, TforTroy_16, Tian_16, Turab_16, Tutumahutu_16, Tweety19_16, VroomVroom_15, Warda_16, Wildwest_17, Yang_16, YesChef_16,

Genes that have the "Most Annotated" start but do not call it:

-

Genes that do not have the "Most Annotated" start:

- AnnabelLee_17, Benry_19, Cicada_21, FireCastle_19, Goodman_20, Htur_19, IndiRoo_20, Jera_20, Johann_20, Milani_20, PermaG_20, Rasovi_19, SBlackberry_19, Sucha_16, TMaxx_17, TurboVicky_19, Typher_21, Zanella_19,

Summary by start number:

Start 2:

- Found in 1 of 70 (1.4%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AnnabelLee_17 (FR),

Start 3:

- Found in 2 of 70 (2.9%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present

- Phage (with cluster) where this start called: TMaxx_17 (FR),

Start 4:

- Found in 52 of 70 (74.3%) of genes in pham
- Manual Annotations of this start: 43 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AEgle_16 (AZ1), AGrandiflora_16 (AZ1), Adumb2043_16 (AZ1), Amyev_16 (AZ1), Asa16_16 (AZ1), Ascela_16 (AZ1), Berrie_16 (AZ1), Cassia_16 (AZ1), Crewmate_17 (AZ1), Cyan_16 (AZ1), Elezi_16 (AZ1), Emotion_15 (AZ4), Eraser_16 (AZ1), Iter_16 (AZ1), IttyBittyPiggy_16 (AZ1), JasmineDragon_15 (AZ4), Joemato_16 (AZ1), JohnDoe_16 (AZ1), Jstan_16 (AZ1), JuneStar_16 (AZ1), Kaylissa_16 (AZ1), Lego_16 (AZ1), Liebe_15 (AZ2), Lizalica_16 (AZ1), London_16 (AZ1), MaGuCo_15 (AZ2), Maureen_15 (AZ2), MiniMommy_15 (AZ4), Mudpuppy_16 (AZ1), Niobe_16 (AZ1), Nitro_16 (AZ1), ObiToo_16 (AZ1), Phives_17 (AZ1), Pixelle_16 (AZ1), Powerpuff_16 (AZ1), Pumpkins_16 (AZ1), ShakeltOph_16 (AZ4), Simpson_18 (AZ1), Snek_16 (AZ3), Sue2_16 (AZ1), Tallboi_16 (AZ1), Tbone_16 (AZ1), TforTroy_16 (AZ1), Tian_16 (AZ1), Turab_16 (AZ1), Tutumahutu_16 (AZ1), Tweety19_16 (AZ3), VroomVroom_15 (AZ4), Warda_16 (AZ1), Wildwest_17 (AZ1), Yang_16 (AZ1), YesChef_16 (AZ1),

Start 6:

- Found in 16 of 70 (22.9%) of genes in pham
- Manual Annotations of this start: 15 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Berry_19 (EJ), Cicada_21 (EJ), FireCastle_19 (EJ), Goodman_20 (EJ), Htur_19 (EJ), IndiRoo_20 (EJ), Jera_20 (EJ), Johann_20 (EJ), Milani_20 (EJ), PermaG_20 (EJ), Rasovi_19 (EJ), SBlackberry_19 (EJ), Sucha_16 (EJ), TurboVicky_19 (EJ), Typher_21 (EJ), Zarella_19 (EJ),

Summary by clusters:

There are 6 clusters represented in this pham: FR, EJ, AZ1, AZ2, AZ3, AZ4,

Info for manual annotations of cluster AZ1:

- Start number 4 was manually annotated 35 times for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 4 was manually annotated 3 times for cluster AZ2.

Info for manual annotations of cluster AZ3:

- Start number 4 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster AZ4:

- Start number 4 was manually annotated 3 times for cluster AZ4.

Info for manual annotations of cluster EJ:

- Start number 6 was manually annotated 15 times for cluster EJ.

Gene Information:

Gene: AEgle_16 Start: 10734, Stop: 13058, Start Num: 4

Candidate Starts for AEgle_16:

(Start: 4 @10734 has 43 MA's), (12, 10890), (14, 10899), (18, 10914), (23, 10980), (25, 11040), (28, 11085), (32, 11157), (39, 11238), (40, 11241), (41, 11271), (44, 11325), (45, 11355), (50, 11412), (53, 11436), (59, 11496), (60, 11502), (96, 11721), (114, 11817), (120, 11850), (136, 11937), (145, 11991), (154, 12033), (162, 12072), (174, 12132), (203, 12273), (226, 12402), (228, 12411), (243, 12522), (258, 12654), (259, 12657), (265, 12690), (272, 12768), (276, 12807), (283, 12867), (292, 12957),

Gene: AGrandiflora_16 Start: 10727, Stop: 13042, Start Num: 4

Candidate Starts for AGrandiflora_16:

(Start: 4 @10727 has 43 MA's), (12, 10883), (14, 10892), (23, 10973), (24, 10985), (25, 11033), (26, 11036), (28, 11078), (32, 11150), (39, 11231), (40, 11234), (41, 11264), (44, 11318), (45, 11348), (50, 11405), (53, 11429), (59, 11489), (96, 11714), (114, 11810), (127, 11873), (128, 11882), (136, 11930), (137, 11939), (141, 11951), (145, 11984), (154, 12026), (162, 12065), (174, 12125), (203, 12266), (215, 12341), (217, 12353), (226, 12395), (228, 12404), (233, 12428), (240, 12497), (243, 12515), (255, 12626), (258, 12647), (259, 12650), (265, 12683), (272, 12761), (276, 12800), (283, 12860), (287, 12890), (292, 12941), (295, 12986), (298, 13031),

Gene: Adumb2043_16 Start: 10733, Stop: 13057, Start Num: 4

Candidate Starts for Adumb2043_16:

(Start: 4 @10733 has 43 MA's), (12, 10889), (14, 10898), (18, 10913), (23, 10979), (25, 11039), (28, 11084), (32, 11156), (39, 11237), (40, 11240), (41, 11270), (44, 11324), (45, 11354), (50, 11411), (53, 11435), (59, 11495), (60, 11501), (96, 11720), (114, 11816), (120, 11849), (136, 11936), (145, 11990), (154, 12032), (162, 12071), (174, 12131), (203, 12272), (226, 12401), (228, 12410), (243, 12521), (258, 12653), (259, 12656), (265, 12689), (272, 12767), (276, 12806), (283, 12866), (292, 12956),

Gene: Amyev_16 Start: 10746, Stop: 13070, Start Num: 4

Candidate Starts for Amyev_16:

(Start: 4 @10746 has 43 MA's), (12, 10902), (14, 10911), (23, 10992), (25, 11052), (28, 11097), (32, 11169), (35, 11229), (39, 11250), (40, 11253), (41, 11283), (44, 11337), (45, 11367), (50, 11424), (53, 11448), (59, 11508), (60, 11514), (78, 11634), (96, 11733), (114, 11829), (128, 11901), (136, 11949), (141, 11970), (145, 12003), (154, 12045), (162, 12084), (174, 12144), (176, 12159), (188, 12225), (212, 12348), (214, 12357), (226, 12414), (228, 12423), (236, 12480), (237, 12483), (243, 12534), (258, 12666), (259, 12669), (272, 12780), (276, 12819), (277, 12843), (292, 12969),

Gene: AnnabelLee_17 Start: 9567, Stop: 11855, Start Num: 2

Candidate Starts for AnnabelLee_17:

(2, 9567), (3, 9570), (9, 9669), (24, 9828), (36, 10044), (46, 10188), (61, 10335), (68, 10377), (89, 10545), (92, 10566), (102, 10620), (129, 10761), (130, 10773), (136, 10806), (140, 10821), (150, 10875), (151, 10878), (155, 10902), (165, 10938), (167, 10947), (170, 10968), (172, 10977), (173, 10983), (175, 10989), (176, 11001), (177, 11004), (183, 11034), (185, 11043), (200, 11112), (206, 11139), (207, 11142), (216, 11208), (220, 11229), (226, 11253), (232, 11277), (235, 11316), (244, 11385), (246, 11394), (249, 11421), (258, 11505), (259, 11508), (270, 11601), (271, 11607), (276, 11658), (277, 11682), (278, 11691), (286, 11736), (297, 11850),

Gene: Asa16_16 Start: 10703, Stop: 13027, Start Num: 4

Candidate Starts for Asa16_16:

(Start: 4 @10703 has 43 MA's), (11, 10856), (12, 10859), (14, 10868), (23, 10949), (25, 11009), (28, 11054), (32, 11126), (39, 11207), (40, 11210), (41, 11240), (44, 11294), (45, 11324), (50, 11381), (53, 11405), (59, 11465), (60, 11471), (65, 11495), (78, 11591), (96, 11690), (114, 11786), (120, 11819), (128, 11858), (136, 11906), (145, 11960), (154, 12002), (162, 12041), (166, 12059), (174, 12101), (192, 12194), (224, 12365), (228, 12380), (243, 12491), (258, 12623), (259, 12626), (265, 12659), (272, 12737), (276, 12776), (283, 12836), (292, 12926),

Gene: Ascela_16 Start: 10739, Stop: 13054, Start Num: 4

Candidate Starts for Ascela_16:

(Start: 4 @10739 has 43 MA's), (12, 10895), (17, 10913), (20, 10937), (23, 10985), (25, 11045), (28, 11090), (32, 11162), (40, 11246), (41, 11276), (44, 11330), (45, 11360), (50, 11417), (53, 11441), (59, 11501), (60, 11507), (96, 11726), (128, 11894), (136, 11942), (154, 12038), (162, 12077), (166, 12095), (174, 12137), (178, 12161), (188, 12218), (192, 12230), (212, 12341), (224, 12401), (228, 12416), (243, 12527), (255, 12638), (258, 12659), (259, 12662), (265, 12695), (272, 12773), (276, 12812), (287, 12902), (288, 12914), (295, 12998),

Gene: Benry_19 Start: 11509, Stop: 13800, Start Num: 6

Candidate Starts for Benry_19:

(Start: 6 @11509 has 15 MA's), (13, 11626), (19, 11659), (27, 11800), (32, 11878), (34, 11902), (42, 12034), (46, 12085), (49, 12136), (52, 12157), (62, 12235), (67, 12271), (68, 12274), (69, 12295), (80, 12352), (91, 12436), (98, 12481), (99, 12484), (103, 12502), (105, 12520), (109, 12544), (134, 12706), (146, 12772), (153, 12805), (157, 12826), (164, 12859), (165, 12862), (198, 13030), (202, 13048), (207, 13069), (218, 13147), (226, 13180), (239, 13279), (245, 13315), (246, 13321), (249, 13348), (253, 13387), (258, 13432), (261, 13444), (263, 13456), (264, 13465), (265, 13468), (276, 13582), (283, 13633), (284, 13639), (285, 13648),

Gene: Berrie_16 Start: 10711, Stop: 13188, Start Num: 4

Candidate Starts for Berrie_16:

(Start: 4 @10711 has 43 MA's), (12, 10867), (14, 10876), (23, 10957), (25, 11017), (28, 11062), (32, 11134), (40, 11218), (41, 11248), (44, 11302), (45, 11332), (50, 11389), (53, 11413), (59, 11473), (60, 11479), (65, 11503), (74, 11581), (88, 11713), (90, 11749), (96, 11791), (107, 11890), (115, 11962), (122, 12001), (128, 12028), (136, 12076), (145, 12130), (154, 12172), (161, 12208), (166, 12229), (174, 12271), (192, 12364), (212, 12475), (215, 12487), (224, 12535), (228, 12550), (258, 12793), (259, 12796), (272, 12907), (276, 12946), (285, 13021), (287, 13036), (295, 13132),

Gene: Cassia_16 Start: 10826, Stop: 13150, Start Num: 4

Candidate Starts for Cassia_16:

(Start: 4 @10826 has 43 MA's), (12, 10982), (14, 10991), (15, 10994), (23, 11072), (25, 11132), (32, 11249), (39, 11330), (40, 11333), (41, 11363), (45, 11447), (50, 11504), (53, 11528), (59, 11588), (60, 11594), (96, 11813), (128, 11981), (136, 12029), (145, 12083), (154, 12125), (162, 12164), (174, 12224), (192, 12317), (220, 12470), (222, 12482), (236, 12560), (237, 12563), (243, 12614), (258, 12746), (259, 12749), (272, 12860), (276, 12899),

Gene: Cicada_21 Start: 13577, Stop: 15565, Start Num: 6

Candidate Starts for Cicada_21:

(Start: 6 @13577 has 15 MA's), (7, 13616), (19, 13727), (21, 13742), (22, 13754), (32, 13946), (34, 13970), (37, 14012), (42, 14102), (46, 14153), (51, 14219), (61, 14300), (63, 14315), (67, 14339), (75, 14402), (81, 14426), (95, 14528), (99, 14552), (110, 14621), (113, 14654), (170, 14852), (198, 14879), (202, 14897), (216, 14951), (227, 14999), (230, 15011), (231, 15017), (238, 15083), (239, 15095), (268, 15272), (270, 15308), (273, 15338), (279, 15398), (296, 15539),

Gene: Crewmate_17 Start: 11180, Stop: 13486, Start Num: 4

Candidate Starts for Crewmate_17:

(Start: 4 @11180 has 43 MA's), (11, 11333), (12, 11336), (14, 11345), (25, 11486), (32, 11603), (40, 11687), (41, 11717), (44, 11771), (50, 11858), (53, 11882), (59, 11942), (60, 11948), (69, 12014), (95, 12164), (96, 12167), (127, 12326), (128, 12335), (136, 12383), (145, 12437), (154, 12479), (162, 12518), (174, 12578), (176, 12593), (192, 12671), (203, 12719), (215, 12794), (217, 12806), (226, 12848), (228, 12857), (243, 12968), (258, 13100), (259, 13103), (272, 13214), (276, 13253), (281, 13307), (285, 13328), (287, 13343), (294, 13421),

Gene: Cyan_16 Start: 10730, Stop: 13045, Start Num: 4

Candidate Starts for Cyan_16:

(Start: 4 @10730 has 43 MA's), (12, 10886), (14, 10895), (23, 10976), (24, 10988), (25, 11036), (32, 11153), (39, 11234), (40, 11237), (41, 11267), (44, 11321), (45, 11351), (50, 11408), (53, 11432), (59, 11492), (96, 11717), (114, 11813), (128, 11885), (136, 11933), (145, 11987), (154, 12029), (162, 12068), (174, 12128), (228, 12407), (233, 12431), (236, 12464), (237, 12467), (243, 12518), (255, 12629), (258, 12650), (259, 12653), (265, 12686), (272, 12764), (276, 12803), (283, 12863), (287, 12893), (292, 12944), (295, 12989), (298, 13034),

Gene: Elezi_16 Start: 10704, Stop: 13028, Start Num: 4

Candidate Starts for Elezi_16:

(Start: 4 @10704 has 43 MA's), (11, 10857), (12, 10860), (14, 10869), (23, 10950), (25, 11010), (28, 11055), (32, 11127), (39, 11208), (40, 11211), (41, 11241), (44, 11295), (45, 11325), (50, 11382), (53, 11406), (59, 11466), (60, 11472), (65, 11496), (78, 11592), (96, 11691), (114, 11787), (128, 11859), (136, 11907), (145, 11961), (154, 12003), (162, 12042), (166, 12060), (174, 12102), (192, 12195), (224, 12366), (228, 12381), (243, 12492), (258, 12624), (259, 12627), (265, 12660), (272, 12738), (276, 12777), (283, 12837), (292, 12927),

