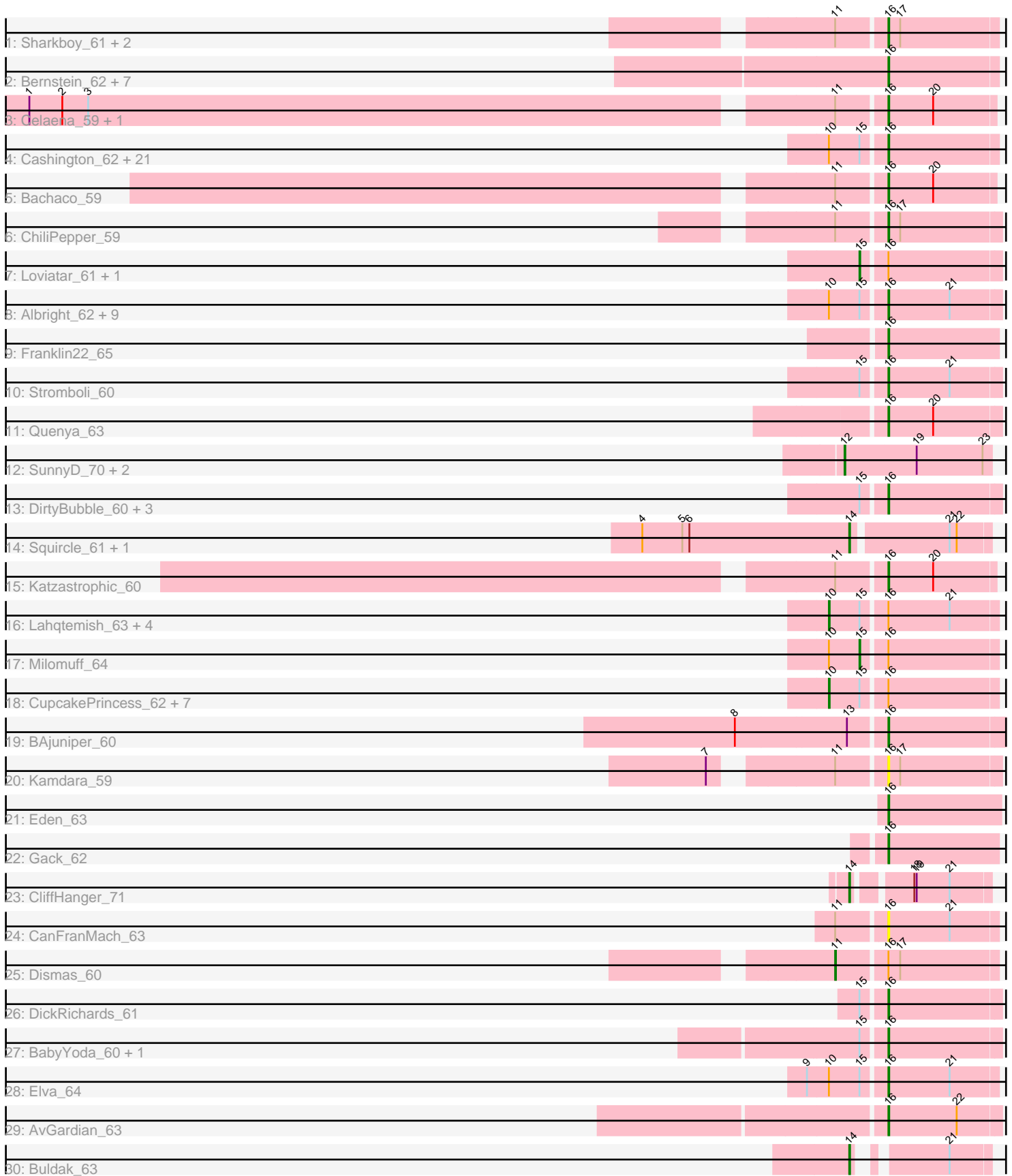


Pham 301283



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 301283 Report

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

Pham number 301283 has 89 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Sharkboy\_61, Rona\_59, Kieran\_59
- Track 2 : Bernstein\_62, Skylord\_62, Brahms\_62, Armstrong\_62, Vitas\_62, Clayda5\_64, Coltrane\_62, Rollins\_62
- Track 3 : Celaena\_59, FlameThrower\_58
- Track 4 : Cashington\_62, Jabb\_62, Finalfrontier\_63, BelmontSKP\_62, CroZenni\_63, MsUbiquitous\_62, Eula\_62, TukTuk\_64, Lilo27\_64, Solea\_65, Pecas\_63, Jovita\_61, Kenzers\_62, QMacho\_64, Johnathan\_62, Avocadoman\_62, SarBear\_63, Swervy\_63, AylexOG\_64, Doobus\_61, Slay\_64, Lynlen\_63
- Track 5 : Bachaco\_59
- Track 6 : ChiliPepper\_59
- Track 7 : Loviatar\_61, Akino08\_61
- Track 8 : Albright\_62, BubbaBear\_62, Albedo\_64, Softsoap\_64, PhigPhack\_65, Didgeridoo\_68, IndyLu\_65, SirBeanington\_63, Phisb\_64, Abigail\_62
- Track 9 : Franklin22\_65
- Track 10 : Stromboli\_60
- Track 11 : Quenya\_63
- Track 12 : SunnyD\_70, Teagster\_70, Shayna\_70
- Track 13 : DirtyBubble\_60, SanaSana\_62, Icarian\_63, Stoor\_60
- Track 14 : Squircle\_61, Olliecat\_61
- Track 15 : Katzastrophic\_60
- Track 16 : Lahqtemish\_63, BabyDaisy\_65, Kate33\_67, PastaFagioli\_64, SansAfet\_64
- Track 17 : Milomuff\_64
- Track 18 : CupcakePrincess\_62, Nicky22\_62, LimaBean\_62, AnnaLie\_62, Bengal\_65, Arroyo\_63, PondAmelia\_75, Burritobowl\_64
- Track 19 : BAjuniper\_60
- Track 20 : Kamdara\_59
- Track 21 : Eden\_63
- Track 22 : Gack\_62
- Track 23 : CliffHanger\_71
- Track 24 : CanFranMach\_63
- Track 25 : Dismas\_60
- Track 26 : DickRichards\_61
- Track 27 : BabyYoda\_60, WalkingDead\_63
- Track 28 : Elva\_64
- Track 29 : AvGardian\_63
- Track 30 : Buldak\_63

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

