

Pham 289346



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 289346 Report

This analysis was run 03/28/26 on database version 641.

Pham number 289346 has 76 members, 16 are drafts.

Phages represented in each track:

- Track 1 : Imvubu\_91
- Track 2 : Indlovu\_86
- Track 3 : LilMcDreamy\_86
- Track 4 : Hydro\_87
- Track 5 : Nanao\_86, Poster\_85, LittleDigger\_86, Epah\_86, Lambano\_84, GinPorsche\_88, Renkei\_86, Hally898\_84, Ahwei\_85, Antihero\_86
- Track 6 : QueenPie\_80
- Track 7 : JAMaL\_87
- Track 8 : StinkyVeggy\_85, Shenyu\_88, KarasumaRum\_85
- Track 9 : Rich\_84, Bae\_85
- Track 10 : Phelemich\_84, Reprobate\_86
- Track 11 : Nangang\_88
- Track 12 : Mysterious\_86, Nehemiah\_86
- Track 13 : Serendipitous\_87
- Track 14 : CRB2\_86
- Track 15 : Quesadilla\_88
- Track 16 : Funsized\_87
- Track 17 : Rinkes\_84
- Track 18 : Swann\_62, Krishelle\_62, Espica\_63, Phrankenstein\_62, Lillie\_62, Bryce\_61, Nancinator\_61, Rhodalysa\_62, Natosaleda\_61, Rasputin\_62, BobbyDazzler\_62, RexFury\_61, Naiad\_61, Shuman\_63, Harlequin\_62, Erik\_62, Alatin\_61, RER2\_56, Gollum\_62, Yoncess\_61, UhSalsa\_62, Belenaria\_63, TWAMP\_62, Bradshaw\_62, AppleCloud\_59, Jester\_61, CosmicSans\_62, StCroix\_61
- Track 19 : PhailMary\_59
- Track 20 : Yogi\_63, Bonanza\_63, Alpacados\_61
- Track 21 : AngryOrchard\_59, Partridge\_61, Dinger\_61, Takoda\_62
- Track 22 : Hiro\_62
- Track 23 : Taptic\_88, GodPhather\_87, Jeon\_82, Cepens\_87
- Track 24 : PR\_86, Argie\_88, D12\_85, Megabear\_85

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

The start number called the most often in the published annotations is 23, it was called in 35 of the 60 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alatin\_61, Alpacados\_61, AngryOrchard\_59, AppleCloud\_59, Belenaria\_63, BobbyDazzler\_62, Bonanza\_63, Bradshaw\_62, Bryce\_61, CosmicSans\_62, Dinger\_61, Erik\_62, Espica\_63, Gollum\_62, Harlequin\_62, Jester\_61, Krishelle\_62, Lillie\_62, Naiad\_61, Nancinator\_61, Natosaleda\_61, Partridge\_61, PhailMary\_59, Phrankenstien\_62, RER2\_56, Rasputin\_62, RexFury\_61, Rhodalysa\_62, Shuman\_63, StCroix\_61, Swann\_62, TWAMP\_62, Takoda\_62, UhSalsa\_62, Yogi\_63, Yoncess\_61,

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

- Hiro\_62,

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

- Ahwei\_85, Antihero\_86, Argie\_88, Baee\_85, CRB2\_86, Cepens\_87, D12\_85, Epah\_86, Funsized\_87, GinPorsche\_88, GodPhather\_87, Hally898\_84, Hydro\_87, Imvubu\_91, Indlovu\_86, JAMaL\_87, Jeon\_82, KarasumaRum\_85, Lambano\_84, LilMcDreamy\_86, LittleDigger\_86, Megabear\_85, Mysterious\_86, Nanao\_86, Nangang\_88, Nehemiah\_86, PR\_86, Phelemich\_84, Poster\_85, QueenPie\_80, Quesadilla\_88, Renkei\_86, Reprobate\_86, Rich\_84, Rinkes\_84, Serendipitous\_87, Shenyu\_88, StinkyVeggy\_85, Taptic\_88,

