



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 215916 Report

This analysis was run 02/22/25 on database version 588.

Pham number 215916 has 150 members, 7 are drafts.

Phages represented in each track:

- Track 1 : Kimona\_51
- Track 2 : Nyxis\_51, Pipcraft\_49, Polymorphads\_52, Jaykayelowell\_49, SenorClean\_49, Koreni\_50, Bombshell\_51, BellusTerra\_52, Medusa\_51, Ulysses\_50, Phelipe\_52, Connomayer\_51, Eros\_51, LochMonster\_52, Dhanush\_51, Bartimeaus\_51, Lunsford\_52, Blackmoor\_51, Citius\_51, Huxley\_51, Obama12\_52, Burger\_49, Alberto7\_52, Rosa24\_50, Peaches\_51, Romney\_51, Thanksgivukkah\_50, Clarenza\_50, Wizard007\_51, Scamp\_51, Baby16\_51, Koan\_49, Tinybot\_50, Phontbonne\_51, Eurydice\_52, Ohfah\_52, Sabertooth\_51, Druantia\_51, TinaFeyge\_51, Abdiel\_51, Broseidon\_51, Eagle\_51, Sparxx\_52, OKaNui\_51, Holli\_50, LeoAvram\_51, Lorenzo\_51, Florean\_51, ICleared\_51, Spino\_50, Kingmustik0402\_51, Wilbur\_51, Relief\_50, Melvin\_53
- Track 3 : Wander\_51, Maverick\_51, Commander\_51, LittleGuy\_51, Nemo27\_51, PeterPeter\_51, Gadost\_51, Avle17\_51, NotAPhaseMom\_51, Kyee\_51, Chaph\_51, KFPoly\_50, Mayonnaise\_51, Ruin\_51, Morrow\_52, HamSlice\_50, TroyPia\_52, Iceman\_51, Millski\_50, Iracema64\_52, Houdini22\_51, Flux\_51, BubbleTrouble\_50, Eris\_50, Annyong\_51, Funston\_50, Palestino\_50, Pumbaa\_51, Phacado\_51, Cocoberry\_51, Roosevelt\_50, MeeZee\_51, Eapen\_51, YoSam321\_51, JoongJeon\_50, Mazhar510\_51, NorthStar\_50
- Track 4 : TygerBlood\_51, LHTSCC\_53, Cerulean\_52, BangNhom\_52, Happiness\_50, Maxo\_52, Kampy\_51, SheldonCooper\_53, ChampagnePapi\_53
- Track 5 : Stink\_50
- Track 6 : Lemur\_51, JetBlade\_51, LittleB\_51, Bruiser\_50, Deano\_50, Camperdownii\_49, Albee\_51, Shaka\_51, Cintron\_50, Skipitt\_50, LappelDuVide\_51, Taquarus\_51, Kremtemulon\_51
- Track 7 : Xena\_49, Datway\_50, Bumblebee11\_49, Cici\_50, Backyardigan\_49, Wile\_50, AbbysRanger\_50, PetiteSangsue\_50, Perplexer\_50, Katalie136\_50, Badger\_49, Achebe\_49, Morpher26\_50
- Track 8 : AvatarAhPeg\_49, Phighter1804\_51, Miramae\_49
- Track 9 : Cindaradix\_48, Mundrea\_50
- Track 10 : Caelakin\_51
- Track 11 : DirtyDunning\_50
- Track 12 : Arturo\_50, Kratak\_51
- Track 13 : Noelle\_51
- Track 14 : TiroTheta9\_51, CentreCat\_51
- Track 15 : Nebs\_52
- Track 16 : Stasia\_50
- Track 17 : Shygu2\_50

- Track 18 : DroogsArmy\_48
- Track 19 : Sheen\_53, Toro\_55, FlyCatcher\_57
- Track 20 : Timshel\_49
- Track 21 : PP\_53
- Track 22 : HINdeR\_47

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

The start number called the most often in the published annotations is 2, it was called in 135 of the 143 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AbbysRanger\_50, Abdiel\_51, Achebe\_49, Albee\_51, Alberto7\_52, Annyong\_51, Arturo\_50, AvatarAhPeg\_49, Avle17\_51, Baby16\_51, Backyardigan\_49, Badger\_49, BangNhom\_52, Bartimeaus\_51, BellusTerra\_52, Blackmoor\_51, Bombshell\_51, Broseidon\_51, Bruiser\_50, BubbleTrouble\_50, Bumblebee11\_49, Burger\_49, Caelakin\_51, Camperdownii\_49, Cerulean\_52, ChampagnePapi\_53, Chaph\_51, Cici\_50, Cindaradix\_48, Cintron\_50, Citius\_51, Clarenza\_50, Cocoaberry\_51, Commander\_51, Connomayer\_51, Datway\_50, Deano\_50, Dhanush\_51, DirtyDunning\_50, Druantia\_51, Eagle\_51, Eapen\_51, Eris\_50, Eros\_51, Eurydice\_52, Florean\_51, Flux\_51, Funston\_50, Gadost\_51, HamSlice\_50, Happiness\_50, Holli\_50, Houdini22\_51, Huxley\_51, ICleared\_51, Iceman\_51, Iracema64\_52, Jaykayelowell\_49, JetBlade\_51, JoongJeon\_50, KFPoly\_50, Kampy\_51, Katalie136\_50, Kingmustik0402\_51, Koan\_49, Koreni\_50, Kratark\_51, Kremtemulon\_51, Kyee\_51, LHTSCC\_53, LappelDuVide\_51, Lemur\_51, LeoAvram\_51, LittleB\_51, LittleGuy\_51, LochMonster\_52, Lorenzo\_51, Lunsford\_52, Maverick\_51, Maxo\_52, Mayonnaise\_51, Mazhar510\_51, Medusa\_51, MeeZee\_51, Melvin\_53, Millski\_50, Miramae\_49, Morpher26\_50, Morrow\_52, Mundrea\_50, Nebs\_52, Nemo27\_51, Noelle\_51, NorthStar\_50, NotAPhaseMom\_51, Nyxis\_51, OKaNui\_51, Obama12\_52, Ohfah\_52, Palestino\_50, Peaches\_51, Perplexer\_50, PeterPeter\_51, PetiteSangsue\_50, Phacado\_51, Felipe\_52, Phighter1804\_51, Phontbonne\_51, Pipcraft\_49, Polymorphads\_52, Pumbaa\_51, Relief\_50, Romney\_51, Roosevelt\_50, Rosa24\_50, Ruin\_51, Sabertooth\_51, Scamp\_51, SenorClean\_49, Shaka\_51, SheldonCooper\_53, Shygu2\_50, Skipitt\_50, Sparxx\_52, Spino\_50, Stasia\_50, Stink\_50, Taquarus\_51, Thanksgivukkah\_50, TinaFeyge\_51, Tinybot\_50, TroyPia\_52, TygerBlood\_51, Ulysses\_50, Wander\_51, Wilbur\_51, Wile\_50, Wizard007\_51, Xena\_49, YoSam321\_51,

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

- CentreCat\_51, TiroTheta9\_51,

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

- DroogsArmy\_48, FlyCatcher\_57, HINdeR\_47, Kimona\_51, PP\_53, Sheen\_53, Timshel\_49, Toro\_55,

**Summary by start number:**

Start 1:

- Found in 1 of 150 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 143

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kimona\_51 (A19),

#### Start 2:

- Found in 142 of 150 ( 94.7% ) of genes in pham
- Manual Annotations of this start: 135 of 143
- Called 98.6% of time when present
- Phage (with cluster) where this start called: AbbysRanger\_50 (A4), Abdiel\_51 (A4), Achebe\_49 (A4), Albee\_51 (A4), Alberto7\_52 (A4), Annyong\_51 (A4), Arturo\_50 (A4), AvatarAhPeg\_49 (A4), Avle17\_51 (A4), Baby16\_51 (A4), Backyardigan\_49 (A4), Badger\_49 (A4), BangNhom\_52 (A4), Bartimeaus\_51 (A4), BellusTerra\_52 (A4), Blackmoor\_51 (A4), Bombshell\_51 (A4), Broseidon\_51 (A4), Bruiser\_50 (A4), BubbleTrouble\_50 (A4), Bumblebee11\_49 (A4), Burger\_49 (A4), Caelakin\_51 (A4), Camperdownii\_49 (A4), Cerulean\_52 (A4), ChampagnePapi\_53 (A4), Chaph\_51 (A4), Cici\_50 (A4), Cindaradix\_48 (A4), Cintron\_50 (A4), Citius\_51 (A4), Clarenza\_50 (A4), Cocoaberry\_51 (A4), Commander\_51 (A4), Connomayer\_51 (A4), Datway\_50 (A4), Deano\_50 (A4), Dhanush\_51 (A4), DirtyDunning\_50 (A4), Druantia\_51 (A4), Eagle\_51 (A4), Eapen\_51 (A4), Eris\_50 (A4), Eros\_51 (A4), Eurydice\_52 (A4), Florean\_51 (A4), Flux\_51 (A4), Funston\_50 (A4), Gadost\_51 (A4), HamSlice\_50 (A4), Happiness\_50 (A4), Holli\_50 (A4), Houdini22\_51 (A4), Huxley\_51 (A4), ICleared\_51 (A4), Iceman\_51 (A4), Iracema64\_52 (A4), Jaykayelowell\_49 (A4), JetBlade\_51 (A4), JoongJeon\_50 (A4), KFPoly\_50 (A4), Kampy\_51 (A4), Katalie136\_50 (A4), Kingmustik0402\_51 (A4), Koan\_49 (A4), Koreni\_50 (A4), Kratark\_51 (A4), Kremtemulon\_51 (A4), Kyee\_51 (A4), LHTSCC\_53 (A4), LappelDuVide\_51 (A4), Lemur\_51 (A4), LeoAvram\_51 (A4), LittleB\_51 (A4), LittleGuy\_51 (A4), LochMonster\_52 (A4), Lorenzo\_51 (A4), Lunsford\_52 (A4), Maverick\_51 (A4), Maxo\_52 (A4), Mayonnaise\_51 (A4), Mazhar510\_51 (A4), Medusa\_51 (A4), MeeZee\_51 (A4), Melvin\_53 (A4), Millski\_50 (A4), Miramae\_49 (A4), Morpher26\_50 (A4), Morrow\_52 (A4), Mundrea\_50 (A4), Nebs\_52 (A4), Nemo27\_51 (A4), Noelle\_51 (A4), NorthStar\_50 (A4), NotAPhaseMom\_51 (A4), Nyxis\_51 (A4), OKaNui\_51 (A4), Obama12\_52 (A4), Ohfah\_52 (A4), Palestino\_50 (A4), Peaches\_51 (A4), Perplexer\_50 (A4), PeterPeter\_51 (A4), PetiteSangsue\_50 (A4), Phacado\_51 (A4), Phelipe\_52 (A4), Phighter1804\_51 (A4), Phontbonne\_51 (A4), Pipcraft\_49 (A4), Polymorphads\_52 (A4), Pumbaa\_51 (A4), Relief\_50 (A4), Romney\_51 (A4), Roosevelt\_50 (A4), Rosa24\_50 (A4), Ruin\_51 (A4), Sabertooth\_51 (A4), Scamp\_51 (A4), SeniorClean\_49 (A4), Shaka\_51 (A4), SheldonCooper\_53 (A4), Shygu2\_50 (A4), Skipitt\_50 (A4), Sparxx\_52 (A4), Spino\_50 (A4), Stasia\_50 (A4), Stink\_50 (A4), Taquarus\_51 (A4), Thanksgivukkah\_50 (A4), TinaFeyge\_51 (A4), Tinybot\_50 (A4), TroyPia\_52 (A4), TygerBlood\_51 (A4), Ulysses\_50 (A4), Wander\_51 (A4), Wilbur\_51 (A4), Wile\_50 (A4), Wizard007\_51 (A4), Xena\_49 (A4), YoSam321\_51 (A4),

