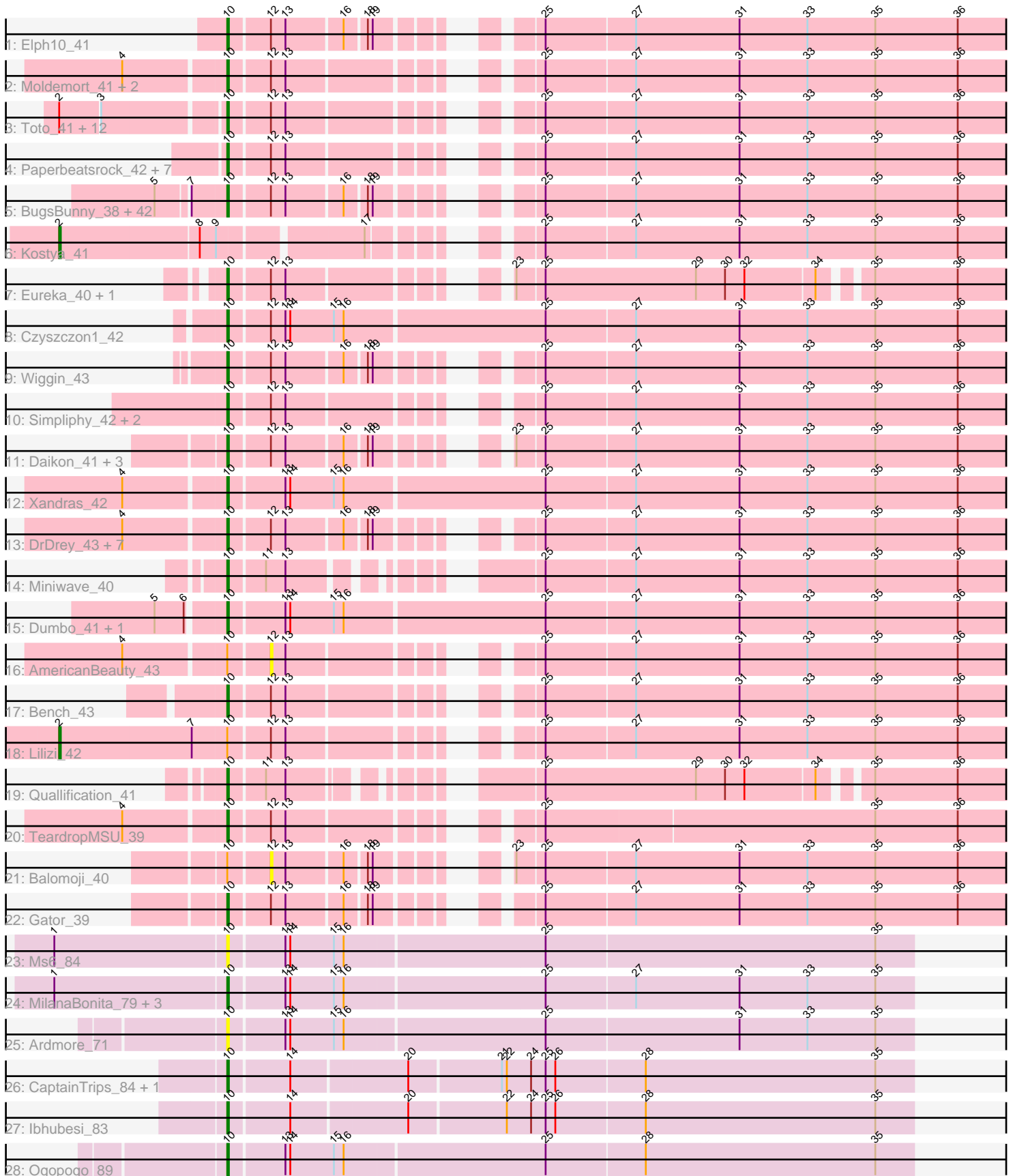


Pham 160281



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 160281 Report

This analysis was run 04/28/24 on database version 559.

Pham number 160281 has 109 members, 10 are drafts.

Phages represented in each track:

- Track 1 : Elph10_41
- Track 2 : Moldemort_41, MadamMonkfish_41, OrionPax_42
- Track 3 : Toto_41, ABCat_40, BilboSwaggins_41, Marshmallow_41, IHOP_40, Tuco_43, CrystalP_42, Myrale_42, ShamWow_42, StellaBean_40, Phaja_40, BaboJay_40, Inca_39
- Track 4 : Paperbeatsrock_42, SophKB_40, Tarkin_42, BadStone_41, NelitzaMV_40, Dusk_41, Pharsalus_41, Henry_42
- Track 5 : BugsBunny_38, MPhalcon_39, Cactus_41, Icee_39, Argent26_42, GooberAzure_42, Asriel_39, HufflyPuff_39, Goldilocks_41, StolenFromERC_42, Gage_42, Murphy_41, NoSleep_41, Nala_40, Stank_43, xkcd_41, MISSy_39, Adnama_43, Gemini_43, Palpatine_40, Lilac_42, Nimrod_40, Rakim_41, Kimchi_42, Barbarian_39, Phaux_39, FireRed_40, Thresher_42, Misfit_40, Maxxinista_41, Murica_39, Command613_41, Terminus_40, Sotrice96_40, GoldenSpark_42, PhatBacter_40, Stark_41, RiverMonster_40, Bask21_40, Policronamos_41, Hoonter_42, TBrady12_42, Cjw1_41
- Track 6 : Kostya_41
- Track 7 : Eureka_40, Goku_40
- Track 8 : Czyszczo1_42
- Track 9 : Wiggin_43
- Track 10 : Simpliphy_42, Saints25_42, Highbury_42
- Track 11 : Daikon_41, Traaww1_38, Glexan_39, Harella_41
- Track 12 : Xandras_42
- Track 13 : DrDrey_43, Phrux_41, HanKaySha_42, JeTaime_43, 244_44, Hopey_43, Filch_43, Pumpkin_44
- Track 14 : Miniwave_40
- Track 15 : Dumbo_41, Easy2Say_42
- Track 16 : AmericanBeauty_43
- Track 17 : Bench_43
- Track 18 : Lilizi_42
- Track 19 : Quallification_41
- Track 20 : TeardropMSU_39
- Track 21 : Balomoji_40
- Track 22 : Gator_39
- Track 23 : Ms6_84
- Track 24 : MilanaBonita_79, Kumao_61, Akhila_80, Fruitloop_85
- Track 25 : Ardmore_71
- Track 26 : CaptainTrips_84, MinionDave_80

