

Pham 311740

1: Rona_17 + 4	26	41	58	59	65	69	73	81	88	94	98	102	113	115	120	126	136	141	148	155	173	182	187	192	204	209	223	234		
2: Celaena_17	26	34	43	54	58	60	68	73	88	94	98	102	113	115	120	126	141	148	156	161	176	189	192	202	207	215	228	232		
3: Lahqtemish_18	26	34	43	54	58	60	68	73	88	94	98	102	113	115	120	126	141	148	156	161	176	189	192	202	207	215	228	232		
4: CliffHanger_18	11	15	22	33	42	53	58	68	73	90	94	100	103	115	120	126	136	146	154	161	170	180	190	195	201	208	216	226	229	
5: Bachaco_17	26	36	53	58	62	68	76	88	94	98	102	113	115	120	126	136	141	148	156	161	176	180	190	201	208	216	226	229		
6: Sharkboy_17	26	36	53	58	62	68	76	88	94	98	102	113	115	120	126	136	141	148	156	161	176	180	190	201	208	216	226	229		
7: IndyLu_18	26	36	53	58	62	68	76	88	94	98	102	113	115	120	126	136	141	148	156	161	176	180	190	201	208	216	226	229		
8: PastaFagioli_18	26	36	53	58	62	68	76	88	94	98	102	113	115	120	126	136	141	148	156	161	176	180	190	201	208	216	226	229		
9: Finalfrontier_19	26	36	53	58	62	68	76	88	94	98	102	113	115	120	126	136	141	148	156	161	176	180	190	201	208	216	226	229		
10: Kate33_18	26	36	53	58	62	68	76	88	94	98	102	113	115	120	126	136	141	148	156	161	176	180	190	201	208	216	226	229		
11: SBlackberry_21	26	40	44	51	59	64	70	72	85	92	99	104	108	115	121	124	134	138	145	153	162	168	171	177	185	191	203	212	222	
12: Htur_21 + 1	26	40	44	51	59	64	70	72	85	92	99	104	108	115	121	124	134	138	145	153	162	168	171	177	185	191	203	212	222	
13: Goodman_22 + 1	26	40	44	51	59	64	70	72	85	92	99	104	108	115	121	124	134	138	145	153	162	168	171	177	185	191	203	212	222	
14: Rasovi_21	14	21	40	44	51	59	64	70	72	85	92	99	104	115	121	124	134	138	145	153	162	168	171	177	185	191	203	212	222	
15: Cicada_23	26	40	44	51	59	64	70	78	85	93	99	104	110	115	121	124	134	138	145	153	162	168	171	177	185	191	203	212	222	
16: PermaG_22	26	40	44	51	59	64	70	78	85	93	99	104	110	115	121	124	134	138	145	153	162	168	171	177	185	191	203	212	222	
17: Olympi_23	14	21	33	38	47	63	67	82	89	91	97	107	111	113	116	122	129	130	134	142	150	158	164	175	191	195	201	212	225	
18: Winchester007_33 + 1	14	21	33	38	47	63	67	82	89	91	97	107	111	113	116	122	129	130	134	142	150	158	164	175	191	195	201	212	225	
19: Antuna_24 + 2	14	21	33	38	47	63	67	82	89	91	97	107	111	113	116	122	129	130	134	142	150	158	164	175	191	195	201	212	225	
20: Dropshot_23 + 1	14	21	33	38	47	63	67	82	89	91	97	107	111	113	116	122	129	130	134	142	150	158	164	175	191	195	201	212	225	
21: Pingu_26	14	21	33	38	47	63	67	82	89	91	97	107	111	113	116	122	129	130	134	142	150	158	164	175	191	195	201	212	225	
22: Mariel_27	14	21	33	38	47	63	67	82	89	91	97	107	111	113	116	122	129	130	134	142	150	158	164	175	191	195	201	212	225	
23: Carrillo_25	14	21	33	38	47	63	67	82	89	91	97	107	111	113	116	122	129	130	134	142	150	158	164	175	191	195	201	212	225	
24: Violeta_25 + 1	14	21	33	38	47	63	67	82	89	91	97	107	111	113	116	122	129	130	134	142	150	158	164	175	191	195	201	212	225	
25: Appa_23	14	21	33	38	47	63	77	82	89	91	97	107	109	111	113	116	122	129	130	134	142	150	158	164	175	191	195	201	212	225
26: Phonegingi_23	26	33	38	47	63	70	79	84	89	91	97	107	111	113	116	122	129	130	134	142	150	158	164	175	191	195	201	212	225	
27: NCRodriguez_25	14	21	33	38	47	63	67	82	89	91	97	107	111	113	116	122	129	130	134	142	150	158	164	175	191	195	201	212	225	
28: Warren_24	14	21	33	38	47	63	68	82	89	91	97	107	111	113	116	122	129	130	134	142	150	158	164	175	191	195	201	212	225	
29: CookieDog_24	14	21	33	38	47	63	84	89	91	97	107	111	113	116	122	129	130	134	142	150	158	164	175	191	195	201	212	225		
30: Guzman_25	14	21	33	38	47	63	75	84	89	91	97	107	111	113	116	122	129	130	134	142	150	158	164	175	191	195	201	212	225	
31: ScoobySnack_22	14	21	33	38	47	63	75	84	89	91	97	107	111	113	116	122	129	130	134	142	150	158	164	175	191	195	201	212	225	
32: Pickles13_23	10	13	16	19	33	36	46	53	56	74	83	89	96	99	113	115	120	126	136	144	156	188	201	210	214	225	234			
33: Gingerbug_20	10	13	16	19	33	36	46	53	56	74	83	89	96	99	113	115	120	126	136	144	156	188	201	210	214	225	234			

