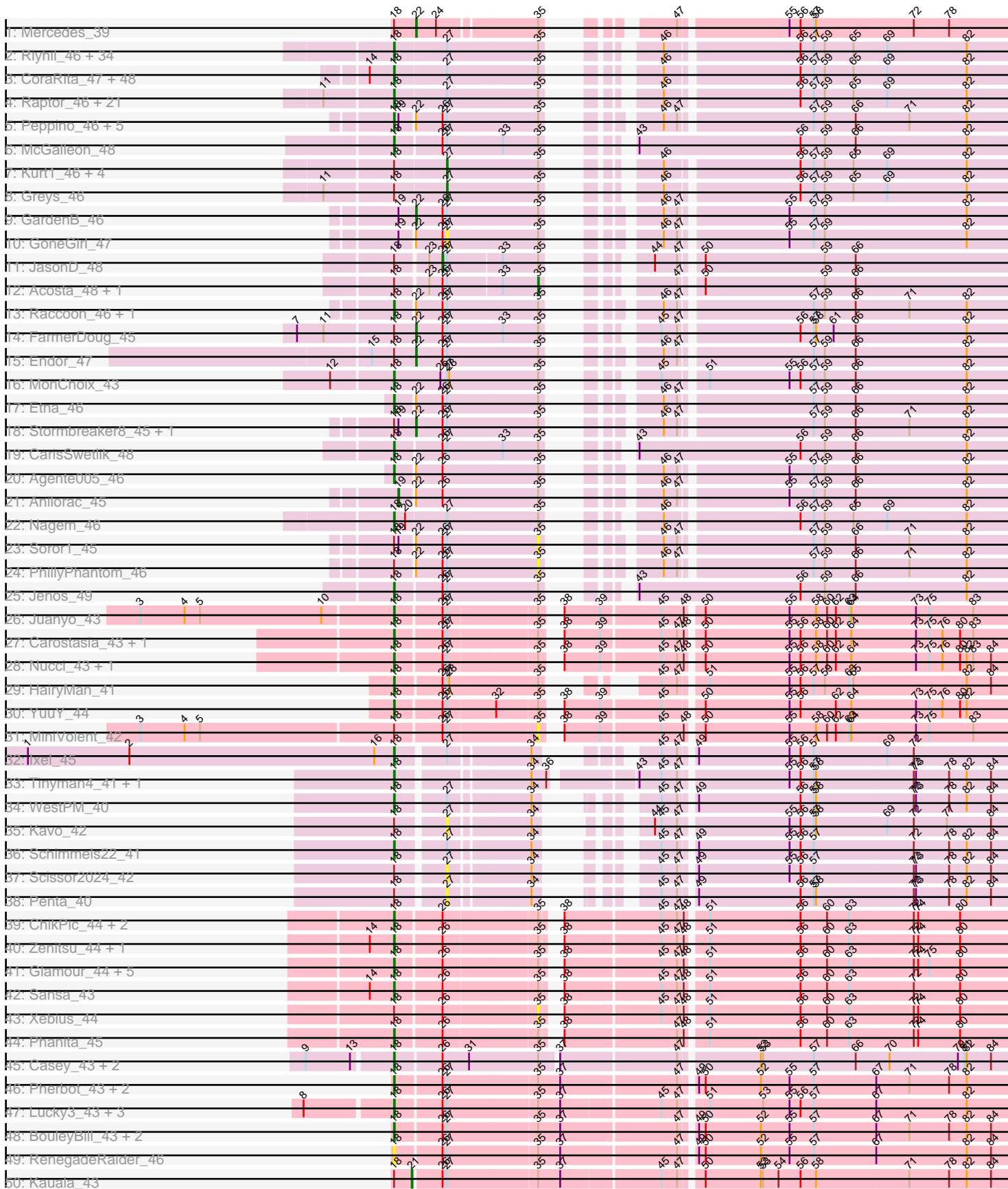


Pham 301070





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 301070 Report

This analysis was run 06/08/26 on database version 649.

Pham number 301070 has 213 members, 17 are drafts.

Phages represented in each track:

- Track 1 : Mercedes\_39
- Track 2 : Riyhil\_46, Dothraki\_46, NickSell\_46, Martin\_47, Bandik\_46, Renzie\_46, TatarkaPM\_46, SJay\_46, Ioannes\_46, Peep\_46, BeautPeep30\_46, SoilGremlin\_47, Inventa\_46, Dave\_46, Rapheph\_46, ParleG\_46, Alyxandracam\_46, OldNelly\_47, Stanktossa\_46, Superfresh\_46, MillyPhilly\_46, Phireproof\_46, Figueroism\_46, Delphidian\_46, Phiderman\_46, MrWorldwide\_46, Antoinette\_46, AlexAdler\_46, Phriends\_46, Pherferi\_46, Shee\_46, Byron23\_47, PhredFlintston\_46, TinSulphur\_47, MaeLinda\_46
- Track 3 : CoraRita\_47, Erla\_45, Aubergine\_45, Kouch\_46, TeddyBear\_45, HankSprout\_46, Garey24\_46, KellyGreen\_47, Kale\_45, Jerbirus\_47, ManRay\_45, StirfryIV\_45, Winzigespinne\_45, Papafritta\_45, Benjalauren\_46, Duocatuli\_45, Espinosa\_45, Baines\_45, Exploradora\_45, Pocket\_45, Bonino\_45, Chamuel\_45, Rog141\_45, Asta\_45, SonOfLevi\_46, Nattles\_45, Ilzat\_45, Gershwin\_45, KannH\_45, JeriBeth\_45, Clancy\_45, Symere\_45, HungryHenry\_45, RosieMae\_45, Sedgewig\_45, Christoph\_45, Etta\_45, Gelo\_45, AranulaLuti\_45, Janus167\_45, StingRay\_45, Oats\_45, Tenda\_45, HanSolo\_45, Calix\_45, Chako\_45, JasperRussell\_45, Gubbabump\_45, Klimt\_46
- Track 4 : Raptor\_46, BonesMcCoy\_46, Ludgate\_46, Thorongil\_46, Strathdee\_46, Vispistious\_46, Oxtober96\_47, Convict\_46, WildNOut\_46, BigRedClifford\_46, Blage\_46, Knox\_46, AxiPup\_46, Teagan\_46, Den3\_46, Gargoyle\_46, Thompsone\_46, PuppyEggo\_46, GoingMerry\_47, Lovelyunicorn\_46, Velene\_46, ShaiHulud\_46
- Track 5 : Peppino\_46, KingJulien\_45, Redfield\_46, Hamlet\_46, Balsa\_45, Schnapsidee\_46
- Track 6 : McGalleon\_48
- Track 7 : Kurt1\_46, SolidSnake\_48, Robinson\_46, Merida02\_48, Zada\_47
- Track 8 : Greys\_46
- Track 9 : GardenB\_46
- Track 10 : GoneGirl\_47
- Track 11 : JasonD\_48
- Track 12 : Acosta\_48, HavenFinLeoSun\_48
- Track 13 : Raccoon\_46, Leafus\_46
- Track 14 : FarmerDoug\_45
- Track 15 : Endor\_47
- Track 16 : MonChoix\_43
- Track 17 : Etna\_46
- Track 18 : Stormbreaker8\_45, BeeBee8\_47

- Track 19 : CarisSwetlik\_48
- Track 20 : Agente005\_46
- Track 21 : Anilorac\_45
- Track 22 : Nagem\_46
- Track 23 : Soror1\_45
- Track 24 : PhillyPhantom\_46
- Track 25 : Jenos\_49
- Track 26 : Juanyo\_43
- Track 27 : Carostasia\_43, Quartz\_44
- Track 28 : Nucci\_43, Mandalorian\_43
- Track 29 : HairyMan\_41
- Track 30 : YuuY\_44
- Track 31 : MiniVolent\_42
- Track 32 : Ixel\_45
- Track 33 : Tinyman4\_41, HerculesXL\_42
- Track 34 : WestPM\_40
- Track 35 : Kavo\_42
- Track 36 : Schimmels22\_41
- Track 37 : Scissor2024\_42
- Track 38 : Penta\_40
- Track 39 : ChikPic\_44, Shamu\_45, Finny\_45
- Track 40 : Zenitsu\_44, MCubed\_44
- Track 41 : Glamour\_44, Eleri\_44, ColaCorta\_44, Andromedas\_44, PSirce\_44, Saratos\_44
- Track 42 : Sansa\_43
- Track 43 : Xebius\_44
- Track 44 : Phanita\_45
- Track 45 : Casey\_43, Pikmin\_43, Pajaza\_43
- Track 46 : Pherbot\_43, Bustleton\_43, Sinatra\_44
- Track 47 : Lucky3\_43, Golden\_43, Guetzie\_44, SirVictor\_44
- Track 48 : BouleyBill\_43, Koji\_43, Jingles\_45
- Track 49 : RenegadeRaider\_46
- Track 50 : Kauala\_43
- Track 51 : PrincePhergus\_43
- Track 52 : Clock\_43, Nebulous\_42
- Track 53 : Alakazam\_44
- Track 54 : QuadZero\_44, LilTerminator\_44, Hasitha\_44, CaptainRex\_44, Greenlvy\_43, BaronJohn\_46, Fulton\_44, Wardwill\_46, Zayuliv\_44, Librie\_44, Zepp\_44
- Track 55 : TwoBits\_43
- Track 56 : Neferthena\_45
- Track 57 : Morigan\_45
- Track 58 : Jemerald\_45, Juicer\_45
- Track 59 : Luna18\_45, KatChan\_45, Chepli\_45
- Track 60 : WilliamStrong\_44
- Track 61 : Schubert\_43
- Track 62 : ChickenKing\_44
- Track 63 : GaeCeo\_46
- Track 64 : Cheeto1\_46

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

The start number called the most often in the published annotations is 18, it was called in 161 of the 196 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agente005\_46, Alakazam\_44, AlexAdler\_46, Alyxandracam\_46, Andromedas\_44, Antoinette\_46, AranulaLuti\_45, Asta\_45, Aubergine\_45, AxiPup\_46, Baines\_45, Balsa\_45, Bandik\_46, BeautPeep30\_46, Benjalauren\_46, BigRedClifford\_46, Blage\_46, BonesMcCoy\_46, Bonino\_45, BouleyBill\_43, Bustleton\_43, Byron23\_47, Calix\_45, CarisSwetlik\_48, Carostasia\_43, Casey\_43, Chako\_45, Chamuel\_45, ChikPic\_44, Christoph\_45, Clancy\_45, Clock\_43, ColaCorta\_44, Convict\_46, CoraRita\_47, Dave\_46, Delphidian\_46, Den3\_46, Dothraki\_46, Duocatuli\_45, Eleri\_44, Erla\_45, Espinosa\_45, Etna\_46, Etta\_45, Exploradora\_45, Figueroism\_46, Finny\_45, Garey24\_46, Gargoyles\_46, Gelo\_45, Gershwin\_45, Glamour\_44, GoingMerry\_47, Golden\_43, Gubbabump\_45, Guetzie\_44, HairyMan\_41, Hamlet\_46, HanSolo\_45, HankSprout\_46, HerculesXL\_42, HungryHenry\_45, Ilzat\_45, Inventa\_46, Ioannes\_46, Ixel\_45, Janus167\_45, JasperRussell\_45, Jenos\_49, Jerbirus\_47, JeriBeth\_45, Jingles\_45, Juanyo\_43, Kale\_45, KannH\_45, KellyGreen\_47, KingJulien\_45, Klimt\_46, Knox\_46, Koji\_43, Kouch\_46, Leafus\_46, Lovelyunicorn\_46, Lucky3\_43, Ludgate\_46, MCubed\_44, MaeLinda\_46, ManRay\_45, Mandalorian\_43, Martin\_47, McGalleon\_48, MillyPhilly\_46, MonChoix\_43, MrWorldwide\_46, Nagem\_46, Nattles\_45, Nebulous\_42, Neferthena\_45, NickSell\_46, Nucci\_43, Oats\_45, OldNelly\_47, Oxtober96\_47, PSirce\_44, Pajaza\_43, Papafritta\_45, ParleG\_46, Peep\_46, Peppino\_46, Phanita\_45, Pherbot\_43, Pherferi\_46, Phiderman\_46, Phireproof\_46, PhredFlintston\_46, Phriends\_46, Pikmin\_43, Pocket\_45, PrincePhergus\_43, PuppyEggo\_46, Quartz\_44, Raccoon\_46, Rappheph\_46, Raptor\_46, Redfield\_46, RenegadeRaider\_46, Renzie\_46, Riyhil\_46, Rog141\_45, RosieMae\_45, SJay\_46, Sansa\_43, Saratos\_44, Schimmels22\_41, Schnapsidee\_46, Schubert\_43, Sedgewig\_45, ShaiHulud\_46, Shamu\_45, Shee\_46, Sinatra\_44, SirVictor\_44, SoilGremlin\_47, SonOfLevi\_46, Stanktossa\_46, StingRay\_45, StirfryIV\_45, Strathdee\_46, Superfresh\_46, Symere\_45, TatarkaPM\_46, Teagan\_46, TeddyBear\_45, Tenda\_45, Thompsone\_46, Thorongil\_46, TinSulphur\_47, Tinyman4\_41, Velene\_46, Vispistious\_46, WestPM\_40, WildNOut\_46, Winzigespinne\_45, YuuY\_44, Zenitsu\_44,

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

- Acosta\_48, BeeBee8\_47, Endor\_47, FarmerDoug\_45, Greys\_46, HavenFinLeoSun\_48, JasonD\_48, Kauala\_43, Kavov\_42, Kurt1\_46, Mercedes\_39, Merida02\_48, MiniVolent\_42, Penta\_40, PhillyPhantom\_46, Robinson\_46, Scissor2024\_42, SolidSnake\_48, Soror1\_45, Stormbreaker8\_45, Xebius\_44, Zada\_47,

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

- Anilorac\_45, BaronJohn\_46, CaptainRex\_44, Cheeto1\_46, Chepli\_45, ChickenKing\_44, Fulton\_44, GaeCeo\_46, GardenB\_46, GoneGirl\_47, Greenlvy\_43, Hasitha\_44, Jemerald\_45, Juicer\_45, KatChan\_45, Librie\_44, LilTerminator\_44, Luna18\_45, Morrigan\_45, QuadZero\_44, TwoBits\_43, Wardwill\_46, WilliamStrong\_44, Zayuliv\_44, Zepp\_44,

### Summary by start number:

Start 17:

- Found in 22 of 213 ( 10.3% ) of genes in pham

- Manual Annotations of this start: 18 of 196
- Called 86.4% of time when present
- Phage (with cluster) where this start called: BaronJohn\_46 (EA5), CaptainRex\_44 (EA5), Chepli\_45 (EA6), Fulton\_44 (EA5), GaeCeo\_46 (EA9), Greenlvy\_43 (EA5), Hasitha\_44 (EA5), Jemerald\_45 (EA6), Juicer\_45 (EA6), KatChan\_45 (EA6), Librie\_44 (EA5), LilTerminator\_44 (EA5), Luna18\_45 (EA6), Morrigan\_45 (EA6), QuadZero\_44 (EA5), TwoBits\_43 (EA5), Wardwill\_46 (EA5), Zayuliv\_44 (EA5), Zepp\_44 (EA5),

Start 18:

- Found in 188 of 213 ( 88.3% ) of genes in pham
- Manual Annotations of this start: 161 of 196
- Called 88.3% of time when present
- Phage (with cluster) where this start called: Agente005\_46 (EA1), Alakazam\_44 (EA5), AlexAdler\_46 (EA1), Alyxandracam\_46 (EA1), Andromedas\_44 (EA2), Antoinette\_46 (EA1), AranulaLuti\_45 (EA1), Asta\_45 (EA1), Aubergine\_45 (EA1), AxiPup\_46 (EA1), Baines\_45 (EA1), Balsa\_45 (EA1), Bandik\_46 (EA1), BeautPeep30\_46 (EA1), Benjalauren\_46 (EA1), BigRedClifford\_46 (EA1), Blage\_46 (EA1), BonesMcCoy\_46 (EA1), Bonino\_45 (EA1), BouleyBill\_43 (EA4), Bustleton\_43 (EA4), Byron23\_47 (EA1), Calix\_45 (EA1), CarisSwetlik\_48 (EA1), Carostasia\_43 (EA10), Casey\_43 (EA3), Chako\_45 (EA1), Chamuel\_45 (EA1), ChikPic\_44 (EA2), Christoph\_45 (EA1), Clancy\_45 (EA1), Clock\_43 (EA5), ColaCorta\_44 (EA2), Convict\_46 (EA1), CoraRita\_47 (EA1), Dave\_46 (EA1), Delphidian\_46 (EA1), Den3\_46 (EA1), Dothraki\_46 (EA1), Duocatuli\_45 (EA1), Eleri\_44 (EA2), Erla\_45 (EA1), Espinosa\_45 (EA1), Etna\_46 (EA1), Etta\_45 (EA1), Exploradora\_45 (EA1), Figueroism\_46 (EA1), Finny\_45 (EA2), Garey24\_46 (EA1), Gargoyle\_46 (EA1), Gelo\_45 (EA1), Gershwin\_45 (EA1), Glamour\_44 (EA2), GoingMerry\_47 (EA1), Golden\_43 (EA4), Gubbabump\_45 (EA1), Guetzie\_44 (EA4), HairyMan\_41 (EA10), Hamlet\_46 (EA1), HanSolo\_45 (EA1), HankSprout\_46 (EA1), HerculesXL\_42 (EA11), HungryHenry\_45 (EA1), Ilzat\_45 (EA1), Inventa\_46 (EA1), Ioannes\_46 (EA1), Ixel\_45 (EA11), Janus167\_45 (EA1), JasperRussell\_45 (EA1), Jenos\_49 (EA1), Jerbirus\_47 (EA1), JeriBeth\_45 (EA1), Jingles\_45 (EA4), Juanyo\_43 (EA10), Kale\_45 (EA1), KannH\_45 (EA1), KellyGreen\_47 (EA1), KingJulien\_45 (EA1), Klimt\_46 (EA1), Knox\_46 (EA1), Koji\_43 (EA4), Kouch\_46 (EA1), Leafus\_46 (EA1), Lovelyunicorn\_46 (EA1), Lucky3\_43 (EA4), Ludgate\_46 (EA1), MCubed\_44 (EA2), MaeLinda\_46 (EA1), ManRay\_45 (EA1), Mandalorian\_43 (EA10), Martin\_47 (EA1), McGalleon\_48 (EA1), MillyPhilly\_46 (EA1), MonChoix\_43 (EA1), MrWorldwide\_46 (EA1), Nagem\_46 (EA1), Nattles\_45 (EA1), Nebulous\_42 (EA5), Neferthena\_45 (EA5), NickSell\_46 (EA1), Nucci\_43 (EA10), Oats\_45 (EA1), OldNelly\_47 (EA1), Oxtober96\_47 (EA1), PSirce\_44 (EA2), Pajaza\_43 (EA3), Papafritta\_45 (EA1), ParleG\_46 (EA1), Peep\_46 (EA1), Peppino\_46 (EA1), Phanita\_45 (EA2), Pherbot\_43 (EA4), Pherferi\_46 (EA1), Phiderman\_46 (EA1), Phireproof\_46 (EA1), PhredFlintston\_46 (EA1), Phriends\_46 (EA1), Pikmin\_43 (EA3), Pocket\_45 (EA1), PrincePhergus\_43 (EA4), PuppyEggo\_46 (EA1), Quartz\_44 (EA10), Raccoon\_46 (EA1), Rapheph\_46 (EA1), Raptor\_46 (EA1), Redfield\_46 (EA1), RenegadeRaider\_46 (EA4), Renzie\_46 (EA1), Riyhil\_46 (EA1), Rog141\_45 (EA1), RosieMae\_45 (EA1), SJay\_46 (EA1), Sansa\_43 (EA2), Saratos\_44 (EA2), Schimmels22\_41 (EA11), Schnapsidee\_46 (EA1), Schubert\_43 (EA8), Sedgewig\_45 (EA1), ShaiHulud\_46 (EA1), Shamu\_45 (EA2), Shee\_46 (EA1), Sinatra\_44 (EA4), SirVictor\_44 (EA4), SoilGremlin\_47 (EA1), SonOfLevi\_46 (EA1), Stanktossa\_46 (EA1), StingRay\_45 (EA1), StirfryIV\_45 (EA1), Strathdee\_46 (EA1), Superfresh\_46 (EA1), Symere\_45 (EA1), TatarkaPM\_46 (EA1), Teagan\_46 (EA1), TeddyBear\_45 (EA1), Tenda\_45 (EA1), Thompsone\_46 (EA1), Thorongil\_46 (EA1), TinSulphur\_47 (EA1), Tinyman4\_41 (EA11), Velene\_46 (EA1), Vispistious\_46 (EA1),

WestPM\_40 (EA11), WildNOOut\_46 (EA1), Winzigespinne\_45 (EA1), YuuY\_44 (EA10), Zenitsu\_44 (EA2),

Start 19:

- Found in 12 of 213 ( 5.6% ) of genes in pham
- Manual Annotations of this start: 1 of 196
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Anilorac\_45 (EA1),

Start 21:

- Found in 2 of 213 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 2 of 196
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kauala\_43 (EA4), WilliamStrong\_44 (EA6),

Start 22:

- Found in 20 of 213 ( 9.4% ) of genes in pham
- Manual Annotations of this start: 6 of 196
- Called 30.0% of time when present
- Phage (with cluster) where this start called: BeeBee8\_47 (EA1), Endor\_47 (EA1), FarmerDoug\_45 (EA1), GardenB\_46 (EA1), Mercedes\_39 (EA), Stormbreaker8\_45 (EA1),

Start 26:

- Found in 67 of 213 ( 31.5% ) of genes in pham
- Manual Annotations of this start: 3 of 196
- Called 4.5% of time when present
- Phage (with cluster) where this start called: Cheeto1\_46 (EA9), ChickenKing\_44 (EA9), JasonD\_48 (EA1),

Start 27:

- Found in 186 of 213 ( 87.3% ) of genes in pham
- Manual Annotations of this start: 4 of 196
- Called 5.4% of time when present
- Phage (with cluster) where this start called: GoneGirl\_47 (EA1), Greys\_46 (EA1), Kavo\_42 (EA11), Kurt1\_46 (EA1), Merida02\_48 (EA1), Penta\_40 (EA11), Robinson\_46 (EA1), Scissor2024\_42 (EA11), SolidSnake\_48 (EA1), Zada\_47 (EA1),

Start 35:

- Found in 205 of 213 ( 96.2% ) of genes in pham
- Manual Annotations of this start: 1 of 196
- Called 2.9% of time when present
- Phage (with cluster) where this start called: Acosta\_48 (EA1), HavenFinLeoSun\_48 (EA1), MiniVolent\_42 (EA10), PhillyPhantom\_46 (EA1), Soror1\_45 (EA1), Xebius\_44 (EA2),

### **Summary by clusters:**

There are 11 clusters represented in this pham: EA11, EA10, EA, EA9, EA8, EA1, EA3, EA2, EA5, EA4, EA6,

Info for manual annotations of cluster EA:

- Start number 22 was manually annotated 1 time for cluster EA.

Info for manual annotations of cluster EA1:

- Start number 18 was manually annotated 117 times for cluster EA1.
- Start number 19 was manually annotated 1 time for cluster EA1.
- Start number 22 was manually annotated 5 times for cluster EA1.
- Start number 26 was manually annotated 1 time for cluster EA1.
- Start number 27 was manually annotated 4 times for cluster EA1.
- Start number 35 was manually annotated 1 time for cluster EA1.

Info for manual annotations of cluster EA10:

- Start number 18 was manually annotated 7 times for cluster EA10.

Info for manual annotations of cluster EA11:

- Start number 18 was manually annotated 5 times for cluster EA11.

Info for manual annotations of cluster EA2:

- Start number 18 was manually annotated 13 times for cluster EA2.

Info for manual annotations of cluster EA3:

- Start number 18 was manually annotated 3 times for cluster EA3.

Info for manual annotations of cluster EA4:

- Start number 18 was manually annotated 11 times for cluster EA4.
- Start number 21 was manually annotated 1 time for cluster EA4.

Info for manual annotations of cluster EA5:

- Start number 17 was manually annotated 11 times for cluster EA5.
- Start number 18 was manually annotated 4 times for cluster EA5.

Info for manual annotations of cluster EA6:

- Start number 17 was manually annotated 6 times for cluster EA6.
- Start number 21 was manually annotated 1 time for cluster EA6.

Info for manual annotations of cluster EA8:

- Start number 18 was manually annotated 1 time for cluster EA8.

Info for manual annotations of cluster EA9:

- Start number 17 was manually annotated 1 time for cluster EA9.
- Start number 26 was manually annotated 2 times for cluster EA9.

### ***Gene Information:***

Gene: Acosta\_48 Start: 33795, Stop: 33262, Start Num: 35

Candidate Starts for Acosta\_48:

(Start: 18 @33975 has 161 MA's), (23, 33936), (Start: 26 @33918 has 3 MA's), (Start: 27 @33912 has 4 MA's), (33, 33843), (Start: 35 @33795 has 1 MA's), (47, 33702), (50, 33681), (59, 33519), (66, 33477),

Gene: Agente005\_46 Start: 33776, Stop: 33048, Start Num: 18

Candidate Starts for Agente005\_46:

(Start: 18 @33776 has 161 MA's), (Start: 22 @33752 has 6 MA's), (Start: 26 @33716 has 3 MA's), (Start: 35 @33587 has 1 MA's), (46, 33506), (47, 33488), (55, 33353), (57, 33320), (59, 33305), (66, 33263), (82, 33113),

Gene: Alakazam\_44 Start: 33194, Stop: 32403, Start Num: 18

Candidate Starts for Alakazam\_44:

(6, 33338), (Start: 18 @33194 has 161 MA's), (Start: 27 @33125 has 4 MA's), (Start: 35 @33005 has 1 MA's), (38, 32993), (39, 32945), (45, 32861), (46, 32858), (47, 32840), (48, 32834), (56, 32687), (60, 32651), (64, 32618), (77, 32489),

Gene: AlexAdler\_46 Start: 33801, Stop: 33076, Start Num: 18

Candidate Starts for AlexAdler\_46:

(Start: 18 @33801 has 161 MA's), (Start: 27 @33732 has 4 MA's), (Start: 35 @33609 has 1 MA's), (46, 33534), (56, 33366), (57, 33348), (59, 33333), (65, 33294), (69, 33249), (82, 33141),

Gene: Alyxandracam\_46 Start: 33811, Stop: 33086, Start Num: 18

Candidate Starts for Alyxandracam\_46:

(Start: 18 @33811 has 161 MA's), (Start: 27 @33742 has 4 MA's), (Start: 35 @33619 has 1 MA's), (46, 33544), (56, 33376), (57, 33358), (59, 33343), (65, 33304), (69, 33259), (82, 33151),

Gene: Andromedas\_44 Start: 32738, Stop: 31959, Start Num: 18

Candidate Starts for Andromedas\_44:

(Start: 18 @32738 has 161 MA's), (Start: 26 @32678 has 3 MA's), (Start: 35 @32555 has 1 MA's), (38, 32546), (45, 32420), (47, 32399), (48, 32393), (51, 32369), (56, 32246), (60, 32210), (63, 32180), (72, 32093), (74, 32087), (75, 32072), (80, 32030),

Gene: Anilorac\_45 Start: 33712, Stop: 32990, Start Num: 19

Candidate Starts for Anilorac\_45:

(Start: 19 @33712 has 1 MA's), (Start: 22 @33694 has 6 MA's), (Start: 26 @33658 has 3 MA's), (Start: 35 @33529 has 1 MA's), (46, 33448), (47, 33430), (55, 33295), (57, 33262), (59, 33247), (66, 33205), (82, 33055),

Gene: Antoinette\_46 Start: 33801, Stop: 33076, Start Num: 18

Candidate Starts for Antoinette\_46:

(Start: 18 @33801 has 161 MA's), (Start: 27 @33732 has 4 MA's), (Start: 35 @33609 has 1 MA's), (46, 33534), (56, 33366), (57, 33348), (59, 33333), (65, 33294), (69, 33249), (82, 33141),

Gene: AranulaLuti\_45 Start: 33498, Stop: 32773, Start Num: 18

Candidate Starts for AranulaLuti\_45:

(14, 33531), (Start: 18 @33498 has 161 MA's), (Start: 27 @33429 has 4 MA's), (Start: 35 @33306 has 1 MA's), (46, 33231), (56, 33063), (57, 33045), (59, 33030), (65, 32991), (69, 32946), (82, 32838),

Gene: Asta\_45 Start: 33508, Stop: 32783, Start Num: 18

Candidate Starts for Asta\_45:

(14, 33541), (Start: 18 @33508 has 161 MA's), (Start: 27 @33439 has 4 MA's), (Start: 35 @33316 has 1 MA's), (46, 33241), (56, 33073), (57, 33055), (59, 33040), (65, 33001), (69, 32956), (82, 32848),

Gene: Aubergine\_45 Start: 33508, Stop: 32783, Start Num: 18

Candidate Starts for Aubergine\_45:

(14, 33541), (Start: 18 @33508 has 161 MA's), (Start: 27 @33439 has 4 MA's), (Start: 35 @33316 has 1 MA's), (46, 33241), (56, 33073), (57, 33055), (59, 33040), (65, 33001), (69, 32956), (82, 32848),