- Track 27 : lbhubesi_83
- Track 28 : Ogopogo_89

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

The start number called the most often in the published annotations is 10, it was called in 97 of the 99 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244_44, ABCat_40, Adnama_43, Akhila_80, Ardmore_71, Argent26_42, Asriel_39, BaboJay_40, BadStone_41, Barbarian_39, Bask21_40, Bench_43, BilboSwaggins_41, BugsBunny_38, Cactus_41, CaptainTrips_84, Cjw1_41, Command613_41, CrystalP_42, Czyszczonek_42, Daikon_41, DrDrey_43, Dumbo_41, Dusk_41, Easy2Say_42, Elph10_41, Eureka_40, Filch_43, FireRed_40, Fruitloop_85, Gage_42, Gator_39, Gemini_43, Glexan_39, Goku_40, GoldenSpark_42, Goldilocks_41, GooberAzure_42, HanKaySha_42, Harella_41, Henry_42, Highbury_42, Hoonter_42, Hopey_43, HufflyPuff_39, IHOP_40, lbhubesi_83, Icee_39, Inca_39, JeTaime_43, Kimchi_42, Kumao_61, Lilac_42, MISSy_39, MPhalcon_39, MadamMonkfish_41, Marshmallow_41, Maxxinista_41, MilanaBonita_79, MinionDave_80, Miniwave_40, Misfit_40, Moldemort_41, Ms6_84, Murica_39, Murphy_41, Myrale_42, Nala_40, NelitzaMV_40, Nimrod_40, NoSleep_41, Ogopogo_89, OrionPax_42, Palpatine_40, Paperbeatsrock_42, Phaja_40, Pharsalus_41, PhatBacter_40, Phaux_39, Phrux_41, Policronamos_41, Pumpkin_44, Quallification_41, Rakim_41, RiverMonster_40, Saints25_42, ShamWow_42, Simpliphy_42, SophKB_40, Sotrice96_40, Stank_43, Stark_41, StellaBean_40, StolenFromERC_42, TBrady12_42, Tarkin_42, TeardropMSU_39, Terminus_40, Thresher_42, Toto_41, Traaww1_38, Tuco_43, Wiggin_43, Xandras_42, xkcd_41,

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

- AmericanBeauty_43, Balomoji_40, Lilizi_42,

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

- Kostya_41,

Summary by start number:

Start 2:

- Found in 15 of 109 (13.8%) of genes in pham
- Manual Annotations of this start: 2 of 99
- Called 13.3% of time when present
- Phage (with cluster) where this start called: Kostya_41 (E), Lilizi_42 (E),

Start 10:

- Found in 108 of 109 (99.1%) of genes in pham
- Manual Annotations of this start: 97 of 99
- Called 97.2% of time when present
- Phage (with cluster) where this start called: 244_44 (E), ABCat_40 (E), Adnama_43 (E), Akhila_80 (F1), Ardmore_71 (F1), Argent26_42 (E), Asriel_39 (E), BaboJay_40 (E), BadStone_41 (E), Barbarian_39 (E), Bask21_40 (E), Bench_43 (E),

BilboSwaggins_41 (E), BugsBunny_38 (E), Cactus_41 (E), CaptainTrips_84 (F1), Cjw1_41 (E), Command613_41 (E), CrystalP_42 (E), Czyszczonek_42 (E), Daikon_41 (E), DrDrey_43 (E), Dumbo_41 (E), Dusk_41 (E), Easy2Say_42 (E), Elph10_41 (E), Eureka_40 (E), Filch_43 (E), FireRed_40 (E), Fruitloop_85 (F1), Gage_42 (E), Gator_39 (E), Gemini_43 (E), Glexan_39 (E), Goku_40 (E), GoldenSpark_42 (E), Goldilocks_41 (E), GooberAzure_42 (E), HanKaySha_42 (E), Harella_41 (E), Henry_42 (E), Highbury_42 (E), Hoonter_42 (E), Hopey_43 (E), HuffyPuff_39 (E), IHOP_40 (E), Ibhubesi_83 (F1), Icee_39 (E), Inca_39 (E), JeTaime_43 (E), Kimchi_42 (E), Kumao_61 (singleton), Lilac_42 (E), MISSy_39 (E), MPhalcon_39 (E), MadamMonkfish_41 (E), Marshmallow_41 (E), Maxxinista_41 (E), MilanaBonita_79 (F1), MinionDave_80 (F1), Miniwave_40 (E), Misfit_40 (E), Moldemort_41 (E), Ms6_84 (F1), Murica_39 (E), Murphy_41 (E), Myrale_42 (E), Nala_40 (E), NelitzaMV_40 (E), Nimrod_40 (E), NoSleep_41 (E), Ogopogo_89 (F1), OrionPax_42 (E), Palpatine_40 (E), Paperbeatsrock_42 (E), Phaja_40 (E), Pharsalus_41 (E), PhatBacter_40 (E), Phaux_39 (E), Phrux_41 (E), Policronamos_41 (E), Pumpkin_44 (E), Quallification_41 (E), Rakim_41 (E), RiverMonster_40 (E), Saints25_42 (E), ShamWow_42 (E), Simpliphy_42 (E), SophKB_40 (E), Sotrice96_40 (E), Stank_43 (E), Stark_41 (E), StellaBean_40 (E), StolenFromERC_42 (E), TBrady12_42 (E), Tarkin_42 (E), TeardropMSU_39 (E), Terminus_40 (E), Thresher_42 (E), Toto_41 (E), Traaww1_38 (E), Tuco_43 (E), Wiggin_43 (E), Xandras_42 (E), xkcd_41 (E),

Start 12:

- Found in 93 of 109 (85.3%) of genes in pham
- No Manual Annotations of this start.
- Called 2.2% of time when present
- Phage (with cluster) where this start called: AmericanBeauty_43 (E), Balomoji_40 (E),

Summary by clusters:

There are 3 clusters represented in this pham: F1, singleton, E,

Info for manual annotations of cluster E:

- Start number 2 was manually annotated 2 times for cluster E.
- Start number 10 was manually annotated 89 times for cluster E.

Info for manual annotations of cluster F1:

- Start number 10 was manually annotated 7 times for cluster F1.

