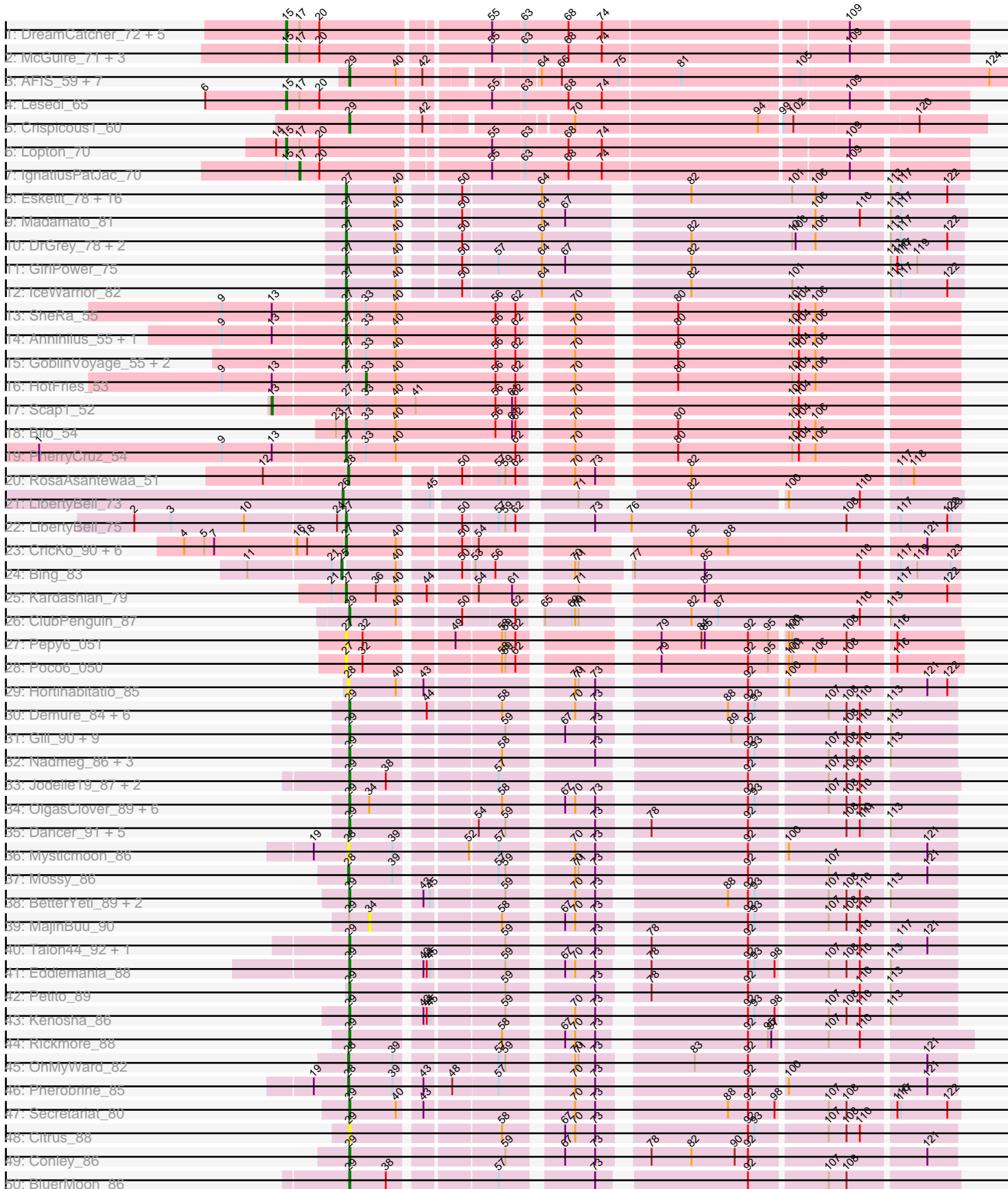
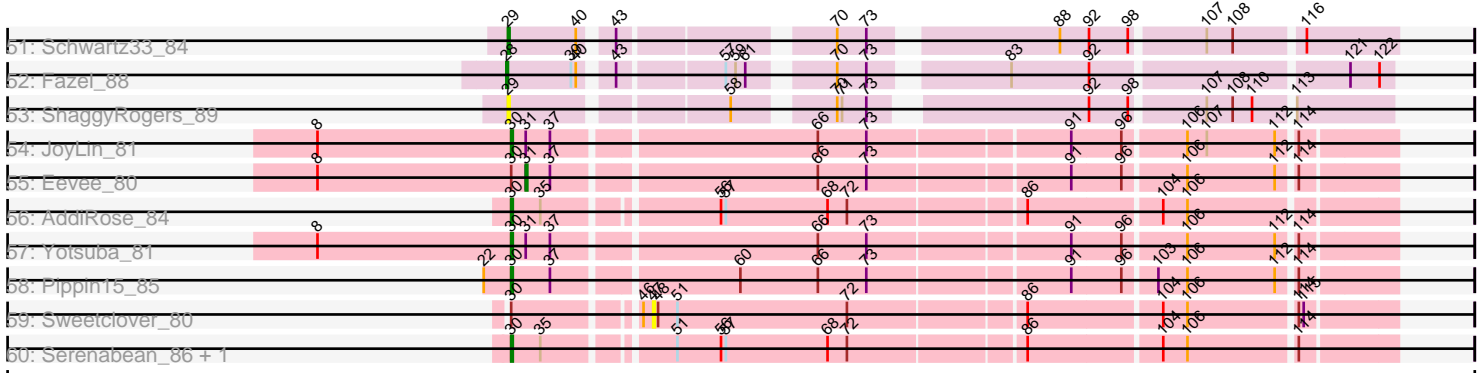


Pham 224385



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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 224385 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224385 has 137 members, 19 are drafts.

Phages represented in each track:

- Track 1 : DreamCatcher_72, GrecoEtereo_71, AFIS_66, Thor_70, Snazzy_68, SarFire_70
- Track 2 : McGuire_71, Ichabod_74, Squee_73, BluSpix_68
- Track 3 : AFIS_59, Bruns_64, NEHalo_60, SpikeBT_61, Moose_64, SwissCheese_66, GageAP_64, Forsytheast_64
- Track 4 : Lesedi_65
- Track 5 : Crispicous1_60
- Track 6 : Lopton_70
- Track 7 : IgnatiusPatJac_70
- Track 8 : Esketit_78, TaidaOne_82, Spectropatronm_81, Rima_83, TonyStarch_81, OlympicHelado_84, TieDye_78, Jaylociraptor_82, Meibysrarus_80, FidgetOrca_84, HazuAndZazu_79, Soshi_81, Indigenous_84, Hoshi_83, Maya_82, Namu_84, CherryBlossom_82
- Track 9 : Madamoto_81
- Track 10 : DrGrey_78, FrodoSwaggins_80, Popy_80
- Track 11 : GirlPower_75
- Track 12 : IceWarrior_82
- Track 13 : SheRa_55
- Track 14 : Annihilus_55, Moozy_54
- Track 15 : GoblinVoyage_55, RavenPuff_55, Doxi13_56
- Track 16 : HotFries_53
- Track 17 : Scap1_52
- Track 18 : Bilo_54
- Track 19 : PherryCruz_54
- Track 20 : RosaAsantewaa_51
- Track 21 : LibertyBell_73
- Track 22 : LibertyBell_75
- Track 23 : CricKo_90, FromIndy_88, Regigigas_90, SendItCS_82, Miek_84, Thiqqums_90, Rainydai_87
- Track 24 : Bing_83
- Track 25 : Kardashian_79
- Track 26 : ClubPenguin_87
- Track 27 : Pepy6_051
- Track 28 : Poco6_050
- Track 29 : Hortihabitatio_85
- Track 30 : Demure_84, Hydrus_87, Untouchable_89, Zeph_90, Arataki_85, Madvan_86, Phepper_88