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 311740 Report

This analysis was run 06/27/26 on database version 652.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 311740 has 44 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Rona_17, Kamdara_17, ChiliPepper_17, Dismas_17, Kieran_17
- Track 2 : Celaena_17
- Track 3 : Lahqtemish_18
- Track 4 : CliffHanger_18
- Track 5 : Bachaco_17
- Track 6 : Sharkboy_17
- Track 7 : IndyLu_18
- Track 8 : PastaFagioli_18
- Track 9 : Finalfrontier_19
- Track 10 : Kate33_18
- Track 11 : SBlackberry_21
- Track 12 : Htur_21, Linayshia_21
- Track 13 : Goodman_22, Johann_22
- Track 14 : Rasovi_21
- Track 15 : Cicada_23
- Track 16 : PermaG_22
- Track 17 : Olympi_23
- Track 18 : Winchester007_39, PhillyJawn_24
- Track 19 : Antuna_24, Losacky_25, MenE_24
- Track 20 : Dropshot_23, Blett_24
- Track 21 : Phingu_26
- Track 22 : Mariel_27
- Track 23 : Carrillo_25
- Track 24 : Violeta_25, Jakelyne_26
- Track 25 : Appa_23
- Track 26 : Phonegingi_23
- Track 27 : NCRodriguez_25
- Track 28 : Warren_24
- Track 29 : CookieDog_24
- Track 30 : Guzman_25
- Track 31 : ScoobySnack_22
- Track 32 : Pickles13_23
- Track 33 : Gingerbug_20

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

The start number called the most often in the published annotations is 27, it was called in 19 of the 33 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Antuna_24, Appa_23, Blett_24, Carrillo_25, Cicada_23, CookieDog_24, Dropshot_23, Goodman_22, Guzman_25, Htur_21, Jakelyne_26, Johann_22, Linayshia_21, Losacky_25, Mariel_27, MenE_24, NCRodriguez_25, Olympi_23, PermaG_22, PhillyJawn_24, Phingu_26, Phonegingi_23, Pickles13_23, Rasovi_21, SBlackberry_21, ScoobySnack_22, Violeta_25, Warren_24, Winchester007_39,

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

-

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

- Bachaco_17, Celaena_17, ChiliPepper_17, CliffHanger_18, Dismas_17, Finalfrontier_19, Gingerbug_20, IndyLu_18, Kamdara_17, Kate33_18, Kieran_17, Lahqtemish_18, PastaFagioli_18, Rona_17, Sharkboy_17,

Summary by start number:

Start 1:

- Found in 2 of 44 (4.5%) of genes in pham
- Manual Annotations of this start: 2 of 33
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bachaco_17 (EB), Celaena_17 (EB),

Start 4:

- Found in 1 of 44 (2.3%) of genes in pham
- Manual Annotations of this start: 1 of 33
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gingerbug_20 (GF),

Start 25:

- Found in 1 of 44 (2.3%) of genes in pham
- Manual Annotations of this start: 1 of 33
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CliffHanger_18 (EB),

Start 26:

- Found in 11 of 44 (25.0%) of genes in pham
- Manual Annotations of this start: 10 of 33
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ChiliPepper_17 (EB), Dismas_17 (EB), Finalfrontier_19 (EB), IndyLu_18 (EB), Kamdara_17 (EB), Kate33_18 (EB), Kieran_17 (EB), Lahqtemish_18 (EB), PastaFagioli_18 (EB), Rona_17 (EB), Sharkboy_17 (EB),

Start 27:

- Found in 29 of 44 (65.9%) of genes in pham
- Manual Annotations of this start: 19 of 33
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Antuna_24 (GA), Appa_23 (GA), Blett_24 (GA), Carrillo_25 (GA), Cicada_23 (EJ), CookieDog_24 (GA), Dropshot_23 (GA), Goodman_22 (EJ), Guzman_25 (GA), Htur_21 (EJ), Jakelyne_26 (GA), Johann_22 (EJ), Linayshia_21 (EJ), Losacky_25 (GA), Mariel_27 (GA), MenE_24 (GA), NCRodriguez_25 (GA), Olympi_23 (EJ), PermaG_22 (EJ), PhillyJawn_24 (GA), Phingu_26 (GA), Phonegingi_23 (GA), Pickles13_23 (GA), Rasovi_21 (EJ), SBlackberry_21 (EJ), ScoobySnack_22 (GA), Violeta_25 (GA), Warren_24 (GA), Winchester007_39 (GA),

Summary by clusters:

There are 4 clusters represented in this pham: GF, EJ, GA, EB,

Info for manual annotations of cluster EB:

- Start number 1 was manually annotated 2 times for cluster EB.
- Start number 25 was manually annotated 1 time for cluster EB.
- Start number 26 was manually annotated 10 times for cluster EB.

Info for manual annotations of cluster EJ:

- Start number 27 was manually annotated 9 times for cluster EJ.

Info for manual annotations of cluster GA:

- Start number 27 was manually annotated 10 times for cluster GA.

Info for manual annotations of cluster GF:

- Start number 4 was manually annotated 1 time for cluster GF.

