



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 189538 Report

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

Pham number 189538 has 148 members, 2 are drafts.

Phages represented in each track:

- Track 1 : Mercedes\_43
- Track 2 : Dothraki\_49, NickSell\_49, Kurt1\_49, Martin\_50, Bandik\_49, TatarkaPM\_49, Renzie\_49, Riyhil\_49, BeautPeep30\_49, Inventa\_49, Phireproof\_49, Dave\_49, Rapheph\_49, Robinson\_49, ParleG\_49, Superfresh\_49, MillyPhilly\_49, Phiderman\_49, AlexAdler\_49, Antoinette\_49, Byron23\_50, Peep\_49, Phriends\_49, Pherferi\_49, OldNelly\_50, Shee\_49, PhredFlintston\_49, MaeLinda\_49, TinSulphur\_50
- Track 3 : Erla\_48, StingRay\_48, BonesMcCoy\_49, Raptor\_49, Garey24\_49, Greys\_49, Kale\_48, BigRedClifford\_49, Strathdee\_49, Thorongil\_49, TeddyBear\_48, HankSprout\_49, Papafritta\_48, StirfryIV\_48, Winzigespinne\_48, ManRay\_48, Duocatuli\_48, Ioannes\_49, SJay\_49, Vispistious\_49, Benjalauren\_49, Thompsone\_49, Espinosa\_48, Convict\_49, Baines\_48, Bonino\_48, AranulaLuti\_48, Ludgate\_49, Pocket\_48, Chamuel\_48, Aubergine\_48, Nattles\_48, Blage\_49, HanSolo\_48, SonOfLevi\_49, Asta\_48, WildNOut\_49, Rog141\_48, Alyxandracam\_49, Ilzat\_48, Gershwin\_48, KannH\_48, Clancy\_48, Klimt\_49, Velene\_49, HungryHenry\_48, Chako\_48, Teagan\_49, Calix\_48, Gargoyle\_49, Knox\_49, Christoph\_48, Sedgewig\_48, Etta\_48, Gelo\_48, Nagem\_49, PuppyEggo\_49, Zada\_50, Janus167\_48, Oats\_48, Lovelyunicorn\_49, Tenda\_48, AxiPup\_49, ShaiHulud\_50, Den3\_49, Oxtober96\_50, Gubbabump\_48
- Track 4 : MonChoix\_46
- Track 5 : Acosta\_51
- Track 6 : FarmerDoug\_48
- Track 7 : Endor\_50
- Track 8 : Agente005\_49
- Track 9 : GardenB\_49
- Track 10 : YuuY\_47
- Track 11 : Juanyo\_46
- Track 12 : Mandalorian\_46, Carostasia\_46, Quartz\_47
- Track 13 : Nucci\_46
- Track 14 : Tinyman4\_44
- Track 15 : WestPM\_43
- Track 16 : Schimmels22\_44
- Track 17 : Ixel\_48
- Track 18 : HerculesXL\_45
- Track 19 : ChikPic\_47
- Track 20 : MCubed\_47, Zenitsu\_47, Eleri\_47, ColaCorta\_47, Glamour\_47, Andromedas\_47, Saratos\_47

- Track 21 : Shamu\_48
- Track 22 : Sansa\_46
- Track 23 : Finny\_48
- Track 24 : Clock\_46, Nebulous\_45
- Track 25 : QuadZero\_48
- Track 26 : Alakazam\_47
- Track 27 : LilTerminator\_48
- Track 28 : Librie\_48, Fulton\_48, CaptainRex\_48
- Track 29 : Hasitha\_48
- Track 30 : Greenlvy\_47
- Track 31 : Neferthena\_48
- Track 32 : Zayuliv\_48
- Track 33 : Zepp\_48
- Track 34 : Morigan\_48
- Track 35 : Jemerald\_48
- Track 36 : Juicer\_48
- Track 37 : Chepli\_48, Luna18\_48
- Track 38 : WilliamStrong\_47
- Track 39 : ChickenKing\_47, GaeCeo\_49
- Track 40 : Cheeto1\_49
- Track 41 : Magritte\_232

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

The start number called the most often in the published annotations is 29, it was called in 122 of the 146 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Acosta\_51, Agente005\_49, AlexAdler\_49, Alyxandracam\_49, Andromedas\_47, Antoinette\_49, AranulaLuti\_48, Asta\_48, Aubergine\_48, AxiPup\_49, Baines\_48, Bandik\_49, BeautPeep30\_49, Benjalauren\_49, BigRedClifford\_49, Blage\_49, BonesMcCoy\_49, Bonino\_48, Byron23\_50, Calix\_48, Carostasia\_46, Chako\_48, Chamuel\_48, ChikPic\_47, Christoph\_48, Clancy\_48, ColaCorta\_47, Convict\_49, Dave\_49, Den3\_49, Dothraki\_49, Duocatuli\_48, Eleri\_47, Erla\_48, Espinosa\_48, Etta\_48, GardenB\_49, Garey24\_49, Gargoyle\_49, Gelo\_48, Gershwin\_48, Glamour\_47, Greenlvy\_47, Greys\_49, Gubbabump\_48, HanSolo\_48, HankSprout\_49, Hasitha\_48, HerculesXL\_45, HungryHenry\_48, Ilzat\_48, Inventa\_49, Ioannes\_49, Ixel\_48, Janus167\_48, Juanyo\_46, Kale\_48, KannH\_48, Klimt\_49, Knox\_49, Kurt1\_49, LilTerminator\_48, Lovelyunicorn\_49, Ludgate\_49, MCubed\_47, MaeLinda\_49, ManRay\_48, Mandalorian\_46, Martin\_50, MillyPhilly\_49, Nagem\_49, Nattles\_48, NickSell\_49, Nucci\_46, Oats\_48, OldNelly\_50, Oxtober96\_50, Papafritta\_48, ParleG\_49, Peep\_49, Pherferi\_49, Phiderman\_49, Phireproof\_49, PhredFlintston\_49, Phriends\_49, Pocket\_48, PuppyEggo\_49, QuadZero\_48, Quartz\_47, Rappheph\_49, Raptor\_49, Renzie\_49, Riyhil\_49, Robinson\_49, Rog141\_48, SJay\_49, Sansa\_46, Saratos\_47, Sedgewig\_48, ShaiHulud\_50, Shamu\_48, Shee\_49, SonOfLevi\_49, StingRay\_48, StirfryIV\_48, Strathdee\_49, Superfresh\_49, TatarkaPM\_49, Teagan\_49, TeddyBear\_48, Tenda\_48, Thompsone\_49, Thorongil\_49, TinSulphur\_50, Tinyman4\_44, Velene\_49, Vispistious\_49, WestPM\_43, WildNOut\_49, Winzigespinne\_48, YuuY\_47, Zada\_50, Zayuliv\_48, Zenitsu\_47,