- Track 31 : Gill_90, Magel_91, NoPickles_88, Roney_88, Capybara_87, Kerry_89, Tanis_89, Odesza_88, Captrips_87, Gravy_89
- Track 32 : Nadmeg_86, Vardy_86, Burley_86, Runhaar_85
- Track 33 : Jodelie19_87, Aflac_88, TenaciousP_89
- Track 34 : OlgasClover_89, Figliar_86, Duffington_88, Nithya_87, Chikenjars_88, EndAve_89, AlainaMarie_88
- Track 35 : Dancer_91, FortCran_88, JulesRay_89, Avazak_89, Trufflozitus_93, Artorias_88
- Track 36 : Mysticmoon_86
- Track 37 : Mossy_86
- Track 38 : BetterYeti_89, Crocheter_87, Gusicorn_90
- Track 39 : MajinBuu_90
- Track 40 : Talon44_92, Perkunas_90
- Track 41 : Eddiemania_88
- Track 42 : Petite_89
- Track 43 : Kenosha_86
- Track 44 : Rickmore_88
- Track 45 : OhMyWard_82
- Track 46 : Pherobrine_85
- Track 47 : Secretariat_80
- Track 48 : Citrus_88
- Track 49 : Conley_86
- Track 50 : BluerMoon_86
- Track 51 : Schwartz33_84
- Track 52 : Fazel_88
- Track 53 : ShaggyRogers_89
- Track 54 : JoyLin_81
- Track 55 : Eevee_80
- Track 56 : AddiRose_84
- Track 57 : Yotsuba_81
- Track 58 : Pippin15_85
- Track 59 : Sweetclover_80
- Track 60 : Serenabean_86, Daddyjeff_86

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

The start number called the most often in the published annotations is 29, it was called in 51 of the 118 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AFIS_59, Aflac_88, AlainaMarie_88, Arataki_85, Artorias_88, Avazak_89, BetterYeti_89, BluerMoon_86, Bruns_64, Burley_86, Captrips_87, Capybara_87, Chikenjars_88, Citrus_88, ClubPenguin_87, Conley_86, Crispicious1_60, Crocheter_87, Dancer_91, Demure_84, Duffington_88, Eddiemania_88, EndAve_89, Figliar_86, Forsytheast_64, FortCran_88, GageAP_64, Gill_90, Gravy_89, Gusicorn_90, Hydrus_87, Jodelie19_87, JulesRay_89, Kenosha_86, Kerry_89, Madvan_86, Magel_91, Moose_64, NEHalo_60, Nadmeg_86, Nithya_87, NoPickles_88, Odesza_88, OlgasClover_89, Perkunas_90, Petite_89, Phepper_88, Rickmore_88, Roney_88, Runhaar_85, Schwartz33_84, Secretariat_80, ShaggyRogers_89, SpikeBT_61, SwissCheese_66, Talon44_92, Tanis_89,

TenaciousP_89, Trufflozitus_93, Untouchable_89, Vardy_86, Zeph_90,

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

- MajinBuu_90,

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

- AFIS_66, AddiRose_84, Annihilus_55, Bilo_54, Bing_83, BluSpix_68, CherryBlossom_82, CricKo_90, Daddyjeff_86, Doxi13_56, DrGrey_78, DreamCatcher_72, Eevee_80, Esketit_78, Fazel_88, FidgetOrca_84, FrodoSwaggins_80, FromIndy_88, GirlPower_75, GoblinVoyage_55, GrecoEtereo_71, HazuAndZazu_79, Hortihabitatio_85, Hoshi_83, HotFries_53, IceWarrior_82, Ichabod_74, IgnatiusPatJac_70, Indigenous_84, Jaylociraptor_82, JoyLin_81, Kardashian_79, Lesedi_65, LibertyBell_73, LibertyBell_75, Lopton_70, Madamato_81, Maya_82, McGuire_71, Meibysrarus_80, Miek_84, Moozy_54, Mossy_86, Mysticmoon_86, Namu_84, OhMyWard_82, OlympicHelado_84, Pepy6_051, Pherobrine_85, PherryCruz_54, Pippin15_85, POCO6_050, Popy_80, Rainydai_87, RavenPuff_55, Regigigas_90, Rima_83, RosaAsantewaa_51, SarFire_70, Scap1_52, SendItCS_82, Serenabean_86, SheRa_55, Snazzy_68, Soshi_81, Spectropatronm_81, Squee_73, Sweetclover_80, TaidaOne_82, Thiqqums_90, Thor_70, TieDye_78, TonyStarch_81, Yotsuba_81,

Summary by start number:

Start 13:

- Found in 6 of 137 (4.4%) of genes in pham
- Manual Annotations of this start: 1 of 118
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Scap1_52 (BI2),

Start 15:

- Found in 13 of 137 (9.5%) of genes in pham
- Manual Annotations of this start: 12 of 118
- Called 92.3% of time when present
- Phage (with cluster) where this start called: AFIS_66 (A1), BluSpix_68 (A1), DreamCatcher_72 (A1), GrecoEtereo_71 (A1), Ichabod_74 (A1), Lesedi_65 (A1), Lopton_70 (A1), McGuire_71 (A1), SarFire_70 (A1), Snazzy_68 (A1), Squee_73 (A1), Thor_70 (A1),

Start 17:

- Found in 13 of 137 (9.5%) of genes in pham
- Manual Annotations of this start: 1 of 118
- Called 7.7% of time when present
- Phage (with cluster) where this start called: IgnatiusPatJac_70 (A1),

Start 25:

- Found in 1 of 137 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 118
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bing_83 (BI5),

Start 26:

- Found in 1 of 137 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 118

- Called 100.0% of time when present
- Phage (with cluster) where this start called: LibertyBell_73 (BI3),

Start 27:

- Found in 44 of 137 (32.1%) of genes in pham
- Manual Annotations of this start: 38 of 118
- Called 95.5% of time when present
- Phage (with cluster) where this start called: Annihilus_55 (BI2), Bilo_54 (BI2), CherryBlossom_82 (BI1), CricKo_90 (BI4), Doxi13_56 (BI2), DrGrey_78 (BI1), Esketit_78 (BI1), FidgetOrca_84 (BI1), FrodoSwaggins_80 (BI1), FromIndy_88 (BI4), GirlPower_75 (BI1), GoblinVoyage_55 (BI2), HazuAndZazu_79 (BI1), Hoshi_83 (BI1), IceWarrior_82 (BI1), Indigenous_84 (BI1), Jaylociraptor_82 (BI1), Kardashian_79 (BI6), LibertyBell_75 (BI3), Madamato_81 (BI1), Maya_82 (BI1), Meibysrarus_80 (BI1), Miek_84 (BI4), Moozy_54 (BI2), Namu_84 (BI1), OlympicHelado_84 (BI1), Popy6_051 (CC), PherryCruz_54 (BI2), Poco6_050 (CC), Popy_80 (BI1), Rainydai_87 (BI4), RavenPuff_55 (BI2), Regigigas_90 (BI4), Rima_83 (BI1), SendItCS_82 (BI4), SheRa_55 (BI2), Soshi_81 (BI1), Spectropatronm_81 (BI1), TaidaOne_82 (BI1), Thiqqums_90 (BI4), TieDye_78 (BI1), TonyStarch_81 (BI1),

Start 28:

- Found in 7 of 137 (5.1%) of genes in pham
- Manual Annotations of this start: 5 of 118
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fazel_88 (DJ), Hortihabitatio_85 (DJ), Mossy_86 (DJ), Mysticmoon_86 (DJ), OhMyWard_82 (DJ), Pherobrine_85 (DJ), RosaAsantewaa_51 (BI2),

Start 29:

- Found in 63 of 137 (46.0%) of genes in pham
- Manual Annotations of this start: 51 of 118
- Called 98.4% of time when present
- Phage (with cluster) where this start called: AFIS_59 (A1), Aflac_88 (DJ), AlainaMarie_88 (DJ), Arataki_85 (DJ), Artorias_88 (DJ), Avazak_89 (DJ), BetterYeti_89 (DJ), BluerMoon_86 (DJ), Bruns_64 (A1), Burley_86 (DJ), Captrips_87 (DJ), Capybara_87 (DJ), Chikenjars_88 (DJ), Citrus_88 (DJ), ClubPenguin_87 (BI7), Conley_86 (DJ), Crispicous1_60 (A1), Crocheter_87 (DJ), Dancer_91 (DJ), Demure_84 (DJ), Duffington_88 (DJ), Eddiemania_88 (DJ), EndAve_89 (DJ), Figliar_86 (DJ), Forsytheast_64 (A1), FortCran_88 (DJ), GageAP_64 (A1), Gill_90 (DJ), Gravy_89 (DJ), Gusicorn_90 (DJ), Hydrus_87 (DJ), Jodelie19_87 (DJ), JulesRay_89 (DJ), Kenosha_86 (DJ), Kerry_89 (DJ), Madvan_86 (DJ), Magel_91 (DJ), Moose_64 (A1), NEHalo_60 (A1), Nadmeg_86 (DJ), Nithya_87 (DJ), NoPickles_88 (DJ), Odesza_88 (DJ), OlgasClover_89 (DJ), Perkunas_90 (DJ), Petite_89 (DJ), Phepper_88 (DJ), Rickmore_88 (DJ), Roney_88 (DJ), Runhaar_85 (DJ), Schwartz33_84 (DJ), Secretariat_80 (DJ), ShaggyRogers_89 (DJ), SpikeBT_61 (A1), SwissCheese_66 (A1), Talon44_92 (DJ), Tanis_89 (DJ), TenaciousP_89 (DJ), Trufflozitus_93 (DJ), Untouchable_89 (DJ), Vardy_86 (DJ), Zeph_90 (DJ),