The start number called the most often in the published annotations is 16, it was called in 57 of the 80 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abigail\_62, Albedo\_64, Albright\_62, Armstrong\_62, AvGardian\_63, Avocadoman\_62, AylexOG\_64, BAjuniper\_60, BabyYoda\_60, Bachaco\_59, BelmontSKP\_62, Bernstein\_62, Brahms\_62, BubbaBear\_62, CanFranMach\_63, Cashington\_62, Celaena\_59, ChiliPepper\_59, Clayda5\_64, Coltrane\_62, CroZenni\_63, DickRichards\_61, Didgeridoo\_68, DirtyBubble\_60, Doobus\_61, Eden\_63, Elva\_64, Eula\_62, Finalfrontier\_63, FlameThrower\_58, Franklin22\_65, Gack\_62, Icarian\_63, IndyLu\_65, Jabb\_62, Johnathan\_62, Jovita\_61, Kamdara\_59, Katzastrophic\_60, Kenzers\_62, Kieran\_59, Lilo27\_64, Lynlen\_63, MsUbiquitous\_62, Pecas\_63, PhigPhack\_65, Phisb\_64, QMacho\_64, Quenya\_63, Rollins\_62, Rona\_59, SanaSana\_62, SarBear\_63, Sharkboy\_61, SirBeanington\_63, Skylord\_62, Slay\_64, Softsoap\_64, Solea\_65, Stoor\_60, Stromboli\_60, Swervy\_63, TukTuk\_64, Vitas\_62, WalkingDead\_63,

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

- Akino08\_61, AnnaLie\_62, Arroyo\_63, BabyDaisy\_65, Bengal\_65, Burritobowl\_64, CupcakePrincess\_62, Dismas\_60, Kate33\_67, Lahqtemish\_63, LimaBean\_62, Loviatar\_61, Milomuff\_64, Nicky22\_62, PastaFagioli\_64, PondAmelia\_75, SansAfet\_64,

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

- Buldak\_63, CliffHanger\_71, Olliecat\_61, Shayna\_70, Squiracle\_61, SunnyD\_70, Teagster\_70,

### **Summary by start number:**

Start 10:

- Found in 47 of 89 ( 52.8% ) of genes in pham
- Manual Annotations of this start: 12 of 80
- Called 27.7% of time when present
- Phage (with cluster) where this start called: AnnaLie\_62 (EB), Arroyo\_63 (EB), BabyDaisy\_65 (EB), Bengal\_65 (EB), Burritobowl\_64 (EB), CupcakePrincess\_62 (EB), Kate33\_67 (EB), Lahqtemish\_63 (EB), LimaBean\_62 (EB), Nicky22\_62 (EB), PastaFagioli\_64 (EB), PondAmelia\_75 (EB), SansAfet\_64 (EB),