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

- CaptainRex\_48, Finny\_48, Fulton\_48, Librie\_48, Schimmels22\_44, Zepp\_48,

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

- Alakazam\_47, Cheeto1\_49, Chepli\_48, ChickenKing\_47, Clock\_46, Endor\_50, FarmerDoug\_48, GaeCeo\_49, Jemerald\_48, Juicer\_48, Luna18\_48, Magritte\_232, Mercedes\_43, MonChoix\_46, Morigan\_48, Nebulous\_45, Neferthena\_48, WilliamStrong\_47,

### Summary by start number:

Start 20:

- Found in 1 of 148 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 146
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Neferthena\_48 (EA5),

Start 21:

- Found in 12 of 148 ( 8.1% ) of genes in pham
- Manual Annotations of this start: 5 of 146
- Called 41.7% of time when present
- Phage (with cluster) where this start called: CaptainRex\_48 (EA5), Fulton\_48 (EA5), Juicer\_48 (EA6), Librie\_48 (EA5), Zepp\_48 (EA5),

Start 22:

- Found in 3 of 148 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 1 of 146
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Alakazam\_47 (EA5),

Start 25:

- Found in 2 of 148 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 1 of 146
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Schimmels22\_44 (EA11),

Start 26:

- Found in 2 of 148 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 1 of 146
- Called 50.0% of time when present
- Phage (with cluster) where this start called: FarmerDoug\_48 (EA1),

Start 28:

- Found in 8 of 148 ( 5.4% ) of genes in pham
- Manual Annotations of this start: 7 of 146
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Cheeto1\_49 (EA9), Chepli\_48 (EA6), ChickenKing\_47 (EA9), GaeCeo\_49 (EA9), Jemerald\_48 (EA6), Luna18\_48 (EA6), Morigan\_48 (EA6),

Start 29:

- Found in 130 of 148 ( 87.8% ) of genes in pham

- Manual Annotations of this start: 122 of 146
- Called 95.4% of time when present
- Phage (with cluster) where this start called: Acosta\_51 (EA1), Agente005\_49 (EA1), AlexAdler\_49 (EA1), Alyxandracam\_49 (EA1), Andromedas\_47 (EA2), Antoinette\_49 (EA1), AranulaLuti\_48 (EA1), Asta\_48 (EA1), Aubergine\_48 (EA1), AxiPup\_49 (EA1), Baines\_48 (EA1), Bandik\_49 (EA1), BeautPeep30\_49 (EA1), Benjalauren\_49 (EA1), BigRedClifford\_49 (EA1), Blage\_49 (EA1), BonesMcCoy\_49 (EA1), Bonino\_48 (EA1), Byron23\_50 (EA1), Calix\_48 (EA1), Carostasia\_46 (EA10), Chako\_48 (EA1), Chamuel\_48 (EA1), ChikPic\_47 (EA2), Christoph\_48 (EA1), Clancy\_48 (EA1), ColaCorta\_47 (EA2), Convict\_49 (EA1), Dave\_49 (EA1), Den3\_49 (EA1), Dothraki\_49 (EA1), Duocatuli\_48 (EA1), Eleri\_47 (EA2), Erla\_48 (EA1), Espinosa\_48 (EA1), Etta\_48 (EA1), GardenB\_49 (EA1), Garey24\_49 (EA1), Gargoyle\_49 (EA1), Gelo\_48 (EA1), Gershwin\_48 (EA1), Glamour\_47 (EA2), Greenlvy\_47 (EA5), Greys\_49 (EA1), Gubbabump\_48 (EA1), HanSolo\_48 (EA1), HankSprout\_49 (EA1), Hasitha\_48 (EA5), HerculesXL\_45 (EA11), HungryHenry\_48 (EA1), Ilzat\_48 (EA1), Inventa\_49 (EA1), Ioannes\_49 (EA1), Ixel\_48 (EA11), Janus167\_48 (EA1), Juanyo\_46 (EA10), Kale\_48 (EA1), KannH\_48 (EA1), Klimt\_49 (EA1), Knox\_49 (EA1), Kurt1\_49 (EA1), LilTerminator\_48 (EA5), Lovelyunicorn\_49 (EA1), Ludgate\_49 (EA1), MCubed\_47 (EA2), MaeLinda\_49 (EA1), ManRay\_48 (EA1), Mandalorian\_46 (EA10), Martin\_50 (EA1), MillyPhilly\_49 (EA1), Nagem\_49 (EA1), Nattles\_48 (EA1), NickSell\_49 (EA1), Nucci\_46 (EA10), Oats\_48 (EA1), OldNelly\_50 (EA1), Oxtober96\_50 (EA1), Papafritta\_48 (EA1), ParleG\_49 (EA1), Peep\_49 (EA1), Pherferi\_49 (EA1), Phiderman\_49 (EA1), Phireproof\_49 (EA1), PhredFlintston\_49 (EA1), Phriends\_49 (EA1), Pocket\_48 (EA1), PuppyEggo\_49 (EA1), QuadZero\_48 (EA5), Quartz\_47 (EA10), Rapheph\_49 (EA1), Raptor\_49 (EA1), Renzie\_49 (EA1), Riyhil\_49 (EA1), Robinson\_49 (EA1), Rog141\_48 (EA1), SJay\_49 (EA1), Sansa\_46 (EA2), Saratos\_47 (EA2), Sedgewig\_48 (EA1), ShaiHulud\_50 (EA1), Shamu\_48 (EA2), Shee\_49 (EA1), SonOfLevi\_49 (EA1), StingRay\_48 (EA1), StirfryIV\_48 (EA1), Strathdee\_49 (EA1), Superfresh\_49 (EA1), TatarkaPM\_49 (EA1), Teagan\_49 (EA1), TeddyBear\_48 (EA1), Tenda\_48 (EA1), Thompsone\_49 (EA1), Thorongil\_49 (EA1), TinSulphur\_50 (EA1), Tinyman4\_44 (EA11), Velene\_49 (EA1), Vispistious\_49 (EA1), WestPM\_43 (EA11), WildNOut\_49 (EA1), Winzigespinne\_48 (EA1), YuuY\_47 (EA10), Zada\_50 (EA1), Zayuliv\_48 (EA5), Zenitsu\_47 (EA2),

#### Start 30:

- Found in 10 of 148 ( 6.8% ) of genes in pham
- Manual Annotations of this start: 5 of 146
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Clock\_46 (EA5), Endor\_50 (EA1), MonChoix\_46 (EA1), Nebulous\_45 (EA5), WilliamStrong\_47 (EA6),

#### Start 31:

- Found in 1 of 148 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 146
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mercedes\_43 (EA),

#### Start 34:

- Found in 27 of 148 ( 18.2% ) of genes in pham
- Manual Annotations of this start: 2 of 146
- Called 7.4% of time when present
- Phage (with cluster) where this start called: Finny\_48 (EA2), Magritte\_232 (singleton),

## Summary by clusters:

There are 9 clusters represented in this pham: singleton, EA11, EA10, EA, EA9, EA1, EA2, EA5, EA6,

Info for manual annotations of cluster EA:

- Start number 31 was manually annotated 1 time for cluster EA.