Gene: AxiPup\_46 Start: 33780, Stop: 33055, Start Num: 18

Candidate Starts for AxiPup\_46:

(11, 33867), (Start: 18 @33780 has 161 MA's), (Start: 27 @33711 has 4 MA's), (Start: 35 @33588 has 1 MA's), (46, 33513), (56, 33345), (57, 33327), (59, 33312), (65, 33273), (69, 33228), (82, 33120),

Gene: Baines\_45 Start: 33501, Stop: 32776, Start Num: 18

Candidate Starts for Baines\_45:

(14, 33534), (Start: 18 @33501 has 161 MA's), (Start: 27 @33432 has 4 MA's), (Start: 35 @33309 has 1 MA's), (46, 33234), (56, 33066), (57, 33048), (59, 33033), (65, 32994), (69, 32949), (82, 32841),

Gene: Balsa\_45 Start: 33763, Stop: 33035, Start Num: 18

Candidate Starts for Balsa\_45:

(Start: 18 @33763 has 161 MA's), (Start: 19 @33757 has 1 MA's), (Start: 22 @33739 has 6 MA's), (Start: 26 @33703 has 3 MA's), (Start: 27 @33697 has 4 MA's), (Start: 35 @33574 has 1 MA's), (46, 33493), (47, 33475), (57, 33307), (59, 33292), (66, 33250), (71, 33178), (82, 33100),

Gene: Bandik\_46 Start: 33806, Stop: 33081, Start Num: 18

Candidate Starts for Bandik\_46:

(Start: 18 @33806 has 161 MA's), (Start: 27 @33737 has 4 MA's), (Start: 35 @33614 has 1 MA's), (46, 33539), (56, 33371), (57, 33353), (59, 33338), (65, 33299), (69, 33254), (82, 33146),

Gene: BaronJohn\_46 Start: 31973, Stop: 31191, Start Num: 17

Candidate Starts for BaronJohn\_46:

(Start: 17 @31973 has 18 MA's), (Start: 27 @31907 has 4 MA's), (Start: 35 @31787 has 1 MA's), (38, 31778), (39, 31730), (47, 31631), (48, 31625), (56, 31478), (58, 31457), (63, 31412), (64, 31409), (73, 31322), (80, 31262),

Gene: BeautPeep30\_46 Start: 33812, Stop: 33087, Start Num: 18

Candidate Starts for BeautPeep30\_46:

(Start: 18 @33812 has 161 MA's), (Start: 27 @33743 has 4 MA's), (Start: 35 @33620 has 1 MA's), (46, 33545), (56, 33377), (57, 33359), (59, 33344), (65, 33305), (69, 33260), (82, 33152),

Gene: BeeBee8\_47 Start: 33910, Stop: 33206, Start Num: 22

Candidate Starts for BeeBee8\_47:

(Start: 18 @33934 has 161 MA's), (Start: 19 @33928 has 1 MA's), (Start: 22 @33910 has 6 MA's), (Start: 26 @33874 has 3 MA's), (Start: 27 @33868 has 4 MA's), (Start: 35 @33745 has 1 MA's), (46, 33664), (47, 33646), (57, 33478), (59, 33463), (66, 33421), (71, 33349), (82, 33271),

Gene: Benjalauren\_46 Start: 33514, Stop: 32789, Start Num: 18

Candidate Starts for Benjalauren\_46:

(14, 33547), (Start: 18 @33514 has 161 MA's), (Start: 27 @33445 has 4 MA's), (Start: 35 @33322 has 1 MA's), (46, 33247), (56, 33079), (57, 33061), (59, 33046), (65, 33007), (69, 32962), (82, 32854),

Gene: BigRedClifford\_46 Start: 33810, Stop: 33085, Start Num: 18

Candidate Starts for BigRedClifford\_46:

(11, 33897), (Start: 18 @33810 has 161 MA's), (Start: 27 @33741 has 4 MA's), (Start: 35 @33618 has 1 MA's), (46, 33543), (56, 33375), (57, 33357), (59, 33342), (65, 33303), (69, 33258), (82, 33150),

Gene: Blage\_46 Start: 33810, Stop: 33085, Start Num: 18

Candidate Starts for Blage\_46:

(11, 33897), (Start: 18 @33810 has 161 MA's), (Start: 27 @33741 has 4 MA's), (Start: 35 @33618 has 1 MA's), (46, 33543), (56, 33375), (57, 33357), (59, 33342), (65, 33303), (69, 33258), (82, 33150),

Gene: BonesMcCoy\_46 Start: 33810, Stop: 33085, Start Num: 18

Candidate Starts for BonesMcCoy\_46:

(11, 33897), (Start: 18 @33810 has 161 MA's), (Start: 27 @33741 has 4 MA's), (Start: 35 @33618 has 1 MA's), (46, 33543), (56, 33375), (57, 33357), (59, 33342), (65, 33303), (69, 33258), (82, 33150),

Gene: Bonino\_45 Start: 33487, Stop: 32762, Start Num: 18

Candidate Starts for Bonino\_45:

(14, 33520), (Start: 18 @33487 has 161 MA's), (Start: 27 @33418 has 4 MA's), (Start: 35 @33295 has 1 MA's), (46, 33220), (56, 33052), (57, 33034), (59, 33019), (65, 32980), (69, 32935), (82, 32827),

Gene: BouleyBill\_43 Start: 32763, Stop: 31951, Start Num: 18

Candidate Starts for BouleyBill\_43:

(Start: 18 @32763 has 161 MA's), (Start: 26 @32703 has 3 MA's), (Start: 27 @32697 has 4 MA's), (Start: 35 @32577 has 1 MA's), (37, 32547), (47, 32394), (49, 32379), (50, 32370), (52, 32295), (55, 32256), (57, 32223), (67, 32139), (71, 32094), (78, 32040), (82, 32016), (84, 31983),

Gene: Bustleton\_43 Start: 32557, Stop: 31745, Start Num: 18

Candidate Starts for Bustleton\_43:

(Start: 18 @32557 has 161 MA's), (Start: 26 @32497 has 3 MA's), (Start: 27 @32491 has 4 MA's), (Start: 35 @32371 has 1 MA's), (37, 32341), (47, 32188), (49, 32173), (50, 32164), (52, 32089), (55, 32050), (57, 32017), (67, 31933), (71, 31888), (78, 31834), (82, 31810),

Gene: Byron23\_47 Start: 33809, Stop: 33084, Start Num: 18

Candidate Starts for Byron23\_47:

(Start: 18 @33809 has 161 MA's), (Start: 27 @33740 has 4 MA's), (Start: 35 @33617 has 1 MA's), (46, 33542), (56, 33374), (57, 33356), (59, 33341), (65, 33302), (69, 33257), (82, 33149),

Gene: Calix\_45 Start: 33494, Stop: 32769, Start Num: 18

Candidate Starts for Calix\_45:

(14, 33527), (Start: 18 @33494 has 161 MA's), (Start: 27 @33425 has 4 MA's), (Start: 35 @33302 has 1 MA's), (46, 33227), (56, 33059), (57, 33041), (59, 33026), (65, 32987), (69, 32942), (82, 32834),

Gene: CaptainRex\_44 Start: 31206, Stop: 30424, Start Num: 17

Candidate Starts for CaptainRex\_44:

(Start: 17 @31206 has 18 MA's), (Start: 27 @31140 has 4 MA's), (Start: 35 @31020 has 1 MA's), (38, 31011), (39, 30963), (47, 30864), (48, 30858), (56, 30711), (58, 30690), (63, 30645), (64, 30642), (73, 30555), (80, 30495),

Gene: CarisSwetlik\_48 Start: 34350, Stop: 33610, Start Num: 18

Candidate Starts for CarisSwetlik\_48:

(Start: 18 @34350 has 161 MA's), (Start: 26 @34290 has 3 MA's), (Start: 27 @34284 has 4 MA's), (33, 34209), (Start: 35 @34161 has 1 MA's), (43, 34119), (56, 33900), (59, 33867), (66, 33825), (82, 33675),

Gene: Carostasia\_43 Start: 32271, Stop: 31492, Start Num: 18

Candidate Starts for Carostasia\_43:

(Start: 18 @32271 has 161 MA's), (Start: 26 @32211 has 3 MA's), (Start: 27 @32205 has 4 MA's), (Start: 35 @32088 has 1 MA's), (38, 32079), (39, 32031), (45, 31953), (47, 31932), (48, 31926), (50, 31908), (55, 31794), (56, 31779), (58, 31758), (60, 31743), (62, 31731), (64, 31710), (73, 31623), (75, 31605), (76, 31587), (80, 31563), (83, 31545),

Gene: Casey\_43 Start: 32217, Stop: 31417, Start Num: 18

Candidate Starts for Casey\_43:

(9, 32328), (13, 32268), (Start: 18 @32217 has 161 MA's), (Start: 26 @32157 has 3 MA's), (31, 32121), (Start: 35 @32028 has 1 MA's), (37, 32010), (47, 31860), (52, 31761), (53, 31758), (57, 31689), (66, 31632), (70, 31587), (79, 31494), (81, 31485), (82, 31482), (84, 31449),

Gene: Chako\_45 Start: 33498, Stop: 32773, Start Num: 18

Candidate Starts for Chako\_45:

(14, 33531), (Start: 18 @33498 has 161 MA's), (Start: 27 @33429 has 4 MA's), (Start: 35 @33306 has 1 MA's), (46, 33231), (56, 33063), (57, 33045), (59, 33030), (65, 32991), (69, 32946), (82, 32838),

Gene: Chamuel\_45 Start: 33520, Stop: 32795, Start Num: 18

Candidate Starts for Chamuel\_45:

(14, 33553), (Start: 18 @33520 has 161 MA's), (Start: 27 @33451 has 4 MA's), (Start: 35 @33328 has 1 MA's), (46, 33253), (56, 33085), (57, 33067), (59, 33052), (65, 33013), (69, 32968), (82, 32860),

Gene: Cheeto1\_46 Start: 33211, Stop: 32546, Start Num: 26

Candidate Starts for Cheeto1\_46:

(Start: 17 @33274 has 18 MA's), (Start: 26 @33211 has 3 MA's), (Start: 35 @33082 has 1 MA's), (47, 32989), (49, 32974), (56, 32836), (57, 32818), (62, 32788), (66, 32761), (78, 32635), (82, 32611),

Gene: Chepli\_45 Start: 32099, Stop: 31398, Start Num: 17

Candidate Starts for Chepli\_45:

(6, 32237), (15, 32126), (Start: 17 @32099 has 18 MA's), (Start: 27 @32036 has 4 MA's), (Start: 35 @31925 has 1 MA's), (45, 31862), (47, 31841), (49, 31826), (50, 31817), (55, 31703), (56, 31688), (63, 31622), (72, 31535), (84, 31430),

Gene: ChickenKing\_44 Start: 33104, Stop: 32439, Start Num: 26

Candidate Starts for ChickenKing\_44:

(Start: 17 @33167 has 18 MA's), (Start: 26 @33104 has 3 MA's), (Start: 35 @32975 has 1 MA's), (47, 32882), (49, 32867), (56, 32729), (57, 32711), (66, 32654), (78, 32528), (82, 32504),

Gene: ChikPic\_44 Start: 32592, Stop: 31813, Start Num: 18

Candidate Starts for ChikPic\_44:

(Start: 18 @32592 has 161 MA's), (Start: 26 @32532 has 3 MA's), (Start: 35 @32409 has 1 MA's), (38, 32400), (45, 32274), (47, 32253), (48, 32247), (51, 32223), (56, 32100), (60, 32064), (63, 32034), (72, 31947), (74, 31941), (80, 31884),

Gene: Christoph\_45 Start: 33507, Stop: 32782, Start Num: 18

Candidate Starts for Christoph\_45:

(14, 33540), (Start: 18 @33507 has 161 MA's), (Start: 27 @33438 has 4 MA's), (Start: 35 @33315 has 1 MA's), (46, 33240), (56, 33072), (57, 33054), (59, 33039), (65, 33000), (69, 32955), (82, 32847),

Gene: Clancy\_45 Start: 33543, Stop: 32818, Start Num: 18

Candidate Starts for Clancy\_45:

(14, 33576), (Start: 18 @33543 has 161 MA's), (Start: 27 @33474 has 4 MA's), (Start: 35 @33351 has 1 MA's), (46, 33276), (56, 33108), (57, 33090), (59, 33075), (65, 33036), (69, 32991), (82, 32883),

Gene: Clock\_43 Start: 33933, Stop: 33151, Start Num: 18

Candidate Starts for Clock\_43:

(Start: 18 @33933 has 161 MA's), (Start: 27 @33864 has 4 MA's), (Start: 35 @33747 has 1 MA's), (38, 33735), (39, 33687), (42, 33651), (45, 33609), (47, 33588), (48, 33582), (55, 33450), (58, 33414), (60, 33399), (64, 33366),

Gene: ColaCorta\_44 Start: 32738, Stop: 31959, Start Num: 18

Candidate Starts for ColaCorta\_44:

(Start: 18 @32738 has 161 MA's), (Start: 26 @32678 has 3 MA's), (Start: 35 @32555 has 1 MA's), (38, 32546), (45, 32420), (47, 32399), (48, 32393), (51, 32369), (56, 32246), (60, 32210), (63, 32180), (72, 32093), (74, 32087), (75, 32072), (80, 32030),

Gene: Convict\_46 Start: 33810, Stop: 33085, Start Num: 18

Candidate Starts for Convict\_46:

(11, 33897), (Start: 18 @33810 has 161 MA's), (Start: 27 @33741 has 4 MA's), (Start: 35 @33618 has 1 MA's), (46, 33543), (56, 33375), (57, 33357), (59, 33342), (65, 33303), (69, 33258), (82, 33150),

Gene: CoraRita\_47 Start: 33513, Stop: 32788, Start Num: 18

Candidate Starts for CoraRita\_47:

(14, 33546), (Start: 18 @33513 has 161 MA's), (Start: 27 @33444 has 4 MA's), (Start: 35 @33321 has 1 MA's), (46, 33246), (56, 33078), (57, 33060), (59, 33045), (65, 33006), (69, 32961), (82, 32853),

Gene: Dave\_46 Start: 33801, Stop: 33076, Start Num: 18

Candidate Starts for Dave\_46:

(Start: 18 @33801 has 161 MA's), (Start: 27 @33732 has 4 MA's), (Start: 35 @33609 has 1 MA's), (46, 33534), (56, 33366), (57, 33348), (59, 33333), (65, 33294), (69, 33249), (82, 33141),

Gene: Delphidian\_46 Start: 33809, Stop: 33084, Start Num: 18

Candidate Starts for Delphidian\_46:

(Start: 18 @33809 has 161 MA's), (Start: 27 @33740 has 4 MA's), (Start: 35 @33617 has 1 MA's), (46, 33542), (56, 33374), (57, 33356), (59, 33341), (65, 33302), (69, 33257), (82, 33149),