Start 11:

- Found in 11 of 89 ( 12.4% ) of genes in pham
- Manual Annotations of this start: 1 of 80
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Dismas\_60 (EB),

Start 12:

- Found in 3 of 89 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 3 of 80

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Shayna\_70 (EB), SunnyD\_70 (EB), Teagster\_70 (EB),

Start 14:

- Found in 4 of 89 ( 4.5% ) of genes in pham
- Manual Annotations of this start: 4 of 80
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Buldak\_63 (EB), CliffHanger\_71 (EB), Olliecat\_61 (EB), Squirrel\_61 (EB),

Start 15:

- Found in 57 of 89 ( 64.0% ) of genes in pham
- Manual Annotations of this start: 3 of 80
- Called 5.3% of time when present
- Phage (with cluster) where this start called: Akino08\_61 (EB), Loviatar\_61 (EB), Milomuff\_64 (EB),

Start 16:

- Found in 82 of 89 ( 92.1% ) of genes in pham
- Manual Annotations of this start: 57 of 80
- Called 79.3% of time when present
- Phage (with cluster) where this start called: Abigail\_62 (EB), Albedo\_64 (EB), Albright\_62 (EB), Armstrong\_62 (EB), AvGardian\_63 (EB), Avocadoman\_62 (EB), AylexOG\_64 (EB), BAjuniper\_60 (EB), BabyYoda\_60 (EB), Bachaco\_59 (EB), BelmontSKP\_62 (EB), Bernstein\_62 (EB), Brahms\_62 (EB), BubbaBear\_62 (EB), CanFranMach\_63 (EB), Cashington\_62 (EB), Celaena\_59 (EB), ChiliPepper\_59 (EB), Clayda5\_64 (EB), Coltrane\_62 (EB), CroZenni\_63 (EB), DickRichards\_61 (EB), Didgeridoo\_68 (EB), DirtyBubble\_60 (EB), Doobus\_61 (EB), Eden\_63 (EB), Elva\_64 (EB), Eula\_62 (EB), Finalfrontier\_63 (EB), FlameThrower\_58 (EB), Franklin22\_65 (EB), Gack\_62 (EB), Icarian\_63 (EB), IndyLu\_65 (EB), Jabb\_62 (EB), Johnathan\_62 (EB), Jovita\_61 (EB), Kamdara\_59 (EB), Katzastrophic\_60 (EB), Kenzers\_62 (EB), Kieran\_59 (EB), Lilo27\_64 (EB), Lynlen\_63 (EB), MsUbiquitous\_62 (EB), Pecas\_63 (EB), PhigPhack\_65 (EB), Phisb\_64 (EB), QMacho\_64 (EB), Quenya\_63 (EB), Rollins\_62 (EB), Rona\_59 (EB), SanaSana\_62 (EB), SarBear\_63 (EB), Sharkboy\_61 (EB), SirBeanington\_63 (EB), Skylord\_62 (EB), Slay\_64 (EB), Softsoap\_64 (EB), Solea\_65 (EB), Stoor\_60 (EB), Stromboli\_60 (EB), Swervy\_63 (EB), TukTuk\_64 (EB), Vitas\_62 (EB), WalkingDead\_63 (EB),

### Summary by clusters:

There is one cluster represented in this pham: EB

Info for manual annotations of cluster EB:

- Start number 10 was manually annotated 12 times for cluster EB.
- Start number 11 was manually annotated 1 time for cluster EB.
- Start number 12 was manually annotated 3 times for cluster EB.
- Start number 14 was manually annotated 4 times for cluster EB.
- Start number 15 was manually annotated 3 times for cluster EB.
- Start number 16 was manually annotated 57 times for cluster EB.