Gene: Emotion_15 Start: 9044, Stop: 11284, Start Num: 4

Candidate Starts for Emotion_15:

(Start: 4 @9044 has 43 MA's), (8, 9131), (19, 9233), (24, 9299), (30, 9404), (36, 9515), (38, 9521), (46, 9659), (48, 9704), (61, 9806), (64, 9824), (82, 9938), (104, 10034), (116, 10121), (124, 10160), (130, 10184), (133, 10208), (136, 10217), (141, 10235), (144, 10262), (155, 10313), (158, 10325), (171, 10382), (181, 10436), (188, 10478), (214, 10607), (226, 10664), (244, 10796), (245, 10799), (258, 10916), (270, 11012), (271, 11018), (274, 11048),

Gene: Eraser_16 Start: 10704, Stop: 13028, Start Num: 4

Candidate Starts for Eraser_16:

(Start: 4 @10704 has 43 MA's), (11, 10857), (12, 10860), (14, 10869), (23, 10950), (25, 11010), (28, 11055), (32, 11127), (39, 11208), (40, 11211), (41, 11241), (44, 11295), (45, 11325), (50, 11382), (53, 11406), (59, 11466), (60, 11472), (65, 11496), (78, 11592), (96, 11691), (114, 11787), (120, 11820), (128, 11859), (136, 11907), (145, 11961), (154, 12003), (162, 12042), (166, 12060), (174, 12102), (192, 12195), (224, 12366), (228, 12381), (243, 12492), (258, 12624), (259, 12627), (265, 12660), (272, 12738), (276, 12777), (283, 12837),

Gene: FireCastle_19 Start: 13235, Stop: 15373, Start Num: 6

Candidate Starts for FireCastle_19:

(Start: 6 @13235 has 15 MA's), (19, 13385), (32, 13604), (33, 13619), (37, 13670), (46, 13811), (48, 13856), (51, 13877), (54, 13901), (63, 13973), (67, 13997), (68, 14000), (76, 14069), (80, 14078), (81, 14084), (91, 14162), (93, 14168), (99, 14210), (110, 14279), (112, 14294), (113, 14312), (126, 14345), (131, 14378), (159, 14477), (165, 14501), (170, 14534), (219, 14756), (229, 14798), (231, 14807), (238, 14873), (261, 15017), (268, 15062), (269, 15083), (270, 15098), (273, 15128), (279, 15188), (284, 15212),

Gene: Goodman_20 Start: 13490, Stop: 15478, Start Num: 6

Candidate Starts for Goodman_20:

(1, 13391), (Start: 6 @13490 has 15 MA's), (19, 13640), (21, 13655), (22, 13667), (32, 13859), (34, 13883), (37, 13925), (42, 14015), (46, 14066), (51, 14132), (61, 14213), (63, 14228), (67, 14252), (81, 14339), (95, 14441), (99, 14465), (110, 14534), (113, 14567), (170, 14765), (198, 14792), (202, 14810), (216, 14864), (227, 14912), (230, 14924), (231, 14930), (238, 14996), (239, 15008), (240, 15011), (268, 15185), (270, 15221), (273, 15251), (279, 15311), (296, 15452),

Gene: Htur_19 Start: 13514, Stop: 15508, Start Num: 6

Candidate Starts for Htur_19:

(Start: 6 @13514 has 15 MA's), (7, 13553), (19, 13664), (21, 13679), (22, 13691), (27, 13805), (32, 13883), (34, 13907), (42, 14039), (46, 14090), (51, 14156), (63, 14252), (81, 14363), (99, 14489), (109, 14549), (112, 14573), (113, 14591), (126, 14624), (163, 14771), (170, 14789), (200, 14822), (203, 14837), (219, 14903), (248, 15062), (249, 15068), (250, 15074), (258, 15152), (262, 15167), (268, 15209), (273, 15275), (280, 15344), (296, 15482),

Gene: IndiRoo_20 Start: 11519, Stop: 13810, Start Num: 6

Candidate Starts for IndiRoo_20:

(Start: 6 @11519 has 15 MA's), (13, 11636), (19, 11669), (27, 11810), (32, 11888), (34, 11912), (42, 12044), (46, 12095), (49, 12146), (62, 12245), (68, 12284), (71, 12332), (80, 12362), (91, 12446), (99, 12494), (103, 12512), (110, 12563), (119, 12629), (134, 12716), (146, 12782), (150, 12797), (153, 12815), (157, 12836), (164, 12869), (202, 13058), (207, 13079), (209, 13091), (210, 13100), (218, 13157), (226, 13190), (231, 13211), (239, 13289), (241, 13301), (246, 13331), (249, 13358), (258, 13442), (261, 13454), (264, 13475), (265, 13478), (276, 13592), (283, 13643), (285, 13658),

Gene: Iter_16 Start: 10739, Stop: 13054, Start Num: 4

Candidate Starts for Iter_16:

(Start: 4 @10739 has 43 MA's), (12, 10895), (17, 10913), (20, 10937), (23, 10985), (25, 11045), (28, 11090), (32, 11162), (40, 11246), (41, 11276), (44, 11330), (45, 11360), (50, 11417), (53, 11441), (59, 11501), (60, 11507), (96, 11726), (128, 11894), (136, 11942), (154, 12038), (162, 12077), (166, 12095), (174, 12137), (178, 12161), (188, 12218), (192, 12230), (212, 12341), (224, 12401), (228, 12416), (243, 12527), (255, 12638), (258, 12659), (259, 12662), (265, 12695), (272, 12773), (276, 12812), (287, 12902), (288, 12914), (295, 12998),

Gene: IttyBittyPiggy_16 Start: 10723, Stop: 13035, Start Num: 4

Candidate Starts for IttyBittyPiggy_16:

(Start: 4 @10723 has 43 MA's), (12, 10879), (18, 10903), (23, 10969), (24, 10981), (25, 11029), (32, 11146), (39, 11227), (40, 11230), (41, 11260), (45, 11344), (50, 11401), (53, 11425), (59, 11485), (60, 11491), (120, 11839), (128, 11878), (136, 11926), (145, 11980), (154, 12022), (162, 12061), (174, 12121), (192, 12214), (221, 12370), (223, 12382), (226, 12391), (243, 12511), (258, 12643), (259, 12646), (272, 12757), (276, 12796), (277, 12820), (283, 12856), (285, 12871), (294, 12970),

Gene: JasmineDragon_15 Start: 8971, Stop: 11214, Start Num: 4

Candidate Starts for JasmineDragon_15:

(Start: 4 @8971 has 43 MA's), (8, 9058), (19, 9160), (24, 9226), (30, 9331), (36, 9442), (38, 9448), (43, 9544), (46, 9586), (61, 9733), (64, 9751), (82, 9868), (86, 9895), (95, 9928), (104, 9964), (111, 10012), (116, 10051), (124, 10090), (133, 10138), (136, 10147), (138, 10156), (141, 10165), (147, 10207), (155, 10243), (158, 10255), (168, 10300), (169, 10306), (175, 10330), (181, 10366), (185, 10384), (188, 10408), (191, 10417), (194, 10429), (199, 10450), (200, 10453), (207, 10483), (245, 10729), (258, 10846), (270, 10942), (271, 10948), (274, 10978),

Gene: Jera_20 Start: 12587, Stop: 14575, Start Num: 6

Candidate Starts for Jera_20:

(Start: 6 @12587 has 15 MA's), (7, 12626), (19, 12737), (21, 12752), (22, 12764), (32, 12956), (34, 12980), (46, 13163), (51, 13229), (63, 13325), (67, 13349), (81, 13436), (95, 13538), (99, 13562), (110, 13631), (113, 13664), (126, 13697), (159, 13829), (198, 13889), (212, 13940), (227, 14009), (230, 14021), (231, 14027), (268, 14282), (273, 14348), (279, 14408), (296, 14549),