Start 30:

- Found in 8 of 137 (5.8%) of genes in pham
- Manual Annotations of this start: 6 of 118
- Called 75.0% of time when present
- Phage (with cluster) where this start called: AddiRose_84 (JA), Daddyjeff_86 (JA), JoyLin_81 (JA), Pippin15_85 (JA), Serenabean_86 (JA), Yotsuba_81 (JA),

Start 31:

- Found in 3 of 137 (2.2%) of genes in pham
- Manual Annotations of this start: 1 of 118
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Eevee_80 (JA),

Start 33:

- Found in 10 of 137 (7.3%) of genes in pham
- Manual Annotations of this start: 1 of 118
- Called 10.0% of time when present
- Phage (with cluster) where this start called: HotFries_53 (BI2),

Start 34:

- Found in 8 of 137 (5.8%) of genes in pham
- No Manual Annotations of this start.
- Called 12.5% of time when present
- Phage (with cluster) where this start called: MajinBuu_90 (DJ),

Start 47:

- Found in 1 of 137 (0.7%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sweetclover_80 (JA),

Summary by clusters:

There are 11 clusters represented in this pham: DJ, CC, BI3, A1, BI6, BI7, BI4, BI5, BI2, JA, BI1,

Info for manual annotations of cluster A1:

- Start number 15 was manually annotated 12 times for cluster A1.
- Start number 17 was manually annotated 1 time for cluster A1.
- Start number 29 was manually annotated 9 times for cluster A1.

Info for manual annotations of cluster BI1:

- Start number 27 was manually annotated 23 times for cluster BI1.

Info for manual annotations of cluster BI2:

- Start number 13 was manually annotated 1 time for cluster BI2.
- Start number 27 was manually annotated 8 times for cluster BI2.
- Start number 28 was manually annotated 1 time for cluster BI2.
- Start number 33 was manually annotated 1 time for cluster BI2.

Info for manual annotations of cluster BI3:

- Start number 26 was manually annotated 1 time for cluster BI3.
- Start number 27 was manually annotated 1 time for cluster BI3.

Info for manual annotations of cluster BI4:

- Start number 27 was manually annotated 5 times for cluster BI4.

Info for manual annotations of cluster BI5:

- Start number 25 was manually annotated 1 time for cluster BI5.

Info for manual annotations of cluster BI6:

- Start number 27 was manually annotated 1 time for cluster BI6.

Info for manual annotations of cluster BI7:

- Start number 29 was manually annotated 1 time for cluster BI7.

Info for manual annotations of cluster DJ:

- Start number 28 was manually annotated 4 times for cluster DJ.
- Start number 29 was manually annotated 41 times for cluster DJ.

Info for manual annotations of cluster JA:

- Start number 30 was manually annotated 6 times for cluster JA.
- Start number 31 was manually annotated 1 time for cluster JA.

Gene Information:

Gene: AFIS_59 Start: 40536, Stop: 39979, Start Num: 29

Candidate Starts for AFIS_59:

(Start: 29 @40536 has 51 MA's), (40, 40494), (42, 40476), (64, 40392), (66, 40374), (75, 40323), (81, 40269), (105, 40167), (124, 39999),

Gene: AFIS_66 Start: 43840, Stop: 43262, Start Num: 15

Candidate Starts for AFIS_66:

(Start: 15 @43840 has 12 MA's), (Start: 17 @43828 has 1 MA's), (20, 43810), (55, 43669), (63, 43642), (68, 43603), (74, 43573), (109, 43360),

Gene: AddiRose_84 Start: 50059, Stop: 50565, Start Num: 30

Candidate Starts for AddiRose_84:

(Start: 30 @50059 has 6 MA's), (35, 50077), (56, 50173), (57, 50176), (68, 50239), (72, 50251), (86, 50353), (104, 50431), (106, 50446),

Gene: Aflac_88 Start: 56715, Stop: 57197, Start Num: 29

Candidate Starts for Aflac_88:

(Start: 29 @56715 has 51 MA's), (38, 56748), (57, 56832), (92, 57021), (107, 57087), (108, 57102), (110, 57114),

Gene: AlainaMarie_88 Start: 56739, Stop: 57221, Start Num: 29

Candidate Starts for AlainaMarie_88:

(Start: 29 @56739 has 51 MA's), (34, 56757), (58, 56859), (67, 56901), (70, 56910), (73, 56928), (92, 57048), (93, 57054), (107, 57114), (108, 57129), (110, 57141),

Gene: Annihilus_55 Start: 38912, Stop: 39421, Start Num: 27

Candidate Starts for Annihilus_55:

(9, 38804), (Start: 13 @38849 has 1 MA's), (Start: 27 @38912 has 38 MA's), (Start: 33 @38927 has 1 MA's), (40, 38954), (56, 39044), (62, 39062), (70, 39101), (80, 39176), (101, 39278), (104, 39284), (106, 39299),

Gene: Arataki_85 Start: 55860, Stop: 56339, Start Num: 29

Candidate Starts for Arataki_85:

(Start: 29 @55860 has 51 MA's), (44, 55920), (58, 55980), (70, 56031), (73, 56049), (88, 56148), (92, 56166), (93, 56172), (107, 56232), (108, 56247), (110, 56259), (113, 56280),

Gene: Artorias_88 Start: 55253, Stop: 55735, Start Num: 29

Candidate Starts for Artorias_88:

(Start: 29 @55253 has 51 MA's), (54, 55352), (59, 55376), (73, 55442), (78, 55475), (92, 55562), (108, 55643), (110, 55655), (111, 55658), (113, 55676),

Gene: Avazak_89 Start: 55682, Stop: 56164, Start Num: 29

Candidate Starts for Avazak_89:

(Start: 29 @55682 has 51 MA's), (54, 55781), (59, 55805), (73, 55871), (78, 55904), (92, 55991), (108, 56072), (110, 56084), (111, 56087), (113, 56105),

Gene: BetterYeti_89 Start: 55872, Stop: 56351, Start Num: 29

Candidate Starts for BetterYeti_89:

(Start: 29 @55872 has 51 MA's), (43, 55929), (45, 55935), (59, 55995), (70, 56043), (73, 56061), (88, 56160), (92, 56178), (93, 56184), (107, 56244), (108, 56259), (110, 56271), (113, 56292),

Gene: Bilo_54 Start: 39203, Stop: 39715, Start Num: 27

Candidate Starts for Bilo_54:

(23, 39194), (Start: 27 @39203 has 38 MA's), (Start: 33 @39221 has 1 MA's), (40, 39248), (56, 39338), (61, 39353), (62, 39356), (70, 39395), (80, 39470), (101, 39572), (104, 39578), (106, 39593),

Gene: Bing_83 Start: 51639, Stop: 52142, Start Num: 25

Candidate Starts for Bing_83:

(11, 51558), (21, 51630), (Start: 25 @51639 has 1 MA's), (40, 51684), (50, 51729), (53, 51738), (56, 51756), (70, 51813), (71, 51816), (77, 51858), (85, 51921), (110, 52059), (117, 52089), (119, 52104), (123, 52134),

Gene: BluSpix_68 Start: 40281, Stop: 39703, Start Num: 15

Candidate Starts for BluSpix_68:

(Start: 15 @40281 has 12 MA's), (Start: 17 @40269 has 1 MA's), (20, 40251), (55, 40110), (63, 40083), (68, 40044), (74, 40014), (109, 39801),

Gene: BluerMoon_86 Start: 56545, Stop: 57027, Start Num: 29

Candidate Starts for BluerMoon_86:

(Start: 29 @56545 has 51 MA's), (38, 56578), (57, 56662), (73, 56734), (92, 56851), (107, 56917), (108, 56932),

Gene: Bruns_64 Start: 41012, Stop: 40455, Start Num: 29

Candidate Starts for Bruns_64:

(Start: 29 @41012 has 51 MA's), (40, 40970), (42, 40952), (64, 40868), (66, 40850), (75, 40799), (81, 40745), (105, 40643), (124, 40475),

Gene: Burley_86 Start: 55548, Stop: 56027, Start Num: 29

Candidate Starts for Burley_86:

(Start: 29 @55548 has 51 MA's), (58, 55668), (73, 55737), (92, 55854), (93, 55860), (107, 55920), (108, 55935), (110, 55947), (113, 55968),

Gene: Captrips_87 Start: 55033, Stop: 55515, Start Num: 29

Candidate Starts for Captrips_87:

(Start: 29 @55033 has 51 MA's), (59, 55156), (67, 55195), (73, 55222), (89, 55327), (92, 55342), (108, 55423), (110, 55435), (113, 55456),

Gene: Capybara_87 Start: 55256, Stop: 55738, Start Num: 29

Candidate Starts for Capybara_87:

(Start: 29 @55256 has 51 MA's), (59, 55379), (67, 55418), (73, 55445), (89, 55550), (92, 55565), (108, 55646), (110, 55658), (113, 55679),

Gene: CherryBlossom_82 Start: 50872, Stop: 51381, Start Num: 27

Candidate Starts for CherryBlossom_82:

(Start: 27 @50872 has 38 MA's), (40, 50917), (50, 50962), (64, 51031), (82, 51145), (101, 51235), (106, 51256), (113, 51316), (117, 51325), (122, 51367),

Gene: Chikenjars_88 Start: 56967, Stop: 57449, Start Num: 29

Candidate Starts for Chikenjars_88:

(Start: 29 @56967 has 51 MA's), (34, 56985), (58, 57087), (67, 57129), (70, 57138), (73, 57156), (92, 57276), (93, 57282), (107, 57342), (108, 57357), (110, 57369),

Gene: Citrus_88 Start: 56560, Stop: 57042, Start Num: 29

Candidate Starts for Citrus_88:

(Start: 29 @56560 has 51 MA's), (58, 56680), (67, 56722), (70, 56731), (73, 56749), (92, 56869), (93, 56875), (107, 56935), (108, 56950), (110, 56962),

Gene: ClubPenguin_87 Start: 51570, Stop: 52061, Start Num: 29

Candidate Starts for ClubPenguin_87:

(Start: 29 @51570 has 51 MA's), (40, 51612), (50, 51657), (62, 51702), (65, 51714), (69, 51738), (70, 51741), (71, 51744), (82, 51828), (87, 51852), (110, 51978), (113, 51999),

Gene: Conley_86 Start: 55548, Stop: 56030, Start Num: 29

Candidate Starts for Conley_86:

(Start: 29 @55548 has 51 MA's), (59, 55671), (67, 55710), (73, 55737), (78, 55770), (82, 55806), (90, 55845), (92, 55857), (121, 56004),

Gene: CricKo_90 Start: 53073, Stop: 53564, Start Num: 27

Candidate Starts for CricKo_90:

(4, 52932), (5, 52950), (7, 52959), (16, 53031), (18, 53040), (Start: 27 @53073 has 38 MA's), (40, 53118), (50, 53163), (54, 53175), (82, 53331), (88, 53364), (121, 53535),

Gene: Crispicous1_60 Start: 40522, Stop: 39992, Start Num: 29

Candidate Starts for Crispicous1_60:

(Start: 29 @40522 has 51 MA's), (42, 40462), (70, 40348), (94, 40186), (99, 40168), (102, 40159), (120, 40051),

Gene: Crocheter_87 Start: 55966, Stop: 56445, Start Num: 29

Candidate Starts for Crocheter_87:

(Start: 29 @55966 has 51 MA's), (43, 56023), (45, 56029), (59, 56089), (70, 56137), (73, 56155), (88, 56254), (92, 56272), (93, 56278), (107, 56338), (108, 56353), (110, 56365), (113, 56386),

Gene: Daddyjeff_86 Start: 50407, Stop: 50913, Start Num: 30

Candidate Starts for Daddyjeff_86:

(Start: 30 @50407 has 6 MA's), (35, 50425), (51, 50494), (56, 50521), (57, 50524), (68, 50587), (72, 50599), (86, 50701), (104, 50779), (106, 50794), (114, 50857),

Gene: Dancer_91 Start: 54990, Stop: 55472, Start Num: 29

Candidate Starts for Dancer_91:

(Start: 29 @54990 has 51 MA's), (54, 55089), (59, 55113), (73, 55179), (78, 55212), (92, 55299), (108, 55380), (110, 55392), (111, 55395), (113, 55413),

Gene: Demure_84 Start: 55994, Stop: 56473, Start Num: 29

Candidate Starts for Demure_84:

(Start: 29 @55994 has 51 MA's), (44, 56054), (58, 56114), (70, 56165), (73, 56183), (88, 56282), (92, 56300), (93, 56306), (107, 56366), (108, 56381), (110, 56393), (113, 56414),

Gene: Doxi13_56 Start: 39042, Stop: 39551, Start Num: 27

Candidate Starts for Doxi13_56:

(Start: 27 @39042 has 38 MA's), (Start: 33 @39057 has 1 MA's), (40, 39084), (56, 39174), (62, 39192), (70, 39231), (80, 39306), (101, 39408), (104, 39414), (106, 39429),

Gene: DrGrey_78 Start: 51385, Stop: 51894, Start Num: 27

Candidate Starts for DrGrey_78:

(Start: 27 @51385 has 38 MA's), (40, 51430), (50, 51475), (64, 51544), (82, 51658), (101, 51748), (103, 51751), (106, 51769), (113, 51829), (117, 51838), (122, 51880),

Gene: DreamCatcher_72 Start: 44845, Stop: 44267, Start Num: 15

Candidate Starts for DreamCatcher_72:

(Start: 15 @44845 has 12 MA's), (Start: 17 @44833 has 1 MA's), (20, 44815), (55, 44674), (63, 44647), (68, 44608), (74, 44578), (109, 44365),

Gene: Duffington_88 Start: 56767, Stop: 57249, Start Num: 29

Candidate Starts for Duffington_88:

(Start: 29 @56767 has 51 MA's), (34, 56785), (58, 56887), (67, 56929), (70, 56938), (73, 56956), (92, 57076), (93, 57082), (107, 57142), (108, 57157), (110, 57169),

Gene: Eddiemania_88 Start: 56862, Stop: 57341, Start Num: 29

Candidate Starts for Eddiemania_88:

(Start: 29 @56862 has 51 MA's), (43, 56919), (44, 56922), (45, 56925), (59, 56985), (67, 57024), (70, 57033), (73, 57051), (78, 57081), (92, 57168), (93, 57174), (98, 57192), (107, 57234), (108, 57249), (110, 57261), (113, 57282),

Gene: Eevee_80 Start: 51716, Stop: 52216, Start Num: 31

Candidate Starts for Eevee_80:

(8, 51587), (Start: 30 @51707 has 6 MA's), (Start: 31 @51716 has 1 MA's), (37, 51731), (66, 51884), (73, 51914), (91, 52031), (96, 52061), (106, 52097), (112, 52151), (114, 52160),

Gene: EndAve_89 Start: 56677, Stop: 57159, Start Num: 29

Candidate Starts for EndAve_89:

(Start: 29 @56677 has 51 MA's), (34, 56695), (58, 56797), (67, 56839), (70, 56848), (73, 56866), (92, 56986), (93, 56992), (107, 57052), (108, 57067), (110, 57079),

Gene: Esketit_78 Start: 49973, Stop: 50482, Start Num: 27

Candidate Starts for Esketit_78:

(Start: 27 @49973 has 38 MA's), (40, 50018), (50, 50063), (64, 50132), (82, 50246), (101, 50336), (106, 50357), (113, 50417), (117, 50426), (122, 50468),

Gene: Fazel_88 Start: 55520, Stop: 56002, Start Num: 28

Candidate Starts for Fazel_88:

(Start: 28 @55520 has 5 MA's), (39, 55559), (40, 55562), (43, 55577), (57, 55637), (59, 55643), (61, 55649), (70, 55691), (73, 55709), (83, 55781), (92, 55829), (121, 55976), (122, 55994),

Gene: FidgetOrca_84 Start: 51423, Stop: 51932, Start Num: 27

Candidate Starts for FidgetOrca_84:

(Start: 27 @51423 has 38 MA's), (40, 51468), (50, 51513), (64, 51582), (82, 51696), (101, 51786), (106, 51807), (113, 51867), (117, 51876), (122, 51918),