### Summary by start number:

Start 21:

- Found in 37 of 76 ( 48.7% ) of genes in pham
- Manual Annotations of this start: 1 of 60
- Called 2.7% of time when present
- Phage (with cluster) where this start called: Hiro\_62 (CA),

Start 22:

- Found in 1 of 76 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 60
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rinkes\_84 (B9),

Start 23:

- Found in 37 of 76 ( 48.7% ) of genes in pham
- Manual Annotations of this start: 35 of 60
- Called 97.3% of time when present
- Phage (with cluster) where this start called: Alatin\_61 (CA), Alpacados\_61 (CA), AngryOrchard\_59 (CA), AppleCloud\_59 (CA), Belenaria\_63 (CA), BobbyDazzler\_62 (CA), Bonanza\_63 (CA), Bradshaw\_62 (CA), Bryce\_61 (CA), CosmicSans\_62 (CA), Dinger\_61 (CA), Erik\_62 (CA), Espica\_63 (CA), Gollum\_62 (CA), Harlequin\_62 (CA), Jester\_61 (CA), Krishelle\_62 (CA), Lillie\_62 (CA), Naiad\_61 (CA), Nancinator\_61 (CA), Natosaleda\_61 (CA), Partridge\_61 (CA), PhailMary\_59 (CA), Phrankenstien\_62 (CA), RER2\_56 (CA), Rasputin\_62 (CA), RexFury\_61 (CA), Rhodalysa\_62 (CA), Shuman\_63 (CA), StCroix\_61 (CA), Swann\_62 (CA), TWAMP\_62 (CA), Takoda\_62 (CA), UhSalsa\_62 (CA), Yogi\_63 (CA), Yoncess\_61 (CA),

Start 24:

- Found in 39 of 76 ( 51.3% ) of genes in pham
- Manual Annotations of this start: 23 of 60

- Called 97.4% of time when present
- Phage (with cluster) where this start called: Ahwei\_85 (B4), Antihero\_86 (B4), Argie\_88 (W), Bae\_85 (B5), CRB2\_86 (B9), Cepens\_87 (W), D12\_85 (W), Epah\_86 (B4), Funsized\_87 (B9), GinPorsche\_88 (B4), GodPhather\_87 (W), Hally898\_84 (B4), Hydro\_87 (B4), Imvubu\_91 (B10), Indlovu\_86 (B11), JAMaL\_87 (B4), Jeon\_82 (W), KarasumaRum\_85 (B5), Lambano\_84 (B4), LilMcDreamy\_86 (B12), LittleDigger\_86 (B4), Megabear\_85 (W), Mysterious\_86 (B5), Nanao\_86 (B4), Nangang\_88 (B5), Nehemiah\_86 (B5), PR\_86 (W), Phelemich\_84 (B5), Poster\_85 (B4), QueenPie\_80 (B4), Quesadilla\_88 (B9), Renkei\_86 (B4), Reprobate\_86 (B5), Rich\_84 (B5), Serendipitous\_87 (B5), Shenyu\_88 (B5), StinkyVeggy\_85 (B5), Taptic\_88 (W),

### **Summary by clusters:**

There are 8 clusters represented in this pham: B10, CA, B4, B5, B12, W, B11, B9,

Info for manual annotations of cluster B10:

- Start number 24 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B11:

- Start number 24 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B12:

- Start number 24 was manually annotated 1 time for cluster B12.

Info for manual annotations of cluster B4:

- Start number 24 was manually annotated 3 times for cluster B4.

Info for manual annotations of cluster B5:

- Start number 24 was manually annotated 6 times for cluster B5.

Info for manual annotations of cluster B9:

- Start number 22 was manually annotated 1 time for cluster B9.
- Start number 24 was manually annotated 3 times for cluster B9.