Gene Information:

Gene: 244_44 Start: 35171, Stop: 34707, Start Num: 10

Candidate Starts for 244_44:

(4, 35231), (Start: 10 @35171 has 97 MA's), (12, 35147), (13, 35138), (16, 35105), (18, 35093), (19, 35090), (25, 35027), (27, 34973), (31, 34910), (33, 34868), (35, 34826), (36, 34775),

Gene: ABCat_40 Start: 35339, Stop: 34872, Start Num: 10

Candidate Starts for ABCat_40:

(Start: 2 @35432 has 2 MA's), (3, 35408), (Start: 10 @35339 has 97 MA's), (12, 35315), (13, 35306), (25, 35192), (27, 35138), (31, 35075), (33, 35033), (35, 34991), (36, 34940),

Gene: Adnama_43 Start: 35176, Stop: 34712, Start Num: 10

Candidate Starts for Adnama_43:

(5, 35215), (7, 35197), (Start: 10 @35176 has 97 MA's), (12, 35152), (13, 35143), (16, 35110), (18, 35098), (19, 35095), (25, 35032), (27, 34978), (31, 34915), (33, 34873), (35, 34831), (36, 34780),

Gene: Akhila_80 Start: 48623, Stop: 49036, Start Num: 10

Candidate Starts for Akhila_80:

(1, 48518), (Start: 10 @48623 has 97 MA's), (13, 48656), (14, 48659), (15, 48686), (16, 48692), (25, 48812), (27, 48866), (31, 48929), (33, 48971), (35, 49013),

Gene: AmericanBeauty_43 Start: 34635, Stop: 34192, Start Num: 12

Candidate Starts for AmericanBeauty_43:

(4, 34719), (Start: 10 @34659 has 97 MA's), (12, 34635), (13, 34626), (25, 34512), (27, 34458), (31, 34395), (33, 34353), (35, 34311), (36, 34260),

Gene: Ardmore_71 Start: 44747, Stop: 45160, Start Num: 10

Candidate Starts for Ardmore_71:

(Start: 10 @44747 has 97 MA's), (13, 44780), (14, 44783), (15, 44810), (16, 44816), (25, 44936), (31, 45053), (33, 45095), (35, 45137),

Gene: Argent26_42 Start: 34659, Stop: 34195, Start Num: 10

Candidate Starts for Argent26_42:

(5, 34698), (7, 34680), (Start: 10 @34659 has 97 MA's), (12, 34635), (13, 34626), (16, 34593), (18, 34581), (19, 34578), (25, 34515), (27, 34461), (31, 34398), (33, 34356), (35, 34314), (36, 34263),

Gene: Asriel_39 Start: 33513, Stop: 33049, Start Num: 10

Candidate Starts for Asriel_39:

(5, 33552), (7, 33534), (Start: 10 @33513 has 97 MA's), (12, 33489), (13, 33480), (16, 33447), (18, 33435), (19, 33432), (25, 33369), (27, 33315), (31, 33252), (33, 33210), (35, 33168), (36, 33117),

Gene: BaboJay_40 Start: 34740, Stop: 34270, Start Num: 10

Candidate Starts for BaboJay_40:

(Start: 2 @34833 has 2 MA's), (3, 34809), (Start: 10 @34740 has 97 MA's), (12, 34713), (13, 34704), (25, 34590), (27, 34536), (31, 34473), (33, 34431), (35, 34389), (36, 34338),

Gene: BadStone_41 Start: 35477, Stop: 35010, Start Num: 10

Candidate Starts for BadStone_41:

(Start: 10 @35477 has 97 MA's), (12, 35453), (13, 35444), (25, 35330), (27, 35276), (31, 35213), (33, 35171), (35, 35129), (36, 35078),

Gene: Balomoji_40 Start: 35046, Stop: 34606, Start Num: 12

Candidate Starts for Balomoji_40:

(Start: 10 @35070 has 97 MA's), (12, 35046), (13, 35037), (16, 35004), (18, 34992), (19, 34989), (23, 34941), (25, 34926), (27, 34872), (31, 34809), (33, 34767), (35, 34725), (36, 34674),

Gene: Barbarian_39 Start: 33513, Stop: 33049, Start Num: 10

Candidate Starts for Barbarian_39:

(5, 33552), (7, 33534), (Start: 10 @33513 has 97 MA's), (12, 33489), (13, 33480), (16, 33447), (18, 33435), (19, 33432), (25, 33369), (27, 33315), (31, 33252), (33, 33210), (35, 33168), (36, 33117),

Gene: Bask21_40 Start: 33847, Stop: 33383, Start Num: 10

Candidate Starts for Bask21_40:

(5, 33886), (7, 33868), (Start: 10 @33847 has 97 MA's), (12, 33823), (13, 33814), (16, 33781), (18, 33769), (19, 33766), (25, 33703), (27, 33649), (31, 33586), (33, 33544), (35, 33502), (36, 33451),

Gene: Bench_43 Start: 34755, Stop: 34288, Start Num: 10

Candidate Starts for Bench_43:

(Start: 10 @34755 has 97 MA's), (12, 34731), (13, 34722), (25, 34608), (27, 34554), (31, 34491), (33, 34449), (35, 34407), (36, 34356),

Gene: BilboSwaggins_41 Start: 35347, Stop: 34880, Start Num: 10

Candidate Starts for BilboSwaggins_41:

(Start: 2 @35440 has 2 MA's), (3, 35416), (Start: 10 @35347 has 97 MA's), (12, 35323), (13, 35314), (25, 35200), (27, 35146), (31, 35083), (33, 35041), (35, 34999), (36, 34948),

Gene: BugsBunny_38 Start: 34241, Stop: 33777, Start Num: 10

Candidate Starts for BugsBunny_38:

(5, 34280), (7, 34262), (Start: 10 @34241 has 97 MA's), (12, 34217), (13, 34208), (16, 34175), (18, 34163), (19, 34160), (25, 34097), (27, 34043), (31, 33980), (33, 33938), (35, 33896), (36, 33845),

Gene: Cactus_41 Start: 33880, Stop: 33416, Start Num: 10

Candidate Starts for Cactus_41:

(5, 33919), (7, 33901), (Start: 10 @33880 has 97 MA's), (12, 33856), (13, 33847), (16, 33814), (18, 33802), (19, 33799), (25, 33736), (27, 33682), (31, 33619), (33, 33577), (35, 33535), (36, 33484),

Gene: CaptainTrips_84 Start: 49276, Stop: 49686, Start Num: 10

Candidate Starts for CaptainTrips_84:

(Start: 10 @49276 has 97 MA's), (14, 49312), (20, 49381), (21, 49435), (22, 49438), (24, 49453), (25, 49462), (26, 49468), (28, 49522), (35, 49663),

Gene: Cjw1_41 Start: 35651, Stop: 35187, Start Num: 10

Candidate Starts for Cjw1_41:

(5, 35690), (7, 35672), (Start: 10 @35651 has 97 MA's), (12, 35627), (13, 35618), (16, 35585), (18, 35573), (19, 35570), (25, 35507), (27, 35453), (31, 35390), (33, 35348), (35, 35306), (36, 35255),

Gene: Command613_41 Start: 34919, Stop: 34455, Start Num: 10

Candidate Starts for Command613_41:

(5, 34958), (7, 34940), (Start: 10 @34919 has 97 MA's), (12, 34895), (13, 34886), (16, 34853), (18, 34841), (19, 34838), (25, 34775), (27, 34721), (31, 34658), (33, 34616), (35, 34574), (36, 34523),

Gene: CrystalP_42 Start: 35347, Stop: 34880, Start Num: 10

Candidate Starts for CrystalP_42:

(Start: 2 @35440 has 2 MA's), (3, 35416), (Start: 10 @35347 has 97 MA's), (12, 35323), (13, 35314), (25, 35200), (27, 35146), (31, 35083), (33, 35041), (35, 34999), (36, 34948),

Gene: Czyszczone1_42 Start: 34681, Stop: 34172, Start Num: 10

Candidate Starts for Czyszczone1_42:

(Start: 10 @34681 has 97 MA's), (12, 34657), (13, 34648), (14, 34645), (15, 34618), (16, 34612), (25, 34492), (27, 34438), (31, 34375), (33, 34333), (35, 34291), (36, 34240),

Gene: Daikon_41 Start: 35091, Stop: 34627, Start Num: 10

Candidate Starts for Daikon_41:

(Start: 10 @35091 has 97 MA's), (12, 35067), (13, 35058), (16, 35025), (18, 35013), (19, 35010), (23, 34962), (25, 34947), (27, 34893), (31, 34830), (33, 34788), (35, 34746), (36, 34695),

Gene: DrDrey_43 Start: 35973, Stop: 35509, Start Num: 10

Candidate Starts for DrDrey_43:

(4, 36033), (Start: 10 @35973 has 97 MA's), (12, 35949), (13, 35940), (16, 35907), (18, 35895), (19, 35892), (25, 35829), (27, 35775), (31, 35712), (33, 35670), (35, 35628), (36, 35577),

Gene: Dumbo_41 Start: 34403, Stop: 33894, Start Num: 10

Candidate Starts for Dumbo_41:

(5, 34442), (6, 34424), (Start: 10 @34403 has 97 MA's), (13, 34370), (14, 34367), (15, 34340), (16, 34334), (25, 34214), (27, 34160), (31, 34097), (33, 34055), (35, 34013), (36, 33962),

Gene: Dusk_41 Start: 35137, Stop: 34670, Start Num: 10

Candidate Starts for Dusk_41:

(Start: 10 @35137 has 97 MA's), (12, 35113), (13, 35104), (25, 34990), (27, 34936), (31, 34873), (33, 34831), (35, 34789), (36, 34738),

Gene: Easy2Say_42 Start: 35947, Stop: 35438, Start Num: 10

Candidate Starts for Easy2Say_42:

(5, 35986), (6, 35968), (Start: 10 @35947 has 97 MA's), (13, 35914), (14, 35911), (15, 35884), (16, 35878), (25, 35758), (27, 35704), (31, 35641), (33, 35599), (35, 35557), (36, 35506),

Gene: Elph10_41 Start: 34122, Stop: 33658, Start Num: 10

Candidate Starts for Elph10_41:

(Start: 10 @34122 has 97 MA's), (12, 34098), (13, 34089), (16, 34056), (18, 34044), (19, 34041), (25, 33978), (27, 33924), (31, 33861), (33, 33819), (35, 33777), (36, 33726),

Gene: Eureka_40 Start: 34965, Stop: 34495, Start Num: 10

Candidate Starts for Eureka_40:

(Start: 10 @34965 has 97 MA's), (12, 34941), (13, 34932), (23, 34833), (25, 34818), (29, 34725), (30, 34707), (32, 34695), (34, 34653), (35, 34629), (36, 34578),

Gene: Filch_43 Start: 34650, Stop: 34186, Start Num: 10

Candidate Starts for Filch_43:

(4, 34710), (Start: 10 @34650 has 97 MA's), (12, 34626), (13, 34617), (16, 34584), (18, 34572), (19, 34569), (25, 34506), (27, 34452), (31, 34389), (33, 34347), (35, 34305), (36, 34254),

Gene: FireRed_40 Start: 34680, Stop: 34216, Start Num: 10

Candidate Starts for FireRed_40:

(5, 34719), (7, 34701), (Start: 10 @34680 has 97 MA's), (12, 34656), (13, 34647), (16, 34614), (18, 34602), (19, 34599), (25, 34536), (27, 34482), (31, 34419), (33, 34377), (35, 34335), (36, 34284),

Gene: Fruitloop_85 Start: 51126, Stop: 51539, Start Num: 10

Candidate Starts for Fruitloop_85:

(1, 51021), (Start: 10 @51126 has 97 MA's), (13, 51159), (14, 51162), (15, 51189), (16, 51195), (25, 51315), (27, 51369), (31, 51432), (33, 51474), (35, 51516),

Gene: Gage_42 Start: 34659, Stop: 34195, Start Num: 10

Candidate Starts for Gage_42:

(5, 34698), (7, 34680), (Start: 10 @34659 has 97 MA's), (12, 34635), (13, 34626), (16, 34593), (18, 34581), (19, 34578), (25, 34515), (27, 34461), (31, 34398), (33, 34356), (35, 34314), (36, 34263),

Gene: Gator_39 Start: 34961, Stop: 34497, Start Num: 10

Candidate Starts for Gator_39:

(Start: 10 @34961 has 97 MA's), (12, 34937), (13, 34928), (16, 34895), (18, 34883), (19, 34880), (25, 34817), (27, 34763), (31, 34700), (33, 34658), (35, 34616), (36, 34565),

Gene: Gemini_43 Start: 35176, Stop: 34712, Start Num: 10

Candidate Starts for Gemini_43:

(5, 35215), (7, 35197), (Start: 10 @35176 has 97 MA's), (12, 35152), (13, 35143), (16, 35110), (18, 35098), (19, 35095), (25, 35032), (27, 34978), (31, 34915), (33, 34873), (35, 34831), (36, 34780),

Gene: Glexan_39 Start: 34949, Stop: 34485, Start Num: 10

Candidate Starts for Glexan_39:

(Start: 10 @34949 has 97 MA's), (12, 34925), (13, 34916), (16, 34883), (18, 34871), (19, 34868), (23, 34820), (25, 34805), (27, 34751), (31, 34688), (33, 34646), (35, 34604), (36, 34553),

Gene: Goku_40 Start: 34694, Stop: 34224, Start Num: 10

Candidate Starts for Goku_40:

(Start: 10 @34694 has 97 MA's), (12, 34670), (13, 34661), (23, 34562), (25, 34547), (29, 34454), (30, 34436), (32, 34424), (34, 34382), (35, 34358), (36, 34307),

Gene: GoldenSpark_42 Start: 34659, Stop: 34195, Start Num: 10

Candidate Starts for GoldenSpark_42:

(5, 34698), (7, 34680), (Start: 10 @34659 has 97 MA's), (12, 34635), (13, 34626), (16, 34593), (18, 34581), (19, 34578), (25, 34515), (27, 34461), (31, 34398), (33, 34356), (35, 34314), (36, 34263),

Gene: Goldilocks_41 Start: 34161, Stop: 33697, Start Num: 10

Candidate Starts for Goldilocks_41:

(5, 34200), (7, 34182), (Start: 10 @34161 has 97 MA's), (12, 34137), (13, 34128), (16, 34095), (18, 34083), (19, 34080), (25, 34017), (27, 33963), (31, 33900), (33, 33858), (35, 33816), (36, 33765),

Gene: GooberAzure_42 Start: 34659, Stop: 34195, Start Num: 10

Candidate Starts for GooberAzure_42:

(5, 34698), (7, 34680), (Start: 10 @34659 has 97 MA's), (12, 34635), (13, 34626), (16, 34593), (18, 34581), (19, 34578), (25, 34515), (27, 34461), (31, 34398), (33, 34356), (35, 34314), (36, 34263),

Gene: HanKaySha_42 Start: 34633, Stop: 34169, Start Num: 10

Candidate Starts for HanKaySha_42:

(4, 34693), (Start: 10 @34633 has 97 MA's), (12, 34609), (13, 34600), (16, 34567), (18, 34555), (19, 34552), (25, 34489), (27, 34435), (31, 34372), (33, 34330), (35, 34288), (36, 34237),

Gene: Harella_41 Start: 35465, Stop: 35001, Start Num: 10

Candidate Starts for Harella_41:

(Start: 10 @35465 has 97 MA's), (12, 35441), (13, 35432), (16, 35399), (18, 35387), (19, 35384), (23, 35336), (25, 35321), (27, 35267), (31, 35204), (33, 35162), (35, 35120), (36, 35069),

Gene: Henry_42 Start: 35356, Stop: 34889, Start Num: 10

Candidate Starts for Henry_42:

(Start: 10 @35356 has 97 MA's), (12, 35332), (13, 35323), (25, 35209), (27, 35155), (31, 35092), (33, 35050), (35, 35008), (36, 34957),

Gene: Highbury_42 Start: 34424, Stop: 33957, Start Num: 10

Candidate Starts for Highbury_42:

(Start: 10 @34424 has 97 MA's), (12, 34400), (13, 34391), (25, 34277), (27, 34223), (31, 34160), (33, 34118), (35, 34076), (36, 34025),

Gene: Hoonter_42 Start: 34659, Stop: 34195, Start Num: 10

Candidate Starts for Hoonter_42:

(5, 34698), (7, 34680), (Start: 10 @34659 has 97 MA's), (12, 34635), (13, 34626), (16, 34593), (18, 34581), (19, 34578), (25, 34515), (27, 34461), (31, 34398), (33, 34356), (35, 34314), (36, 34263),

Gene: Hohey_43 Start: 35168, Stop: 34704, Start Num: 10

Candidate Starts for Hohey_43:

(4, 35228), (Start: 10 @35168 has 97 MA's), (12, 35144), (13, 35135), (16, 35102), (18, 35090), (19, 35087), (25, 35024), (27, 34970), (31, 34907), (33, 34865), (35, 34823), (36, 34772),

Gene: HufflyPuff_39 Start: 34636, Stop: 34172, Start Num: 10

Candidate Starts for HufflyPuff_39:

(5, 34675), (7, 34657), (Start: 10 @34636 has 97 MA's), (12, 34612), (13, 34603), (16, 34570), (18, 34558), (19, 34555), (25, 34492), (27, 34438), (31, 34375), (33, 34333), (35, 34291), (36, 34240),

Gene: IHOP_40 Start: 34911, Stop: 34444, Start Num: 10

Candidate Starts for IHOP_40:

(Start: 2 @35004 has 2 MA's), (3, 34980), (Start: 10 @34911 has 97 MA's), (12, 34887), (13, 34878), (25, 34764), (27, 34710), (31, 34647), (33, 34605), (35, 34563), (36, 34512),

Gene: lbhubesi_83 Start: 48014, Stop: 48424, Start Num: 10

Candidate Starts for lbhubesi_83:

(Start: 10 @48014 has 97 MA's), (14, 48050), (20, 48119), (22, 48176), (24, 48191), (25, 48200), (26, 48206), (28, 48260), (35, 48401),

Gene: Icee_39 Start: 34327, Stop: 33863, Start Num: 10

Candidate Starts for Icee_39:

(5, 34366), (7, 34348), (Start: 10 @34327 has 97 MA's), (12, 34303), (13, 34294), (16, 34261), (18, 34249), (19, 34246), (25, 34183), (27, 34129), (31, 34066), (33, 34024), (35, 33982), (36, 33931),

Gene: Inca_39 Start: 33436, Stop: 32969, Start Num: 10

Candidate Starts for Inca_39:

(Start: 2 @33529 has 2 MA's), (3, 33505), (Start: 10 @33436 has 97 MA's), (12, 33412), (13, 33403), (25, 33289), (27, 33235), (31, 33172), (33, 33130), (35, 33088), (36, 33037),

Gene: JeTaime_43 Start: 35692, Stop: 35228, Start Num: 10

Candidate Starts for JeTaime_43:

(4, 35752), (Start: 10 @35692 has 97 MA's), (12, 35668), (13, 35659), (16, 35626), (18, 35614), (19, 35611), (25, 35548), (27, 35494), (31, 35431), (33, 35389), (35, 35347), (36, 35296),

Gene: Kimchi_42 Start: 34662, Stop: 34198, Start Num: 10

Candidate Starts for Kimchi_42:

(5, 34701), (7, 34683), (Start: 10 @34662 has 97 MA's), (12, 34638), (13, 34629), (16, 34596), (18, 34584), (19, 34581), (25, 34518), (27, 34464), (31, 34401), (33, 34359), (35, 34317), (36, 34266),

Gene: Kostya_41 Start: 34766, Stop: 34206, Start Num: 2

Candidate Starts for Kostya_41:

(Start: 2 @34766 has 2 MA's), (8, 34682), (9, 34673), (17, 34592), (25, 34526), (27, 34472), (31, 34409), (33, 34367), (35, 34325), (36, 34274),

Gene: Kumao_61 Start: 43622, Stop: 44035, Start Num: 10

Candidate Starts for Kumao_61:

(1, 43517), (Start: 10 @43622 has 97 MA's), (13, 43655), (14, 43658), (15, 43685), (16, 43691), (25, 43811), (27, 43865), (31, 43928), (33, 43970), (35, 44012),

Gene: Lilac_42 Start: 34149, Stop: 33685, Start Num: 10

Candidate Starts for Lilac_42:

(5, 34188), (7, 34170), (Start: 10 @34149 has 97 MA's), (12, 34125), (13, 34116), (16, 34083), (18, 34071), (19, 34068), (25, 34005), (27, 33951), (31, 33888), (33, 33846), (35, 33804), (36, 33753),

Gene: Lilizi_42 Start: 34462, Stop: 33893, Start Num: 2

Candidate Starts for Lilizi_42:

(Start: 2 @34462 has 2 MA's), (7, 34381), (Start: 10 @34360 has 97 MA's), (12, 34336), (13, 34327), (25, 34213), (27, 34159), (31, 34096), (33, 34054), (35, 34012), (36, 33961),

Gene: MISSy_39 Start: 34165, Stop: 33701, Start Num: 10

Candidate Starts for MISSy_39:

(5, 34204), (7, 34186), (Start: 10 @34165 has 97 MA's), (12, 34141), (13, 34132), (16, 34099), (18, 34087), (19, 34084), (25, 34021), (27, 33967), (31, 33904), (33, 33862), (35, 33820), (36, 33769),

Gene: MPhalcon_39 Start: 34158, Stop: 33694, Start Num: 10

Candidate Starts for MPhalcon_39:

(5, 34197), (7, 34179), (Start: 10 @34158 has 97 MA's), (12, 34134), (13, 34125), (16, 34092), (18, 34080), (19, 34077), (25, 34014), (27, 33960), (31, 33897), (33, 33855), (35, 33813), (36, 33762),

Gene: MadamMonkfish_41 Start: 34185, Stop: 33718, Start Num: 10

Candidate Starts for MadamMonkfish_41:

(4, 34245), (Start: 10 @34185 has 97 MA's), (12, 34161), (13, 34152), (25, 34038), (27, 33984), (31, 33921), (33, 33879), (35, 33837), (36, 33786),

Gene: Marshmallow_41 Start: 35345, Stop: 34878, Start Num: 10

Candidate Starts for Marshmallow_41:

(Start: 2 @35438 has 2 MA's), (3, 35414), (Start: 10 @35345 has 97 MA's), (12, 35321), (13, 35312), (25, 35198), (27, 35144), (31, 35081), (33, 35039), (35, 34997), (36, 34946),

Gene: Maxxinista_41 Start: 34119, Stop: 33655, Start Num: 10

Candidate Starts for Maxxinista_41:

(5, 34158), (7, 34140), (Start: 10 @34119 has 97 MA's), (12, 34095), (13, 34086), (16, 34053), (18, 34041), (19, 34038), (25, 33975), (27, 33921), (31, 33858), (33, 33816), (35, 33774), (36, 33723),

Gene: MilanaBonita_79 Start: 48623, Stop: 49036, Start Num: 10

Candidate Starts for MilanaBonita_79:

(1, 48518), (Start: 10 @48623 has 97 MA's), (13, 48656), (14, 48659), (15, 48686), (16, 48692), (25, 48812), (27, 48866), (31, 48929), (33, 48971), (35, 49013),

Gene: MinionDave_80 Start: 49276, Stop: 49686, Start Num: 10

Candidate Starts for MinionDave_80:

(Start: 10 @49276 has 97 MA's), (14, 49312), (20, 49381), (21, 49435), (22, 49438), (24, 49453), (25, 49462), (26, 49468), (28, 49522), (35, 49663),

Gene: Miniwave_40 Start: 34863, Stop: 34402, Start Num: 10

Candidate Starts for Miniwave_40:

(Start: 10 @34863 has 97 MA's), (11, 34842), (13, 34830), (25, 34722), (27, 34668), (31, 34605), (33, 34563), (35, 34521), (36, 34470),

Gene: Misfit_40 Start: 34739, Stop: 34275, Start Num: 10

Candidate Starts for Misfit_40:

(5, 34778), (7, 34760), (Start: 10 @34739 has 97 MA's), (12, 34715), (13, 34706), (16, 34673), (18, 34661), (19, 34658), (25, 34595), (27, 34541), (31, 34478), (33, 34436), (35, 34394), (36, 34343),

Gene: Moldemort_41 Start: 34414, Stop: 33947, Start Num: 10

Candidate Starts for Moldemort_41:

(4, 34474), (Start: 10 @34414 has 97 MA's), (12, 34390), (13, 34381), (25, 34267), (27, 34213), (31, 34150), (33, 34108), (35, 34066), (36, 34015),

Gene: Ms6_84 Start: 46316, Stop: 46729, Start Num: 10

Candidate Starts for Ms6_84:

(1, 46211), (Start: 10 @46316 has 97 MA's), (13, 46349), (14, 46352), (15, 46379), (16, 46385), (25, 46505), (35, 46706),

Gene: Murica_39 Start: 34636, Stop: 34172, Start Num: 10

Candidate Starts for Murica_39:

(5, 34675), (7, 34657), (Start: 10 @34636 has 97 MA's), (12, 34612), (13, 34603), (16, 34570), (18, 34558), (19, 34555), (25, 34492), (27, 34438), (31, 34375), (33, 34333), (35, 34291), (36, 34240),

Gene: Murphy_41 Start: 34631, Stop: 34167, Start Num: 10

Candidate Starts for Murphy_41:

(5, 34670), (7, 34652), (Start: 10 @34631 has 97 MA's), (12, 34607), (13, 34598), (16, 34565), (18, 34553), (19, 34550), (25, 34487), (27, 34433), (31, 34370), (33, 34328), (35, 34286), (36, 34235),

Gene: Myrale_42 Start: 35210, Stop: 34743, Start Num: 10

Candidate Starts for Myrale_42:

(Start: 2 @35303 has 2 MA's), (3, 35279), (Start: 10 @35210 has 97 MA's), (12, 35186), (13, 35177), (25, 35063), (27, 35009), (31, 34946), (33, 34904), (35, 34862), (36, 34811),

Gene: Nala_40 Start: 34670, Stop: 34206, Start Num: 10

Candidate Starts for Nala_40:

(5, 34709), (7, 34691), (Start: 10 @34670 has 97 MA's), (12, 34646), (13, 34637), (16, 34604), (18, 34592), (19, 34589), (25, 34526), (27, 34472), (31, 34409), (33, 34367), (35, 34325), (36, 34274),

Gene: NelitzaMV_40 Start: 34723, Stop: 34256, Start Num: 10

Candidate Starts for NelitzaMV_40:

(Start: 10 @34723 has 97 MA's), (12, 34699), (13, 34690), (25, 34576), (27, 34522), (31, 34459), (33, 34417), (35, 34375), (36, 34324),

Gene: Nimrod_40 Start: 34894, Stop: 34430, Start Num: 10

Candidate Starts for Nimrod_40:

(5, 34933), (7, 34915), (Start: 10 @34894 has 97 MA's), (12, 34870), (13, 34861), (16, 34828), (18, 34816), (19, 34813), (25, 34750), (27, 34696), (31, 34633), (33, 34591), (35, 34549), (36, 34498),

Gene: NoSleep_41 Start: 34391, Stop: 33927, Start Num: 10

Candidate Starts for NoSleep_41:

(5, 34430), (7, 34412), (Start: 10 @34391 has 97 MA's), (12, 34367), (13, 34358), (16, 34325), (18, 34313), (19, 34310), (25, 34247), (27, 34193), (31, 34130), (33, 34088), (35, 34046), (36, 33995),

Gene: Ogopogo_89 Start: 49435, Stop: 49848, Start Num: 10

Candidate Starts for Ogopogo_89:

(Start: 10 @49435 has 97 MA's), (13, 49468), (14, 49471), (15, 49498), (16, 49504), (25, 49624), (28, 49684), (35, 49825),

Gene: OrionPax_42 Start: 34639, Stop: 34172, Start Num: 10

Candidate Starts for OrionPax_42:

(4, 34699), (Start: 10 @34639 has 97 MA's), (12, 34615), (13, 34606), (25, 34492), (27, 34438), (31, 34375), (33, 34333), (35, 34291), (36, 34240),

Gene: Palpatine_40 Start: 34666, Stop: 34202, Start Num: 10

Candidate Starts for Palpatine_40:

(5, 34705), (7, 34687), (Start: 10 @34666 has 97 MA's), (12, 34642), (13, 34633), (16, 34600), (18, 34588), (19, 34585), (25, 34522), (27, 34468), (31, 34405), (33, 34363), (35, 34321), (36, 34270),

Gene: Paperbeatsrock_42 Start: 35652, Stop: 35185, Start Num: 10

Candidate Starts for Paperbeatsrock_42:

(Start: 10 @35652 has 97 MA's), (12, 35628), (13, 35619), (25, 35505), (27, 35451), (31, 35388), (33, 35346), (35, 35304), (36, 35253),

Gene: Phaja_40 Start: 34910, Stop: 34443, Start Num: 10

Candidate Starts for Phaja_40:

(Start: 2 @35003 has 2 MA's), (3, 34979), (Start: 10 @34910 has 97 MA's), (12, 34886), (13, 34877), (25, 34763), (27, 34709), (31, 34646), (33, 34604), (35, 34562), (36, 34511),

Gene: Pharsalus_41 Start: 35452, Stop: 34985, Start Num: 10

Candidate Starts for Pharsalus_41:

(Start: 10 @35452 has 97 MA's), (12, 35428), (13, 35419), (25, 35305), (27, 35251), (31, 35188), (33, 35146), (35, 35104), (36, 35053),

Gene: PhatBacter_40 Start: 34680, Stop: 34216, Start Num: 10

Candidate Starts for PhatBacter_40:

(5, 34719), (7, 34701), (Start: 10 @34680 has 97 MA's), (12, 34656), (13, 34647), (16, 34614), (18, 34602), (19, 34599), (25, 34536), (27, 34482), (31, 34419), (33, 34377), (35, 34335), (36, 34284),

Gene: Phaux_39 Start: 34678, Stop: 34214, Start Num: 10

Candidate Starts for Phaux_39:

(5, 34717), (7, 34699), (Start: 10 @34678 has 97 MA's), (12, 34654), (13, 34645), (16, 34612), (18, 34600), (19, 34597), (25, 34534), (27, 34480), (31, 34417), (33, 34375), (35, 34333), (36, 34282),

Gene: Phrux_41 Start: 34632, Stop: 34168, Start Num: 10

Candidate Starts for Phrux_41:

(4, 34692), (Start: 10 @34632 has 97 MA's), (12, 34608), (13, 34599), (16, 34566), (18, 34554), (19, 34551), (25, 34488), (27, 34434), (31, 34371), (33, 34329), (35, 34287), (36, 34236),

Gene: Policronamos_41 Start: 34678, Stop: 34214, Start Num: 10

Candidate Starts for Policronamos_41:

(5, 34717), (7, 34699), (Start: 10 @34678 has 97 MA's), (12, 34654), (13, 34645), (16, 34612), (18, 34600), (19, 34597), (25, 34534), (27, 34480), (31, 34417), (33, 34375), (35, 34333), (36, 34282),

Gene: Pumpkin_44 Start: 35558, Stop: 35094, Start Num: 10

Candidate Starts for Pumpkin_44:

(4, 35618), (Start: 10 @35558 has 97 MA's), (12, 35534), (13, 35525), (16, 35492), (18, 35480), (19, 35477), (25, 35414), (27, 35360), (31, 35297), (33, 35255), (35, 35213), (36, 35162),

Gene: Quallification_41 Start: 34860, Stop: 34411, Start Num: 10

Candidate Starts for Quallification_41:

(Start: 10 @34860 has 97 MA's), (11, 34839), (13, 34827), (25, 34719), (29, 34626), (30, 34608), (32, 34596), (34, 34554), (35, 34530), (36, 34479),

Gene: Rakim_41 Start: 34775, Stop: 34311, Start Num: 10

Candidate Starts for Rakim_41:

(5, 34814), (7, 34796), (Start: 10 @34775 has 97 MA's), (12, 34751), (13, 34742), (16, 34709), (18, 34697), (19, 34694), (25, 34631), (27, 34577), (31, 34514), (33, 34472), (35, 34430), (36, 34379),

Gene: RiverMonster_40 Start: 34407, Stop: 33943, Start Num: 10

Candidate Starts for RiverMonster_40:

(5, 34446), (7, 34428), (Start: 10 @34407 has 97 MA's), (12, 34383), (13, 34374), (16, 34341), (18, 34329), (19, 34326), (25, 34263), (27, 34209), (31, 34146), (33, 34104), (35, 34062), (36, 34011),

Gene: Saints25_42 Start: 34424, Stop: 33957, Start Num: 10

Candidate Starts for Saints25_42:

(Start: 10 @34424 has 97 MA's), (12, 34400), (13, 34391), (25, 34277), (27, 34223), (31, 34160), (33, 34118), (35, 34076), (36, 34025),

Gene: ShamWow_42 Start: 35347, Stop: 34880, Start Num: 10

Candidate Starts for ShamWow_42:

(Start: 2 @35440 has 2 MA's), (3, 35416), (Start: 10 @35347 has 97 MA's), (12, 35323), (13, 35314), (25, 35200), (27, 35146), (31, 35083), (33, 35041), (35, 34999), (36, 34948),