Info for manual annotations of cluster EA1:

- Start number 26 was manually annotated 1 time for cluster EA1.
- Start number 29 was manually annotated 98 times for cluster EA1.
- Start number 30 was manually annotated 2 times for cluster EA1.

Info for manual annotations of cluster EA10:

- Start number 29 was manually annotated 6 times for cluster EA10.

Info for manual annotations of cluster EA11:

- Start number 25 was manually annotated 1 time for cluster EA11.
- Start number 29 was manually annotated 4 times for cluster EA11.

Info for manual annotations of cluster EA2:

- Start number 29 was manually annotated 10 times for cluster EA2.
- Start number 34 was manually annotated 1 time for cluster EA2.

Info for manual annotations of cluster EA5:

- Start number 20 was manually annotated 1 time for cluster EA5.
- Start number 21 was manually annotated 4 times for cluster EA5.
- Start number 22 was manually annotated 1 time for cluster EA5.
- Start number 29 was manually annotated 4 times for cluster EA5.
- Start number 30 was manually annotated 2 times for cluster EA5.

Info for manual annotations of cluster EA6:

- Start number 21 was manually annotated 1 time for cluster EA6.
- Start number 28 was manually annotated 4 times for cluster EA6.
- Start number 30 was manually annotated 1 time for cluster EA6.

Info for manual annotations of cluster EA9:

- Start number 28 was manually annotated 3 times for cluster EA9.

## **Gene Information:**

Gene: Acosta\_51 Start: 35700, Stop: 35482, Start Num: 29

Candidate Starts for Acosta\_51:

(Start: 29 @35700 has 122 MA's),

Gene: Agente005\_49 Start: 35521, Stop: 35294, Start Num: 29

Candidate Starts for Agente005\_49:

(Start: 29 @35521 has 122 MA's), (Start: 30 @35518 has 5 MA's), (38, 35455),

Gene: Alakazam\_47 Start: 35003, Stop: 34707, Start Num: 22

Candidate Starts for Alakazam\_47:

(13, 35093), (15, 35069), (Start: 22 @35003 has 1 MA's), (Start: 30 @34955 has 5 MA's), (43, 34865), (51, 34835), (58, 34805), (60, 34787), (63, 34766), (64, 34754),

Gene: AlexAdler\_49 Start: 35534, Stop: 35301, Start Num: 29

Candidate Starts for AlexAdler\_49:

(Start: 29 @35534 has 122 MA's), (36, 35486), (45, 35435),

Gene: Alyxandracam\_49 Start: 35544, Stop: 35311, Start Num: 29

Candidate Starts for Alyxandracam\_49:

(Start: 29 @35544 has 122 MA's), (36, 35496), (37, 35490), (45, 35445), (48, 35433),

Gene: Andromedas\_47 Start: 34462, Stop: 34241, Start Num: 29

Candidate Starts for Andromedas\_47:

(Start: 29 @34462 has 122 MA's), (Start: 34 @34429 has 2 MA's), (42, 34372),

Gene: Antoinette\_49 Start: 35534, Stop: 35301, Start Num: 29

Candidate Starts for Antoinette\_49:

(Start: 29 @35534 has 122 MA's), (36, 35486), (45, 35435),

Gene: AranulaLuti\_48 Start: 35246, Stop: 35013, Start Num: 29

Candidate Starts for AranulaLuti\_48:

(Start: 29 @35246 has 122 MA's), (36, 35198), (37, 35192), (45, 35147), (48, 35135),

Gene: Asta\_48 Start: 35256, Stop: 35023, Start Num: 29

Candidate Starts for Asta\_48:

(Start: 29 @35256 has 122 MA's), (36, 35208), (37, 35202), (45, 35157), (48, 35145),

Gene: Aubergine\_48 Start: 35256, Stop: 35023, Start Num: 29

Candidate Starts for Aubergine\_48:

(Start: 29 @35256 has 122 MA's), (36, 35208), (37, 35202), (45, 35157), (48, 35145),

Gene: AxiPup\_49 Start: 35513, Stop: 35280, Start Num: 29

Candidate Starts for AxiPup\_49:

(Start: 29 @35513 has 122 MA's), (36, 35465), (37, 35459), (45, 35414), (48, 35402),

Gene: Baines\_48 Start: 35249, Stop: 35016, Start Num: 29

Candidate Starts for Baines\_48:

(Start: 29 @35249 has 122 MA's), (36, 35201), (37, 35195), (45, 35150), (48, 35138),

Gene: Bandik\_49 Start: 35539, Stop: 35306, Start Num: 29

Candidate Starts for Bandik\_49:

(Start: 29 @35539 has 122 MA's), (36, 35491), (45, 35440),

Gene: BeautPeep30\_49 Start: 35545, Stop: 35312, Start Num: 29

Candidate Starts for BeautPeep30\_49:

(Start: 29 @35545 has 122 MA's), (36, 35497), (45, 35446),

Gene: Benjalauren\_49 Start: 35262, Stop: 35029, Start Num: 29

Candidate Starts for Benjalauren\_49:

(Start: 29 @35262 has 122 MA's), (36, 35214), (37, 35208), (45, 35163), (48, 35151),

Gene: BigRedClifford\_49 Start: 35540, Stop: 35307, Start Num: 29

Candidate Starts for BigRedClifford\_49:

(Start: 29 @35540 has 122 MA's), (36, 35492), (37, 35486), (45, 35441), (48, 35429),

Gene: Blage\_49 Start: 35540, Stop: 35307, Start Num: 29

Candidate Starts for Blage\_49:

(Start: 29 @35540 has 122 MA's), (36, 35492), (37, 35486), (45, 35441), (48, 35429),

Gene: BonesMcCoy\_49 Start: 35540, Stop: 35307, Start Num: 29

Candidate Starts for BonesMcCoy\_49:

(Start: 29 @35540 has 122 MA's), (36, 35492), (37, 35486), (45, 35441), (48, 35429),

Gene: Bonino\_48 Start: 35235, Stop: 35002, Start Num: 29

Candidate Starts for Bonino\_48:

(Start: 29 @35235 has 122 MA's), (36, 35187), (37, 35181), (45, 35136), (48, 35124),

Gene: Byron23\_50 Start: 35542, Stop: 35309, Start Num: 29

Candidate Starts for Byron23\_50:

(Start: 29 @35542 has 122 MA's), (36, 35494), (45, 35443),

Gene: Calix\_48 Start: 35242, Stop: 35009, Start Num: 29

Candidate Starts for Calix\_48:

(Start: 29 @35242 has 122 MA's), (36, 35194), (37, 35188), (45, 35143), (48, 35131),

Gene: CaptainRex\_48 Start: 33994, Stop: 33689, Start Num: 21

Candidate Starts for CaptainRex\_48:

(3, 34333), (8, 34156), (9, 34150), (Start: 21 @33994 has 5 MA's), (24, 33964), (Start: 29 @33931 has 122 MA's), (33, 33919), (Start: 34 @33904 has 2 MA's), (37, 33883), (51, 33811), (60, 33754),

Gene: Carostasia\_46 Start: 34024, Stop: 33800, Start Num: 29

Candidate Starts for Carostasia\_46:

(Start: 29 @34024 has 122 MA's), (Start: 34 @33991 has 2 MA's), (42, 33934), (60, 33865),

Gene: Chako\_48 Start: 35246, Stop: 35013, Start Num: 29

Candidate Starts for Chako\_48:

(Start: 29 @35246 has 122 MA's), (36, 35198), (37, 35192), (45, 35147), (48, 35135),

Gene: Chamuel\_48 Start: 35268, Stop: 35035, Start Num: 29

Candidate Starts for Chamuel\_48:

(Start: 29 @35268 has 122 MA's), (36, 35220), (37, 35214), (45, 35169), (48, 35157),

Gene: Cheeto1\_49 Start: 35008, Stop: 34778, Start Num: 28

Candidate Starts for Cheeto1\_49:

(17, 35119), (Start: 28 @35008 has 7 MA's), (32, 34993), (36, 34957), (42, 34915), (51, 34885),

Gene: Chepli\_48 Start: 33829, Stop: 33602, Start Num: 28

Candidate Starts for Chepli\_48:

(16, 33937), (Start: 28 @33829 has 7 MA's), (58, 33691), (62, 33661),

Gene: ChickenKing\_47 Start: 34901, Stop: 34671, Start Num: 28

Candidate Starts for ChickenKing\_47:

(12, 35060), (14, 35021), (Start: 28 @34901 has 7 MA's), (32, 34886), (36, 34850), (42, 34808), (59, 34745),



Gene: ChikPic\_47 Start: 34316, Stop: 34095, Start Num: 29  
Candidate Starts for ChikPic\_47:  
(19, 34415), (Start: 29 @34316 has 122 MA's), (Start: 34 @34283 has 2 MA's), (42, 34226),

Gene: Christoph\_48 Start: 35255, Stop: 35022, Start Num: 29  
Candidate Starts for Christoph\_48:  
(Start: 29 @35255 has 122 MA's), (36, 35207), (37, 35201), (45, 35156), (48, 35144),

Gene: Clancy\_48 Start: 35291, Stop: 35058, Start Num: 29  
Candidate Starts for Clancy\_48:  
(Start: 29 @35291 has 122 MA's), (36, 35243), (37, 35237), (45, 35192), (48, 35180),

Gene: Clock\_46 Start: 35691, Stop: 35443, Start Num: 30  
Candidate Starts for Clock\_46:  
(14, 35811), (Start: 22 @35739 has 1 MA's), (Start: 30 @35691 has 5 MA's), (37, 35640), (43, 35601),  
(51, 35571), (58, 35541), (60, 35523),

Gene: ColaCorta\_47 Start: 34462, Stop: 34241, Start Num: 29  
Candidate Starts for ColaCorta\_47:  
(Start: 29 @34462 has 122 MA's), (Start: 34 @34429 has 2 MA's), (42, 34372),

Gene: Convict\_49 Start: 35540, Stop: 35307, Start Num: 29  
Candidate Starts for Convict\_49:  
(Start: 29 @35540 has 122 MA's), (36, 35492), (37, 35486), (45, 35441), (48, 35429),

Gene: Dave\_49 Start: 35534, Stop: 35301, Start Num: 29  
Candidate Starts for Dave\_49:  
(Start: 29 @35534 has 122 MA's), (36, 35486), (45, 35435),

Gene: Den3\_49 Start: 35545, Stop: 35312, Start Num: 29  
Candidate Starts for Den3\_49:  
(Start: 29 @35545 has 122 MA's), (36, 35497), (37, 35491), (45, 35446), (48, 35434),

Gene: Dothraki\_49 Start: 35542, Stop: 35309, Start Num: 29  
Candidate Starts for Dothraki\_49:  
(Start: 29 @35542 has 122 MA's), (36, 35494), (45, 35443),

Gene: Duocatuli\_48 Start: 35246, Stop: 35013, Start Num: 29  
Candidate Starts for Duocatuli\_48:  
(Start: 29 @35246 has 122 MA's), (36, 35198), (37, 35192), (45, 35147), (48, 35135),

Gene: Eleri\_47 Start: 34306, Stop: 34085, Start Num: 29  
Candidate Starts for Eleri\_47:  
(Start: 29 @34306 has 122 MA's), (Start: 34 @34273 has 2 MA's), (42, 34216),

Gene: Endor\_50 Start: 35728, Stop: 35504, Start Num: 30  
Candidate Starts for Endor\_50:  
(Start: 30 @35728 has 5 MA's), (41, 35644), (56, 35587),

Gene: Erla\_48 Start: 35239, Stop: 35006, Start Num: 29  
Candidate Starts for Erla\_48:  
(Start: 29 @35239 has 122 MA's), (36, 35191), (37, 35185), (45, 35140), (48, 35128),

Gene: Espinosa\_48 Start: 35254, Stop: 35021, Start Num: 29  
Candidate Starts for Espinosa\_48:  
(Start: 29 @35254 has 122 MA's), (36, 35206), (37, 35200), (45, 35155), (48, 35143),

Gene: Etta\_48 Start: 35243, Stop: 35010, Start Num: 29  
Candidate Starts for Etta\_48:  
(Start: 29 @35243 has 122 MA's), (36, 35195), (37, 35189), (45, 35144), (48, 35132),

Gene: FarmerDoug\_48 Start: 35255, Stop: 35010, Start Num: 26  
Candidate Starts for FarmerDoug\_48:  
(Start: 26 @35255 has 1 MA's), (Start: 30 @35234 has 5 MA's), (44, 35144), (52, 35117),

Gene: Finny\_48 Start: 34267, Stop: 34079, Start Num: 34  
Candidate Starts for Finny\_48:  
(Start: 29 @34300 has 122 MA's), (Start: 34 @34267 has 2 MA's), (42, 34210),

Gene: Fulton\_48 Start: 33995, Stop: 33690, Start Num: 21  
Candidate Starts for Fulton\_48:  
(3, 34334), (8, 34157), (9, 34151), (Start: 21 @33995 has 5 MA's), (24, 33965), (Start: 29 @33932 has 122 MA's), (33, 33920), (Start: 34 @33905 has 2 MA's), (37, 33884), (51, 33812), (60, 33755),