Gene Information:

Gene: Antuna_24 Start: 14563, Stop: 16431, Start Num: 27

Candidate Starts for Antuna_24:

(14, 14338), (24, 14533), (Start: 27 @14563 has 19 MA's), (32, 14623), (35, 14644), (38, 14656), (43, 14710), (47, 14743), (50, 14749), (67, 14965), (82, 15121), (86, 15175), (87, 15178), (91, 15208), (97, 15280), (107, 15403), (111, 15475), (113, 15508), (115, 15532), (122, 15580), (129, 15643), (150, 15877), (158, 15928), (164, 15946), (168, 15973), (172, 15991), (175, 16006), (191, 16153), (195, 16180), (201, 16243), (212, 16330), (225, 16423),

Gene: Appa_23 Start: 14425, Stop: 16293, Start Num: 27

Candidate Starts for Appa_23:

(14, 14200), (24, 14395), (Start: 27 @14425 has 19 MA's), (32, 14485), (35, 14506), (38, 14518), (43, 14572), (47, 14605), (63, 14734), (82, 14983), (86, 15037), (87, 15040), (91, 15070), (97, 15142), (107, 15265), (111, 15337), (113, 15370), (115, 15394), (122, 15442), (150, 15739), (158, 15790), (164, 15808), (168, 15835), (172, 15853), (175, 15868), (191, 16015), (195, 16042), (201, 16105), (212, 16192), (225, 16285),

Gene: Bachaco_17 Start: 13521, Stop: 16133, Start Num: 1

Candidate Starts for Bachaco_17:

(Start: 1 @13521 has 2 MA's), (2, 13548), (3, 13587), (5, 13650), (9, 13773), (11, 13854), (15, 13926), (22, 14052), (33, 14190), (37, 14217), (39, 14223), (42, 14271), (58, 14388), (63, 14463), (65, 14484), (69, 14562), (73, 14604), (90, 14760), (94, 14802), (100, 14883), (103, 14916), (115, 15099), (122, 15147), (126, 15183), (129, 15210), (135, 15240), (137, 15276), (139, 15297), (146, 15357), (154, 15453), (161, 15483), (166, 15507), (170, 15531), (180, 15585), (190, 15678), (195, 15708), (201, 15771), (208, 15834), (216, 15879), (223, 15936), (226, 15957), (229, 16023),

Gene: Blett_24 Start: 14578, Stop: 16446, Start Num: 27

Candidate Starts for Blett_24:

(14, 14353), (24, 14548), (Start: 27 @14578 has 19 MA's), (32, 14638), (35, 14659), (38, 14671), (43, 14725), (47, 14758), (63, 14887), (67, 14980), (86, 15190), (87, 15193), (91, 15223), (97, 15295), (107, 15418), (113, 15523), (115, 15547), (122, 15595), (150, 15892), (158, 15943), (164, 15961), (168, 15988), (172, 16006), (175, 16021), (191, 16168), (195, 16195), (201, 16258), (212, 16345), (225, 16438),

Gene: Carrillo_25 Start: 14532, Stop: 16400, Start Num: 27

Candidate Starts for Carrillo_25:

(14, 14307), (24, 14502), (Start: 27 @14532 has 19 MA's), (32, 14592), (35, 14613), (38, 14625), (43, 14679), (47, 14712), (67, 14934), (82, 15090), (86, 15144), (87, 15147), (91, 15177), (97, 15249), (107, 15372), (111, 15444), (113, 15477), (115, 15501), (122, 15549), (129, 15612), (150, 15846), (158, 15897), (164, 15915), (168, 15942), (172, 15960), (175, 15975), (191, 16122), (195, 16149), (201, 16212), (212, 16299), (225, 16392),

Gene: Celaena_17 Start: 13457, Stop: 16075, Start Num: 1

Candidate Starts for Celaena_17:

(Start: 1 @13457 has 2 MA's), (2, 13484), (3, 13523), (5, 13586), (9, 13709), (11, 13790), (15, 13862), (20, 13955), (21, 13973), (23, 13997), (33, 14126), (37, 14153), (39, 14159), (42, 14207), (45, 14225), (58, 14324), (63, 14399), (65, 14420), (69, 14498), (73, 14540), (100, 14819), (103, 14852), (115, 15035), (122, 15083), (129, 15146), (135, 15176), (137, 15212), (139, 15233), (147, 15302), (148, 15329), (157, 15407), (163, 15422), (170, 15473), (180, 15527), (185, 15572), (186, 15593), (204, 15746), (209, 15779), (221, 15857), (223, 15869), (234, 16058),

Gene: ChiliPepper_17 Start: 13661, Stop: 15667, Start Num: 26

Candidate Starts for ChiliPepper_17:

(Start: 26 @13661 has 10 MA's), (41, 13778), (48, 13847), (53, 13865), (55, 13877), (58, 13907), (60, 13958), (61, 13961), (62, 13970), (65, 14003), (69, 14081), (73, 14123), (80, 14180), (81, 14204), (88, 14267), (94, 14321), (98, 14393), (102, 14432), (103, 14435), (113, 14594), (115, 14618), (120, 14660), (121, 14663), (125, 14693), (133, 14747), (135, 14759), (137, 14795), (138, 14804), (141, 14837), (143, 14849), (155, 14978), (173, 15065), (180, 15122), (181, 15125), (182, 15137), (187, 15185), (192, 15221), (220, 15437), (223, 15455), (224, 15461), (230, 15611), (233, 15620),