Gene: Joemato_16 Start: 10730, Stop: 13045, Start Num: 4

Candidate Starts for Joemato_16:

(Start: 4 @10730 has 43 MA's), (12, 10886), (14, 10895), (23, 10976), (24, 10988), (25, 11036), (32, 11153), (39, 11234), (40, 11237), (41, 11267), (44, 11321), (45, 11351), (50, 11408), (53, 11432), (59, 11492), (96, 11717), (114, 11813), (128, 11885), (136, 11933), (145, 11987), (154, 12029), (162, 12068), (174, 12128), (228, 12407), (233, 12431), (236, 12464), (237, 12467), (243, 12518), (255, 12629), (258, 12650), (259, 12653), (265, 12686), (272, 12764), (275, 12785), (276, 12803), (283, 12863), (287, 12893), (292, 12944), (295, 12989), (298, 13034),

Gene: Johann_20 Start: 13490, Stop: 15478, Start Num: 6

Candidate Starts for Johann_20:

(1, 13391), (Start: 6 @13490 has 15 MA's), (19, 13640), (21, 13655), (22, 13667), (32, 13859), (34, 13883), (37, 13925), (42, 14015), (46, 14066), (51, 14132), (61, 14213), (63, 14228), (67, 14252), (81, 14339), (95, 14441), (99, 14465), (110, 14534), (113, 14567), (170, 14765), (198, 14792), (202, 14810), (216, 14864), (227, 14912), (230, 14924), (231, 14930), (238, 14996), (239, 15008), (240, 15011), (268, 15185), (270, 15221), (273, 15251), (279, 15311), (296, 15452),

Gene: JohnDoe_16 Start: 10725, Stop: 13040, Start Num: 4

Candidate Starts for JohnDoe_16:

(Start: 4 @10725 has 43 MA's), (12, 10881), (14, 10890), (23, 10971), (24, 10983), (25, 11031), (32, 11148), (39, 11229), (40, 11232), (41, 11262), (44, 11316), (45, 11346), (50, 11403), (53, 11427), (59, 11487), (96, 11712), (114, 11808), (128, 11880), (136, 11928), (145, 11982), (154, 12024), (162, 12063), (174, 12123), (228, 12402), (233, 12426), (236, 12459), (237, 12462), (243, 12513), (255, 12624), (258, 12645), (259, 12648), (265, 12681), (272, 12759), (276, 12798), (283, 12858), (287, 12888), (292, 12939), (295, 12984), (298, 13029),

Gene: Jstan_16 Start: 10704, Stop: 13028, Start Num: 4

Candidate Starts for Jstan_16:

(Start: 4 @10704 has 43 MA's), (11, 10857), (12, 10860), (14, 10869), (23, 10950), (25, 11010), (28, 11055), (32, 11127), (39, 11208), (40, 11211), (41, 11241), (44, 11295), (45, 11325), (50, 11382), (53, 11406), (59, 11466), (60, 11472), (65, 11496), (78, 11592), (96, 11691), (114, 11787), (120, 11820), (128, 11859), (136, 11907), (145, 11961), (154, 12003), (162, 12042), (166, 12060), (174, 12102), (192, 12195), (224, 12366), (228, 12381), (243, 12492), (258, 12624), (259, 12627), (265, 12660), (272, 12738), (276, 12777), (283, 12837), (292, 12927),

Gene: JuneStar_16 Start: 10824, Stop: 13148, Start Num: 4

Candidate Starts for JuneStar_16:

(Start: 4 @10824 has 43 MA's), (17, 10998), (20, 11022), (23, 11070), (25, 11130), (31, 11235), (32, 11247), (39, 11328), (40, 11331), (41, 11361), (44, 11415), (45, 11445), (47, 11487), (50, 11502), (53, 11526), (55, 11556), (59, 11586), (60, 11592), (96, 11811), (120, 11940), (128, 11979), (136, 12027), (141, 12048), (145, 12081), (154, 12123), (162, 12162), (174, 12222), (192, 12315), (208, 12384), (243, 12612), (255, 12723), (258, 12744), (259, 12747), (272, 12858), (276, 12897),

Gene: Kaylissa_16 Start: 10731, Stop: 13046, Start Num: 4

Candidate Starts for Kaylissa_16:

(Start: 4 @10731 has 43 MA's), (12, 10887), (14, 10896), (23, 10977), (24, 10989), (25, 11037), (32, 11154), (39, 11235), (40, 11238), (41, 11268), (44, 11322), (45, 11352), (50, 11409), (53, 11433), (59, 11493), (96, 11718), (114, 11814), (128, 11886), (136, 11934), (145, 11988), (154, 12030), (162, 12069), (174, 12129), (228, 12408), (233, 12432), (236, 12465), (237, 12468), (243, 12519), (255, 12630), (258, 12651), (259, 12654), (265, 12687), (272, 12765), (275, 12786), (276, 12804), (283, 12864), (287, 12894), (292, 12945), (295, 12990), (298, 13035),

Gene: Lego_16 Start: 10730, Stop: 13045, Start Num: 4

Candidate Starts for Lego_16:

(Start: 4 @10730 has 43 MA's), (12, 10886), (14, 10895), (23, 10976), (24, 10988), (25, 11036), (26, 11039), (28, 11081), (32, 11153), (39, 11234), (40, 11237), (41, 11267), (44, 11321), (45, 11351), (50, 11408), (53, 11432), (59, 11492), (96, 11717), (114, 11813), (127, 11876), (128, 11885), (136, 11933), (137, 11942), (141, 11954), (145, 11987), (154, 12029), (162, 12068), (174, 12128), (203, 12269), (215, 12344), (217, 12356), (226, 12398), (228, 12407), (233, 12431), (243, 12518), (255, 12629), (258, 12650), (259, 12653), (265, 12686), (272, 12764), (276, 12803), (283, 12863), (287, 12893), (292, 12944), (295, 12989), (298, 13034),

Gene: Liebe_15 Start: 9206, Stop: 11569, Start Num: 4

Candidate Starts for Liebe_15:

(Start: 4 @9206 has 43 MA's), (19, 9395), (24, 9461), (27, 9536), (31, 9602), (36, 9677), (37, 9680), (38, 9683), (42, 9770), (43, 9779), (46, 9821), (61, 9968), (64, 9986), (72, 10061), (77, 10094), (83, 10127), (100, 10268), (119, 10391), (121, 10400), (130, 10439), (132, 10457), (136, 10472), (147, 10532), (149, 10538), (151, 10544), (152, 10556), (153, 10559), (167, 10613), (168, 10625), (171, 10637), (174, 10652), (187, 10724), (191, 10742), (193, 10751), (197, 10766), (200, 10778), (204, 10796), (207, 10808), (241, 11030), (258, 11171), (259, 11174), (265, 11207), (266, 11222), (267, 11228), (270, 11267), (276, 11324), (279, 11366), (287, 11414),

Gene: Lizalica_16 Start: 10715, Stop: 13030, Start Num: 4

Candidate Starts for Lizalica_16:

(Start: 4 @10715 has 43 MA's), (12, 10871), (14, 10880), (23, 10961), (24, 10973), (25, 11021), (26, 11024), (28, 11066), (32, 11138), (39, 11219), (40, 11222), (41, 11252), (44, 11306), (45, 11336), (50, 11393), (53, 11417), (59, 11477), (96, 11702), (114, 11798), (128, 11870), (136, 11918), (145, 11972), (154, 12014), (162, 12053), (174, 12113), (203, 12254), (226, 12383), (228, 12392), (233, 12416), (240, 12485), (243, 12503), (255, 12614), (258, 12635), (259, 12638), (265, 12671), (272, 12749), (276, 12788), (283, 12848), (287, 12878), (292, 12929), (295, 12974), (298, 13019),