**Gene Information:**

Gene: Abigail\_62 Start: 38976, Stop: 39116, Start Num: 16

Candidate Starts for Abigail\_62:

(Start: 10 @38910 has 12 MA's), (Start: 15 @38949 has 3 MA's), (Start: 16 @38976 has 57 MA's), (21, 39054),

Gene: Akino08\_61 Start: 40409, Stop: 40576, Start Num: 15

Candidate Starts for Akino08\_61:

(Start: 15 @40409 has 3 MA's), (Start: 16 @40436 has 57 MA's),

Gene: Albedo\_64 Start: 39896, Stop: 40036, Start Num: 16

Candidate Starts for Albedo\_64:

(Start: 10 @39830 has 12 MA's), (Start: 15 @39869 has 3 MA's), (Start: 16 @39896 has 57 MA's), (21, 39974),

Gene: Albright\_62 Start: 38958, Stop: 39098, Start Num: 16

Candidate Starts for Albright\_62:

(Start: 10 @38892 has 12 MA's), (Start: 15 @38931 has 3 MA's), (Start: 16 @38958 has 57 MA's), (21, 39036),

Gene: AnnaLie\_62 Start: 39565, Stop: 39771, Start Num: 10

Candidate Starts for AnnaLie\_62:

(Start: 10 @39565 has 12 MA's), (Start: 15 @39604 has 3 MA's), (Start: 16 @39631 has 57 MA's),

Gene: Armstrong\_62 Start: 37649, Stop: 37786, Start Num: 16

Candidate Starts for Armstrong\_62:

(Start: 16 @37649 has 57 MA's),

Gene: Arroyo\_63 Start: 39867, Stop: 40070, Start Num: 10

Candidate Starts for Arroyo\_63:

(Start: 10 @39867 has 12 MA's), (Start: 15 @39906 has 3 MA's), (Start: 16 @39933 has 57 MA's),

Gene: AvGardian\_63 Start: 39698, Stop: 39838, Start Num: 16

Candidate Starts for AvGardian\_63:

(Start: 16 @39698 has 57 MA's), (22, 39785),

Gene: Avocadoman\_62 Start: 38904, Stop: 39041, Start Num: 16

Candidate Starts for Avocadoman\_62:

(Start: 10 @38838 has 12 MA's), (Start: 15 @38877 has 3 MA's), (Start: 16 @38904 has 57 MA's),

Gene: AylexOG\_64 Start: 39542, Stop: 39679, Start Num: 16

Candidate Starts for AylexOG\_64:

(Start: 10 @39476 has 12 MA's), (Start: 15 @39515 has 3 MA's), (Start: 16 @39542 has 57 MA's),

Gene: BAjuniper\_60 Start: 39708, Stop: 39854, Start Num: 16

Candidate Starts for BAjuniper\_60:

(8, 39525), (13, 39663), (Start: 16 @39708 has 57 MA's),

Gene: BabyDaisy\_65 Start: 40375, Stop: 40581, Start Num: 10

Candidate Starts for BabyDaisy\_65:

(Start: 10 @40375 has 12 MA's), (Start: 15 @40414 has 3 MA's), (Start: 16 @40441 has 57 MA's), (21, 40519),

Gene: BabyYoda\_60 Start: 39344, Stop: 39484, Start Num: 16

Candidate Starts for BabyYoda\_60:

(Start: 15 @39317 has 3 MA's), (Start: 16 @39344 has 57 MA's),

Gene: Bachaco\_59 Start: 40387, Stop: 40521, Start Num: 16

Candidate Starts for Bachaco\_59:

(Start: 11 @40327 has 1 MA's), (Start: 16 @40387 has 57 MA's), (20, 40444),

Gene: BelmontSKP\_62 Start: 39631, Stop: 39771, Start Num: 16

Candidate Starts for BelmontSKP\_62:

(Start: 10 @39565 has 12 MA's), (Start: 15 @39604 has 3 MA's), (Start: 16 @39631 has 57 MA's),

Gene: Bengal\_65 Start: 39625, Stop: 39828, Start Num: 10

Candidate Starts for Bengal\_65:

(Start: 10 @39625 has 12 MA's), (Start: 15 @39664 has 3 MA's), (Start: 16 @39691 has 57 MA's),

Gene: Bernstein\_62 Start: 37647, Stop: 37784, Start Num: 16

Candidate Starts for Bernstein\_62:

(Start: 16 @37647 has 57 MA's),

Gene: Brahms\_62 Start: 37549, Stop: 37686, Start Num: 16

Candidate Starts for Brahms\_62:

(Start: 16 @37549 has 57 MA's),

Gene: BubbaBear\_62 Start: 39688, Stop: 39825, Start Num: 16

Candidate Starts for BubbaBear\_62:

(Start: 10 @39622 has 12 MA's), (Start: 15 @39661 has 3 MA's), (Start: 16 @39688 has 57 MA's), (21, 39766),

Gene: Buldak\_63 Start: 37507, Stop: 37647, Start Num: 14

Candidate Starts for Buldak\_63:

(Start: 14 @37507 has 4 MA's), (21, 37597),

Gene: Burritobowl\_64 Start: 39393, Stop: 39599, Start Num: 10

Candidate Starts for Burritobowl\_64:

(Start: 10 @39393 has 12 MA's), (Start: 15 @39432 has 3 MA's), (Start: 16 @39459 has 57 MA's),

Gene: CanFranMach\_63 Start: 39336, Stop: 39473, Start Num: 16

Candidate Starts for CanFranMach\_63:

(Start: 11 @39279 has 1 MA's), (Start: 16 @39336 has 57 MA's), (21, 39414),

Gene: Cashington\_62 Start: 39035, Stop: 39172, Start Num: 16

Candidate Starts for Cashington\_62:

(Start: 10 @38969 has 12 MA's), (Start: 15 @39008 has 3 MA's), (Start: 16 @39035 has 57 MA's),

Gene: Celaena\_59 Start: 40149, Stop: 40283, Start Num: 16

Candidate Starts for Celaena\_59:

(1, 39096), (2, 39138), (3, 39171), (Start: 11 @40089 has 1 MA's), (Start: 16 @40149 has 57 MA's), (20, 40206),

Gene: ChiliPepper\_59 Start: 39702, Stop: 39842, Start Num: 16

Candidate Starts for ChiliPepper\_59:

(Start: 11 @39642 has 1 MA's), (Start: 16 @39702 has 57 MA's), (17, 39717),

Gene: Clayda5\_64 Start: 37614, Stop: 37751, Start Num: 16

Candidate Starts for Clayda5\_64:

(Start: 16 @37614 has 57 MA's),

Gene: CliffHanger\_71 Start: 39059, Stop: 39217, Start Num: 14

Candidate Starts for CliffHanger\_71:

(Start: 14 @39059 has 4 MA's), (18, 39122), (19, 39125), (21, 39167),

Gene: Coltrane\_62 Start: 37549, Stop: 37686, Start Num: 16

Candidate Starts for Coltrane\_62:

(Start: 16 @37549 has 57 MA's),

Gene: CroZenni\_63 Start: 39258, Stop: 39395, Start Num: 16

Candidate Starts for CroZenni\_63:

(Start: 10 @39192 has 12 MA's), (Start: 15 @39231 has 3 MA's), (Start: 16 @39258 has 57 MA's),

Gene: CupcakePrincess\_62 Start: 38947, Stop: 39150, Start Num: 10

Candidate Starts for CupcakePrincess\_62:

(Start: 10 @38947 has 12 MA's), (Start: 15 @38986 has 3 MA's), (Start: 16 @39013 has 57 MA's),

Gene: DickRichards\_61 Start: 39415, Stop: 39555, Start Num: 16

Candidate Starts for DickRichards\_61:

(Start: 15 @39388 has 3 MA's), (Start: 16 @39415 has 57 MA's),

Gene: Didgeridoo\_68 Start: 40551, Stop: 40691, Start Num: 16

Candidate Starts for Didgeridoo\_68:

(Start: 10 @40485 has 12 MA's), (Start: 15 @40524 has 3 MA's), (Start: 16 @40551 has 57 MA's), (21, 40629),

Gene: DirtyBubble\_60 Start: 39383, Stop: 39523, Start Num: 16

Candidate Starts for DirtyBubble\_60:

(Start: 15 @39356 has 3 MA's), (Start: 16 @39383 has 57 MA's),

Gene: Dismas\_60 Start: 39563, Stop: 39760, Start Num: 11

Candidate Starts for Dismas\_60:

(Start: 11 @39563 has 1 MA's), (Start: 16 @39623 has 57 MA's), (17, 39638),

Gene: Doobus\_61 Start: 39090, Stop: 39227, Start Num: 16

Candidate Starts for Doobus\_61:

(Start: 10 @39024 has 12 MA's), (Start: 15 @39063 has 3 MA's), (Start: 16 @39090 has 57 MA's),

Gene: Eden\_63 Start: 38448, Stop: 38591, Start Num: 16

Candidate Starts for Eden\_63:

(Start: 16 @38448 has 57 MA's),

Gene: Elva\_64 Start: 40115, Stop: 40252, Start Num: 16

Candidate Starts for Elva\_64:

(9, 40022), (Start: 10 @40049 has 12 MA's), (Start: 15 @40088 has 3 MA's), (Start: 16 @40115 has 57 MA's), (21, 40193),

Gene: Eula\_62 Start: 38999, Stop: 39136, Start Num: 16

Candidate Starts for Eula\_62:

(Start: 10 @38933 has 12 MA's), (Start: 15 @38972 has 3 MA's), (Start: 16 @38999 has 57 MA's),

Gene: Finalfrontier\_63 Start: 40163, Stop: 40303, Start Num: 16

Candidate Starts for Finalfrontier\_63:

(Start: 10 @40097 has 12 MA's), (Start: 15 @40136 has 3 MA's), (Start: 16 @40163 has 57 MA's),

Gene: FlameThrower\_58 Start: 39186, Stop: 39320, Start Num: 16

Candidate Starts for FlameThrower\_58:

(1, 38133), (2, 38175), (3, 38208), (Start: 11 @39126 has 1 MA's), (Start: 16 @39186 has 57 MA's), (20, 39243),

Gene: Franklin22\_65 Start: 38170, Stop: 38310, Start Num: 16

Candidate Starts for Franklin22\_65:

(Start: 16 @38170 has 57 MA's),

Gene: Gack\_62 Start: 38076, Stop: 38216, Start Num: 16

Candidate Starts for Gack\_62:

(Start: 16 @38076 has 57 MA's),

Gene: Icarian\_63 Start: 40033, Stop: 40173, Start Num: 16

Candidate Starts for Icarian\_63:

(Start: 15 @40006 has 3 MA's), (Start: 16 @40033 has 57 MA's),

Gene: IndyLu\_65 Start: 40172, Stop: 40312, Start Num: 16

Candidate Starts for IndyLu\_65:

(Start: 10 @40106 has 12 MA's), (Start: 15 @40145 has 3 MA's), (Start: 16 @40172 has 57 MA's), (21, 40250),

Gene: Jabb\_62 Start: 39013, Stop: 39150, Start Num: 16

Candidate Starts for Jabb\_62:

(Start: 10 @38947 has 12 MA's), (Start: 15 @38986 has 3 MA's), (Start: 16 @39013 has 57 MA's),

Gene: Johnathan\_62 Start: 38959, Stop: 39099, Start Num: 16

Candidate Starts for Johnathan\_62:

(Start: 10 @38893 has 12 MA's), (Start: 15 @38932 has 3 MA's), (Start: 16 @38959 has 57 MA's),

Gene: Jovita\_61 Start: 38770, Stop: 38907, Start Num: 16

Candidate Starts for Jovita\_61:

(Start: 10 @38704 has 12 MA's), (Start: 15 @38743 has 3 MA's), (Start: 16 @38770 has 57 MA's),

Gene: Kamdara\_59 Start: 39661, Stop: 39801, Start Num: 16

Candidate Starts for Kamdara\_59:

(7, 39472), (Start: 11 @39601 has 1 MA's), (Start: 16 @39661 has 57 MA's), (17, 39676),

Gene: Kate33\_67 Start: 39842, Stop: 40048, Start Num: 10

Candidate Starts for Kate33\_67:

(Start: 10 @39842 has 12 MA's), (Start: 15 @39881 has 3 MA's), (Start: 16 @39908 has 57 MA's), (21, 39986),

Gene: Katzastrophic\_60 Start: 39696, Stop: 39830, Start Num: 16

Candidate Starts for Katzastrophic\_60:

(Start: 11 @39636 has 1 MA's), (Start: 16 @39696 has 57 MA's), (20, 39753),

Gene: Kenzers\_62 Start: 38829, Stop: 38966, Start Num: 16  
Candidate Starts for Kenzers\_62:  
(Start: 10 @38763 has 12 MA's), (Start: 15 @38802 has 3 MA's), (Start: 16 @38829 has 57 MA's),

Gene: Kieran\_59 Start: 39664, Stop: 39804, Start Num: 16  
Candidate Starts for Kieran\_59:  
(Start: 11 @39604 has 1 MA's), (Start: 16 @39664 has 57 MA's), (17, 39679),

Gene: Lahqtemish\_63 Start: 40119, Stop: 40322, Start Num: 10  
Candidate Starts for Lahqtemish\_63:  
(Start: 10 @40119 has 12 MA's), (Start: 15 @40158 has 3 MA's), (Start: 16 @40185 has 57 MA's), (21, 40263),

Gene: Lilo27\_64 Start: 39440, Stop: 39577, Start Num: 16  
Candidate Starts for Lilo27\_64:  
(Start: 10 @39374 has 12 MA's), (Start: 15 @39413 has 3 MA's), (Start: 16 @39440 has 57 MA's),