Gene: Cicada_23 Start: 16468, Stop: 18345, Start Num: 27

Candidate Starts for Cicada_23:

(14, 16243), (Start: 27 @16468 has 19 MA's), (40, 16597), (43, 16636), (44, 16639), (57, 16708), (59, 16753), (62, 16789), (70, 16918), (86, 17098), (87, 17101), (92, 17134), (99, 17239), (101, 17260), (104, 17278), (105, 17281), (115, 17455), (124, 17527), (127, 17542), (129, 17566), (131, 17572), (134, 17593), (138, 17641), (152, 17809), (153, 17812), (156, 17833), (157, 17845), (174, 17920), (197, 18115), (199, 18136), (200, 18145), (203, 18178), (212, 18244), (217, 18274), (222, 18316),

Gene: CliffHanger_18 Start: 13501, Stop: 15195, Start Num: 25

Candidate Starts for CliffHanger_18:

(Start: 25 @13501 has 1 MA's), (34, 13588), (43, 13651), (58, 13729), (66, 13879), (67, 13888), (69, 13903), (70, 13915), (71, 13921), (105, 14263), (113, 14416), (120, 14482), (136, 14605), (156,

14800), (167, 14857), (179, 14929), (180, 14932), (189, 15019), (193, 15040), (202, 15130), (207, 15169),

Gene: CookieDog_24 Start: 14559, Stop: 16421, Start Num: 27

Candidate Starts for CookieDog_24:

(14, 14334), (24, 14529), (Start: 27 @14559 has 19 MA's), (32, 14619), (35, 14640), (38, 14652), (43, 14706), (47, 14739), (68, 14973), (82, 15117), (86, 15171), (87, 15174), (91, 15204), (97, 15276), (107, 15399), (111, 15471), (113, 15504), (115, 15528), (122, 15576), (150, 15867), (191, 16143), (195, 16170), (201, 16233), (212, 16320), (225, 16413),

Gene: Dismas_17 Start: 13661, Stop: 15667, Start Num: 26

Candidate Starts for Dismas_17:

(Start: 26 @13661 has 10 MA's), (41, 13778), (48, 13847), (53, 13865), (55, 13877), (58, 13907), (60, 13958), (61, 13961), (62, 13970), (65, 14003), (69, 14081), (73, 14123), (80, 14180), (81, 14204), (88, 14267), (94, 14321), (98, 14393), (102, 14432), (103, 14435), (113, 14594), (115, 14618), (120, 14660), (121, 14663), (125, 14693), (133, 14747), (135, 14759), (137, 14795), (138, 14804), (141, 14837), (143, 14849), (155, 14978), (173, 15065), (180, 15122), (181, 15125), (182, 15137), (187, 15185), (192, 15221), (220, 15437), (223, 15455), (224, 15461), (230, 15611), (233, 15620),

Gene: Dropshot_23 Start: 14425, Stop: 16293, Start Num: 27

Candidate Starts for Dropshot_23:

(14, 14200), (24, 14395), (Start: 27 @14425 has 19 MA's), (32, 14485), (35, 14506), (38, 14518), (43, 14572), (47, 14605), (63, 14734), (67, 14827), (86, 15037), (87, 15040), (91, 15070), (97, 15142), (107, 15265), (113, 15370), (115, 15394), (122, 15442), (150, 15739), (158, 15790), (164, 15808), (168, 15835), (172, 15853), (175, 15868), (191, 16015), (195, 16042), (201, 16105), (212, 16192), (225, 16285),

Gene: Finalfrontier_19 Start: 14486, Stop: 16459, Start Num: 26

Candidate Starts for Finalfrontier_19:

(Start: 26 @14486 has 10 MA's), (36, 14579), (50, 14675), (54, 14699), (58, 14732), (60, 14783), (69, 14906), (70, 14918), (99, 15224), (102, 15257), (105, 15266), (120, 15485), (126, 15527), (139, 15641), (141, 15662), (150, 15785), (165, 15863), (175, 15911), (192, 16049), (211, 16208), (215, 16232), (224, 16295), (231, 16427), (232, 16433),

Gene: Gingerbug_20 Start: 14337, Stop: 16679, Start Num: 4

Candidate Starts for Gingerbug_20:

(Start: 4 @14337 has 1 MA's), (6, 14445), (7, 14460), (8, 14484), (9, 14487), (10, 14523), (12, 14574), (13, 14595), (16, 14652), (17, 14664), (18, 14679), (19, 14715), (30, 14871), (31, 14883), (35, 14934), (46, 15018), (51, 15051), (52, 15054), (56, 15078), (74, 15345), (83, 15453), (86, 15486), (87, 15489), (88, 15495), (89, 15504), (91, 15519), (95, 15561), (96, 15579), (99, 15627), (113, 15819), (115, 15843), (116, 15849), (117, 15855), (118, 15876), (119, 15879), (123, 15900), (129, 15954), (130, 15957), (134, 15981), (137, 16020), (139, 16041), (144, 16074), (156, 16188), (197, 16452), (198, 16464), (201, 16503), (210, 16563), (214, 16587),

Gene: Goodman_22 Start: 16381, Stop: 18258, Start Num: 27

Candidate Starts for Goodman_22:

