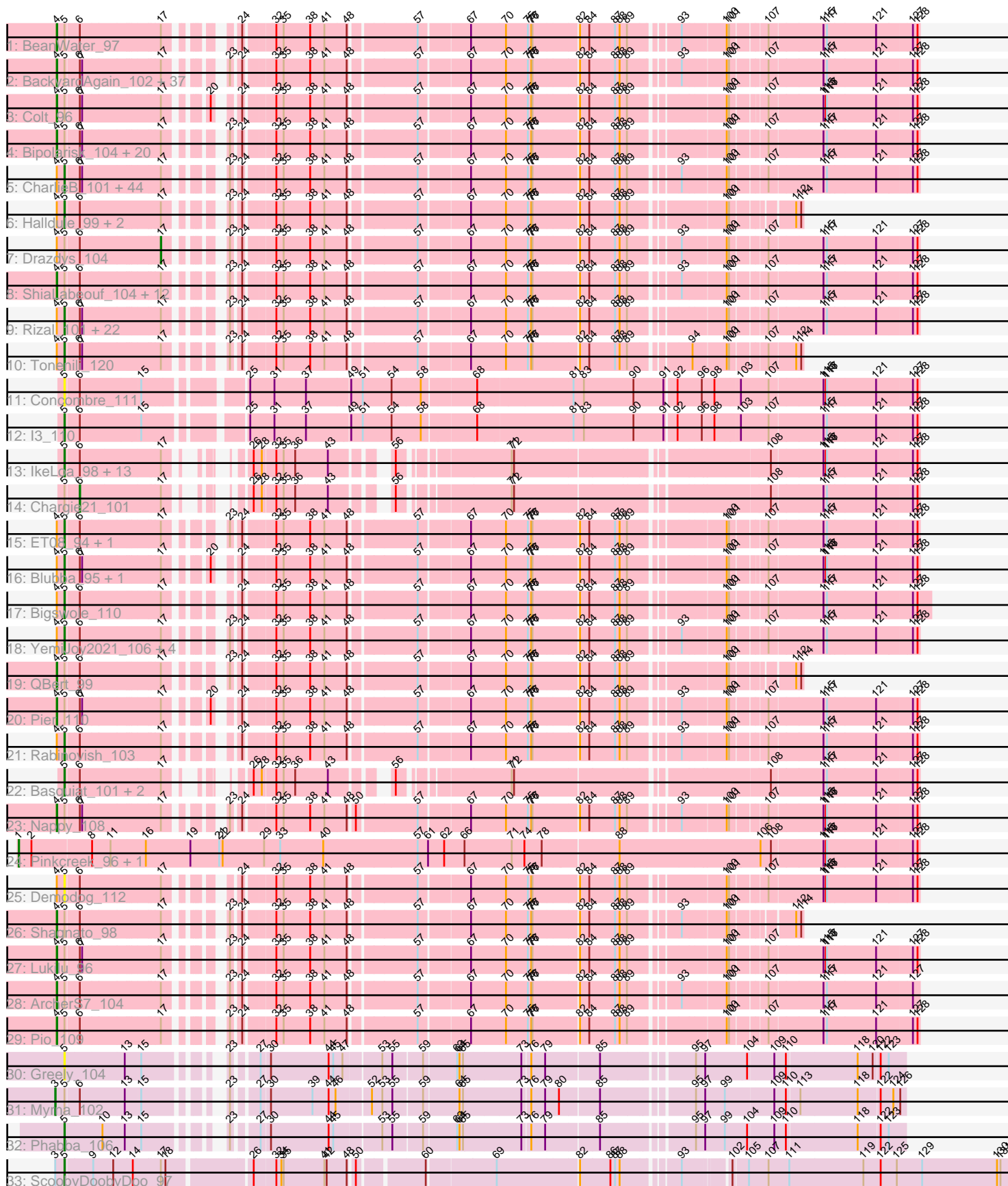


Pham 193754



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 193754 Report

This analysis was run 11/02/24 on database version 579.

Pham number 193754 has 192 members, 19 are drafts.

Phages represented in each track:

- Track 1 : BeanWater\_97
- Track 2 : BackyardAgain\_102, Patter\_105, ValleyTerrace\_105, JPickles\_103, Atlantean\_104, RoMag\_100, BadAgartude\_101, Khaleesi\_104, Spud\_105, Ngannou\_101, Cali\_101, Roots515\_104, Napoleon13\_101, Naija\_104, Catera\_102, Rahel\_104, Mangeria\_105, Ading\_105, Amataga\_105, Jaygup\_105, JustHall\_102, Blackbrain\_100, Specks\_110, Shnickers\_105, FrayBell\_110, Latch\_105, StubbySaigey\_108, Kamryn\_105, Phusco\_105, EmmaElysia\_105, McWolfish\_103, LifeSavor\_104, Bxz1\_103, Babyland\_106, Teardrop\_104, Pivoine\_104, Littleton\_105, SilverDipper\_106
- Track 3 : Colt\_96
- Track 4 : Bipolarisk\_104, Delylah\_108, Delilah\_105, Ewok\_106, Jessibeth14\_104, Shelob\_107, Erdmann\_106, Issimir\_104, Dietrick\_97, TinyTim\_105, Bonray\_105, Darko\_105, DrPhinkDaddy\_104, Morizzled23\_105, Norm\_106, Nidhogg\_106, Yucca\_105, Daffodil\_110, FoxtrotP1\_105, Flabslab\_99, Iota\_100
- Track 5 : CharlieB\_101, Ghost\_104, Phox\_102, CindyLou\_106, Gamgam\_105, Tainan\_109, Derek\_105, Yassified\_102, BananaFence\_104, Grasshills\_112, Domi\_99, Kboogie\_109, ScottMcG\_102, Phlegm\_107, DTDevon\_106, LolaVinca\_106, StephanieG\_104, Blackdragon\_101, Momo\_104, EggyFarm\_113, Ronan\_99, Jemmno\_105, Sprinklers\_101, Capablanca\_107, Bread\_105, InigoMontoya\_106, BigCity\_113, Janiyra\_107, Turret\_100, NoodleTree\_112, Spec\_101, Jedediah\_108, Adlitam\_105, Matsumoto\_102, Cactojaque\_100, Bangla1971\_106, DirtMonster\_99, Mikro\_103, Salacia\_109, NuevoMundo\_111, LordLeafolot\_109, Koguma\_102, InterFolia\_113, Audrick\_107, JigglyPuff\_113
- Track 6 : Halldule\_99, Grungle\_93, JulietS\_100
- Track 7 : Drazdys\_104
- Track 8 : ShiaLabeouf\_104, ChaylaJr\_100, Essence\_102, Melpomini\_99, Trinitium\_102, YoungMoneyMata\_106, McGee\_107, Wally\_104, SmallFry\_105, Tortoise16\_102, Tyke\_106, ChickenPhender\_101, Quasimodo\_106
- Track 9 : Rizal\_101, SrishMeg2525\_104, Caravan\_100, Shrimp\_105, MoMoMixon\_106, ZygoTaiga\_104, Gizmo\_109, Burrough\_105, MikeLiesIn\_106, Megamind\_104, Zeenon\_107, Maby2021\_105, Asterius\_102, Ava3\_106, ParkTD\_106, Zalkecks\_106, NedWong\_106, Naval22\_110, Izajani\_105, PurduePete\_105, Willis\_106, Pleione\_108, Lee7\_103
- Track 10 : Tonenili\_120
- Track 11 : Concombre\_111
- Track 12 : I3\_110

- Track 13 : IkeLoa\_98, EasyJones\_107, Loanshark\_104, Sebata\_106, LinStu\_104, LRRHood\_99, Stubby\_97, Sauce\_105, JayJay\_106, Shifa\_93, HyRo\_96, FudgeTart\_104, EmToTheThree\_107, Dandelion\_111
- Track 14 : Chargie21\_101
- Track 15 : ET08\_94, Astraea\_102
- Track 16 : Blubba\_95, Cane17\_95
- Track 17 : Bigswole\_110
- Track 18 : YemiJoy2021\_106, Breeniome\_104, Chomp\_104, Guwapp\_104, Gabriel\_106
- Track 19 : QBert\_99
- Track 20 : Pier\_110
- Track 21 : Rabinovish\_103
- Track 22 : Basquiat\_101, Fludd\_105, ErnieJ\_100
- Track 23 : Nappy\_108
- Track 24 : Pinkcreek\_96, Alice\_98
- Track 25 : Demodog\_112
- Track 26 : Shaqnato\_98
- Track 27 : Lukilu\_96
- Track 28 : ArcherS7\_104
- Track 29 : Pio\_109
- Track 30 : Greely\_104
- Track 31 : Myrna\_102
- Track 32 : Phabba\_106
- Track 33 : ScoobyDoobyDoo\_97

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

The start number called the most often in the published annotations is 5, it was called in 87 of the 173 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adlitam\_105, Asterius\_102, Astraea\_102, Audrick\_107, Ava3\_106, BananaFence\_104, Bangla1971\_106, Basquiat\_101, BigCity\_113, Bigswole\_110, Blackdragon\_101, Blubba\_95, Bread\_105, Breeniome\_104, Burrough\_105, Cactojaque\_100, Cane17\_95, Capablanca\_107, Caravan\_100, CharlieB\_101, Chomp\_104, CindyLou\_106, Concombre\_111, DTDevon\_106, Dandelion\_111, Demodog\_112, Derek\_105, DirtMonster\_99, Domi\_99, ET08\_94, EasyJones\_107, EggyFarm\_113, EmToTheThree\_107, ErnieJ\_100, Fludd\_105, FudgeTart\_104, Gabriel\_106, Gamgam\_105, Ghost\_104, Gizmo\_109, Grasshills\_112, Greely\_104, Grungle\_93, Guwapp\_104, Halldule\_99, HyRo\_96, I3\_110, IkeLoa\_98, InigoMontoya\_106, InterFolia\_113, Izajani\_105, Janiyra\_107, JayJay\_106, Jedediah\_108, Jemmno\_105, JigglyPuff\_113, JulietS\_100, Kboogie\_109, Koguma\_102, LRRHood\_99, Lee7\_103, LinStu\_104, Loanshark\_104, LolaVinca\_106, LordLeafolot\_109, Maby2021\_105, Matsumoto\_102, Megamind\_104, MikeLiesIn\_106, Mikro\_103, MoMoMixon\_106, Momo\_104, Naval22\_110, NedWong\_106, NoodleTree\_112, NuevoMundo\_111, ParkTD\_106, Phabba\_106, Phlegm\_107, Phox\_102, Pleione\_108, PurduePete\_105, Rabinovish\_103, Rizal\_101, Ronan\_99, Salacia\_109, Sauce\_105, ScoobyDoobyDoo\_97, ScottMcG\_102, Sebata\_106, Shifa\_93, Shrimp\_105, Spec\_101, Sprinklers\_101, SrishMeg2525\_104, StephanieG\_104, Stubby\_97, Tainan\_109, Tonenili\_120, Turret\_100, Willis\_106,

Yassified\_102, YemiJoy2021\_106, Zalkecks\_106, Zeenon\_107, ZygoTaiga\_104,

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

- Ading\_105, Amataga\_105, ArcherS7\_104, Atlantean\_104, Babyland\_106, BackyardAgain\_102, BadAgartude\_101, BeanWater\_97, Bipolarisk\_104, Blackbrain\_100, Bonray\_105, Bxz1\_103, Cali\_101, Catera\_102, Chargie21\_101, ChaylaJr\_100, ChickenPhender\_101, Colt\_96, Daffodil\_110, Darko\_105, Delilah\_105, Delylah\_108, Dietrick\_97, DrPhinkDaddy\_104, Drazdys\_104, EmmaElysia\_105, Erdmann\_106, Essence\_102, Ewok\_106, Flabslab\_99, FoxtrotP1\_105, FrayBell\_110, Iota\_100, Issimir\_104, JPickles\_103, Jaygup\_105, Jessibeth14\_104, JustHall\_102, Kamryn\_105, Khaleesi\_104, Latch\_105, LifeSavor\_104, Littleton\_105, Lukilu\_96, Mangeria\_105, McGee\_107, McWolfish\_103, Melpomini\_99, Morizzled23\_105, Myrna\_102, Naija\_104, Napoleon13\_101, Nappy\_108, Ngannou\_101, Nidhogg\_106, Norm\_106, Patter\_105, Phusco\_105, Pier\_110, Pio\_109, Pivoine\_104, QBert\_99, Quasimodo\_106, Rahel\_104, RoMag\_100, Roots515\_104, Shaqnato\_98, Shelob\_107, ShiaLabeouf\_104, Shnickers\_105, SilverDipper\_106, SmallFry\_105, Specks\_110, Spud\_105, StubbySaigey\_108, Teardrop\_104, TinyTim\_105, Tortoise16\_102, Trinitium\_102, Tyke\_106, ValleyTerrace\_105, Wally\_104, YoungMoneyMata\_106, Yucca\_105,

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

- Alice\_98, Pinkcreek\_96,

### Summary by start number:

Start 1:

- Found in 2 of 192 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 2 of 173
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alice\_98 (C1), Pinkcreek\_96 (C1),

Start 3:

- Found in 2 of 192 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 1 of 173
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Myrna\_102 (C2),

Start 4:

- Found in 166 of 192 ( 86.5% ) of genes in pham
- Manual Annotations of this start: 81 of 173
- Called 48.8% of time when present
- Phage (with cluster) where this start called: Ading\_105 (C1), Amataga\_105 (C1), ArcherS7\_104 (C1), Atlantean\_104 (C1), Babyland\_106 (C1), BackyardAgain\_102 (C1), BadAgartude\_101 (C1), BeanWater\_97 (C1), Bipolarisk\_104 (C1), Blackbrain\_100 (C1), Bonray\_105 (C1), Bxz1\_103 (C1), Cali\_101 (C1), Catera\_102 (C1), ChaylaJr\_100 (C1), ChickenPhender\_101 (C1), Colt\_96 (C1), Daffodil\_110 (C1), Darko\_105 (C1), Delilah\_105 (C1), Delylah\_108 (C1), Dietrick\_97 (C1), DrPhinkDaddy\_104 (C1), EmmaElysia\_105 (C1), Erdmann\_106 (C1), Essence\_102 (C1), Ewok\_106 (C1), Flabslab\_99 (C1), FoxtrotP1\_105 (C1), FrayBell\_110 (C1), Iota\_100 (C1), Issimir\_104 (C1), JPickles\_103 (C1), Jaygup\_105 (C1), Jessibeth14\_104 (C1), JustHall\_102 (C1), Kamryn\_105 (C1), Khaleesi\_104 (C1), Latch\_105 (C1), LifeSavor\_104 (C1), Littleton\_105 (C1), Lukilu\_96 (C1),

Mangeria\_105 (C1), McGee\_107 (C1), McWolfish\_103 (C1), Melpomini\_99 (C1), Morizzled23\_105 (C1), Naija\_104 (C1), Napoleon13\_101 (C1), Nappy\_108 (C1), Ngannou\_101 (C1), Nidhogg\_106 (C1), Norm\_106 (C1), Patter\_105 (C1), Phusco\_105 (C1), Pier\_110 (C1), Pio\_109 (C1), Pivoine\_104 (C1), QBert\_99 (C1), Quasimodo\_106 (C1), Rahel\_104 (C1), RoMag\_100 (C1), Roots515\_104 (C1), Shaqnato\_98 (C1), Shelob\_107 (C1), ShiaLabeouf\_104 (C1), Shnickers\_105 (C1), SilverDipper\_106 (C1), SmallFry\_105 (C1), Specks\_110 (C1), Spud\_105 (C1), StubbySaigey\_108 (C1), Teardrop\_104 (C1), TinyTim\_105 (C1), Tortoise16\_102 (C1), Trinitium\_102 (C1), Tyke\_106 (C1), ValleyTerrace\_105 (C1), Wally\_104 (C1), YoungMoneyMata\_106 (C1), Yucca\_105 (C1),

#### Start 5:

- Found in 190 of 192 ( 99.0% ) of genes in pham
- Manual Annotations of this start: 87 of 173
- Called 55.8% of time when present
- Phage (with cluster) where this start called: Adlitam\_105 (C1), Asterius\_102 (C1), Astraea\_102 (C1), Audrick\_107 (C1), Ava3\_106 (C1), BananaFence\_104 (C1), Bangla1971\_106 (C1), Basquiat\_101 (C1), BigCity\_113 (C1), Bigswole\_110 (C1), Blackdragon\_101 (C1), Blubba\_95 (C1), Bread\_105 (C1), Breeniome\_104 (C1), Burrough\_105 (C1), Cactojaque\_100 (C1), Cane17\_95 (C1), Capablanca\_107 (C1), Caravan\_100 (C1), CharlieB\_101 (C1), Chomp\_104 (C1), CindyLou\_106 (C1), Concombre\_111 (C1), DTDevon\_106 (C1), Dandelion\_111 (C1), Demodog\_112 (C1), Derek\_105 (C1), DirtMonster\_99 (C1), Domi\_99 (C1), ET08\_94 (C1), EasyJones\_107 (C1), EggyFarm\_113 (C1), EmToTheThree\_107 (C1), ErnieJ\_100 (C1), Fludd\_105 (C1), FudgeTart\_104 (C1), Gabriel\_106 (C1), Gangam\_105 (C1), Ghost\_104 (C1), Gizmo\_109 (C1), Grasshills\_112 (C1), Greely\_104 (C2), Grungle\_93 (C1), Guwapp\_104 (C1), Halldule\_99 (C1), HyRo\_96 (C1), I3\_110 (C1), IkeLoa\_98 (C1), InigoMontoya\_106 (C1), InterFolia\_113 (C1), Izajani\_105 (C1), Janiyra\_107 (C1), JayJay\_106 (C1), Jedediah\_108 (C1), Jemmno\_105 (C1), JigglyPuff\_113 (C1), JulietS\_100 (C1), Kboogie\_109 (C1), Koguma\_102 (C1), LRRHood\_99 (C1), Lee7\_103 (C1), LinStu\_104 (C1), Loanshark\_104 (C1), LolaVinca\_106 (C1), LordLeafolot\_109 (C1), Maby2021\_105 (C1), Matsumoto\_102 (C1), Megamind\_104 (C1), MikeLiesIn\_106 (C1), Mikro\_103 (C1), MoMoMixon\_106 (C1), Momo\_104 (C1), Naval22\_110 (C1), NedWong\_106 (C1), NoodleTree\_112 (C1), NuevoMundo\_111 (C1), ParkTD\_106 (C1), Phabba\_106 (C2), Phlegm\_107 (C1), Phox\_102 (C1), Pleione\_108 (C1), PurduePete\_105 (C1), Rabinovich\_103 (C1), Rizal\_101 (C1), Ronan\_99 (C1), Salacia\_109 (C1), Sauce\_105 (C1), ScoobyDoobyDoo\_97 (C2), ScottMcG\_102 (C1), Sebata\_106 (C1), Shifa\_93 (C1), Shrimp\_105 (C1), Spec\_101 (C1), Sprinklers\_101 (C1), SrishMeg2525\_104 (C1), StephanieG\_104 (C1), Stubby\_97 (C1), Tainan\_109 (C1), Tonenili\_120 (C1), Turret\_100 (C1), Willis\_106 (C1), Yassified\_102 (C1), YemiJoy2021\_106 (C1), Zalkecks\_106 (C1), Zeenon\_107 (C1), ZygoTaiga\_104 (C1),

#### Start 6:

- Found in 187 of 192 ( 97.4% ) of genes in pham
- Manual Annotations of this start: 1 of 173
- Called 0.5% of time when present
- Phage (with cluster) where this start called: Chargie21\_101 (C1),

#### Start 17:

- Found in 185 of 192 ( 96.4% ) of genes in pham
- Manual Annotations of this start: 1 of 173
- Called 0.5% of time when present

- Phage (with cluster) where this start called: Drazdys\_104 (C1),

### **Summary by clusters:**

There are 2 clusters represented in this pham: C2, C1,

Info for manual annotations of cluster C1:

- Start number 1 was manually annotated 2 times for cluster C1.
- Start number 4 was manually annotated 81 times for cluster C1.
- Start number 5 was manually annotated 85 times for cluster C1.
- Start number 6 was manually annotated 1 time for cluster C1.
- Start number 17 was manually annotated 1 time for cluster C1.

Info for manual annotations of cluster C2:

- Start number 3 was manually annotated 1 time for cluster C2.
- Start number 5 was manually annotated 2 times for cluster C2.