Gene: Den3\_46 Start: 33815, Stop: 33090, Start Num: 18

Candidate Starts for Den3\_46:

(11, 33902), (Start: 18 @33815 has 161 MA's), (Start: 27 @33746 has 4 MA's), (Start: 35 @33623 has 1 MA's), (46, 33548), (56, 33380), (57, 33362), (59, 33347), (65, 33308), (69, 33263), (82, 33155),

Gene: Dothraki\_46 Start: 33809, Stop: 33084, Start Num: 18

Candidate Starts for Dothraki\_46:

(Start: 18 @33809 has 161 MA's), (Start: 27 @33740 has 4 MA's), (Start: 35 @33617 has 1 MA's), (46, 33542), (56, 33374), (57, 33356), (59, 33341), (65, 33302), (69, 33257), (82, 33149),

Gene: Duocatuli\_45 Start: 33498, Stop: 32773, Start Num: 18

Candidate Starts for Duocatuli\_45:

(14, 33531), (Start: 18 @33498 has 161 MA's), (Start: 27 @33429 has 4 MA's), (Start: 35 @33306 has 1 MA's), (46, 33231), (56, 33063), (57, 33045), (59, 33030), (65, 32991), (69, 32946), (82, 32838),

Gene: Eleri\_44 Start: 32582, Stop: 31803, Start Num: 18

Candidate Starts for Eleri\_44:

(Start: 18 @32582 has 161 MA's), (Start: 26 @32522 has 3 MA's), (Start: 35 @32399 has 1 MA's), (38, 32390), (45, 32264), (47, 32243), (48, 32237), (51, 32213), (56, 32090), (60, 32054), (63, 32024), (72, 31937), (74, 31931), (75, 31916), (80, 31874),

Gene: Endor\_47 Start: 33982, Stop: 33278, Start Num: 22

Candidate Starts for Endor\_47:

(15, 34036), (Start: 18 @34006 has 161 MA's), (Start: 22 @33982 has 6 MA's), (Start: 26 @33946 has 3 MA's), (Start: 27 @33940 has 4 MA's), (Start: 35 @33817 has 1 MA's), (46, 33736), (47, 33718), (57, 33550), (59, 33535), (66, 33493), (82, 33343),

Gene: Erla\_45 Start: 33491, Stop: 32766, Start Num: 18

Candidate Starts for Erla\_45:

(14, 33524), (Start: 18 @33491 has 161 MA's), (Start: 27 @33422 has 4 MA's), (Start: 35 @33299 has 1 MA's), (46, 33224), (56, 33056), (57, 33038), (59, 33023), (65, 32984), (69, 32939), (82, 32831),

Gene: Espinosa\_45 Start: 33506, Stop: 32781, Start Num: 18

Candidate Starts for Espinosa\_45:

(14, 33539), (Start: 18 @33506 has 161 MA's), (Start: 27 @33437 has 4 MA's), (Start: 35 @33314 has 1 MA's), (46, 33239), (56, 33071), (57, 33053), (59, 33038), (65, 32999), (69, 32954), (82, 32846),

Gene: Etna\_46 Start: 33810, Stop: 33082, Start Num: 18

Candidate Starts for Etna\_46:

(Start: 18 @33810 has 161 MA's), (Start: 22 @33786 has 6 MA's), (Start: 26 @33750 has 3 MA's), (Start: 27 @33744 has 4 MA's), (Start: 35 @33621 has 1 MA's), (46, 33540), (47, 33522), (57, 33354), (59, 33339), (66, 33297), (82, 33147),

Gene: Etta\_45 Start: 33495, Stop: 32770, Start Num: 18

Candidate Starts for Etta\_45:

(14, 33528), (Start: 18 @33495 has 161 MA's), (Start: 27 @33426 has 4 MA's), (Start: 35 @33303 has 1 MA's), (46, 33228), (56, 33060), (57, 33042), (59, 33027), (65, 32988), (69, 32943), (82, 32835),

Gene: Exploradora\_45 Start: 33498, Stop: 32773, Start Num: 18

Candidate Starts for Exploradora\_45:

(14, 33531), (Start: 18 @33498 has 161 MA's), (Start: 27 @33429 has 4 MA's), (Start: 35 @33306 has 1 MA's), (46, 33231), (56, 33063), (57, 33045), (59, 33030), (65, 32991), (69, 32946), (82, 32838),

Gene: FarmerDoug\_45 Start: 33486, Stop: 32788, Start Num: 22

Candidate Starts for FarmerDoug\_45:

(7, 33633), (11, 33597), (Start: 18 @33510 has 161 MA's), (Start: 22 @33486 has 6 MA's), (Start: 26 @33450 has 3 MA's), (Start: 27 @33444 has 4 MA's), (33, 33369), (Start: 35 @33321 has 1 MA's), (45, 33249), (47, 33228), (56, 33078), (57, 33060), (58, 33057), (61, 33033), (66, 33003), (82, 32853),

Gene: Figueroism\_46 Start: 33800, Stop: 33075, Start Num: 18

Candidate Starts for Figueroism\_46:

(Start: 18 @33800 has 161 MA's), (Start: 27 @33731 has 4 MA's), (Start: 35 @33608 has 1 MA's), (46, 33533), (56, 33365), (57, 33347), (59, 33332), (65, 33293), (69, 33248), (82, 33140),

Gene: Finny\_45 Start: 32576, Stop: 31797, Start Num: 18

Candidate Starts for Finny\_45:

(Start: 18 @32576 has 161 MA's), (Start: 26 @32516 has 3 MA's), (Start: 35 @32393 has 1 MA's), (38, 32384), (45, 32258), (47, 32237), (48, 32231), (51, 32207), (56, 32084), (60, 32048), (63, 32018), (72, 31931), (74, 31925), (80, 31868),

Gene: Fulton\_44 Start: 31207, Stop: 30425, Start Num: 17

Candidate Starts for Fulton\_44:

(Start: 17 @31207 has 18 MA's), (Start: 27 @31141 has 4 MA's), (Start: 35 @31021 has 1 MA's), (38, 31012), (39, 30964), (47, 30865), (48, 30859), (56, 30712), (58, 30691), (63, 30646), (64, 30643), (73, 30556), (80, 30496),

Gene: GaeCeo\_46 Start: 33400, Stop: 32672, Start Num: 17

Candidate Starts for GaeCeo\_46:

(Start: 17 @33400 has 18 MA's), (Start: 26 @33337 has 3 MA's), (Start: 35 @33208 has 1 MA's), (47, 33115), (49, 33100), (56, 32962), (57, 32944), (66, 32887), (78, 32761), (82, 32737),

Gene: GardenB\_46 Start: 33727, Stop: 33023, Start Num: 22

Candidate Starts for GardenB\_46:

(Start: 19 @33745 has 1 MA's), (Start: 22 @33727 has 6 MA's), (Start: 26 @33691 has 3 MA's), (Start: 27 @33685 has 4 MA's), (Start: 35 @33562 has 1 MA's), (46, 33481), (47, 33463), (55, 33328), (57, 33295), (59, 33280), (82, 33088),

Gene: Garey24\_46 Start: 33474, Stop: 32749, Start Num: 18

Candidate Starts for Garey24\_46:

(14, 33507), (Start: 18 @33474 has 161 MA's), (Start: 27 @33405 has 4 MA's), (Start: 35 @33282 has 1 MA's), (46, 33207), (56, 33039), (57, 33021), (59, 33006), (65, 32967), (69, 32922), (82, 32814),

Gene: Gargoyle\_46 Start: 33815, Stop: 33090, Start Num: 18

Candidate Starts for Gargoyle\_46:

(11, 33902), (Start: 18 @33815 has 161 MA's), (Start: 27 @33746 has 4 MA's), (Start: 35 @33623 has 1 MA's), (46, 33548), (56, 33380), (57, 33362), (59, 33347), (65, 33308), (69, 33263), (82, 33155),

Gene: Gelo\_45 Start: 33501, Stop: 32776, Start Num: 18

Candidate Starts for Gelo\_45:

(14, 33534), (Start: 18 @33501 has 161 MA's), (Start: 27 @33432 has 4 MA's), (Start: 35 @33309 has 1 MA's), (46, 33234), (56, 33066), (57, 33048), (59, 33033), (65, 32994), (69, 32949), (82, 32841),

Gene: Gershwin\_45 Start: 33508, Stop: 32783, Start Num: 18

Candidate Starts for Gershwin\_45:

(14, 33541), (Start: 18 @33508 has 161 MA's), (Start: 27 @33439 has 4 MA's), (Start: 35 @33316 has 1 MA's), (46, 33241), (56, 33073), (57, 33055), (59, 33040), (65, 33001), (69, 32956), (82, 32848),

Gene: Glamour\_44 Start: 32730, Stop: 31951, Start Num: 18

Candidate Starts for Glamour\_44:

(Start: 18 @32730 has 161 MA's), (Start: 26 @32670 has 3 MA's), (Start: 35 @32547 has 1 MA's), (38, 32538), (45, 32412), (47, 32391), (48, 32385), (51, 32361), (56, 32238), (60, 32202), (63, 32172), (72, 32085), (74, 32079), (75, 32064), (80, 32022),

Gene: GoingMerry\_47 Start: 33793, Stop: 33068, Start Num: 18

Candidate Starts for GoingMerry\_47:

(11, 33880), (Start: 18 @33793 has 161 MA's), (Start: 27 @33724 has 4 MA's), (Start: 35 @33601 has 1 MA's), (46, 33526), (56, 33358), (57, 33340), (59, 33325), (65, 33286), (69, 33241), (82, 33133),

Gene: Golden\_43 Start: 32643, Stop: 31837, Start Num: 18

Candidate Starts for Golden\_43:

(8, 32757), (Start: 18 @32643 has 161 MA's), (Start: 26 @32583 has 3 MA's), (Start: 27 @32577 has 4 MA's), (Start: 35 @32457 has 1 MA's), (37, 32430), (45, 32301), (47, 32280), (51, 32250), (53, 32178), (55, 32142), (56, 32127), (57, 32109), (67, 32025), (82, 31902),

Gene: GoneGirl\_47 Start: 33678, Stop: 33016, Start Num: 27

Candidate Starts for GoneGirl\_47:

(Start: 19 @33738 has 1 MA's), (Start: 22 @33720 has 6 MA's), (Start: 26 @33684 has 3 MA's), (Start: 27 @33678 has 4 MA's), (Start: 35 @33555 has 1 MA's), (46, 33474), (47, 33456), (55, 33321), (57, 33288), (59, 33273), (82, 33081),

Gene: Greenlvy\_43 Start: 31562, Stop: 30780, Start Num: 17

Candidate Starts for Greenlvy\_43:

(Start: 17 @31562 has 18 MA's), (Start: 27 @31496 has 4 MA's), (Start: 35 @31376 has 1 MA's), (38, 31367), (39, 31319), (47, 31220), (48, 31214), (56, 31067), (58, 31046), (63, 31001), (64, 30998), (73,

30911), (80, 30851),

Gene: Greys\_46 Start: 33739, Stop: 33083, Start Num: 27

Candidate Starts for Greys\_46:

(11, 33895), (Start: 18 @33808 has 161 MA's), (Start: 27 @33739 has 4 MA's), (Start: 35 @33616 has 1 MA's), (46, 33541), (56, 33373), (57, 33355), (59, 33340), (65, 33301), (69, 33256), (82, 33148),

Gene: Gubbabump\_45 Start: 33488, Stop: 32763, Start Num: 18

Candidate Starts for Gubbabump\_45:

(14, 33521), (Start: 18 @33488 has 161 MA's), (Start: 27 @33419 has 4 MA's), (Start: 35 @33296 has 1 MA's), (46, 33221), (56, 33053), (57, 33035), (59, 33020), (65, 32981), (69, 32936), (82, 32828),

Gene: Guetzie\_44 Start: 32628, Stop: 31822, Start Num: 18

Candidate Starts for Guetzie\_44:

(8, 32742), (Start: 18 @32628 has 161 MA's), (Start: 26 @32568 has 3 MA's), (Start: 27 @32562 has 4 MA's), (Start: 35 @32442 has 1 MA's), (37, 32415), (45, 32286), (47, 32265), (51, 32235), (53, 32163), (55, 32127), (56, 32112), (57, 32094), (67, 32010), (82, 31887),

Gene: HairyMan\_41 Start: 32161, Stop: 31448, Start Num: 18

Candidate Starts for HairyMan\_41:

(Start: 18 @32161 has 161 MA's), (Start: 26 @32101 has 3 MA's), (Start: 27 @32095 has 4 MA's), (28, 32092), (Start: 35 @31972 has 1 MA's), (45, 31912), (47, 31891), (51, 31861), (55, 31753), (56, 31738), (57, 31720), (59, 31705), (63, 31672), (65, 31666), (82, 31513), (84, 31480),

Gene: Hamlet\_46 Start: 33755, Stop: 33027, Start Num: 18

Candidate Starts for Hamlet\_46:

(Start: 18 @33755 has 161 MA's), (Start: 19 @33749 has 1 MA's), (Start: 22 @33731 has 6 MA's), (Start: 26 @33695 has 3 MA's), (Start: 27 @33689 has 4 MA's), (Start: 35 @33566 has 1 MA's), (46, 33485), (47, 33467), (57, 33299), (59, 33284), (66, 33242), (71, 33170), (82, 33092),

Gene: HanSolo\_45 Start: 33498, Stop: 32773, Start Num: 18

Candidate Starts for HanSolo\_45:

(14, 33531), (Start: 18 @33498 has 161 MA's), (Start: 27 @33429 has 4 MA's), (Start: 35 @33306 has 1 MA's), (46, 33231), (56, 33063), (57, 33045), (59, 33030), (65, 32991), (69, 32946), (82, 32838),

Gene: HankSprout\_46 Start: 33375, Stop: 32650, Start Num: 18

Candidate Starts for HankSprout\_46:

(14, 33408), (Start: 18 @33375 has 161 MA's), (Start: 27 @33306 has 4 MA's), (Start: 35 @33183 has 1 MA's), (46, 33108), (56, 32940), (57, 32922), (59, 32907), (65, 32868), (69, 32823), (82, 32715),

Gene: Hasitha\_44 Start: 31219, Stop: 30437, Start Num: 17

Candidate Starts for Hasitha\_44:

(Start: 17 @31219 has 18 MA's), (Start: 27 @31153 has 4 MA's), (Start: 35 @31033 has 1 MA's), (38, 31024), (39, 30976), (47, 30877), (48, 30871), (56, 30724), (58, 30703), (63, 30658), (64, 30655), (73, 30568), (80, 30508),

Gene: HavenFinLeoSun\_48 Start: 33742, Stop: 33209, Start Num: 35

Candidate Starts for HavenFinLeoSun\_48:

(Start: 18 @33922 has 161 MA's), (23, 33883), (Start: 26 @33865 has 3 MA's), (Start: 27 @33859 has 4 MA's), (33, 33790), (Start: 35 @33742 has 1 MA's), (47, 33649), (50, 33628), (59, 33466), (66, 33424),

Gene: HerculesXL\_42 Start: 31320, Stop: 30547, Start Num: 18

Candidate Starts for HerculesXL\_42:

(Start: 18 @31320 has 161 MA's), (34, 31158), (36, 31140), (43, 31041), (45, 31011), (47, 30990), (55, 30852), (56, 30837), (57, 30819), (58, 30816), (72, 30684), (73, 30681), (78, 30636), (82, 30612), (84, 30579),

Gene: HungryHenry\_45 Start: 33503, Stop: 32778, Start Num: 18

Candidate Starts for HungryHenry\_45:

(14, 33536), (Start: 18 @33503 has 161 MA's), (Start: 27 @33434 has 4 MA's), (Start: 35 @33311 has 1 MA's), (46, 33236), (56, 33068), (57, 33050), (59, 33035), (65, 32996), (69, 32951), (82, 32843),

Gene: Ilzat\_45 Start: 33514, Stop: 32789, Start Num: 18

Candidate Starts for Ilzat\_45:

(14, 33547), (Start: 18 @33514 has 161 MA's), (Start: 27 @33445 has 4 MA's), (Start: 35 @33322 has 1 MA's), (46, 33247), (56, 33079), (57, 33061), (59, 33046), (65, 33007), (69, 32962), (82, 32854),

Gene: Inventa\_46 Start: 33806, Stop: 33081, Start Num: 18

Candidate Starts for Inventa\_46:

(Start: 18 @33806 has 161 MA's), (Start: 27 @33737 has 4 MA's), (Start: 35 @33614 has 1 MA's), (46, 33539), (56, 33371), (57, 33353), (59, 33338), (65, 33299), (69, 33254), (82, 33146),

Gene: Ioannes\_46 Start: 33810, Stop: 33085, Start Num: 18

Candidate Starts for Ioannes\_46:

(Start: 18 @33810 has 161 MA's), (Start: 27 @33741 has 4 MA's), (Start: 35 @33618 has 1 MA's), (46, 33543), (56, 33375), (57, 33357), (59, 33342), (65, 33303), (69, 33258), (82, 33150),

Gene: Ixel\_45 Start: 32997, Stop: 32293, Start Num: 18

Candidate Starts for Ixel\_45:

(1, 33495), (2, 33357), (16, 33024), (Start: 18 @32997 has 161 MA's), (Start: 27 @32937 has 4 MA's), (34, 32835), (45, 32757), (47, 32736), (49, 32721), (55, 32598), (56, 32583), (57, 32565), (69, 32466), (72, 32430),

Gene: Janus167\_45 Start: 33495, Stop: 32770, Start Num: 18

Candidate Starts for Janus167\_45:

(14, 33528), (Start: 18 @33495 has 161 MA's), (Start: 27 @33426 has 4 MA's), (Start: 35 @33303 has 1 MA's), (46, 33228), (56, 33060), (57, 33042), (59, 33027), (65, 32988), (69, 32943), (82, 32835),

Gene: JasonD\_48 Start: 33846, Stop: 33190, Start Num: 26

Candidate Starts for JasonD\_48:

(Start: 18 @33903 has 161 MA's), (23, 33864), (Start: 26 @33846 has 3 MA's), (Start: 27 @33840 has 4 MA's), (33, 33771), (Start: 35 @33723 has 1 MA's), (44, 33660), (47, 33630), (50, 33609), (59, 33447), (66, 33405),

Gene: JasperRussell\_45 Start: 33498, Stop: 32773, Start Num: 18

Candidate Starts for JasperRussell\_45:

(14, 33531), (Start: 18 @33498 has 161 MA's), (Start: 27 @33429 has 4 MA's), (Start: 35 @33306 has 1 MA's), (46, 33231), (56, 33063), (57, 33045), (59, 33030), (65, 32991), (69, 32946), (82, 32838),

Gene: Jemerald\_45 Start: 33166, Stop: 32465, Start Num: 17

Candidate Starts for Jemerald\_45:

(Start: 17 @33166 has 18 MA's), (23, 33121), (Start: 27 @33097 has 4 MA's), (29, 33091), (Start: 35 @32974 has 1 MA's), (43, 32959), (45, 32929), (47, 32908), (56, 32755), (82, 32530), (84, 32497),

Gene: Jenos\_49 Start: 34633, Stop: 33893, Start Num: 18

Candidate Starts for Jenos\_49:

(Start: 18 @34633 has 161 MA's), (Start: 26 @34573 has 3 MA's), (Start: 27 @34567 has 4 MA's), (Start: 35 @34444 has 1 MA's), (43, 34402), (56, 34183), (59, 34150), (66, 34108), (82, 33958),

Gene: Jerbirus\_47 Start: 33498, Stop: 32773, Start Num: 18

Candidate Starts for Jerbirus\_47:

(14, 33531), (Start: 18 @33498 has 161 MA's), (Start: 27 @33429 has 4 MA's), (Start: 35 @33306 has 1 MA's), (46, 33231), (56, 33063), (57, 33045), (59, 33030), (65, 32991), (69, 32946), (82, 32838),

Gene: JeriBeth\_45 Start: 33361, Stop: 32636, Start Num: 18

Candidate Starts for JeriBeth\_45:

(14, 33394), (Start: 18 @33361 has 161 MA's), (Start: 27 @33292 has 4 MA's), (Start: 35 @33169 has 1 MA's), (46, 33094), (56, 32926), (57, 32908), (59, 32893), (65, 32854), (69, 32809), (82, 32701),

Gene: Jingles\_45 Start: 32772, Stop: 31960, Start Num: 18

Candidate Starts for Jingles\_45:

(Start: 18 @32772 has 161 MA's), (Start: 26 @32712 has 3 MA's), (Start: 27 @32706 has 4 MA's), (Start: 35 @32586 has 1 MA's), (37, 32556), (47, 32403), (49, 32388), (50, 32379), (52, 32304), (55, 32265), (57, 32232), (67, 32148), (71, 32103), (78, 32049), (82, 32025), (84, 31992),

Gene: Juanyo\_43 Start: 32202, Stop: 31423, Start Num: 18

Candidate Starts for Juanyo\_43:

(3, 32538), (4, 32478), (5, 32457), (10, 32292), (Start: 18 @32202 has 161 MA's), (Start: 26 @32142 has 3 MA's), (Start: 27 @32136 has 4 MA's), (Start: 35 @32019 has 1 MA's), (38, 32010), (39, 31962), (45, 31884), (48, 31857), (50, 31839), (55, 31725), (58, 31689), (60, 31674), (62, 31662), (63, 31644), (64, 31641), (73, 31554), (75, 31536), (83, 31476),

Gene: Juicer\_45 Start: 33166, Stop: 32465, Start Num: 17

Candidate Starts for Juicer\_45:

(Start: 17 @33166 has 18 MA's), (23, 33121), (Start: 27 @33097 has 4 MA's), (29, 33091), (Start: 35 @32974 has 1 MA's), (43, 32959), (45, 32929), (47, 32908), (56, 32755), (82, 32530), (84, 32497),

Gene: Kale\_45 Start: 33510, Stop: 32785, Start Num: 18

Candidate Starts for Kale\_45:

(14, 33543), (Start: 18 @33510 has 161 MA's), (Start: 27 @33441 has 4 MA's), (Start: 35 @33318 has 1 MA's), (46, 33243), (56, 33075), (57, 33057), (59, 33042), (65, 33003), (69, 32958), (82, 32850),

Gene: KannH\_45 Start: 33498, Stop: 32773, Start Num: 18

Candidate Starts for KannH\_45:

(14, 33531), (Start: 18 @33498 has 161 MA's), (Start: 27 @33429 has 4 MA's), (Start: 35 @33306 has 1 MA's), (46, 33231), (56, 33063), (57, 33045), (59, 33030), (65, 32991), (69, 32946), (82, 32838),

Gene: KatChan\_45 Start: 32111, Stop: 31410, Start Num: 17

Candidate Starts for KatChan\_45:

(6, 32249), (15, 32138), (Start: 17 @32111 has 18 MA's), (Start: 27 @32048 has 4 MA's), (Start: 35 @31937 has 1 MA's), (45, 31874), (47, 31853), (49, 31838), (50, 31829), (55, 31715), (56, 31700), (63, 31634), (72, 31547), (84, 31442),

Gene: Kauala\_43 Start: 32902, Stop: 32117, Start Num: 21

Candidate Starts for Kauala\_43:

(Start: 18 @32926 has 161 MA's), (Start: 21 @32902 has 2 MA's), (Start: 26 @32866 has 3 MA's), (Start: 27 @32860 has 4 MA's), (Start: 35 @32740 has 1 MA's), (37, 32710), (45, 32581), (47, 32560), (50, 32536), (52, 32461), (53, 32458), (54, 32437), (56, 32407), (58, 32386), (71, 32260), (78, 32206),

(82, 32182), (84, 32149),

Gene: Kavo\_42 Start: 31304, Stop: 30669, Start Num: 27

Candidate Starts for Kavo\_42:

(Start: 18 @31364 has 161 MA's), (Start: 27 @31304 has 4 MA's), (34, 31202), (44, 31142), (45, 31133), (47, 31112), (55, 30974), (56, 30959), (57, 30941), (58, 30938), (69, 30842), (72, 30806), (77, 30761), (84, 30701),

Gene: KellyGreen\_47 Start: 33492, Stop: 32767, Start Num: 18

Candidate Starts for KellyGreen\_47:

(14, 33525), (Start: 18 @33492 has 161 MA's), (Start: 27 @33423 has 4 MA's), (Start: 35 @33300 has 1 MA's), (46, 33225), (56, 33057), (57, 33039), (59, 33024), (65, 32985), (69, 32940), (82, 32832),

Gene: KingJulien\_45 Start: 33646, Stop: 32918, Start Num: 18

Candidate Starts for KingJulien\_45:

(Start: 18 @33646 has 161 MA's), (Start: 19 @33640 has 1 MA's), (Start: 22 @33622 has 6 MA's), (Start: 26 @33586 has 3 MA's), (Start: 27 @33580 has 4 MA's), (Start: 35 @33457 has 1 MA's), (46, 33376), (47, 33358), (57, 33190), (59, 33175), (66, 33133), (71, 33061), (82, 32983),

Gene: Klimt\_46 Start: 33526, Stop: 32801, Start Num: 18

Candidate Starts for Klimt\_46:

(14, 33559), (Start: 18 @33526 has 161 MA's), (Start: 27 @33457 has 4 MA's), (Start: 35 @33334 has 1 MA's), (46, 33259), (56, 33091), (57, 33073), (59, 33058), (65, 33019), (69, 32974), (82, 32866),

Gene: Knox\_46 Start: 33810, Stop: 33085, Start Num: 18

Candidate Starts for Knox\_46:

(11, 33897), (Start: 18 @33810 has 161 MA's), (Start: 27 @33741 has 4 MA's), (Start: 35 @33618 has 1 MA's), (46, 33543), (56, 33375), (57, 33357), (59, 33342), (65, 33303), (69, 33258), (82, 33150),

Gene: Koji\_43 Start: 32928, Stop: 32116, Start Num: 18

Candidate Starts for Koji\_43:

(Start: 18 @32928 has 161 MA's), (Start: 26 @32868 has 3 MA's), (Start: 27 @32862 has 4 MA's), (Start: 35 @32742 has 1 MA's), (37, 32712), (47, 32559), (49, 32544), (50, 32535), (52, 32460), (55, 32421), (57, 32388), (67, 32304), (71, 32259), (78, 32205), (82, 32181), (84, 32148),

Gene: Kouch\_46 Start: 33498, Stop: 32773, Start Num: 18

Candidate Starts for Kouch\_46:

(14, 33531), (Start: 18 @33498 has 161 MA's), (Start: 27 @33429 has 4 MA's), (Start: 35 @33306 has 1 MA's), (46, 33231), (56, 33063), (57, 33045), (59, 33030), (65, 32991), (69, 32946), (82, 32838),

Gene: Kurt1\_46 Start: 33737, Stop: 33081, Start Num: 27

Candidate Starts for Kurt1\_46:

(Start: 18 @33806 has 161 MA's), (Start: 27 @33737 has 4 MA's), (Start: 35 @33614 has 1 MA's), (46, 33539), (56, 33371), (57, 33353), (59, 33338), (65, 33299), (69, 33254), (82, 33146),

Gene: Leafus\_46 Start: 33909, Stop: 33181, Start Num: 18

Candidate Starts for Leafus\_46:

(Start: 18 @33909 has 161 MA's), (Start: 22 @33885 has 6 MA's), (Start: 26 @33849 has 3 MA's), (Start: 27 @33843 has 4 MA's), (Start: 35 @33720 has 1 MA's), (46, 33639), (47, 33621), (57, 33453), (59, 33438), (66, 33396), (71, 33324), (82, 33246),

Gene: Librie\_44 Start: 31206, Stop: 30424, Start Num: 17

Candidate Starts for Librie\_44:

(Start: 17 @31206 has 18 MA's), (Start: 27 @31140 has 4 MA's), (Start: 35 @31020 has 1 MA's), (38, 31011), (39, 30963), (47, 30864), (48, 30858), (56, 30711), (58, 30690), (63, 30645), (64, 30642), (73, 30555), (80, 30495),

Gene: LilTerminator\_44 Start: 31228, Stop: 30446, Start Num: 17

Candidate Starts for LilTerminator\_44:

(Start: 17 @31228 has 18 MA's), (Start: 27 @31162 has 4 MA's), (Start: 35 @31042 has 1 MA's), (38, 31033), (39, 30985), (47, 30886), (48, 30880), (56, 30733), (58, 30712), (63, 30667), (64, 30664), (73, 30577), (80, 30517),

Gene: Lovelyunicorn\_46 Start: 33811, Stop: 33086, Start Num: 18

Candidate Starts for Lovelyunicorn\_46:

(11, 33898), (Start: 18 @33811 has 161 MA's), (Start: 27 @33742 has 4 MA's), (Start: 35 @33619 has 1 MA's), (46, 33544), (56, 33376), (57, 33358), (59, 33343), (65, 33304), (69, 33259), (82, 33151),

Gene: Lucky3\_43 Start: 32643, Stop: 31837, Start Num: 18

Candidate Starts for Lucky3\_43:

(8, 32757), (Start: 18 @32643 has 161 MA's), (Start: 26 @32583 has 3 MA's), (Start: 27 @32577 has 4 MA's), (Start: 35 @32457 has 1 MA's), (37, 32430), (45, 32301), (47, 32280), (51, 32250), (53, 32178), (55, 32142), (56, 32127), (57, 32109), (67, 32025), (82, 31902),