(Start: 27 @16381 has 19 MA's), (40, 16510), (43, 16549), (44, 16552), (57, 16621), (59, 16666), (62, 16702), (70, 16831), (86, 17011), (87, 17014), (92, 17047), (99, 17152), (101, 17173), (104, 17191), (105, 17194), (115, 17368), (121, 17413), (124, 17440), (127, 17455), (129, 17479), (131, 17485), (134, 17506), (138, 17554), (152, 17722), (153, 17725), (156, 17746), (157, 17758), (174, 17833), (197, 18028), (199, 18049), (200, 18058), (203, 18091), (212, 18157), (217, 18187), (222, 18229),

Gene: Guzman_25 Start: 14840, Stop: 16702, Start Num: 27

Candidate Starts for Guzman_25:

(14, 14615), (24, 14810), (Start: 27 @14840 has 19 MA's), (32, 14900), (35, 14921), (38, 14933), (43, 14987), (47, 15020), (63, 15149), (84, 15422), (86, 15452), (87, 15455), (89, 15470), (91, 15485), (97, 15557), (107, 15680), (111, 15752), (113, 15785), (115, 15809), (119, 15845), (122, 15857), (129, 15920), (150, 16148), (191, 16424), (195, 16451), (201, 16514), (212, 16601), (225, 16694),

Gene: Htur_21 Start: 16411, Stop: 18312, Start Num: 27

Candidate Starts for Htur_21:

(Start: 27 @16411 has 19 MA's), (28, 16432), (29, 16438), (40, 16540), (43, 16579), (44, 16582), (57, 16651), (62, 16732), (64, 16762), (70, 16861), (72, 16903), (85, 17044), (86, 17065), (87, 17068), (92, 17101), (99, 17206), (104, 17245), (105, 17248), (108, 17308), (114, 17416), (115, 17422), (124, 17494), (127, 17509), (129, 17533), (131, 17539), (134, 17560), (138, 17608), (142, 17659), (145, 17680), (152, 17776), (156, 17800), (157, 17812), (171, 17875), (177, 17932), (185, 17986), (191, 18043), (195, 18070), (196, 18076), (197, 18082), (198, 18094), (203, 18145), (222, 18283),

Gene: IndyLu_18 Start: 13944, Stop: 15914, Start Num: 26

Candidate Starts for IndyLu_18:

(Start: 26 @13944 has 10 MA's), (36, 14037), (50, 14133), (54, 14157), (58, 14190), (60, 14241), (69, 14364), (70, 14376), (99, 14682), (102, 14715), (105, 14724), (120, 14943), (139, 15099), (141, 15120), (148, 15204), (160, 15294), (169, 15339), (192, 15504), (211, 15663), (215, 15687), (224, 15750), (228, 15783), (232, 15888),

Gene: Jakelyne_26 Start: 14641, Stop: 16509, Start Num: 27

Candidate Starts for Jakelyne_26:

(14, 14416), (24, 14611), (Start: 27 @14641 has 19 MA's), (32, 14701), (35, 14722), (38, 14734), (43, 14788), (47, 14821), (63, 14950), (67, 15043), (82, 15199), (86, 15253), (87, 15256), (91, 15286), (97, 15358), (107, 15481), (113, 15586), (115, 15610), (122, 15658), (150, 15955), (158, 16006), (164, 16024), (168, 16051), (172, 16069), (175, 16084), (191, 16231), (195, 16258), (201, 16321), (212, 16408), (225, 16501),

Gene: Johann_22 Start: 16381, Stop: 18258, Start Num: 27

Candidate Starts for Johann_22:

(Start: 27 @16381 has 19 MA's), (40, 16510), (43, 16549), (44, 16552), (57, 16621), (59, 16666), (62, 16702), (70, 16831), (86, 17011), (87, 17014), (92, 17047), (99, 17152), (101, 17173), (104, 17191), (105, 17194), (115, 17368), (121, 17413), (124, 17440), (127, 17455), (129, 17479), (131, 17485), (134, 17506), (138, 17554), (152, 17722), (153, 17725), (156, 17746), (157, 17758), (174, 17833), (197, 18028), (199, 18049), (200, 18058), (203, 18091), (212, 18157), (217, 18187), (222, 18229),

Gene: Kamdara_17 Start: 13660, Stop: 15666, Start Num: 26

Candidate Starts for Kamdara_17:

(Start: 26 @13660 has 10 MA's), (41, 13777), (48, 13846), (53, 13864), (55, 13876), (58, 13906), (60, 13957), (61, 13960), (62, 13969), (65, 14002), (69, 14080), (73, 14122), (80, 14179), (81, 14203), (88, 14266), (94, 14320), (98, 14392), (102, 14431), (103, 14434), (113, 14593), (115, 14617), (120, 14659), (121, 14662), (125, 14692), (133, 14746), (135, 14758), (137, 14794), (138, 14803), (141, 14836), (143, 14848), (155, 14977), (173, 15064), (180, 15121), (181, 15124), (182, 15136), (187, 15184), (192, 15220), (220, 15436), (223, 15454), (224, 15460), (230, 15610), (233, 15619),

Gene: Kate33_18 Start: 13943, Stop: 15916, Start Num: 26

Candidate Starts for Kate33_18:

(Start: 26 @13943 has 10 MA's), (36, 14036), (50, 14132), (54, 14156), (58, 14189), (60, 14240), (69, 14363), (70, 14375), (99, 14681), (102, 14714), (105, 14723), (116, 14906), (120, 14942), (126, 14984), (139, 15098), (141, 15119), (148, 15203), (160, 15296), (165, 15320), (169, 15341), (176, 15380), (192, 15506), (211, 15665), (215, 15689), (224, 15752), (228, 15785), (231, 15884), (232,