Gene: Figliar_86 Start: 56571, Stop: 57053, Start Num: 29

Candidate Starts for Figliar_86:

(Start: 29 @56571 has 51 MA's), (34, 56589), (58, 56691), (67, 56733), (70, 56742), (73, 56760), (92, 56880), (93, 56886), (107, 56946), (108, 56961), (110, 56973),

Gene: Forsytheast_64 Start: 41180, Stop: 40623, Start Num: 29

Candidate Starts for Forsytheast_64:

(Start: 29 @41180 has 51 MA's), (40, 41138), (42, 41120), (64, 41036), (66, 41018), (75, 40967), (81, 40913), (105, 40811), (124, 40643),

Gene: FortCran_88 Start: 55254, Stop: 55736, Start Num: 29

Candidate Starts for FortCran_88:

(Start: 29 @55254 has 51 MA's), (54, 55353), (59, 55377), (73, 55443), (78, 55476), (92, 55563), (108, 55644), (110, 55656), (111, 55659), (113, 55677),

Gene: FrodoSwaggins_80 Start: 51780, Stop: 52289, Start Num: 27

Candidate Starts for FrodoSwaggins_80:

(Start: 27 @51780 has 38 MA's), (40, 51825), (50, 51870), (64, 51939), (82, 52053), (101, 52143), (103, 52146), (106, 52164), (113, 52224), (117, 52233), (122, 52275),

Gene: FromIndy_88 Start: 52273, Stop: 52764, Start Num: 27

Candidate Starts for FromIndy_88:

(4, 52132), (5, 52150), (7, 52159), (16, 52231), (18, 52240), (Start: 27 @52273 has 38 MA's), (40, 52318), (50, 52363), (54, 52375), (82, 52531), (88, 52564), (121, 52735),

Gene: GageAP_64 Start: 42203, Stop: 41646, Start Num: 29

Candidate Starts for GageAP_64:

(Start: 29 @42203 has 51 MA's), (40, 42161), (42, 42143), (64, 42059), (66, 42041), (75, 41990), (81, 41936), (105, 41834), (124, 41666),

Gene: Gill_90 Start: 55283, Stop: 55765, Start Num: 29

Candidate Starts for Gill_90:

(Start: 29 @55283 has 51 MA's), (59, 55406), (67, 55445), (73, 55472), (89, 55577), (92, 55592), (108, 55673), (110, 55685), (113, 55706),

Gene: GirlPower_75 Start: 50852, Stop: 51361, Start Num: 27

Candidate Starts for GirlPower_75:

(Start: 27 @50852 has 38 MA's), (40, 50897), (50, 50942), (57, 50972), (64, 51011), (67, 51032), (82, 51125), (113, 51296), (116, 51302), (117, 51305), (119, 51320),

Gene: GoblinVoyage_55 Start: 38886, Stop: 39395, Start Num: 27

Candidate Starts for GoblinVoyage_55:

(Start: 27 @38886 has 38 MA's), (Start: 33 @38901 has 1 MA's), (40, 38928), (56, 39018), (62, 39036), (70, 39075), (80, 39150), (101, 39252), (104, 39258), (106, 39273),

Gene: Gravy_89 Start: 54946, Stop: 55428, Start Num: 29

Candidate Starts for Gravy_89:

(Start: 29 @54946 has 51 MA's), (59, 55069), (67, 55108), (73, 55135), (89, 55240), (92, 55255), (108, 55336), (110, 55348), (113, 55369),

Gene: GrecoEtereo_71 Start: 44625, Stop: 44047, Start Num: 15

Candidate Starts for GrecoEtereo_71:

(Start: 15 @44625 has 12 MA's), (Start: 17 @44613 has 1 MA's), (20, 44595), (55, 44454), (63, 44427), (68, 44388), (74, 44358), (109, 44145),

Gene: Gusicorn_90 Start: 55873, Stop: 56352, Start Num: 29

Candidate Starts for Gusicorn_90:

(Start: 29 @55873 has 51 MA's), (43, 55930), (45, 55936), (59, 55996), (70, 56044), (73, 56062), (88, 56161), (92, 56179), (93, 56185), (107, 56245), (108, 56260), (110, 56272), (113, 56293),

Gene: HazuAndZazu_79 Start: 51132, Stop: 51641, Start Num: 27

Candidate Starts for HazuAndZazu_79:

(Start: 27 @51132 has 38 MA's), (40, 51177), (50, 51222), (64, 51291), (82, 51405), (101, 51495), (106, 51516), (113, 51576), (117, 51585), (122, 51627),

Gene: Hortihabitatio_85 Start: 55292, Stop: 55774, Start Num: 28

Candidate Starts for Hortihabitatio_85:

(Start: 28 @55292 has 5 MA's), (40, 55334), (43, 55349), (70, 55463), (71, 55466), (73, 55481), (92, 55601), (100, 55631), (121, 55748), (122, 55766),

Gene: Hoshi_83 Start: 51036, Stop: 51545, Start Num: 27

Candidate Starts for Hoshi_83:

(Start: 27 @51036 has 38 MA's), (40, 51081), (50, 51126), (64, 51195), (82, 51309), (101, 51399), (106, 51420), (113, 51480), (117, 51489), (122, 51531),

Gene: HotFries_53 Start: 39084, Stop: 39578, Start Num: 33

Candidate Starts for HotFries_53:

(9, 38961), (Start: 13 @39006 has 1 MA's), (Start: 27 @39069 has 38 MA's), (Start: 33 @39084 has 1 MA's), (40, 39111), (56, 39201), (62, 39219), (70, 39258), (80, 39333), (101, 39435), (104, 39441), (106, 39456),

Gene: Hydrus_87 Start: 56277, Stop: 56756, Start Num: 29

Candidate Starts for Hydrus_87:

(Start: 29 @56277 has 51 MA's), (44, 56337), (58, 56397), (70, 56448), (73, 56466), (88, 56565), (92, 56583), (93, 56589), (107, 56649), (108, 56664), (110, 56676), (113, 56697),

Gene: IceWarrior_82 Start: 50842, Stop: 51351, Start Num: 27

Candidate Starts for IceWarrior_82:

(Start: 27 @50842 has 38 MA's), (40, 50887), (50, 50932), (64, 51001), (82, 51115), (101, 51205), (113, 51286), (117, 51295), (122, 51337),

Gene: Ichabod_74 Start: 45654, Stop: 45076, Start Num: 15

Candidate Starts for Ichabod_74:

(Start: 15 @45654 has 12 MA's), (Start: 17 @45642 has 1 MA's), (20, 45624), (55, 45483), (63, 45456), (68, 45417), (74, 45387), (109, 45174),

Gene: IgnatiusPatJac_70 Start: 44214, Stop: 43648, Start Num: 17

Candidate Starts for IgnatiusPatJac_70:

(Start: 15 @44226 has 12 MA's), (Start: 17 @44214 has 1 MA's), (20, 44196), (55, 44055), (63, 44028), (68, 43989), (74, 43959), (109, 43746),

Gene: Indigenous_84 Start: 51428, Stop: 51937, Start Num: 27

Candidate Starts for Indigenous_84:

(Start: 27 @51428 has 38 MA's), (40, 51473), (50, 51518), (64, 51587), (82, 51701), (101, 51791), (106, 51812), (113, 51872), (117, 51881), (122, 51923),

Gene: Jaylociraptor_82 Start: 51008, Stop: 51517, Start Num: 27

Candidate Starts for Jaylociraptor_82:

(Start: 27 @51008 has 38 MA's), (40, 51053), (50, 51098), (64, 51167), (82, 51281), (101, 51371), (106, 51392), (113, 51452), (117, 51461), (122, 51503),

Gene: Jodelie19_87 Start: 57758, Stop: 58240, Start Num: 29

Candidate Starts for Jodelie19_87:

(Start: 29 @57758 has 51 MA's), (38, 57791), (57, 57875), (92, 58064), (107, 58130), (108, 58145), (110, 58157),

Gene: JoyLin_81 Start: 52459, Stop: 52968, Start Num: 30

Candidate Starts for JoyLin_81:

(8, 52339), (Start: 30 @52459 has 6 MA's), (Start: 31 @52468 has 1 MA's), (37, 52483), (66, 52636), (73, 52666), (91, 52783), (96, 52813), (106, 52849), (107, 52861), (112, 52903), (114, 52912),

Gene: JulesRay_89 Start: 55349, Stop: 55831, Start Num: 29

Candidate Starts for JulesRay_89:

(Start: 29 @55349 has 51 MA's), (54, 55448), (59, 55472), (73, 55538), (78, 55571), (92, 55658), (108, 55739), (110, 55751), (111, 55754), (113, 55772),

Gene: Kardashian_79 Start: 51398, Stop: 51889, Start Num: 27

Candidate Starts for Kardashian_79:

(21, 51386), (Start: 27 @51398 has 38 MA's), (36, 51425), (40, 51443), (44, 51461), (54, 51500), (61, 51530), (71, 51575), (85, 51668), (117, 51836), (122, 51878),

Gene: Kenosha_86 Start: 56334, Stop: 56813, Start Num: 29

Candidate Starts for Kenosha_86:

(Start: 29 @56334 has 51 MA's), (43, 56391), (44, 56394), (45, 56397), (59, 56457), (70, 56505), (73, 56523), (92, 56640), (93, 56646), (98, 56664), (107, 56706), (108, 56721), (110, 56733), (113, 56754),

Gene: Kerry_89 Start: 55009, Stop: 55491, Start Num: 29

Candidate Starts for Kerry_89:

(Start: 29 @55009 has 51 MA's), (59, 55132), (67, 55171), (73, 55198), (89, 55303), (92, 55318), (108, 55399), (110, 55411), (113, 55432),

Gene: Lesedi_65 Start: 42530, Stop: 41952, Start Num: 15

Candidate Starts for Lesedi_65:

(6, 42602), (Start: 15 @42530 has 12 MA's), (Start: 17 @42518 has 1 MA's), (20, 42500), (55, 42359), (63, 42332), (68, 42293), (74, 42263), (109, 42050),

Gene: LibertyBell_73 Start: 45969, Stop: 46457, Start Num: 26

Candidate Starts for LibertyBell_73:

(Start: 26 @45969 has 1 MA's), (45, 46038), (71, 46152), (82, 46227), (100, 46308), (110, 46371),

Gene: LibertyBell_75 Start: 48093, Stop: 48605, Start Num: 27

Candidate Starts for LibertyBell_75:

(2, 47907), (3, 47940), (10, 48006), (24, 48087), (Start: 27 @48093 has 38 MA's), (50, 48183), (57, 48213), (59, 48219), (62, 48228), (73, 48285), (76, 48318), (108, 48510), (117, 48552), (122, 48594), (123, 48597),

Gene: Lopton_70 Start: 46302, Stop: 45724, Start Num: 15

Candidate Starts for Lopton_70:

(14, 46311), (Start: 15 @46302 has 12 MA's), (Start: 17 @46290 has 1 MA's), (20, 46272), (55, 46131), (63, 46104), (68, 46065), (74, 46035), (109, 45822),

Gene: Madamoto_81 Start: 50680, Stop: 51192, Start Num: 27

Candidate Starts for Madamoto_81:

(Start: 27 @50680 has 38 MA's), (40, 50725), (50, 50770), (64, 50839), (67, 50860), (106, 51064), (110, 51103), (113, 51124), (117, 51133),

Gene: Madvan_86 Start: 55589, Stop: 56068, Start Num: 29

Candidate Starts for Madvan_86:

(Start: 29 @55589 has 51 MA's), (44, 55649), (58, 55709), (70, 55760), (73, 55778), (88, 55877), (92, 55895), (93, 55901), (107, 55961), (108, 55976), (110, 55988), (113, 56009),

Gene: Magel_91 Start: 55198, Stop: 55680, Start Num: 29

Candidate Starts for Magel_91:

(Start: 29 @55198 has 51 MA's), (59, 55321), (67, 55360), (73, 55387), (89, 55492), (92, 55507), (108, 55588), (110, 55600), (113, 55621),

Gene: MajinBuu_90 Start: 56967, Stop: 57431, Start Num: 34

Candidate Starts for MajinBuu_90:

(Start: 29 @56949 has 51 MA's), (34, 56967), (58, 57069), (67, 57111), (70, 57120), (73, 57138), (92, 57258), (93, 57264), (107, 57324), (108, 57339), (110, 57351),

Gene: Maya_82 Start: 51022, Stop: 51531, Start Num: 27

Candidate Starts for Maya_82:

(Start: 27 @51022 has 38 MA's), (40, 51067), (50, 51112), (64, 51181), (82, 51295), (101, 51385), (106, 51406), (113, 51466), (117, 51475), (122, 51517),

Gene: McGuire_71 Start: 44174, Stop: 43596, Start Num: 15

Candidate Starts for McGuire_71:

(Start: 15 @44174 has 12 MA's), (Start: 17 @44162 has 1 MA's), (20, 44144), (55, 44003), (63, 43976), (68, 43937), (74, 43907), (109, 43694),

Gene: Meibysrarus_80 Start: 50406, Stop: 50915, Start Num: 27

Candidate Starts for Meibysrarus_80:

(Start: 27 @50406 has 38 MA's), (40, 50451), (50, 50496), (64, 50565), (82, 50679), (101, 50769), (106, 50790), (113, 50850), (117, 50859), (122, 50901),

Gene: Miek_84 Start: 51455, Stop: 51946, Start Num: 27

Candidate Starts for Miek_84:

(4, 51314), (5, 51332), (7, 51341), (16, 51413), (18, 51422), (Start: 27 @51455 has 38 MA's), (40, 51500), (50, 51545), (54, 51557), (82, 51713), (88, 51746), (121, 51917),

Gene: Moose_64 Start: 41180, Stop: 40623, Start Num: 29

Candidate Starts for Moose_64:

(Start: 29 @41180 has 51 MA's), (40, 41138), (42, 41120), (64, 41036), (66, 41018), (75, 40967), (81, 40913), (105, 40811), (124, 40643),

Gene: Moozy_54 Start: 38896, Stop: 39405, Start Num: 27

Candidate Starts for Moozy_54:

(9, 38788), (Start: 13 @38833 has 1 MA's), (Start: 27 @38896 has 38 MA's), (Start: 33 @38911 has 1 MA's), (40, 38938), (56, 39028), (62, 39046), (70, 39085), (80, 39160), (101, 39262), (104, 39268), (106, 39283),

Gene: Mossy_86 Start: 56611, Stop: 57093, Start Num: 28

Candidate Starts for Mossy_86:

(Start: 28 @56611 has 5 MA's), (39, 56650), (57, 56728), (59, 56734), (70, 56782), (71, 56785), (73, 56800), (92, 56920), (107, 56986), (121, 57067),

Gene: Mysticmoon_86 Start: 55708, Stop: 56190, Start Num: 28

Candidate Starts for Mysticmoon_86:

(19, 55678), (Start: 28 @55708 has 5 MA's), (39, 55747), (52, 55801), (57, 55825), (70, 55879), (73, 55897), (92, 56017), (100, 56047), (121, 56164),

Gene: NEHalo_60 Start: 41604, Stop: 41047, Start Num: 29

Candidate Starts for NEHalo_60:

(Start: 29 @41604 has 51 MA's), (40, 41562), (42, 41544), (64, 41460), (66, 41442), (75, 41391), (81, 41337), (105, 41235), (124, 41067),

Gene: Nadmeg_86 Start: 56574, Stop: 57053, Start Num: 29

Candidate Starts for Nadmeg_86:

(Start: 29 @56574 has 51 MA's), (58, 56694), (73, 56763), (92, 56880), (93, 56886), (107, 56946), (108, 56961), (110, 56973), (113, 56994),

Gene: Namo_84 Start: 51477, Stop: 51986, Start Num: 27

Candidate Starts for Namo_84:

(Start: 27 @51477 has 38 MA's), (40, 51522), (50, 51567), (64, 51636), (82, 51750), (101, 51840), (106, 51861), (113, 51921), (117, 51930), (122, 51972),

Gene: Nithya_87 Start: 56516, Stop: 56998, Start Num: 29

Candidate Starts for Nithya_87:

(Start: 29 @56516 has 51 MA's), (34, 56534), (58, 56636), (67, 56678), (70, 56687), (73, 56705), (92, 56825), (93, 56831), (107, 56891), (108, 56906), (110, 56918),

Gene: NoPickles_88 Start: 55105, Stop: 55587, Start Num: 29

Candidate Starts for NoPickles_88:

(Start: 29 @55105 has 51 MA's), (59, 55228), (67, 55267), (73, 55294), (89, 55399), (92, 55414), (108, 55495), (110, 55507), (113, 55528),

Gene: Odesza_88 Start: 55145, Stop: 55627, Start Num: 29

Candidate Starts for Odesza_88:

(Start: 29 @55145 has 51 MA's), (59, 55268), (67, 55307), (73, 55334), (89, 55439), (92, 55454), (108, 55535), (110, 55547), (113, 55568),

Gene: OhMyWard_82 Start: 56405, Stop: 56887, Start Num: 28

Candidate Starts for OhMyWard_82:

(Start: 28 @56405 has 5 MA's), (39, 56444), (57, 56522), (59, 56528), (70, 56576), (71, 56579), (73, 56594), (83, 56666), (92, 56714), (121, 56861),

Gene: OlgasClover_89 Start: 57350, Stop: 57832, Start Num: 29

Candidate Starts for OlgasClover_89:

(Start: 29 @57350 has 51 MA's), (34, 57368), (58, 57470), (67, 57512), (70, 57521), (73, 57539), (92, 57659), (93, 57665), (107, 57725), (108, 57740), (110, 57752),

Gene: OlympicHelado_84 Start: 51498, Stop: 52007, Start Num: 27

Candidate Starts for OlympicHelado_84:

(Start: 27 @51498 has 38 MA's), (40, 51543), (50, 51588), (64, 51657), (82, 51771), (101, 51861), (106, 51882), (113, 51942), (117, 51951), (122, 51993),

Gene: Pepy6_051 Start: 72091, Stop: 72582, Start Num: 27

Candidate Starts for Pepy6_051:

(Start: 27 @72091 has 38 MA's), (32, 72106), (49, 72175), (58, 72214), (59, 72217), (62, 72226), (79, 72325), (84, 72361), (85, 72364), (92, 72403), (95, 72421), (100, 72433), (101, 72436), (108, 72484), (116, 72523),

Gene: Perkunas_90 Start: 55043, Stop: 55525, Start Num: 29

Candidate Starts for Perkunas_90:

(Start: 29 @55043 has 51 MA's), (59, 55166), (73, 55232), (78, 55265), (92, 55352), (110, 55445), (117, 55475), (121, 55499),

Gene: Petito_89 Start: 55917, Stop: 56399, Start Num: 29

Candidate Starts for Petito_89:

(Start: 29 @55917 has 51 MA's), (59, 56040), (73, 56106), (78, 56139), (92, 56226), (110, 56319), (113, 56340),

Gene: Phepper_88 Start: 56061, Stop: 56540, Start Num: 29

Candidate Starts for Phepper_88:

(Start: 29 @56061 has 51 MA's), (44, 56121), (58, 56181), (70, 56232), (73, 56250), (88, 56349), (92, 56367), (93, 56373), (107, 56433), (108, 56448), (110, 56460), (113, 56481),

Gene: Pherobrine_85 Start: 55751, Stop: 56233, Start Num: 28

Candidate Starts for Pherobrine_85:

(19, 55721), (Start: 28 @55751 has 5 MA's), (39, 55790), (43, 55808), (48, 55829), (57, 55868), (70, 55922), (73, 55940), (92, 56060), (100, 56090), (121, 56207),

Gene: PherryCruz_54 Start: 39085, Stop: 39594, Start Num: 27

Candidate Starts for PherryCruz_54:

(1, 38812), (9, 38977), (Start: 13 @39022 has 1 MA's), (Start: 27 @39085 has 38 MA's), (Start: 33 @39100 has 1 MA's), (40, 39127), (62, 39235), (70, 39274), (80, 39349), (101, 39451), (104, 39457), (106, 39472),

Gene: Pippin15_85 Start: 49798, Stop: 50307, Start Num: 30

Candidate Starts for Pippin15_85:

(22, 49786), (Start: 30 @49798 has 6 MA's), (37, 49822), (60, 49927), (66, 49975), (73, 50005), (91, 50122), (96, 50152), (103, 50170), (106, 50188), (112, 50242), (114, 50251),

Gene: Poco6_050 Start: 73353, Stop: 73844, Start Num: 27

Candidate Starts for Poco6_050:

(Start: 27 @73353 has 38 MA's), (32, 73368), (58, 73476), (59, 73479), (62, 73488), (79, 73587), (92, 73665), (95, 73683), (100, 73695), (101, 73698), (106, 73719), (108, 73746), (116, 73785),

Gene: Popy_80 Start: 51779, Stop: 52288, Start Num: 27

Candidate Starts for Popy_80:

(Start: 27 @51779 has 38 MA's), (40, 51824), (50, 51869), (64, 51938), (82, 52052), (101, 52142), (103, 52145), (106, 52163), (113, 52223), (117, 52232), (122, 52274),

Gene: Rainydai_87 Start: 53073, Stop: 53564, Start Num: 27

Candidate Starts for Rainydai_87:

(4, 52932), (5, 52950), (7, 52959), (16, 53031), (18, 53040), (Start: 27 @53073 has 38 MA's), (40, 53118), (50, 53163), (54, 53175), (82, 53331), (88, 53364), (121, 53535),

Gene: RavenPuff_55 Start: 39055, Stop: 39564, Start Num: 27

Candidate Starts for RavenPuff_55:

(Start: 27 @39055 has 38 MA's), (Start: 33 @39070 has 1 MA's), (40, 39097), (56, 39187), (62, 39205), (70, 39244), (80, 39319), (101, 39421), (104, 39427), (106, 39442),

Gene: Regigigas_90 Start: 52685, Stop: 53176, Start Num: 27

Candidate Starts for Regigigas_90:

(4, 52544), (5, 52562), (7, 52571), (16, 52643), (18, 52652), (Start: 27 @52685 has 38 MA's), (40, 52730), (50, 52775), (54, 52787), (82, 52943), (88, 52976), (121, 53147),

Gene: Rickmore_88 Start: 55645, Stop: 56139, Start Num: 29

Candidate Starts for Rickmore_88:

(Start: 29 @55645 has 51 MA's), (58, 55765), (67, 55807), (70, 55816), (73, 55834), (92, 55951), (95, 55969), (97, 55972), (107, 56017), (110, 56044),

Gene: Rima_83 Start: 51477, Stop: 51986, Start Num: 27

Candidate Starts for Rima_83:

(Start: 27 @51477 has 38 MA's), (40, 51522), (50, 51567), (64, 51636), (82, 51750), (101, 51840), (106, 51861), (113, 51921), (117, 51930), (122, 51972),

Gene: Roney_88 Start: 55308, Stop: 55790, Start Num: 29

Candidate Starts for Roney_88:

(Start: 29 @55308 has 51 MA's), (59, 55431), (67, 55470), (73, 55497), (89, 55602), (92, 55617), (108, 55698), (110, 55710), (113, 55731),

Gene: RosaAsantewaa_51 Start: 38179, Stop: 38670, Start Num: 28

Candidate Starts for RosaAsantewaa_51:

(12, 38107), (Start: 28 @38179 has 5 MA's), (50, 38266), (57, 38296), (59, 38302), (62, 38311), (70, 38350), (73, 38368), (82, 38437), (117, 38617), (118, 38629),

Gene: Runhaar_85 Start: 55666, Stop: 56145, Start Num: 29

Candidate Starts for Runhaar_85:

(Start: 29 @55666 has 51 MA's), (58, 55786), (73, 55855), (92, 55972), (93, 55978), (107, 56038), (108, 56053), (110, 56065), (113, 56086),

Gene: SarFire_70 Start: 44563, Stop: 43985, Start Num: 15

Candidate Starts for SarFire_70:

(Start: 15 @44563 has 12 MA's), (Start: 17 @44551 has 1 MA's), (20, 44533), (55, 44392), (63, 44365), (68, 44326), (74, 44296), (109, 44083),

Gene: Scap1_52 Start: 38365, Stop: 38937, Start Num: 13

Candidate Starts for Scap1_52:

(Start: 13 @38365 has 1 MA's), (Start: 27 @38428 has 38 MA's), (Start: 33 @38443 has 1 MA's), (40, 38470), (41, 38488), (56, 38560), (61, 38575), (62, 38578), (70, 38617), (101, 38794), (104, 38800),

Gene: Schwartz33_84 Start: 54940, Stop: 55425, Start Num: 29

Candidate Starts for Schwartz33_84:

(Start: 29 @54940 has 51 MA's), (40, 54982), (43, 54997), (70, 55111), (73, 55129), (88, 55231), (92, 55249), (98, 55273), (107, 55315), (108, 55330), (116, 55369),

Gene: Secretariat_80 Start: 53208, Stop: 53693, Start Num: 29

Candidate Starts for Secretariat_80:

(Start: 29 @53208 has 51 MA's), (40, 53250), (43, 53265), (70, 53379), (73, 53397), (88, 53499), (92, 53517), (98, 53541), (107, 53583), (108, 53598), (116, 53637), (117, 53640), (122, 53682),

Gene: SendItCS_82 Start: 51443, Stop: 51934, Start Num: 27

Candidate Starts for SendItCS_82:

(4, 51302), (5, 51320), (7, 51329), (16, 51401), (18, 51410), (Start: 27 @51443 has 38 MA's), (40, 51488), (50, 51533), (54, 51545), (82, 51701), (88, 51734), (121, 51905),

Gene: Serenabean_86 Start: 50568, Stop: 51074, Start Num: 30

Candidate Starts for Serenabean_86:

(Start: 30 @50568 has 6 MA's), (35, 50586), (51, 50655), (56, 50682), (57, 50685), (68, 50748), (72, 50760), (86, 50862), (104, 50940), (106, 50955), (114, 51018),

Gene: ShaggyRogers_89 Start: 55632, Stop: 56111, Start Num: 29

Candidate Starts for ShaggyRogers_89:

(Start: 29 @55632 has 51 MA's), (58, 55752), (70, 55803), (71, 55806), (73, 55821), (92, 55938), (98, 55962), (107, 56004), (108, 56019), (110, 56031), (113, 56052),

Gene: SheRa_55 Start: 38965, Stop: 39474, Start Num: 27

Candidate Starts for SheRa_55:

(9, 38857), (Start: 13 @38902 has 1 MA's), (Start: 27 @38965 has 38 MA's), (Start: 33 @38980 has 1 MA's), (40, 39007), (56, 39097), (62, 39115), (70, 39154), (80, 39229), (101, 39331), (104, 39337), (106, 39352),

Gene: Snazzy_68 Start: 43855, Stop: 43277, Start Num: 15

Candidate Starts for Snazzy_68:

(Start: 15 @43855 has 12 MA's), (Start: 17 @43843 has 1 MA's), (20, 43825), (55, 43684), (63, 43657), (68, 43618), (74, 43588), (109, 43375),

Gene: Soshi_81 Start: 51620, Stop: 52129, Start Num: 27

Candidate Starts for Soshi_81:

(Start: 27 @51620 has 38 MA's), (40, 51665), (50, 51710), (64, 51779), (82, 51893), (101, 51983), (106, 52004), (113, 52064), (117, 52073), (122, 52115),

Gene: Spectropatronm_81 Start: 51016, Stop: 51525, Start Num: 27

Candidate Starts for Spectropatronm_81:

(Start: 27 @51016 has 38 MA's), (40, 51061), (50, 51106), (64, 51175), (82, 51289), (101, 51379), (106, 51400), (113, 51460), (117, 51469), (122, 51511),

Gene: SpikeBT_61 Start: 41461, Stop: 40904, Start Num: 29

Candidate Starts for SpikeBT_61:

(Start: 29 @41461 has 51 MA's), (40, 41419), (42, 41401), (64, 41317), (66, 41299), (75, 41248), (81, 41194), (105, 41092), (124, 40924),

Gene: Squee_73 Start: 44893, Stop: 44315, Start Num: 15

Candidate Starts for Squee_73:

(Start: 15 @44893 has 12 MA's), (Start: 17 @44881 has 1 MA's), (20, 44863), (55, 44722), (63, 44695), (68, 44656), (74, 44626), (109, 44413),

Gene: Sweetclover_80 Start: 49348, Stop: 49782, Start Num: 47

Candidate Starts for Sweetclover_80:

(Start: 30 @49276 has 6 MA's), (46, 49342), (47, 49348), (48, 49351), (51, 49363), (72, 49468), (86, 49570), (104, 49648), (106, 49663), (114, 49726), (115, 49729),

Gene: SwissCheese_66 Start: 41680, Stop: 41123, Start Num: 29

Candidate Starts for SwissCheese_66:

(Start: 29 @41680 has 51 MA's), (40, 41638), (42, 41620), (64, 41536), (66, 41518), (75, 41467), (81, 41413), (105, 41311), (124, 41143),

Gene: TaidaOne_82 Start: 51492, Stop: 52001, Start Num: 27

Candidate Starts for TaidaOne_82:

(Start: 27 @51492 has 38 MA's), (40, 51537), (50, 51582), (64, 51651), (82, 51765), (101, 51855), (106, 51876), (113, 51936), (117, 51945), (122, 51987),

Gene: Talon44_92 Start: 55653, Stop: 56135, Start Num: 29

Candidate Starts for Talon44_92:

(Start: 29 @55653 has 51 MA's), (59, 55776), (73, 55842), (78, 55875), (92, 55962), (110, 56055), (117, 56085), (121, 56109),

Gene: Tanis_89 Start: 55128, Stop: 55610, Start Num: 29

Candidate Starts for Tanis_89:

(Start: 29 @55128 has 51 MA's), (59, 55251), (67, 55290), (73, 55317), (89, 55422), (92, 55437), (108, 55518), (110, 55530), (113, 55551),

Gene: TenaciousP_89 Start: 57721, Stop: 58203, Start Num: 29

Candidate Starts for TenaciousP_89:

(Start: 29 @57721 has 51 MA's), (38, 57754), (57, 57838), (92, 58027), (107, 58093), (108, 58108), (110, 58120),

Gene: Thiqqums_90 Start: 53073, Stop: 53564, Start Num: 27

Candidate Starts for Thiqqums_90:

(4, 52932), (5, 52950), (7, 52959), (16, 53031), (18, 53040), (Start: 27 @53073 has 38 MA's), (40, 53118), (50, 53163), (54, 53175), (82, 53331), (88, 53364), (121, 53535),

Gene: Thor_70 Start: 43921, Stop: 43343, Start Num: 15

Candidate Starts for Thor_70:

(Start: 15 @43921 has 12 MA's), (Start: 17 @43909 has 1 MA's), (20, 43891), (55, 43750), (63, 43723), (68, 43684), (74, 43654), (109, 43441),

Gene: TieDye_78 Start: 50340, Stop: 50849, Start Num: 27

Candidate Starts for TieDye_78:

(Start: 27 @50340 has 38 MA's), (40, 50385), (50, 50430), (64, 50499), (82, 50613), (101, 50703), (106, 50724), (113, 50784), (117, 50793), (122, 50835),

Gene: TonyStarch_81 Start: 50778, Stop: 51287, Start Num: 27

Candidate Starts for TonyStarch_81:

(Start: 27 @50778 has 38 MA's), (40, 50823), (50, 50868), (64, 50937), (82, 51051), (101, 51141), (106, 51162), (113, 51222), (117, 51231), (122, 51273),

Gene: Trufflozitus_93 Start: 55606, Stop: 56088, Start Num: 29

Candidate Starts for Trufflozitus_93:

(Start: 29 @55606 has 51 MA's), (54, 55705), (59, 55729), (73, 55795), (78, 55828), (92, 55915), (108, 55996), (110, 56008), (111, 56011), (113, 56029),

Gene: Untouchable_89 Start: 57058, Stop: 57537, Start Num: 29

Candidate Starts for Untouchable_89:

(Start: 29 @57058 has 51 MA's), (44, 57118), (58, 57178), (70, 57229), (73, 57247), (88, 57346), (92, 57364), (93, 57370), (107, 57430), (108, 57445), (110, 57457), (113, 57478),

Gene: Vardy_86 Start: 55581, Stop: 56060, Start Num: 29

Candidate Starts for Vardy_86:

(Start: 29 @55581 has 51 MA's), (58, 55701), (73, 55770), (92, 55887), (93, 55893), (107, 55953), (108, 55968), (110, 55980), (113, 56001),

Gene: Yotsuba_81 Start: 52477, Stop: 52986, Start Num: 30

Candidate Starts for Yotsuba_81:

(8, 52357), (Start: 30 @52477 has 6 MA's), (Start: 31 @52486 has 1 MA's), (37, 52501), (66, 52654), (73, 52684), (91, 52801), (96, 52831), (106, 52867), (112, 52921), (114, 52930),

Gene: Zeph_90 Start: 56862, Stop: 57341, Start Num: 29

Candidate Starts for Zeph_90:

(Start: 29 @56862 has 51 MA's), (44, 56922), (58, 56982), (70, 57033), (73, 57051), (88, 57150), (92, 57168), (93, 57174), (107, 57234), (108, 57249), (110, 57261), (113, 57282),