#### Start 3:

- Found in 7 of 150 ( 4.7% ) of genes in pham
- Manual Annotations of this start: 5 of 143
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DroogsArmy\_48 (A7), FlyCatcher\_57 (A7), HINdeR\_47 (A7), PP\_53 (A7), Sheen\_53 (A7), Timshel\_49 (A7), Toro\_55 (A7),

#### Start 4:

- Found in 127 of 150 ( 84.7% ) of genes in pham
- Manual Annotations of this start: 2 of 143
- Called 1.6% of time when present
- Phage (with cluster) where this start called: CentreCat\_51 (A4), TiroTheta9\_51 (A4),

## Summary by clusters:

There are 3 clusters represented in this pham: A19, A4, A7,

Info for manual annotations of cluster A19:

- Start number 1 was manually annotated 1 time for cluster A19.

Info for manual annotations of cluster A4:

- Start number 2 was manually annotated 135 times for cluster A4.
- Start number 4 was manually annotated 2 times for cluster A4.

Info for manual annotations of cluster A7:

- Start number 3 was manually annotated 5 times for cluster A7.

## Gene Information:

Gene: AbbysRanger\_50 Start: 36304, Stop: 35420, Start Num: 2

Candidate Starts for AbbysRanger\_50:

(Start: 2 @36304 has 135 MA's), (5, 36283), (14, 36130), (17, 36094), (25, 35992), (26, 35980), (40, 35830), (48, 35698), (49, 35659), (56, 35590), (59, 35563), (62, 35515), (65, 35479), (66, 35440), (67, 35437),

Gene: Abdiel\_51 Start: 36342, Stop: 35446, Start Num: 2

Candidate Starts for Abdiel\_51:

(Start: 2 @36342 has 135 MA's), (Start: 4 @36330 has 2 MA's), (5, 36321), (6, 36318), (11, 36240), (12, 36204), (14, 36168), (17, 36132), (25, 36030), (26, 36018), (48, 35724), (49, 35685), (56, 35616), (58, 35595), (59, 35589), (62, 35541), (67, 35463),

Gene: Achebe\_49 Start: 36287, Stop: 35403, Start Num: 2

Candidate Starts for Achebe\_49:

(Start: 2 @36287 has 135 MA's), (5, 36266), (14, 36113), (17, 36077), (25, 35975), (26, 35963), (40, 35813), (48, 35681), (49, 35642), (56, 35573), (59, 35546), (62, 35498), (65, 35462), (66, 35423), (67, 35420),

Gene: Albee\_51 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Albee\_51:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (12, 36203), (14, 36167), (17, 36131), (22, 36071), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Alberto7\_52 Start: 36678, Stop: 35782, Start Num: 2

Candidate Starts for Alberto7\_52:

(Start: 2 @36678 has 135 MA's), (Start: 4 @36666 has 2 MA's), (5, 36657), (6, 36654), (11, 36576), (12, 36540), (14, 36504), (17, 36468), (25, 36366), (26, 36354), (48, 36060), (49, 36021), (56, 35952), (58, 35931), (59, 35925), (62, 35877), (67, 35799),

Gene: Annyong\_51 Start: 36386, Stop: 35490, Start Num: 2

Candidate Starts for Annyong\_51:

(Start: 2 @36386 has 135 MA's), (Start: 4 @36374 has 2 MA's), (5, 36365), (6, 36362), (11, 36284), (14, 36212), (17, 36176), (22, 36116), (25, 36074), (26, 36062), (48, 35768), (49, 35729), (56, 35660),

(58, 35639), (59, 35633), (62, 35585), (67, 35507),

Gene: Arturo\_50 Start: 36613, Stop: 35717, Start Num: 2

Candidate Starts for Arturo\_50:

(Start: 2 @36613 has 135 MA's), (Start: 4 @36601 has 2 MA's), (5, 36592), (6, 36589), (11, 36511), (12, 36475), (14, 36439), (17, 36403), (25, 36301), (26, 36289), (48, 35995), (49, 35956), (56, 35887), (58, 35866), (59, 35860), (62, 35812), (63, 35809), (65, 35776), (66, 35737), (67, 35734),

Gene: AvatarAhPeg\_49 Start: 36126, Stop: 35230, Start Num: 2

Candidate Starts for AvatarAhPeg\_49:

(Start: 2 @36126 has 135 MA's), (Start: 4 @36114 has 2 MA's), (5, 36105), (6, 36102), (11, 36024), (12, 35988), (14, 35952), (17, 35916), (22, 35856), (25, 35814), (26, 35802), (48, 35508), (49, 35469), (56, 35400), (58, 35379), (59, 35373), (62, 35325), (63, 35322), (65, 35289), (66, 35250), (67, 35247),

Gene: Avle17\_51 Start: 36338, Stop: 35442, Start Num: 2

Candidate Starts for Avle17\_51:

(Start: 2 @36338 has 135 MA's), (Start: 4 @36326 has 2 MA's), (5, 36317), (6, 36314), (11, 36236), (14, 36164), (17, 36128), (22, 36068), (25, 36026), (26, 36014), (48, 35720), (49, 35681), (56, 35612), (58, 35591), (59, 35585), (62, 35537), (67, 35459),

Gene: Baby16\_51 Start: 36352, Stop: 35456, Start Num: 2

Candidate Starts for Baby16\_51:

(Start: 2 @36352 has 135 MA's), (Start: 4 @36340 has 2 MA's), (5, 36331), (6, 36328), (11, 36250), (12, 36214), (14, 36178), (17, 36142), (25, 36040), (26, 36028), (48, 35734), (49, 35695), (56, 35626), (58, 35605), (59, 35599), (62, 35551), (67, 35473),

Gene: Backyardigan\_49 Start: 36320, Stop: 35436, Start Num: 2

Candidate Starts for Backyardigan\_49:

(Start: 2 @36320 has 135 MA's), (5, 36299), (14, 36146), (17, 36110), (25, 36008), (26, 35996), (40, 35846), (48, 35714), (49, 35675), (56, 35606), (59, 35579), (62, 35531), (65, 35495), (66, 35456), (67, 35453),

Gene: Badger\_49 Start: 36288, Stop: 35404, Start Num: 2

Candidate Starts for Badger\_49:

(Start: 2 @36288 has 135 MA's), (5, 36267), (14, 36114), (17, 36078), (25, 35976), (26, 35964), (40, 35814), (48, 35682), (49, 35643), (56, 35574), (59, 35547), (62, 35499), (65, 35463), (66, 35424), (67, 35421),

Gene: BangNhom\_52 Start: 36777, Stop: 35881, Start Num: 2

Candidate Starts for BangNhom\_52:

(Start: 2 @36777 has 135 MA's), (Start: 4 @36765 has 2 MA's), (5, 36756), (6, 36753), (11, 36675), (14, 36603), (17, 36567), (25, 36465), (26, 36453), (48, 36159), (49, 36120), (56, 36051), (58, 36030), (59, 36024), (62, 35976), (67, 35898),

Gene: Bartimeaus\_51 Start: 36343, Stop: 35447, Start Num: 2

Candidate Starts for Bartimeaus\_51:

(Start: 2 @36343 has 135 MA's), (Start: 4 @36331 has 2 MA's), (5, 36322), (6, 36319), (11, 36241), (12, 36205), (14, 36169), (17, 36133), (25, 36031), (26, 36019), (48, 35725), (49, 35686), (56, 35617), (58, 35596), (59, 35590), (62, 35542), (67, 35464),

Gene: BellusTerra\_52 Start: 36342, Stop: 35446, Start Num: 2

Candidate Starts for BellusTerra\_52:

(Start: 2 @36342 has 135 MA's), (Start: 4 @36330 has 2 MA's), (5, 36321), (6, 36318), (11, 36240), (12, 36204), (14, 36168), (17, 36132), (25, 36030), (26, 36018), (48, 35724), (49, 35685), (56, 35616), (58, 35595), (59, 35589), (62, 35541), (67, 35463),

Gene: Blackmoor\_51 Start: 36343, Stop: 35447, Start Num: 2

Candidate Starts for Blackmoor\_51:

(Start: 2 @36343 has 135 MA's), (Start: 4 @36331 has 2 MA's), (5, 36322), (6, 36319), (11, 36241), (12, 36205), (14, 36169), (17, 36133), (25, 36031), (26, 36019), (48, 35725), (49, 35686), (56, 35617), (58, 35596), (59, 35590), (62, 35542), (67, 35464),

Gene: Bombshell\_51 Start: 36338, Stop: 35442, Start Num: 2

Candidate Starts for Bombshell\_51:

(Start: 2 @36338 has 135 MA's), (Start: 4 @36326 has 2 MA's), (5, 36317), (6, 36314), (11, 36236), (12, 36200), (14, 36164), (17, 36128), (25, 36026), (26, 36014), (48, 35720), (49, 35681), (56, 35612), (58, 35591), (59, 35585), (62, 35537), (67, 35459),

Gene: Broseidon\_51 Start: 36343, Stop: 35447, Start Num: 2

Candidate Starts for Broseidon\_51:

(Start: 2 @36343 has 135 MA's), (Start: 4 @36331 has 2 MA's), (5, 36322), (6, 36319), (11, 36241), (12, 36205), (14, 36169), (17, 36133), (25, 36031), (26, 36019), (48, 35725), (49, 35686), (56, 35617), (58, 35596), (59, 35590), (62, 35542), (67, 35464),

Gene: Bruiser\_50 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Bruiser\_50:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (12, 36203), (14, 36167), (17, 36131), (22, 36071), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: BubbleTrouble\_50 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for BubbleTrouble\_50:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (14, 36167), (17, 36131), (22, 36071), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Bumblebee11\_49 Start: 36290, Stop: 35406, Start Num: 2

Candidate Starts for Bumblebee11\_49:

(Start: 2 @36290 has 135 MA's), (5, 36269), (14, 36116), (17, 36080), (25, 35978), (26, 35966), (40, 35816), (48, 35684), (49, 35645), (56, 35576), (59, 35549), (62, 35501), (65, 35465), (66, 35426), (67, 35423),

Gene: Burger\_49 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Burger\_49:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (12, 36203), (14, 36167), (17, 36131), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Caelakin\_51 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Caelakin\_51:

(Start: 2 @36341 has 135 MA's), (5, 36320), (6, 36317), (11, 36239), (14, 36167), (17, 36131), (22, 36071), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Camperdownii\_49 Start: 36015, Stop: 35119, Start Num: 2

Candidate Starts for Camperdownii\_49:

(Start: 2 @36015 has 135 MA's), (Start: 4 @36003 has 2 MA's), (5, 35994), (6, 35991), (11, 35913), (12, 35877), (14, 35841), (17, 35805), (22, 35745), (25, 35703), (26, 35691), (48, 35397), (49, 35358), (56, 35289), (58, 35268), (59, 35262), (62, 35214), (67, 35136),

Gene: CentreCat\_51 Start: 36332, Stop: 35448, Start Num: 4

Candidate Starts for CentreCat\_51:

(Start: 2 @36344 has 135 MA's), (Start: 4 @36332 has 2 MA's), (5, 36323), (6, 36320), (11, 36242), (12, 36206), (14, 36170), (17, 36134), (25, 36032), (26, 36020), (48, 35726), (49, 35687), (56, 35618), (58, 35597), (59, 35591), (62, 35543), (67, 35465),

Gene: Cerulean\_52 Start: 36778, Stop: 35882, Start Num: 2

Candidate Starts for Cerulean\_52:

(Start: 2 @36778 has 135 MA's), (Start: 4 @36766 has 2 MA's), (5, 36757), (6, 36754), (11, 36676), (14, 36604), (17, 36568), (25, 36466), (26, 36454), (48, 36160), (49, 36121), (56, 36052), (58, 36031), (59, 36025), (62, 35977), (67, 35899),

Gene: ChampagnePapi\_53 Start: 36777, Stop: 35881, Start Num: 2

Candidate Starts for ChampagnePapi\_53:

(Start: 2 @36777 has 135 MA's), (Start: 4 @36765 has 2 MA's), (5, 36756), (6, 36753), (11, 36675), (14, 36603), (17, 36567), (25, 36465), (26, 36453), (48, 36159), (49, 36120), (56, 36051), (58, 36030), (59, 36024), (62, 35976), (67, 35898),

Gene: Chaph\_51 Start: 36352, Stop: 35456, Start Num: 2

Candidate Starts for Chaph\_51:

(Start: 2 @36352 has 135 MA's), (Start: 4 @36340 has 2 MA's), (5, 36331), (6, 36328), (11, 36250), (14, 36178), (17, 36142), (22, 36082), (25, 36040), (26, 36028), (48, 35734), (49, 35695), (56, 35626), (58, 35605), (59, 35599), (62, 35551), (67, 35473),

Gene: Cici\_50 Start: 36305, Stop: 35421, Start Num: 2

Candidate Starts for Cici\_50:

(Start: 2 @36305 has 135 MA's), (5, 36284), (14, 36131), (17, 36095), (25, 35993), (26, 35981), (40, 35831), (48, 35699), (49, 35660), (56, 35591), (59, 35564), (62, 35516), (65, 35480), (66, 35441), (67, 35438),

Gene: Cindaradix\_48 Start: 35971, Stop: 35075, Start Num: 2

Candidate Starts for Cindaradix\_48:

(Start: 2 @35971 has 135 MA's), (Start: 4 @35959 has 2 MA's), (5, 35950), (11, 35869), (12, 35833), (14, 35797), (17, 35761), (22, 35701), (25, 35659), (26, 35647), (48, 35353), (49, 35314), (56, 35245), (58, 35224), (59, 35218), (62, 35170), (63, 35167), (65, 35134), (67, 35092),

Gene: Cintron\_50 Start: 36318, Stop: 35422, Start Num: 2

Candidate Starts for Cintron\_50:

(Start: 2 @36318 has 135 MA's), (Start: 4 @36306 has 2 MA's), (5, 36297), (6, 36294), (11, 36216), (12, 36180), (14, 36144), (17, 36108), (22, 36048), (25, 36006), (26, 35994), (48, 35700), (49, 35661), (56, 35592), (58, 35571), (59, 35565), (62, 35517), (67, 35439),

Gene: Citius\_51 Start: 36362, Stop: 35466, Start Num: 2

Candidate Starts for Citius\_51:

(Start: 2 @36362 has 135 MA's), (Start: 4 @36350 has 2 MA's), (5, 36341), (6, 36338), (11, 36260), (12, 36224), (14, 36188), (17, 36152), (25, 36050), (26, 36038), (48, 35744), (49, 35705), (56, 35636), (58, 35615), (59, 35609), (62, 35561), (67, 35483),



Gene: Clarenza\_50 Start: 36338, Stop: 35442, Start Num: 2

Candidate Starts for Clarenza\_50:

(Start: 2 @36338 has 135 MA's), (Start: 4 @36326 has 2 MA's), (5, 36317), (6, 36314), (11, 36236), (12, 36200), (14, 36164), (17, 36128), (25, 36026), (26, 36014), (48, 35720), (49, 35681), (56, 35612), (58, 35591), (59, 35585), (62, 35537), (67, 35459),

Gene: Cocoaberry\_51 Start: 36345, Stop: 35449, Start Num: 2

Candidate Starts for Cocoaberry\_51:

(Start: 2 @36345 has 135 MA's), (Start: 4 @36333 has 2 MA's), (5, 36324), (6, 36321), (11, 36243), (14, 36171), (17, 36135), (22, 36075), (25, 36033), (26, 36021), (48, 35727), (49, 35688), (56, 35619), (58, 35598), (59, 35592), (62, 35544), (67, 35466),

Gene: Commander\_51 Start: 36340, Stop: 35444, Start Num: 2

Candidate Starts for Commander\_51:

(Start: 2 @36340 has 135 MA's), (Start: 4 @36328 has 2 MA's), (5, 36319), (6, 36316), (11, 36238), (14, 36166), (17, 36130), (22, 36070), (25, 36028), (26, 36016), (48, 35722), (49, 35683), (56, 35614), (58, 35593), (59, 35587), (62, 35539), (67, 35461),

Gene: Connomayer\_51 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Connomayer\_51:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (12, 36203), (14, 36167), (17, 36131), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Datway\_50 Start: 36276, Stop: 35392, Start Num: 2

Candidate Starts for Datway\_50:

(Start: 2 @36276 has 135 MA's), (5, 36255), (14, 36102), (17, 36066), (25, 35964), (26, 35952), (40, 35802), (48, 35670), (49, 35631), (56, 35562), (59, 35535), (62, 35487), (65, 35451), (66, 35412), (67, 35409),

Gene: Deano\_50 Start: 36349, Stop: 35453, Start Num: 2

Candidate Starts for Deano\_50:

(Start: 2 @36349 has 135 MA's), (Start: 4 @36337 has 2 MA's), (5, 36328), (6, 36325), (11, 36247), (12, 36211), (14, 36175), (17, 36139), (22, 36079), (25, 36037), (26, 36025), (48, 35731), (49, 35692), (56, 35623), (58, 35602), (59, 35596), (62, 35548), (67, 35470),

Gene: Dhanush\_51 Start: 36344, Stop: 35448, Start Num: 2

Candidate Starts for Dhanush\_51:

(Start: 2 @36344 has 135 MA's), (Start: 4 @36332 has 2 MA's), (5, 36323), (6, 36320), (11, 36242), (12, 36206), (14, 36170), (17, 36134), (25, 36032), (26, 36020), (48, 35726), (49, 35687), (56, 35618), (58, 35597), (59, 35591), (62, 35543), (67, 35465),