15890),

Gene: Kieran_17 Start: 13664, Stop: 15670, Start Num: 26

Candidate Starts for Kieran_17:

(Start: 26 @13664 has 10 MA's), (41, 13781), (48, 13850), (53, 13868), (55, 13880), (58, 13910), (60, 13961), (61, 13964), (62, 13973), (65, 14006), (69, 14084), (73, 14126), (80, 14183), (81, 14207), (88, 14270), (94, 14324), (98, 14396), (102, 14435), (103, 14438), (113, 14597), (115, 14621), (120, 14663), (121, 14666), (125, 14696), (133, 14750), (135, 14762), (137, 14798), (138, 14807), (141, 14840), (143, 14852), (155, 14981), (173, 15068), (180, 15125), (181, 15128), (182, 15140), (187, 15188), (192, 15224), (220, 15440), (223, 15458), (224, 15464), (230, 15614), (233, 15623),

Gene: Lahqtemish_18 Start: 13989, Stop: 15962, Start Num: 26

Candidate Starts for Lahqtemish_18:

(Start: 26 @13989 has 10 MA's), (54, 14202), (58, 14235), (60, 14286), (69, 14409), (70, 14421), (99, 14727), (102, 14760), (105, 14769), (120, 14988), (126, 15030), (141, 15165), (148, 15249), (160, 15342), (165, 15366), (169, 15387), (176, 15426), (192, 15552), (211, 15711), (215, 15735), (227, 15828), (228, 15831), (232, 15936),

Gene: Linayshia_21 Start: 16403, Stop: 18304, Start Num: 27

Candidate Starts for Linayshia_21:

(Start: 27 @16403 has 19 MA's), (28, 16424), (29, 16430), (40, 16532), (43, 16571), (44, 16574), (57, 16643), (62, 16724), (64, 16754), (70, 16853), (72, 16895), (85, 17036), (86, 17057), (87, 17060), (92, 17093), (99, 17198), (104, 17237), (105, 17240), (108, 17300), (114, 17408), (115, 17414), (124, 17486), (127, 17501), (129, 17525), (131, 17531), (134, 17552), (138, 17600), (142, 17651), (145, 17672), (152, 17768), (156, 17792), (157, 17804), (171, 17867), (177, 17924), (185, 17978), (191, 18035), (195, 18062), (196, 18068), (197, 18074), (198, 18086), (203, 18137), (222, 18275),

Gene: Losacky_25 Start: 14705, Stop: 16573, Start Num: 27

Candidate Starts for Losacky_25:

(14, 14480), (24, 14675), (Start: 27 @14705 has 19 MA's), (32, 14765), (35, 14786), (38, 14798), (43, 14852), (47, 14885), (50, 14891), (67, 15107), (82, 15263), (86, 15317), (87, 15320), (91, 15350), (97, 15422), (107, 15545), (111, 15617), (113, 15650), (115, 15674), (122, 15722), (129, 15785), (150, 16019), (158, 16070), (164, 16088), (168, 16115), (172, 16133), (175, 16148), (191, 16295), (195, 16322), (201, 16385), (212, 16472), (225, 16565),

Gene: Mariel_27 Start: 14997, Stop: 16865, Start Num: 27

Candidate Starts for Mariel_27:

(14, 14772), (24, 14967), (Start: 27 @14997 has 19 MA's), (32, 15057), (35, 15078), (38, 15090), (43, 15144), (47, 15177), (50, 15183), (63, 15306), (86, 15609), (87, 15612), (91, 15642), (97, 15714), (107, 15837), (113, 15942), (115, 15966), (122, 16014), (150, 16311), (158, 16362), (164, 16380), (172, 16425), (175, 16440), (191, 16587), (195, 16614), (201, 16677), (212, 16764), (225, 16857),

Gene: MenE_24 Start: 14693, Stop: 16561, Start Num: 27

Candidate Starts for MenE_24:

(14, 14468), (24, 14663), (Start: 27 @14693 has 19 MA's), (32, 14753), (35, 14774), (38, 14786), (43, 14840), (47, 14873), (50, 14879), (67, 15095), (82, 15251), (86, 15305), (87, 15308), (91, 15338), (97, 15410), (107, 15533), (111, 15605), (113, 15638), (115, 15662), (122, 15710), (129, 15773), (150, 16007), (158, 16058), (164, 16076), (168, 16103), (172, 16121), (175, 16136), (191, 16283), (195, 16310), (201, 16373), (212, 16460), (225, 16553),

Gene: NCRodriguez_25 Start: 14754, Stop: 16613, Start Num: 27

Candidate Starts for NCRodriguez_25:

(24, 14724), (Start: 27 @14754 has 19 MA's), (32, 14814), (35, 14835), (38, 14847), (43, 14901), (47, 14934), (63, 15063), (70, 15177), (79, 15252), (82, 15303), (84, 15327), (87, 15360), (91, 15390), (94, 15420), (97, 15462), (107, 15585), (113, 15690), (115, 15714), (122, 15762), (150, 16059), (158, 16110), (164, 16128), (168, 16155), (172, 16173), (175, 16188), (191, 16335), (195, 16362), (201, 16425), (212, 16512), (225, 16605),