Gene: GaeCeo\_49 Start: 35134, Stop: 34904, Start Num: 28  
Candidate Starts for GaeCeo\_49:  
(12, 35293), (14, 35254), (Start: 28 @35134 has 7 MA's), (32, 35119), (36, 35083), (42, 35041), (59, 34978),

Gene: GardenB\_49 Start: 35493, Stop: 35266, Start Num: 29  
Candidate Starts for GardenB\_49:  
(11, 35706), (Start: 29 @35493 has 122 MA's), (Start: 30 @35490 has 5 MA's), (38, 35427),

Gene: Garey24\_49 Start: 35222, Stop: 34989, Start Num: 29  
Candidate Starts for Garey24\_49:  
(Start: 29 @35222 has 122 MA's), (36, 35174), (37, 35168), (45, 35123), (48, 35111),

Gene: Gargoyle\_49 Start: 35545, Stop: 35312, Start Num: 29  
Candidate Starts for Gargoyle\_49:  
(Start: 29 @35545 has 122 MA's), (36, 35497), (37, 35491), (45, 35446), (48, 35434),

Gene: Gelo\_48 Start: 35249, Stop: 35016, Start Num: 29  
Candidate Starts for Gelo\_48:  
(Start: 29 @35249 has 122 MA's), (36, 35201), (37, 35195), (45, 35150), (48, 35138),

Gene: Gershwin\_48 Start: 35256, Stop: 35023, Start Num: 29  
Candidate Starts for Gershwin\_48:  
(Start: 29 @35256 has 122 MA's), (36, 35208), (37, 35202), (45, 35157), (48, 35145),

Gene: Glamour\_47 Start: 34454, Stop: 34233, Start Num: 29  
Candidate Starts for Glamour\_47:  
(Start: 29 @34454 has 122 MA's), (Start: 34 @34421 has 2 MA's), (42, 34364),

Gene: Greenlvy\_47 Start: 34290, Stop: 34045, Start Num: 29  
Candidate Starts for Greenlvy\_47:

(3, 34632), (5, 34530), (Start: 21 @34353 has 5 MA's), (24, 34323), (Start: 29 @34290 has 122 MA's), (36, 34242), (40, 34206), (44, 34194), (47, 34185), (51, 34164), (55, 34137),

Gene: Greys\_49 Start: 35541, Stop: 35308, Start Num: 29

Candidate Starts for Greys\_49:

(Start: 29 @35541 has 122 MA's), (36, 35493), (37, 35487), (45, 35442), (48, 35430),

Gene: Gubbabump\_48 Start: 35236, Stop: 35003, Start Num: 29

Candidate Starts for Gubbabump\_48:

(Start: 29 @35236 has 122 MA's), (36, 35188), (37, 35182), (45, 35137), (48, 35125),

Gene: HanSolo\_48 Start: 35246, Stop: 35013, Start Num: 29

Candidate Starts for HanSolo\_48:

(Start: 29 @35246 has 122 MA's), (36, 35198), (37, 35192), (45, 35147), (48, 35135),

Gene: HankSprout\_49 Start: 35123, Stop: 34890, Start Num: 29

Candidate Starts for HankSprout\_49:

(Start: 29 @35123 has 122 MA's), (36, 35075), (37, 35069), (45, 35024), (48, 35012),

Gene: Hasitha\_48 Start: 33944, Stop: 33702, Start Num: 29

Candidate Starts for Hasitha\_48:

(3, 34346), (8, 34169), (9, 34163), (Start: 21 @34007 has 5 MA's), (24, 33977), (Start: 29 @33944 has 122 MA's), (33, 33932), (Start: 34 @33917 has 2 MA's), (37, 33896), (51, 33824), (60, 33767),

Gene: HerculesXL\_45 Start: 33070, Stop: 32831, Start Num: 29

Candidate Starts for HerculesXL\_45:

(Start: 29 @33070 has 122 MA's), (46, 32968), (47, 32965), (50, 32953), (58, 32914), (60, 32896),

Gene: HungryHenry\_48 Start: 35251, Stop: 35018, Start Num: 29

Candidate Starts for HungryHenry\_48:

(Start: 29 @35251 has 122 MA's), (36, 35203), (37, 35197), (45, 35152), (48, 35140),

Gene: Ilzat\_48 Start: 35262, Stop: 35029, Start Num: 29

Candidate Starts for Ilzat\_48:

(Start: 29 @35262 has 122 MA's), (36, 35214), (37, 35208), (45, 35163), (48, 35151),

Gene: Inventa\_49 Start: 35539, Stop: 35306, Start Num: 29

Candidate Starts for Inventa\_49:

(Start: 29 @35539 has 122 MA's), (36, 35491), (45, 35440),

Gene: loannes\_49 Start: 35543, Stop: 35310, Start Num: 29

Candidate Starts for loannes\_49:

(Start: 29 @35543 has 122 MA's), (36, 35495), (37, 35489), (45, 35444), (48, 35432),

Gene: Ixel\_48 Start: 34765, Stop: 34514, Start Num: 29

Candidate Starts for Ixel\_48:

(Start: 29 @34765 has 122 MA's), (35, 34720), (51, 34642), (58, 34612), (60, 34594),

Gene: Janus167\_48 Start: 35273, Stop: 35043, Start Num: 29

Candidate Starts for Janus167\_48:

(Start: 29 @35273 has 122 MA's), (36, 35225), (37, 35219), (45, 35174), (48, 35162),

Gene: Jemerald\_48 Start: 34908, Stop: 34672, Start Num: 28

Candidate Starts for Jemerald\_48:

(18, 34998), (Start: 21 @34974 has 5 MA's), (24, 34944), (Start: 28 @34908 has 7 MA's), (32, 34893), (37, 34851), (42, 34815), (49, 34788), (54, 34758), (62, 34728),

Gene: Juanyo\_46 Start: 33928, Stop: 33704, Start Num: 29

Candidate Starts for Juanyo\_46:

(Start: 29 @33928 has 122 MA's), (Start: 34 @33895 has 2 MA's), (42, 33838), (53, 33796), (60, 33769),

Gene: Juicer\_48 Start: 34974, Stop: 34672, Start Num: 21

Candidate Starts for Juicer\_48:

(18, 34998), (Start: 21 @34974 has 5 MA's), (24, 34944), (Start: 28 @34908 has 7 MA's), (32, 34893), (37, 34851), (42, 34815), (49, 34788), (54, 34758), (62, 34728),

Gene: Kale\_48 Start: 35258, Stop: 35025, Start Num: 29

Candidate Starts for Kale\_48:

(Start: 29 @35258 has 122 MA's), (36, 35210), (37, 35204), (45, 35159), (48, 35147),

Gene: KannH\_48 Start: 35246, Stop: 35013, Start Num: 29

Candidate Starts for KannH\_48:

(Start: 29 @35246 has 122 MA's), (36, 35198), (37, 35192), (45, 35147), (48, 35135),

Gene: Klimt\_49 Start: 35274, Stop: 35041, Start Num: 29

Candidate Starts for Klimt\_49:

(Start: 29 @35274 has 122 MA's), (36, 35226), (37, 35220), (45, 35175), (48, 35163),

Gene: Knox\_49 Start: 35540, Stop: 35307, Start Num: 29

Candidate Starts for Knox\_49:

(Start: 29 @35540 has 122 MA's), (36, 35492), (37, 35486), (45, 35441), (48, 35429),

Gene: Kurt1\_49 Start: 35539, Stop: 35306, Start Num: 29

Candidate Starts for Kurt1\_49:

(Start: 29 @35539 has 122 MA's), (36, 35491), (45, 35440),

Gene: Librie\_48 Start: 33994, Stop: 33689, Start Num: 21

Candidate Starts for Librie\_48:

(3, 34333), (8, 34156), (9, 34150), (Start: 21 @33994 has 5 MA's), (24, 33964), (Start: 29 @33931 has 122 MA's), (33, 33919), (Start: 34 @33904 has 2 MA's), (37, 33883), (51, 33811), (60, 33754),

Gene: LilTerminator\_48 Start: 33956, Stop: 33711, Start Num: 29

Candidate Starts for LilTerminator\_48:

(3, 34298), (5, 34196), (Start: 21 @34019 has 5 MA's), (24, 33989), (Start: 29 @33956 has 122 MA's), (36, 33908), (40, 33872), (44, 33860), (47, 33851), (51, 33830), (55, 33803),

Gene: Lovelyunicorn\_49 Start: 35541, Stop: 35374, Start Num: 29

Candidate Starts for Lovelyunicorn\_49:

(Start: 29 @35541 has 122 MA's), (36, 35493), (37, 35487), (45, 35442), (48, 35430),

Gene: Ludgate\_49 Start: 35542, Stop: 35309, Start Num: 29

Candidate Starts for Ludgate\_49:

(Start: 29 @35542 has 122 MA's), (36, 35494), (37, 35488), (45, 35443), (48, 35431),

Gene: Luna18\_48 Start: 33841, Stop: 33614, Start Num: 28

Candidate Starts for Luna18\_48:  
(16, 33949), (Start: 28 @33841 has 7 MA's), (58, 33703), (62, 33673),

Gene: MCubed\_47 Start: 34331, Stop: 34110, Start Num: 29  
Candidate Starts for MCubed\_47:  
(Start: 29 @34331 has 122 MA's), (Start: 34 @34298 has 2 MA's), (42, 34241),

Gene: MaeLinda\_49 Start: 35543, Stop: 35310, Start Num: 29  
Candidate Starts for MaeLinda\_49:  
(Start: 29 @35543 has 122 MA's), (36, 35495), (45, 35444),

Gene: Magritte\_232 Start: 121567, Stop: 121797, Start Num: 34  
Candidate Starts for Magritte\_232:  
(27, 121516), (Start: 34 @121567 has 2 MA's), (36, 121582), (40, 121618), (49, 121651), (52, 121663), (61, 121714), (65, 121777),

Gene: ManRay\_48 Start: 35256, Stop: 35023, Start Num: 29  
Candidate Starts for ManRay\_48:  
(Start: 29 @35256 has 122 MA's), (36, 35208), (37, 35202), (45, 35157), (48, 35145),

Gene: Mandalorian\_46 Start: 34034, Stop: 33810, Start Num: 29  
Candidate Starts for Mandalorian\_46:  
(Start: 29 @34034 has 122 MA's), (Start: 34 @34001 has 2 MA's), (42, 33944), (60, 33875),

Gene: Martin\_50 Start: 35548, Stop: 35315, Start Num: 29  
Candidate Starts for Martin\_50:  
(Start: 29 @35548 has 122 MA's), (36, 35500), (45, 35449),

Gene: Mercedes\_43 Start: 33910, Stop: 33674, Start Num: 31  
Candidate Starts for Mercedes\_43:  
(1, 34471), (2, 34369), (3, 34327), (4, 34306), (10, 34132), (Start: 21 @33973 has 5 MA's), (24, 33943), (Start: 31 @33910 has 1 MA's), (Start: 34 @33883 has 2 MA's), (35, 33871), (37, 33862), (40, 33832), (51, 33790), (60, 33739),

Gene: MillyPhilly\_49 Start: 35536, Stop: 35303, Start Num: 29  
Candidate Starts for MillyPhilly\_49:  
(Start: 29 @35536 has 122 MA's), (36, 35488), (45, 35437),

Gene: MonChoix\_46 Start: 35079, Stop: 34858, Start Num: 30  
Candidate Starts for MonChoix\_46:  
(Start: 26 @35100 has 1 MA's), (Start: 30 @35079 has 5 MA's), (Start: 34 @35052 has 2 MA's), (36, 35037), (41, 34998), (44, 34989),

Gene: Morrigan\_48 Start: 33809, Stop: 33570, Start Num: 28  
Candidate Starts for Morrigan\_48:  
(Start: 28 @33809 has 7 MA's), (33, 33788), (39, 33725), (62, 33623),

Gene: Nagem\_49 Start: 35539, Stop: 35306, Start Num: 29  
Candidate Starts for Nagem\_49:  
(Start: 29 @35539 has 122 MA's), (36, 35491), (37, 35485), (45, 35440), (48, 35428),

Gene: Nattles\_48 Start: 35243, Stop: 35010, Start Num: 29  
Candidate Starts for Nattles\_48:

(Start: 29 @35243 has 122 MA's), (36, 35195), (37, 35189), (45, 35144), (48, 35132),

Gene: Nebulous\_45 Start: 35872, Stop: 35624, Start Num: 30

Candidate Starts for Nebulous\_45:

(14, 35992), (Start: 22 @35920 has 1 MA's), (Start: 30 @35872 has 5 MA's), (37, 35821), (43, 35782), (51, 35752), (58, 35722), (60, 35704),

Gene: Neferthena\_48 Start: 35278, Stop: 34961, Start Num: 20

Candidate Starts for Neferthena\_48:

(6, 35464), (7, 35437), (Start: 20 @35278 has 1 MA's), (Start: 30 @35209 has 5 MA's), (37, 35158), (43, 35119), (51, 35089), (58, 35059), (60, 35041),

Gene: NickSell\_49 Start: 35549, Stop: 35316, Start Num: 29

Candidate Starts for NickSell\_49:

(Start: 29 @35549 has 122 MA's), (36, 35501), (45, 35450),

Gene: Nucci\_46 Start: 34017, Stop: 33793, Start Num: 29

Candidate Starts for Nucci\_46:

(Start: 29 @34017 has 122 MA's), (Start: 34 @33984 has 2 MA's), (42, 33927), (43, 33924), (60, 33858),