Gene: DirtyDunning\_50 Start: 36353, Stop: 35457, Start Num: 2

Candidate Starts for DirtyDunning\_50:

(Start: 2 @36353 has 135 MA's), (Start: 4 @36341 has 2 MA's), (5, 36332), (6, 36329), (11, 36251), (12, 36215), (14, 36179), (17, 36143), (22, 36083), (25, 36041), (26, 36029), (28, 35996), (48, 35735), (49, 35696), (56, 35627), (58, 35606), (59, 35600), (62, 35552), (66, 35477), (67, 35474),

Gene: DroogsArmy\_48 Start: 37473, Stop: 36574, Start Num: 3

Candidate Starts for DroogsArmy\_48:

(Start: 3 @37473 has 5 MA's), (7, 37431), (10, 37389), (15, 37287), (23, 37194), (25, 37164), (29, 37110), (30, 37086), (36, 37032), (38, 37011), (41, 36975), (47, 36861), (48, 36858), (49, 36819), (50, 36804), (52, 36789), (55, 36750), (57, 36738), (61, 36690), (62, 36669), (65, 36633), (66, 36594), (67,

36591), (68, 36579),

Gene: Druantia\_51 Start: 36344, Stop: 35448, Start Num: 2

Candidate Starts for Druantia\_51:

(Start: 2 @36344 has 135 MA's), (Start: 4 @36332 has 2 MA's), (5, 36323), (6, 36320), (11, 36242), (12, 36206), (14, 36170), (17, 36134), (25, 36032), (26, 36020), (48, 35726), (49, 35687), (56, 35618), (58, 35597), (59, 35591), (62, 35543), (67, 35465),

Gene: Eagle\_51 Start: 36366, Stop: 35470, Start Num: 2

Candidate Starts for Eagle\_51:

(Start: 2 @36366 has 135 MA's), (Start: 4 @36354 has 2 MA's), (5, 36345), (6, 36342), (11, 36264), (12, 36228), (14, 36192), (17, 36156), (25, 36054), (26, 36042), (48, 35748), (49, 35709), (56, 35640), (58, 35619), (59, 35613), (62, 35565), (67, 35487),

Gene: Eapen\_51 Start: 36336, Stop: 35440, Start Num: 2

Candidate Starts for Eapen\_51:

(Start: 2 @36336 has 135 MA's), (Start: 4 @36324 has 2 MA's), (5, 36315), (6, 36312), (11, 36234), (14, 36162), (17, 36126), (22, 36066), (25, 36024), (26, 36012), (48, 35718), (49, 35679), (56, 35610), (58, 35589), (59, 35583), (62, 35535), (67, 35457),

Gene: Eris\_50 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Eris\_50:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (14, 36167), (17, 36131), (22, 36071), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Eros\_51 Start: 36343, Stop: 35447, Start Num: 2

Candidate Starts for Eros\_51:

(Start: 2 @36343 has 135 MA's), (Start: 4 @36331 has 2 MA's), (5, 36322), (6, 36319), (11, 36241), (12, 36205), (14, 36169), (17, 36133), (25, 36031), (26, 36019), (48, 35725), (49, 35686), (56, 35617), (58, 35596), (59, 35590), (62, 35542), (67, 35464),

Gene: Eurydice\_52 Start: 36338, Stop: 35442, Start Num: 2

Candidate Starts for Eurydice\_52:

(Start: 2 @36338 has 135 MA's), (Start: 4 @36326 has 2 MA's), (5, 36317), (6, 36314), (11, 36236), (12, 36200), (14, 36164), (17, 36128), (25, 36026), (26, 36014), (48, 35720), (49, 35681), (56, 35612), (58, 35591), (59, 35585), (62, 35537), (67, 35459),

Gene: Florean\_51 Start: 36340, Stop: 35444, Start Num: 2

Candidate Starts for Florean\_51:

(Start: 2 @36340 has 135 MA's), (Start: 4 @36328 has 2 MA's), (5, 36319), (6, 36316), (11, 36238), (12, 36202), (14, 36166), (17, 36130), (25, 36028), (26, 36016), (48, 35722), (49, 35683), (56, 35614), (58, 35593), (59, 35587), (62, 35539), (67, 35461),

Gene: Flux\_51 Start: 36340, Stop: 35444, Start Num: 2

Candidate Starts for Flux\_51:

(Start: 2 @36340 has 135 MA's), (Start: 4 @36328 has 2 MA's), (5, 36319), (6, 36316), (11, 36238), (14, 36166), (17, 36130), (22, 36070), (25, 36028), (26, 36016), (48, 35722), (49, 35683), (56, 35614), (58, 35593), (59, 35587), (62, 35539), (67, 35461),

Gene: FlyCatcher\_57 Start: 38873, Stop: 37983, Start Num: 3

Candidate Starts for FlyCatcher\_57:

(Start: 3 @38873 has 5 MA's), (10, 38789), (13, 38717), (16, 38675), (20, 38633), (24, 38567), (25, 38564), (31, 38483), (35, 38453), (36, 38432), (37, 38420), (39, 38408), (41, 38375), (44, 38321), (45, 38309), (46, 38279), (48, 38258), (49, 38219), (50, 38204), (51, 38201), (59, 38126), (62, 38078), (65, 38042), (67, 38000),

Gene: Funston\_50 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Funston\_50:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (14, 36167), (17, 36131), (22, 36071), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Gadost\_51 Start: 36345, Stop: 35449, Start Num: 2

Candidate Starts for Gadost\_51:

(Start: 2 @36345 has 135 MA's), (Start: 4 @36333 has 2 MA's), (5, 36324), (6, 36321), (11, 36243), (14, 36171), (17, 36135), (22, 36075), (25, 36033), (26, 36021), (48, 35727), (49, 35688), (56, 35619), (58, 35598), (59, 35592), (62, 35544), (67, 35466),

Gene: HINdeR\_47 Start: 37135, Stop: 36236, Start Num: 3

Candidate Starts for HINdeR\_47:

(Start: 3 @37135 has 5 MA's), (7, 37093), (9, 37066), (10, 37051), (12, 37000), (15, 36949), (21, 36877), (25, 36826), (30, 36748), (36, 36694), (39, 36670), (41, 36637), (48, 36520), (49, 36481), (50, 36466), (54, 36415), (55, 36412), (57, 36400), (59, 36379), (62, 36331), (65, 36295), (66, 36256), (67, 36253), (68, 36241),

Gene: HamSlice\_50 Start: 36339, Stop: 35443, Start Num: 2

Candidate Starts for HamSlice\_50:

(Start: 2 @36339 has 135 MA's), (Start: 4 @36327 has 2 MA's), (5, 36318), (6, 36315), (11, 36237), (14, 36165), (17, 36129), (22, 36069), (25, 36027), (26, 36015), (48, 35721), (49, 35682), (56, 35613), (58, 35592), (59, 35586), (62, 35538), (67, 35460),

Gene: Happiness\_50 Start: 36360, Stop: 35464, Start Num: 2

Candidate Starts for Happiness\_50:

(Start: 2 @36360 has 135 MA's), (Start: 4 @36348 has 2 MA's), (5, 36339), (6, 36336), (11, 36258), (14, 36186), (17, 36150), (25, 36048), (26, 36036), (48, 35742), (49, 35703), (56, 35634), (58, 35613), (59, 35607), (62, 35559), (67, 35481),

Gene: Holli\_50 Start: 36131, Stop: 35235, Start Num: 2

Candidate Starts for Holli\_50:

(Start: 2 @36131 has 135 MA's), (Start: 4 @36119 has 2 MA's), (5, 36110), (6, 36107), (11, 36029), (12, 35993), (14, 35957), (17, 35921), (25, 35819), (26, 35807), (48, 35513), (49, 35474), (56, 35405), (58, 35384), (59, 35378), (62, 35330), (67, 35252),

Gene: Houdini22\_51 Start: 36345, Stop: 35449, Start Num: 2

Candidate Starts for Houdini22\_51:

(Start: 2 @36345 has 135 MA's), (Start: 4 @36333 has 2 MA's), (5, 36324), (6, 36321), (11, 36243), (14, 36171), (17, 36135), (22, 36075), (25, 36033), (26, 36021), (48, 35727), (49, 35688), (56, 35619), (58, 35598), (59, 35592), (62, 35544), (67, 35466),

Gene: Huxley\_51 Start: 36402, Stop: 35506, Start Num: 2

Candidate Starts for Huxley\_51:

(Start: 2 @36402 has 135 MA's), (Start: 4 @36390 has 2 MA's), (5, 36381), (6, 36378), (11, 36300), (12, 36264), (14, 36228), (17, 36192), (25, 36090), (26, 36078), (48, 35784), (49, 35745), (56, 35676), (58, 35655), (59, 35649), (62, 35601), (67, 35523),

Gene: ICleared\_51 Start: 36370, Stop: 35474, Start Num: 2

Candidate Starts for ICleared\_51:

(Start: 2 @36370 has 135 MA's), (Start: 4 @36358 has 2 MA's), (5, 36349), (6, 36346), (11, 36268), (12, 36232), (14, 36196), (17, 36160), (25, 36058), (26, 36046), (48, 35752), (49, 35713), (56, 35644), (58, 35623), (59, 35617), (62, 35569), (67, 35491),

Gene: Iceman\_51 Start: 36627, Stop: 35731, Start Num: 2

Candidate Starts for Iceman\_51:

(Start: 2 @36627 has 135 MA's), (Start: 4 @36615 has 2 MA's), (5, 36606), (6, 36603), (11, 36525), (14, 36453), (17, 36417), (22, 36357), (25, 36315), (26, 36303), (48, 36009), (49, 35970), (56, 35901), (58, 35880), (59, 35874), (62, 35826), (67, 35748),