Info for manual annotations of cluster CA:

- Start number 21 was manually annotated 1 time for cluster CA.
- Start number 23 was manually annotated 35 times for cluster CA.

Info for manual annotations of cluster W:

- Start number 24 was manually annotated 8 times for cluster W.

### **Gene Information:**

Gene: Ahwei\_85 Start: 65422, Stop: 65189, Start Num: 24

Candidate Starts for Ahwei\_85:

(12, 65515), (17, 65458), (Start: 24 @65422 has 23 MA's), (31, 65374), (33, 65353), (36, 65323), (43, 65272),

Gene: Alatin\_61 Start: 42128, Stop: 41901, Start Num: 23

Candidate Starts for Alatin\_61:

(16, 42161), (Start: 21 @42131 has 1 MA's), (Start: 23 @42128 has 35 MA's), (30, 42077),

Gene: Alpacados\_61 Start: 41951, Stop: 41724, Start Num: 23  
Candidate Starts for Alpacados\_61:  
(15, 41999), (16, 41984), (Start: 21 @41954 has 1 MA's), (Start: 23 @41951 has 35 MA's), (30, 41900),

Gene: AngryOrchard\_59 Start: 42181, Stop: 41954, Start Num: 23  
Candidate Starts for AngryOrchard\_59:  
(14, 42238), (Start: 21 @42184 has 1 MA's), (Start: 23 @42181 has 35 MA's),

Gene: Antihero\_86 Start: 65345, Stop: 65112, Start Num: 24  
Candidate Starts for Antihero\_86:  
(12, 65438), (17, 65381), (Start: 24 @65345 has 23 MA's), (31, 65297), (33, 65276), (36, 65246), (43, 65195),

Gene: AppleCloud\_59 Start: 41845, Stop: 41618, Start Num: 23  
Candidate Starts for AppleCloud\_59:  
(16, 41878), (Start: 21 @41848 has 1 MA's), (Start: 23 @41845 has 35 MA's), (30, 41794),

Gene: Argie\_88 Start: 59134, Stop: 59316, Start Num: 24  
Candidate Starts for Argie\_88:  
(18, 59113), (Start: 24 @59134 has 23 MA's), (31, 59182), (32, 59188), (35, 59218), (36, 59224), (38, 59236), (40, 59257),

Gene: Bae\_85 Start: 65223, Stop: 65053, Start Num: 24  
Candidate Starts for Bae\_85:  
(19, 65241), (Start: 24 @65223 has 23 MA's), (30, 65172), (39, 65118),

Gene: Belenaria\_63 Start: 41993, Stop: 41766, Start Num: 23  
Candidate Starts for Belenaria\_63:  
(16, 42026), (Start: 21 @41996 has 1 MA's), (Start: 23 @41993 has 35 MA's), (30, 41942),

Gene: BobbyDazzler\_62 Start: 42099, Stop: 41872, Start Num: 23  
Candidate Starts for BobbyDazzler\_62:  
(16, 42132), (Start: 21 @42102 has 1 MA's), (Start: 23 @42099 has 35 MA's), (30, 42048),

Gene: Bonanza\_63 Start: 42403, Stop: 42176, Start Num: 23  
Candidate Starts for Bonanza\_63:  
(15, 42451), (16, 42436), (Start: 21 @42406 has 1 MA's), (Start: 23 @42403 has 35 MA's), (30, 42352),

Gene: Bradshaw\_62 Start: 42061, Stop: 41834, Start Num: 23  
Candidate Starts for Bradshaw\_62:  
(16, 42094), (Start: 21 @42064 has 1 MA's), (Start: 23 @42061 has 35 MA's), (30, 42010),

Gene: Bryce\_61 Start: 41807, Stop: 41580, Start Num: 23  
Candidate Starts for Bryce\_61:  
(16, 41840), (Start: 21 @41810 has 1 MA's), (Start: 23 @41807 has 35 MA's), (30, 41756),

