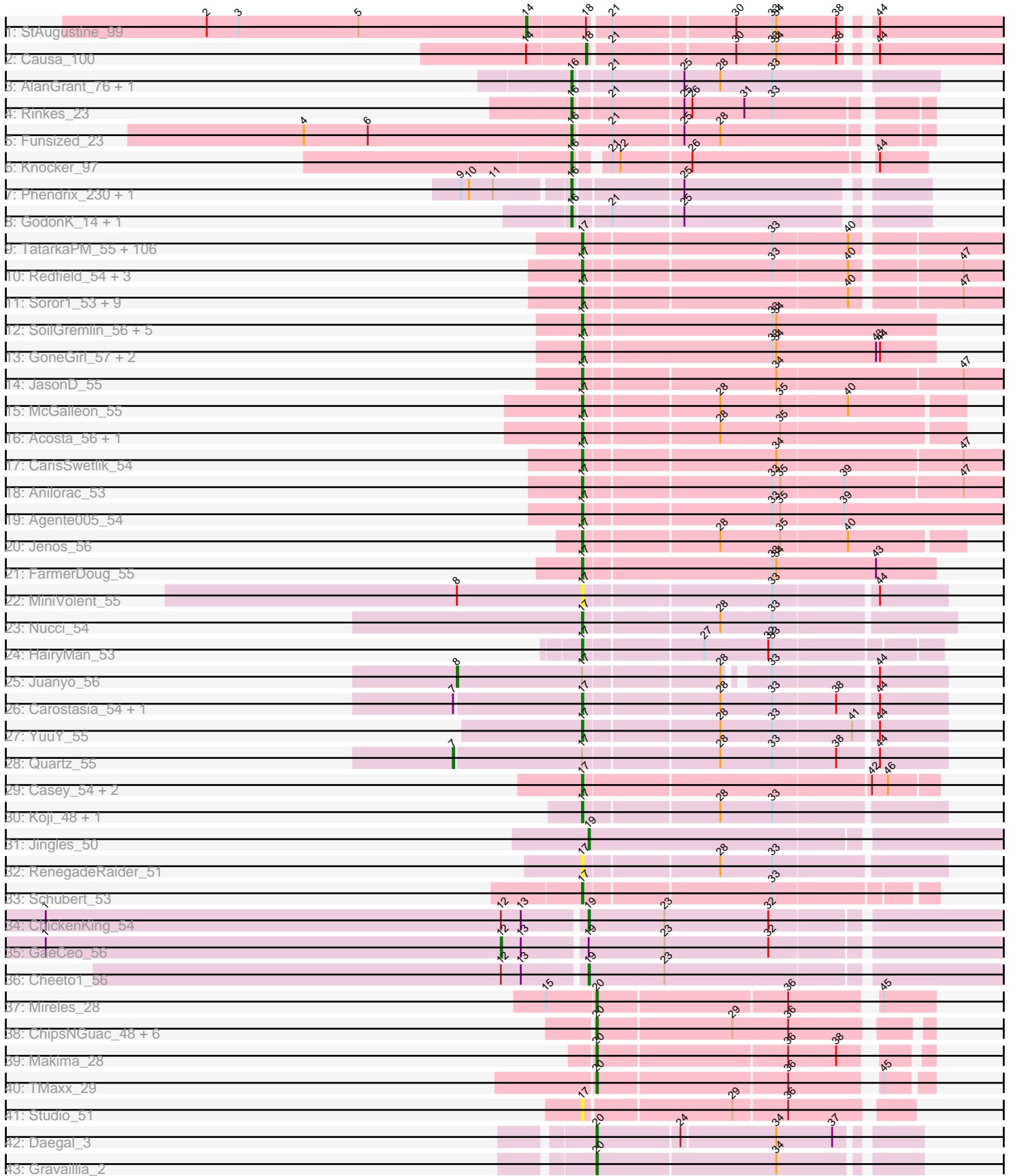


Pham 308136



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 308136 Report

This analysis was run 06/27/26 on database version 652.

Pham number 308136 has 182 members, 14 are drafts.

Phages represented in each track:

- Track 1 : StAugustine\_99
- Track 2 : Causa\_100
- Track 3 : AlanGrant\_76, Vincenzo\_75
- Track 4 : Rinkes\_23
- Track 5 : Funsized\_23
- Track 6 : Knocker\_97
- Track 7 : Phendrix\_230, Phendrix\_14
- Track 8 : GodonK\_14, GodonK\_240
- Track 9 : TatarkaPM\_55, Renzie\_55, Lovelyunicorn\_55, Den3\_55, Vispistious\_55, Benjalauen\_55, Ioannes\_55, PhredFlintston\_55, Klimt\_55, AranulaLuti\_54, Erla\_54, Kouch\_55, Inventa\_55, Dothraki\_55, Stanktossa\_54, Aubergine\_54, BonesMcCoy\_55, Antoinette\_55, Exploradora\_54, Garey24\_55, Bonino\_54, Chamuel\_54, Greys\_55, KellyGreen\_56, Asta\_54, CoraRita\_54, SonOfLevi\_55, Nattles\_54, StirfryIV\_54, Winzigespinne\_54, TeddyBear\_54, Gershwin\_54, Alyxandracam\_55, BeautPeep30\_55, Peep\_55, Pherferi\_55, Superfresh\_55, BigRedClifford\_55, JeriBeth\_54, Velene\_55, AxiPup\_55, Oxtober96\_56, Phireproof\_55, Baines\_54, Symere\_54, Convict\_55, MillyPhilly\_55, Raptor\_55, HungryHenry\_54, Dave\_55, Papafritta\_54, SJay\_55, Calix\_54, Robinson\_55, Rog141\_54, RosieMae\_54, WildNOut\_55, Rappheph\_55, HanSolo\_54, Sedgewig\_54, Ilzat\_54, Gelo\_54, Thompsone\_55, Knox\_55, KannH\_54, Janus167\_54, Strathdee\_55, Clancy\_54, Martin\_56, Espinosa\_54, Oats\_54, GoingMerry\_56, Christoph\_54, Thorongil\_55, TinSulphur\_56, Pocket\_54, Teagan\_55, Byron23\_56, ManRay\_54, Zada\_56, Figueroism\_55, Gargoyle\_55, Duocatuli\_54, Phiderman\_55, MrWorldwide\_55, Blage\_55, AlexAdler\_55, ShaiHulud\_55, Etta\_54, Shee\_55, HankSprout\_55, PuppyEggo\_55, JasperRussell\_54, Gubbabump\_54, MaeLinda\_55, StingRay\_54, Kale\_54, Riyhil\_55, NickSell\_55, Tenda\_54, ParleG\_55, Jerbirus\_56, Ludgate\_55, Kurt1\_55, Bandik\_55, Chako\_54, Nagem\_55
- Track 10 : Redfield\_54, Etna\_54, MonChoix\_52, BeeBee8\_55
- Track 11 : Soror1\_53, Leafus\_54, KingJulien\_53, Raccoon\_54, Balsa\_53, Stormbreaker8\_53, Hamlet\_54, Schnapsidee\_54, PhillyPhantom\_54, Peppino\_54
- Track 12 : SoilGremlin\_56, SolidSnake\_57, Phriends\_55, OldNelly\_56, Merida02\_57, Delphidian\_55
- Track 13 : GoneGirl\_57, Endor\_57, GardenB\_56
- Track 14 : JasonD\_55
- Track 15 : McGalleon\_55
- Track 16 : Acosta\_56, HavenFinLeoSun\_56
- Track 17 : CarisSwetlik\_54