### **Gene Information:**

Gene: Ading\_105 Start: 52826, Stop: 54730, Start Num: 4

Candidate Starts for Ading\_105:

(Start: 4 @52826 has 81 MA's), (Start: 5 @52844 has 87 MA's), (Start: 6 @52877 has 1 MA's), (7, 52883), (Start: 17 @53069 has 1 MA's), (23, 53147), (24, 53165), (32, 53231), (35, 53249), (38, 53315), (41, 53351), (48, 53408), (57, 53564), (67, 53687), (70, 53774), (75, 53831), (76, 53840), (77, 53843), (82, 53951), (84, 53975), (87, 54041), (88, 54053), (89, 54071), (93, 54173), (100, 54272), (101, 54278), (107, 54359), (115, 54494), (117, 54503), (121, 54626), (127, 54713), (128, 54725),

Gene: Adlitam\_105 Start: 52861, Stop: 54747, Start Num: 5

Candidate Starts for Adlitam\_105:

(Start: 4 @52843 has 81 MA's), (Start: 5 @52861 has 87 MA's), (Start: 6 @52894 has 1 MA's), (7, 52900), (Start: 17 @53086 has 1 MA's), (23, 53164), (24, 53182), (32, 53248), (35, 53266), (38, 53332), (41, 53368), (48, 53425), (57, 53581), (67, 53704), (70, 53791), (75, 53848), (76, 53857), (77, 53860), (82, 53968), (84, 53992), (87, 54058), (88, 54070), (89, 54088), (93, 54190), (100, 54289), (101, 54295), (107, 54376), (115, 54511), (117, 54520), (121, 54643), (127, 54730), (128, 54742),

Gene: Alice\_98 Start: 51763, Stop: 54024, Start Num: 1

Candidate Starts for Alice\_98:

(Start: 1 @51763 has 2 MA's), (2, 51796), (8, 51946), (11, 51994), (16, 52084), (19, 52198), (21, 52273), (22, 52282), (29, 52390), (33, 52429), (40, 52537), (57, 52780), (61, 52807), (62, 52849), (66, 52900), (71, 53020), (74, 53053), (78, 53098), (88, 53284), (106, 53632), (108, 53659), (115, 53788), (116, 53794), (117, 53797), (121, 53920), (127, 54007), (128, 54019),

Gene: Amataga\_105 Start: 52088, Stop: 53992, Start Num: 4

Candidate Starts for Amataga\_105:

(Start: 4 @52088 has 81 MA's), (Start: 5 @52106 has 87 MA's), (Start: 6 @52139 has 1 MA's), (7, 52145), (Start: 17 @52331 has 1 MA's), (23, 52409), (24, 52427), (32, 52493), (35, 52511), (38, 52577), (41, 52613), (48, 52670), (57, 52826), (67, 52949), (70, 53036), (75, 53093), (76, 53102), (77, 53105), (82, 53213), (84, 53237), (87, 53303), (88, 53315), (89, 53333), (93, 53435), (100, 53534), (101, 53540), (107, 53621), (115, 53756), (117, 53765), (121, 53888), (127, 53975), (128, 53987),

Gene: ArcherS7\_104 Start: 52406, Stop: 54310, Start Num: 4

Candidate Starts for ArcherS7\_104:

(Start: 4 @52406 has 81 MA's), (Start: 5 @52424 has 87 MA's), (Start: 6 @52457 has 1 MA's), (Start: 17 @52649 has 1 MA's), (23, 52727), (24, 52745), (32, 52811), (35, 52829), (38, 52895), (41, 52931), (48, 52988), (57, 53144), (67, 53267), (70, 53354), (75, 53411), (76, 53420), (77, 53423), (82, 53531), (84, 53555), (87, 53621), (88, 53633), (89, 53651), (93, 53753), (100, 53852), (101, 53858), (107, 53939), (115, 54074), (117, 54083), (121, 54206), (127, 54293),

Gene: Asterius\_102 Start: 53099, Stop: 54985, Start Num: 5

Candidate Starts for Asterius\_102:

(Start: 4 @53081 has 81 MA's), (Start: 5 @53099 has 87 MA's), (Start: 6 @53132 has 1 MA's), (7, 53138), (Start: 17 @53324 has 1 MA's), (23, 53402), (24, 53420), (32, 53486), (35, 53504), (38, 53570), (41, 53606), (48, 53663), (57, 53819), (67, 53942), (70, 54029), (75, 54086), (76, 54095), (77, 54098), (82, 54206), (84, 54230), (87, 54296), (88, 54308), (89, 54326), (100, 54527), (101, 54533), (107, 54614), (115, 54749), (117, 54758), (121, 54881), (127, 54968), (128, 54980),

Gene: Astraea\_102 Start: 51875, Stop: 53761, Start Num: 5

Candidate Starts for Astraea\_102:

(Start: 4 @51857 has 81 MA's), (Start: 5 @51875 has 87 MA's), (Start: 6 @51908 has 1 MA's), (Start: 17 @52100 has 1 MA's), (23, 52178), (24, 52196), (32, 52262), (35, 52280), (38, 52346), (41, 52382), (48, 52439), (57, 52595), (67, 52718), (70, 52805), (75, 52862), (76, 52871), (77, 52874), (82, 52982), (84, 53006), (87, 53072), (88, 53084), (89, 53102), (100, 53303), (101, 53309), (107, 53390), (115, 53525), (117, 53534), (121, 53657), (127, 53744), (128, 53756),

Gene: Atlantean\_104 Start: 52088, Stop: 53992, Start Num: 4

Candidate Starts for Atlantean\_104:

(Start: 4 @52088 has 81 MA's), (Start: 5 @52106 has 87 MA's), (Start: 6 @52139 has 1 MA's), (7, 52145), (Start: 17 @52331 has 1 MA's), (23, 52409), (24, 52427), (32, 52493), (35, 52511), (38, 52577), (41, 52613), (48, 52670), (57, 52826), (67, 52949), (70, 53036), (75, 53093), (76, 53102), (77, 53105), (82, 53213), (84, 53237), (87, 53303), (88, 53315), (89, 53333), (93, 53435), (100, 53534), (101, 53540), (107, 53621), (115, 53756), (117, 53765), (121, 53888), (127, 53975), (128, 53987),

Gene: Audrick\_107 Start: 52085, Stop: 53971, Start Num: 5

Candidate Starts for Audrick\_107:

(Start: 4 @52067 has 81 MA's), (Start: 5 @52085 has 87 MA's), (Start: 6 @52118 has 1 MA's), (7, 52124), (Start: 17 @52310 has 1 MA's), (23, 52388), (24, 52406), (32, 52472), (35, 52490), (38, 52556), (41, 52592), (48, 52649), (57, 52805), (67, 52928), (70, 53015), (75, 53072), (76, 53081), (77, 53084), (82, 53192), (84, 53216), (87, 53282), (88, 53294), (89, 53312), (93, 53414), (100, 53513), (101, 53519), (107, 53600), (115, 53735), (117, 53744), (121, 53867), (127, 53954), (128, 53966),

Gene: Ava3\_106 Start: 53019, Stop: 54905, Start Num: 5

Candidate Starts for Ava3\_106:

(Start: 4 @53001 has 81 MA's), (Start: 5 @53019 has 87 MA's), (Start: 6 @53052 has 1 MA's), (7, 53058), (Start: 17 @53244 has 1 MA's), (23, 53322), (24, 53340), (32, 53406), (35, 53424), (38, 53490), (41, 53526), (48, 53583), (57, 53739), (67, 53862), (70, 53949), (75, 54006), (76, 54015), (77, 54018), (82, 54126), (84, 54150), (87, 54216), (88, 54228), (89, 54246), (100, 54447), (101, 54453), (107, 54534), (115, 54669), (117, 54678), (121, 54801), (127, 54888), (128, 54900),

Gene: Babyland\_106 Start: 52176, Stop: 54080, Start Num: 4

Candidate Starts for Babyland\_106:

(Start: 4 @52176 has 81 MA's), (Start: 5 @52194 has 87 MA's), (Start: 6 @52227 has 1 MA's), (7, 52233), (Start: 17 @52419 has 1 MA's), (23, 52497), (24, 52515), (32, 52581), (35, 52599), (38, 52665), (41, 52701), (48, 52758), (57, 52914), (67, 53037), (70, 53124), (75, 53181), (76, 53190), (77, 53193), (82, 53301), (84, 53325), (87, 53391), (88, 53403), (89, 53421), (93, 53523), (100, 53622),

(101, 53628), (107, 53709), (115, 53844), (117, 53853), (121, 53976), (127, 54063), (128, 54075),

Gene: BackyardAgain\_102 Start: 52003, Stop: 53907, Start Num: 4

Candidate Starts for BackyardAgain\_102:

(Start: 4 @52003 has 81 MA's), (Start: 5 @52021 has 87 MA's), (Start: 6 @52054 has 1 MA's), (7, 52060), (Start: 17 @52246 has 1 MA's), (23, 52324), (24, 52342), (32, 52408), (35, 52426), (38, 52492), (41, 52528), (48, 52585), (57, 52741), (67, 52864), (70, 52951), (75, 53008), (76, 53017), (77, 53020), (82, 53128), (84, 53152), (87, 53218), (88, 53230), (89, 53248), (93, 53350), (100, 53449), (101, 53455), (107, 53536), (115, 53671), (117, 53680), (121, 53803), (127, 53890), (128, 53902),

Gene: BadAgartude\_101 Start: 53526, Stop: 55430, Start Num: 4

Candidate Starts for BadAgartude\_101:

(Start: 4 @53526 has 81 MA's), (Start: 5 @53544 has 87 MA's), (Start: 6 @53577 has 1 MA's), (7, 53583), (Start: 17 @53769 has 1 MA's), (23, 53847), (24, 53865), (32, 53931), (35, 53949), (38, 54015), (41, 54051), (48, 54108), (57, 54264), (67, 54387), (70, 54474), (75, 54531), (76, 54540), (77, 54543), (82, 54651), (84, 54675), (87, 54741), (88, 54753), (89, 54771), (93, 54873), (100, 54972), (101, 54978), (107, 55059), (115, 55194), (117, 55203), (121, 55326), (127, 55413), (128, 55425),

Gene: BananaFence\_104 Start: 53275, Stop: 55161, Start Num: 5

Candidate Starts for BananaFence\_104:

(Start: 4 @53257 has 81 MA's), (Start: 5 @53275 has 87 MA's), (Start: 6 @53308 has 1 MA's), (7, 53314), (Start: 17 @53500 has 1 MA's), (23, 53578), (24, 53596), (32, 53662), (35, 53680), (38, 53746), (41, 53782), (48, 53839), (57, 53995), (67, 54118), (70, 54205), (75, 54262), (76, 54271), (77, 54274), (82, 54382), (84, 54406), (87, 54472), (88, 54484), (89, 54502), (93, 54604), (100, 54703), (101, 54709), (107, 54790), (115, 54925), (117, 54934), (121, 55057), (127, 55144), (128, 55156),

Gene: Bangla1971\_106 Start: 52554, Stop: 54440, Start Num: 5

Candidate Starts for Bangla1971\_106:

(Start: 4 @52536 has 81 MA's), (Start: 5 @52554 has 87 MA's), (Start: 6 @52587 has 1 MA's), (7, 52593), (Start: 17 @52779 has 1 MA's), (23, 52857), (24, 52875), (32, 52941), (35, 52959), (38, 53025), (41, 53061), (48, 53118), (57, 53274), (67, 53397), (70, 53484), (75, 53541), (76, 53550), (77, 53553), (82, 53661), (84, 53685), (87, 53751), (88, 53763), (89, 53781), (93, 53883), (100, 53982), (101, 53988), (107, 54069), (115, 54204), (117, 54213), (121, 54336), (127, 54423), (128, 54435),

Gene: Basquiat\_101 Start: 51821, Stop: 53623, Start Num: 5

Candidate Starts for Basquiat\_101:

(Start: 5 @51821 has 87 MA's), (Start: 6 @51854 has 1 MA's), (Start: 17 @52049 has 1 MA's), (26, 52127), (28, 52145), (32, 52175), (35, 52193), (36, 52223), (43, 52304), (56, 52409), (71, 52655), (72, 52661), (108, 53258), (115, 53387), (117, 53396), (121, 53519), (127, 53606), (128, 53618),

Gene: BeanWater\_97 Start: 52853, Stop: 54757, Start Num: 4

Candidate Starts for BeanWater\_97:

(Start: 4 @52853 has 81 MA's), (Start: 5 @52871 has 87 MA's), (Start: 6 @52904 has 1 MA's), (Start: 17 @53096 has 1 MA's), (24, 53192), (32, 53258), (35, 53276), (38, 53342), (41, 53378), (48, 53435), (57, 53591), (67, 53714), (70, 53801), (75, 53858), (76, 53867), (77, 53870), (82, 53978), (84, 54002), (87, 54068), (88, 54080), (89, 54098), (93, 54200), (100, 54299), (101, 54305), (107, 54386), (115, 54521), (117, 54530), (121, 54653), (127, 54740), (128, 54752),

Gene: BigCity\_113 Start: 55535, Stop: 57421, Start Num: 5

Candidate Starts for BigCity\_113:

(Start: 4 @55517 has 81 MA's), (Start: 5 @55535 has 87 MA's), (Start: 6 @55568 has 1 MA's), (7, 55574), (Start: 17 @55760 has 1 MA's), (23, 55838), (24, 55856), (32, 55922), (35, 55940), (38, 56006), (41, 56042), (48, 56099), (57, 56255), (67, 56378), (70, 56465), (75, 56522), (76, 56531), (77,



56534), (82, 56642), (84, 56666), (87, 56732), (88, 56744), (89, 56762), (93, 56864), (100, 56963), (101, 56969), (107, 57050), (115, 57185), (117, 57194), (121, 57317), (127, 57404), (128, 57416),

Gene: Bigswole\_110 Start: 56064, Stop: 57980, Start Num: 5

Candidate Starts for Bigswole\_110:

(Start: 4 @56046 has 81 MA's), (Start: 5 @56064 has 87 MA's), (Start: 6 @56097 has 1 MA's), (Start: 17 @56289 has 1 MA's), (24, 56385), (32, 56451), (35, 56469), (38, 56535), (41, 56571), (48, 56628), (57, 56784), (67, 56907), (70, 56994), (75, 57051), (76, 57060), (77, 57063), (82, 57171), (84, 57195), (87, 57261), (88, 57273), (89, 57291), (100, 57492), (101, 57498), (107, 57579), (115, 57714), (117, 57723), (121, 57846), (127, 57933), (128, 57945),

Gene: Bipolarisk\_104 Start: 53259, Stop: 55163, Start Num: 4

Candidate Starts for Bipolarisk\_104:

(Start: 4 @53259 has 81 MA's), (Start: 5 @53277 has 87 MA's), (Start: 6 @53310 has 1 MA's), (7, 53316), (Start: 17 @53502 has 1 MA's), (23, 53580), (24, 53598), (32, 53664), (35, 53682), (38, 53748), (41, 53784), (48, 53841), (57, 53997), (67, 54120), (70, 54207), (75, 54264), (76, 54273), (77, 54276), (82, 54384), (84, 54408), (87, 54474), (88, 54486), (89, 54504), (100, 54705), (101, 54711), (107, 54792), (115, 54927), (117, 54936), (121, 55059), (127, 55146), (128, 55158),

Gene: Blackbrain\_100 Start: 51550, Stop: 53454, Start Num: 4

Candidate Starts for Blackbrain\_100:

(Start: 4 @51550 has 81 MA's), (Start: 5 @51568 has 87 MA's), (Start: 6 @51601 has 1 MA's), (7, 51607), (Start: 17 @51793 has 1 MA's), (23, 51871), (24, 51889), (32, 51955), (35, 51973), (38, 52039), (41, 52075), (48, 52132), (57, 52288), (67, 52411), (70, 52498), (75, 52555), (76, 52564), (77, 52567), (82, 52675), (84, 52699), (87, 52765), (88, 52777), (89, 52795), (93, 52897), (100, 52996), (101, 53002), (107, 53083), (115, 53218), (117, 53227), (121, 53350), (127, 53437), (128, 53449),

Gene: Blackdragon\_101 Start: 52701, Stop: 54587, Start Num: 5

Candidate Starts for Blackdragon\_101:

(Start: 4 @52683 has 81 MA's), (Start: 5 @52701 has 87 MA's), (Start: 6 @52734 has 1 MA's), (7, 52740), (Start: 17 @52926 has 1 MA's), (23, 53004), (24, 53022), (32, 53088), (35, 53106), (38, 53172), (41, 53208), (48, 53265), (57, 53421), (67, 53544), (70, 53631), (75, 53688), (76, 53697), (77, 53700), (82, 53808), (84, 53832), (87, 53898), (88, 53910), (89, 53928), (93, 54030), (100, 54129), (101, 54135), (107, 54216), (115, 54351), (117, 54360), (121, 54483), (127, 54570), (128, 54582),

Gene: Blubba\_95 Start: 53311, Stop: 55194, Start Num: 5

Candidate Starts for Blubba\_95:

(Start: 4 @53293 has 81 MA's), (Start: 5 @53311 has 87 MA's), (Start: 6 @53344 has 1 MA's), (7, 53350), (Start: 17 @53536 has 1 MA's), (20, 53602), (24, 53632), (32, 53698), (35, 53716), (38, 53782), (41, 53818), (48, 53875), (57, 54031), (67, 54154), (70, 54241), (75, 54298), (76, 54307), (77, 54310), (82, 54418), (84, 54442), (87, 54508), (88, 54520), (89, 54538), (100, 54739), (101, 54745), (107, 54823), (115, 54958), (116, 54964), (117, 54967), (121, 55090), (127, 55177), (128, 55189),

Gene: Bonray\_105 Start: 53432, Stop: 55336, Start Num: 4

Candidate Starts for Bonray\_105:

(Start: 4 @53432 has 81 MA's), (Start: 5 @53450 has 87 MA's), (Start: 6 @53483 has 1 MA's), (7, 53489), (Start: 17 @53675 has 1 MA's), (23, 53753), (24, 53771), (32, 53837), (35, 53855), (38, 53921), (41, 53957), (48, 54014), (57, 54170), (67, 54293), (70, 54380), (75, 54437), (76, 54446), (77, 54449), (82, 54557), (84, 54581), (87, 54647), (88, 54659), (89, 54677), (100, 54878), (101, 54884), (107, 54965), (115, 55100), (117, 55109), (121, 55232), (127, 55319), (128, 55331),

Gene: Bread\_105 Start: 53105, Stop: 54991, Start Num: 5

Candidate Starts for Bread\_105:

(Start: 4 @53087 has 81 MA's), (Start: 5 @53105 has 87 MA's), (Start: 6 @53138 has 1 MA's), (7, 53144), (Start: 17 @53330 has 1 MA's), (23, 53408), (24, 53426), (32, 53492), (35, 53510), (38, 53576), (41, 53612), (48, 53669), (57, 53825), (67, 53948), (70, 54035), (75, 54092), (76, 54101), (77, 54104), (82, 54212), (84, 54236), (87, 54302), (88, 54314), (89, 54332), (93, 54434), (100, 54533), (101, 54539), (107, 54620), (115, 54755), (117, 54764), (121, 54887), (127, 54974), (128, 54986),

Gene: Breeniome\_104 Start: 51687, Stop: 53573, Start Num: 5

Candidate Starts for Breeniome\_104:

(Start: 4 @51669 has 81 MA's), (Start: 5 @51687 has 87 MA's), (Start: 6 @51720 has 1 MA's), (Start: 17 @51912 has 1 MA's), (23, 51990), (24, 52008), (32, 52074), (35, 52092), (38, 52158), (41, 52194), (48, 52251), (57, 52407), (67, 52530), (70, 52617), (75, 52674), (76, 52683), (77, 52686), (82, 52794), (84, 52818), (87, 52884), (88, 52896), (89, 52914), (93, 53016), (100, 53115), (101, 53121), (107, 53202), (115, 53337), (117, 53346), (121, 53469), (127, 53556), (128, 53568),

Gene: Burrough\_105 Start: 53604, Stop: 55490, Start Num: 5

Candidate Starts for Burrough\_105:

(Start: 4 @53586 has 81 MA's), (Start: 5 @53604 has 87 MA's), (Start: 6 @53637 has 1 MA's), (7, 53643), (Start: 17 @53829 has 1 MA's), (23, 53907), (24, 53925), (32, 53991), (35, 54009), (38, 54075), (41, 54111), (48, 54168), (57, 54324), (67, 54447), (70, 54534), (75, 54591), (76, 54600), (77, 54603), (82, 54711), (84, 54735), (87, 54801), (88, 54813), (89, 54831), (100, 55032), (101, 55038), (107, 55119), (115, 55254), (117, 55263), (121, 55386), (127, 55473), (128, 55485),

Gene: Bxz1\_103 Start: 55024, Stop: 56928, Start Num: 4

Candidate Starts for Bxz1\_103:

(Start: 4 @55024 has 81 MA's), (Start: 5 @55042 has 87 MA's), (Start: 6 @55075 has 1 MA's), (7, 55081), (Start: 17 @55267 has 1 MA's), (23, 55345), (24, 55363), (32, 55429), (35, 55447), (38, 55513), (41, 55549), (48, 55606), (57, 55762), (67, 55885), (70, 55972), (75, 56029), (76, 56038), (77, 56041), (82, 56149), (84, 56173), (87, 56239), (88, 56251), (89, 56269), (93, 56371), (100, 56470), (101, 56476), (107, 56557), (115, 56692), (117, 56701), (121, 56824), (127, 56911), (128, 56923),

Gene: Cactojaque\_100 Start: 51675, Stop: 53561, Start Num: 5

Candidate Starts for Cactojaque\_100:

(Start: 4 @51657 has 81 MA's), (Start: 5 @51675 has 87 MA's), (Start: 6 @51708 has 1 MA's), (7, 51714), (Start: 17 @51900 has 1 MA's), (23, 51978), (24, 51996), (32, 52062), (35, 52080), (38, 52146), (41, 52182), (48, 52239), (57, 52395), (67, 52518), (70, 52605), (75, 52662), (76, 52671), (77, 52674), (82, 52782), (84, 52806), (87, 52872), (88, 52884), (89, 52902), (93, 53004), (100, 53103), (101, 53109), (107, 53190), (115, 53325), (117, 53334), (121, 53457), (127, 53544), (128, 53556),

Gene: Cali\_101 Start: 53588, Stop: 55492, Start Num: 4

Candidate Starts for Cali\_101:

(Start: 4 @53588 has 81 MA's), (Start: 5 @53606 has 87 MA's), (Start: 6 @53639 has 1 MA's), (7, 53645), (Start: 17 @53831 has 1 MA's), (23, 53909), (24, 53927), (32, 53993), (35, 54011), (38, 54077), (41, 54113), (48, 54170), (57, 54326), (67, 54449), (70, 54536), (75, 54593), (76, 54602), (77, 54605), (82, 54713), (84, 54737), (87, 54803), (88, 54815), (89, 54833), (93, 54935), (100, 55034), (101, 55040), (107, 55121), (115, 55256), (117, 55265), (121, 55388), (127, 55475), (128, 55487),

Gene: Cane17\_95 Start: 53369, Stop: 55252, Start Num: 5

Candidate Starts for Cane17\_95:

(Start: 4 @53351 has 81 MA's), (Start: 5 @53369 has 87 MA's), (Start: 6 @53402 has 1 MA's), (7, 53408), (Start: 17 @53594 has 1 MA's), (20, 53660), (24, 53690), (32, 53756), (35, 53774), (38, 53840), (41, 53876), (48, 53933), (57, 54089), (67, 54212), (70, 54299), (75, 54356), (76, 54365), (77, 54368), (82, 54476), (84, 54500), (87, 54566), (88, 54578), (89, 54596), (100, 54797), (101, 54803), (107, 54881), (115, 55016), (116, 55022), (117, 55025), (121, 55148), (127, 55235), (128, 55247),

Gene: Capablanca\_107 Start: 53856, Stop: 55742, Start Num: 5

Candidate Starts for Capablanca\_107:

(Start: 4 @53838 has 81 MA's), (Start: 5 @53856 has 87 MA's), (Start: 6 @53889 has 1 MA's), (7, 53895), (Start: 17 @54081 has 1 MA's), (23, 54159), (24, 54177), (32, 54243), (35, 54261), (38, 54327), (41, 54363), (48, 54420), (57, 54576), (67, 54699), (70, 54786), (75, 54843), (76, 54852), (77, 54855), (82, 54963), (84, 54987), (87, 55053), (88, 55065), (89, 55083), (93, 55185), (100, 55284), (101, 55290), (107, 55371), (115, 55506), (117, 55515), (121, 55638), (127, 55725), (128, 55737),

Gene: Caravan\_100 Start: 52963, Stop: 54849, Start Num: 5

Candidate Starts for Caravan\_100:

(Start: 4 @52945 has 81 MA's), (Start: 5 @52963 has 87 MA's), (Start: 6 @52996 has 1 MA's), (7, 53002), (Start: 17 @53188 has 1 MA's), (23, 53266), (24, 53284), (32, 53350), (35, 53368), (38, 53434), (41, 53470), (48, 53527), (57, 53683), (67, 53806), (70, 53893), (75, 53950), (76, 53959), (77, 53962), (82, 54070), (84, 54094), (87, 54160), (88, 54172), (89, 54190), (100, 54391), (101, 54397), (107, 54478), (115, 54613), (117, 54622), (121, 54745), (127, 54832), (128, 54844),

Gene: Catera\_102 Start: 51861, Stop: 53765, Start Num: 4

Candidate Starts for Catera\_102:

(Start: 4 @51861 has 81 MA's), (Start: 5 @51879 has 87 MA's), (Start: 6 @51912 has 1 MA's), (7, 51918), (Start: 17 @52104 has 1 MA's), (23, 52182), (24, 52200), (32, 52266), (35, 52284), (38, 52350), (41, 52386), (48, 52443), (57, 52599), (67, 52722), (70, 52809), (75, 52866), (76, 52875), (77, 52878), (82, 52986), (84, 53010), (87, 53076), (88, 53088), (89, 53106), (93, 53208), (100, 53307), (101, 53313), (107, 53394), (115, 53529), (117, 53538), (121, 53661), (127, 53748), (128, 53760),

Gene: Chargie21\_101 Start: 51854, Stop: 53623, Start Num: 6

Candidate Starts for Chargie21\_101:

(Start: 5 @51821 has 87 MA's), (Start: 6 @51854 has 1 MA's), (Start: 17 @52049 has 1 MA's), (26, 52127), (28, 52145), (32, 52175), (35, 52193), (36, 52223), (43, 52304), (56, 52409), (71, 52655), (72, 52661), (108, 53258), (115, 53387), (117, 53396), (121, 53519), (127, 53606), (128, 53618),

Gene: CharlieB\_101 Start: 52008, Stop: 53894, Start Num: 5

Candidate Starts for CharlieB\_101:

(Start: 4 @51990 has 81 MA's), (Start: 5 @52008 has 87 MA's), (Start: 6 @52041 has 1 MA's), (7, 52047), (Start: 17 @52233 has 1 MA's), (23, 52311), (24, 52329), (32, 52395), (35, 52413), (38, 52479), (41, 52515), (48, 52572), (57, 52728), (67, 52851), (70, 52938), (75, 52995), (76, 53004), (77, 53007), (82, 53115), (84, 53139), (87, 53205), (88, 53217), (89, 53235), (93, 53337), (100, 53436), (101, 53442), (107, 53523), (115, 53658), (117, 53667), (121, 53790), (127, 53877), (128, 53889),

Gene: ChaylaJr\_100 Start: 51484, Stop: 53388, Start Num: 4

Candidate Starts for ChaylaJr\_100:

(Start: 4 @51484 has 81 MA's), (Start: 5 @51502 has 87 MA's), (Start: 6 @51535 has 1 MA's), (Start: 17 @51727 has 1 MA's), (23, 51805), (24, 51823), (32, 51889), (35, 51907), (38, 51973), (41, 52009), (48, 52066), (57, 52222), (67, 52345), (70, 52432), (75, 52489), (76, 52498), (77, 52501), (82, 52609), (84, 52633), (87, 52699), (88, 52711), (89, 52729), (93, 52831), (100, 52930), (101, 52936), (107, 53017), (115, 53152), (117, 53161), (121, 53284), (127, 53371), (128, 53383),

Gene: ChickenPhender\_101 Start: 51787, Stop: 53691, Start Num: 4

Candidate Starts for ChickenPhender\_101:

(Start: 4 @51787 has 81 MA's), (Start: 5 @51805 has 87 MA's), (Start: 6 @51838 has 1 MA's), (Start: 17 @52030 has 1 MA's), (23, 52108), (24, 52126), (32, 52192), (35, 52210), (38, 52276), (41, 52312), (48, 52369), (57, 52525), (67, 52648), (70, 52735), (75, 52792), (76, 52801), (77, 52804), (82, 52912), (84, 52936), (87, 53002), (88, 53014), (89, 53032), (93, 53134), (100, 53233), (101, 53239), (107,

53320), (115, 53455), (117, 53464), (121, 53587), (127, 53674), (128, 53686),

Gene: Chomp\_104 Start: 53394, Stop: 55280, Start Num: 5

Candidate Starts for Chomp\_104:

(Start: 4 @53376 has 81 MA's), (Start: 5 @53394 has 87 MA's), (Start: 6 @53427 has 1 MA's), (Start: 17 @53619 has 1 MA's), (23, 53697), (24, 53715), (32, 53781), (35, 53799), (38, 53865), (41, 53901), (48, 53958), (57, 54114), (67, 54237), (70, 54324), (75, 54381), (76, 54390), (77, 54393), (82, 54501), (84, 54525), (87, 54591), (88, 54603), (89, 54621), (93, 54723), (100, 54822), (101, 54828), (107, 54909), (115, 55044), (117, 55053), (121, 55176), (127, 55263), (128, 55275),

Gene: CindyLou\_106 Start: 53435, Stop: 55321, Start Num: 5

Candidate Starts for CindyLou\_106:

(Start: 4 @53417 has 81 MA's), (Start: 5 @53435 has 87 MA's), (Start: 6 @53468 has 1 MA's), (7, 53474), (Start: 17 @53660 has 1 MA's), (23, 53738), (24, 53756), (32, 53822), (35, 53840), (38, 53906), (41, 53942), (48, 53999), (57, 54155), (67, 54278), (70, 54365), (75, 54422), (76, 54431), (77, 54434), (82, 54542), (84, 54566), (87, 54632), (88, 54644), (89, 54662), (93, 54764), (100, 54863), (101, 54869), (107, 54950), (115, 55085), (117, 55094), (121, 55217), (127, 55304), (128, 55316),

Gene: Colt\_96 Start: 53947, Stop: 55848, Start Num: 4

Candidate Starts for Colt\_96:

(Start: 4 @53947 has 81 MA's), (Start: 5 @53965 has 87 MA's), (Start: 6 @53998 has 1 MA's), (7, 54004), (Start: 17 @54190 has 1 MA's), (20, 54256), (24, 54286), (32, 54352), (35, 54370), (38, 54436), (41, 54472), (48, 54529), (57, 54685), (67, 54808), (70, 54895), (75, 54952), (76, 54961), (77, 54964), (82, 55072), (84, 55096), (87, 55162), (88, 55174), (89, 55192), (100, 55393), (101, 55399), (107, 55477), (115, 55612), (116, 55618), (117, 55621), (121, 55744), (127, 55831), (128, 55843),

Gene: Concombres\_111 Start: 55604, Stop: 57652, Start Num: 5

Candidate Starts for Concombres\_111:

(Start: 5 @55604 has 87 MA's), (Start: 6 @55637 has 1 MA's), (15, 55787), (25, 55994), (31, 56054), (37, 56135), (49, 56243), (51, 56273), (54, 56348), (58, 56423), (68, 56555), (81, 56792), (83, 56819), (90, 56948), (91, 57026), (92, 57053), (96, 57116), (98, 57149), (103, 57209), (107, 57281), (115, 57416), (116, 57422), (117, 57425), (121, 57548), (127, 57635), (128, 57647),

Gene: DTDevon\_106 Start: 53880, Stop: 55766, Start Num: 5

Candidate Starts for DTDevon\_106:

(Start: 4 @53862 has 81 MA's), (Start: 5 @53880 has 87 MA's), (Start: 6 @53913 has 1 MA's), (7, 53919), (Start: 17 @54105 has 1 MA's), (23, 54183), (24, 54201), (32, 54267), (35, 54285), (38, 54351), (41, 54387), (48, 54444), (57, 54600), (67, 54723), (70, 54810), (75, 54867), (76, 54876), (77, 54879), (82, 54987), (84, 55011), (87, 55077), (88, 55089), (89, 55107), (93, 55209), (100, 55308), (101, 55314), (107, 55395), (115, 55530), (117, 55539), (121, 55662), (127, 55749), (128, 55761),

Gene: Daffodil\_110 Start: 53559, Stop: 55463, Start Num: 4

Candidate Starts for Daffodil\_110:

(Start: 4 @53559 has 81 MA's), (Start: 5 @53577 has 87 MA's), (Start: 6 @53610 has 1 MA's), (7, 53616), (Start: 17 @53802 has 1 MA's), (23, 53880), (24, 53898), (32, 53964), (35, 53982), (38, 54048), (41, 54084), (48, 54141), (57, 54297), (67, 54420), (70, 54507), (75, 54564), (76, 54573), (77, 54576), (82, 54684), (84, 54708), (87, 54774), (88, 54786), (89, 54804), (100, 55005), (101, 55011), (107, 55092), (115, 55227), (117, 55236), (121, 55359), (127, 55446), (128, 55458),

Gene: Dandelion\_111 Start: 55842, Stop: 57644, Start Num: 5

Candidate Starts for Dandelion\_111:

(Start: 5 @55842 has 87 MA's), (Start: 6 @55875 has 1 MA's), (Start: 17 @56070 has 1 MA's), (26, 56148), (28, 56166), (32, 56196), (35, 56214), (36, 56244), (43, 56325), (56, 56430), (71, 56676), (72,

56682), (108, 57279), (115, 57408), (116, 57414), (117, 57417), (121, 57540), (127, 57627), (128, 57639),

Gene: Darko\_105 Start: 53495, Stop: 55399, Start Num: 4

Candidate Starts for Darko\_105:

(Start: 4 @53495 has 81 MA's), (Start: 5 @53513 has 87 MA's), (Start: 6 @53546 has 1 MA's), (7, 53552), (Start: 17 @53738 has 1 MA's), (23, 53816), (24, 53834), (32, 53900), (35, 53918), (38, 53984), (41, 54020), (48, 54077), (57, 54233), (67, 54356), (70, 54443), (75, 54500), (76, 54509), (77, 54512), (82, 54620), (84, 54644), (87, 54710), (88, 54722), (89, 54740), (100, 54941), (101, 54947), (107, 55028), (115, 55163), (117, 55172), (121, 55295), (127, 55382), (128, 55394),

Gene: Delilah\_105 Start: 53713, Stop: 55617, Start Num: 4

Candidate Starts for Delilah\_105:

(Start: 4 @53713 has 81 MA's), (Start: 5 @53731 has 87 MA's), (Start: 6 @53764 has 1 MA's), (7, 53770), (Start: 17 @53956 has 1 MA's), (23, 54034), (24, 54052), (32, 54118), (35, 54136), (38, 54202), (41, 54238), (48, 54295), (57, 54451), (67, 54574), (70, 54661), (75, 54718), (76, 54727), (77, 54730), (82, 54838), (84, 54862), (87, 54928), (88, 54940), (89, 54958), (100, 55159), (101, 55165), (107, 55246), (115, 55381), (117, 55390), (121, 55513), (127, 55600), (128, 55612),

Gene: Delylah\_108 Start: 53252, Stop: 55156, Start Num: 4

Candidate Starts for Delylah\_108:

(Start: 4 @53252 has 81 MA's), (Start: 5 @53270 has 87 MA's), (Start: 6 @53303 has 1 MA's), (7, 53309), (Start: 17 @53495 has 1 MA's), (23, 53573), (24, 53591), (32, 53657), (35, 53675), (38, 53741), (41, 53777), (48, 53834), (57, 53990), (67, 54113), (70, 54200), (75, 54257), (76, 54266), (77, 54269), (82, 54377), (84, 54401), (87, 54467), (88, 54479), (89, 54497), (100, 54698), (101, 54704), (107, 54785), (115, 54920), (117, 54929), (121, 55052), (127, 55139), (128, 55151),

Gene: Demodog\_112 Start: 55776, Stop: 57662, Start Num: 5

Candidate Starts for Demodog\_112:

(Start: 4 @55758 has 81 MA's), (Start: 5 @55776 has 87 MA's), (Start: 6 @55809 has 1 MA's), (Start: 17 @56001 has 1 MA's), (24, 56097), (32, 56163), (35, 56181), (38, 56247), (41, 56283), (48, 56340), (57, 56496), (67, 56619), (70, 56706), (75, 56763), (76, 56772), (77, 56775), (82, 56883), (84, 56907), (87, 56973), (88, 56985), (89, 57003), (100, 57204), (101, 57210), (107, 57291), (115, 57426), (116, 57432), (117, 57435), (121, 57558), (127, 57645), (128, 57657),

Gene: Derek\_105 Start: 53196, Stop: 55082, Start Num: 5

Candidate Starts for Derek\_105:

(Start: 4 @53178 has 81 MA's), (Start: 5 @53196 has 87 MA's), (Start: 6 @53229 has 1 MA's), (7, 53235), (Start: 17 @53421 has 1 MA's), (23, 53499), (24, 53517), (32, 53583), (35, 53601), (38, 53667), (41, 53703), (48, 53760), (57, 53916), (67, 54039), (70, 54126), (75, 54183), (76, 54192), (77, 54195), (82, 54303), (84, 54327), (87, 54393), (88, 54405), (89, 54423), (93, 54525), (100, 54624), (101, 54630), (107, 54711), (115, 54846), (117, 54855), (121, 54978), (127, 55065), (128, 55077),

Gene: Dietrick\_97 Start: 51254, Stop: 53158, Start Num: 4

Candidate Starts for Dietrick\_97:

(Start: 4 @51254 has 81 MA's), (Start: 5 @51272 has 87 MA's), (Start: 6 @51305 has 1 MA's), (7, 51311), (Start: 17 @51497 has 1 MA's), (23, 51575), (24, 51593), (32, 51659), (35, 51677), (38, 51743), (41, 51779), (48, 51836), (57, 51992), (67, 52115), (70, 52202), (75, 52259), (76, 52268), (77, 52271), (82, 52379), (84, 52403), (87, 52469), (88, 52481), (89, 52499), (100, 52700), (101, 52706), (107, 52787), (115, 52922), (117, 52931), (121, 53054), (127, 53141), (128, 53153),

Gene: DirtMonster\_99 Start: 52764, Stop: 54650, Start Num: 5

Candidate Starts for DirtMonster\_99:

(Start: 4 @52746 has 81 MA's), (Start: 5 @52764 has 87 MA's), (Start: 6 @52797 has 1 MA's), (7, 52803), (Start: 17 @52989 has 1 MA's), (23, 53067), (24, 53085), (32, 53151), (35, 53169), (38, 53235), (41, 53271), (48, 53328), (57, 53484), (67, 53607), (70, 53694), (75, 53751), (76, 53760), (77, 53763), (82, 53871), (84, 53895), (87, 53961), (88, 53973), (89, 53991), (93, 54093), (100, 54192), (101, 54198), (107, 54279), (115, 54414), (117, 54423), (121, 54546), (127, 54633), (128, 54645),

Gene: Domi\_99 Start: 52618, Stop: 54504, Start Num: 5

Candidate Starts for Domi\_99:

(Start: 4 @52600 has 81 MA's), (Start: 5 @52618 has 87 MA's), (Start: 6 @52651 has 1 MA's), (7, 52657), (Start: 17 @52843 has 1 MA's), (23, 52921), (24, 52939), (32, 53005), (35, 53023), (38, 53089), (41, 53125), (48, 53182), (57, 53338), (67, 53461), (70, 53548), (75, 53605), (76, 53614), (77, 53617), (82, 53725), (84, 53749), (87, 53815), (88, 53827), (89, 53845), (93, 53947), (100, 54046), (101, 54052), (107, 54133), (115, 54268), (117, 54277), (121, 54400), (127, 54487), (128, 54499),

Gene: DrPhinkDaddy\_104 Start: 53781, Stop: 55685, Start Num: 4

Candidate Starts for DrPhinkDaddy\_104:

(Start: 4 @53781 has 81 MA's), (Start: 5 @53799 has 87 MA's), (Start: 6 @53832 has 1 MA's), (7, 53838), (Start: 17 @54024 has 1 MA's), (23, 54102), (24, 54120), (32, 54186), (35, 54204), (38, 54270), (41, 54306), (48, 54363), (57, 54519), (67, 54642), (70, 54729), (75, 54786), (76, 54795), (77, 54798), (82, 54906), (84, 54930), (87, 54996), (88, 55008), (89, 55026), (100, 55227), (101, 55233), (107, 55314), (115, 55449), (117, 55458), (121, 55581), (127, 55668), (128, 55680),

Gene: Drazdys\_104 Start: 52719, Stop: 54380, Start Num: 17

Candidate Starts for Drazdys\_104:

(Start: 4 @52476 has 81 MA's), (Start: 5 @52494 has 87 MA's), (Start: 6 @52527 has 1 MA's), (Start: 17 @52719 has 1 MA's), (23, 52797), (24, 52815), (32, 52881), (35, 52899), (38, 52965), (41, 53001), (48, 53058), (57, 53214), (67, 53337), (70, 53424), (75, 53481), (76, 53490), (77, 53493), (82, 53601), (84, 53625), (87, 53691), (88, 53703), (89, 53721), (93, 53823), (100, 53922), (101, 53928), (107, 54009), (115, 54144), (117, 54153), (121, 54276), (127, 54363), (128, 54375),

Gene: ET08\_94 Start: 52260, Stop: 54146, Start Num: 5

Candidate Starts for ET08\_94:

(Start: 4 @52242 has 81 MA's), (Start: 5 @52260 has 87 MA's), (Start: 6 @52293 has 1 MA's), (Start: 17 @52485 has 1 MA's), (23, 52563), (24, 52581), (32, 52647), (35, 52665), (38, 52731), (41, 52767), (48, 52824), (57, 52980), (67, 53103), (70, 53190), (75, 53247), (76, 53256), (77, 53259), (82, 53367), (84, 53391), (87, 53457), (88, 53469), (89, 53487), (100, 53688), (101, 53694), (107, 53775), (115, 53910), (117, 53919), (121, 54042), (127, 54129), (128, 54141),

Gene: EasyJones\_107 Start: 52485, Stop: 54287, Start Num: 5

Candidate Starts for EasyJones\_107:

(Start: 5 @52485 has 87 MA's), (Start: 6 @52518 has 1 MA's), (Start: 17 @52713 has 1 MA's), (26, 52791), (28, 52809), (32, 52839), (35, 52857), (36, 52887), (43, 52968), (56, 53073), (71, 53319), (72, 53325), (108, 53922), (115, 54051), (116, 54057), (117, 54060), (121, 54183), (127, 54270), (128, 54282),

Gene: EggyFarm\_113 Start: 55535, Stop: 57421, Start Num: 5

Candidate Starts for EggyFarm\_113:

(Start: 4 @55517 has 81 MA's), (Start: 5 @55535 has 87 MA's), (Start: 6 @55568 has 1 MA's), (7, 55574), (Start: 17 @55760 has 1 MA's), (23, 55838), (24, 55856), (32, 55922), (35, 55940), (38, 56006), (41, 56042), (48, 56099), (57, 56255), (67, 56378), (70, 56465), (75, 56522), (76, 56531), (77, 56534), (82, 56642), (84, 56666), (87, 56732), (88, 56744), (89, 56762), (93, 56864), (100, 56963), (101, 56969), (107, 57050), (115, 57185), (117, 57194), (121, 57317), (127, 57404), (128, 57416),

Gene: EmToTheThree\_107 Start: 54622, Stop: 56424, Start Num: 5

Candidate Starts for EmToTheThree\_107:

(Start: 5 @54622 has 87 MA's), (Start: 6 @54655 has 1 MA's), (Start: 17 @54850 has 1 MA's), (26, 54928), (28, 54946), (32, 54976), (35, 54994), (36, 55024), (43, 55105), (56, 55210), (71, 55456), (72, 55462), (108, 56059), (115, 56188), (116, 56194), (117, 56197), (121, 56320), (127, 56407), (128, 56419),

Gene: EmmaElysia\_105 Start: 52307, Stop: 54211, Start Num: 4

Candidate Starts for EmmaElysia\_105:

(Start: 4 @52307 has 81 MA's), (Start: 5 @52325 has 87 MA's), (Start: 6 @52358 has 1 MA's), (7, 52364), (Start: 17 @52550 has 1 MA's), (23, 52628), (24, 52646), (32, 52712), (35, 52730), (38, 52796), (41, 52832), (48, 52889), (57, 53045), (67, 53168), (70, 53255), (75, 53312), (76, 53321), (77, 53324), (82, 53432), (84, 53456), (87, 53522), (88, 53534), (89, 53552), (93, 53654), (100, 53753), (101, 53759), (107, 53840), (115, 53975), (117, 53984), (121, 54107), (127, 54194), (128, 54206),

Gene: Erdmann\_106 Start: 53560, Stop: 55464, Start Num: 4

Candidate Starts for Erdmann\_106:

(Start: 4 @53560 has 81 MA's), (Start: 5 @53578 has 87 MA's), (Start: 6 @53611 has 1 MA's), (7, 53617), (Start: 17 @53803 has 1 MA's), (23, 53881), (24, 53899), (32, 53965), (35, 53983), (38, 54049), (41, 54085), (48, 54142), (57, 54298), (67, 54421), (70, 54508), (75, 54565), (76, 54574), (77, 54577), (82, 54685), (84, 54709), (87, 54775), (88, 54787), (89, 54805), (100, 55006), (101, 55012), (107, 55093), (115, 55228), (117, 55237), (121, 55360), (127, 55447), (128, 55459),

Gene: ErnieJ\_100 Start: 51616, Stop: 53418, Start Num: 5

Candidate Starts for ErnieJ\_100:

(Start: 5 @51616 has 87 MA's), (Start: 6 @51649 has 1 MA's), (Start: 17 @51844 has 1 MA's), (26, 51922), (28, 51940), (32, 51970), (35, 51988), (36, 52018), (43, 52099), (56, 52204), (71, 52450), (72, 52456), (108, 53053), (115, 53182), (117, 53191), (121, 53314), (127, 53401), (128, 53413),

Gene: Essence\_102 Start: 52642, Stop: 54546, Start Num: 4

Candidate Starts for Essence\_102:

(Start: 4 @52642 has 81 MA's), (Start: 5 @52660 has 87 MA's), (Start: 6 @52693 has 1 MA's), (Start: 17 @52885 has 1 MA's), (23, 52963), (24, 52981), (32, 53047), (35, 53065), (38, 53131), (41, 53167), (48, 53224), (57, 53380), (67, 53503), (70, 53590), (75, 53647), (76, 53656), (77, 53659), (82, 53767), (84, 53791), (87, 53857), (88, 53869), (89, 53887), (93, 53989), (100, 54088), (101, 54094), (107, 54175), (115, 54310), (117, 54319), (121, 54442), (127, 54529), (128, 54541),

Gene: Ewok\_106 Start: 52947, Stop: 54851, Start Num: 4

Candidate Starts for Ewok\_106:

(Start: 4 @52947 has 81 MA's), (Start: 5 @52965 has 87 MA's), (Start: 6 @52998 has 1 MA's), (7, 53004), (Start: 17 @53190 has 1 MA's), (23, 53268), (24, 53286), (32, 53352), (35, 53370), (38, 53436), (41, 53472), (48, 53529), (57, 53685), (67, 53808), (70, 53895), (75, 53952), (76, 53961), (77, 53964), (82, 54072), (84, 54096), (87, 54162), (88, 54174), (89, 54192), (100, 54393), (101, 54399), (107, 54480), (115, 54615), (117, 54624), (121, 54747), (127, 54834), (128, 54846),

Gene: Flabslab\_99 Start: 50639, Stop: 52543, Start Num: 4

Candidate Starts for Flabslab\_99:

(Start: 4 @50639 has 81 MA's), (Start: 5 @50657 has 87 MA's), (Start: 6 @50690 has 1 MA's), (7, 50696), (Start: 17 @50882 has 1 MA's), (23, 50960), (24, 50978), (32, 51044), (35, 51062), (38, 51128), (41, 51164), (48, 51221), (57, 51377), (67, 51500), (70, 51587), (75, 51644), (76, 51653), (77, 51656), (82, 51764), (84, 51788), (87, 51854), (88, 51866), (89, 51884), (100, 52085), (101, 52091), (107, 52172), (115, 52307), (117, 52316), (121, 52439), (127, 52526), (128, 52538),

Gene: Fludd\_105 Start: 52256, Stop: 54058, Start Num: 5

Candidate Starts for Fludd\_105:

(Start: 5 @52256 has 87 MA's), (Start: 6 @52289 has 1 MA's), (Start: 17 @52484 has 1 MA's), (26, 52562), (28, 52580), (32, 52610), (35, 52628), (36, 52658), (43, 52739), (56, 52844), (71, 53090), (72, 53096), (108, 53693), (115, 53822), (117, 53831), (121, 53954), (127, 54041), (128, 54053),

Gene: FoxtrotP1\_105 Start: 54730, Stop: 56634, Start Num: 4

Candidate Starts for FoxtrotP1\_105:

(Start: 4 @54730 has 81 MA's), (Start: 5 @54748 has 87 MA's), (Start: 6 @54781 has 1 MA's), (7, 54787), (Start: 17 @54973 has 1 MA's), (23, 55051), (24, 55069), (32, 55135), (35, 55153), (38, 55219), (41, 55255), (48, 55312), (57, 55468), (67, 55591), (70, 55678), (75, 55735), (76, 55744), (77, 55747), (82, 55855), (84, 55879), (87, 55945), (88, 55957), (89, 55975), (100, 56176), (101, 56182), (107, 56263), (115, 56398), (117, 56407), (121, 56530), (127, 56617), (128, 56629),

Gene: FrayBell\_110 Start: 54128, Stop: 56032, Start Num: 4

Candidate Starts for FrayBell\_110:

(Start: 4 @54128 has 81 MA's), (Start: 5 @54146 has 87 MA's), (Start: 6 @54179 has 1 MA's), (7, 54185), (Start: 17 @54371 has 1 MA's), (23, 54449), (24, 54467), (32, 54533), (35, 54551), (38, 54617), (41, 54653), (48, 54710), (57, 54866), (67, 54989), (70, 55076), (75, 55133), (76, 55142), (77, 55145), (82, 55253), (84, 55277), (87, 55343), (88, 55355), (89, 55373), (93, 55475), (100, 55574), (101, 55580), (107, 55661), (115, 55796), (117, 55805), (121, 55928), (127, 56015), (128, 56027),

Gene: FudgeTart\_104 Start: 52690, Stop: 54492, Start Num: 5

Candidate Starts for FudgeTart\_104:

(Start: 5 @52690 has 87 MA's), (Start: 6 @52723 has 1 MA's), (Start: 17 @52918 has 1 MA's), (26, 52996), (28, 53014), (32, 53044), (35, 53062), (36, 53092), (43, 53173), (56, 53278), (71, 53524), (72, 53530), (108, 54127), (115, 54256), (116, 54262), (117, 54265), (121, 54388), (127, 54475), (128, 54487),

Gene: Gabriel\_106 Start: 52066, Stop: 53952, Start Num: 5

Candidate Starts for Gabriel\_106:

(Start: 4 @52048 has 81 MA's), (Start: 5 @52066 has 87 MA's), (Start: 6 @52099 has 1 MA's), (Start: 17 @52291 has 1 MA's), (23, 52369), (24, 52387), (32, 52453), (35, 52471), (38, 52537), (41, 52573), (48, 52630), (57, 52786), (67, 52909), (70, 52996), (75, 53053), (76, 53062), (77, 53065), (82, 53173), (84, 53197), (87, 53263), (88, 53275), (89, 53293), (93, 53395), (100, 53494), (101, 53500), (107, 53581), (115, 53716), (117, 53725), (121, 53848), (127, 53935), (128, 53947),

Gene: Gamgam\_105 Start: 52106, Stop: 53992, Start Num: 5

Candidate Starts for Gamgam\_105:

(Start: 4 @52088 has 81 MA's), (Start: 5 @52106 has 87 MA's), (Start: 6 @52139 has 1 MA's), (7, 52145), (Start: 17 @52331 has 1 MA's), (23, 52409), (24, 52427), (32, 52493), (35, 52511), (38, 52577), (41, 52613), (48, 52670), (57, 52826), (67, 52949), (70, 53036), (75, 53093), (76, 53102), (77, 53105), (82, 53213), (84, 53237), (87, 53303), (88, 53315), (89, 53333), (93, 53435), (100, 53534), (101, 53540), (107, 53621), (115, 53756), (117, 53765), (121, 53888), (127, 53975), (128, 53987),

Gene: Ghost\_104 Start: 52106, Stop: 53992, Start Num: 5

Candidate Starts for Ghost\_104:

(Start: 4 @52088 has 81 MA's), (Start: 5 @52106 has 87 MA's), (Start: 6 @52139 has 1 MA's), (7, 52145), (Start: 17 @52331 has 1 MA's), (23, 52409), (24, 52427), (32, 52493), (35, 52511), (38, 52577), (41, 52613), (48, 52670), (57, 52826), (67, 52949), (70, 53036), (75, 53093), (76, 53102), (77, 53105), (82, 53213), (84, 53237), (87, 53303), (88, 53315), (89, 53333), (93, 53435), (100, 53534), (101, 53540), (107, 53621), (115, 53756), (117, 53765), (121, 53888), (127, 53975), (128, 53987),



Gene: Gizmo\_109 Start: 54728, Stop: 56614, Start Num: 5

Candidate Starts for Gizmo\_109:

(Start: 4 @54710 has 81 MA's), (Start: 5 @54728 has 87 MA's), (Start: 6 @54761 has 1 MA's), (7, 54767), (Start: 17 @54953 has 1 MA's), (23, 55031), (24, 55049), (32, 55115), (35, 55133), (38, 55199), (41, 55235), (48, 55292), (57, 55448), (67, 55571), (70, 55658), (75, 55715), (76, 55724), (77, 55727), (82, 55835), (84, 55859), (87, 55925), (88, 55937), (89, 55955), (100, 56156), (101, 56162), (107, 56243), (115, 56378), (117, 56387), (121, 56510), (127, 56597), (128, 56609),

Gene: Grasshills\_112 Start: 55535, Stop: 57421, Start Num: 5

Candidate Starts for Grasshills\_112:

(Start: 4 @55517 has 81 MA's), (Start: 5 @55535 has 87 MA's), (Start: 6 @55568 has 1 MA's), (7, 55574), (Start: 17 @55760 has 1 MA's), (23, 55838), (24, 55856), (32, 55922), (35, 55940), (38, 56006), (41, 56042), (48, 56099), (57, 56255), (67, 56378), (70, 56465), (75, 56522), (76, 56531), (77, 56534), (82, 56642), (84, 56666), (87, 56732), (88, 56744), (89, 56762), (93, 56864), (100, 56963), (101, 56969), (107, 57050), (115, 57185), (117, 57194), (121, 57317), (127, 57404), (128, 57416),

Gene: Greely\_104 Start: 51685, Stop: 53577, Start Num: 5

Candidate Starts for Greely\_104:

(Start: 5 @51685 has 87 MA's), (13, 51835), (15, 51874), (23, 52009), (27, 52057), (30, 52078), (44, 52225), (45, 52237), (47, 52261), (53, 52348), (55, 52372), (59, 52444), (63, 52522), (64, 52528), (65, 52537), (73, 52678), (76, 52693), (79, 52729), (85, 52858), (95, 53068), (97, 53089), (104, 53197), (109, 53260), (110, 53290), (118, 53464), (120, 53500), (122, 53515), (123, 53533),

Gene: Grungle\_93 Start: 49918, Stop: 51501, Start Num: 5

Candidate Starts for Grungle\_93:

(Start: 4 @49900 has 81 MA's), (Start: 5 @49918 has 87 MA's), (Start: 6 @49951 has 1 MA's), (Start: 17 @50143 has 1 MA's), (23, 50221), (24, 50239), (32, 50305), (35, 50323), (38, 50389), (41, 50425), (48, 50482), (57, 50638), (67, 50761), (70, 50848), (75, 50905), (76, 50914), (77, 50917), (82, 51025), (84, 51049), (87, 51115), (88, 51127), (89, 51145), (100, 51346), (101, 51352), (112, 51484), (114, 51496),

Gene: Guwapp\_104 Start: 52231, Stop: 54117, Start Num: 5

Candidate Starts for Guwapp\_104:

(Start: 4 @52213 has 81 MA's), (Start: 5 @52231 has 87 MA's), (Start: 6 @52264 has 1 MA's), (Start: 17 @52456 has 1 MA's), (23, 52534), (24, 52552), (32, 52618), (35, 52636), (38, 52702), (41, 52738), (48, 52795), (57, 52951), (67, 53074), (70, 53161), (75, 53218), (76, 53227), (77, 53230), (82, 53338), (84, 53362), (87, 53428), (88, 53440), (89, 53458), (93, 53560), (100, 53659), (101, 53665), (107, 53746), (115, 53881), (117, 53890), (121, 54013), (127, 54100), (128, 54112),

Gene: Halldule\_99 Start: 50944, Stop: 52527, Start Num: 5

Candidate Starts for Halldule\_99:

(Start: 4 @50926 has 81 MA's), (Start: 5 @50944 has 87 MA's), (Start: 6 @50977 has 1 MA's), (Start: 17 @51169 has 1 MA's), (23, 51247), (24, 51265), (32, 51331), (35, 51349), (38, 51415), (41, 51451), (48, 51508), (57, 51664), (67, 51787), (70, 51874), (75, 51931), (76, 51940), (77, 51943), (82, 52051), (84, 52075), (87, 52141), (88, 52153), (89, 52171), (100, 52372), (101, 52378), (112, 52510), (114, 52522),

Gene: HyRo\_96 Start: 52186, Stop: 53988, Start Num: 5

Candidate Starts for HyRo\_96:

(Start: 5 @52186 has 87 MA's), (Start: 6 @52219 has 1 MA's), (Start: 17 @52414 has 1 MA's), (26, 52492), (28, 52510), (32, 52540), (35, 52558), (36, 52588), (43, 52669), (56, 52774), (71, 53020), (72, 53026), (108, 53623), (115, 53752), (116, 53758), (117, 53761), (121, 53884), (127, 53971), (128, 53983),

Gene: I3\_110 Start: 53901, Stop: 55949, Start Num: 5

Candidate Starts for I3\_110:

(Start: 5 @53901 has 87 MA's), (Start: 6 @53934 has 1 MA's), (15, 54084), (25, 54291), (31, 54351), (37, 54432), (49, 54540), (51, 54570), (54, 54645), (58, 54720), (68, 54852), (81, 55089), (83, 55116), (90, 55245), (91, 55323), (92, 55350), (96, 55413), (98, 55446), (103, 55506), (107, 55578), (115, 55713), (117, 55722), (121, 55845), (127, 55932), (128, 55944),

Gene: IkeLoa\_98 Start: 52016, Stop: 53818, Start Num: 5

Candidate Starts for IkeLoa\_98:

(Start: 5 @52016 has 87 MA's), (Start: 6 @52049 has 1 MA's), (Start: 17 @52244 has 1 MA's), (26, 52322), (28, 52340), (32, 52370), (35, 52388), (36, 52418), (43, 52499), (56, 52604), (71, 52850), (72, 52856), (108, 53453), (115, 53582), (116, 53588), (117, 53591), (121, 53714), (127, 53801), (128, 53813),

Gene: InigoMontoya\_106 Start: 52067, Stop: 53953, Start Num: 5

Candidate Starts for InigoMontoya\_106:

(Start: 4 @52049 has 81 MA's), (Start: 5 @52067 has 87 MA's), (Start: 6 @52100 has 1 MA's), (7, 52106), (Start: 17 @52292 has 1 MA's), (23, 52370), (24, 52388), (32, 52454), (35, 52472), (38, 52538), (41, 52574), (48, 52631), (57, 52787), (67, 52910), (70, 52997), (75, 53054), (76, 53063), (77, 53066), (82, 53174), (84, 53198), (87, 53264), (88, 53276), (89, 53294), (93, 53396), (100, 53495), (101, 53501), (107, 53582), (115, 53717), (117, 53726), (121, 53849), (127, 53936), (128, 53948),

Gene: InterFolia\_113 Start: 55081, Stop: 56967, Start Num: 5

Candidate Starts for InterFolia\_113:

(Start: 4 @55063 has 81 MA's), (Start: 5 @55081 has 87 MA's), (Start: 6 @55114 has 1 MA's), (7, 55120), (Start: 17 @55306 has 1 MA's), (23, 55384), (24, 55402), (32, 55468), (35, 55486), (38, 55552), (41, 55588), (48, 55645), (57, 55801), (67, 55924), (70, 56011), (75, 56068), (76, 56077), (77, 56080), (82, 56188), (84, 56212), (87, 56278), (88, 56290), (89, 56308), (93, 56410), (100, 56509), (101, 56515), (107, 56596), (115, 56731), (117, 56740), (121, 56863), (127, 56950), (128, 56962),

Gene: Iota\_100 Start: 52525, Stop: 54429, Start Num: 4

Candidate Starts for Iota\_100:

(Start: 4 @52525 has 81 MA's), (Start: 5 @52543 has 87 MA's), (Start: 6 @52576 has 1 MA's), (7, 52582), (Start: 17 @52768 has 1 MA's), (23, 52846), (24, 52864), (32, 52930), (35, 52948), (38, 53014), (41, 53050), (48, 53107), (57, 53263), (67, 53386), (70, 53473), (75, 53530), (76, 53539), (77, 53542), (82, 53650), (84, 53674), (87, 53740), (88, 53752), (89, 53770), (100, 53971), (101, 53977), (107, 54058), (115, 54193), (117, 54202), (121, 54325), (127, 54412), (128, 54424),