Gene: Iracema64\_52 Start: 36605, Stop: 35709, Start Num: 2

Candidate Starts for Iracema64\_52:

(Start: 2 @36605 has 135 MA's), (Start: 4 @36593 has 2 MA's), (5, 36584), (6, 36581), (11, 36503), (14, 36431), (17, 36395), (22, 36335), (25, 36293), (26, 36281), (48, 35987), (49, 35948), (56, 35879), (58, 35858), (59, 35852), (62, 35804), (67, 35726),

Gene: Jaykayelowell\_49 Start: 36334, Stop: 35438, Start Num: 2

Candidate Starts for Jaykayelowell\_49:

(Start: 2 @36334 has 135 MA's), (Start: 4 @36322 has 2 MA's), (5, 36313), (6, 36310), (11, 36232), (12, 36196), (14, 36160), (17, 36124), (25, 36022), (26, 36010), (48, 35716), (49, 35677), (56, 35608), (58, 35587), (59, 35581), (62, 35533), (67, 35455),

Gene: JetBlade\_51 Start: 36335, Stop: 35439, Start Num: 2

Candidate Starts for JetBlade\_51:

(Start: 2 @36335 has 135 MA's), (Start: 4 @36323 has 2 MA's), (5, 36314), (6, 36311), (11, 36233), (12, 36197), (14, 36161), (17, 36125), (22, 36065), (25, 36023), (26, 36011), (48, 35717), (49, 35678), (56, 35609), (58, 35588), (59, 35582), (62, 35534), (67, 35456),

Gene: JoongJeon\_50 Start: 36338, Stop: 35442, Start Num: 2

Candidate Starts for JoongJeon\_50:

(Start: 2 @36338 has 135 MA's), (Start: 4 @36326 has 2 MA's), (5, 36317), (6, 36314), (11, 36236), (14, 36164), (17, 36128), (22, 36068), (25, 36026), (26, 36014), (48, 35720), (49, 35681), (56, 35612), (58, 35591), (59, 35585), (62, 35537), (67, 35459),

Gene: KFPoly\_50 Start: 36335, Stop: 35439, Start Num: 2

Candidate Starts for KFPoly\_50:

(Start: 2 @36335 has 135 MA's), (Start: 4 @36323 has 2 MA's), (5, 36314), (6, 36311), (11, 36233), (14, 36161), (17, 36125), (22, 36065), (25, 36023), (26, 36011), (48, 35717), (49, 35678), (56, 35609), (58, 35588), (59, 35582), (62, 35534), (67, 35456),

Gene: Kampy\_51 Start: 36343, Stop: 35447, Start Num: 2

Candidate Starts for Kampy\_51:

(Start: 2 @36343 has 135 MA's), (Start: 4 @36331 has 2 MA's), (5, 36322), (6, 36319), (11, 36241), (14, 36169), (17, 36133), (25, 36031), (26, 36019), (48, 35725), (49, 35686), (56, 35617), (58, 35596), (59, 35590), (62, 35542), (67, 35464),

Gene: Katalie136\_50 Start: 36290, Stop: 35406, Start Num: 2

Candidate Starts for Katalie136\_50:

(Start: 2 @36290 has 135 MA's), (5, 36269), (14, 36116), (17, 36080), (25, 35978), (26, 35966), (40, 35816), (48, 35684), (49, 35645), (56, 35576), (59, 35549), (62, 35501), (65, 35465), (66, 35426), (67,

35423),

Gene: Kimona\_51 Start: 34953, Stop: 34051, Start Num: 1

Candidate Starts for Kimona\_51:

(Start: 1 @34953 has 1 MA's), (7, 34899), (8, 34878), (25, 34629), (33, 34533), (43, 34419), (44, 34398), (48, 34335), (49, 34296), (50, 34281), (52, 34266), (53, 34257), (59, 34194), (60, 34179), (61, 34167), (62, 34146), (63, 34143), (65, 34110), (67, 34068),

Gene: Kingmustik0402\_51 Start: 36330, Stop: 35434, Start Num: 2

Candidate Starts for Kingmustik0402\_51:

(Start: 2 @36330 has 135 MA's), (Start: 4 @36318 has 2 MA's), (5, 36309), (6, 36306), (11, 36228), (12, 36192), (14, 36156), (17, 36120), (25, 36018), (26, 36006), (48, 35712), (49, 35673), (56, 35604), (58, 35583), (59, 35577), (62, 35529), (67, 35451),

Gene: Koan\_49 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Koan\_49:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (12, 36203), (14, 36167), (17, 36131), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Koreni\_50 Start: 36022, Stop: 35126, Start Num: 2

Candidate Starts for Koreni\_50:

(Start: 2 @36022 has 135 MA's), (Start: 4 @36010 has 2 MA's), (5, 36001), (6, 35998), (11, 35920), (12, 35884), (14, 35848), (17, 35812), (25, 35710), (26, 35698), (48, 35404), (49, 35365), (56, 35296), (58, 35275), (59, 35269), (62, 35221), (67, 35143),

Gene: Kratak\_51 Start: 36496, Stop: 35600, Start Num: 2

Candidate Starts for Kratak\_51:

(Start: 2 @36496 has 135 MA's), (Start: 4 @36484 has 2 MA's), (5, 36475), (6, 36472), (11, 36394), (12, 36358), (14, 36322), (17, 36286), (25, 36184), (26, 36172), (48, 35878), (49, 35839), (56, 35770), (58, 35749), (59, 35743), (62, 35695), (63, 35692), (65, 35659), (66, 35620), (67, 35617),

Gene: Kremtemulon\_51 Start: 36289, Stop: 35393, Start Num: 2

Candidate Starts for Kremtemulon\_51:

(Start: 2 @36289 has 135 MA's), (Start: 4 @36277 has 2 MA's), (5, 36268), (6, 36265), (11, 36187), (12, 36151), (14, 36115), (17, 36079), (22, 36019), (25, 35977), (26, 35965), (48, 35671), (49, 35632), (56, 35563), (58, 35542), (59, 35536), (62, 35488), (67, 35410),

Gene: Kyee\_51 Start: 36339, Stop: 35443, Start Num: 2

Candidate Starts for Kyee\_51:

(Start: 2 @36339 has 135 MA's), (Start: 4 @36327 has 2 MA's), (5, 36318), (6, 36315), (11, 36237), (14, 36165), (17, 36129), (22, 36069), (25, 36027), (26, 36015), (48, 35721), (49, 35682), (56, 35613), (58, 35592), (59, 35586), (62, 35538), (67, 35460),

Gene: LHTSCC\_53 Start: 36777, Stop: 35881, Start Num: 2

Candidate Starts for LHTSCC\_53:

(Start: 2 @36777 has 135 MA's), (Start: 4 @36765 has 2 MA's), (5, 36756), (6, 36753), (11, 36675), (14, 36603), (17, 36567), (25, 36465), (26, 36453), (48, 36159), (49, 36120), (56, 36051), (58, 36030), (59, 36024), (62, 35976), (67, 35898),

Gene: LappelDuVide\_51 Start: 36340, Stop: 35444, Start Num: 2

Candidate Starts for LappelDuVide\_51:

(Start: 2 @36340 has 135 MA's), (Start: 4 @36328 has 2 MA's), (5, 36319), (6, 36316), (11, 36238), (12, 36202), (14, 36166), (17, 36130), (22, 36070), (25, 36028), (26, 36016), (48, 35722), (49, 35683), (56, 35614), (58, 35593), (59, 35587), (62, 35539), (67, 35461),

Gene: Lemur\_51 Start: 36338, Stop: 35442, Start Num: 2

Candidate Starts for Lemur\_51:

(Start: 2 @36338 has 135 MA's), (Start: 4 @36326 has 2 MA's), (5, 36317), (6, 36314), (11, 36236), (12, 36200), (14, 36164), (17, 36128), (22, 36068), (25, 36026), (26, 36014), (48, 35720), (49, 35681), (56, 35612), (58, 35591), (59, 35585), (62, 35537), (67, 35459),

Gene: LeoAvram\_51 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for LeoAvram\_51:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (12, 36203), (14, 36167), (17, 36131), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: LittleB\_51 Start: 36342, Stop: 35446, Start Num: 2

Candidate Starts for LittleB\_51:

(Start: 2 @36342 has 135 MA's), (Start: 4 @36330 has 2 MA's), (5, 36321), (6, 36318), (11, 36240), (12, 36204), (14, 36168), (17, 36132), (22, 36072), (25, 36030), (26, 36018), (48, 35724), (49, 35685), (56, 35616), (58, 35595), (59, 35589), (62, 35541), (67, 35463),

Gene: LittleGuy\_51 Start: 36237, Stop: 35341, Start Num: 2

Candidate Starts for LittleGuy\_51:

(Start: 2 @36237 has 135 MA's), (Start: 4 @36225 has 2 MA's), (5, 36216), (6, 36213), (11, 36135), (14, 36063), (17, 36027), (22, 35967), (25, 35925), (26, 35913), (48, 35619), (49, 35580), (56, 35511), (58, 35490), (59, 35484), (62, 35436), (67, 35358),

Gene: LochMonster\_52 Start: 36577, Stop: 35681, Start Num: 2

Candidate Starts for LochMonster\_52:

(Start: 2 @36577 has 135 MA's), (Start: 4 @36565 has 2 MA's), (5, 36556), (6, 36553), (11, 36475), (12, 36439), (14, 36403), (17, 36367), (25, 36265), (26, 36253), (48, 35959), (49, 35920), (56, 35851), (58, 35830), (59, 35824), (62, 35776), (67, 35698),

Gene: Lorenzo\_51 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Lorenzo\_51:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (12, 36203), (14, 36167), (17, 36131), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Lunsford\_52 Start: 36335, Stop: 35439, Start Num: 2

Candidate Starts for Lunsford\_52:

(Start: 2 @36335 has 135 MA's), (Start: 4 @36323 has 2 MA's), (5, 36314), (6, 36311), (11, 36233), (12, 36197), (14, 36161), (17, 36125), (25, 36023), (26, 36011), (48, 35717), (49, 35678), (56, 35609), (58, 35588), (59, 35582), (62, 35534), (67, 35456),

Gene: Maverick\_51 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Maverick\_51:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (14, 36167), (17, 36131), (22, 36071), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Maxo\_52 Start: 36343, Stop: 35447, Start Num: 2

Candidate Starts for Maxo\_52:

(Start: 2 @36343 has 135 MA's), (Start: 4 @36331 has 2 MA's), (5, 36322), (6, 36319), (11, 36241), (14, 36169), (17, 36133), (25, 36031), (26, 36019), (48, 35725), (49, 35686), (56, 35617), (58, 35596), (59, 35590), (62, 35542), (67, 35464),

Gene: Mayonnaise\_51 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Mayonnaise\_51:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (14, 36167), (17, 36131), (22, 36071), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Mazhar510\_51 Start: 36342, Stop: 35446, Start Num: 2

Candidate Starts for Mazhar510\_51:

(Start: 2 @36342 has 135 MA's), (Start: 4 @36330 has 2 MA's), (5, 36321), (6, 36318), (11, 36240), (14, 36168), (17, 36132), (22, 36072), (25, 36030), (26, 36018), (48, 35724), (49, 35685), (56, 35616), (58, 35595), (59, 35589), (62, 35541), (67, 35463),

Gene: Medusa\_51 Start: 36340, Stop: 35444, Start Num: 2

Candidate Starts for Medusa\_51:

(Start: 2 @36340 has 135 MA's), (Start: 4 @36328 has 2 MA's), (5, 36319), (6, 36316), (11, 36238), (12, 36202), (14, 36166), (17, 36130), (25, 36028), (26, 36016), (48, 35722), (49, 35683), (56, 35614), (58, 35593), (59, 35587), (62, 35539), (67, 35461),

Gene: MeeZee\_51 Start: 36338, Stop: 35442, Start Num: 2

Candidate Starts for MeeZee\_51:

(Start: 2 @36338 has 135 MA's), (Start: 4 @36326 has 2 MA's), (5, 36317), (6, 36314), (11, 36236), (14, 36164), (17, 36128), (22, 36068), (25, 36026), (26, 36014), (48, 35720), (49, 35681), (56, 35612), (58, 35591), (59, 35585), (62, 35537), (67, 35459),

Gene: Melvin\_53 Start: 36336, Stop: 35440, Start Num: 2

Candidate Starts for Melvin\_53:

(Start: 2 @36336 has 135 MA's), (Start: 4 @36324 has 2 MA's), (5, 36315), (6, 36312), (11, 36234), (12, 36198), (14, 36162), (17, 36126), (25, 36024), (26, 36012), (48, 35718), (49, 35679), (56, 35610), (58, 35589), (59, 35583), (62, 35535), (67, 35457),

Gene: Millski\_50 Start: 36342, Stop: 35446, Start Num: 2

Candidate Starts for Millski\_50:

(Start: 2 @36342 has 135 MA's), (Start: 4 @36330 has 2 MA's), (5, 36321), (6, 36318), (11, 36240), (14, 36168), (17, 36132), (22, 36072), (25, 36030), (26, 36018), (48, 35724), (49, 35685), (56, 35616), (58, 35595), (59, 35589), (62, 35541), (67, 35463),

Gene: Miramae\_49 Start: 35788, Stop: 34892, Start Num: 2

Candidate Starts for Miramae\_49:

(Start: 2 @35788 has 135 MA's), (Start: 4 @35776 has 2 MA's), (5, 35767), (6, 35764), (11, 35686), (12, 35650), (14, 35614), (17, 35578), (22, 35518), (25, 35476), (26, 35464), (48, 35170), (49, 35131), (56, 35062), (58, 35041), (59, 35035), (62, 34987), (63, 34984), (65, 34951), (66, 34912), (67, 34909),

Gene: Morpher26\_50 Start: 36311, Stop: 35427, Start Num: 2

Candidate Starts for Morpher26\_50:

(Start: 2 @36311 has 135 MA's), (5, 36290), (14, 36137), (17, 36101), (25, 35999), (26, 35987), (40, 35837), (48, 35705), (49, 35666), (56, 35597), (59, 35570), (62, 35522), (65, 35486), (66, 35447), (67, 35444),

Gene: Morrow\_52 Start: 36347, Stop: 35451, Start Num: 2

Candidate Starts for Morrow\_52:

(Start: 2 @36347 has 135 MA's), (Start: 4 @36335 has 2 MA's), (5, 36326), (6, 36323), (11, 36245), (14, 36173), (17, 36137), (22, 36077), (25, 36035), (26, 36023), (48, 35729), (49, 35690), (56, 35621), (58, 35600), (59, 35594), (62, 35546), (67, 35468),

Gene: Mundrea\_50 Start: 36337, Stop: 35441, Start Num: 2

Candidate Starts for Mundrea\_50:

(Start: 2 @36337 has 135 MA's), (Start: 4 @36325 has 2 MA's), (5, 36316), (11, 36235), (12, 36199), (14, 36163), (17, 36127), (22, 36067), (25, 36025), (26, 36013), (48, 35719), (49, 35680), (56, 35611), (58, 35590), (59, 35584), (62, 35536), (63, 35533), (65, 35500), (67, 35458),

Gene: Nebs\_52 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Nebs\_52:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (12, 36203), (14, 36167), (17, 36131), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (66, 35465), (67, 35462),

Gene: Nemo27\_51 Start: 36340, Stop: 35444, Start Num: 2

Candidate Starts for Nemo27\_51:

(Start: 2 @36340 has 135 MA's), (Start: 4 @36328 has 2 MA's), (5, 36319), (6, 36316), (11, 36238), (14, 36166), (17, 36130), (22, 36070), (25, 36028), (26, 36016), (48, 35722), (49, 35683), (56, 35614), (58, 35593), (59, 35587), (62, 35539), (67, 35461),

Gene: Noelle\_51 Start: 36615, Stop: 35719, Start Num: 2

Candidate Starts for Noelle\_51:

(Start: 2 @36615 has 135 MA's), (Start: 4 @36603 has 2 MA's), (5, 36594), (6, 36591), (11, 36513), (12, 36477), (14, 36441), (18, 36402), (25, 36303), (26, 36291), (48, 35997), (49, 35958), (56, 35889), (58, 35868), (59, 35862), (62, 35814), (63, 35811), (65, 35778), (66, 35739), (67, 35736),

Gene: NorthStar\_50 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for NorthStar\_50:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (14, 36167), (17, 36131), (22, 36071), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: NotAPhaseMom\_51 Start: 36345, Stop: 35449, Start Num: 2

Candidate Starts for NotAPhaseMom\_51:

(Start: 2 @36345 has 135 MA's), (Start: 4 @36333 has 2 MA's), (5, 36324), (6, 36321), (11, 36243), (14, 36171), (17, 36135), (22, 36075), (25, 36033), (26, 36021), (48, 35727), (49, 35688), (56, 35619), (58, 35598), (59, 35592), (62, 35544), (67, 35466),

Gene: Nyxis\_51 Start: 36231, Stop: 35335, Start Num: 2

Candidate Starts for Nyxis\_51:

(Start: 2 @36231 has 135 MA's), (Start: 4 @36219 has 2 MA's), (5, 36210), (6, 36207), (11, 36129), (12, 36093), (14, 36057), (17, 36021), (25, 35919), (26, 35907), (48, 35613), (49, 35574), (56, 35505), (58, 35484), (59, 35478), (62, 35430), (67, 35352),

Gene: OKaNui\_51 Start: 36391, Stop: 35495, Start Num: 2

Candidate Starts for OKaNui\_51:

(Start: 2 @36391 has 135 MA's), (Start: 4 @36379 has 2 MA's), (5, 36370), (6, 36367), (11, 36289), (12, 36253), (14, 36217), (17, 36181), (25, 36079), (26, 36067), (48, 35773), (49, 35734), (56, 35665), (58, 35644), (59, 35638), (62, 35590), (67, 35512),



Gene: Obama12\_52 Start: 36761, Stop: 35865, Start Num: 2

Candidate Starts for Obama12\_52:

(Start: 2 @36761 has 135 MA's), (Start: 4 @36749 has 2 MA's), (5, 36740), (6, 36737), (11, 36659), (12, 36623), (14, 36587), (17, 36551), (25, 36449), (26, 36437), (48, 36143), (49, 36104), (56, 36035), (58, 36014), (59, 36008), (62, 35960), (67, 35882),

Gene: Ohfah\_52 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Ohfah\_52:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (12, 36203), (14, 36167), (17, 36131), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: PP\_53 Start: 39933, Stop: 39049, Start Num: 3

Candidate Starts for PP\_53:

(Start: 3 @39933 has 5 MA's), (5, 39918), (11, 39837), (15, 39750), (19, 39702), (21, 39678), (25, 39627), (26, 39615), (27, 39588), (33, 39531), (41, 39450), (42, 39438), (48, 39333), (49, 39294), (50, 39279), (53, 39255), (54, 39228), (55, 39225), (59, 39192), (60, 39177), (61, 39165), (62, 39144), (64, 39123), (65, 39108), (66, 39069), (67, 39066),

Gene: Palestino\_50 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Palestino\_50:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (14, 36167), (17, 36131), (22, 36071), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Peaches\_51 Start: 36340, Stop: 35444, Start Num: 2

Candidate Starts for Peaches\_51:

(Start: 2 @36340 has 135 MA's), (Start: 4 @36328 has 2 MA's), (5, 36319), (6, 36316), (11, 36238), (12, 36202), (14, 36166), (17, 36130), (25, 36028), (26, 36016), (48, 35722), (49, 35683), (56, 35614), (58, 35593), (59, 35587), (62, 35539), (67, 35461),