- Track 18 : Anilorac\_53
- Track 19 : Agente005\_54
- Track 20 : Jenos\_56
- Track 21 : FarmerDoug\_55
- Track 22 : MiniVolent\_55
- Track 23 : Nucci\_54
- Track 24 : HairyMan\_53
- Track 25 : Juanyo\_56
- Track 26 : Carostasia\_54, Mandalorian\_54
- Track 27 : YuuY\_55
- Track 28 : Quartz\_55
- Track 29 : Casey\_54, Pajaza\_54, Pikmin\_54
- Track 30 : Koji\_48, Kauala\_48
- Track 31 : Jingles\_50
- Track 32 : RenegadeRaider\_51
- Track 33 : Schubert\_53
- Track 34 : ChickenKing\_54
- Track 35 : GaeCeo\_56
- Track 36 : Cheeto1\_56
- Track 37 : Mireles\_28
- Track 38 : ChipsNGuac\_48, Neuville\_47, CardboardBox\_48, Roberts\_48, ChamoyPickle\_49, AnnabelLee\_48, Gerri43\_47
- Track 39 : Makima\_28
- Track 40 : TMaxx\_29
- Track 41 : Studio\_51
- Track 42 : Daegal\_3
- Track 43 : Gravaillia\_2

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

The start number called the most often in the published annotations is 17, it was called in 142 of the 168 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acosta\_56, Agente005\_54, AlexAdler\_55, Alyxandracam\_55, Anilorac\_53, Antoinette\_55, AranulaLuti\_54, Asta\_54, Aubergine\_54, AxiPup\_55, Baines\_54, Balsa\_53, Bandik\_55, BeautPeep30\_55, BeeBee8\_55, Benjalauren\_55, BigRedClifford\_55, Blage\_55, BonesMcCoy\_55, Bonino\_54, Byron23\_56, Calix\_54, CarisSwetlik\_54, Carostasia\_54, Casey\_54, Chako\_54, Chamuel\_54, Christoph\_54, Clancy\_54, Convict\_55, CoraRita\_54, Dave\_55, Delphidian\_55, Den3\_55, Dothraki\_55, Duocatuli\_54, Endor\_57, Erla\_54, Espinosa\_54, Etna\_54, Etta\_54, Exploradora\_54, FarmerDoug\_55, Figueroism\_55, GardenB\_56, Garey24\_55, Gargoyle\_55, Gelo\_54, Gershwin\_54, GoingMerry\_56, GoneGirl\_57, Greys\_55, Gubbabump\_54, HairyMan\_53, Hamlet\_54, HanSolo\_54, HankSprout\_55, HavenFinLeoSun\_56, HungryHenry\_54, Ilzat\_54, Inventa\_55, Ioannes\_55, Janus167\_54, JasonD\_55, JasperRussell\_54, Jenos\_56, Jerbirus\_56, JeriBeth\_54, Kale\_54, KannH\_54, Kauala\_48, KellyGreen\_56, KingJulien\_53, Klimt\_55, Knox\_55, Koji\_48, Kouch\_55, Kurt1\_55, Leafus\_54, Lovelyunicorn\_55, Ludgate\_55, MaeLinda\_55, ManRay\_54, Mandalorian\_54, Martin\_56, McGalleon\_55, Merida02\_57, MillyPhilly\_55, MiniVolent\_55, MonChoix\_52, MrWorldwide\_55,

Nagem\_55, Nattles\_54, NickSell\_55, Nucci\_54, Oats\_54, OldNelly\_56, Oxtober96\_56, Pajaza\_54, Papafritta\_54, ParleG\_55, Peep\_55, Peppino\_54, Pherferi\_55, Phiderman\_55, PhillyPhantom\_54, Phireproof\_55, PhredFlintston\_55, Phriends\_55, Pikmin\_54, Pocket\_54, PuppyEggo\_55, Raccoon\_54, Rapheph\_55, Raptor\_55, Redfield\_54, RenegadeRaider\_51, Renzie\_55, Riyhil\_55, Robinson\_55, Rog141\_54, RosieMae\_54, SJay\_55, Schnapsidee\_54, Schubert\_53, Sedgewig\_54, ShaiHulud\_55, Shee\_55, SoilGremlin\_56, SolidSnake\_57, SonOfLevi\_55, Soror1\_53, Stanktossa\_54, StingRay\_54, StirfryIV\_54, Stormbreaker8\_53, Strathdee\_55, Studio\_51, Superfresh\_55, Symere\_54, TatarkaPM\_55, Teagan\_55, TeddyBear\_54, Tenda\_54, Thompsone\_55, Thorongil\_55, TinSulphur\_56, Velene\_55, Vispistious\_55, WildNOut\_55, Winzigespinne\_54, YuuY\_55, Zada\_56,

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

- Juanyo\_56, Quartz\_55,

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

- AlanGrant\_76, AnnabelLee\_48, CardboardBox\_48, Causa\_100, ChamoyPickle\_49, Cheeto1\_56, ChickenKing\_54, ChipsNGuac\_48, Daegal\_3, Funsized\_23, GaeCeo\_56, Gerri43\_47, GodonK\_14, GodonK\_240, Gravallia\_2, Jingles\_50, Knocker\_97, Makima\_28, Mireles\_28, Neuville\_47, Phendrix\_14, Phendrix\_230, Rinkes\_23, Roberts\_48, StAugustine\_99, TMaxx\_29, Vincenzo\_75,

### Summary by start number:

Start 7:

- Found in 3 of 182 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 168
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Quartz\_55 (EA10),

Start 8:

- Found in 2 of 182 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 168
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Juanyo\_56 (EA10),

Start 12:

- Found in 3 of 182 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 168
- Called 33.3% of time when present
- Phage (with cluster) where this start called: GaeCeo\_56 (EA9),

Start 14:

- Found in 2 of 182 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 168
- Called 50.0% of time when present
- Phage (with cluster) where this start called: StAugustine\_99 (A1),

Start 16:

- Found in 9 of 182 ( 4.9% ) of genes in pham
- Manual Annotations of this start: 9 of 168
- Called 100.0% of time when present

- Phage (with cluster) where this start called: AlanGrant\_76 (B4), Funsized\_23 (B9), GodonK\_14 (DK), GodonK\_240 (DK), Knocker\_97 (B9), Phendrix\_14 (DK), Phendrix\_230 (DK), Rinkes\_23 (B9), Vincenzo\_75 (B4),