Gene: CRB2\_86 Start: 67074, Stop: 66823, Start Num: 24  
Candidate Starts for CRB2\_86:  
(Start: 24 @67074 has 23 MA's), (31, 67026), (42, 66936), (48, 66903), (50, 66873),

Gene: Cepens\_87 Start: 58243, Stop: 58425, Start Num: 24  
Candidate Starts for Cepens\_87:

(18, 58222), (20, 58225), (Start: 24 @58243 has 23 MA's), (31, 58291), (32, 58297), (35, 58327), (36, 58333), (38, 58345), (40, 58366),

Gene: CosmicSans\_62 Start: 42052, Stop: 41825, Start Num: 23

Candidate Starts for CosmicSans\_62:

(16, 42085), (Start: 21 @42055 has 1 MA's), (Start: 23 @42052 has 35 MA's), (30, 42001),

Gene: D12\_85 Start: 58877, Stop: 59059, Start Num: 24

Candidate Starts for D12\_85:

(18, 58856), (Start: 24 @58877 has 23 MA's), (31, 58925), (32, 58931), (35, 58961), (36, 58967), (38, 58979), (40, 59000),

Gene: Dinger\_61 Start: 42199, Stop: 41972, Start Num: 23

Candidate Starts for Dinger\_61:

(14, 42256), (Start: 21 @42202 has 1 MA's), (Start: 23 @42199 has 35 MA's),

Gene: Epah\_86 Start: 65345, Stop: 65112, Start Num: 24

Candidate Starts for Epah\_86:

(12, 65438), (17, 65381), (Start: 24 @65345 has 23 MA's), (31, 65297), (33, 65276), (36, 65246), (43, 65195),

Gene: Erik\_62 Start: 41883, Stop: 41656, Start Num: 23

Candidate Starts for Erik\_62:

(16, 41916), (Start: 21 @41886 has 1 MA's), (Start: 23 @41883 has 35 MA's), (30, 41832),

Gene: Espica\_63 Start: 41993, Stop: 41766, Start Num: 23

Candidate Starts for Espica\_63:

(16, 42026), (Start: 21 @41996 has 1 MA's), (Start: 23 @41993 has 35 MA's), (30, 41942),

Gene: Funsized\_87 Start: 67824, Stop: 67570, Start Num: 24

Candidate Starts for Funsized\_87:

(8, 68058), (Start: 24 @67824 has 23 MA's), (25, 67797), (28, 67785), (31, 67776), (34, 67743), (40, 67701), (43, 67683),

Gene: GinPorsche\_88 Start: 65342, Stop: 65109, Start Num: 24

Candidate Starts for GinPorsche\_88:

(12, 65435), (17, 65378), (Start: 24 @65342 has 23 MA's), (31, 65294), (33, 65273), (36, 65243), (43, 65192),

Gene: GodPhather\_87 Start: 59020, Stop: 59202, Start Num: 24

Candidate Starts for GodPhather\_87:

(18, 58999), (20, 59002), (Start: 24 @59020 has 23 MA's), (31, 59068), (32, 59074), (35, 59104), (36, 59110), (38, 59122), (40, 59143),

Gene: Gollum\_62 Start: 41994, Stop: 41767, Start Num: 23

Candidate Starts for Gollum\_62:

(16, 42027), (Start: 21 @41997 has 1 MA's), (Start: 23 @41994 has 35 MA's), (30, 41943),

Gene: Hally898\_84 Start: 65182, Stop: 64949, Start Num: 24

Candidate Starts for Hally898\_84:

(12, 65275), (17, 65218), (Start: 24 @65182 has 23 MA's), (31, 65134), (33, 65113), (36, 65083), (43, 65032),

Gene: Harlequin\_62 Start: 41842, Stop: 41615, Start Num: 23  
Candidate Starts for Harlequin\_62:  
(16, 41875), (Start: 21 @41845 has 1 MA's), (Start: 23 @41842 has 35 MA's), (30, 41791),