Gene: London_16 Start: 10704, Stop: 13028, Start Num: 4

Candidate Starts for London_16:

(Start: 4 @10704 has 43 MA's), (11, 10857), (12, 10860), (14, 10869), (23, 10950), (25, 11010), (28, 11055), (32, 11127), (39, 11208), (40, 11211), (41, 11241), (44, 11295), (45, 11325), (50, 11382), (53, 11406), (59, 11466), (60, 11472), (65, 11496), (78, 11592), (96, 11691), (114, 11787), (120, 11820), (128, 11859), (136, 11907), (145, 11961), (154, 12003), (162, 12042), (166, 12060), (174, 12102), (192, 12195), (224, 12366), (228, 12381), (243, 12492), (258, 12624), (259, 12627), (265, 12660), (272, 12738), (276, 12777), (283, 12837), (292, 12927),

Gene: MaGuCo_15 Start: 9140, Stop: 11503, Start Num: 4

Candidate Starts for MaGuCo_15:

(Start: 4 @9140 has 43 MA's), (19, 9329), (24, 9395), (27, 9470), (36, 9611), (37, 9614), (38, 9617), (42, 9704), (43, 9713), (46, 9755), (48, 9800), (61, 9902), (64, 9920), (77, 10028), (83, 10061), (100, 10202), (115, 10304), (119, 10325), (121, 10334), (130, 10373), (132, 10391), (135, 10403), (136, 10406), (147, 10466), (149, 10472), (151, 10478), (152, 10490), (153, 10493), (158, 10514), (167, 10547), (168, 10559), (171, 10571), (174, 10586), (187, 10658), (190, 10670), (191, 10676), (193, 10685), (197, 10700), (200, 10712), (204, 10730), (207, 10742), (241, 10964), (258, 11105), (259, 11108), (265, 11141), (267, 11162), (270, 11201), (276, 11258), (279, 11300), (287, 11348),

Gene: Maureen_15 Start: 9206, Stop: 11569, Start Num: 4

Candidate Starts for Maureen_15:

(Start: 4 @9206 has 43 MA's), (19, 9395), (24, 9461), (27, 9536), (31, 9602), (36, 9677), (37, 9680), (38, 9683), (42, 9770), (43, 9779), (46, 9821), (61, 9968), (64, 9986), (72, 10061), (77, 10094), (83, 10127), (100, 10268), (119, 10391), (121, 10400), (130, 10439), (132, 10457), (136, 10472), (147, 10532), (149, 10538), (151, 10544), (152, 10556), (153, 10559), (167, 10613), (168, 10625), (171, 10637), (174, 10652), (187, 10724), (191, 10742), (193, 10751), (197, 10766), (200, 10778), (204,

10796), (207, 10808), (241, 11030), (258, 11171), (259, 11174), (265, 11207), (266, 11222), (267, 11228), (270, 11267), (276, 11324), (279, 11366), (287, 11414),

Gene: Milani_20 Start: 12168, Stop: 14459, Start Num: 6

Candidate Starts for Milani_20:

(Start: 6 @12168 has 15 MA's), (13, 12285), (19, 12318), (22, 12345), (32, 12537), (42, 12693), (46, 12744), (49, 12795), (52, 12816), (57, 12873), (67, 12930), (81, 13017), (85, 13044), (87, 13065), (91, 13095), (92, 13098), (110, 13212), (132, 13356), (153, 13464), (164, 13518), (185, 13629), (202, 13707), (207, 13728), (209, 13740), (211, 13761), (218, 13806), (233, 13872), (239, 13938), (245, 13974), (246, 13980), (249, 14007), (253, 14046), (258, 14091), (259, 14094), (261, 14103), (263, 14115), (264, 14124), (265, 14127), (276, 14241), (283, 14292), (284, 14298),

Gene: MiniMommy_15 Start: 8972, Stop: 11215, Start Num: 4

Candidate Starts for MiniMommy_15:

(Start: 4 @8972 has 43 MA's), (8, 9059), (19, 9161), (24, 9227), (30, 9332), (36, 9443), (38, 9449), (43, 9545), (46, 9587), (61, 9734), (64, 9752), (82, 9869), (86, 9896), (95, 9929), (104, 9965), (111, 10013), (116, 10052), (124, 10091), (130, 10115), (133, 10139), (136, 10148), (138, 10157), (141, 10166), (147, 10208), (155, 10244), (158, 10256), (168, 10301), (169, 10307), (175, 10331), (181, 10367), (185, 10385), (188, 10409), (191, 10418), (194, 10430), (199, 10451), (200, 10454), (207, 10484), (245, 10730), (258, 10847), (270, 10943), (271, 10949), (274, 10979),

Gene: Mudpuppy_16 Start: 10729, Stop: 13044, Start Num: 4

Candidate Starts for Mudpuppy_16:

(Start: 4 @10729 has 43 MA's), (12, 10885), (14, 10894), (23, 10975), (24, 10987), (25, 11035), (26, 11038), (28, 11080), (32, 11152), (39, 11233), (40, 11236), (41, 11266), (44, 11320), (45, 11350), (50, 11407), (53, 11431), (59, 11491), (96, 11716), (114, 11812), (127, 11875), (128, 11884), (136, 11932), (141, 11953), (145, 11986), (154, 12028), (162, 12067), (174, 12127), (203, 12268), (226, 12397), (228, 12406), (233, 12430), (236, 12463), (240, 12499), (243, 12517), (255, 12628), (258, 12649), (259, 12652), (265, 12685), (272, 12763), (276, 12802), (283, 12862), (287, 12892), (292, 12943), (295, 12988), (298, 13033),

Gene: Niobe_16 Start: 10704, Stop: 13028, Start Num: 4

Candidate Starts for Niobe_16:

(Start: 4 @10704 has 43 MA's), (11, 10857), (12, 10860), (14, 10869), (23, 10950), (25, 11010), (28, 11055), (32, 11127), (39, 11208), (40, 11211), (41, 11241), (44, 11295), (45, 11325), (50, 11382), (53, 11406), (59, 11466), (60, 11472), (65, 11496), (78, 11592), (96, 11691), (114, 11787), (120, 11820), (128, 11859), (136, 11907), (145, 11961), (154, 12003), (162, 12042), (166, 12060), (174, 12102), (192, 12195), (224, 12366), (228, 12381), (243, 12492), (258, 12624), (259, 12627), (265, 12660), (272, 12738), (276, 12777), (283, 12837), (292, 12927),

Gene: Nitro_16 Start: 10728, Stop: 13052, Start Num: 4

Candidate Starts for Nitro_16:

(Start: 4 @10728 has 43 MA's), (10, 10875), (12, 10884), (20, 10926), (23, 10974), (25, 11034), (28, 11079), (32, 11151), (35, 11211), (40, 11235), (41, 11265), (44, 11319), (45, 11349), (50, 11406), (53, 11430), (59, 11490), (60, 11496), (73, 11595), (95, 11712), (114, 11811), (128, 11883), (136, 11931), (154, 12027), (162, 12066), (166, 12084), (174, 12126), (176, 12141), (192, 12219), (224, 12390), (228, 12405), (236, 12462), (240, 12498), (243, 12516), (258, 12648), (259, 12651), (265, 12684), (272, 12762), (276, 12801), (283, 12861), (292, 12951), (295, 12996), (298, 13041),

Gene: ObiToo_16 Start: 10917, Stop: 13223, Start Num: 4

Candidate Starts for ObiToo_16:

(Start: 4 @10917 has 43 MA's), (11, 11070), (12, 11073), (14, 11082), (25, 11223), (32, 11340), (40, 11424), (41, 11454), (44, 11508), (50, 11595), (53, 11619), (59, 11679), (60, 11685), (69, 11751), (95,