Gene: LimaBean\_62 Start: 38787, Stop: 38993, Start Num: 10  
Candidate Starts for LimaBean\_62:  
(Start: 10 @38787 has 12 MA's), (Start: 15 @38826 has 3 MA's), (Start: 16 @38853 has 57 MA's),

Gene: Loviatar\_61 Start: 40424, Stop: 40591, Start Num: 15  
Candidate Starts for Loviatar\_61:  
(Start: 15 @40424 has 3 MA's), (Start: 16 @40451 has 57 MA's),

Gene: Lynlen\_63 Start: 39012, Stop: 39149, Start Num: 16  
Candidate Starts for Lynlen\_63:  
(Start: 10 @38946 has 12 MA's), (Start: 15 @38985 has 3 MA's), (Start: 16 @39012 has 57 MA's),

Gene: Milomuff\_64 Start: 39521, Stop: 39685, Start Num: 15  
Candidate Starts for Milomuff\_64:  
(Start: 10 @39482 has 12 MA's), (Start: 15 @39521 has 3 MA's), (Start: 16 @39548 has 57 MA's),

Gene: MsUbiquitous\_62 Start: 39013, Stop: 39150, Start Num: 16  
Candidate Starts for MsUbiquitous\_62:  
(Start: 10 @38947 has 12 MA's), (Start: 15 @38986 has 3 MA's), (Start: 16 @39013 has 57 MA's),

Gene: Nicky22\_62 Start: 39355, Stop: 39558, Start Num: 10  
Candidate Starts for Nicky22\_62:  
(Start: 10 @39355 has 12 MA's), (Start: 15 @39394 has 3 MA's), (Start: 16 @39421 has 57 MA's),

Gene: Olliecat\_61 Start: 37393, Stop: 37557, Start Num: 14  
Candidate Starts for Olliecat\_61:  
(4, 37129), (5, 37180), (6, 37189), (Start: 14 @37393 has 4 MA's), (21, 37507), (22, 37516),

Gene: PastaFagioli\_64 Start: 40065, Stop: 40271, Start Num: 10  
Candidate Starts for PastaFagioli\_64:  
(Start: 10 @40065 has 12 MA's), (Start: 15 @40104 has 3 MA's), (Start: 16 @40131 has 57 MA's), (21, 40209),

Gene: Pecas\_63 Start: 39282, Stop: 39419, Start Num: 16  
Candidate Starts for Pecas\_63:

(Start: 10 @39216 has 12 MA's), (Start: 15 @39255 has 3 MA's), (Start: 16 @39282 has 57 MA's),

Gene: PhigPhack\_65 Start: 39555, Stop: 39695, Start Num: 16

Candidate Starts for PhigPhack\_65:

(Start: 10 @39489 has 12 MA's), (Start: 15 @39528 has 3 MA's), (Start: 16 @39555 has 57 MA's), (21, 39633),

Gene: Phisb\_64 Start: 39528, Stop: 39668, Start Num: 16

Candidate Starts for Phisb\_64:

(Start: 10 @39462 has 12 MA's), (Start: 15 @39501 has 3 MA's), (Start: 16 @39528 has 57 MA's), (21, 39606),

Gene: PondAmelia\_75 Start: 39344, Stop: 39550, Start Num: 10

Candidate Starts for PondAmelia\_75:

(Start: 10 @39344 has 12 MA's), (Start: 15 @39383 has 3 MA's), (Start: 16 @39410 has 57 MA's),

Gene: QMacho\_64 Start: 39659, Stop: 39799, Start Num: 16

Candidate Starts for QMacho\_64:

(Start: 10 @39593 has 12 MA's), (Start: 15 @39632 has 3 MA's), (Start: 16 @39659 has 57 MA's),

Gene: Quenya\_63 Start: 40087, Stop: 40227, Start Num: 16

Candidate Starts for Quenya\_63:

(Start: 16 @40087 has 57 MA's), (20, 40144),

Gene: Rollins\_62 Start: 37647, Stop: 37784, Start Num: 16

Candidate Starts for Rollins\_62:

(Start: 16 @37647 has 57 MA's),

Gene: Rona\_59 Start: 39614, Stop: 39751, Start Num: 16

Candidate Starts for Rona\_59:

(Start: 11 @39554 has 1 MA's), (Start: 16 @39614 has 57 MA's), (17, 39629),

Gene: SanaSana\_62 Start: 39794, Stop: 39934, Start Num: 16

Candidate Starts for SanaSana\_62:

(Start: 15 @39767 has 3 MA's), (Start: 16 @39794 has 57 MA's),

Gene: SansAfet\_64 Start: 39438, Stop: 39644, Start Num: 10

Candidate Starts for SansAfet\_64:

(Start: 10 @39438 has 12 MA's), (Start: 15 @39477 has 3 MA's), (Start: 16 @39504 has 57 MA's), (21, 39582),

Gene: SarBear\_63 Start: 39068, Stop: 39205, Start Num: 16

Candidate Starts for SarBear\_63:

(Start: 10 @39002 has 12 MA's), (Start: 15 @39041 has 3 MA's), (Start: 16 @39068 has 57 MA's),

Gene: Sharkboy\_61 Start: 39988, Stop: 40125, Start Num: 16

Candidate Starts for Sharkboy\_61:

(Start: 11 @39928 has 1 MA's), (Start: 16 @39988 has 57 MA's), (17, 40003),

Gene: Shayna\_70 Start: 39636, Stop: 39821, Start Num: 12

Candidate Starts for Shayna\_70:

(Start: 12 @39636 has 3 MA's), (19, 39726), (23, 39810),

Gene: SirBeanington\_63 Start: 39763, Stop: 39903, Start Num: 16  
Candidate Starts for SirBeanington\_63:  
(Start: 10 @39697 has 12 MA's), (Start: 15 @39736 has 3 MA's), (Start: 16 @39763 has 57 MA's), (21, 39841),

Gene: Skylord\_62 Start: 37564, Stop: 37701, Start Num: 16  
Candidate Starts for Skylord\_62:  
(Start: 16 @37564 has 57 MA's),

Gene: Slay\_64 Start: 40038, Stop: 40178, Start Num: 16  
Candidate Starts for Slay\_64:  
(Start: 10 @39972 has 12 MA's), (Start: 15 @40011 has 3 MA's), (Start: 16 @40038 has 57 MA's),

Gene: Softsoap\_64 Start: 39727, Stop: 39867, Start Num: 16  
Candidate Starts for Softsoap\_64:  
(Start: 10 @39661 has 12 MA's), (Start: 15 @39700 has 3 MA's), (Start: 16 @39727 has 57 MA's), (21, 39805),

Gene: Solea\_65 Start: 39547, Stop: 39684, Start Num: 16  
Candidate Starts for Solea\_65:  
(Start: 10 @39481 has 12 MA's), (Start: 15 @39520 has 3 MA's), (Start: 16 @39547 has 57 MA's),

Gene: Squircle\_61 Start: 37392, Stop: 37556, Start Num: 14  
Candidate Starts for Squircle\_61:  
(4, 37128), (5, 37179), (6, 37188), (Start: 14 @37392 has 4 MA's), (21, 37506), (22, 37515),

Gene: Stoor\_60 Start: 39581, Stop: 39721, Start Num: 16  
Candidate Starts for Stoor\_60:  
(Start: 15 @39554 has 3 MA's), (Start: 16 @39581 has 57 MA's),

Gene: Stromboli\_60 Start: 39382, Stop: 39522, Start Num: 16  
Candidate Starts for Stromboli\_60:  
(Start: 15 @39355 has 3 MA's), (Start: 16 @39382 has 57 MA's), (21, 39460),

Gene: SunnyD\_70 Start: 39636, Stop: 39821, Start Num: 12  
Candidate Starts for SunnyD\_70:  
(Start: 12 @39636 has 3 MA's), (19, 39726), (23, 39810),

Gene: Swervy\_63 Start: 39132, Stop: 39269, Start Num: 16  
Candidate Starts for Swervy\_63:  
(Start: 10 @39066 has 12 MA's), (Start: 15 @39105 has 3 MA's), (Start: 16 @39132 has 57 MA's),

Gene: Teagster\_70 Start: 40081, Stop: 40239, Start Num: 12  
Candidate Starts for Teagster\_70:  
(Start: 12 @40081 has 3 MA's), (19, 40144), (23, 40228),

Gene: TukTuk\_64 Start: 39577, Stop: 39714, Start Num: 16  
Candidate Starts for TukTuk\_64:  
(Start: 10 @39511 has 12 MA's), (Start: 15 @39550 has 3 MA's), (Start: 16 @39577 has 57 MA's),

Gene: Vitas\_62 Start: 37620, Stop: 37757, Start Num: 16  
Candidate Starts for Vitas\_62:  
(Start: 16 @37620 has 57 MA's),

Gene: WalkingDead\_63 Start: 40560, Stop: 40700, Start Num: 16  
Candidate Starts for WalkingDead\_63:  
(Start: 15 @40533 has 3 MA's), (Start: 16 @40560 has 57 MA's),