Gene: Oats\_48 Start: 35256, Stop: 35023, Start Num: 29

Candidate Starts for Oats\_48:

(Start: 29 @35256 has 122 MA's), (36, 35208), (37, 35202), (45, 35157), (48, 35145),

Gene: OldNelly\_50 Start: 35545, Stop: 35312, Start Num: 29

Candidate Starts for OldNelly\_50:

(Start: 29 @35545 has 122 MA's), (36, 35497), (45, 35446),

Gene: Oxtober96\_50 Start: 35541, Stop: 35308, Start Num: 29

Candidate Starts for Oxtober96\_50:

(Start: 29 @35541 has 122 MA's), (36, 35493), (37, 35487), (45, 35442), (48, 35430),

Gene: Papafritta\_48 Start: 35297, Stop: 35067, Start Num: 29

Candidate Starts for Papafritta\_48:

(Start: 29 @35297 has 122 MA's), (36, 35249), (37, 35243), (45, 35198), (48, 35186),

Gene: ParleG\_49 Start: 35546, Stop: 35313, Start Num: 29

Candidate Starts for ParleG\_49:

(Start: 29 @35546 has 122 MA's), (36, 35498), (45, 35447),

Gene: Peep\_49 Start: 35531, Stop: 35298, Start Num: 29

Candidate Starts for Peep\_49:

(Start: 29 @35531 has 122 MA's), (36, 35483), (45, 35432),

Gene: Pherferi\_49 Start: 35539, Stop: 35306, Start Num: 29

Candidate Starts for Pherferi\_49:

(Start: 29 @35539 has 122 MA's), (36, 35491), (45, 35440),

Gene: Phiderman\_49 Start: 35536, Stop: 35303, Start Num: 29

Candidate Starts for Phiderman\_49:

(Start: 29 @35536 has 122 MA's), (36, 35488), (45, 35437),

Gene: Phireproof\_49 Start: 35545, Stop: 35312, Start Num: 29

Candidate Starts for Phireproof\_49:

(Start: 29 @35545 has 122 MA's), (36, 35497), (45, 35446),

Gene: PhredFlintston\_49 Start: 35539, Stop: 35306, Start Num: 29

Candidate Starts for PhredFlintston\_49:

(Start: 29 @35539 has 122 MA's), (36, 35491), (45, 35440),

Gene: Phriends\_49 Start: 35545, Stop: 35312, Start Num: 29

Candidate Starts for Phriends\_49:

(Start: 29 @35545 has 122 MA's), (36, 35497), (45, 35446),

Gene: Pocket\_48 Start: 35283, Stop: 35050, Start Num: 29

Candidate Starts for Pocket\_48:

(Start: 29 @35283 has 122 MA's), (36, 35235), (37, 35229), (45, 35184), (48, 35172),

Gene: PuppyEggo\_49 Start: 35546, Stop: 35313, Start Num: 29

Candidate Starts for PuppyEggo\_49:

(Start: 29 @35546 has 122 MA's), (36, 35498), (37, 35492), (45, 35447), (48, 35435),

Gene: QuadZero\_48 Start: 34095, Stop: 33853, Start Num: 29

Candidate Starts for QuadZero\_48:

(3, 34437), (5, 34335), (Start: 21 @34158 has 5 MA's), (24, 34128), (Start: 29 @34095 has 122 MA's), (33, 34083), (Start: 34 @34068 has 2 MA's), (35, 34056), (37, 34047), (51, 33975), (60, 33918),

Gene: Quartz\_47 Start: 34147, Stop: 33923, Start Num: 29

Candidate Starts for Quartz\_47:

(Start: 29 @34147 has 122 MA's), (Start: 34 @34114 has 2 MA's), (42, 34057), (60, 33988),

Gene: Rapheph\_49 Start: 35539, Stop: 35306, Start Num: 29

Candidate Starts for Rapheph\_49:

(Start: 29 @35539 has 122 MA's), (36, 35491), (45, 35440),

Gene: Raptor\_49 Start: 35543, Stop: 35310, Start Num: 29

Candidate Starts for Raptor\_49:

(Start: 29 @35543 has 122 MA's), (36, 35495), (37, 35489), (45, 35444), (48, 35432),

Gene: Renzie\_49 Start: 35534, Stop: 35301, Start Num: 29

Candidate Starts for Renzie\_49:

(Start: 29 @35534 has 122 MA's), (36, 35486), (45, 35435),

Gene: Riyhil\_49 Start: 35549, Stop: 35316, Start Num: 29

Candidate Starts for Riyhil\_49:

(Start: 29 @35549 has 122 MA's), (36, 35501), (45, 35450),

Gene: Robinson\_49 Start: 35537, Stop: 35304, Start Num: 29

Candidate Starts for Robinson\_49:

(Start: 29 @35537 has 122 MA's), (36, 35489), (45, 35438),

Gene: Rog141\_48 Start: 35246, Stop: 35013, Start Num: 29

Candidate Starts for Rog141\_48:

(Start: 29 @35246 has 122 MA's), (36, 35198), (37, 35192), (45, 35147), (48, 35135),

Gene: SJay\_49 Start: 35540, Stop: 35307, Start Num: 29  
Candidate Starts for SJay\_49:  
(Start: 29 @35540 has 122 MA's), (36, 35492), (37, 35486), (45, 35441), (48, 35429),

Gene: Sansa\_46 Start: 34536, Stop: 34315, Start Num: 29  
Candidate Starts for Sansa\_46:  
(Start: 29 @34536 has 122 MA's), (Start: 34 @34503 has 2 MA's), (38, 34470),

Gene: Saratos\_47 Start: 34291, Stop: 34070, Start Num: 29  
Candidate Starts for Saratos\_47:  
(Start: 29 @34291 has 122 MA's), (Start: 34 @34258 has 2 MA's), (42, 34201),

Gene: Schimmels22\_44 Start: 33402, Stop: 33130, Start Num: 25  
Candidate Starts for Schimmels22\_44:  
(23, 33411), (Start: 25 @33402 has 1 MA's), (Start: 29 @33369 has 122 MA's), (46, 33267), (47, 33264), (50, 33252), (58, 33213), (60, 33195),

Gene: Sedgewig\_48 Start: 35244, Stop: 35011, Start Num: 29  
Candidate Starts for Sedgewig\_48:  
(Start: 29 @35244 has 122 MA's), (36, 35196), (37, 35190), (45, 35145), (48, 35133),

Gene: ShaiHulud\_50 Start: 35555, Stop: 35322, Start Num: 29  
Candidate Starts for ShaiHulud\_50:  
(Start: 29 @35555 has 122 MA's), (36, 35507), (37, 35501), (45, 35456), (48, 35444),

Gene: Shamu\_48 Start: 34470, Stop: 34249, Start Num: 29  
Candidate Starts for Shamu\_48:  
(Start: 29 @34470 has 122 MA's), (Start: 34 @34437 has 2 MA's), (42, 34380),