Gene: Simpliphy_42 Start: 34499, Stop: 34032, Start Num: 10

Candidate Starts for Simpliphy_42:

(Start: 10 @34499 has 97 MA's), (12, 34475), (13, 34466), (25, 34352), (27, 34298), (31, 34235), (33, 34193), (35, 34151), (36, 34100),

Gene: SophKB_40 Start: 34671, Stop: 34204, Start Num: 10

Candidate Starts for SophKB_40:

(Start: 10 @34671 has 97 MA's), (12, 34647), (13, 34638), (25, 34524), (27, 34470), (31, 34407), (33, 34365), (35, 34323), (36, 34272),

Gene: Sotrice96_40 Start: 34623, Stop: 34159, Start Num: 10

Candidate Starts for Sotrice96_40:

(5, 34662), (7, 34644), (Start: 10 @34623 has 97 MA's), (12, 34599), (13, 34590), (16, 34557), (18, 34545), (19, 34542), (25, 34479), (27, 34425), (31, 34362), (33, 34320), (35, 34278), (36, 34227),

Gene: Stank_43 Start: 35175, Stop: 34711, Start Num: 10

Candidate Starts for Stank_43:

(5, 35214), (7, 35196), (Start: 10 @35175 has 97 MA's), (12, 35151), (13, 35142), (16, 35109), (18, 35097), (19, 35094), (25, 35031), (27, 34977), (31, 34914), (33, 34872), (35, 34830), (36, 34779),

Gene: Stark_41 Start: 34410, Stop: 33946, Start Num: 10

Candidate Starts for Stark_41:

(5, 34449), (7, 34431), (Start: 10 @34410 has 97 MA's), (12, 34386), (13, 34377), (16, 34344), (18, 34332), (19, 34329), (25, 34266), (27, 34212), (31, 34149), (33, 34107), (35, 34065), (36, 34014),

Gene: StellaBean_40 Start: 34671, Stop: 34204, Start Num: 10

Candidate Starts for StellaBean_40:

(Start: 2 @34764 has 2 MA's), (3, 34740), (Start: 10 @34671 has 97 MA's), (12, 34647), (13, 34638), (25, 34524), (27, 34470), (31, 34407), (33, 34365), (35, 34323), (36, 34272),

Gene: StolenFromERC_42 Start: 34659, Stop: 34195, Start Num: 10

Candidate Starts for StolenFromERC_42:

(5, 34698), (7, 34680), (Start: 10 @34659 has 97 MA's), (12, 34635), (13, 34626), (16, 34593), (18, 34581), (19, 34578), (25, 34515), (27, 34461), (31, 34398), (33, 34356), (35, 34314), (36, 34263),

Gene: TBrady12_42 Start: 34659, Stop: 34195, Start Num: 10

Candidate Starts for TBrady12_42:

(5, 34698), (7, 34680), (Start: 10 @34659 has 97 MA's), (12, 34635), (13, 34626), (16, 34593), (18, 34581), (19, 34578), (25, 34515), (27, 34461), (31, 34398), (33, 34356), (35, 34314), (36, 34263),

Gene: Tarkin_42 Start: 35661, Stop: 35194, Start Num: 10

Candidate Starts for Tarkin_42:

(Start: 10 @35661 has 97 MA's), (12, 35637), (13, 35628), (25, 35514), (27, 35460), (31, 35397), (33, 35355), (35, 35313), (36, 35262),

Gene: TeardropMSU_39 Start: 34571, Stop: 34104, Start Num: 10

Candidate Starts for TeardropMSU_39:

(4, 34631), (Start: 10 @34571 has 97 MA's), (12, 34547), (13, 34538), (25, 34424), (35, 34223), (36, 34172),

Gene: Terminus_40 Start: 34739, Stop: 34275, Start Num: 10

Candidate Starts for Terminus_40:

(5, 34778), (7, 34760), (Start: 10 @34739 has 97 MA's), (12, 34715), (13, 34706), (16, 34673), (18, 34661), (19, 34658), (25, 34595), (27, 34541), (31, 34478), (33, 34436), (35, 34394), (36, 34343),

Gene: Thresher_42 Start: 35645, Stop: 35181, Start Num: 10

Candidate Starts for Thresher_42:

(5, 35684), (7, 35666), (Start: 10 @35645 has 97 MA's), (12, 35621), (13, 35612), (16, 35579), (18, 35567), (19, 35564), (25, 35501), (27, 35447), (31, 35384), (33, 35342), (35, 35300), (36, 35249),

Gene: Toto_41 Start: 35347, Stop: 34880, Start Num: 10

Candidate Starts for Toto_41:

(Start: 2 @35440 has 2 MA's), (3, 35416), (Start: 10 @35347 has 97 MA's), (12, 35323), (13, 35314), (25, 35200), (27, 35146), (31, 35083), (33, 35041), (35, 34999), (36, 34948),

Gene: Traaww1_38 Start: 34290, Stop: 33826, Start Num: 10

Candidate Starts for Traaww1_38:

(Start: 10 @34290 has 97 MA's), (12, 34266), (13, 34257), (16, 34224), (18, 34212), (19, 34209), (23, 34161), (25, 34146), (27, 34092), (31, 34029), (33, 33987), (35, 33945), (36, 33894),

Gene: Tuco_43 Start: 35855, Stop: 35388, Start Num: 10

Candidate Starts for Tuco_43:

(Start: 2 @35948 has 2 MA's), (3, 35924), (Start: 10 @35855 has 97 MA's), (12, 35831), (13, 35822), (25, 35708), (27, 35654), (31, 35591), (33, 35549), (35, 35507), (36, 35456),

Gene: Wiggin_43 Start: 35173, Stop: 34709, Start Num: 10

Candidate Starts for Wiggin_43:

(Start: 10 @35173 has 97 MA's), (12, 35149), (13, 35140), (16, 35107), (18, 35095), (19, 35092), (25, 35029), (27, 34975), (31, 34912), (33, 34870), (35, 34828), (36, 34777),

Gene: Xandras_42 Start: 34687, Stop: 34178, Start Num: 10

Candidate Starts for Xandras_42:

(4, 34747), (Start: 10 @34687 has 97 MA's), (13, 34654), (14, 34651), (15, 34624), (16, 34618), (25, 34498), (27, 34444), (31, 34381), (33, 34339), (35, 34297), (36, 34246),

Gene: xkcd_41 Start: 34821, Stop: 34357, Start Num: 10

Candidate Starts for xkcd_41:

(5, 34860), (7, 34842), (Start: 10 @34821 has 97 MA's), (12, 34797), (13, 34788), (16, 34755), (18, 34743), (19, 34740), (25, 34677), (27, 34623), (31, 34560), (33, 34518), (35, 34476), (36, 34425),