11901), (96, 11904), (127, 12063), (128, 12072), (136, 12120), (145, 12174), (154, 12216), (162, 12255), (174, 12315), (176, 12330), (192, 12408), (203, 12456), (215, 12531), (217, 12543), (226, 12585), (228, 12594), (243, 12705), (258, 12837), (259, 12840), (272, 12951), (276, 12990), (281, 13044), (285, 13065), (287, 13080), (294, 13158),

Gene: PermaG_20 Start: 13551, Stop: 15539, Start Num: 6

Candidate Starts for PermaG_20:

(Start: 6 @13551 has 15 MA's), (7, 13590), (19, 13701), (21, 13716), (22, 13728), (32, 13920), (34, 13944), (37, 13986), (42, 14076), (43, 14085), (46, 14127), (51, 14193), (61, 14274), (63, 14289), (67, 14313), (76, 14385), (81, 14400), (95, 14502), (99, 14526), (110, 14595), (113, 14628), (131, 14694), (170, 14826), (198, 14853), (216, 14925), (222, 14958), (230, 14985), (231, 14991), (234, 15024), (268, 15246), (270, 15282), (273, 15312), (279, 15372), (296, 15513),

Gene: Phives_17 Start: 11806, Stop: 14130, Start Num: 4

Candidate Starts for Phives_17:

(Start: 4 @11806 has 43 MA's), (12, 11962), (14, 11971), (23, 12052), (25, 12112), (28, 12157), (32, 12229), (35, 12289), (39, 12310), (40, 12313), (41, 12343), (44, 12397), (45, 12427), (50, 12484), (53, 12508), (59, 12568), (60, 12574), (96, 12793), (120, 12922), (127, 12952), (128, 12961), (136, 13009), (141, 13030), (145, 13063), (154, 13105), (162, 13144), (174, 13204), (176, 13219), (192, 13297), (205, 13354), (221, 13453), (223, 13465), (226, 13474), (233, 13507), (236, 13540), (237, 13543), (243, 13594), (258, 13726), (259, 13729), (272, 13840), (276, 13879), (283, 13939), (290, 13990), (292, 14029),

Gene: Pixelle_16 Start: 10749, Stop: 13073, Start Num: 4

Candidate Starts for Pixelle_16:

(Start: 4 @10749 has 43 MA's), (12, 10905), (14, 10914), (23, 10995), (25, 11055), (28, 11100), (32, 11172), (39, 11253), (40, 11256), (41, 11286), (44, 11340), (45, 11370), (50, 11427), (53, 11451), (58, 11505), (59, 11511), (60, 11517), (96, 11736), (128, 11904), (136, 11952), (141, 11973), (145, 12006), (154, 12048), (162, 12087), (174, 12147), (176, 12162), (188, 12228), (212, 12351), (226, 12417), (228, 12426), (236, 12483), (237, 12486), (243, 12537), (258, 12669), (259, 12672), (272, 12783), (276, 12822), (277, 12846), (292, 12972),

Gene: Powerpuff_16 Start: 10781, Stop: 13096, Start Num: 4

Candidate Starts for Powerpuff_16:

(Start: 4 @10781 has 43 MA's), (12, 10937), (14, 10946), (23, 11027), (24, 11039), (25, 11087), (26, 11090), (28, 11132), (32, 11204), (39, 11285), (40, 11288), (41, 11318), (44, 11372), (45, 11402), (50, 11459), (53, 11483), (59, 11543), (96, 11768), (114, 11864), (127, 11927), (128, 11936), (136, 11984), (137, 11993), (141, 12005), (145, 12038), (154, 12080), (162, 12119), (174, 12179), (203, 12320), (215, 12395), (217, 12407), (226, 12449), (228, 12458), (233, 12482), (240, 12551), (243, 12569), (255, 12680), (258, 12701), (259, 12704), (265, 12737), (272, 12815), (276, 12854), (283, 12914), (287, 12944), (292, 12995), (295, 13040), (298, 13085),

Gene: Pumpkins_16 Start: 10836, Stop: 13160, Start Num: 4

Candidate Starts for Pumpkins_16:

(Start: 4 @10836 has 43 MA's), (12, 10992), (14, 11001), (15, 11004), (17, 11010), (23, 11082), (25, 11142), (32, 11259), (39, 11340), (40, 11343), (41, 11373), (45, 11457), (50, 11514), (53, 11538), (59, 11598), (60, 11604), (96, 11823), (128, 11991), (136, 12039), (145, 12093), (154, 12135), (162, 12174), (192, 12327), (220, 12480), (222, 12492), (236, 12570), (237, 12573), (243, 12624), (258, 12756), (259, 12759), (265, 12792), (272, 12870), (276, 12909),

Gene: Rasovi_19 Start: 13514, Stop: 15508, Start Num: 6

Candidate Starts for Rasovi_19:

(Start: 6 @13514 has 15 MA's), (7, 13553), (19, 13664), (21, 13679), (22, 13691), (27, 13805), (32, 13883), (34, 13907), (42, 14039), (46, 14090), (51, 14156), (63, 14252), (81, 14363), (99, 14489), (109, 14549), (112, 14573), (113, 14591), (126, 14624), (163, 14771), (170, 14789), (200, 14822), (203, 14837), (219, 14903), (248, 15062), (249, 15068), (250, 15074), (258, 15152), (262, 15167), (268, 15209), (273, 15275), (280, 15344), (296, 15482),

Gene: SBlackberry_19 Start: 13346, Stop: 15334, Start Num: 6

Candidate Starts for SBlackberry_19:

(Start: 6 @13346 has 15 MA's), (7, 13385), (19, 13496), (21, 13511), (22, 13523), (32, 13715), (34, 13739), (46, 13922), (51, 13988), (63, 14084), (67, 14108), (81, 14195), (95, 14297), (99, 14321), (110, 14390), (113, 14423), (159, 14588), (170, 14621), (198, 14648), (202, 14666), (227, 14768), (230, 14780), (231, 14786), (240, 14867), (268, 15041), (273, 15107), (279, 15167), (280, 15176), (296, 15308),

Gene: ShakeltOph_16 Start: 8971, Stop: 11214, Start Num: 4

Candidate Starts for ShakeltOph_16:

(Start: 4 @8971 has 43 MA's), (8, 9058), (19, 9160), (24, 9226), (30, 9331), (36, 9442), (38, 9448), (43, 9544), (46, 9586), (61, 9733), (64, 9751), (82, 9868), (86, 9895), (95, 9928), (104, 9964), (111, 10012), (116, 10051), (124, 10090), (133, 10138), (136, 10147), (138, 10156), (141, 10165), (147, 10207), (155, 10243), (158, 10255), (168, 10300), (169, 10306), (175, 10330), (181, 10366), (185, 10384), (188, 10408), (191, 10417), (194, 10429), (199, 10450), (200, 10453), (207, 10483), (245, 10729), (258, 10846), (270, 10942), (271, 10948), (274, 10978),

Gene: Simpson_18 Start: 10730, Stop: 13045, Start Num: 4

Candidate Starts for Simpson_18:

(Start: 4 @10730 has 43 MA's), (12, 10886), (14, 10895), (23, 10976), (24, 10988), (25, 11036), (32, 11153), (39, 11234), (40, 11237), (41, 11267), (44, 11321), (45, 11351), (50, 11408), (53, 11432), (59, 11492), (96, 11717), (114, 11813), (128, 11885), (136, 11933), (145, 11987), (154, 12029), (162, 12068), (174, 12128), (228, 12407), (233, 12431), (236, 12464), (237, 12467), (243, 12518), (255, 12629), (258, 12650), (259, 12653), (265, 12686), (272, 12764), (275, 12785), (276, 12803), (283, 12863), (287, 12893), (292, 12944), (295, 12989), (298, 13034),

Gene: Snek_16 Start: 9838, Stop: 12117, Start Num: 4

Candidate Starts for Snek_16:

(Start: 4 @9838 has 43 MA's), (21, 10042), (24, 10093), (29, 10195), (33, 10261), (36, 10309), (38, 10315), (42, 10402), (43, 10411), (46, 10453), (48, 10498), (61, 10600), (64, 10618), (82, 10747), (84, 10762), (94, 10804), (97, 10825), (101, 10840), (119, 10951), (133, 11023), (136, 11032), (138, 11041), (142, 11053), (149, 11098), (151, 11104), (153, 11119), (158, 11140), (168, 11185), (184, 11263), (200, 11338), (204, 11356), (232, 11503), (245, 11614), (252, 11677), (254, 11698), (257, 11725), (260, 11740), (271, 11830), (274, 11860), (280, 11926), (296, 12052), (299, 12091),

Gene: Sucha_16 Start: 10506, Stop: 12797, Start Num: 6

Candidate Starts for Sucha_16:

(Start: 6 @10506 has 15 MA's), (13, 10623), (19, 10656), (27, 10797), (32, 10875), (42, 11031), (46, 11082), (49, 11133), (52, 11154), (67, 11268), (68, 11271), (69, 11292), (80, 11349), (98, 11478), (99, 11481), (103, 11499), (105, 11517), (109, 11541), (134, 11703), (150, 11784), (153, 11802), (157, 11823), (164, 11856), (165, 11859), (186, 11964), (189, 11988), (207, 12066), (208, 12069), (211, 12099), (218, 12144), (226, 12177), (239, 12276), (245, 12312), (246, 12318), (249, 12345), (253, 12384), (258, 12429), (261, 12441), (263, 12453), (264, 12462), (265, 12465), (276, 12579), (283, 12630), (285, 12645),

Gene: Sue2_16 Start: 10752, Stop: 13142, Start Num: 4

Candidate Starts for Sue2_16:

(Start: 4 @10752 has 43 MA's), (5, 10785), (11, 10905), (19, 10941), (24, 11007), (29, 11109), (36, 11223), (38, 11229), (42, 11316), (43, 11325), (46, 11367), (61, 11514), (94, 11790), (106, 11874), (125, 11985), (139, 12063), (141, 12069), (143, 12078), (146, 12105), (168, 12204), (187, 12303), (190, 12315), (196, 12342), (200, 12357), (201, 12366), (204, 12375), (211, 12420), (228, 12507), (234, 12552), (251, 12675), (256, 12732), (258, 12750), (259, 12753), (266, 12801), (272, 12864), (276, 12903), (296, 13077),

Gene: TMaxx_17 Start: 9424, Stop: 11712, Start Num: 3

Candidate Starts for TMaxx_17:

(3, 9424), (29, 9784), (30, 9787), (36, 9898), (37, 9901), (38, 9904), (46, 10042), (61, 10189), (66, 10219), (70, 10270), (85, 10360), (95, 10441), (108, 10516), (114, 10552), (116, 10564), (117, 10567), (123, 10600), (136, 10660), (148, 10723), (150, 10729), (151, 10732), (154, 10753), (156, 10759), (160, 10774), (167, 10801), (168, 10813), (170, 10822), (174, 10840), (176, 10855), (177, 10858), (179, 10867), (180, 10873), (182, 10885), (187, 10912), (191, 10930), (196, 10951), (200, 10966), (241, 11218), (244, 11239), (245, 11242), (258, 11359), (259, 11362), (270, 11455), (276, 11512), (277, 11536), (278, 11545), (282, 11563), (289, 11614), (291, 11629), (293, 11653),

Gene: Tallboi_16 Start: 10731, Stop: 13055, Start Num: 4

Candidate Starts for Tallboi_16:

(Start: 4 @10731 has 43 MA's), (10, 10878), (12, 10887), (23, 10977), (25, 11037), (28, 11082), (32, 11154), (35, 11214), (40, 11238), (41, 11268), (44, 11322), (45, 11352), (50, 11409), (53, 11433), (59, 11493), (60, 11499), (96, 11718), (128, 11886), (136, 11934), (145, 11988), (154, 12030), (162, 12069), (174, 12129), (192, 12222), (226, 12399), (228, 12408), (243, 12519), (258, 12651), (259, 12654), (265, 12687), (272, 12765), (276, 12804), (283, 12864), (287, 12894), (292, 12954),

Gene: Tbone_16 Start: 10734, Stop: 13049, Start Num: 4

Candidate Starts for Tbone_16:

(Start: 4 @10734 has 43 MA's), (12, 10890), (14, 10899), (23, 10980), (24, 10992), (25, 11040), (26, 11043), (28, 11085), (32, 11157), (39, 11238), (40, 11241), (41, 11271), (44, 11325), (45, 11355), (50, 11412), (53, 11436), (59, 11496), (96, 11721), (114, 11817), (127, 11880), (128, 11889), (136, 11937), (141, 11958), (145, 11991), (154, 12033), (162, 12072), (174, 12132), (203, 12273), (226, 12402), (228, 12411), (233, 12435), (236, 12468), (240, 12504), (243, 12522), (255, 12633), (258, 12654), (259, 12657), (265, 12690), (272, 12768), (276, 12807), (283, 12867), (287, 12897), (292, 12948), (295, 12993), (298, 13038),

Gene: TforTroy_16 Start: 10854, Stop: 13178, Start Num: 4

Candidate Starts for TforTroy_16:

(Start: 4 @10854 has 43 MA's), (12, 11010), (14, 11019), (15, 11022), (17, 11028), (23, 11100), (25, 11160), (32, 11277), (39, 11358), (40, 11361), (41, 11391), (44, 11445), (45, 11475), (50, 11532), (53, 11556), (59, 11616), (60, 11622), (79, 11745), (96, 11841), (128, 12009), (136, 12057), (145, 12111), (154, 12153), (162, 12192), (174, 12252), (192, 12345), (217, 12480), (223, 12513), (226, 12522), (243, 12642), (258, 12774), (259, 12777), (272, 12888), (276, 12927),

Gene: Tian_16 Start: 10746, Stop: 13070, Start Num: 4

Candidate Starts for Tian_16:

(Start: 4 @10746 has 43 MA's), (12, 10902), (14, 10911), (23, 10992), (25, 11052), (28, 11097), (32, 11169), (35, 11229), (39, 11250), (40, 11253), (41, 11283), (44, 11337), (45, 11367), (50, 11424), (53, 11448), (59, 11508), (60, 11514), (78, 11634), (96, 11733), (114, 11829), (128, 11901), (136, 11949), (141, 11970), (145, 12003), (154, 12045), (162, 12084), (174, 12144), (176, 12159), (188, 12225), (212, 12348), (214, 12357), (226, 12414), (228, 12423), (236, 12480), (237, 12483), (243, 12534), (258, 12666), (259, 12669), (272, 12780), (276, 12819), (277, 12843), (292, 12969),

Gene: Turab_16 Start: 10733, Stop: 13057, Start Num: 4

Candidate Starts for Turab_16:

(Start: 4 @10733 has 43 MA's), (12, 10889), (14, 10898), (18, 10913), (23, 10979), (25, 11039), (28, 11084), (32, 11156), (39, 11237), (40, 11240), (41, 11270), (44, 11324), (45, 11354), (50, 11411), (53, 11435), (59, 11495), (60, 11501), (96, 11720), (114, 11816), (120, 11849), (136, 11936), (145, 11990), (154, 12032), (162, 12071), (174, 12131), (203, 12272), (226, 12401), (228, 12410), (243, 12521), (258, 12653), (259, 12656), (265, 12689), (272, 12767), (276, 12806), (283, 12866), (292, 12956),

Gene: TurboVicky_19 Start: 13340, Stop: 15328, Start Num: 6

Candidate Starts for TurboVicky_19:

(Start: 6 @13340 has 15 MA's), (7, 13379), (19, 13490), (21, 13505), (22, 13517), (32, 13709), (34, 13733), (37, 13775), (46, 13916), (51, 13982), (63, 14078), (81, 14189), (95, 14291), (99, 14315), (110, 14384), (113, 14417), (159, 14582), (195, 14630), (198, 14642), (202, 14660), (227, 14762), (230, 14774), (231, 14780), (268, 15035), (273, 15101), (279, 15161), (296, 15302),

Gene: Tutumahutu_16 Start: 10781, Stop: 13096, Start Num: 4

Candidate Starts for Tutumahutu_16:

(Start: 4 @10781 has 43 MA's), (12, 10937), (14, 10946), (23, 11027), (24, 11039), (25, 11087), (26, 11090), (28, 11132), (32, 11204), (39, 11285), (40, 11288), (41, 11318), (44, 11372), (45, 11402), (50, 11459), (53, 11483), (59, 11543), (96, 11768), (114, 11864), (127, 11927), (128, 11936), (136, 11984), (137, 11993), (141, 12005), (145, 12038), (154, 12080), (162, 12119), (174, 12179), (203, 12320), (215, 12395), (217, 12407), (226, 12449), (228, 12458), (233, 12482), (240, 12551), (243, 12569), (244, 12581), (255, 12680), (258, 12701), (259, 12704), (265, 12737), (272, 12815), (276, 12854), (283, 12914), (287, 12944), (292, 12995), (295, 13040), (298, 13085),

Gene: Tweety19_16 Start: 9837, Stop: 12116, Start Num: 4

Candidate Starts for Tweety19_16:

(Start: 4 @9837 has 43 MA's), (21, 10041), (24, 10092), (29, 10194), (33, 10260), (36, 10308), (38, 10314), (42, 10401), (43, 10410), (46, 10452), (48, 10497), (61, 10599), (64, 10617), (82, 10746), (84, 10761), (94, 10803), (97, 10824), (101, 10839), (119, 10950), (133, 11022), (136, 11031), (138, 11040), (142, 11052), (149, 11097), (151, 11103), (153, 11118), (158, 11139), (168, 11184), (184, 11262), (200, 11337), (204, 11355), (232, 11502), (245, 11613), (252, 11676), (254, 11697), (257, 11724), (260, 11739), (271, 11829), (274, 11859), (280, 11925), (296, 12051), (299, 12090),

Gene: Typher_21 Start: 13470, Stop: 15458, Start Num: 6

Candidate Starts for Typher_21:

(Start: 6 @13470 has 15 MA's), (7, 13509), (19, 13620), (21, 13635), (22, 13647), (32, 13839), (34, 13863), (37, 13905), (46, 14046), (51, 14112), (63, 14208), (81, 14319), (95, 14421), (99, 14445), (110, 14514), (113, 14547), (159, 14712), (170, 14745), (195, 14760), (198, 14772), (202, 14790), (230, 14904), (231, 14910), (268, 15165), (273, 15231), (279, 15291), (296, 15432),

Gene: VroomVroom_15 Start: 8983, Stop: 11226, Start Num: 4

Candidate Starts for VroomVroom_15:

(Start: 4 @8983 has 43 MA's), (8, 9070), (16, 9151), (19, 9172), (24, 9238), (30, 9343), (36, 9454), (38, 9460), (43, 9556), (46, 9598), (61, 9745), (82, 9880), (86, 9907), (95, 9940), (111, 10024), (116, 10063), (124, 10102), (130, 10126), (133, 10150), (136, 10159), (141, 10177), (144, 10204), (147, 10219), (155, 10255), (158, 10267), (168, 10312), (169, 10318), (181, 10378), (185, 10396), (188, 10420), (199, 10462), (200, 10465), (207, 10495), (225, 10603), (258, 10858), (261, 10870), (270, 10954), (271, 10960), (274, 10990),

Gene: Warda_16 Start: 10726, Stop: 13041, Start Num: 4

Candidate Starts for Warda_16:

(Start: 4 @10726 has 43 MA's), (12, 10882), (14, 10891), (23, 10972), (24, 10984), (25, 11032), (26, 11035), (28, 11077), (32, 11149), (39, 11230), (40, 11233), (41, 11263), (44, 11317), (45, 11347), (50,

11404), (53, 11428), (59, 11488), (96, 11713), (114, 11809), (127, 11872), (128, 11881), (136, 11929), (141, 11950), (145, 11983), (154, 12025), (162, 12064), (174, 12124), (203, 12265), (226, 12394), (228, 12403), (233, 12427), (236, 12460), (240, 12496), (243, 12514), (255, 12625), (258, 12646), (259, 12649), (265, 12682), (272, 12760), (276, 12799), (283, 12859), (287, 12889), (292, 12940), (295, 12985), (298, 13030),

Gene: Wildwest_17 Start: 11664, Stop: 13910, Start Num: 4

Candidate Starts for Wildwest_17:

(Start: 4 @11664 has 43 MA's), (12, 11820), (14, 11829), (19, 11856), (23, 11910), (25, 11970), (32, 12087), (39, 12168), (40, 12171), (41, 12201), (44, 12255), (45, 12285), (50, 12342), (53, 12366), (56, 12408), (59, 12426), (96, 12651), (118, 12771), (128, 12819), (136, 12867), (137, 12876), (154, 12963), (162, 13002), (166, 13020), (174, 13062), (194, 13164), (204, 13209), (208, 13224), (213, 13269), (223, 13323), (226, 13332), (232, 13356), (242, 13380), (247, 13419), (255, 13497), (258, 13518), (259, 13521), (266, 13569), (272, 13632), (274, 13650), (276, 13671), (294, 13845),

Gene: Yang_16 Start: 10824, Stop: 13148, Start Num: 4

Candidate Starts for Yang_16:

(Start: 4 @10824 has 43 MA's), (17, 10998), (20, 11022), (23, 11070), (25, 11130), (32, 11247), (39, 11328), (40, 11331), (41, 11361), (45, 11445), (50, 11502), (53, 11526), (59, 11586), (60, 11592), (95, 11808), (96, 11811), (128, 11979), (136, 12027), (141, 12048), (145, 12081), (154, 12123), (162, 12162), (165, 12174), (174, 12222), (192, 12315), (208, 12384), (222, 12480), (228, 12501), (240, 12594), (243, 12612), (258, 12744), (259, 12747), (272, 12858), (276, 12897),

Gene: YesChef_16 Start: 10781, Stop: 13096, Start Num: 4

Candidate Starts for YesChef_16:

(Start: 4 @10781 has 43 MA's), (12, 10937), (14, 10946), (23, 11027), (24, 11039), (25, 11087), (26, 11090), (28, 11132), (32, 11204), (39, 11285), (40, 11288), (41, 11318), (44, 11372), (45, 11402), (50, 11459), (53, 11483), (59, 11543), (96, 11768), (114, 11864), (127, 11927), (128, 11936), (136, 11984), (137, 11993), (141, 12005), (145, 12038), (154, 12080), (162, 12119), (174, 12179), (203, 12320), (215, 12395), (217, 12407), (226, 12449), (228, 12458), (233, 12482), (240, 12551), (243, 12569), (255, 12680), (258, 12701), (259, 12704), (265, 12737), (272, 12815), (276, 12854), (283, 12914), (287, 12944), (292, 12995), (295, 13040), (298, 13085),

Gene: Zanella_19 Start: 13343, Stop: 15331, Start Num: 6

Candidate Starts for Zanella_19:

(Start: 6 @13343 has 15 MA's), (7, 13382), (19, 13493), (21, 13508), (22, 13520), (32, 13712), (34, 13736), (46, 13919), (51, 13985), (63, 14081), (67, 14105), (81, 14192), (95, 14294), (99, 14318), (110, 14387), (113, 14420), (159, 14585), (195, 14633), (198, 14645), (202, 14663), (227, 14765), (230, 14777), (231, 14783), (268, 15038), (273, 15104), (279, 15164), (296, 15305),