Gene: Issimir\_104 Start: 53534, Stop: 55438, Start Num: 4

Candidate Starts for Issimir\_104:

(Start: 4 @53534 has 81 MA's), (Start: 5 @53552 has 87 MA's), (Start: 6 @53585 has 1 MA's), (7, 53591), (Start: 17 @53777 has 1 MA's), (23, 53855), (24, 53873), (32, 53939), (35, 53957), (38, 54023), (41, 54059), (48, 54116), (57, 54272), (67, 54395), (70, 54482), (75, 54539), (76, 54548), (77, 54551), (82, 54659), (84, 54683), (87, 54749), (88, 54761), (89, 54779), (100, 54980), (101, 54986), (107, 55067), (115, 55202), (117, 55211), (121, 55334), (127, 55421), (128, 55433),

Gene: Izajani\_105 Start: 53758, Stop: 55644, Start Num: 5

Candidate Starts for Izajani\_105:

(Start: 4 @53740 has 81 MA's), (Start: 5 @53758 has 87 MA's), (Start: 6 @53791 has 1 MA's), (7, 53797), (Start: 17 @53983 has 1 MA's), (23, 54061), (24, 54079), (32, 54145), (35, 54163), (38, 54229), (41, 54265), (48, 54322), (57, 54478), (67, 54601), (70, 54688), (75, 54745), (76, 54754), (77, 54757), (82, 54865), (84, 54889), (87, 54955), (88, 54967), (89, 54985), (100, 55186), (101, 55192),

(107, 55273), (115, 55408), (117, 55417), (121, 55540), (127, 55627), (128, 55639),

Gene: JPickles\_103 Start: 51319, Stop: 53223, Start Num: 4

Candidate Starts for JPickles\_103:

(Start: 4 @51319 has 81 MA's), (Start: 5 @51337 has 87 MA's), (Start: 6 @51370 has 1 MA's), (7, 51376), (Start: 17 @51562 has 1 MA's), (23, 51640), (24, 51658), (32, 51724), (35, 51742), (38, 51808), (41, 51844), (48, 51901), (57, 52057), (67, 52180), (70, 52267), (75, 52324), (76, 52333), (77, 52336), (82, 52444), (84, 52468), (87, 52534), (88, 52546), (89, 52564), (93, 52666), (100, 52765), (101, 52771), (107, 52852), (115, 52987), (117, 52996), (121, 53119), (127, 53206), (128, 53218),

Gene: Janiyra\_107 Start: 53033, Stop: 54919, Start Num: 5

Candidate Starts for Janiyra\_107:

(Start: 4 @53015 has 81 MA's), (Start: 5 @53033 has 87 MA's), (Start: 6 @53066 has 1 MA's), (7, 53072), (Start: 17 @53258 has 1 MA's), (23, 53336), (24, 53354), (32, 53420), (35, 53438), (38, 53504), (41, 53540), (48, 53597), (57, 53753), (67, 53876), (70, 53963), (75, 54020), (76, 54029), (77, 54032), (82, 54140), (84, 54164), (87, 54230), (88, 54242), (89, 54260), (93, 54362), (100, 54461), (101, 54467), (107, 54548), (115, 54683), (117, 54692), (121, 54815), (127, 54902), (128, 54914),

Gene: JayJay\_106 Start: 54626, Stop: 56428, Start Num: 5

Candidate Starts for JayJay\_106:

(Start: 5 @54626 has 87 MA's), (Start: 6 @54659 has 1 MA's), (Start: 17 @54854 has 1 MA's), (26, 54932), (28, 54950), (32, 54980), (35, 54998), (36, 55028), (43, 55109), (56, 55214), (71, 55460), (72, 55466), (108, 56063), (115, 56192), (116, 56198), (117, 56201), (121, 56324), (127, 56411), (128, 56423),

Gene: Jaygup\_105 Start: 52844, Stop: 54748, Start Num: 4

Candidate Starts for Jaygup\_105:

(Start: 4 @52844 has 81 MA's), (Start: 5 @52862 has 87 MA's), (Start: 6 @52895 has 1 MA's), (7, 52901), (Start: 17 @53087 has 1 MA's), (23, 53165), (24, 53183), (32, 53249), (35, 53267), (38, 53333), (41, 53369), (48, 53426), (57, 53582), (67, 53705), (70, 53792), (75, 53849), (76, 53858), (77, 53861), (82, 53969), (84, 53993), (87, 54059), (88, 54071), (89, 54089), (93, 54191), (100, 54290), (101, 54296), (107, 54377), (115, 54512), (117, 54521), (121, 54644), (127, 54731), (128, 54743),

Gene: Jedediah\_108 Start: 53395, Stop: 55281, Start Num: 5

Candidate Starts for Jedediah\_108:

(Start: 4 @53377 has 81 MA's), (Start: 5 @53395 has 87 MA's), (Start: 6 @53428 has 1 MA's), (7, 53434), (Start: 17 @53620 has 1 MA's), (23, 53698), (24, 53716), (32, 53782), (35, 53800), (38, 53866), (41, 53902), (48, 53959), (57, 54115), (67, 54238), (70, 54325), (75, 54382), (76, 54391), (77, 54394), (82, 54502), (84, 54526), (87, 54592), (88, 54604), (89, 54622), (93, 54724), (100, 54823), (101, 54829), (107, 54910), (115, 55045), (117, 55054), (121, 55177), (127, 55264), (128, 55276),

Gene: Jemmno\_105 Start: 52842, Stop: 54728, Start Num: 5

Candidate Starts for Jemmno\_105:

(Start: 4 @52824 has 81 MA's), (Start: 5 @52842 has 87 MA's), (Start: 6 @52875 has 1 MA's), (7, 52881), (Start: 17 @53067 has 1 MA's), (23, 53145), (24, 53163), (32, 53229), (35, 53247), (38, 53313), (41, 53349), (48, 53406), (57, 53562), (67, 53685), (70, 53772), (75, 53829), (76, 53838), (77, 53841), (82, 53949), (84, 53973), (87, 54039), (88, 54051), (89, 54069), (93, 54171), (100, 54270), (101, 54276), (107, 54357), (115, 54492), (117, 54501), (121, 54624), (127, 54711), (128, 54723),

Gene: Jessibeth14\_104 Start: 53345, Stop: 55249, Start Num: 4

Candidate Starts for Jessibeth14\_104:

(Start: 4 @53345 has 81 MA's), (Start: 5 @53363 has 87 MA's), (Start: 6 @53396 has 1 MA's), (7, 53402), (Start: 17 @53588 has 1 MA's), (23, 53666), (24, 53684), (32, 53750), (35, 53768), (38,

53834), (41, 53870), (48, 53927), (57, 54083), (67, 54206), (70, 54293), (75, 54350), (76, 54359), (77, 54362), (82, 54470), (84, 54494), (87, 54560), (88, 54572), (89, 54590), (100, 54791), (101, 54797), (107, 54878), (115, 55013), (117, 55022), (121, 55145), (127, 55232), (128, 55244),

Gene: JigglyPuff\_113 Start: 55692, Stop: 57578, Start Num: 5

Candidate Starts for JigglyPuff\_113:

(Start: 4 @55674 has 81 MA's), (Start: 5 @55692 has 87 MA's), (Start: 6 @55725 has 1 MA's), (7, 55731), (Start: 17 @55917 has 1 MA's), (23, 55995), (24, 56013), (32, 56079), (35, 56097), (38, 56163), (41, 56199), (48, 56256), (57, 56412), (67, 56535), (70, 56622), (75, 56679), (76, 56688), (77, 56691), (82, 56799), (84, 56823), (87, 56889), (88, 56901), (89, 56919), (93, 57021), (100, 57120), (101, 57126), (107, 57207), (115, 57342), (117, 57351), (121, 57474), (127, 57561), (128, 57573),

Gene: JulietS\_100 Start: 50797, Stop: 52380, Start Num: 5

Candidate Starts for JulietS\_100:

(Start: 4 @50779 has 81 MA's), (Start: 5 @50797 has 87 MA's), (Start: 6 @50830 has 1 MA's), (Start: 17 @51022 has 1 MA's), (23, 51100), (24, 51118), (32, 51184), (35, 51202), (38, 51268), (41, 51304), (48, 51361), (57, 51517), (67, 51640), (70, 51727), (75, 51784), (76, 51793), (77, 51796), (82, 51904), (84, 51928), (87, 51994), (88, 52006), (89, 52024), (100, 52225), (101, 52231), (112, 52363), (114, 52375),

Gene: JustHall\_102 Start: 52883, Stop: 54787, Start Num: 4

Candidate Starts for JustHall\_102:

(Start: 4 @52883 has 81 MA's), (Start: 5 @52901 has 87 MA's), (Start: 6 @52934 has 1 MA's), (7, 52940), (Start: 17 @53126 has 1 MA's), (23, 53204), (24, 53222), (32, 53288), (35, 53306), (38, 53372), (41, 53408), (48, 53465), (57, 53621), (67, 53744), (70, 53831), (75, 53888), (76, 53897), (77, 53900), (82, 54008), (84, 54032), (87, 54098), (88, 54110), (89, 54128), (93, 54230), (100, 54329), (101, 54335), (107, 54416), (115, 54551), (117, 54560), (121, 54683), (127, 54770), (128, 54782),

Gene: Kamryn\_105 Start: 54160, Stop: 56064, Start Num: 4

Candidate Starts for Kamryn\_105:

(Start: 4 @54160 has 81 MA's), (Start: 5 @54178 has 87 MA's), (Start: 6 @54211 has 1 MA's), (7, 54217), (Start: 17 @54403 has 1 MA's), (23, 54481), (24, 54499), (32, 54565), (35, 54583), (38, 54649), (41, 54685), (48, 54742), (57, 54898), (67, 55021), (70, 55108), (75, 55165), (76, 55174), (77, 55177), (82, 55285), (84, 55309), (87, 55375), (88, 55387), (89, 55405), (93, 55507), (100, 55606), (101, 55612), (107, 55693), (115, 55828), (117, 55837), (121, 55960), (127, 56047), (128, 56059),

Gene: Kboogie\_109 Start: 52534, Stop: 54420, Start Num: 5

Candidate Starts for Kboogie\_109:

(Start: 4 @52516 has 81 MA's), (Start: 5 @52534 has 87 MA's), (Start: 6 @52567 has 1 MA's), (7, 52573), (Start: 17 @52759 has 1 MA's), (23, 52837), (24, 52855), (32, 52921), (35, 52939), (38, 53005), (41, 53041), (48, 53098), (57, 53254), (67, 53377), (70, 53464), (75, 53521), (76, 53530), (77, 53533), (82, 53641), (84, 53665), (87, 53731), (88, 53743), (89, 53761), (93, 53863), (100, 53962), (101, 53968), (107, 54049), (115, 54184), (117, 54193), (121, 54316), (127, 54403), (128, 54415),

Gene: Khaleesi\_104 Start: 53459, Stop: 55363, Start Num: 4

Candidate Starts for Khaleesi\_104:

(Start: 4 @53459 has 81 MA's), (Start: 5 @53477 has 87 MA's), (Start: 6 @53510 has 1 MA's), (7, 53516), (Start: 17 @53702 has 1 MA's), (23, 53780), (24, 53798), (32, 53864), (35, 53882), (38, 53948), (41, 53984), (48, 54041), (57, 54197), (67, 54320), (70, 54407), (75, 54464), (76, 54473), (77, 54476), (82, 54584), (84, 54608), (87, 54674), (88, 54686), (89, 54704), (93, 54806), (100, 54905), (101, 54911), (107, 54992), (115, 55127), (117, 55136), (121, 55259), (127, 55346), (128, 55358),

Gene: Koguma\_102 Start: 51022, Stop: 52908, Start Num: 5

Candidate Starts for Koguma\_102:

(Start: 4 @51004 has 81 MA's), (Start: 5 @51022 has 87 MA's), (Start: 6 @51055 has 1 MA's), (7, 51061), (Start: 17 @51247 has 1 MA's), (23, 51325), (24, 51343), (32, 51409), (35, 51427), (38, 51493), (41, 51529), (48, 51586), (57, 51742), (67, 51865), (70, 51952), (75, 52009), (76, 52018), (77, 52021), (82, 52129), (84, 52153), (87, 52219), (88, 52231), (89, 52249), (93, 52351), (100, 52450), (101, 52456), (107, 52537), (115, 52672), (117, 52681), (121, 52804), (127, 52891), (128, 52903),

Gene: LRRHood\_99 Start: 52904, Stop: 54706, Start Num: 5

Candidate Starts for LRRHood\_99:

(Start: 5 @52904 has 87 MA's), (Start: 6 @52937 has 1 MA's), (Start: 17 @53132 has 1 MA's), (26, 53210), (28, 53228), (32, 53258), (35, 53276), (36, 53306), (43, 53387), (56, 53492), (71, 53738), (72, 53744), (108, 54341), (115, 54470), (116, 54476), (117, 54479), (121, 54602), (127, 54689), (128, 54701),

Gene: Latch\_105 Start: 52088, Stop: 53992, Start Num: 4

Candidate Starts for Latch\_105:

(Start: 4 @52088 has 81 MA's), (Start: 5 @52106 has 87 MA's), (Start: 6 @52139 has 1 MA's), (7, 52145), (Start: 17 @52331 has 1 MA's), (23, 52409), (24, 52427), (32, 52493), (35, 52511), (38, 52577), (41, 52613), (48, 52670), (57, 52826), (67, 52949), (70, 53036), (75, 53093), (76, 53102), (77, 53105), (82, 53213), (84, 53237), (87, 53303), (88, 53315), (89, 53333), (93, 53435), (100, 53534), (101, 53540), (107, 53621), (115, 53756), (117, 53765), (121, 53888), (127, 53975), (128, 53987),

Gene: Lee7\_103 Start: 54111, Stop: 55997, Start Num: 5

Candidate Starts for Lee7\_103:

(Start: 4 @54093 has 81 MA's), (Start: 5 @54111 has 87 MA's), (Start: 6 @54144 has 1 MA's), (7, 54150), (Start: 17 @54336 has 1 MA's), (23, 54414), (24, 54432), (32, 54498), (35, 54516), (38, 54582), (41, 54618), (48, 54675), (57, 54831), (67, 54954), (70, 55041), (75, 55098), (76, 55107), (77, 55110), (82, 55218), (84, 55242), (87, 55308), (88, 55320), (89, 55338), (100, 55539), (101, 55545), (107, 55626), (115, 55761), (117, 55770), (121, 55893), (127, 55980), (128, 55992),

Gene: LifeSavor\_104 Start: 52776, Stop: 54680, Start Num: 4

Candidate Starts for LifeSavor\_104:

(Start: 4 @52776 has 81 MA's), (Start: 5 @52794 has 87 MA's), (Start: 6 @52827 has 1 MA's), (7, 52833), (Start: 17 @53019 has 1 MA's), (23, 53097), (24, 53115), (32, 53181), (35, 53199), (38, 53265), (41, 53301), (48, 53358), (57, 53514), (67, 53637), (70, 53724), (75, 53781), (76, 53790), (77, 53793), (82, 53901), (84, 53925), (87, 53991), (88, 54003), (89, 54021), (93, 54123), (100, 54222), (101, 54228), (107, 54309), (115, 54444), (117, 54453), (121, 54576), (127, 54663), (128, 54675),

Gene: LinStu\_104 Start: 53512, Stop: 55314, Start Num: 5

Candidate Starts for LinStu\_104:

(Start: 5 @53512 has 87 MA's), (Start: 6 @53545 has 1 MA's), (Start: 17 @53740 has 1 MA's), (26, 53818), (28, 53836), (32, 53866), (35, 53884), (36, 53914), (43, 53995), (56, 54100), (71, 54346), (72, 54352), (108, 54949), (115, 55078), (116, 55084), (117, 55087), (121, 55210), (127, 55297), (128, 55309),

Gene: Littleton\_105 Start: 52905, Stop: 54809, Start Num: 4

Candidate Starts for Littleton\_105:

(Start: 4 @52905 has 81 MA's), (Start: 5 @52923 has 87 MA's), (Start: 6 @52956 has 1 MA's), (7, 52962), (Start: 17 @53148 has 1 MA's), (23, 53226), (24, 53244), (32, 53310), (35, 53328), (38, 53394), (41, 53430), (48, 53487), (57, 53643), (67, 53766), (70, 53853), (75, 53910), (76, 53919), (77, 53922), (82, 54030), (84, 54054), (87, 54120), (88, 54132), (89, 54150), (93, 54252), (100, 54351), (101, 54357), (107, 54438), (115, 54573), (117, 54582), (121, 54705), (127, 54792), (128, 54804),

Gene: Loanshark\_104 Start: 53529, Stop: 55331, Start Num: 5

Candidate Starts for Loanshark\_104:

(Start: 5 @53529 has 87 MA's), (Start: 6 @53562 has 1 MA's), (Start: 17 @53757 has 1 MA's), (26, 53835), (28, 53853), (32, 53883), (35, 53901), (36, 53931), (43, 54012), (56, 54117), (71, 54363), (72, 54369), (108, 54966), (115, 55095), (116, 55101), (117, 55104), (121, 55227), (127, 55314), (128, 55326),

Gene: LolaVinca\_106 Start: 53797, Stop: 55683, Start Num: 5

Candidate Starts for LolaVinca\_106:

(Start: 4 @53779 has 81 MA's), (Start: 5 @53797 has 87 MA's), (Start: 6 @53830 has 1 MA's), (7, 53836), (Start: 17 @54022 has 1 MA's), (23, 54100), (24, 54118), (32, 54184), (35, 54202), (38, 54268), (41, 54304), (48, 54361), (57, 54517), (67, 54640), (70, 54727), (75, 54784), (76, 54793), (77, 54796), (82, 54904), (84, 54928), (87, 54994), (88, 55006), (89, 55024), (93, 55126), (100, 55225), (101, 55231), (107, 55312), (115, 55447), (117, 55456), (121, 55579), (127, 55666), (128, 55678),

Gene: LordLeafolot\_109 Start: 54764, Stop: 56650, Start Num: 5

Candidate Starts for LordLeafolot\_109:

(Start: 4 @54746 has 81 MA's), (Start: 5 @54764 has 87 MA's), (Start: 6 @54797 has 1 MA's), (7, 54803), (Start: 17 @54989 has 1 MA's), (23, 55067), (24, 55085), (32, 55151), (35, 55169), (38, 55235), (41, 55271), (48, 55328), (57, 55484), (67, 55607), (70, 55694), (75, 55751), (76, 55760), (77, 55763), (82, 55871), (84, 55895), (87, 55961), (88, 55973), (89, 55991), (93, 56093), (100, 56192), (101, 56198), (107, 56279), (115, 56414), (117, 56423), (121, 56546), (127, 56633), (128, 56645),

Gene: Lukilu\_96 Start: 53192, Stop: 55096, Start Num: 4

Candidate Starts for Lukilu\_96:

(Start: 4 @53192 has 81 MA's), (Start: 5 @53210 has 87 MA's), (Start: 6 @53243 has 1 MA's), (7, 53249), (Start: 17 @53435 has 1 MA's), (23, 53513), (24, 53531), (32, 53597), (35, 53615), (38, 53681), (41, 53717), (48, 53774), (57, 53930), (67, 54053), (70, 54140), (75, 54197), (76, 54206), (77, 54209), (82, 54317), (84, 54341), (87, 54407), (88, 54419), (89, 54437), (100, 54638), (101, 54644), (107, 54725), (115, 54860), (116, 54866), (117, 54869), (121, 54992), (127, 55079), (128, 55091),

Gene: Maby2021\_105 Start: 53571, Stop: 55457, Start Num: 5

Candidate Starts for Maby2021\_105:

(Start: 4 @53553 has 81 MA's), (Start: 5 @53571 has 87 MA's), (Start: 6 @53604 has 1 MA's), (7, 53610), (Start: 17 @53796 has 1 MA's), (23, 53874), (24, 53892), (32, 53958), (35, 53976), (38, 54042), (41, 54078), (48, 54135), (57, 54291), (67, 54414), (70, 54501), (75, 54558), (76, 54567), (77, 54570), (82, 54678), (84, 54702), (87, 54768), (88, 54780), (89, 54798), (100, 54999), (101, 55005), (107, 55086), (115, 55221), (117, 55230), (121, 55353), (127, 55440), (128, 55452),

Gene: Mangeria\_105 Start: 53622, Stop: 55526, Start Num: 4

Candidate Starts for Mangeria\_105:

(Start: 4 @53622 has 81 MA's), (Start: 5 @53640 has 87 MA's), (Start: 6 @53673 has 1 MA's), (7, 53679), (Start: 17 @53865 has 1 MA's), (23, 53943), (24, 53961), (32, 54027), (35, 54045), (38, 54111), (41, 54147), (48, 54204), (57, 54360), (67, 54483), (70, 54570), (75, 54627), (76, 54636), (77, 54639), (82, 54747), (84, 54771), (87, 54837), (88, 54849), (89, 54867), (93, 54969), (100, 55068), (101, 55074), (107, 55155), (115, 55290), (117, 55299), (121, 55422), (127, 55509), (128, 55521),

Gene: Matsumoto\_102 Start: 52422, Stop: 54308, Start Num: 5

Candidate Starts for Matsumoto\_102:

(Start: 4 @52404 has 81 MA's), (Start: 5 @52422 has 87 MA's), (Start: 6 @52455 has 1 MA's), (7, 52461), (Start: 17 @52647 has 1 MA's), (23, 52725), (24, 52743), (32, 52809), (35, 52827), (38, 52893), (41, 52929), (48, 52986), (57, 53142), (67, 53265), (70, 53352), (75, 53409), (76, 53418), (77, 53421), (82, 53529), (84, 53553), (87, 53619), (88, 53631), (89, 53649), (93, 53751), (100, 53850),

(101, 53856), (107, 53937), (115, 54072), (117, 54081), (121, 54204), (127, 54291), (128, 54303),

Gene: McGee\_107 Start: 52157, Stop: 54061, Start Num: 4

Candidate Starts for McGee\_107:

(Start: 4 @52157 has 81 MA's), (Start: 5 @52175 has 87 MA's), (Start: 6 @52208 has 1 MA's), (Start: 17 @52400 has 1 MA's), (23, 52478), (24, 52496), (32, 52562), (35, 52580), (38, 52646), (41, 52682), (48, 52739), (57, 52895), (67, 53018), (70, 53105), (75, 53162), (76, 53171), (77, 53174), (82, 53282), (84, 53306), (87, 53372), (88, 53384), (89, 53402), (93, 53504), (100, 53603), (101, 53609), (107, 53690), (115, 53825), (117, 53834), (121, 53957), (127, 54044), (128, 54056),

Gene: McWolfish\_103 Start: 53342, Stop: 55246, Start Num: 4

Candidate Starts for McWolfish\_103:

(Start: 4 @53342 has 81 MA's), (Start: 5 @53360 has 87 MA's), (Start: 6 @53393 has 1 MA's), (7, 53399), (Start: 17 @53585 has 1 MA's), (23, 53663), (24, 53681), (32, 53747), (35, 53765), (38, 53831), (41, 53867), (48, 53924), (57, 54080), (67, 54203), (70, 54290), (75, 54347), (76, 54356), (77, 54359), (82, 54467), (84, 54491), (87, 54557), (88, 54569), (89, 54587), (93, 54689), (100, 54788), (101, 54794), (107, 54875), (115, 55010), (117, 55019), (121, 55142), (127, 55229), (128, 55241),

Gene: Megamind\_104 Start: 53244, Stop: 55130, Start Num: 5

Candidate Starts for Megamind\_104:

(Start: 4 @53226 has 81 MA's), (Start: 5 @53244 has 87 MA's), (Start: 6 @53277 has 1 MA's), (7, 53283), (Start: 17 @53469 has 1 MA's), (23, 53547), (24, 53565), (32, 53631), (35, 53649), (38, 53715), (41, 53751), (48, 53808), (57, 53964), (67, 54087), (70, 54174), (75, 54231), (76, 54240), (77, 54243), (82, 54351), (84, 54375), (87, 54441), (88, 54453), (89, 54471), (100, 54672), (101, 54678), (107, 54759), (115, 54894), (117, 54903), (121, 55026), (127, 55113), (128, 55125),

Gene: Melpomini\_99 Start: 50692, Stop: 52596, Start Num: 4

Candidate Starts for Melpomini\_99:

(Start: 4 @50692 has 81 MA's), (Start: 5 @50710 has 87 MA's), (Start: 6 @50743 has 1 MA's), (Start: 17 @50935 has 1 MA's), (23, 51013), (24, 51031), (32, 51097), (35, 51115), (38, 51181), (41, 51217), (48, 51274), (57, 51430), (67, 51553), (70, 51640), (75, 51697), (76, 51706), (77, 51709), (82, 51817), (84, 51841), (87, 51907), (88, 51919), (89, 51937), (93, 52039), (100, 52138), (101, 52144), (107, 52225), (115, 52360), (117, 52369), (121, 52492), (127, 52579), (128, 52591),

Gene: MikeLiesIn\_106 Start: 53591, Stop: 55477, Start Num: 5

Candidate Starts for MikeLiesIn\_106:

(Start: 4 @53573 has 81 MA's), (Start: 5 @53591 has 87 MA's), (Start: 6 @53624 has 1 MA's), (7, 53630), (Start: 17 @53816 has 1 MA's), (23, 53894), (24, 53912), (32, 53978), (35, 53996), (38, 54062), (41, 54098), (48, 54155), (57, 54311), (67, 54434), (70, 54521), (75, 54578), (76, 54587), (77, 54590), (82, 54698), (84, 54722), (87, 54788), (88, 54800), (89, 54818), (100, 55019), (101, 55025), (107, 55106), (115, 55241), (117, 55250), (121, 55373), (127, 55460), (128, 55472),

Gene: Mikro\_103 Start: 54813, Stop: 56699, Start Num: 5

Candidate Starts for Mikro\_103:

(Start: 4 @54795 has 81 MA's), (Start: 5 @54813 has 87 MA's), (Start: 6 @54846 has 1 MA's), (7, 54852), (Start: 17 @55038 has 1 MA's), (23, 55116), (24, 55134), (32, 55200), (35, 55218), (38, 55284), (41, 55320), (48, 55377), (57, 55533), (67, 55656), (70, 55743), (75, 55800), (76, 55809), (77, 55812), (82, 55920), (84, 55944), (87, 56010), (88, 56022), (89, 56040), (93, 56142), (100, 56241), (101, 56247), (107, 56328), (115, 56463), (117, 56472), (121, 56595), (127, 56682), (128, 56694),

Gene: MoMoMixon\_106 Start: 53067, Stop: 54953, Start Num: 5

Candidate Starts for MoMoMixon\_106:

(Start: 4 @53049 has 81 MA's), (Start: 5 @53067 has 87 MA's), (Start: 6 @53100 has 1 MA's), (7, 53106), (Start: 17 @53292 has 1 MA's), (23, 53370), (24, 53388), (32, 53454), (35, 53472), (38, 53538), (41, 53574), (48, 53631), (57, 53787), (67, 53910), (70, 53997), (75, 54054), (76, 54063), (77, 54066), (82, 54174), (84, 54198), (87, 54264), (88, 54276), (89, 54294), (100, 54495), (101, 54501), (107, 54582), (115, 54717), (117, 54726), (121, 54849), (127, 54936), (128, 54948),

Gene: Momo\_104 Start: 52106, Stop: 53992, Start Num: 5

Candidate Starts for Momo\_104:

(Start: 4 @52088 has 81 MA's), (Start: 5 @52106 has 87 MA's), (Start: 6 @52139 has 1 MA's), (7, 52145), (Start: 17 @52331 has 1 MA's), (23, 52409), (24, 52427), (32, 52493), (35, 52511), (38, 52577), (41, 52613), (48, 52670), (57, 52826), (67, 52949), (70, 53036), (75, 53093), (76, 53102), (77, 53105), (82, 53213), (84, 53237), (87, 53303), (88, 53315), (89, 53333), (93, 53435), (100, 53534), (101, 53540), (107, 53621), (115, 53756), (117, 53765), (121, 53888), (127, 53975), (128, 53987),

Gene: Morizzled23\_105 Start: 52453, Stop: 54357, Start Num: 4

Candidate Starts for Morizzled23\_105:

(Start: 4 @52453 has 81 MA's), (Start: 5 @52471 has 87 MA's), (Start: 6 @52504 has 1 MA's), (7, 52510), (Start: 17 @52696 has 1 MA's), (23, 52774), (24, 52792), (32, 52858), (35, 52876), (38, 52942), (41, 52978), (48, 53035), (57, 53191), (67, 53314), (70, 53401), (75, 53458), (76, 53467), (77, 53470), (82, 53578), (84, 53602), (87, 53668), (88, 53680), (89, 53698), (100, 53899), (101, 53905), (107, 53986), (115, 54121), (117, 54130), (121, 54253), (127, 54340), (128, 54352),

Gene: Myrna\_102 Start: 52463, Stop: 54373, Start Num: 3

Candidate Starts for Myrna\_102:

(Start: 3 @52463 has 1 MA's), (Start: 5 @52487 has 87 MA's), (Start: 6 @52520 has 1 MA's), (13, 52631), (15, 52670), (23, 52805), (27, 52853), (30, 52874), (39, 52979), (44, 53021), (46, 53039), (52, 53120), (53, 53144), (55, 53168), (59, 53240), (64, 53324), (65, 53333), (73, 53474), (76, 53489), (79, 53525), (80, 53558), (85, 53654), (95, 53864), (97, 53885), (99, 53936), (109, 54056), (110, 54086), (113, 54113), (118, 54260), (122, 54311), (124, 54341), (126, 54359),

Gene: Naija\_104 Start: 52088, Stop: 53992, Start Num: 4

Candidate Starts for Naija\_104:

(Start: 4 @52088 has 81 MA's), (Start: 5 @52106 has 87 MA's), (Start: 6 @52139 has 1 MA's), (7, 52145), (Start: 17 @52331 has 1 MA's), (23, 52409), (24, 52427), (32, 52493), (35, 52511), (38, 52577), (41, 52613), (48, 52670), (57, 52826), (67, 52949), (70, 53036), (75, 53093), (76, 53102), (77, 53105), (82, 53213), (84, 53237), (87, 53303), (88, 53315), (89, 53333), (93, 53435), (100, 53534), (101, 53540), (107, 53621), (115, 53756), (117, 53765), (121, 53888), (127, 53975), (128, 53987),

Gene: Napoleon13\_101 Start: 51130, Stop: 53034, Start Num: 4

Candidate Starts for Napoleon13\_101:

(Start: 4 @51130 has 81 MA's), (Start: 5 @51148 has 87 MA's), (Start: 6 @51181 has 1 MA's), (7, 51187), (Start: 17 @51373 has 1 MA's), (23, 51451), (24, 51469), (32, 51535), (35, 51553), (38, 51619), (41, 51655), (48, 51712), (57, 51868), (67, 51991), (70, 52078), (75, 52135), (76, 52144), (77, 52147), (82, 52255), (84, 52279), (87, 52345), (88, 52357), (89, 52375), (93, 52477), (100, 52576), (101, 52582), (107, 52663), (115, 52798), (117, 52807), (121, 52930), (127, 53017), (128, 53029),

Gene: Nappy\_108 Start: 54483, Stop: 56387, Start Num: 4

Candidate Starts for Nappy\_108:

(Start: 4 @54483 has 81 MA's), (Start: 5 @54501 has 87 MA's), (Start: 6 @54534 has 1 MA's), (7, 54540), (Start: 17 @54726 has 1 MA's), (23, 54804), (24, 54822), (32, 54888), (35, 54906), (38, 54972), (41, 55008), (48, 55065), (50, 55077), (57, 55221), (67, 55344), (70, 55431), (75, 55488), (76, 55497), (77, 55500), (82, 55608), (84, 55632), (87, 55698), (88, 55710), (89, 55728), (93, 55830), (100, 55929), (101, 55935), (107, 56016), (115, 56151), (116, 56157), (117, 56160), (121, 56283),



(127, 56370), (128, 56382),

Gene: Naval22\_110 Start: 55082, Stop: 56968, Start Num: 5

Candidate Starts for Naval22\_110:

(Start: 4 @55064 has 81 MA's), (Start: 5 @55082 has 87 MA's), (Start: 6 @55115 has 1 MA's), (7, 55121), (Start: 17 @55307 has 1 MA's), (23, 55385), (24, 55403), (32, 55469), (35, 55487), (38, 55553), (41, 55589), (48, 55646), (57, 55802), (67, 55925), (70, 56012), (75, 56069), (76, 56078), (77, 56081), (82, 56189), (84, 56213), (87, 56279), (88, 56291), (89, 56309), (100, 56510), (101, 56516), (107, 56597), (115, 56732), (117, 56741), (121, 56864), (127, 56951), (128, 56963),

Gene: NedWong\_106 Start: 53578, Stop: 55464, Start Num: 5

Candidate Starts for NedWong\_106:

(Start: 4 @53560 has 81 MA's), (Start: 5 @53578 has 87 MA's), (Start: 6 @53611 has 1 MA's), (7, 53617), (Start: 17 @53803 has 1 MA's), (23, 53881), (24, 53899), (32, 53965), (35, 53983), (38, 54049), (41, 54085), (48, 54142), (57, 54298), (67, 54421), (70, 54508), (75, 54565), (76, 54574), (77, 54577), (82, 54685), (84, 54709), (87, 54775), (88, 54787), (89, 54805), (100, 55006), (101, 55012), (107, 55093), (115, 55228), (117, 55237), (121, 55360), (127, 55447), (128, 55459),

Gene: Ngannou\_101 Start: 51070, Stop: 52974, Start Num: 4

Candidate Starts for Ngannou\_101:

(Start: 4 @51070 has 81 MA's), (Start: 5 @51088 has 87 MA's), (Start: 6 @51121 has 1 MA's), (7, 51127), (Start: 17 @51313 has 1 MA's), (23, 51391), (24, 51409), (32, 51475), (35, 51493), (38, 51559), (41, 51595), (48, 51652), (57, 51808), (67, 51931), (70, 52018), (75, 52075), (76, 52084), (77, 52087), (82, 52195), (84, 52219), (87, 52285), (88, 52297), (89, 52315), (93, 52417), (100, 52516), (101, 52522), (107, 52603), (115, 52738), (117, 52747), (121, 52870), (127, 52957), (128, 52969),

Gene: Nidhogg\_106 Start: 53294, Stop: 55198, Start Num: 4

Candidate Starts for Nidhogg\_106:

(Start: 4 @53294 has 81 MA's), (Start: 5 @53312 has 87 MA's), (Start: 6 @53345 has 1 MA's), (7, 53351), (Start: 17 @53537 has 1 MA's), (23, 53615), (24, 53633), (32, 53699), (35, 53717), (38, 53783), (41, 53819), (48, 53876), (57, 54032), (67, 54155), (70, 54242), (75, 54299), (76, 54308), (77, 54311), (82, 54419), (84, 54443), (87, 54509), (88, 54521), (89, 54539), (100, 54740), (101, 54746), (107, 54827), (115, 54962), (117, 54971), (121, 55094), (127, 55181), (128, 55193),

Gene: NoodleTree\_112 Start: 53904, Stop: 55790, Start Num: 5

Candidate Starts for NoodleTree\_112:

(Start: 4 @53886 has 81 MA's), (Start: 5 @53904 has 87 MA's), (Start: 6 @53937 has 1 MA's), (7, 53943), (Start: 17 @54129 has 1 MA's), (23, 54207), (24, 54225), (32, 54291), (35, 54309), (38, 54375), (41, 54411), (48, 54468), (57, 54624), (67, 54747), (70, 54834), (75, 54891), (76, 54900), (77, 54903), (82, 55011), (84, 55035), (87, 55101), (88, 55113), (89, 55131), (93, 55233), (100, 55332), (101, 55338), (107, 55419), (115, 55554), (117, 55563), (121, 55686), (127, 55773), (128, 55785),

Gene: Norm\_106 Start: 54489, Stop: 56393, Start Num: 4

Candidate Starts for Norm\_106:

(Start: 4 @54489 has 81 MA's), (Start: 5 @54507 has 87 MA's), (Start: 6 @54540 has 1 MA's), (7, 54546), (Start: 17 @54732 has 1 MA's), (23, 54810), (24, 54828), (32, 54894), (35, 54912), (38, 54978), (41, 55014), (48, 55071), (57, 55227), (67, 55350), (70, 55437), (75, 55494), (76, 55503), (77, 55506), (82, 55614), (84, 55638), (87, 55704), (88, 55716), (89, 55734), (100, 55935), (101, 55941), (107, 56022), (115, 56157), (117, 56166), (121, 56289), (127, 56376), (128, 56388),

Gene: NuevoMundo\_111 Start: 55852, Stop: 57738, Start Num: 5

Candidate Starts for NuevoMundo\_111:

(Start: 4 @55834 has 81 MA's), (Start: 5 @55852 has 87 MA's), (Start: 6 @55885 has 1 MA's), (7, 55891), (Start: 17 @56077 has 1 MA's), (23, 56155), (24, 56173), (32, 56239), (35, 56257), (38, 56323), (41, 56359), (48, 56416), (57, 56572), (67, 56695), (70, 56782), (75, 56839), (76, 56848), (77, 56851), (82, 56959), (84, 56983), (87, 57049), (88, 57061), (89, 57079), (93, 57181), (100, 57280), (101, 57286), (107, 57367), (115, 57502), (117, 57511), (121, 57634), (127, 57721), (128, 57733),

Gene: ParkTD\_106 Start: 53574, Stop: 55460, Start Num: 5

Candidate Starts for ParkTD\_106:

(Start: 4 @53556 has 81 MA's), (Start: 5 @53574 has 87 MA's), (Start: 6 @53607 has 1 MA's), (7, 53613), (Start: 17 @53799 has 1 MA's), (23, 53877), (24, 53895), (32, 53961), (35, 53979), (38, 54045), (41, 54081), (48, 54138), (57, 54294), (67, 54417), (70, 54504), (75, 54561), (76, 54570), (77, 54573), (82, 54681), (84, 54705), (87, 54771), (88, 54783), (89, 54801), (100, 55002), (101, 55008), (107, 55089), (115, 55224), (117, 55233), (121, 55356), (127, 55443), (128, 55455),

Gene: Patter\_105 Start: 52105, Stop: 54009, Start Num: 4

Candidate Starts for Patter\_105:

(Start: 4 @52105 has 81 MA's), (Start: 5 @52123 has 87 MA's), (Start: 6 @52156 has 1 MA's), (7, 52162), (Start: 17 @52348 has 1 MA's), (23, 52426), (24, 52444), (32, 52510), (35, 52528), (38, 52594), (41, 52630), (48, 52687), (57, 52843), (67, 52966), (70, 53053), (75, 53110), (76, 53119), (77, 53122), (82, 53230), (84, 53254), (87, 53320), (88, 53332), (89, 53350), (93, 53452), (100, 53551), (101, 53557), (107, 53638), (115, 53773), (117, 53782), (121, 53905), (127, 53992), (128, 54004),

Gene: Phabba\_106 Start: 51448, Stop: 53340, Start Num: 5

Candidate Starts for Phabba\_106:

(Start: 5 @51448 has 87 MA's), (10, 51544), (13, 51598), (15, 51637), (23, 51772), (27, 51820), (30, 51841), (44, 51988), (45, 52000), (53, 52111), (55, 52135), (59, 52207), (63, 52285), (64, 52291), (65, 52300), (73, 52441), (76, 52456), (79, 52492), (85, 52621), (95, 52831), (97, 52852), (99, 52903), (104, 52960), (109, 53023), (110, 53053), (118, 53227), (122, 53278), (123, 53296),

Gene: Phlegm\_107 Start: 52106, Stop: 53992, Start Num: 5

Candidate Starts for Phlegm\_107:

(Start: 4 @52088 has 81 MA's), (Start: 5 @52106 has 87 MA's), (Start: 6 @52139 has 1 MA's), (7, 52145), (Start: 17 @52331 has 1 MA's), (23, 52409), (24, 52427), (32, 52493), (35, 52511), (38, 52577), (41, 52613), (48, 52670), (57, 52826), (67, 52949), (70, 53036), (75, 53093), (76, 53102), (77, 53105), (82, 53213), (84, 53237), (87, 53303), (88, 53315), (89, 53333), (93, 53435), (100, 53534), (101, 53540), (107, 53621), (115, 53756), (117, 53765), (121, 53888), (127, 53975), (128, 53987),

Gene: Phox\_102 Start: 53854, Stop: 55740, Start Num: 5

Candidate Starts for Phox\_102:

(Start: 4 @53836 has 81 MA's), (Start: 5 @53854 has 87 MA's), (Start: 6 @53887 has 1 MA's), (7, 53893), (Start: 17 @54079 has 1 MA's), (23, 54157), (24, 54175), (32, 54241), (35, 54259), (38, 54325), (41, 54361), (48, 54418), (57, 54574), (67, 54697), (70, 54784), (75, 54841), (76, 54850), (77, 54853), (82, 54961), (84, 54985), (87, 55051), (88, 55063), (89, 55081), (93, 55183), (100, 55282), (101, 55288), (107, 55369), (115, 55504), (117, 55513), (121, 55636), (127, 55723), (128, 55735),