#### Start 17:

- Found in 155 of 182 ( 85.2% ) of genes in pham
- Manual Annotations of this start: 142 of 168
- Called 98.7% of time when present
- Phage (with cluster) where this start called: Acosta\_56 (EA1), Agente005\_54 (EA1), AlexAdler\_55 (EA1), Alyxandracam\_55 (EA1), Anilorac\_53 (EA1), Antoinette\_55 (EA1), AranulaLuti\_54 (EA1), Asta\_54 (EA1), Aubergine\_54 (EA1), AxiPup\_55 (EA1), Baines\_54 (EA1), Balsa\_53 (EA1), Bandik\_55 (EA1), BeautPeep30\_55 (EA1), BeeBee8\_55 (EA1), Benjalauen\_55 (EA1), BigRedClifford\_55 (EA1), Blage\_55 (EA1), BonesMcCoy\_55 (EA1), Bonino\_54 (EA1), Byron23\_56 (EA1), Calix\_54 (EA1), CarisSwetlik\_54 (EA1), Carostasia\_54 (EA10), Casey\_54 (EA3), Chako\_54 (EA1), Chamuel\_54 (EA1), Christoph\_54 (EA1), Clancy\_54 (EA1), Convict\_55 (EA1), CoraRita\_54 (EA1), Dave\_55 (EA1), Delphidian\_55 (EA1), Den3\_55 (EA1), Dothraki\_55 (EA1), Duocatuli\_54 (EA1), Endor\_57 (EA1), Erla\_54 (EA1), Espinosa\_54 (EA1), Etna\_54 (EA1), Etta\_54 (EA1), Exploradora\_54 (EA1), FarmerDoug\_55 (EA1), Figueroism\_55 (EA1), GardenB\_56 (EA1), Garey24\_55 (EA1), Gargoyle\_55 (EA1), Gelo\_54 (EA1), Gershwin\_54 (EA1), GoingMerry\_56 (EA1), GoneGirl\_57 (EA1), Greys\_55 (EA1), Gubbabump\_54 (EA1), HairyMan\_53 (EA10), Hamlet\_54 (EA1), HanSolo\_54 (EA1), HankSprout\_55 (EA1), HavenFinLeoSun\_56 (EA1), HungryHenry\_54 (EA1), Ilzat\_54 (EA1), Inventa\_55 (EA1), Ioannes\_55 (EA1), Janus167\_54 (EA1), JasonD\_55 (EA1), JasperRussell\_54 (EA1), Jenos\_56 (EA1), Jerbirus\_56 (EA1), JeriBeth\_54 (EA1), Kale\_54 (EA1), KannH\_54 (EA1), Kauala\_48 (EA4), KellyGreen\_56 (EA1), KingJulien\_53 (EA1), Klimt\_55 (EA1), Knox\_55 (EA1), Koji\_48 (EA4), Kouch\_55 (EA1), Kurt1\_55 (EA1), Leafus\_54 (EA1), Lovelyunicorn\_55 (EA1), Ludgate\_55 (EA1), MaeLinda\_55 (EA1), ManRay\_54 (EA1), Mandalorian\_54 (EA10), Martin\_56 (EA1), McGalleon\_55 (EA1), Merida02\_57 (EA1), MillyPhilly\_55 (EA1), MiniVolent\_55 (EA10), MonChoix\_52 (EA1), MrWorldwide\_55 (EA1), Nagem\_55 (EA1), Nattles\_54 (EA1), NickSell\_55 (EA1), Nucci\_54 (EA10), Oats\_54 (EA1), OldNelly\_56 (EA1), Oxtober96\_56 (EA1), Pajaza\_54 (EA3), Papafritta\_54 (EA1), ParleG\_55 (EA1), Peep\_55 (EA1), Peppino\_54 (EA1), Pherferi\_55 (EA1), Phiderman\_55 (EA1), PhillyPhantom\_54 (EA1), Phireproof\_55 (EA1), PhredFlintston\_55 (EA1), Phriends\_55 (EA1), Pikmin\_54 (EA3), Pocket\_54 (EA1), PuppyEggo\_55 (EA1), Raccoon\_54 (EA1), Rapheph\_55 (EA1), Raptor\_55 (EA1), Redfield\_54 (EA1), RenegadeRaider\_51 (EA4), Renzie\_55 (EA1), Riyhil\_55 (EA1), Robinson\_55 (EA1), Rog141\_54 (EA1), RosieMae\_54 (EA1), SJay\_55 (EA1), Schnapsidee\_54 (EA1), Schubert\_53 (EA8), Sedgewig\_54 (EA1), ShaiHulud\_55 (EA1), Shee\_55 (EA1), SoilGremlin\_56 (EA1), SolidSnake\_57 (EA1), SonOfLevi\_55 (EA1), Soror1\_53 (EA1), Stanktossa\_54 (EA1), StingRay\_54 (EA1), StirfryIV\_54 (EA1), Stormbreaker8\_53 (EA1), Strathdee\_55 (EA1), Studio\_51 (FR), Superfresh\_55 (EA1), Symere\_54 (EA1), TatarkaPM\_55 (EA1), Teagan\_55 (EA1), TeddyBear\_54 (EA1), Tenda\_54 (EA1), Thompsone\_55 (EA1), Thorongil\_55 (EA1), TinSulphur\_56 (EA1), Velene\_55 (EA1), Vispistious\_55 (EA1), WildNOut\_55 (EA1), Winzigespinne\_54 (EA1), YuuY\_55 (EA10), Zada\_56 (EA1),

#### Start 18:

- Found in 2 of 182 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 168
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Causa\_100 (AI),

Start 19:

- Found in 4 of 182 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 3 of 168
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Cheeto1\_56 (EA9), ChickenKing\_54 (EA9), Jingles\_50 (EA4),

Start 20:

- Found in 12 of 182 ( 6.6% ) of genes in pham
- Manual Annotations of this start: 9 of 168
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AnnabelLee\_48 (FR), CardboardBox\_48 (FR), ChamoyPickle\_49 (FR), ChipsNGuac\_48 (FR), Daegal\_3 (Q), Gerri43\_47 (FR), Gravaillia\_2 (Q), Makima\_28 (FR), Mireles\_28 (FR), Neuville\_47 (FR), Roberts\_48 (FR), TMaxx\_29 (FR),

### **Summary by clusters:**

There are 12 clusters represented in this pham: Q, FR, EA9, DK, AI, EA4, B4, EA8, EA1, EA3, B9, EA10,

Info for manual annotations of cluster AI:

- Start number 14 was manually annotated 1 time for cluster AI.
- Start number 18 was manually annotated 1 time for cluster AI.

Info for manual annotations of cluster B4:

- Start number 16 was manually annotated 2 times for cluster B4.

Info for manual annotations of cluster B9:

- Start number 16 was manually annotated 3 times for cluster B9.

Info for manual annotations of cluster DK:

- Start number 16 was manually annotated 4 times for cluster DK.

Info for manual annotations of cluster EA1:

- Start number 17 was manually annotated 131 times for cluster EA1.

Info for manual annotations of cluster EA10:

- Start number 7 was manually annotated 1 time for cluster EA10.
- Start number 8 was manually annotated 1 time for cluster EA10.
- Start number 17 was manually annotated 5 times for cluster EA10.

Info for manual annotations of cluster EA3:

- Start number 17 was manually annotated 3 times for cluster EA3.

Info for manual annotations of cluster EA4:

- Start number 17 was manually annotated 2 times for cluster EA4.
- Start number 19 was manually annotated 1 time for cluster EA4.

Info for manual annotations of cluster EA8:

- Start number 17 was manually annotated 1 time for cluster EA8.

Info for manual annotations of cluster EA9:

- Start number 12 was manually annotated 1 time for cluster EA9.
- Start number 19 was manually annotated 2 times for cluster EA9.

Info for manual annotations of cluster FR:

- Start number 20 was manually annotated 7 times for cluster FR.

Info for manual annotations of cluster Q:

- Start number 20 was manually annotated 2 times for cluster Q.

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

Gene: Acosta\_56 Start: 37827, Stop: 37555, Start Num: 17

Candidate Starts for Acosta\_56:

(Start: 17 @37827 has 142 MA's), (28, 37731), (35, 37686),

Gene: Agente005\_54 Start: 37813, Stop: 37499, Start Num: 17

Candidate Starts for Agente005\_54:

(Start: 17 @37813 has 142 MA's), (33, 37678), (35, 37672), (39, 37627),

Gene: AlanGrant\_76 Start: 63236, Stop: 62979, Start Num: 16

Candidate Starts for AlanGrant\_76:

(Start: 16 @63236 has 9 MA's), (21, 63212), (25, 63161), (28, 63134), (33, 63095),

Gene: AlexAdler\_55 Start: 38033, Stop: 37737, Start Num: 17

Candidate Starts for AlexAdler\_55:

(Start: 17 @38033 has 142 MA's), (33, 37898), (40, 37844),

Gene: Alyxandracam\_55 Start: 38007, Stop: 37705, Start Num: 17

Candidate Starts for Alyxandracam\_55:

(Start: 17 @38007 has 142 MA's), (33, 37872), (40, 37818),

Gene: Anilorac\_53 Start: 37720, Stop: 37409, Start Num: 17

Candidate Starts for Anilorac\_53:

(Start: 17 @37720 has 142 MA's), (33, 37585), (35, 37579), (39, 37534), (47, 37447),

Gene: AnnabelLee\_48 Start: 31169, Stop: 30939, Start Num: 20

Candidate Starts for AnnabelLee\_48:

(Start: 20 @31169 has 9 MA's), (29, 31070), (36, 31028),

Gene: Antoinette\_55 Start: 38058, Stop: 37762, Start Num: 17

Candidate Starts for Antoinette\_55:

(Start: 17 @38058 has 142 MA's), (33, 37923), (40, 37869),

Gene: AranulaLuti\_54 Start: 37751, Stop: 37449, Start Num: 17

Candidate Starts for AranulaLuti\_54:

(Start: 17 @37751 has 142 MA's), (33, 37616), (40, 37562),

Gene: Asta\_54 Start: 37755, Stop: 37459, Start Num: 17

Candidate Starts for Asta\_54:

(Start: 17 @37755 has 142 MA's), (33, 37620), (40, 37566),

Gene: Aubergine\_54 Start: 37755, Stop: 37459, Start Num: 17  
Candidate Starts for Aubergine\_54:  
(Start: 17 @37755 has 142 MA's), (33, 37620), (40, 37566),

Gene: AxiPup\_55 Start: 37970, Stop: 37674, Start Num: 17  
Candidate Starts for AxiPup\_55:  
(Start: 17 @37970 has 142 MA's), (33, 37835), (40, 37781),

Gene: Baines\_54 Start: 37755, Stop: 37453, Start Num: 17  
Candidate Starts for Baines\_54:  
(Start: 17 @37755 has 142 MA's), (33, 37620), (40, 37566),

Gene: Balsa\_53 Start: 37838, Stop: 37536, Start Num: 17  
Candidate Starts for Balsa\_53:  
(Start: 17 @37838 has 142 MA's), (40, 37649), (47, 37574),

Gene: Bandik\_55 Start: 38002, Stop: 37700, Start Num: 17  
Candidate Starts for Bandik\_55:  
(Start: 17 @38002 has 142 MA's), (33, 37867), (40, 37813),

Gene: BeautPeep30\_55 Start: 38008, Stop: 37706, Start Num: 17  
Candidate Starts for BeautPeep30\_55:  
(Start: 17 @38008 has 142 MA's), (33, 37873), (40, 37819),

Gene: BeeBee8\_55 Start: 38012, Stop: 37710, Start Num: 17  
Candidate Starts for BeeBee8\_55:  
(Start: 17 @38012 has 142 MA's), (33, 37877), (40, 37823), (47, 37748),

Gene: Benjalauren\_55 Start: 37761, Stop: 37465, Start Num: 17  
Candidate Starts for Benjalauren\_55:  
(Start: 17 @37761 has 142 MA's), (33, 37626), (40, 37572),

Gene: BigRedClifford\_55 Start: 37997, Stop: 37701, Start Num: 17  
Candidate Starts for BigRedClifford\_55:  
(Start: 17 @37997 has 142 MA's), (33, 37862), (40, 37808),

Gene: Blage\_55 Start: 37997, Stop: 37701, Start Num: 17  
Candidate Starts for Blage\_55:  
(Start: 17 @37997 has 142 MA's), (33, 37862), (40, 37808),

Gene: BonesMcCoy\_55 Start: 37997, Stop: 37701, Start Num: 17  
Candidate Starts for BonesMcCoy\_55:  
(Start: 17 @37997 has 142 MA's), (33, 37862), (40, 37808),

Gene: Bonino\_54 Start: 37734, Stop: 37438, Start Num: 17  
Candidate Starts for Bonino\_54:  
(Start: 17 @37734 has 142 MA's), (33, 37599), (40, 37545),

Gene: Byron23\_56 Start: 38005, Stop: 37703, Start Num: 17  
Candidate Starts for Byron23\_56:  
(Start: 17 @38005 has 142 MA's), (33, 37870), (40, 37816),

Gene: Calix\_54 Start: 37741, Stop: 37445, Start Num: 17  
Candidate Starts for Calix\_54:  
(Start: 17 @37741 has 142 MA's), (33, 37606), (40, 37552),

Gene: CardboardBox\_48 Start: 31172, Stop: 30942, Start Num: 20  
Candidate Starts for CardboardBox\_48:  
(Start: 20 @31172 has 9 MA's), (29, 31073), (36, 31031),

Gene: CarisSwetlik\_54 Start: 37811, Stop: 37500, Start Num: 17  
Candidate Starts for CarisSwetlik\_54:  
(Start: 17 @37811 has 142 MA's), (34, 37673), (47, 37538),

Gene: Carostasia\_54 Start: 36652, Stop: 36395, Start Num: 17  
Candidate Starts for Carostasia\_54:  
(Start: 7 @36745 has 1 MA's), (Start: 17 @36652 has 142 MA's), (28, 36556), (33, 36517), (38, 36472),  
(44, 36445),

Gene: Casey\_54 Start: 36538, Stop: 36284, Start Num: 17  
Candidate Starts for Casey\_54:  
(Start: 17 @36538 has 142 MA's), (42, 36331), (46, 36319),

Gene: Causa\_100 Start: 71095, Stop: 70808, Start Num: 18  
Candidate Starts for Causa\_100:  
(Start: 14 @71137 has 1 MA's), (Start: 18 @71095 has 1 MA's), (21, 71080), (30, 70993), (33, 70966),  
(34, 70963), (38, 70918), (44, 70903),

Gene: Chako\_54 Start: 37751, Stop: 37449, Start Num: 17  
Candidate Starts for Chako\_54:  
(Start: 17 @37751 has 142 MA's), (33, 37616), (40, 37562),

Gene: ChamoyPickle\_49 Start: 31712, Stop: 31482, Start Num: 20  
Candidate Starts for ChamoyPickle\_49:  
(Start: 20 @31712 has 9 MA's), (29, 31613), (36, 31571),

Gene: Chamuel\_54 Start: 37767, Stop: 37471, Start Num: 17  
Candidate Starts for Chamuel\_54:  
(Start: 17 @37767 has 142 MA's), (33, 37632), (40, 37578),

Gene: Cheeto1\_56 Start: 38137, Stop: 37841, Start Num: 19  
Candidate Starts for Cheeto1\_56:  
(Start: 12 @38197 has 1 MA's), (13, 38182), (Start: 19 @38137 has 3 MA's), (23, 38080),

Gene: ChickenKing\_54 Start: 38291, Stop: 37995, Start Num: 19  
Candidate Starts for ChickenKing\_54:  
(1, 38693), (Start: 12 @38351 has 1 MA's), (13, 38336), (Start: 19 @38291 has 3 MA's), (23, 38234),  
(32, 38156),

Gene: ChipsNGuac\_48 Start: 31172, Stop: 30942, Start Num: 20  
Candidate Starts for ChipsNGuac\_48:  
(Start: 20 @31172 has 9 MA's), (29, 31073), (36, 31031),

Gene: Christoph\_54 Start: 37754, Stop: 37458, Start Num: 17  
Candidate Starts for Christoph\_54:

(Start: 17 @37754 has 142 MA's), (33, 37619), (40, 37565),

Gene: Clancy\_54 Start: 37754, Stop: 37452, Start Num: 17

Candidate Starts for Clancy\_54:

(Start: 17 @37754 has 142 MA's), (33, 37619), (40, 37565),

Gene: Convict\_55 Start: 37997, Stop: 37701, Start Num: 17

Candidate Starts for Convict\_55:

(Start: 17 @37997 has 142 MA's), (33, 37862), (40, 37808),

Gene: CoraRita\_54 Start: 37724, Stop: 37422, Start Num: 17

Candidate Starts for CoraRita\_54:

(Start: 17 @37724 has 142 MA's), (33, 37589), (40, 37535),

Gene: Daegal\_3 Start: 1154, Stop: 930, Start Num: 20

Candidate Starts for Daegal\_3:

(Start: 20 @1154 has 9 MA's), (24, 1094), (34, 1025), (37, 983),

Gene: Dave\_55 Start: 38058, Stop: 37762, Start Num: 17

Candidate Starts for Dave\_55:

(Start: 17 @38058 has 142 MA's), (33, 37923), (40, 37869),

Gene: Delphidian\_55 Start: 37991, Stop: 37731, Start Num: 17

Candidate Starts for Delphidian\_55:

(Start: 17 @37991 has 142 MA's), (33, 37853), (34, 37850),

Gene: Den3\_55 Start: 38002, Stop: 37706, Start Num: 17

Candidate Starts for Den3\_55:

(Start: 17 @38002 has 142 MA's), (33, 37867), (40, 37813),

Gene: Dothraki\_55 Start: 38005, Stop: 37703, Start Num: 17

Candidate Starts for Dothraki\_55:

(Start: 17 @38005 has 142 MA's), (33, 37870), (40, 37816),

Gene: Duocatuli\_54 Start: 37751, Stop: 37449, Start Num: 17

Candidate Starts for Duocatuli\_54:

(Start: 17 @37751 has 142 MA's), (33, 37616), (40, 37562),

Gene: Endor\_57 Start: 38543, Stop: 38283, Start Num: 17

Candidate Starts for Endor\_57:

(Start: 17 @38543 has 142 MA's), (33, 38405), (34, 38402), (43, 38327), (44, 38324),

Gene: Erla\_54 Start: 37738, Stop: 37442, Start Num: 17

Candidate Starts for Erla\_54:

(Start: 17 @37738 has 142 MA's), (33, 37603), (40, 37549),

Gene: Espinosa\_54 Start: 37753, Stop: 37457, Start Num: 17

Candidate Starts for Espinosa\_54:

(Start: 17 @37753 has 142 MA's), (33, 37618), (40, 37564),

Gene: Etna\_54 Start: 37891, Stop: 37589, Start Num: 17

Candidate Starts for Etna\_54:

(Start: 17 @37891 has 142 MA's), (33, 37756), (40, 37702), (47, 37627),

Gene: Etta\_54 Start: 37742, Stop: 37446, Start Num: 17

Candidate Starts for Etta\_54:

(Start: 17 @37742 has 142 MA's), (33, 37607), (40, 37553),

Gene: Exploradora\_54 Start: 37703, Stop: 37407, Start Num: 17

Candidate Starts for Exploradora\_54:

(Start: 17 @37703 has 142 MA's), (33, 37568), (40, 37514),

Gene: FarmerDoug\_55 Start: 38067, Stop: 37807, Start Num: 17

Candidate Starts for FarmerDoug\_55:

(Start: 17 @38067 has 142 MA's), (33, 37929), (34, 37926), (43, 37851),

Gene: Figueroism\_55 Start: 37998, Stop: 37696, Start Num: 17

Candidate Starts for Figueroism\_55:

(Start: 17 @37998 has 142 MA's), (33, 37863), (40, 37809),

Gene: Funsized\_23 Start: 19544, Stop: 19296, Start Num: 16

Candidate Starts for Funsized\_23:

(4, 19742), (6, 19694), (Start: 16 @19544 has 9 MA's), (21, 19517), (25, 19466), (28, 19439),

Gene: GaeCeo\_56 Start: 38584, Stop: 38228, Start Num: 12

Candidate Starts for GaeCeo\_56:

(1, 38926), (Start: 12 @38584 has 1 MA's), (13, 38569), (Start: 19 @38524 has 3 MA's), (23, 38467), (32, 38389),

Gene: GardenB\_56 Start: 38320, Stop: 38060, Start Num: 17

Candidate Starts for GardenB\_56:

(Start: 17 @38320 has 142 MA's), (33, 38182), (34, 38179), (43, 38104), (44, 38101),

Gene: Garey24\_55 Start: 37721, Stop: 37425, Start Num: 17

Candidate Starts for Garey24\_55:

(Start: 17 @37721 has 142 MA's), (33, 37586), (40, 37532),

Gene: Gargoyle\_55 Start: 38002, Stop: 37706, Start Num: 17

Candidate Starts for Gargoyle\_55:

(Start: 17 @38002 has 142 MA's), (33, 37867), (40, 37813),

Gene: Gelo\_54 Start: 37748, Stop: 37452, Start Num: 17

Candidate Starts for Gelo\_54:

(Start: 17 @37748 has 142 MA's), (33, 37613), (40, 37559),

Gene: Gerri43\_47 Start: 31172, Stop: 30942, Start Num: 20

Candidate Starts for Gerri43\_47:

(Start: 20 @31172 has 9 MA's), (29, 31073), (36, 31031),

Gene: Gershwin\_54 Start: 37755, Stop: 37459, Start Num: 17

Candidate Starts for Gershwin\_54:

(Start: 17 @37755 has 142 MA's), (33, 37620), (40, 37566),

Gene: GodonK\_14 Start: 5550, Stop: 5308, Start Num: 16

Candidate Starts for GodonK\_14:

(Start: 16 @5550 has 9 MA's), (21, 5526), (25, 5475),

Gene: GodonK\_240 Start: 120532, Stop: 120290, Start Num: 16  
Candidate Starts for GodonK\_240:  
(Start: 16 @120532 has 9 MA's), (21, 120508), (25, 120457),

Gene: GoingMerry\_56 Start: 37980, Stop: 37684, Start Num: 17  
Candidate Starts for GoingMerry\_56:  
(Start: 17 @37980 has 142 MA's), (33, 37845), (40, 37791),

Gene: GoneGirl\_57 Start: 38307, Stop: 38047, Start Num: 17  
Candidate Starts for GoneGirl\_57:  
(Start: 17 @38307 has 142 MA's), (33, 38169), (34, 38166), (43, 38091), (44, 38088),

Gene: Gravaillia\_2 Start: 866, Stop: 639, Start Num: 20  
Candidate Starts for Gravaillia\_2:  
(Start: 20 @866 has 9 MA's), (34, 734),

Gene: Greys\_55 Start: 37998, Stop: 37702, Start Num: 17  
Candidate Starts for Greys\_55:  
(Start: 17 @37998 has 142 MA's), (33, 37863), (40, 37809),

Gene: Gubbabump\_54 Start: 37693, Stop: 37397, Start Num: 17  
Candidate Starts for Gubbabump\_54:  
(Start: 17 @37693 has 142 MA's), (33, 37558), (40, 37504),

Gene: HairyMan\_53 Start: 37770, Stop: 37519, Start Num: 17  
Candidate Starts for HairyMan\_53:  
(Start: 17 @37770 has 142 MA's), (27, 37686), (32, 37638), (33, 37635),

Gene: Hamlet\_54 Start: 37931, Stop: 37629, Start Num: 17  
Candidate Starts for Hamlet\_54:  
(Start: 17 @37931 has 142 MA's), (40, 37742), (47, 37667),

Gene: HanSolo\_54 Start: 37703, Stop: 37407, Start Num: 17  
Candidate Starts for HanSolo\_54:  
(Start: 17 @37703 has 142 MA's), (33, 37568), (40, 37514),

Gene: HankSprout\_55 Start: 37622, Stop: 37326, Start Num: 17  
Candidate Starts for HankSprout\_55:  
(Start: 17 @37622 has 142 MA's), (33, 37487), (40, 37433),

Gene: HavenFinLeoSun\_56 Start: 37773, Stop: 37501, Start Num: 17  
Candidate Starts for HavenFinLeoSun\_56:  
(Start: 17 @37773 has 142 MA's), (28, 37677), (35, 37632),

Gene: HungryHenry\_54 Start: 37715, Stop: 37413, Start Num: 17  
Candidate Starts for HungryHenry\_54:  
(Start: 17 @37715 has 142 MA's), (33, 37580), (40, 37526),

Gene: Ilzat\_54 Start: 37725, Stop: 37423, Start Num: 17  
Candidate Starts for Ilzat\_54:  
(Start: 17 @37725 has 142 MA's), (33, 37590), (40, 37536),

Gene: Inventa\_55 Start: 38002, Stop: 37700, Start Num: 17  
Candidate Starts for Inventa\_55:  
(Start: 17 @38002 has 142 MA's), (33, 37867), (40, 37813),

Gene: loannes\_55 Start: 38080, Stop: 37784, Start Num: 17  
Candidate Starts for loannes\_55:  
(Start: 17 @38080 has 142 MA's), (33, 37945), (40, 37891),