Gene: Shee\_49 Start: 35536, Stop: 35303, Start Num: 29  
Candidate Starts for Shee\_49:  
(Start: 29 @35536 has 122 MA's), (36, 35488), (45, 35437),

Gene: SonOfLevi\_49 Start: 35274, Stop: 35041, Start Num: 29  
Candidate Starts for SonOfLevi\_49:  
(Start: 29 @35274 has 122 MA's), (36, 35226), (37, 35220), (45, 35175), (48, 35163),

Gene: StingRay\_48 Start: 35259, Stop: 35026, Start Num: 29  
Candidate Starts for StingRay\_48:  
(Start: 29 @35259 has 122 MA's), (36, 35211), (37, 35205), (45, 35160), (48, 35148),

Gene: StirfryIV\_48 Start: 35255, Stop: 35022, Start Num: 29  
Candidate Starts for StirfryIV\_48:  
(Start: 29 @35255 has 122 MA's), (36, 35207), (37, 35201), (45, 35156), (48, 35144),

Gene: Strathdee\_49 Start: 35545, Stop: 35312, Start Num: 29  
Candidate Starts for Strathdee\_49:  
(Start: 29 @35545 has 122 MA's), (36, 35497), (37, 35491), (45, 35446), (48, 35434),

Gene: Superfresh\_49 Start: 35534, Stop: 35301, Start Num: 29  
Candidate Starts for Superfresh\_49:  
(Start: 29 @35534 has 122 MA's), (36, 35486), (45, 35435),



Gene: TatarkaPM\_49 Start: 35549, Stop: 35316, Start Num: 29

Candidate Starts for TatarkaPM\_49:

(Start: 29 @35549 has 122 MA's), (36, 35501), (45, 35450),

Gene: Teagan\_49 Start: 35536, Stop: 35303, Start Num: 29

Candidate Starts for Teagan\_49:

(Start: 29 @35536 has 122 MA's), (36, 35488), (37, 35482), (45, 35437), (48, 35425),

Gene: TeddyBear\_48 Start: 35256, Stop: 35023, Start Num: 29

Candidate Starts for TeddyBear\_48:

(Start: 29 @35256 has 122 MA's), (36, 35208), (37, 35202), (45, 35157), (48, 35145),

Gene: Tenda\_48 Start: 35254, Stop: 35021, Start Num: 29

Candidate Starts for Tenda\_48:

(Start: 29 @35254 has 122 MA's), (36, 35206), (37, 35200), (45, 35155), (48, 35143),

Gene: Thompsone\_49 Start: 35543, Stop: 35310, Start Num: 29

Candidate Starts for Thompsone\_49:

(Start: 29 @35543 has 122 MA's), (36, 35495), (37, 35489), (45, 35444), (48, 35432),

Gene: Thorongil\_49 Start: 35060, Stop: 34827, Start Num: 29

Candidate Starts for Thorongil\_49:

(Start: 29 @35060 has 122 MA's), (36, 35012), (37, 35006), (45, 34961), (48, 34949),

Gene: TinSulphur\_50 Start: 35545, Stop: 35312, Start Num: 29

Candidate Starts for TinSulphur\_50:

(Start: 29 @35545 has 122 MA's), (36, 35497), (45, 35446),

Gene: Tinyman4\_44 Start: 33070, Stop: 32831, Start Num: 29

Candidate Starts for Tinyman4\_44:

(23, 33112), (Start: 25 @33103 has 1 MA's), (Start: 29 @33070 has 122 MA's), (46, 32968), (47, 32965), (50, 32953), (58, 32914), (60, 32896), (63, 32875),

Gene: Velene\_49 Start: 35541, Stop: 35308, Start Num: 29

Candidate Starts for Velene\_49:

(Start: 29 @35541 has 122 MA's), (36, 35493), (37, 35487), (45, 35442), (48, 35430),

Gene: Vispitious\_49 Start: 35546, Stop: 35313, Start Num: 29

Candidate Starts for Vispitious\_49:

(Start: 29 @35546 has 122 MA's), (36, 35498), (37, 35492), (45, 35447), (48, 35435),

Gene: WestPM\_43 Start: 33142, Stop: 32903, Start Num: 29

Candidate Starts for WestPM\_43:

(Start: 29 @33142 has 122 MA's), (46, 33040), (50, 33025), (58, 32986), (60, 32968), (63, 32947),

Gene: WildNOut\_49 Start: 35539, Stop: 35306, Start Num: 29

Candidate Starts for WildNOut\_49:

(Start: 29 @35539 has 122 MA's), (36, 35491), (37, 35485), (45, 35440), (48, 35428),

Gene: WilliamStrong\_47 Start: 34382, Stop: 34158, Start Num: 30

Candidate Starts for WilliamStrong\_47:

(Start: 30 @34382 has 5 MA's), (Start: 34 @34352 has 2 MA's), (57, 34241),

Gene: Winzigespinne\_48 Start: 35242, Stop: 35009, Start Num: 29

Candidate Starts for Winzigespinne\_48:

(Start: 29 @35242 has 122 MA's), (36, 35194), (37, 35188), (45, 35143), (48, 35131),

Gene: YuuY\_47 Start: 34607, Stop: 34386, Start Num: 29

Candidate Starts for YuuY\_47:

(Start: 29 @34607 has 122 MA's), (Start: 34 @34574 has 2 MA's), (38, 34541), (42, 34517), (53, 34475),

Gene: Zada\_50 Start: 35515, Stop: 35282, Start Num: 29

Candidate Starts for Zada\_50:

(Start: 29 @35515 has 122 MA's), (36, 35467), (37, 35461), (45, 35416), (48, 35404),

Gene: Zayuliv\_48 Start: 34572, Stop: 34327, Start Num: 29

Candidate Starts for Zayuliv\_48:

(3, 34962), (5, 34860), (9, 34791), (Start: 21 @34635 has 5 MA's), (24, 34605), (Start: 29 @34572 has 122 MA's), (36, 34524), (40, 34488), (44, 34476), (47, 34467), (51, 34446), (55, 34419),

Gene: Zenitsu\_47 Start: 34336, Stop: 34115, Start Num: 29

Candidate Starts for Zenitsu\_47:

(Start: 29 @34336 has 122 MA's), (Start: 34 @34303 has 2 MA's), (42, 34246),

Gene: Zepp\_48 Start: 34066, Stop: 33761, Start Num: 21

Candidate Starts for Zepp\_48:

(3, 34393), (5, 34291), (9, 34222), (Start: 21 @34066 has 5 MA's), (24, 34036), (Start: 29 @34003 has 122 MA's), (33, 33991), (Start: 34 @33976 has 2 MA's), (35, 33964), (37, 33955), (51, 33883), (60, 33826),