Gene: Phusco\_105 Start: 52853, Stop: 54757, Start Num: 4

Candidate Starts for Phusco\_105:

(Start: 4 @52853 has 81 MA's), (Start: 5 @52871 has 87 MA's), (Start: 6 @52904 has 1 MA's), (7, 52910), (Start: 17 @53096 has 1 MA's), (23, 53174), (24, 53192), (32, 53258), (35, 53276), (38, 53342), (41, 53378), (48, 53435), (57, 53591), (67, 53714), (70, 53801), (75, 53858), (76, 53867), (77, 53870), (82, 53978), (84, 54002), (87, 54068), (88, 54080), (89, 54098), (93, 54200), (100, 54299), (101, 54305), (107, 54386), (115, 54521), (117, 54530), (121, 54653), (127, 54740), (128, 54752),

Gene: Pier\_110 Start: 55842, Stop: 57746, Start Num: 4

Candidate Starts for Pier\_110:

(Start: 4 @55842 has 81 MA's), (Start: 5 @55860 has 87 MA's), (Start: 6 @55893 has 1 MA's), (7, 55899), (Start: 17 @56085 has 1 MA's), (20, 56151), (24, 56181), (32, 56247), (35, 56265), (38, 56331), (41, 56367), (48, 56424), (57, 56580), (67, 56703), (70, 56790), (75, 56847), (76, 56856), (77, 56859), (82, 56967), (84, 56991), (87, 57057), (88, 57069), (89, 57087), (93, 57189), (100, 57288), (101, 57294), (107, 57375), (115, 57510), (117, 57519), (121, 57642), (127, 57729), (128, 57741),

Gene: Pinkcreek\_96 Start: 50819, Stop: 53080, Start Num: 1

Candidate Starts for Pinkcreek\_96:

(Start: 1 @50819 has 2 MA's), (2, 50852), (8, 51002), (11, 51050), (16, 51140), (19, 51254), (21, 51329), (22, 51338), (29, 51446), (33, 51485), (40, 51593), (57, 51836), (61, 51863), (62, 51905), (66, 51956), (71, 52076), (74, 52109), (78, 52154), (88, 52340), (106, 52688), (108, 52715), (115, 52844), (116, 52850), (117, 52853), (121, 52976), (127, 53063), (128, 53075),

Gene: Pio\_109 Start: 55446, Stop: 57350, Start Num: 4

Candidate Starts for Pio\_109:

(Start: 4 @55446 has 81 MA's), (Start: 5 @55464 has 87 MA's), (Start: 6 @55497 has 1 MA's), (Start: 17 @55689 has 1 MA's), (23, 55767), (24, 55785), (32, 55851), (35, 55869), (38, 55935), (41, 55971), (48, 56028), (57, 56184), (67, 56307), (70, 56394), (75, 56451), (76, 56460), (77, 56463), (82, 56571), (84, 56595), (87, 56661), (88, 56673), (89, 56691), (100, 56892), (101, 56898), (107, 56979), (115, 57114), (117, 57123), (121, 57246), (127, 57333), (128, 57345),

Gene: Pivoine\_104 Start: 52088, Stop: 53992, Start Num: 4

Candidate Starts for Pivoine\_104:

(Start: 4 @52088 has 81 MA's), (Start: 5 @52106 has 87 MA's), (Start: 6 @52139 has 1 MA's), (7, 52145), (Start: 17 @52331 has 1 MA's), (23, 52409), (24, 52427), (32, 52493), (35, 52511), (38, 52577), (41, 52613), (48, 52670), (57, 52826), (67, 52949), (70, 53036), (75, 53093), (76, 53102), (77, 53105), (82, 53213), (84, 53237), (87, 53303), (88, 53315), (89, 53333), (93, 53435), (100, 53534), (101, 53540), (107, 53621), (115, 53756), (117, 53765), (121, 53888), (127, 53975), (128, 53987),

Gene: Pleione\_108 Start: 53741, Stop: 55627, Start Num: 5

Candidate Starts for Pleione\_108:

(Start: 4 @53723 has 81 MA's), (Start: 5 @53741 has 87 MA's), (Start: 6 @53774 has 1 MA's), (7, 53780), (Start: 17 @53966 has 1 MA's), (23, 54044), (24, 54062), (32, 54128), (35, 54146), (38, 54212), (41, 54248), (48, 54305), (57, 54461), (67, 54584), (70, 54671), (75, 54728), (76, 54737), (77, 54740), (82, 54848), (84, 54872), (87, 54938), (88, 54950), (89, 54968), (100, 55169), (101, 55175), (107, 55256), (115, 55391), (117, 55400), (121, 55523), (127, 55610), (128, 55622),

Gene: PurduePete\_105 Start: 53998, Stop: 55884, Start Num: 5

Candidate Starts for PurduePete\_105:

(Start: 4 @53980 has 81 MA's), (Start: 5 @53998 has 87 MA's), (Start: 6 @54031 has 1 MA's), (7, 54037), (Start: 17 @54223 has 1 MA's), (23, 54301), (24, 54319), (32, 54385), (35, 54403), (38, 54469), (41, 54505), (48, 54562), (57, 54718), (67, 54841), (70, 54928), (75, 54985), (76, 54994), (77, 54997), (82, 55105), (84, 55129), (87, 55195), (88, 55207), (89, 55225), (100, 55426), (101, 55432), (107, 55513), (115, 55648), (117, 55657), (121, 55780), (127, 55867), (128, 55879),

Gene: QBert\_99 Start: 52628, Stop: 54229, Start Num: 4

Candidate Starts for QBert\_99:

(Start: 4 @52628 has 81 MA's), (Start: 5 @52646 has 87 MA's), (Start: 6 @52679 has 1 MA's), (Start: 17 @52871 has 1 MA's), (23, 52949), (24, 52967), (32, 53033), (35, 53051), (38, 53117), (41, 53153), (48, 53210), (57, 53366), (67, 53489), (70, 53576), (75, 53633), (76, 53642), (77, 53645), (82, 53753), (84, 53777), (87, 53843), (88, 53855), (89, 53873), (100, 54074), (101, 54080), (112, 54212), (114,

54224),

Gene: Quasimodo\_106 Start: 53515, Stop: 55419, Start Num: 4

Candidate Starts for Quasimodo\_106:

(Start: 4 @53515 has 81 MA's), (Start: 5 @53533 has 87 MA's), (Start: 6 @53566 has 1 MA's), (Start: 17 @53758 has 1 MA's), (23, 53836), (24, 53854), (32, 53920), (35, 53938), (38, 54004), (41, 54040), (48, 54097), (57, 54253), (67, 54376), (70, 54463), (75, 54520), (76, 54529), (77, 54532), (82, 54640), (84, 54664), (87, 54730), (88, 54742), (89, 54760), (93, 54862), (100, 54961), (101, 54967), (107, 55048), (115, 55183), (117, 55192), (121, 55315), (127, 55402), (128, 55414),

Gene: Rabinovish\_103 Start: 53770, Stop: 55656, Start Num: 5

Candidate Starts for Rabinovish\_103:

(Start: 4 @53752 has 81 MA's), (Start: 5 @53770 has 87 MA's), (Start: 6 @53803 has 1 MA's), (Start: 17 @53995 has 1 MA's), (24, 54091), (32, 54157), (35, 54175), (38, 54241), (41, 54277), (48, 54334), (57, 54490), (67, 54613), (70, 54700), (75, 54757), (76, 54766), (77, 54769), (82, 54877), (84, 54901), (87, 54967), (88, 54979), (89, 54997), (93, 55099), (100, 55198), (101, 55204), (107, 55285), (115, 55420), (117, 55429), (121, 55552), (127, 55639), (128, 55651),

Gene: Rahel\_104 Start: 52445, Stop: 54349, Start Num: 4

Candidate Starts for Rahel\_104:

(Start: 4 @52445 has 81 MA's), (Start: 5 @52463 has 87 MA's), (Start: 6 @52496 has 1 MA's), (7, 52502), (Start: 17 @52688 has 1 MA's), (23, 52766), (24, 52784), (32, 52850), (35, 52868), (38, 52934), (41, 52970), (48, 53027), (57, 53183), (67, 53306), (70, 53393), (75, 53450), (76, 53459), (77, 53462), (82, 53570), (84, 53594), (87, 53660), (88, 53672), (89, 53690), (93, 53792), (100, 53891), (101, 53897), (107, 53978), (115, 54113), (117, 54122), (121, 54245), (127, 54332), (128, 54344),

Gene: Rizal\_101 Start: 51611, Stop: 53497, Start Num: 5

Candidate Starts for Rizal\_101:

(Start: 4 @51593 has 81 MA's), (Start: 5 @51611 has 87 MA's), (Start: 6 @51644 has 1 MA's), (7, 51650), (Start: 17 @51836 has 1 MA's), (23, 51914), (24, 51932), (32, 51998), (35, 52016), (38, 52082), (41, 52118), (48, 52175), (57, 52331), (67, 52454), (70, 52541), (75, 52598), (76, 52607), (77, 52610), (82, 52718), (84, 52742), (87, 52808), (88, 52820), (89, 52838), (100, 53039), (101, 53045), (107, 53126), (115, 53261), (117, 53270), (121, 53393), (127, 53480), (128, 53492),

Gene: RoMag\_100 Start: 52765, Stop: 54669, Start Num: 4

Candidate Starts for RoMag\_100:

(Start: 4 @52765 has 81 MA's), (Start: 5 @52783 has 87 MA's), (Start: 6 @52816 has 1 MA's), (7, 52822), (Start: 17 @53008 has 1 MA's), (23, 53086), (24, 53104), (32, 53170), (35, 53188), (38, 53254), (41, 53290), (48, 53347), (57, 53503), (67, 53626), (70, 53713), (75, 53770), (76, 53779), (77, 53782), (82, 53890), (84, 53914), (87, 53980), (88, 53992), (89, 54010), (93, 54112), (100, 54211), (101, 54217), (107, 54298), (115, 54433), (117, 54442), (121, 54565), (127, 54652), (128, 54664),

Gene: Ronan\_99 Start: 50734, Stop: 52620, Start Num: 5

Candidate Starts for Ronan\_99:

(Start: 4 @50716 has 81 MA's), (Start: 5 @50734 has 87 MA's), (Start: 6 @50767 has 1 MA's), (7, 50773), (Start: 17 @50959 has 1 MA's), (23, 51037), (24, 51055), (32, 51121), (35, 51139), (38, 51205), (41, 51241), (48, 51298), (57, 51454), (67, 51577), (70, 51664), (75, 51721), (76, 51730), (77, 51733), (82, 51841), (84, 51865), (87, 51931), (88, 51943), (89, 51961), (93, 52063), (100, 52162), (101, 52168), (107, 52249), (115, 52384), (117, 52393), (121, 52516), (127, 52603), (128, 52615),

Gene: Roots515\_104 Start: 53753, Stop: 55657, Start Num: 4

Candidate Starts for Roots515\_104:

(Start: 4 @53753 has 81 MA's), (Start: 5 @53771 has 87 MA's), (Start: 6 @53804 has 1 MA's), (7, 53810), (Start: 17 @53996 has 1 MA's), (23, 54074), (24, 54092), (32, 54158), (35, 54176), (38, 54242), (41, 54278), (48, 54335), (57, 54491), (67, 54614), (70, 54701), (75, 54758), (76, 54767), (77, 54770), (82, 54878), (84, 54902), (87, 54968), (88, 54980), (89, 54998), (93, 55100), (100, 55199), (101, 55205), (107, 55286), (115, 55421), (117, 55430), (121, 55553), (127, 55640), (128, 55652),

Gene: Salacia\_109 Start: 53912, Stop: 55798, Start Num: 5

Candidate Starts for Salacia\_109:

(Start: 4 @53894 has 81 MA's), (Start: 5 @53912 has 87 MA's), (Start: 6 @53945 has 1 MA's), (7, 53951), (Start: 17 @54137 has 1 MA's), (23, 54215), (24, 54233), (32, 54299), (35, 54317), (38, 54383), (41, 54419), (48, 54476), (57, 54632), (67, 54755), (70, 54842), (75, 54899), (76, 54908), (77, 54911), (82, 55019), (84, 55043), (87, 55109), (88, 55121), (89, 55139), (93, 55241), (100, 55340), (101, 55346), (107, 55427), (115, 55562), (117, 55571), (121, 55694), (127, 55781), (128, 55793),

Gene: Sauce\_105 Start: 52602, Stop: 54404, Start Num: 5

Candidate Starts for Sauce\_105:

(Start: 5 @52602 has 87 MA's), (Start: 6 @52635 has 1 MA's), (Start: 17 @52830 has 1 MA's), (26, 52908), (28, 52926), (32, 52956), (35, 52974), (36, 53004), (43, 53085), (56, 53190), (71, 53436), (72, 53442), (108, 54039), (115, 54168), (116, 54174), (117, 54177), (121, 54300), (127, 54387), (128, 54399),

Gene: ScoobyDoobyDoo\_97 Start: 50692, Stop: 53040, Start Num: 5

Candidate Starts for ScoobyDoobyDoo\_97:

(Start: 3 @50668 has 1 MA's), (Start: 5 @50692 has 87 MA's), (9, 50758), (12, 50809), (14, 50857), (Start: 17 @50920 has 1 MA's), (18, 50932), (26, 51127), (32, 51175), (34, 51187), (35, 51193), (41, 51295), (42, 51301), (48, 51352), (50, 51364), (60, 51514), (69, 51682), (82, 51880), (86, 51958), (87, 51970), (88, 51982), (93, 52105), (102, 52204), (105, 52240), (107, 52285), (111, 52339), (119, 52528), (122, 52573), (125, 52612), (129, 52678), (130, 52873), (131, 52882),

Gene: ScottMcG\_102 Start: 52533, Stop: 54419, Start Num: 5

Candidate Starts for ScottMcG\_102:

(Start: 4 @52515 has 81 MA's), (Start: 5 @52533 has 87 MA's), (Start: 6 @52566 has 1 MA's), (7, 52572), (Start: 17 @52758 has 1 MA's), (23, 52836), (24, 52854), (32, 52920), (35, 52938), (38, 53004), (41, 53040), (48, 53097), (57, 53253), (67, 53376), (70, 53463), (75, 53520), (76, 53529), (77, 53532), (82, 53640), (84, 53664), (87, 53730), (88, 53742), (89, 53760), (93, 53862), (100, 53961), (101, 53967), (107, 54048), (115, 54183), (117, 54192), (121, 54315), (127, 54402), (128, 54414),

Gene: Sebata\_106 Start: 54071, Stop: 55873, Start Num: 5

Candidate Starts for Sebata\_106:

(Start: 5 @54071 has 87 MA's), (Start: 6 @54104 has 1 MA's), (Start: 17 @54299 has 1 MA's), (26, 54377), (28, 54395), (32, 54425), (35, 54443), (36, 54473), (43, 54554), (56, 54659), (71, 54905), (72, 54911), (108, 55508), (115, 55637), (116, 55643), (117, 55646), (121, 55769), (127, 55856), (128, 55868),

Gene: Shaqnato\_98 Start: 51628, Stop: 53229, Start Num: 4

Candidate Starts for Shaqnato\_98:

(Start: 4 @51628 has 81 MA's), (Start: 5 @51646 has 87 MA's), (Start: 6 @51679 has 1 MA's), (Start: 17 @51871 has 1 MA's), (23, 51949), (24, 51967), (32, 52033), (35, 52051), (38, 52117), (41, 52153), (48, 52210), (57, 52366), (67, 52489), (70, 52576), (75, 52633), (76, 52642), (77, 52645), (82, 52753), (84, 52777), (87, 52843), (88, 52855), (89, 52873), (93, 52975), (100, 53074), (101, 53080), (112, 53212), (114, 53224),

Gene: Shelob\_107 Start: 54341, Stop: 56245, Start Num: 4

Candidate Starts for Shelob\_107:

(Start: 4 @54341 has 81 MA's), (Start: 5 @54359 has 87 MA's), (Start: 6 @54392 has 1 MA's), (7, 54398), (Start: 17 @54584 has 1 MA's), (23, 54662), (24, 54680), (32, 54746), (35, 54764), (38, 54830), (41, 54866), (48, 54923), (57, 55079), (67, 55202), (70, 55289), (75, 55346), (76, 55355), (77, 55358), (82, 55466), (84, 55490), (87, 55556), (88, 55568), (89, 55586), (100, 55787), (101, 55793), (107, 55874), (115, 56009), (117, 56018), (121, 56141), (127, 56228), (128, 56240),

Gene: ShiaLabeouf\_104 Start: 52880, Stop: 54784, Start Num: 4

Candidate Starts for ShiaLabeouf\_104:

(Start: 4 @52880 has 81 MA's), (Start: 5 @52898 has 87 MA's), (Start: 6 @52931 has 1 MA's), (Start: 17 @53123 has 1 MA's), (23, 53201), (24, 53219), (32, 53285), (35, 53303), (38, 53369), (41, 53405), (48, 53462), (57, 53618), (67, 53741), (70, 53828), (75, 53885), (76, 53894), (77, 53897), (82, 54005), (84, 54029), (87, 54095), (88, 54107), (89, 54125), (93, 54227), (100, 54326), (101, 54332), (107, 54413), (115, 54548), (117, 54557), (121, 54680), (127, 54767), (128, 54779),

Gene: Shifa\_93 Start: 51452, Stop: 53254, Start Num: 5

Candidate Starts for Shifa\_93:

(Start: 5 @51452 has 87 MA's), (Start: 6 @51485 has 1 MA's), (Start: 17 @51680 has 1 MA's), (26, 51758), (28, 51776), (32, 51806), (35, 51824), (36, 51854), (43, 51935), (56, 52040), (71, 52286), (72, 52292), (108, 52889), (115, 53018), (116, 53024), (117, 53027), (121, 53150), (127, 53237), (128, 53249),

Gene: Shnickers\_105 Start: 52844, Stop: 54748, Start Num: 4

Candidate Starts for Shnickers\_105:

(Start: 4 @52844 has 81 MA's), (Start: 5 @52862 has 87 MA's), (Start: 6 @52895 has 1 MA's), (7, 52901), (Start: 17 @53087 has 1 MA's), (23, 53165), (24, 53183), (32, 53249), (35, 53267), (38, 53333), (41, 53369), (48, 53426), (57, 53582), (67, 53705), (70, 53792), (75, 53849), (76, 53858), (77, 53861), (82, 53969), (84, 53993), (87, 54059), (88, 54071), (89, 54089), (93, 54191), (100, 54290), (101, 54296), (107, 54377), (115, 54512), (117, 54521), (121, 54644), (127, 54731), (128, 54743),

Gene: Shrimp\_105 Start: 53582, Stop: 55468, Start Num: 5

Candidate Starts for Shrimp\_105:

(Start: 4 @53564 has 81 MA's), (Start: 5 @53582 has 87 MA's), (Start: 6 @53615 has 1 MA's), (7, 53621), (Start: 17 @53807 has 1 MA's), (23, 53885), (24, 53903), (32, 53969), (35, 53987), (38, 54053), (41, 54089), (48, 54146), (57, 54302), (67, 54425), (70, 54512), (75, 54569), (76, 54578), (77, 54581), (82, 54689), (84, 54713), (87, 54779), (88, 54791), (89, 54809), (100, 55010), (101, 55016), (107, 55097), (115, 55232), (117, 55241), (121, 55364), (127, 55451), (128, 55463),

Gene: SilverDipper\_106 Start: 52088, Stop: 53992, Start Num: 4

Candidate Starts for SilverDipper\_106:

(Start: 4 @52088 has 81 MA's), (Start: 5 @52106 has 87 MA's), (Start: 6 @52139 has 1 MA's), (7, 52145), (Start: 17 @52331 has 1 MA's), (23, 52409), (24, 52427), (32, 52493), (35, 52511), (38, 52577), (41, 52613), (48, 52670), (57, 52826), (67, 52949), (70, 53036), (75, 53093), (76, 53102), (77, 53105), (82, 53213), (84, 53237), (87, 53303), (88, 53315), (89, 53333), (93, 53435), (100, 53534), (101, 53540), (107, 53621), (115, 53756), (117, 53765), (121, 53888), (127, 53975), (128, 53987),

Gene: SmallFry\_105 Start: 52069, Stop: 53973, Start Num: 4

Candidate Starts for SmallFry\_105:

(Start: 4 @52069 has 81 MA's), (Start: 5 @52087 has 87 MA's), (Start: 6 @52120 has 1 MA's), (Start: 17 @52312 has 1 MA's), (23, 52390), (24, 52408), (32, 52474), (35, 52492), (38, 52558), (41, 52594), (48, 52651), (57, 52807), (67, 52930), (70, 53017), (75, 53074), (76, 53083), (77, 53086), (82, 53194), (84, 53218), (87, 53284), (88, 53296), (89, 53314), (93, 53416), (100, 53515), (101, 53521), (107, 53602), (115, 53737), (117, 53746), (121, 53869), (127, 53956), (128, 53968),

Gene: Spec\_101 Start: 52627, Stop: 54513, Start Num: 5

Candidate Starts for Spec\_101:

(Start: 4 @52609 has 81 MA's), (Start: 5 @52627 has 87 MA's), (Start: 6 @52660 has 1 MA's), (7, 52666), (Start: 17 @52852 has 1 MA's), (23, 52930), (24, 52948), (32, 53014), (35, 53032), (38, 53098), (41, 53134), (48, 53191), (57, 53347), (67, 53470), (70, 53557), (75, 53614), (76, 53623), (77, 53626), (82, 53734), (84, 53758), (87, 53824), (88, 53836), (89, 53854), (93, 53956), (100, 54055), (101, 54061), (107, 54142), (115, 54277), (117, 54286), (121, 54409), (127, 54496), (128, 54508),

Gene: Specks\_110 Start: 54743, Stop: 56647, Start Num: 4

Candidate Starts for Specks\_110:

(Start: 4 @54743 has 81 MA's), (Start: 5 @54761 has 87 MA's), (Start: 6 @54794 has 1 MA's), (7, 54800), (Start: 17 @54986 has 1 MA's), (23, 55064), (24, 55082), (32, 55148), (35, 55166), (38, 55232), (41, 55268), (48, 55325), (57, 55481), (67, 55604), (70, 55691), (75, 55748), (76, 55757), (77, 55760), (82, 55868), (84, 55892), (87, 55958), (88, 55970), (89, 55988), (93, 56090), (100, 56189), (101, 56195), (107, 56276), (115, 56411), (117, 56420), (121, 56543), (127, 56630), (128, 56642),

Gene: Sprinklers\_101 Start: 52143, Stop: 54029, Start Num: 5

Candidate Starts for Sprinklers\_101:

(Start: 4 @52125 has 81 MA's), (Start: 5 @52143 has 87 MA's), (Start: 6 @52176 has 1 MA's), (7, 52182), (Start: 17 @52368 has 1 MA's), (23, 52446), (24, 52464), (32, 52530), (35, 52548), (38, 52614), (41, 52650), (48, 52707), (57, 52863), (67, 52986), (70, 53073), (75, 53130), (76, 53139), (77, 53142), (82, 53250), (84, 53274), (87, 53340), (88, 53352), (89, 53370), (93, 53472), (100, 53571), (101, 53577), (107, 53658), (115, 53793), (117, 53802), (121, 53925), (127, 54012), (128, 54024),

Gene: Spud\_105 Start: 53640, Stop: 55544, Start Num: 4

Candidate Starts for Spud\_105:

(Start: 4 @53640 has 81 MA's), (Start: 5 @53658 has 87 MA's), (Start: 6 @53691 has 1 MA's), (7, 53697), (Start: 17 @53883 has 1 MA's), (23, 53961), (24, 53979), (32, 54045), (35, 54063), (38, 54129), (41, 54165), (48, 54222), (57, 54378), (67, 54501), (70, 54588), (75, 54645), (76, 54654), (77, 54657), (82, 54765), (84, 54789), (87, 54855), (88, 54867), (89, 54885), (93, 54987), (100, 55086), (101, 55092), (107, 55173), (115, 55308), (117, 55317), (121, 55440), (127, 55527), (128, 55539),

Gene: SrishMeg2525\_104 Start: 53680, Stop: 55566, Start Num: 5

Candidate Starts for SrishMeg2525\_104:

(Start: 4 @53662 has 81 MA's), (Start: 5 @53680 has 87 MA's), (Start: 6 @53713 has 1 MA's), (7, 53719), (Start: 17 @53905 has 1 MA's), (23, 53983), (24, 54001), (32, 54067), (35, 54085), (38, 54151), (41, 54187), (48, 54244), (57, 54400), (67, 54523), (70, 54610), (75, 54667), (76, 54676), (77, 54679), (82, 54787), (84, 54811), (87, 54877), (88, 54889), (89, 54907), (100, 55108), (101, 55114), (107, 55195), (115, 55330), (117, 55339), (121, 55462), (127, 55549), (128, 55561),

Gene: StephanieG\_104 Start: 54488, Stop: 56374, Start Num: 5

Candidate Starts for StephanieG\_104:

(Start: 4 @54470 has 81 MA's), (Start: 5 @54488 has 87 MA's), (Start: 6 @54521 has 1 MA's), (7, 54527), (Start: 17 @54713 has 1 MA's), (23, 54791), (24, 54809), (32, 54875), (35, 54893), (38, 54959), (41, 54995), (48, 55052), (57, 55208), (67, 55331), (70, 55418), (75, 55475), (76, 55484), (77, 55487), (82, 55595), (84, 55619), (87, 55685), (88, 55697), (89, 55715), (93, 55817), (100, 55916), (101, 55922), (107, 56003), (115, 56138), (117, 56147), (121, 56270), (127, 56357), (128, 56369),

Gene: Stubby\_97 Start: 51768, Stop: 53570, Start Num: 5

Candidate Starts for Stubby\_97:

(Start: 5 @51768 has 87 MA's), (Start: 6 @51801 has 1 MA's), (Start: 17 @51996 has 1 MA's), (26, 52074), (28, 52092), (32, 52122), (35, 52140), (36, 52170), (43, 52251), (56, 52356), (71, 52602), (72,

52608), (108, 53205), (115, 53334), (116, 53340), (117, 53343), (121, 53466), (127, 53553), (128, 53565),

Gene: StubbySaigey\_108 Start: 52257, Stop: 54161, Start Num: 4

Candidate Starts for StubbySaigey\_108:

(Start: 4 @52257 has 81 MA's), (Start: 5 @52275 has 87 MA's), (Start: 6 @52308 has 1 MA's), (7, 52314), (Start: 17 @52500 has 1 MA's), (23, 52578), (24, 52596), (32, 52662), (35, 52680), (38, 52746), (41, 52782), (48, 52839), (57, 52995), (67, 53118), (70, 53205), (75, 53262), (76, 53271), (77, 53274), (82, 53382), (84, 53406), (87, 53472), (88, 53484), (89, 53502), (93, 53604), (100, 53703), (101, 53709), (107, 53790), (115, 53925), (117, 53934), (121, 54057), (127, 54144), (128, 54156),

Gene: Tainan\_109 Start: 54084, Stop: 55970, Start Num: 5

Candidate Starts for Tainan\_109:

(Start: 4 @54066 has 81 MA's), (Start: 5 @54084 has 87 MA's), (Start: 6 @54117 has 1 MA's), (7, 54123), (Start: 17 @54309 has 1 MA's), (23, 54387), (24, 54405), (32, 54471), (35, 54489), (38, 54555), (41, 54591), (48, 54648), (57, 54804), (67, 54927), (70, 55014), (75, 55071), (76, 55080), (77, 55083), (82, 55191), (84, 55215), (87, 55281), (88, 55293), (89, 55311), (93, 55413), (100, 55512), (101, 55518), (107, 55599), (115, 55734), (117, 55743), (121, 55866), (127, 55953), (128, 55965),

Gene: Teardrop\_104 Start: 52067, Stop: 53971, Start Num: 4

Candidate Starts for Teardrop\_104:

(Start: 4 @52067 has 81 MA's), (Start: 5 @52085 has 87 MA's), (Start: 6 @52118 has 1 MA's), (7, 52124), (Start: 17 @52310 has 1 MA's), (23, 52388), (24, 52406), (32, 52472), (35, 52490), (38, 52556), (41, 52592), (48, 52649), (57, 52805), (67, 52928), (70, 53015), (75, 53072), (76, 53081), (77, 53084), (82, 53192), (84, 53216), (87, 53282), (88, 53294), (89, 53312), (93, 53414), (100, 53513), (101, 53519), (107, 53600), (115, 53735), (117, 53744), (121, 53867), (127, 53954), (128, 53966),

Gene: TinyTim\_105 Start: 53320, Stop: 55224, Start Num: 4

Candidate Starts for TinyTim\_105:

(Start: 4 @53320 has 81 MA's), (Start: 5 @53338 has 87 MA's), (Start: 6 @53371 has 1 MA's), (7, 53377), (Start: 17 @53563 has 1 MA's), (23, 53641), (24, 53659), (32, 53725), (35, 53743), (38, 53809), (41, 53845), (48, 53902), (57, 54058), (67, 54181), (70, 54268), (75, 54325), (76, 54334), (77, 54337), (82, 54445), (84, 54469), (87, 54535), (88, 54547), (89, 54565), (100, 54766), (101, 54772), (107, 54853), (115, 54988), (117, 54997), (121, 55120), (127, 55207), (128, 55219),

Gene: Tonenili\_120 Start: 57084, Stop: 58682, Start Num: 5

Candidate Starts for Tonenili\_120:

(Start: 4 @57066 has 81 MA's), (Start: 5 @57084 has 87 MA's), (Start: 6 @57117 has 1 MA's), (7, 57123), (Start: 17 @57309 has 1 MA's), (23, 57387), (24, 57405), (32, 57471), (35, 57489), (38, 57555), (41, 57591), (48, 57648), (57, 57804), (67, 57927), (70, 58014), (75, 58071), (76, 58080), (77, 58083), (82, 58191), (84, 58215), (87, 58281), (88, 58293), (89, 58311), (94, 58440), (100, 58512), (101, 58518), (107, 58599), (112, 58665), (114, 58677),

Gene: Tortoise16\_102 Start: 52668, Stop: 54572, Start Num: 4

Candidate Starts for Tortoise16\_102:

(Start: 4 @52668 has 81 MA's), (Start: 5 @52686 has 87 MA's), (Start: 6 @52719 has 1 MA's), (Start: 17 @52911 has 1 MA's), (23, 52989), (24, 53007), (32, 53073), (35, 53091), (38, 53157), (41, 53193), (48, 53250), (57, 53406), (67, 53529), (70, 53616), (75, 53673), (76, 53682), (77, 53685), (82, 53793), (84, 53817), (87, 53883), (88, 53895), (89, 53913), (93, 54015), (100, 54114), (101, 54120), (107, 54201), (115, 54336), (117, 54345), (121, 54468), (127, 54555), (128, 54567),

Gene: Trinitium\_102 Start: 52023, Stop: 53927, Start Num: 4

Candidate Starts for Trinitium\_102:



(Start: 4 @52023 has 81 MA's), (Start: 5 @52041 has 87 MA's), (Start: 6 @52074 has 1 MA's), (Start: 17 @52266 has 1 MA's), (23, 52344), (24, 52362), (32, 52428), (35, 52446), (38, 52512), (41, 52548), (48, 52605), (57, 52761), (67, 52884), (70, 52971), (75, 53028), (76, 53037), (77, 53040), (82, 53148), (84, 53172), (87, 53238), (88, 53250), (89, 53268), (93, 53370), (100, 53469), (101, 53475), (107, 53556), (115, 53691), (117, 53700), (121, 53823), (127, 53910), (128, 53922),

Gene: Turret\_100 Start: 51486, Stop: 53372, Start Num: 5

Candidate Starts for Turret\_100:

(Start: 4 @51468 has 81 MA's), (Start: 5 @51486 has 87 MA's), (Start: 6 @51519 has 1 MA's), (7, 51525), (Start: 17 @51711 has 1 MA's), (23, 51789), (24, 51807), (32, 51873), (35, 51891), (38, 51957), (41, 51993), (48, 52050), (57, 52206), (67, 52329), (70, 52416), (75, 52473), (76, 52482), (77, 52485), (82, 52593), (84, 52617), (87, 52683), (88, 52695), (89, 52713), (93, 52815), (100, 52914), (101, 52920), (107, 53001), (115, 53136), (117, 53145), (121, 53268), (127, 53355), (128, 53367),

Gene: Tyke\_106 Start: 54209, Stop: 56113, Start Num: 4

Candidate Starts for Tyke\_106:

(Start: 4 @54209 has 81 MA's), (Start: 5 @54227 has 87 MA's), (Start: 6 @54260 has 1 MA's), (Start: 17 @54452 has 1 MA's), (23, 54530), (24, 54548), (32, 54614), (35, 54632), (38, 54698), (41, 54734), (48, 54791), (57, 54947), (67, 55070), (70, 55157), (75, 55214), (76, 55223), (77, 55226), (82, 55334), (84, 55358), (87, 55424), (88, 55436), (89, 55454), (93, 55556), (100, 55655), (101, 55661), (107, 55742), (115, 55877), (117, 55886), (121, 56009), (127, 56096), (128, 56108),

Gene: ValleyTerrace\_105 Start: 52088, Stop: 53992, Start Num: 4

Candidate Starts for ValleyTerrace\_105:

(Start: 4 @52088 has 81 MA's), (Start: 5 @52106 has 87 MA's), (Start: 6 @52139 has 1 MA's), (7, 52145), (Start: 17 @52331 has 1 MA's), (23, 52409), (24, 52427), (32, 52493), (35, 52511), (38, 52577), (41, 52613), (48, 52670), (57, 52826), (67, 52949), (70, 53036), (75, 53093), (76, 53102), (77, 53105), (82, 53213), (84, 53237), (87, 53303), (88, 53315), (89, 53333), (93, 53435), (100, 53534), (101, 53540), (107, 53621), (115, 53756), (117, 53765), (121, 53888), (127, 53975), (128, 53987),

Gene: Wally\_104 Start: 52098, Stop: 54002, Start Num: 4

Candidate Starts for Wally\_104:

(Start: 4 @52098 has 81 MA's), (Start: 5 @52116 has 87 MA's), (Start: 6 @52149 has 1 MA's), (Start: 17 @52341 has 1 MA's), (23, 52419), (24, 52437), (32, 52503), (35, 52521), (38, 52587), (41, 52623), (48, 52680), (57, 52836), (67, 52959), (70, 53046), (75, 53103), (76, 53112), (77, 53115), (82, 53223), (84, 53247), (87, 53313), (88, 53325), (89, 53343), (93, 53445), (100, 53544), (101, 53550), (107, 53631), (115, 53766), (117, 53775), (121, 53898), (127, 53985), (128, 53997),

Gene: Willis\_106 Start: 53473, Stop: 55359, Start Num: 5

Candidate Starts for Willis\_106:

(Start: 4 @53455 has 81 MA's), (Start: 5 @53473 has 87 MA's), (Start: 6 @53506 has 1 MA's), (7, 53512), (Start: 17 @53698 has 1 MA's), (23, 53776), (24, 53794), (32, 53860), (35, 53878), (38, 53944), (41, 53980), (48, 54037), (57, 54193), (67, 54316), (70, 54403), (75, 54460), (76, 54469), (77, 54472), (82, 54580), (84, 54604), (87, 54670), (88, 54682), (89, 54700), (100, 54901), (101, 54907), (107, 54988), (115, 55123), (117, 55132), (121, 55255), (127, 55342), (128, 55354),

Gene: Yassified\_102 Start: 52193, Stop: 54079, Start Num: 5

Candidate Starts for Yassified\_102:

(Start: 4 @52175 has 81 MA's), (Start: 5 @52193 has 87 MA's), (Start: 6 @52226 has 1 MA's), (7, 52232), (Start: 17 @52418 has 1 MA's), (23, 52496), (24, 52514), (32, 52580), (35, 52598), (38, 52664), (41, 52700), (48, 52757), (57, 52913), (67, 53036), (70, 53123), (75, 53180), (76, 53189), (77, 53192), (82, 53300), (84, 53324), (87, 53390), (88, 53402), (89, 53420), (93, 53522), (100, 53621), (101, 53627), (107, 53708), (115, 53843), (117, 53852), (121, 53975), (127, 54062), (128, 54074),

Gene: YemiJoy2021\_106 Start: 53575, Stop: 55461, Start Num: 5

Candidate Starts for YemiJoy2021\_106:

(Start: 4 @53557 has 81 MA's), (Start: 5 @53575 has 87 MA's), (Start: 6 @53608 has 1 MA's), (Start: 17 @53800 has 1 MA's), (23, 53878), (24, 53896), (32, 53962), (35, 53980), (38, 54046), (41, 54082), (48, 54139), (57, 54295), (67, 54418), (70, 54505), (75, 54562), (76, 54571), (77, 54574), (82, 54682), (84, 54706), (87, 54772), (88, 54784), (89, 54802), (93, 54904), (100, 55003), (101, 55009), (107, 55090), (115, 55225), (117, 55234), (121, 55357), (127, 55444), (128, 55456),

Gene: YoungMoneyMata\_106 Start: 52724, Stop: 54628, Start Num: 4

Candidate Starts for YoungMoneyMata\_106:

(Start: 4 @52724 has 81 MA's), (Start: 5 @52742 has 87 MA's), (Start: 6 @52775 has 1 MA's), (Start: 17 @52967 has 1 MA's), (23, 53045), (24, 53063), (32, 53129), (35, 53147), (38, 53213), (41, 53249), (48, 53306), (57, 53462), (67, 53585), (70, 53672), (75, 53729), (76, 53738), (77, 53741), (82, 53849), (84, 53873), (87, 53939), (88, 53951), (89, 53969), (93, 54071), (100, 54170), (101, 54176), (107, 54257), (115, 54392), (117, 54401), (121, 54524), (127, 54611), (128, 54623),

Gene: Yucca\_105 Start: 53239, Stop: 55143, Start Num: 4

Candidate Starts for Yucca\_105:

(Start: 4 @53239 has 81 MA's), (Start: 5 @53257 has 87 MA's), (Start: 6 @53290 has 1 MA's), (7, 53296), (Start: 17 @53482 has 1 MA's), (23, 53560), (24, 53578), (32, 53644), (35, 53662), (38, 53728), (41, 53764), (48, 53821), (57, 53977), (67, 54100), (70, 54187), (75, 54244), (76, 54253), (77, 54256), (82, 54364), (84, 54388), (87, 54454), (88, 54466), (89, 54484), (100, 54685), (101, 54691), (107, 54772), (115, 54907), (117, 54916), (121, 55039), (127, 55126), (128, 55138),

Gene: Zalkecks\_106 Start: 53258, Stop: 55144, Start Num: 5

Candidate Starts for Zalkecks\_106:

(Start: 4 @53240 has 81 MA's), (Start: 5 @53258 has 87 MA's), (Start: 6 @53291 has 1 MA's), (7, 53297), (Start: 17 @53483 has 1 MA's), (23, 53561), (24, 53579), (32, 53645), (35, 53663), (38, 53729), (41, 53765), (48, 53822), (57, 53978), (67, 54101), (70, 54188), (75, 54245), (76, 54254), (77, 54257), (82, 54365), (84, 54389), (87, 54455), (88, 54467), (89, 54485), (100, 54686), (101, 54692), (107, 54773), (115, 54908), (117, 54917), (121, 55040), (127, 55127), (128, 55139),

Gene: Zeenon\_107 Start: 53343, Stop: 55229, Start Num: 5

Candidate Starts for Zeenon\_107:

(Start: 4 @53325 has 81 MA's), (Start: 5 @53343 has 87 MA's), (Start: 6 @53376 has 1 MA's), (7, 53382), (Start: 17 @53568 has 1 MA's), (23, 53646), (24, 53664), (32, 53730), (35, 53748), (38, 53814), (41, 53850), (48, 53907), (57, 54063), (67, 54186), (70, 54273), (75, 54330), (76, 54339), (77, 54342), (82, 54450), (84, 54474), (87, 54540), (88, 54552), (89, 54570), (100, 54771), (101, 54777), (107, 54858), (115, 54993), (117, 55002), (121, 55125), (127, 55212), (128, 55224),

Gene: ZygoTaiga\_104 Start: 54503, Stop: 56389, Start Num: 5

Candidate Starts for ZygoTaiga\_104:

(Start: 4 @54485 has 81 MA's), (Start: 5 @54503 has 87 MA's), (Start: 6 @54536 has 1 MA's), (7, 54542), (Start: 17 @54728 has 1 MA's), (23, 54806), (24, 54824), (32, 54890), (35, 54908), (38, 54974), (41, 55010), (48, 55067), (57, 55223), (67, 55346), (70, 55433), (75, 55490), (76, 55499), (77, 55502), (82, 55610), (84, 55634), (87, 55700), (88, 55712), (89, 55730), (100, 55931), (101, 55937), (107, 56018), (115, 56153), (117, 56162), (121, 56285), (127, 56372), (128, 56384),