Gene: Ludgate\_46 Start: 33809, Stop: 33084, Start Num: 18

Candidate Starts for Ludgate\_46:

(11, 33896), (Start: 18 @33809 has 161 MA's), (Start: 27 @33740 has 4 MA's), (Start: 35 @33617 has 1 MA's), (46, 33542), (56, 33374), (57, 33356), (59, 33341), (65, 33302), (69, 33257), (82, 33149),

Gene: Luna18\_45 Start: 32111, Stop: 31410, Start Num: 17

Candidate Starts for Luna18\_45:

(6, 32249), (15, 32138), (Start: 17 @32111 has 18 MA's), (Start: 27 @32048 has 4 MA's), (Start: 35 @31937 has 1 MA's), (45, 31874), (47, 31853), (49, 31838), (50, 31829), (55, 31715), (56, 31700), (63, 31634), (72, 31547), (84, 31442),

Gene: MCubed\_44 Start: 32607, Stop: 31828, Start Num: 18

Candidate Starts for MCubed\_44:

(14, 32640), (Start: 18 @32607 has 161 MA's), (Start: 26 @32547 has 3 MA's), (Start: 35 @32424 has 1 MA's), (38, 32415), (45, 32289), (47, 32268), (48, 32262), (51, 32238), (56, 32115), (60, 32079), (63, 32049), (72, 31962), (74, 31956), (80, 31899),

Gene: MaeLinda\_46 Start: 33810, Stop: 33085, Start Num: 18

Candidate Starts for MaeLinda\_46:

(Start: 18 @33810 has 161 MA's), (Start: 27 @33741 has 4 MA's), (Start: 35 @33618 has 1 MA's), (46, 33543), (56, 33375), (57, 33357), (59, 33342), (65, 33303), (69, 33258), (82, 33150),

Gene: ManRay\_45 Start: 33508, Stop: 32783, Start Num: 18

Candidate Starts for ManRay\_45:

(14, 33541), (Start: 18 @33508 has 161 MA's), (Start: 27 @33439 has 4 MA's), (Start: 35 @33316 has 1 MA's), (46, 33241), (56, 33073), (57, 33055), (59, 33040), (65, 33001), (69, 32956), (82, 32848),

Gene: Mandalorian\_43 Start: 32281, Stop: 31502, Start Num: 18

Candidate Starts for Mandalorian\_43:

(Start: 18 @32281 has 161 MA's), (Start: 26 @32221 has 3 MA's), (Start: 27 @32215 has 4 MA's), (Start: 35 @32098 has 1 MA's), (38, 32089), (39, 32041), (45, 31963), (47, 31942), (48, 31936), (50, 31918), (55, 31804), (56, 31789), (58, 31768), (60, 31753), (62, 31741), (64, 31720), (73, 31633), (75,

31615), (76, 31597), (80, 31573), (82, 31564), (83, 31555), (84, 31531),

Gene: Martin\_47 Start: 33815, Stop: 33090, Start Num: 18

Candidate Starts for Martin\_47:

(Start: 18 @33815 has 161 MA's), (Start: 27 @33746 has 4 MA's), (Start: 35 @33623 has 1 MA's), (46, 33548), (56, 33380), (57, 33362), (59, 33347), (65, 33308), (69, 33263), (82, 33155),

Gene: McGalleon\_48 Start: 34793, Stop: 34053, Start Num: 18

Candidate Starts for McGalleon\_48:

(Start: 18 @34793 has 161 MA's), (Start: 26 @34733 has 3 MA's), (Start: 27 @34727 has 4 MA's), (33, 34652), (Start: 35 @34604 has 1 MA's), (43, 34562), (56, 34343), (59, 34310), (66, 34268), (82, 34118),

Gene: Mercedes\_39 Start: 31146, Stop: 30457, Start Num: 22

Candidate Starts for Mercedes\_39:

(Start: 18 @31176 has 161 MA's), (Start: 22 @31146 has 6 MA's), (24, 31119), (Start: 35 @30993 has 1 MA's), (47, 30900), (55, 30762), (56, 30747), (57, 30729), (58, 30726), (72, 30594), (78, 30546),

Gene: Merida02\_48 Start: 33740, Stop: 33084, Start Num: 27

Candidate Starts for Merida02\_48:

(Start: 18 @33809 has 161 MA's), (Start: 27 @33740 has 4 MA's), (Start: 35 @33617 has 1 MA's), (46, 33542), (56, 33374), (57, 33356), (59, 33341), (65, 33302), (69, 33257), (82, 33149),

Gene: MillyPhilly\_46 Start: 33803, Stop: 33078, Start Num: 18

Candidate Starts for MillyPhilly\_46:

(Start: 18 @33803 has 161 MA's), (Start: 27 @33734 has 4 MA's), (Start: 35 @33611 has 1 MA's), (46, 33536), (56, 33368), (57, 33350), (59, 33335), (65, 33296), (69, 33251), (82, 33143),

Gene: MiniVolent\_42 Start: 31981, Stop: 31385, Start Num: 35

Candidate Starts for MiniVolent\_42:

(3, 32500), (4, 32440), (5, 32419), (Start: 18 @32164 has 161 MA's), (Start: 26 @32104 has 3 MA's), (Start: 27 @32098 has 4 MA's), (Start: 35 @31981 has 1 MA's), (38, 31972), (39, 31924), (45, 31846), (48, 31819), (50, 31801), (55, 31687), (58, 31651), (60, 31636), (62, 31624), (63, 31606), (64, 31603), (73, 31516), (75, 31498), (83, 31438),

Gene: MonChoix\_43 Start: 33358, Stop: 32630, Start Num: 18

Candidate Starts for MonChoix\_43:

(12, 33436), (Start: 18 @33358 has 161 MA's), (25, 33295), (Start: 27 @33286 has 4 MA's), (28, 33283), (Start: 35 @33163 has 1 MA's), (45, 33091), (51, 33043), (55, 32935), (56, 32920), (57, 32902), (59, 32887), (66, 32845), (82, 32695),

Gene: Morrigan\_45 Start: 32063, Stop: 31353, Start Num: 17

Candidate Starts for Morrigan\_45:

(Start: 17 @32063 has 18 MA's), (30, 31979), (32, 31940), (Start: 35 @31883 has 1 MA's), (45, 31817), (47, 31796), (49, 31781), (50, 31772), (55, 31658), (72, 31490), (84, 31385),

Gene: MrWorldwide\_46 Start: 33813, Stop: 33088, Start Num: 18

Candidate Starts for MrWorldwide\_46:

(Start: 18 @33813 has 161 MA's), (Start: 27 @33744 has 4 MA's), (Start: 35 @33621 has 1 MA's), (46, 33546), (56, 33378), (57, 33360), (59, 33345), (65, 33306), (69, 33261), (82, 33153),

Gene: Nagem\_46 Start: 33806, Stop: 33081, Start Num: 18

Candidate Starts for Nagem\_46:

(Start: 18 @33806 has 161 MA's), (20, 33791), (Start: 27 @33737 has 4 MA's), (Start: 35 @33614 has 1 MA's), (46, 33539), (56, 33371), (57, 33353), (59, 33338), (65, 33299), (69, 33254), (82, 33146),

Gene: Nattles\_45 Start: 33495, Stop: 32770, Start Num: 18

Candidate Starts for Nattles\_45:

(14, 33528), (Start: 18 @33495 has 161 MA's), (Start: 27 @33426 has 4 MA's), (Start: 35 @33303 has 1 MA's), (46, 33228), (56, 33060), (57, 33042), (59, 33027), (65, 32988), (69, 32943), (82, 32835),

Gene: Nebulous\_42 Start: 34114, Stop: 33332, Start Num: 18

Candidate Starts for Nebulous\_42:

(Start: 18 @34114 has 161 MA's), (Start: 27 @34045 has 4 MA's), (Start: 35 @33928 has 1 MA's), (38, 33916), (39, 33868), (42, 33832), (45, 33790), (47, 33769), (48, 33763), (55, 33631), (58, 33595), (60, 33580), (64, 33547),

Gene: Neferthema\_45 Start: 33455, Stop: 32673, Start Num: 18

Candidate Starts for Neferthema\_45:

(15, 33485), (16, 33482), (Start: 18 @33455 has 161 MA's), (Start: 27 @33395 has 4 MA's), (Start: 35 @33275 has 1 MA's), (38, 33263), (39, 33215), (47, 33110), (48, 33104), (55, 32972), (60, 32921), (64, 32888),

Gene: NickSell\_46 Start: 33816, Stop: 33091, Start Num: 18

Candidate Starts for NickSell\_46:

(Start: 18 @33816 has 161 MA's), (Start: 27 @33747 has 4 MA's), (Start: 35 @33624 has 1 MA's), (46, 33549), (56, 33381), (57, 33363), (59, 33348), (65, 33309), (69, 33264), (82, 33156),

Gene: Nucci\_43 Start: 32264, Stop: 31485, Start Num: 18

Candidate Starts for Nucci\_43:

(Start: 18 @32264 has 161 MA's), (Start: 26 @32204 has 3 MA's), (Start: 27 @32198 has 4 MA's), (Start: 35 @32081 has 1 MA's), (38, 32072), (39, 32024), (45, 31946), (47, 31925), (48, 31919), (50, 31901), (55, 31787), (56, 31772), (58, 31751), (60, 31736), (62, 31724), (64, 31703), (73, 31616), (75, 31598), (76, 31580), (80, 31556), (82, 31547), (83, 31538), (84, 31514),

Gene: Oats\_45 Start: 33508, Stop: 32783, Start Num: 18

Candidate Starts for Oats\_45:

(14, 33541), (Start: 18 @33508 has 161 MA's), (Start: 27 @33439 has 4 MA's), (Start: 35 @33316 has 1 MA's), (46, 33241), (56, 33073), (57, 33055), (59, 33040), (65, 33001), (69, 32956), (82, 32848),

Gene: OldNelly\_47 Start: 33812, Stop: 33087, Start Num: 18

Candidate Starts for OldNelly\_47:

(Start: 18 @33812 has 161 MA's), (Start: 27 @33743 has 4 MA's), (Start: 35 @33620 has 1 MA's), (46, 33545), (56, 33377), (57, 33359), (59, 33344), (65, 33305), (69, 33260), (82, 33152),

Gene: Oxtober96\_47 Start: 33811, Stop: 33086, Start Num: 18

Candidate Starts for Oxtober96\_47:

(11, 33898), (Start: 18 @33811 has 161 MA's), (Start: 27 @33742 has 4 MA's), (Start: 35 @33619 has 1 MA's), (46, 33544), (56, 33376), (57, 33358), (59, 33343), (65, 33304), (69, 33259), (82, 33151),

Gene: PSirce\_44 Start: 32737, Stop: 31958, Start Num: 18

Candidate Starts for PSirce\_44:

(Start: 18 @32737 has 161 MA's), (Start: 26 @32677 has 3 MA's), (Start: 35 @32554 has 1 MA's), (38, 32545), (45, 32419), (47, 32398), (48, 32392), (51, 32368), (56, 32245), (60, 32209), (63, 32179), (72, 32092), (74, 32086), (75, 32071), (80, 32029),

Gene: Pajaza\_43 Start: 32217, Stop: 31417, Start Num: 18

Candidate Starts for Pajaza\_43:

(9, 32328), (13, 32268), (Start: 18 @32217 has 161 MA's), (Start: 26 @32157 has 3 MA's), (31, 32121), (Start: 35 @32028 has 1 MA's), (37, 32010), (47, 31860), (52, 31761), (53, 31758), (57, 31689), (66, 31632), (70, 31587), (79, 31494), (81, 31485), (82, 31482), (84, 31449),

Gene: Papafritta\_45 Start: 33519, Stop: 32794, Start Num: 18

Candidate Starts for Papafritta\_45:

(14, 33552), (Start: 18 @33519 has 161 MA's), (Start: 27 @33450 has 4 MA's), (Start: 35 @33327 has 1 MA's), (46, 33252), (56, 33084), (57, 33066), (59, 33051), (65, 33012), (69, 32967), (82, 32859),

Gene: ParleG\_46 Start: 33813, Stop: 33088, Start Num: 18

Candidate Starts for ParleG\_46:

(Start: 18 @33813 has 161 MA's), (Start: 27 @33744 has 4 MA's), (Start: 35 @33621 has 1 MA's), (46, 33546), (56, 33378), (57, 33360), (59, 33345), (65, 33306), (69, 33261), (82, 33153),

Gene: Peep\_46 Start: 33798, Stop: 33073, Start Num: 18

Candidate Starts for Peep\_46:

(Start: 18 @33798 has 161 MA's), (Start: 27 @33729 has 4 MA's), (Start: 35 @33606 has 1 MA's), (46, 33531), (56, 33363), (57, 33345), (59, 33330), (65, 33291), (69, 33246), (82, 33138),

Gene: Penta\_40 Start: 31163, Stop: 30528, Start Num: 27

Candidate Starts for Penta\_40:

(Start: 18 @31223 has 161 MA's), (Start: 27 @31163 has 4 MA's), (34, 31061), (45, 30992), (47, 30971), (49, 30956), (56, 30818), (57, 30800), (58, 30797), (72, 30665), (73, 30662), (78, 30617), (82, 30593), (84, 30560),

Gene: Peppino\_46 Start: 33755, Stop: 33027, Start Num: 18

Candidate Starts for Peppino\_46:

(Start: 18 @33755 has 161 MA's), (Start: 19 @33749 has 1 MA's), (Start: 22 @33731 has 6 MA's), (Start: 26 @33695 has 3 MA's), (Start: 27 @33689 has 4 MA's), (Start: 35 @33566 has 1 MA's), (46, 33485), (47, 33467), (57, 33299), (59, 33284), (66, 33242), (71, 33170), (82, 33092),

Gene: Phanita\_45 Start: 32519, Stop: 31740, Start Num: 18

Candidate Starts for Phanita\_45:

(Start: 18 @32519 has 161 MA's), (Start: 26 @32459 has 3 MA's), (Start: 35 @32336 has 1 MA's), (38, 32327), (47, 32180), (48, 32174), (51, 32150), (56, 32027), (60, 31991), (63, 31961), (72, 31874), (74, 31868), (80, 31811),

Gene: Pherbot\_43 Start: 32544, Stop: 31732, Start Num: 18

Candidate Starts for Pherbot\_43:

(Start: 18 @32544 has 161 MA's), (Start: 26 @32484 has 3 MA's), (Start: 27 @32478 has 4 MA's), (Start: 35 @32358 has 1 MA's), (37, 32328), (47, 32175), (49, 32160), (50, 32151), (52, 32076), (55, 32037), (57, 32004), (67, 31920), (71, 31875), (78, 31821), (82, 31797),

Gene: Pherferi\_46 Start: 33806, Stop: 33081, Start Num: 18

Candidate Starts for Pherferi\_46:

(Start: 18 @33806 has 161 MA's), (Start: 27 @33737 has 4 MA's), (Start: 35 @33614 has 1 MA's), (46, 33539), (56, 33371), (57, 33353), (59, 33338), (65, 33299), (69, 33254), (82, 33146),

Gene: Phiderman\_46 Start: 33803, Stop: 33078, Start Num: 18

Candidate Starts for Phiderman\_46:

(Start: 18 @33803 has 161 MA's), (Start: 27 @33734 has 4 MA's), (Start: 35 @33611 has 1 MA's), (46, 33536), (56, 33368), (57, 33350), (59, 33335), (65, 33296), (69, 33251), (82, 33143),

Gene: PhillyPhantom\_46 Start: 33556, Stop: 33017, Start Num: 35

Candidate Starts for PhillyPhantom\_46:

(Start: 18 @33745 has 161 MA's), (Start: 22 @33721 has 6 MA's), (Start: 26 @33685 has 3 MA's), (Start: 27 @33679 has 4 MA's), (Start: 35 @33556 has 1 MA's), (46, 33475), (47, 33457), (57, 33289), (59, 33274), (66, 33232), (71, 33160), (82, 33082),

Gene: Phireproof\_46 Start: 33812, Stop: 33087, Start Num: 18

Candidate Starts for Phireproof\_46:

(Start: 18 @33812 has 161 MA's), (Start: 27 @33743 has 4 MA's), (Start: 35 @33620 has 1 MA's), (46, 33545), (56, 33377), (57, 33359), (59, 33344), (65, 33305), (69, 33260), (82, 33152),

Gene: PhredFlintston\_46 Start: 33806, Stop: 33081, Start Num: 18

Candidate Starts for PhredFlintston\_46:

(Start: 18 @33806 has 161 MA's), (Start: 27 @33737 has 4 MA's), (Start: 35 @33614 has 1 MA's), (46, 33539), (56, 33371), (57, 33353), (59, 33338), (65, 33299), (69, 33254), (82, 33146),

Gene: Phriends\_46 Start: 33812, Stop: 33087, Start Num: 18

Candidate Starts for Phriends\_46:

(Start: 18 @33812 has 161 MA's), (Start: 27 @33743 has 4 MA's), (Start: 35 @33620 has 1 MA's), (46, 33545), (56, 33377), (57, 33359), (59, 33344), (65, 33305), (69, 33260), (82, 33152),

Gene: Pikmin\_43 Start: 32217, Stop: 31417, Start Num: 18

Candidate Starts for Pikmin\_43:

(9, 32328), (13, 32268), (Start: 18 @32217 has 161 MA's), (Start: 26 @32157 has 3 MA's), (31, 32121), (Start: 35 @32028 has 1 MA's), (37, 32010), (47, 31860), (52, 31761), (53, 31758), (57, 31689), (66, 31632), (70, 31587), (79, 31494), (81, 31485), (82, 31482), (84, 31449),

Gene: Pocket\_45 Start: 33535, Stop: 32810, Start Num: 18

Candidate Starts for Pocket\_45:

(14, 33568), (Start: 18 @33535 has 161 MA's), (Start: 27 @33466 has 4 MA's), (Start: 35 @33343 has 1 MA's), (46, 33268), (56, 33100), (57, 33082), (59, 33067), (65, 33028), (69, 32983), (82, 32875),

Gene: PrincePhergus\_43 Start: 32560, Stop: 31748, Start Num: 18

Candidate Starts for PrincePhergus\_43:

(Start: 18 @32560 has 161 MA's), (Start: 26 @32500 has 3 MA's), (Start: 27 @32494 has 4 MA's), (Start: 35 @32374 has 1 MA's), (37, 32344), (47, 32191), (50, 32167), (52, 32092), (55, 32053), (57, 32020), (67, 31936), (71, 31891), (78, 31837), (82, 31813), (84, 31780),

Gene: PuppyEggo\_46 Start: 33813, Stop: 33088, Start Num: 18

Candidate Starts for PuppyEggo\_46:

(11, 33900), (Start: 18 @33813 has 161 MA's), (Start: 27 @33744 has 4 MA's), (Start: 35 @33621 has 1 MA's), (46, 33546), (56, 33378), (57, 33360), (59, 33345), (65, 33306), (69, 33261), (82, 33153),

Gene: QuadZero\_44 Start: 31373, Stop: 30591, Start Num: 17

Candidate Starts for QuadZero\_44:

(Start: 17 @31373 has 18 MA's), (Start: 27 @31307 has 4 MA's), (Start: 35 @31187 has 1 MA's), (38, 31178), (39, 31130), (47, 31031), (48, 31025), (56, 30878), (58, 30857), (63, 30812), (64, 30809), (73, 30722), (80, 30662),

Gene: Quartz\_44 Start: 32394, Stop: 31615, Start Num: 18

Candidate Starts for Quartz\_44:

(Start: 18 @32394 has 161 MA's), (Start: 26 @32334 has 3 MA's), (Start: 27 @32328 has 4 MA's), (Start: 35 @32211 has 1 MA's), (38, 32202), (39, 32154), (45, 32076), (47, 32055), (48, 32049), (50, 32031), (55, 31917), (56, 31902), (58, 31881), (60, 31866), (62, 31854), (64, 31833), (73, 31746), (75, 31728), (76, 31710), (80, 31686), (83, 31668),

Gene: Raccoon\_46 Start: 33712, Stop: 32984, Start Num: 18

Candidate Starts for Raccoon\_46:

(Start: 18 @33712 has 161 MA's), (Start: 22 @33688 has 6 MA's), (Start: 26 @33652 has 3 MA's), (Start: 27 @33646 has 4 MA's), (Start: 35 @33523 has 1 MA's), (46, 33442), (47, 33424), (57, 33256), (59, 33241), (66, 33199), (71, 33127), (82, 33049),

Gene: Rapheph\_46 Start: 33806, Stop: 33081, Start Num: 18

Candidate Starts for Rapheph\_46:

(Start: 18 @33806 has 161 MA's), (Start: 27 @33737 has 4 MA's), (Start: 35 @33614 has 1 MA's), (46, 33539), (56, 33371), (57, 33353), (59, 33338), (65, 33299), (69, 33254), (82, 33146),

Gene: Raptor\_46 Start: 33813, Stop: 33088, Start Num: 18

Candidate Starts for Raptor\_46:

(11, 33900), (Start: 18 @33813 has 161 MA's), (Start: 27 @33744 has 4 MA's), (Start: 35 @33621 has 1 MA's), (46, 33546), (56, 33378), (57, 33360), (59, 33345), (65, 33306), (69, 33261), (82, 33153),

Gene: Redfield\_46 Start: 33763, Stop: 33035, Start Num: 18

Candidate Starts for Redfield\_46:

(Start: 18 @33763 has 161 MA's), (Start: 19 @33757 has 1 MA's), (Start: 22 @33739 has 6 MA's), (Start: 26 @33703 has 3 MA's), (Start: 27 @33697 has 4 MA's), (Start: 35 @33574 has 1 MA's), (46, 33493), (47, 33475), (57, 33307), (59, 33292), (66, 33250), (71, 33178), (82, 33100),

Gene: RenegadeRaider\_46 Start: 32615, Stop: 31803, Start Num: 18

Candidate Starts for RenegadeRaider\_46:

(Start: 18 @32615 has 161 MA's), (Start: 26 @32555 has 3 MA's), (Start: 27 @32549 has 4 MA's), (Start: 35 @32429 has 1 MA's), (37, 32399), (47, 32246), (49, 32231), (50, 32222), (52, 32147), (55, 32108), (57, 32075), (67, 31991), (82, 31868), (84, 31835),

Gene: Renzie\_46 Start: 33801, Stop: 33076, Start Num: 18

Candidate Starts for Renzie\_46:

(Start: 18 @33801 has 161 MA's), (Start: 27 @33732 has 4 MA's), (Start: 35 @33609 has 1 MA's), (46, 33534), (56, 33366), (57, 33348), (59, 33333), (65, 33294), (69, 33249), (82, 33141),

Gene: Riyhil\_46 Start: 33816, Stop: 33091, Start Num: 18

Candidate Starts for Riyhil\_46:

(Start: 18 @33816 has 161 MA's), (Start: 27 @33747 has 4 MA's), (Start: 35 @33624 has 1 MA's), (46, 33549), (56, 33381), (57, 33363), (59, 33348), (65, 33309), (69, 33264), (82, 33156),

Gene: Robinson\_46 Start: 33735, Stop: 33079, Start Num: 27

Candidate Starts for Robinson\_46:

(Start: 18 @33804 has 161 MA's), (Start: 27 @33735 has 4 MA's), (Start: 35 @33612 has 1 MA's), (46, 33537), (56, 33369), (57, 33351), (59, 33336), (65, 33297), (69, 33252), (82, 33144),

Gene: Rog141\_45 Start: 33498, Stop: 32773, Start Num: 18

Candidate Starts for Rog141\_45:

(14, 33531), (Start: 18 @33498 has 161 MA's), (Start: 27 @33429 has 4 MA's), (Start: 35 @33306 has 1 MA's), (46, 33231), (56, 33063), (57, 33045), (59, 33030), (65, 32991), (69, 32946), (82, 32838),

Gene: RosieMae\_45 Start: 33553, Stop: 32828, Start Num: 18

Candidate Starts for RosieMae\_45:

(14, 33586), (Start: 18 @33553 has 161 MA's), (Start: 27 @33484 has 4 MA's), (Start: 35 @33361 has 1 MA's), (46, 33286), (56, 33118), (57, 33100), (59, 33085), (65, 33046), (69, 33001), (82, 32893),

Gene: SJay\_46 Start: 33807, Stop: 33082, Start Num: 18

Candidate Starts for SJay\_46:

(Start: 18 @33807 has 161 MA's), (Start: 27 @33738 has 4 MA's), (Start: 35 @33615 has 1 MA's), (46, 33540), (56, 33372), (57, 33354), (59, 33339), (65, 33300), (69, 33255), (82, 33147),

Gene: Sansa\_43 Start: 32812, Stop: 32033, Start Num: 18

Candidate Starts for Sansa\_43:

(14, 32845), (Start: 18 @32812 has 161 MA's), (Start: 26 @32752 has 3 MA's), (Start: 35 @32629 has 1 MA's), (38, 32620), (45, 32494), (47, 32473), (48, 32467), (51, 32443), (56, 32320), (60, 32284), (63, 32254), (72, 32167), (80, 32104),

Gene: Saratos\_44 Start: 32567, Stop: 31788, Start Num: 18

Candidate Starts for Saratos\_44:

(Start: 18 @32567 has 161 MA's), (Start: 26 @32507 has 3 MA's), (Start: 35 @32384 has 1 MA's), (38, 32375), (45, 32249), (47, 32228), (48, 32222), (51, 32198), (56, 32075), (60, 32039), (63, 32009), (72, 31922), (74, 31916), (75, 31901), (80, 31859),

Gene: Schimmels22\_41 Start: 31619, Stop: 30921, Start Num: 18

Candidate Starts for Schimmels22\_41:

(Start: 18 @31619 has 161 MA's), (Start: 27 @31559 has 4 MA's), (34, 31457), (45, 31385), (47, 31364), (49, 31349), (55, 31226), (56, 31211), (57, 31193), (72, 31058), (78, 31010), (82, 30986), (84, 30953),

Gene: Schnapsidee\_46 Start: 33770, Stop: 33042, Start Num: 18

Candidate Starts for Schnapsidee\_46:

(Start: 18 @33770 has 161 MA's), (Start: 19 @33764 has 1 MA's), (Start: 22 @33746 has 6 MA's), (Start: 26 @33710 has 3 MA's), (Start: 27 @33704 has 4 MA's), (Start: 35 @33581 has 1 MA's), (46, 33500), (47, 33482), (57, 33314), (59, 33299), (66, 33257), (71, 33185), (82, 33107),

Gene: Schubert\_43 Start: 32437, Stop: 31721, Start Num: 18

Candidate Starts for Schubert\_43:

(15, 32467), (Start: 18 @32437 has 161 MA's), (Start: 26 @32377 has 3 MA's), (Start: 35 @32248 has 1 MA's), (40, 32215), (45, 32185), (47, 32164), (55, 32026), (56, 32011), (63, 31945), (66, 31936), (78, 31810), (82, 31786),

Gene: Scissor2024\_42 Start: 31206, Stop: 30568, Start Num: 27

Candidate Starts for Scissor2024\_42:

(Start: 18 @31266 has 161 MA's), (Start: 27 @31206 has 4 MA's), (34, 31104), (45, 31032), (47, 31011), (49, 30996), (55, 30873), (56, 30858), (57, 30840), (72, 30705), (73, 30702), (78, 30657), (82, 30633), (84, 30600),

Gene: Sedgewig\_45 Start: 33496, Stop: 32771, Start Num: 18

Candidate Starts for Sedgewig\_45:

(14, 33529), (Start: 18 @33496 has 161 MA's), (Start: 27 @33427 has 4 MA's), (Start: 35 @33304 has 1 MA's), (46, 33229), (56, 33061), (57, 33043), (59, 33028), (65, 32989), (69, 32944), (82, 32836),

Gene: ShaiHulud\_46 Start: 33822, Stop: 33097, Start Num: 18

Candidate Starts for ShaiHulud\_46:

(11, 33909), (Start: 18 @33822 has 161 MA's), (Start: 27 @33753 has 4 MA's), (Start: 35 @33630 has 1 MA's), (46, 33555), (56, 33387), (57, 33369), (59, 33354), (65, 33315), (69, 33270), (82, 33162),

Gene: Shamu\_45 Start: 32746, Stop: 31967, Start Num: 18

Candidate Starts for Shamu\_45:

(Start: 18 @32746 has 161 MA's), (Start: 26 @32686 has 3 MA's), (Start: 35 @32563 has 1 MA's), (38, 32554), (45, 32428), (47, 32407), (48, 32401), (51, 32377), (56, 32254), (60, 32218), (63, 32188), (72, 32101), (74, 32095), (80, 32038),

Gene: Shee\_46 Start: 33803, Stop: 33078, Start Num: 18

Candidate Starts for Shee\_46:

(Start: 18 @33803 has 161 MA's), (Start: 27 @33734 has 4 MA's), (Start: 35 @33611 has 1 MA's), (46, 33536), (56, 33368), (57, 33350), (59, 33335), (65, 33296), (69, 33251), (82, 33143),

Gene: Sinatra\_44 Start: 32555, Stop: 31743, Start Num: 18

Candidate Starts for Sinatra\_44:

(Start: 18 @32555 has 161 MA's), (Start: 26 @32495 has 3 MA's), (Start: 27 @32489 has 4 MA's), (Start: 35 @32369 has 1 MA's), (37, 32339), (47, 32186), (49, 32171), (50, 32162), (52, 32087), (55, 32048), (57, 32015), (67, 31931), (71, 31886), (78, 31832), (82, 31808),