Gene: Janus167\_54 Start: 37730, Stop: 37434, Start Num: 17  
Candidate Starts for Janus167\_54:  
(Start: 17 @37730 has 142 MA's), (33, 37595), (40, 37541),

Gene: JasonD\_55 Start: 37644, Stop: 37333, Start Num: 17  
Candidate Starts for JasonD\_55:  
(Start: 17 @37644 has 142 MA's), (34, 37506), (47, 37371),

Gene: JasperRussell\_54 Start: 37751, Stop: 37449, Start Num: 17  
Candidate Starts for JasperRussell\_54:  
(Start: 17 @37751 has 142 MA's), (33, 37616), (40, 37562),

Gene: Jenos\_56 Start: 38342, Stop: 38070, Start Num: 17  
Candidate Starts for Jenos\_56:  
(Start: 17 @38342 has 142 MA's), (28, 38246), (35, 38201), (40, 38153),

Gene: Jerbirus\_56 Start: 37745, Stop: 37449, Start Num: 17  
Candidate Starts for Jerbirus\_56:  
(Start: 17 @37745 has 142 MA's), (33, 37610), (40, 37556),

Gene: JeriBeth\_54 Start: 37633, Stop: 37337, Start Num: 17  
Candidate Starts for JeriBeth\_54:  
(Start: 17 @37633 has 142 MA's), (33, 37498), (40, 37444),

Gene: Jingles\_50 Start: 35268, Stop: 34969, Start Num: 19  
Candidate Starts for Jingles\_50:  
(Start: 19 @35268 has 3 MA's),

Gene: Juanyo\_56 Start: 37419, Stop: 37084, Start Num: 8  
Candidate Starts for Juanyo\_56:  
(Start: 8 @37419 has 1 MA's), (Start: 17 @37326 has 142 MA's), (28, 37230), (33, 37206), (44, 37134),

Gene: Kale\_54 Start: 37757, Stop: 37461, Start Num: 17  
Candidate Starts for Kale\_54:  
(Start: 17 @37757 has 142 MA's), (33, 37622), (40, 37568),

Gene: KannH\_54 Start: 37751, Stop: 37449, Start Num: 17  
Candidate Starts for KannH\_54:  
(Start: 17 @37751 has 142 MA's), (33, 37616), (40, 37562),

Gene: Kauala\_48 Start: 35372, Stop: 35127, Start Num: 17  
Candidate Starts for Kauala\_48:  
(Start: 17 @35372 has 142 MA's), (28, 35276), (33, 35237),

Gene: KellyGreen\_56 Start: 37739, Stop: 37443, Start Num: 17

Candidate Starts for KellyGreen\_56:

(Start: 17 @37739 has 142 MA's), (33, 37604), (40, 37550),

Gene: KingJulien\_53 Start: 37729, Stop: 37427, Start Num: 17

Candidate Starts for KingJulien\_53:

(Start: 17 @37729 has 142 MA's), (40, 37540), (47, 37465),

Gene: Klimt\_55 Start: 37773, Stop: 37477, Start Num: 17

Candidate Starts for Klimt\_55:

(Start: 17 @37773 has 142 MA's), (33, 37638), (40, 37584),

Gene: Knocker\_97 Start: 70879, Stop: 70643, Start Num: 16

Candidate Starts for Knocker\_97:

(Start: 16 @70879 has 9 MA's), (21, 70861), (22, 70855), (26, 70804), (44, 70678),

Gene: Knox\_55 Start: 37997, Stop: 37701, Start Num: 17

Candidate Starts for Knox\_55:

(Start: 17 @37997 has 142 MA's), (33, 37862), (40, 37808),

Gene: Koji\_48 Start: 35362, Stop: 35105, Start Num: 17

Candidate Starts for Koji\_48:

(Start: 17 @35362 has 142 MA's), (28, 35266), (33, 35227),

Gene: Kouch\_55 Start: 37703, Stop: 37407, Start Num: 17

Candidate Starts for Kouch\_55:

(Start: 17 @37703 has 142 MA's), (33, 37568), (40, 37514),

Gene: Kurt1\_55 Start: 38002, Stop: 37700, Start Num: 17

Candidate Starts for Kurt1\_55:

(Start: 17 @38002 has 142 MA's), (33, 37867), (40, 37813),

Gene: Leafus\_54 Start: 37994, Stop: 37692, Start Num: 17

Candidate Starts for Leafus\_54:

(Start: 17 @37994 has 142 MA's), (40, 37805), (47, 37730),

Gene: Lovelyunicorn\_55 Start: 37998, Stop: 37702, Start Num: 17

Candidate Starts for Lovelyunicorn\_55:

(Start: 17 @37998 has 142 MA's), (33, 37863), (40, 37809),

Gene: Ludgate\_55 Start: 37999, Stop: 37703, Start Num: 17

Candidate Starts for Ludgate\_55:

(Start: 17 @37999 has 142 MA's), (33, 37864), (40, 37810),

Gene: MaeLinda\_55 Start: 38006, Stop: 37704, Start Num: 17

Candidate Starts for MaeLinda\_55:

(Start: 17 @38006 has 142 MA's), (33, 37871), (40, 37817),

Gene: Makima\_28 Start: 19515, Stop: 19291, Start Num: 20

Candidate Starts for Makima\_28:

(Start: 20 @19515 has 9 MA's), (36, 19377), (38, 19341),

Gene: ManRay\_54 Start: 37755, Stop: 37459, Start Num: 17

Candidate Starts for ManRay\_54:

(Start: 17 @37755 has 142 MA's), (33, 37620), (40, 37566),

Gene: Mandalorian\_54 Start: 36663, Stop: 36406, Start Num: 17

Candidate Starts for Mandalorian\_54:

(Start: 7 @36756 has 1 MA's), (Start: 17 @36663 has 142 MA's), (28, 36567), (33, 36528), (38, 36483), (44, 36456),

Gene: Martin\_56 Start: 38011, Stop: 37709, Start Num: 17

Candidate Starts for Martin\_56:

(Start: 17 @38011 has 142 MA's), (33, 37876), (40, 37822),

Gene: McGalleon\_55 Start: 38480, Stop: 38208, Start Num: 17

Candidate Starts for McGalleon\_55:

(Start: 17 @38480 has 142 MA's), (28, 38384), (35, 38339), (40, 38291),

Gene: Merida02\_57 Start: 37998, Stop: 37738, Start Num: 17

Candidate Starts for Merida02\_57:

(Start: 17 @37998 has 142 MA's), (33, 37860), (34, 37857),

Gene: MillyPhilly\_55 Start: 37999, Stop: 37697, Start Num: 17

Candidate Starts for MillyPhilly\_55:

(Start: 17 @37999 has 142 MA's), (33, 37864), (40, 37810),

Gene: MiniVolent\_55 Start: 37294, Stop: 37037, Start Num: 17

Candidate Starts for MiniVolent\_55:

(Start: 8 @37387 has 1 MA's), (Start: 17 @37294 has 142 MA's), (33, 37159), (44, 37087),

Gene: Mireles\_28 Start: 18449, Stop: 18216, Start Num: 20

Candidate Starts for Mireles\_28:

(15, 18485), (Start: 20 @18449 has 9 MA's), (36, 18311), (45, 18254),

Gene: MonChoix\_52 Start: 37644, Stop: 37339, Start Num: 17

Candidate Starts for MonChoix\_52:

(Start: 17 @37644 has 142 MA's), (33, 37509), (40, 37455), (47, 37377),

Gene: MrWorldwide\_55 Start: 38009, Stop: 37707, Start Num: 17

Candidate Starts for MrWorldwide\_55:

(Start: 17 @38009 has 142 MA's), (33, 37874), (40, 37820),

Gene: Nagem\_55 Start: 38045, Stop: 37743, Start Num: 17

Candidate Starts for Nagem\_55:

(Start: 17 @38045 has 142 MA's), (33, 37910), (40, 37856),

Gene: Nattles\_54 Start: 37742, Stop: 37446, Start Num: 17

Candidate Starts for Nattles\_54:

(Start: 17 @37742 has 142 MA's), (33, 37607), (40, 37553),

Gene: Neuville\_47 Start: 31172, Stop: 30942, Start Num: 20

Candidate Starts for Neuville\_47:

(Start: 20 @31172 has 9 MA's), (29, 31073), (36, 31031),

Gene: NickSell\_55 Start: 38012, Stop: 37710, Start Num: 17

Candidate Starts for NickSell\_55:

(Start: 17 @38012 has 142 MA's), (33, 37877), (40, 37823),

Gene: Nucci\_54 Start: 36629, Stop: 36366, Start Num: 17

Candidate Starts for Nucci\_54:

(Start: 17 @36629 has 142 MA's), (28, 36533), (33, 36494),

Gene: Oats\_54 Start: 37755, Stop: 37459, Start Num: 17

Candidate Starts for Oats\_54:

(Start: 17 @37755 has 142 MA's), (33, 37620), (40, 37566),

Gene: OldNelly\_56 Start: 37995, Stop: 37735, Start Num: 17

Candidate Starts for OldNelly\_56:

(Start: 17 @37995 has 142 MA's), (33, 37857), (34, 37854),

Gene: Oxtober96\_56 Start: 37998, Stop: 37702, Start Num: 17

Candidate Starts for Oxtober96\_56:

(Start: 17 @37998 has 142 MA's), (33, 37863), (40, 37809),

Gene: Pajaza\_54 Start: 36538, Stop: 36284, Start Num: 17

Candidate Starts for Pajaza\_54:

(Start: 17 @36538 has 142 MA's), (42, 36331), (46, 36319),

Gene: Papafritta\_54 Start: 37760, Stop: 37458, Start Num: 17

Candidate Starts for Papafritta\_54:

(Start: 17 @37760 has 142 MA's), (33, 37625), (40, 37571),

Gene: ParleG\_55 Start: 38009, Stop: 37707, Start Num: 17

Candidate Starts for ParleG\_55:

(Start: 17 @38009 has 142 MA's), (33, 37874), (40, 37820),

Gene: Peep\_55 Start: 38055, Stop: 37759, Start Num: 17

Candidate Starts for Peep\_55:

(Start: 17 @38055 has 142 MA's), (33, 37920), (40, 37866),

Gene: Peppino\_54 Start: 37824, Stop: 37522, Start Num: 17

Candidate Starts for Peppino\_54:

(Start: 17 @37824 has 142 MA's), (40, 37635), (47, 37560),

Gene: Phendrix\_230 Start: 119315, Stop: 119073, Start Num: 16

Candidate Starts for Phendrix\_230:

(9, 119390), (10, 119384), (11, 119366), (Start: 16 @119315 has 9 MA's), (25, 119240),

Gene: Phendrix\_14 Start: 5717, Stop: 5475, Start Num: 16

Candidate Starts for Phendrix\_14:

(9, 5792), (10, 5786), (11, 5768), (Start: 16 @5717 has 9 MA's), (25, 5642),

Gene: Pherferi\_55 Start: 38002, Stop: 37700, Start Num: 17

Candidate Starts for Pherferi\_55:

(Start: 17 @38002 has 142 MA's), (33, 37867), (40, 37813),

Gene: Phiderman\_55 Start: 37999, Stop: 37697, Start Num: 17

Candidate Starts for Phiderman\_55:

(Start: 17 @37999 has 142 MA's), (33, 37864), (40, 37810),

Gene: PhillyPhantom\_54 Start: 37825, Stop: 37523, Start Num: 17  
Candidate Starts for PhillyPhantom\_54:  
(Start: 17 @37825 has 142 MA's), (40, 37636), (47, 37561),

Gene: Phireproof\_55 Start: 38008, Stop: 37706, Start Num: 17  
Candidate Starts for Phireproof\_55:  
(Start: 17 @38008 has 142 MA's), (33, 37873), (40, 37819),

Gene: PhredFlintston\_55 Start: 38002, Stop: 37700, Start Num: 17  
Candidate Starts for PhredFlintston\_55:  
(Start: 17 @38002 has 142 MA's), (33, 37867), (40, 37813),

Gene: Phriends\_55 Start: 37999, Stop: 37739, Start Num: 17  
Candidate Starts for Phriends\_55:  
(Start: 17 @37999 has 142 MA's), (33, 37861), (34, 37858),

Gene: Pikmin\_54 Start: 36538, Stop: 36284, Start Num: 17  
Candidate Starts for Pikmin\_54:  
(Start: 17 @36538 has 142 MA's), (42, 36331), (46, 36319),

Gene: Pocket\_54 Start: 37782, Stop: 37486, Start Num: 17  
Candidate Starts for Pocket\_54:  
(Start: 17 @37782 has 142 MA's), (33, 37647), (40, 37593),

Gene: PuppyEggo\_55 Start: 38003, Stop: 37707, Start Num: 17  
Candidate Starts for PuppyEggo\_55:  
(Start: 17 @38003 has 142 MA's), (33, 37868), (40, 37814),

Gene: Quartz\_55 Start: 36869, Stop: 36519, Start Num: 7  
Candidate Starts for Quartz\_55:  
(Start: 7 @36869 has 1 MA's), (Start: 17 @36776 has 142 MA's), (28, 36680), (33, 36641), (38, 36596),  
(44, 36569),

Gene: Raccoon\_54 Start: 37795, Stop: 37493, Start Num: 17  
Candidate Starts for Raccoon\_54:  
(Start: 17 @37795 has 142 MA's), (40, 37606), (47, 37531),

Gene: Rapheph\_55 Start: 38002, Stop: 37700, Start Num: 17  
Candidate Starts for Rapheph\_55:  
(Start: 17 @38002 has 142 MA's), (33, 37867), (40, 37813),

Gene: Raptor\_55 Start: 38000, Stop: 37704, Start Num: 17  
Candidate Starts for Raptor\_55:  
(Start: 17 @38000 has 142 MA's), (33, 37865), (40, 37811),

Gene: Redfield\_54 Start: 37837, Stop: 37535, Start Num: 17  
Candidate Starts for Redfield\_54:  
(Start: 17 @37837 has 142 MA's), (33, 37702), (40, 37648), (47, 37573),

Gene: RenegadeRaider\_51 Start: 35067, Stop: 34810, Start Num: 17  
Candidate Starts for RenegadeRaider\_51:  
(Start: 17 @35067 has 142 MA's), (28, 34971), (33, 34932),

Gene: Renzie\_55 Start: 38058, Stop: 37762, Start Num: 17

Candidate Starts for Renzie\_55:

(Start: 17 @38058 has 142 MA's), (33, 37923), (40, 37869),

Gene: Rinkes\_23 Start: 19467, Stop: 19222, Start Num: 16

Candidate Starts for Rinkes\_23:

(Start: 16 @19467 has 9 MA's), (21, 19443), (25, 19392), (26, 19386), (31, 19347), (33, 19326),

Gene: Riyhil\_55 Start: 38012, Stop: 37710, Start Num: 17

Candidate Starts for Riyhil\_55:

(Start: 17 @38012 has 142 MA's), (33, 37877), (40, 37823),

Gene: Roberts\_48 Start: 31172, Stop: 30942, Start Num: 20

Candidate Starts for Roberts\_48:

(Start: 20 @31172 has 9 MA's), (29, 31073), (36, 31031),

Gene: Robinson\_55 Start: 38074, Stop: 37778, Start Num: 17

Candidate Starts for Robinson\_55:

(Start: 17 @38074 has 142 MA's), (33, 37939), (40, 37885),

Gene: Rog141\_54 Start: 37745, Stop: 37449, Start Num: 17

Candidate Starts for Rog141\_54:

(Start: 17 @37745 has 142 MA's), (33, 37610), (40, 37556),

Gene: RosieMae\_54 Start: 37806, Stop: 37504, Start Num: 17

Candidate Starts for RosieMae\_54:

(Start: 17 @37806 has 142 MA's), (33, 37671), (40, 37617),

Gene: SJay\_55 Start: 38046, Stop: 37744, Start Num: 17

Candidate Starts for SJay\_55:

(Start: 17 @38046 has 142 MA's), (33, 37911), (40, 37857),

Gene: Schnapsidee\_54 Start: 37869, Stop: 37567, Start Num: 17

Candidate Starts for Schnapsidee\_54:

(Start: 17 @37869 has 142 MA's), (40, 37680), (47, 37605),

Gene: Schubert\_53 Start: 37310, Stop: 37065, Start Num: 17

Candidate Starts for Schubert\_53:

(Start: 17 @37310 has 142 MA's), (33, 37175),

Gene: Sedgewig\_54 Start: 37707, Stop: 37405, Start Num: 17

Candidate Starts for Sedgewig\_54:

(Start: 17 @37707 has 142 MA's), (33, 37572), (40, 37518),

Gene: ShaiHulud\_55 Start: 38012, Stop: 37716, Start Num: 17

Candidate Starts for ShaiHulud\_55:

(Start: 17 @38012 has 142 MA's), (33, 37877), (40, 37823),

Gene: Shee\_55 Start: 37999, Stop: 37697, Start Num: 17

Candidate Starts for Shee\_55:

(Start: 17 @37999 has 142 MA's), (33, 37864), (40, 37810),

Gene: SoilGremlin\_56 Start: 37992, Stop: 37732, Start Num: 17  
Candidate Starts for SoilGremlin\_56:  
(Start: 17 @37992 has 142 MA's), (33, 37854), (34, 37851),

Gene: SolidSnake\_57 Start: 37991, Stop: 37731, Start Num: 17  
Candidate Starts for SolidSnake\_57:  
(Start: 17 @37991 has 142 MA's), (33, 37853), (34, 37850),

Gene: SonOfLevi\_55 Start: 37773, Stop: 37477, Start Num: 17  
Candidate Starts for SonOfLevi\_55:  
(Start: 17 @37773 has 142 MA's), (33, 37638), (40, 37584),

Gene: Soror1\_53 Start: 37744, Stop: 37442, Start Num: 17  
Candidate Starts for Soror1\_53:  
(Start: 17 @37744 has 142 MA's), (40, 37555), (47, 37480),

Gene: StAugustine\_99 Start: 72844, Stop: 72515, Start Num: 14  
Candidate Starts for StAugustine\_99:  
(2, 73084), (3, 73060), (5, 72970), (Start: 14 @72844 has 1 MA's), (Start: 18 @72802 has 1 MA's), (21, 72787), (30, 72700), (33, 72673), (34, 72670), (38, 72625), (44, 72610),

Gene: Stanktossa\_54 Start: 38002, Stop: 37700, Start Num: 17  
Candidate Starts for Stanktossa\_54:  
(Start: 17 @38002 has 142 MA's), (33, 37867), (40, 37813),

Gene: StingRay\_54 Start: 37797, Stop: 37501, Start Num: 17  
Candidate Starts for StingRay\_54:  
(Start: 17 @37797 has 142 MA's), (33, 37662), (40, 37608),

Gene: StirfryIV\_54 Start: 37718, Stop: 37416, Start Num: 17  
Candidate Starts for StirfryIV\_54:  
(Start: 17 @37718 has 142 MA's), (33, 37583), (40, 37529),

Gene: Stormbreaker8\_53 Start: 37730, Stop: 37428, Start Num: 17  
Candidate Starts for Stormbreaker8\_53:  
(Start: 17 @37730 has 142 MA's), (40, 37541), (47, 37466),

Gene: Strathdee\_55 Start: 38002, Stop: 37706, Start Num: 17  
Candidate Starts for Strathdee\_55:  
(Start: 17 @38002 has 142 MA's), (33, 37867), (40, 37813),

Gene: Studio\_51 Start: 32697, Stop: 32470, Start Num: 17  
Candidate Starts for Studio\_51:  
(Start: 17 @32697 has 142 MA's), (29, 32592), (36, 32553),

Gene: Superfresh\_55 Start: 38058, Stop: 37762, Start Num: 17  
Candidate Starts for Superfresh\_55:  
(Start: 17 @38058 has 142 MA's), (33, 37923), (40, 37869),

Gene: Symere\_54 Start: 37717, Stop: 37415, Start Num: 17  
Candidate Starts for Symere\_54:  
(Start: 17 @37717 has 142 MA's), (33, 37582), (40, 37528),

Gene: TMaxx\_29 Start: 18671, Stop: 18444, Start Num: 20  
Candidate Starts for TMaxx\_29:  
(Start: 20 @18671 has 9 MA's), (36, 18533), (45, 18476),

Gene: TatarkaPM\_55 Start: 38012, Stop: 37710, Start Num: 17  
Candidate Starts for TatarkaPM\_55:  
(Start: 17 @38012 has 142 MA's), (33, 37877), (40, 37823),

Gene: Teagan\_55 Start: 37993, Stop: 37697, Start Num: 17  
Candidate Starts for Teagan\_55:  
(Start: 17 @37993 has 142 MA's), (33, 37858), (40, 37804),

Gene: TeddyBear\_54 Start: 37755, Stop: 37459, Start Num: 17  
Candidate Starts for TeddyBear\_54:  
(Start: 17 @37755 has 142 MA's), (33, 37620), (40, 37566),

Gene: Tenda\_54 Start: 37753, Stop: 37457, Start Num: 17  
Candidate Starts for Tenda\_54:  
(Start: 17 @37753 has 142 MA's), (33, 37618), (40, 37564),

Gene: Thompsone\_55 Start: 38000, Stop: 37704, Start Num: 17  
Candidate Starts for Thompsone\_55:  
(Start: 17 @38000 has 142 MA's), (33, 37865), (40, 37811),

Gene: Thorongil\_55 Start: 37517, Stop: 37221, Start Num: 17  
Candidate Starts for Thorongil\_55:  
(Start: 17 @37517 has 142 MA's), (33, 37382), (40, 37328),

Gene: TinSulphur\_56 Start: 38008, Stop: 37706, Start Num: 17  
Candidate Starts for TinSulphur\_56:  
(Start: 17 @38008 has 142 MA's), (33, 37873), (40, 37819),

Gene: Velene\_55 Start: 37998, Stop: 37702, Start Num: 17  
Candidate Starts for Velene\_55:  
(Start: 17 @37998 has 142 MA's), (33, 37863), (40, 37809),

Gene: Vincenzo\_75 Start: 63266, Stop: 63009, Start Num: 16  
Candidate Starts for Vincenzo\_75:  
(Start: 16 @63266 has 9 MA's), (21, 63242), (25, 63191), (28, 63164), (33, 63125),

Gene: Vispitious\_55 Start: 38003, Stop: 37707, Start Num: 17  
Candidate Starts for Vispitious\_55:  
(Start: 17 @38003 has 142 MA's), (33, 37868), (40, 37814),

Gene: WildNOOut\_55 Start: 37996, Stop: 37700, Start Num: 17  
Candidate Starts for WildNOOut\_55:  
(Start: 17 @37996 has 142 MA's), (33, 37861), (40, 37807),

Gene: Winzigespinne\_54 Start: 37741, Stop: 37445, Start Num: 17  
Candidate Starts for Winzigespinne\_54:  
(Start: 17 @37741 has 142 MA's), (33, 37606), (40, 37552),

Gene: YuuY\_55 Start: 37195, Stop: 36938, Start Num: 17

Candidate Starts for YuuY\_55:

(Start: 17 @37195 has 142 MA's), (28, 37099), (33, 37060), (41, 37003), (44, 36988),

Gene: Zada\_56 Start: 38015, Stop: 37719, Start Num: 17

Candidate Starts for Zada\_56:

(Start: 17 @38015 has 142 MA's), (33, 37880), (40, 37826),