Gene: Olympi_23 Start: 16368, Stop: 18245, Start Num: 27

Candidate Starts for Olympi_23:

(Start: 27 @16368 has 19 MA's), (40, 16497), (43, 16536), (44, 16539), (57, 16608), (59, 16653), (62, 16689), (70, 16818), (86, 16998), (87, 17001), (92, 17034), (93, 17058), (99, 17139), (104, 17178), (105, 17181), (110, 17271), (115, 17355), (124, 17427), (127, 17442), (129, 17466), (131, 17472), (134, 17493), (138, 17541), (152, 17709), (153, 17712), (156, 17733), (157, 17745), (174, 17820), (197, 18015), (199, 18036), (200, 18045), (203, 18078), (212, 18144), (217, 18174), (222, 18216),

Gene: PastaFagioli_18 Start: 13977, Stop: 15950, Start Num: 26

Candidate Starts for PastaFagioli_18:

(Start: 26 @13977 has 10 MA's), (36, 14070), (54, 14190), (58, 14223), (60, 14274), (69, 14397), (70, 14409), (99, 14715), (102, 14748), (105, 14757), (120, 14976), (126, 15018), (141, 15153), (148, 15237), (160, 15330), (169, 15375), (176, 15414), (201, 15624), (205, 15654), (211, 15699), (215, 15723), (228, 15819), (232, 15924),

Gene: PermaG_22 Start: 16442, Stop: 18325, Start Num: 27

Candidate Starts for PermaG_22:

(24, 16412), (Start: 27 @16442 has 19 MA's), (40, 16571), (43, 16610), (44, 16613), (57, 16682), (62, 16763), (70, 16892), (78, 16970), (86, 17072), (87, 17075), (99, 17213), (104, 17252), (105, 17255), (112, 17399), (115, 17429), (127, 17516), (129, 17540), (131, 17546), (134, 17567), (138, 17615), (152, 17783), (153, 17786), (156, 17807), (157, 17819), (183, 17975), (191, 18050), (194, 18068), (201, 18137), (212, 18224), (213, 18227), (218, 18260),

Gene: PhillyJawn_24 Start: 14425, Stop: 16293, Start Num: 27

Candidate Starts for PhillyJawn_24:

(14, 14200), (24, 14395), (Start: 27 @14425 has 19 MA's), (32, 14485), (35, 14506), (38, 14518), (43, 14572), (47, 14605), (63, 14734), (67, 14827), (82, 14983), (86, 15037), (87, 15040), (91, 15070), (97, 15142), (107, 15265), (113, 15370), (115, 15394), (122, 15442), (150, 15739), (158, 15790), (164, 15808), (172, 15853), (175, 15868), (191, 16015), (195, 16042), (201, 16105), (212, 16192), (225, 16285),

Gene: Phingu_26 Start: 14644, Stop: 16512, Start Num: 27

Candidate Starts for Phingu_26:

(14, 14419), (24, 14614), (Start: 27 @14644 has 19 MA's), (32, 14704), (35, 14725), (38, 14737), (43, 14791), (47, 14824), (63, 14953), (67, 15046), (82, 15202), (86, 15256), (87, 15259), (91, 15289), (97, 15361), (107, 15484), (111, 15556), (113, 15589), (115, 15613), (122, 15661), (129, 15724), (150, 15958), (158, 16009), (164, 16027), (172, 16072), (175, 16087), (191, 16234), (195, 16261), (201, 16324), (212, 16411), (225, 16504),

Gene: Phonegingi_23 Start: 14486, Stop: 16339, Start Num: 27

Candidate Starts for Phonegingi_23:

(14, 14261), (24, 14456), (Start: 27 @14486 has 19 MA's), (32, 14546), (35, 14567), (38, 14579), (43, 14633), (47, 14666), (63, 14795), (77, 14984), (82, 15044), (86, 15098), (87, 15101), (91, 15131), (97, 15203), (107, 15326), (109, 15365), (111, 15398), (113, 15431), (115, 15455), (122, 15503), (125, 15530), (128, 15551), (134, 15593), (136, 15620), (158, 15851), (164, 15869), (184, 16016), (195, 16103), (197, 16115), (201, 16160), (203, 16172), (206, 16193), (217, 16268), (222, 16310), (225, 16331),

Gene: Pickles13_23 Start: 14850, Stop: 16718, Start Num: 27

Candidate Starts for Pickles13_23:

(14, 14625), (24, 14820), (Start: 27 @14850 has 19 MA's), (32, 14910), (35, 14931), (38, 14943), (43, 14997), (47, 15030), (49, 15033), (84, 15432), (86, 15462), (87, 15465), (91, 15495), (97, 15567), (107, 15690), (111, 15762), (113, 15795), (115, 15819), (119, 15855), (122, 15867), (125, 15894), (129, 15930), (140, 16026), (150, 16164), (164, 16233), (168, 16260), (191, 16440), (195, 16467), (201, 16530), (212, 16617), (225, 16710),

Gene: Rasovi_21 Start: 16411, Stop: 18312, Start Num: 27

Candidate Starts for Rasovi_21:

(Start: 27 @16411 has 19 MA's), (28, 16432), (29, 16438), (40, 16540), (44, 16582), (57, 16651), (62, 16732), (64, 16762), (70, 16861), (72, 16903), (85, 17044), (86, 17065), (87, 17068), (92, 17101), (99, 17206), (104, 17245), (105, 17248), (108, 17308), (114, 17416), (115, 17422), (124, 17494), (127, 17509), (129, 17533), (131, 17539), (134, 17560), (138, 17608), (142, 17659), (145, 17680), (152, 17776), (156, 17800), (157, 17812), (171, 17875), (177, 17932), (185, 17986), (191, 18043), (195, 18070), (196, 18076), (197, 18082), (198, 18094), (203, 18145), (222, 18283),

Gene: Rona_17 Start: 13661, Stop: 15667, Start Num: 26

Candidate Starts for Rona_17:

(Start: 26 @13661 has 10 MA's), (41, 13778), (48, 13847), (53, 13865), (55, 13877), (58, 13907), (60, 13958), (61, 13961), (62, 13970), (65, 14003), (69, 14081), (73, 14123), (80, 14180), (81, 14204), (88, 14267), (94, 14321), (98, 14393), (102, 14432), (103, 14435), (113, 14594), (115, 14618), (120, 14660), (121, 14663), (125, 14693), (133, 14747), (135, 14759), (137, 14795), (138, 14804), (141, 14837), (143, 14849), (155, 14978), (173, 15065), (180, 15122), (181, 15125), (182, 15137), (187, 15185), (192, 15221), (220, 15437), (223, 15455), (224, 15461), (230, 15611), (233, 15620),

Gene: SBlackberry_21 Start: 16237, Stop: 18123, Start Num: 27

Candidate Starts for SBlackberry_21:

(Start: 27 @16237 has 19 MA's), (40, 16366), (43, 16405), (57, 16477), (62, 16558), (63, 16570), (70, 16687), (74, 16729), (85, 16846), (86, 16867), (87, 16870), (92, 16903), (99, 17008), (104, 17047), (105, 17050), (106, 17080), (114, 17218), (115, 17224), (124, 17296), (127, 17311), (129, 17335), (131, 17341), (134, 17362), (138, 17410), (143, 17467), (149, 17566), (150, 17575), (151, 17581), (162, 17635), (168, 17671), (197, 17893), (199, 17914), (200, 17923), (203, 17956), (212, 18022), (217, 18052), (222, 18094),

Gene: ScoobySnack_22 Start: 14554, Stop: 16422, Start Num: 27

Candidate Starts for ScoobySnack_22:

(14, 14329), (24, 14524), (Start: 27 @14554 has 19 MA's), (32, 14614), (35, 14635), (38, 14647), (43, 14701), (57, 14770), (63, 14863), (75, 15034), (86, 15166), (87, 15169), (91, 15199), (95, 15241), (97, 15271), (107, 15394), (111, 15466), (113, 15499), (115, 15523), (119, 15559), (122, 15571), (128, 15619), (129, 15634), (150, 15868), (168, 15964), (172, 15982), (178, 16036), (188, 16126), (195, 16171), (205, 16267), (225, 16414),

Gene: Sharkboy_17 Start: 13660, Stop: 15654, Start Num: 26

Candidate Starts for Sharkboy_17:

(Start: 26 @13660 has 10 MA's), (36, 13753), (53, 13864), (58, 13906), (62, 13969), (69, 14080), (76, 14149), (88, 14266), (94, 14320), (115, 14617), (120, 14659), (125, 14692), (132, 14740), (137, 14794), (154, 14971), (155, 14977), (159, 15001), (180, 15106), (190, 15199), (201, 15292), (208, 15355), (223, 15457), (226, 15478), (229, 15544),

Gene: Violeta_25 Start: 14523, Stop: 16391, Start Num: 27

Candidate Starts for Violeta_25:

(14, 14298), (24, 14493), (Start: 27 @14523 has 19 MA's), (32, 14583), (35, 14604), (38, 14616), (43, 14670), (47, 14703), (63, 14832), (67, 14925), (82, 15081), (86, 15135), (87, 15138), (91, 15168), (97, 15240), (107, 15363), (113, 15468), (115, 15492), (122, 15540), (150, 15837), (158, 15888), (164, 15906), (168, 15933), (172, 15951), (175, 15966), (191, 16113), (195, 16140), (201, 16203), (212, 16290), (225, 16383),

Gene: Warren_24 Start: 14623, Stop: 16491, Start Num: 27

Candidate Starts for Warren_24:

(14, 14398), (24, 14593), (Start: 27 @14623 has 19 MA's), (32, 14683), (35, 14704), (38, 14716), (43, 14770), (47, 14803), (67, 15025), (82, 15181), (86, 15235), (87, 15238), (91, 15268), (97, 15340), (107, 15463), (111, 15535), (115, 15592), (122, 15640), (129, 15703), (140, 15799), (150, 15937), (158, 15988), (164, 16006), (168, 16033), (195, 16240), (212, 16390), (219, 16435), (225, 16483),

Gene: Winchester007_39 Start: 20543, Stop: 22411, Start Num: 27

Candidate Starts for Winchester007_39:

(14, 20318), (24, 20513), (Start: 27 @20543 has 19 MA's), (32, 20603), (35, 20624), (38, 20636), (43, 20690), (47, 20723), (63, 20852), (67, 20945), (82, 21101), (86, 21155), (87, 21158), (91, 21188), (97, 21260), (107, 21383), (113, 21488), (115, 21512), (122, 21560), (150, 21857), (158, 21908), (164, 21926), (172, 21971), (175, 21986), (191, 22133), (195, 22160), (201, 22223), (212, 22310), (225, 22403),