Gene: SirVictor\_44 Start: 32628, Stop: 31822, Start Num: 18

Candidate Starts for SirVictor\_44:

(8, 32742), (Start: 18 @32628 has 161 MA's), (Start: 26 @32568 has 3 MA's), (Start: 27 @32562 has 4 MA's), (Start: 35 @32442 has 1 MA's), (37, 32415), (45, 32286), (47, 32265), (51, 32235), (53, 32163), (55, 32127), (56, 32112), (57, 32094), (67, 32010), (82, 31887),

Gene: SoilGremlin\_47 Start: 33809, Stop: 33084, Start Num: 18

Candidate Starts for SoilGremlin\_47:

(Start: 18 @33809 has 161 MA's), (Start: 27 @33740 has 4 MA's), (Start: 35 @33617 has 1 MA's), (46, 33542), (56, 33374), (57, 33356), (59, 33341), (65, 33302), (69, 33257), (82, 33149),

Gene: SolidSnake\_48 Start: 33743, Stop: 33087, Start Num: 27

Candidate Starts for SolidSnake\_48:

(Start: 18 @33812 has 161 MA's), (Start: 27 @33743 has 4 MA's), (Start: 35 @33620 has 1 MA's), (46, 33545), (56, 33377), (57, 33359), (59, 33344), (65, 33305), (69, 33260), (82, 33152),

Gene: SonOfLevi\_46 Start: 33526, Stop: 32801, Start Num: 18

Candidate Starts for SonOfLevi\_46:

(14, 33559), (Start: 18 @33526 has 161 MA's), (Start: 27 @33457 has 4 MA's), (Start: 35 @33334 has 1 MA's), (46, 33259), (56, 33091), (57, 33073), (59, 33058), (65, 33019), (69, 32974), (82, 32866),

Gene: Soror1\_45 Start: 33472, Stop: 32933, Start Num: 35

Candidate Starts for Soror1\_45:

(Start: 18 @33661 has 161 MA's), (Start: 19 @33655 has 1 MA's), (Start: 22 @33637 has 6 MA's), (Start: 26 @33601 has 3 MA's), (Start: 27 @33595 has 4 MA's), (Start: 35 @33472 has 1 MA's), (46, 33391), (47, 33373), (57, 33205), (59, 33190), (66, 33148), (71, 33076), (82, 32998),

Gene: Stanktossa\_46 Start: 33806, Stop: 33081, Start Num: 18

Candidate Starts for Stanktossa\_46:

(Start: 18 @33806 has 161 MA's), (Start: 27 @33737 has 4 MA's), (Start: 35 @33614 has 1 MA's), (46, 33539), (56, 33371), (57, 33353), (59, 33338), (65, 33299), (69, 33254), (82, 33146),

Gene: StingRay\_45 Start: 33511, Stop: 32786, Start Num: 18

Candidate Starts for StingRay\_45:

(14, 33544), (Start: 18 @33511 has 161 MA's), (Start: 27 @33442 has 4 MA's), (Start: 35 @33319 has 1 MA's), (46, 33244), (56, 33076), (57, 33058), (59, 33043), (65, 33004), (69, 32959), (82, 32851),

Gene: StirfryIV\_45 Start: 33507, Stop: 32782, Start Num: 18

Candidate Starts for StirfryIV\_45:

(14, 33540), (Start: 18 @33507 has 161 MA's), (Start: 27 @33438 has 4 MA's), (Start: 35 @33315 has 1 MA's), (46, 33240), (56, 33072), (57, 33054), (59, 33039), (65, 33000), (69, 32955), (82, 32847),

Gene: Stormbreaker8\_45 Start: 33622, Stop: 32918, Start Num: 22

Candidate Starts for Stormbreaker8\_45:

(Start: 18 @33646 has 161 MA's), (Start: 19 @33640 has 1 MA's), (Start: 22 @33622 has 6 MA's), (Start: 26 @33586 has 3 MA's), (Start: 27 @33580 has 4 MA's), (Start: 35 @33457 has 1 MA's), (46, 33376), (47, 33358), (57, 33190), (59, 33175), (66, 33133), (71, 33061), (82, 32983),

Gene: Strathdee\_46 Start: 33812, Stop: 33087, Start Num: 18

Candidate Starts for Strathdee\_46:

(11, 33899), (Start: 18 @33812 has 161 MA's), (Start: 27 @33743 has 4 MA's), (Start: 35 @33620 has 1 MA's), (46, 33545), (56, 33377), (57, 33359), (59, 33344), (65, 33305), (69, 33260), (82, 33152),

Gene: Superfresh\_46 Start: 33801, Stop: 33076, Start Num: 18

Candidate Starts for Superfresh\_46:

(Start: 18 @33801 has 161 MA's), (Start: 27 @33732 has 4 MA's), (Start: 35 @33609 has 1 MA's), (46, 33534), (56, 33366), (57, 33348), (59, 33333), (65, 33294), (69, 33249), (82, 33141),

Gene: Symere\_45 Start: 33506, Stop: 32781, Start Num: 18

Candidate Starts for Symere\_45:

(14, 33539), (Start: 18 @33506 has 161 MA's), (Start: 27 @33437 has 4 MA's), (Start: 35 @33314 has 1 MA's), (46, 33239), (56, 33071), (57, 33053), (59, 33038), (65, 32999), (69, 32954), (82, 32846),

Gene: TatarkaPM\_46 Start: 33816, Stop: 33091, Start Num: 18

Candidate Starts for TatarkaPM\_46:

(Start: 18 @33816 has 161 MA's), (Start: 27 @33747 has 4 MA's), (Start: 35 @33624 has 1 MA's), (46, 33549), (56, 33381), (57, 33363), (59, 33348), (65, 33309), (69, 33264), (82, 33156),

Gene: Teagan\_46 Start: 33806, Stop: 33081, Start Num: 18

Candidate Starts for Teagan\_46:

(11, 33893), (Start: 18 @33806 has 161 MA's), (Start: 27 @33737 has 4 MA's), (Start: 35 @33614 has 1 MA's), (46, 33539), (56, 33371), (57, 33353), (59, 33338), (65, 33299), (69, 33254), (82, 33146),

Gene: TeddyBear\_45 Start: 33508, Stop: 32783, Start Num: 18

Candidate Starts for TeddyBear\_45:

(14, 33541), (Start: 18 @33508 has 161 MA's), (Start: 27 @33439 has 4 MA's), (Start: 35 @33316 has 1 MA's), (46, 33241), (56, 33073), (57, 33055), (59, 33040), (65, 33001), (69, 32956), (82, 32848),

Gene: Tenda\_45 Start: 33506, Stop: 32781, Start Num: 18

Candidate Starts for Tenda\_45:

(14, 33539), (Start: 18 @33506 has 161 MA's), (Start: 27 @33437 has 4 MA's), (Start: 35 @33314 has 1 MA's), (46, 33239), (56, 33071), (57, 33053), (59, 33038), (65, 32999), (69, 32954), (82, 32846),

Gene: Thompsone\_46 Start: 33813, Stop: 33088, Start Num: 18

Candidate Starts for Thompsone\_46:

(11, 33900), (Start: 18 @33813 has 161 MA's), (Start: 27 @33744 has 4 MA's), (Start: 35 @33621 has 1 MA's), (46, 33546), (56, 33378), (57, 33360), (59, 33345), (65, 33306), (69, 33261), (82, 33153),

Gene: Thorongil\_46 Start: 33327, Stop: 32602, Start Num: 18

Candidate Starts for Thorongil\_46:

(11, 33414), (Start: 18 @33327 has 161 MA's), (Start: 27 @33258 has 4 MA's), (Start: 35 @33135 has 1 MA's), (46, 33060), (56, 32892), (57, 32874), (59, 32859), (65, 32820), (69, 32775), (82, 32667),

Gene: TinSulphur\_47 Start: 33812, Stop: 33087, Start Num: 18

Candidate Starts for TinSulphur\_47:

(Start: 18 @33812 has 161 MA's), (Start: 27 @33743 has 4 MA's), (Start: 35 @33620 has 1 MA's), (46, 33545), (56, 33377), (57, 33359), (59, 33344), (65, 33305), (69, 33260), (82, 33152),

Gene: Tinyman4\_41 Start: 31320, Stop: 30547, Start Num: 18

Candidate Starts for Tinyman4\_41:

(Start: 18 @31320 has 161 MA's), (34, 31158), (36, 31140), (43, 31041), (45, 31011), (47, 30990), (55, 30852), (56, 30837), (57, 30819), (58, 30816), (72, 30684), (73, 30681), (78, 30636), (82, 30612), (84, 30579),

Gene: TwoBits\_43 Start: 31706, Stop: 30993, Start Num: 17

Candidate Starts for TwoBits\_43:

(Start: 17 @31706 has 18 MA's), (Start: 27 @31640 has 4 MA's), (32, 31586), (Start: 35 @31529 has 1 MA's), (47, 31436), (49, 31421), (55, 31298), (56, 31283), (58, 31262), (68, 31172), (72, 31130), (78, 31082),

Gene: Velene\_46 Start: 33811, Stop: 33086, Start Num: 18

Candidate Starts for Velene\_46:

(11, 33898), (Start: 18 @33811 has 161 MA's), (Start: 27 @33742 has 4 MA's), (Start: 35 @33619 has 1 MA's), (46, 33544), (56, 33376), (57, 33358), (59, 33343), (65, 33304), (69, 33259), (82, 33151),

Gene: Vispistious\_46 Start: 33813, Stop: 33088, Start Num: 18

Candidate Starts for Vispistious\_46:

(11, 33900), (Start: 18 @33813 has 161 MA's), (Start: 27 @33744 has 4 MA's), (Start: 35 @33621 has 1 MA's), (46, 33546), (56, 33378), (57, 33360), (59, 33345), (65, 33306), (69, 33261), (82, 33153),

Gene: Wardwill\_46 Start: 31405, Stop: 30623, Start Num: 17

Candidate Starts for Wardwill\_46:

(Start: 17 @31405 has 18 MA's), (Start: 27 @31339 has 4 MA's), (Start: 35 @31219 has 1 MA's), (38, 31210), (39, 31162), (47, 31063), (48, 31057), (56, 30910), (58, 30889), (63, 30844), (64, 30841), (73, 30754), (80, 30694),

Gene: WestPM\_40 Start: 31386, Stop: 30691, Start Num: 18

Candidate Starts for WestPM\_40:

(Start: 18 @31386 has 161 MA's), (Start: 27 @31326 has 4 MA's), (34, 31224), (45, 31155), (47, 31134), (49, 31119), (56, 30981), (57, 30963), (58, 30960), (72, 30828), (73, 30825), (78, 30780), (82, 30756), (84, 30723),

Gene: WildNOut\_46 Start: 33809, Stop: 33084, Start Num: 18

Candidate Starts for WildNOut\_46:

(11, 33896), (Start: 18 @33809 has 161 MA's), (Start: 27 @33740 has 4 MA's), (Start: 35 @33617 has 1 MA's), (46, 33542), (56, 33374), (57, 33356), (59, 33341), (65, 33302), (69, 33257), (82, 33149),

Gene: WilliamStrong\_44 Start: 32618, Stop: 31935, Start Num: 21

Candidate Starts for WilliamStrong\_44:

(Start: 17 @32645 has 18 MA's), (Start: 21 @32618 has 2 MA's), (Start: 27 @32576 has 4 MA's), (28, 32573), (Start: 35 @32465 has 1 MA's), (41, 32429), (45, 32399), (47, 32378), (54, 32255), (55, 32240), (56, 32225), (63, 32159), (66, 32150), (72, 32072),

Gene: Winzigespinne\_45 Start: 33494, Stop: 32769, Start Num: 18

Candidate Starts for Winzigespinne\_45:

(14, 33527), (Start: 18 @33494 has 161 MA's), (Start: 27 @33425 has 4 MA's), (Start: 35 @33302 has 1 MA's), (46, 33227), (56, 33059), (57, 33041), (59, 33026), (65, 32987), (69, 32942), (82, 32834),

Gene: Xebius\_44 Start: 32387, Stop: 31791, Start Num: 35

Candidate Starts for Xebius\_44:

(Start: 18 @32570 has 161 MA's), (Start: 26 @32510 has 3 MA's), (Start: 35 @32387 has 1 MA's), (38, 32378), (45, 32252), (47, 32231), (48, 32225), (51, 32201), (56, 32078), (60, 32042), (63, 32012), (72, 31925), (74, 31919), (80, 31862),

Gene: YuuY\_44 Start: 32861, Stop: 32082, Start Num: 18

Candidate Starts for YuuY\_44:

(Start: 18 @32861 has 161 MA's), (Start: 26 @32801 has 3 MA's), (Start: 27 @32795 has 4 MA's), (32, 32732), (Start: 35 @32678 has 1 MA's), (38, 32669), (39, 32621), (45, 32543), (50, 32498), (55, 32384), (56, 32369), (62, 32321), (64, 32300), (73, 32213), (75, 32195), (76, 32177), (80, 32153), (82, 32144),

Gene: Zada\_47 Start: 33713, Stop: 33057, Start Num: 27

Candidate Starts for Zada\_47:

(Start: 18 @33782 has 161 MA's), (Start: 27 @33713 has 4 MA's), (Start: 35 @33590 has 1 MA's), (46, 33515), (56, 33347), (57, 33329), (59, 33314), (65, 33275), (69, 33230), (82, 33122),

Gene: Zayuliv\_44 Start: 31844, Stop: 31062, Start Num: 17

Candidate Starts for Zayuliv\_44:

(Start: 17 @31844 has 18 MA's), (Start: 27 @31778 has 4 MA's), (Start: 35 @31658 has 1 MA's), (38, 31649), (39, 31601), (47, 31502), (48, 31496), (56, 31349), (58, 31328), (63, 31283), (64, 31280), (73, 31193), (80, 31133),

Gene: Zenitsu\_44 Start: 32612, Stop: 31833, Start Num: 18

Candidate Starts for Zenitsu\_44:

(14, 32645), (Start: 18 @32612 has 161 MA's), (Start: 26 @32552 has 3 MA's), (Start: 35 @32429 has 1 MA's), (38, 32420), (45, 32294), (47, 32273), (48, 32267), (51, 32243), (56, 32120), (60, 32084), (63, 32054), (72, 31967), (74, 31961), (80, 31904),

Gene: Zepp\_44 Start: 31278, Stop: 30496, Start Num: 17

Candidate Starts for Zepp\_44:

(Start: 17 @31278 has 18 MA's), (Start: 27 @31212 has 4 MA's), (Start: 35 @31092 has 1 MA's), (38, 31083), (39, 31035), (47, 30936), (48, 30930), (56, 30783), (58, 30762), (63, 30717), (64, 30714), (73, 30627), (80, 30567),