Gene: Perplexer\_50 Start: 36287, Stop: 35403, Start Num: 2

Candidate Starts for Perplexer\_50:

(Start: 2 @36287 has 135 MA's), (5, 36266), (14, 36113), (17, 36077), (25, 35975), (26, 35963), (40, 35813), (48, 35681), (49, 35642), (56, 35573), (59, 35546), (62, 35498), (65, 35462), (66, 35423), (67, 35420),

Gene: PeterPeter\_51 Start: 36338, Stop: 35442, Start Num: 2

Candidate Starts for PeterPeter\_51:

(Start: 2 @36338 has 135 MA's), (Start: 4 @36326 has 2 MA's), (5, 36317), (6, 36314), (11, 36236), (14, 36164), (17, 36128), (22, 36068), (25, 36026), (26, 36014), (48, 35720), (49, 35681), (56, 35612), (58, 35591), (59, 35585), (62, 35537), (67, 35459),

Gene: PetiteSangsue\_50 Start: 36290, Stop: 35406, Start Num: 2

Candidate Starts for PetiteSangsue\_50:

(Start: 2 @36290 has 135 MA's), (5, 36269), (14, 36116), (17, 36080), (25, 35978), (26, 35966), (40, 35816), (48, 35684), (49, 35645), (56, 35576), (59, 35549), (62, 35501), (65, 35465), (66, 35426), (67, 35423),

Gene: Phacado\_51 Start: 36340, Stop: 35444, Start Num: 2

Candidate Starts for Phacado\_51:

(Start: 2 @36340 has 135 MA's), (Start: 4 @36328 has 2 MA's), (5, 36319), (6, 36316), (11, 36238), (14, 36166), (17, 36130), (22, 36070), (25, 36028), (26, 36016), (48, 35722), (49, 35683), (56, 35614), (58, 35593), (59, 35587), (62, 35539), (67, 35461),

Gene: Phelipe\_52 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Phelipe\_52:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (12, 36203), (14, 36167), (17, 36131), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Phighter1804\_51 Start: 36402, Stop: 35506, Start Num: 2

Candidate Starts for Phighter1804\_51:

(Start: 2 @36402 has 135 MA's), (Start: 4 @36390 has 2 MA's), (5, 36381), (6, 36378), (11, 36300), (12, 36264), (14, 36228), (17, 36192), (22, 36132), (25, 36090), (26, 36078), (48, 35784), (49, 35745), (56, 35676), (58, 35655), (59, 35649), (62, 35601), (63, 35598), (65, 35565), (66, 35526), (67, 35523),

Gene: Phontbonne\_51 Start: 36232, Stop: 35336, Start Num: 2

Candidate Starts for Phontbonne\_51:

(Start: 2 @36232 has 135 MA's), (Start: 4 @36220 has 2 MA's), (5, 36211), (6, 36208), (11, 36130), (12, 36094), (14, 36058), (17, 36022), (25, 35920), (26, 35908), (48, 35614), (49, 35575), (56, 35506), (58, 35485), (59, 35479), (62, 35431), (67, 35353),

Gene: Pipcraft\_49 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Pipcraft\_49:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (12, 36203), (14, 36167), (17, 36131), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Polymorphads\_52 Start: 36334, Stop: 35438, Start Num: 2

Candidate Starts for Polymorphads\_52:

(Start: 2 @36334 has 135 MA's), (Start: 4 @36322 has 2 MA's), (5, 36313), (6, 36310), (11, 36232), (12, 36196), (14, 36160), (17, 36124), (25, 36022), (26, 36010), (48, 35716), (49, 35677), (56, 35608), (58, 35587), (59, 35581), (62, 35533), (67, 35455),

Gene: Pumbaa\_51 Start: 36286, Stop: 35390, Start Num: 2

Candidate Starts for Pumbaa\_51:

(Start: 2 @36286 has 135 MA's), (Start: 4 @36274 has 2 MA's), (5, 36265), (6, 36262), (11, 36184), (14, 36112), (17, 36076), (22, 36016), (25, 35974), (26, 35962), (48, 35668), (49, 35629), (56, 35560), (58, 35539), (59, 35533), (62, 35485), (67, 35407),

Gene: Relief\_50 Start: 36338, Stop: 35442, Start Num: 2

Candidate Starts for Relief\_50:

(Start: 2 @36338 has 135 MA's), (Start: 4 @36326 has 2 MA's), (5, 36317), (6, 36314), (11, 36236), (12, 36200), (14, 36164), (17, 36128), (25, 36026), (26, 36014), (48, 35720), (49, 35681), (56, 35612), (58, 35591), (59, 35585), (62, 35537), (67, 35459),

Gene: Romney\_51 Start: 36338, Stop: 35442, Start Num: 2

Candidate Starts for Romney\_51:

(Start: 2 @36338 has 135 MA's), (Start: 4 @36326 has 2 MA's), (5, 36317), (6, 36314), (11, 36236), (12, 36200), (14, 36164), (17, 36128), (25, 36026), (26, 36014), (48, 35720), (49, 35681), (56, 35612), (58, 35591), (59, 35585), (62, 35537), (67, 35459),

Gene: Roosevelt\_50 Start: 36343, Stop: 35447, Start Num: 2

Candidate Starts for Roosevelt\_50:

(Start: 2 @36343 has 135 MA's), (Start: 4 @36331 has 2 MA's), (5, 36322), (6, 36319), (11, 36241), (14, 36169), (17, 36133), (22, 36073), (25, 36031), (26, 36019), (48, 35725), (49, 35686), (56, 35617), (58, 35596), (59, 35590), (62, 35542), (67, 35464),

Gene: Rosa24\_50 Start: 36369, Stop: 35473, Start Num: 2

Candidate Starts for Rosa24\_50:

(Start: 2 @36369 has 135 MA's), (Start: 4 @36357 has 2 MA's), (5, 36348), (6, 36345), (11, 36267), (12, 36231), (14, 36195), (17, 36159), (25, 36057), (26, 36045), (48, 35751), (49, 35712), (56, 35643), (58, 35622), (59, 35616), (62, 35568), (67, 35490),

Gene: Ruin\_51 Start: 36334, Stop: 35438, Start Num: 2

Candidate Starts for Ruin\_51:

(Start: 2 @36334 has 135 MA's), (Start: 4 @36322 has 2 MA's), (5, 36313), (6, 36310), (11, 36232), (14, 36160), (17, 36124), (22, 36064), (25, 36022), (26, 36010), (48, 35716), (49, 35677), (56, 35608), (58, 35587), (59, 35581), (62, 35533), (67, 35455),

Gene: Sabertooth\_51 Start: 36343, Stop: 35447, Start Num: 2

Candidate Starts for Sabertooth\_51:

(Start: 2 @36343 has 135 MA's), (Start: 4 @36331 has 2 MA's), (5, 36322), (6, 36319), (11, 36241), (12, 36205), (14, 36169), (17, 36133), (25, 36031), (26, 36019), (48, 35725), (49, 35686), (56, 35617), (58, 35596), (59, 35590), (62, 35542), (67, 35464),

Gene: Scamp\_51 Start: 36343, Stop: 35447, Start Num: 2

Candidate Starts for Scamp\_51:

(Start: 2 @36343 has 135 MA's), (Start: 4 @36331 has 2 MA's), (5, 36322), (6, 36319), (11, 36241), (12, 36205), (14, 36169), (17, 36133), (25, 36031), (26, 36019), (48, 35725), (49, 35686), (56, 35617), (58, 35596), (59, 35590), (62, 35542), (67, 35464),

Gene: SenorClean\_49 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for SenorClean\_49:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (12, 36203), (14, 36167), (17, 36131), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Shaka\_51 Start: 36338, Stop: 35442, Start Num: 2

Candidate Starts for Shaka\_51:

(Start: 2 @36338 has 135 MA's), (Start: 4 @36326 has 2 MA's), (5, 36317), (6, 36314), (11, 36236), (12, 36200), (14, 36164), (17, 36128), (22, 36068), (25, 36026), (26, 36014), (48, 35720), (49, 35681), (56, 35612), (58, 35591), (59, 35585), (62, 35537), (67, 35459),

Gene: Sheen\_53 Start: 38761, Stop: 37871, Start Num: 3

Candidate Starts for Sheen\_53:

(Start: 3 @38761 has 5 MA's), (10, 38677), (13, 38605), (16, 38563), (20, 38521), (24, 38455), (25, 38452), (31, 38371), (35, 38341), (36, 38320), (37, 38308), (39, 38296), (41, 38263), (44, 38209), (45, 38197), (46, 38167), (48, 38146), (49, 38107), (50, 38092), (51, 38089), (59, 38014), (62, 37966), (65, 37930), (67, 37888),

Gene: SheldonCooper\_53 Start: 36778, Stop: 35882, Start Num: 2

Candidate Starts for SheldonCooper\_53:

(Start: 2 @36778 has 135 MA's), (Start: 4 @36766 has 2 MA's), (5, 36757), (6, 36754), (11, 36676), (14, 36604), (17, 36568), (25, 36466), (26, 36454), (48, 36160), (49, 36121), (56, 36052), (58, 36031), (59, 36025), (62, 35977), (67, 35899),

Gene: Shygu2\_50 Start: 36314, Stop: 35418, Start Num: 2

Candidate Starts for Shygu2\_50:

(Start: 2 @36314 has 135 MA's), (5, 36293), (6, 36290), (14, 36140), (17, 36104), (25, 36002), (26, 35990), (30, 35924), (32, 35915), (34, 35894), (40, 35828), (48, 35696), (49, 35657), (56, 35588), (58, 35567), (59, 35561), (62, 35513), (65, 35477), (67, 35435),

Gene: Skipitt\_50 Start: 36335, Stop: 35439, Start Num: 2

Candidate Starts for Skipitt\_50:

(Start: 2 @36335 has 135 MA's), (Start: 4 @36323 has 2 MA's), (5, 36314), (6, 36311), (11, 36233), (12, 36197), (14, 36161), (17, 36125), (22, 36065), (25, 36023), (26, 36011), (48, 35717), (49, 35678), (56, 35609), (58, 35588), (59, 35582), (62, 35534), (67, 35456),

Gene: Sparxx\_52 Start: 36336, Stop: 35440, Start Num: 2

Candidate Starts for Sparxx\_52:

(Start: 2 @36336 has 135 MA's), (Start: 4 @36324 has 2 MA's), (5, 36315), (6, 36312), (11, 36234), (12, 36198), (14, 36162), (17, 36126), (25, 36024), (26, 36012), (48, 35718), (49, 35679), (56, 35610), (58, 35589), (59, 35583), (62, 35535), (67, 35457),

Gene: Spino\_50 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for Spino\_50:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (12, 36203), (14, 36167), (17, 36131), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Stasia\_50 Start: 36217, Stop: 35321, Start Num: 2

Candidate Starts for Stasia\_50:

(Start: 2 @36217 has 135 MA's), (Start: 4 @36205 has 2 MA's), (5, 36196), (11, 36115), (12, 36079), (14, 36043), (25, 35905), (48, 35599), (49, 35560), (56, 35491), (59, 35464), (62, 35416), (63, 35413), (67, 35338),

Gene: Stink\_50 Start: 36068, Stop: 35172, Start Num: 2

Candidate Starts for Stink\_50:

(Start: 2 @36068 has 135 MA's), (Start: 4 @36056 has 2 MA's), (5, 36047), (6, 36044), (11, 35966), (12, 35930), (14, 35894), (22, 35798), (25, 35756), (26, 35744), (48, 35450), (49, 35411), (56, 35342), (58, 35321), (59, 35315), (62, 35267), (63, 35264), (65, 35231), (66, 35192), (67, 35189),

Gene: Taquarus\_51 Start: 36344, Stop: 35448, Start Num: 2

Candidate Starts for Taquarus\_51:

(Start: 2 @36344 has 135 MA's), (Start: 4 @36332 has 2 MA's), (5, 36323), (6, 36320), (11, 36242), (12, 36206), (14, 36170), (17, 36134), (22, 36074), (25, 36032), (26, 36020), (48, 35726), (49, 35687), (56, 35618), (58, 35597), (59, 35591), (62, 35543), (67, 35465),

Gene: Thanksgivukkah\_50 Start: 36339, Stop: 35443, Start Num: 2

Candidate Starts for Thanksgivukkah\_50:

(Start: 2 @36339 has 135 MA's), (Start: 4 @36327 has 2 MA's), (5, 36318), (6, 36315), (11, 36237), (12, 36201), (14, 36165), (17, 36129), (25, 36027), (26, 36015), (48, 35721), (49, 35682), (56, 35613), (58, 35592), (59, 35586), (62, 35538), (67, 35460),

Gene: Timshel\_49 Start: 37554, Stop: 36655, Start Num: 3

Candidate Starts for Timshel\_49:

(Start: 3 @37554 has 5 MA's), (7, 37512), (10, 37470), (15, 37368), (23, 37275), (25, 37245), (29, 37191), (30, 37167), (36, 37113), (38, 37092), (41, 37056), (47, 36942), (48, 36939), (49, 36900), (50,

36885), (52, 36870), (55, 36831), (57, 36819), (62, 36750), (65, 36714), (66, 36675), (67, 36672), (68, 36660),

Gene: TinaFeyge\_51 Start: 36336, Stop: 35440, Start Num: 2

Candidate Starts for TinaFeyge\_51:

(Start: 2 @36336 has 135 MA's), (Start: 4 @36324 has 2 MA's), (5, 36315), (6, 36312), (11, 36234), (12, 36198), (14, 36162), (17, 36126), (25, 36024), (26, 36012), (48, 35718), (49, 35679), (56, 35610), (58, 35589), (59, 35583), (62, 35535), (67, 35457),

Gene: Tinybot\_50 Start: 36368, Stop: 35472, Start Num: 2

Candidate Starts for Tinybot\_50:

(Start: 2 @36368 has 135 MA's), (Start: 4 @36356 has 2 MA's), (5, 36347), (6, 36344), (11, 36266), (12, 36230), (14, 36194), (17, 36158), (25, 36056), (26, 36044), (48, 35750), (49, 35711), (56, 35642), (58, 35621), (59, 35615), (62, 35567), (67, 35489),

Gene: TiroTheta9\_51 Start: 36323, Stop: 35439, Start Num: 4

Candidate Starts for TiroTheta9\_51:

(Start: 2 @36335 has 135 MA's), (Start: 4 @36323 has 2 MA's), (5, 36314), (6, 36311), (11, 36233), (12, 36197), (14, 36161), (17, 36125), (25, 36023), (26, 36011), (48, 35717), (49, 35678), (56, 35609), (58, 35588), (59, 35582), (62, 35534), (67, 35456),

Gene: Toro\_55 Start: 38873, Stop: 37983, Start Num: 3

Candidate Starts for Toro\_55:

(Start: 3 @38873 has 5 MA's), (10, 38789), (13, 38717), (16, 38675), (20, 38633), (24, 38567), (25, 38564), (31, 38483), (35, 38453), (36, 38432), (37, 38420), (39, 38408), (41, 38375), (44, 38321), (45, 38309), (46, 38279), (48, 38258), (49, 38219), (50, 38204), (51, 38201), (59, 38126), (62, 38078), (65, 38042), (67, 38000),

Gene: TroyPia\_52 Start: 36339, Stop: 35443, Start Num: 2

Candidate Starts for TroyPia\_52:

(Start: 2 @36339 has 135 MA's), (Start: 4 @36327 has 2 MA's), (5, 36318), (6, 36315), (11, 36237), (14, 36165), (17, 36129), (22, 36069), (25, 36027), (26, 36015), (48, 35721), (49, 35682), (56, 35613), (58, 35592), (59, 35586), (62, 35538), (67, 35460),

Gene: TygerBlood\_51 Start: 36341, Stop: 35445, Start Num: 2

Candidate Starts for TygerBlood\_51:

(Start: 2 @36341 has 135 MA's), (Start: 4 @36329 has 2 MA's), (5, 36320), (6, 36317), (11, 36239), (14, 36167), (17, 36131), (25, 36029), (26, 36017), (48, 35723), (49, 35684), (56, 35615), (58, 35594), (59, 35588), (62, 35540), (67, 35462),

Gene: Ulysses\_50 Start: 36018, Stop: 35122, Start Num: 2

Candidate Starts for Ulysses\_50:

(Start: 2 @36018 has 135 MA's), (Start: 4 @36006 has 2 MA's), (5, 35997), (6, 35994), (11, 35916), (12, 35880), (14, 35844), (17, 35808), (25, 35706), (26, 35694), (48, 35400), (49, 35361), (56, 35292), (58, 35271), (59, 35265), (62, 35217), (67, 35139),

Gene: Wander\_51 Start: 36338, Stop: 35442, Start Num: 2

Candidate Starts for Wander\_51:

(Start: 2 @36338 has 135 MA's), (Start: 4 @36326 has 2 MA's), (5, 36317), (6, 36314), (11, 36236), (14, 36164), (17, 36128), (22, 36068), (25, 36026), (26, 36014), (48, 35720), (49, 35681), (56, 35612), (58, 35591), (59, 35585), (62, 35537), (67, 35459),

Gene: Wilbur\_51 Start: 36338, Stop: 35442, Start Num: 2

Candidate Starts for Wilbur\_51:

(Start: 2 @36338 has 135 MA's), (Start: 4 @36326 has 2 MA's), (5, 36317), (6, 36314), (11, 36236), (12, 36200), (14, 36164), (17, 36128), (25, 36026), (26, 36014), (48, 35720), (49, 35681), (56, 35612), (58, 35591), (59, 35585), (62, 35537), (67, 35459),

Gene: Wile\_50 Start: 36321, Stop: 35437, Start Num: 2

Candidate Starts for Wile\_50:

(Start: 2 @36321 has 135 MA's), (5, 36300), (14, 36147), (17, 36111), (25, 36009), (26, 35997), (40, 35847), (48, 35715), (49, 35676), (56, 35607), (59, 35580), (62, 35532), (65, 35496), (66, 35457), (67, 35454),

Gene: Wizard007\_51 Start: 36346, Stop: 35450, Start Num: 2

Candidate Starts for Wizard007\_51:

(Start: 2 @36346 has 135 MA's), (Start: 4 @36334 has 2 MA's), (5, 36325), (6, 36322), (11, 36244), (12, 36208), (14, 36172), (17, 36136), (25, 36034), (26, 36022), (48, 35728), (49, 35689), (56, 35620), (58, 35599), (59, 35593), (62, 35545), (67, 35467),

Gene: Xena\_49 Start: 36287, Stop: 35403, Start Num: 2

Candidate Starts for Xena\_49:

(Start: 2 @36287 has 135 MA's), (5, 36266), (14, 36113), (17, 36077), (25, 35975), (26, 35963), (40, 35813), (48, 35681), (49, 35642), (56, 35573), (59, 35546), (62, 35498), (65, 35462), (66, 35423), (67, 35420),

Gene: YoSam321\_51 Start: 36335, Stop: 35439, Start Num: 2

Candidate Starts for YoSam321\_51:

(Start: 2 @36335 has 135 MA's), (Start: 4 @36323 has 2 MA's), (5, 36314), (6, 36311), (11, 36233), (14, 36161), (17, 36125), (22, 36065), (25, 36023), (26, 36011), (48, 35717), (49, 35678), (56, 35609), (58, 35588), (59, 35582), (62, 35534), (67, 35456),