Gene: Hiro\_62 Start: 42316, Stop: 42086, Start Num: 21  
Candidate Starts for Hiro\_62:  
(16, 42346), (Start: 21 @42316 has 1 MA's), (Start: 23 @42313 has 35 MA's), (30, 42262),

Gene: Hydro\_87 Start: 66400, Stop: 66179, Start Num: 24  
Candidate Starts for Hydro\_87:  
(Start: 24 @66400 has 23 MA's), (26, 66370), (38, 66286), (39, 66283), (47, 66220),

Gene: Imvubu\_91 Start: 65831, Stop: 65577, Start Num: 24  
Candidate Starts for Imvubu\_91:  
(9, 66041), (11, 65969), (Start: 24 @65831 has 23 MA's), (31, 65783), (34, 65750), (40, 65708), (43, 65690), (44, 65684),

Gene: Indlovu\_86 Start: 66392, Stop: 66171, Start Num: 24  
Candidate Starts for Indlovu\_86:  
(Start: 24 @66392 has 23 MA's), (41, 66266), (45, 66227), (49, 66206),

Gene: JAMaL\_87 Start: 65869, Stop: 65651, Start Num: 24  
Candidate Starts for JAMaL\_87:  
(12, 65962), (13, 65938), (17, 65905), (Start: 24 @65869 has 23 MA's), (31, 65821), (33, 65800), (36, 65770), (46, 65692),

Gene: Jeon\_82 Start: 58513, Stop: 58695, Start Num: 24  
Candidate Starts for Jeon\_82:  
(18, 58492), (20, 58495), (Start: 24 @58513 has 23 MA's), (31, 58561), (32, 58567), (35, 58597), (36, 58603), (38, 58615), (40, 58636),

Gene: Jester\_61 Start: 41773, Stop: 41546, Start Num: 23  
Candidate Starts for Jester\_61:  
(16, 41806), (Start: 21 @41776 has 1 MA's), (Start: 23 @41773 has 35 MA's), (30, 41722),

Gene: KarasumaRum\_85 Start: 64809, Stop: 64591, Start Num: 24  
Candidate Starts for KarasumaRum\_85:  
(Start: 24 @64809 has 23 MA's), (27, 64773), (30, 64758),

Gene: Krishelle\_62 Start: 42421, Stop: 42194, Start Num: 23  
Candidate Starts for Krishelle\_62:  
(16, 42454), (Start: 21 @42424 has 1 MA's), (Start: 23 @42421 has 35 MA's), (30, 42370),

Gene: Lambano\_84 Start: 65182, Stop: 64949, Start Num: 24  
Candidate Starts for Lambano\_84:  
(12, 65275), (17, 65218), (Start: 24 @65182 has 23 MA's), (31, 65134), (33, 65113), (36, 65083), (43, 65032),

Gene: LilMcDreamy\_86 Start: 65203, Stop: 64979, Start Num: 24  
Candidate Starts for LilMcDreamy\_86:  
(Start: 24 @65203 has 23 MA's), (29, 65155), (37, 65092),

Gene: Lillie\_62 Start: 42052, Stop: 41825, Start Num: 23

Candidate Starts for Lillie\_62:

(16, 42085), (Start: 21 @42055 has 1 MA's), (Start: 23 @42052 has 35 MA's), (30, 42001),

Gene: LittleDigger\_86 Start: 65282, Stop: 65049, Start Num: 24

Candidate Starts for LittleDigger\_86:

(12, 65375), (17, 65318), (Start: 24 @65282 has 23 MA's), (31, 65234), (33, 65213), (36, 65183), (43, 65132),

Gene: Megabear\_85 Start: 58166, Stop: 58348, Start Num: 24

Candidate Starts for Megabear\_85:

(18, 58145), (Start: 24 @58166 has 23 MA's), (31, 58214), (32, 58220), (35, 58250), (36, 58256), (38, 58268), (40, 58289),

Gene: Mysterious\_86 Start: 64978, Stop: 64736, Start Num: 24

Candidate Starts for Mysterious\_86:

(Start: 24 @64978 has 23 MA's), (36, 64864), (39, 64849),

Gene: Naiad\_61 Start: 42074, Stop: 41847, Start Num: 23

Candidate Starts for Naiad\_61:

(16, 42107), (Start: 21 @42077 has 1 MA's), (Start: 23 @42074 has 35 MA's), (30, 42023),

Gene: Nanao\_86 Start: 65195, Stop: 64962, Start Num: 24

Candidate Starts for Nanao\_86:

(12, 65288), (17, 65231), (Start: 24 @65195 has 23 MA's), (31, 65147), (33, 65126), (36, 65096), (43, 65045),

Gene: Nancinator\_61 Start: 41391, Stop: 41164, Start Num: 23

Candidate Starts for Nancinator\_61:

(16, 41424), (Start: 21 @41394 has 1 MA's), (Start: 23 @41391 has 35 MA's), (30, 41340),

Gene: Nangang\_88 Start: 65412, Stop: 65194, Start Num: 24

Candidate Starts for Nangang\_88:

(Start: 24 @65412 has 23 MA's), (27, 65376), (30, 65361),

Gene: Natosaleda\_61 Start: 41992, Stop: 41765, Start Num: 23

Candidate Starts for Natosaleda\_61:

(16, 42025), (Start: 21 @41995 has 1 MA's), (Start: 23 @41992 has 35 MA's), (30, 41941),

Gene: Nehemiah\_86 Start: 64858, Stop: 64616, Start Num: 24

Candidate Starts for Nehemiah\_86:

(Start: 24 @64858 has 23 MA's), (36, 64744), (39, 64729),

Gene: PR\_86 Start: 58854, Stop: 59036, Start Num: 24

Candidate Starts for PR\_86:

(18, 58833), (Start: 24 @58854 has 23 MA's), (31, 58902), (32, 58908), (35, 58938), (36, 58944), (38, 58956), (40, 58977),

Gene: Partridge\_61 Start: 42353, Stop: 42126, Start Num: 23

Candidate Starts for Partridge\_61:

(14, 42410), (Start: 21 @42356 has 1 MA's), (Start: 23 @42353 has 35 MA's),

Gene: PhailMary\_59 Start: 41069, Stop: 40842, Start Num: 23

Candidate Starts for PhailMary\_59:

(16, 41102), (Start: 21 @41072 has 1 MA's), (Start: 23 @41069 has 35 MA's),

Gene: Phelemich\_84 Start: 64879, Stop: 64661, Start Num: 24

Candidate Starts for Phelemich\_84:

(Start: 24 @64879 has 23 MA's), (30, 64828), (39, 64774),

Gene: Phrankenstein\_62 Start: 41998, Stop: 41771, Start Num: 23

Candidate Starts for Phrankenstein\_62:

(16, 42031), (Start: 21 @42001 has 1 MA's), (Start: 23 @41998 has 35 MA's), (30, 41947),

Gene: Poster\_85 Start: 65196, Stop: 64963, Start Num: 24

Candidate Starts for Poster\_85:

(12, 65289), (17, 65232), (Start: 24 @65196 has 23 MA's), (31, 65148), (33, 65127), (36, 65097), (43, 65046),

Gene: QueenPie\_80 Start: 64873, Stop: 64691, Start Num: 24

Candidate Starts for QueenPie\_80:

(4, 65167), (5, 65158), (6, 65152), (7, 65146), (19, 64891), (Start: 24 @64873 has 23 MA's), (33, 64798), (38, 64759), (39, 64756), (43, 64720),

Gene: Quesadilla\_88 Start: 65998, Stop: 65714, Start Num: 24

Candidate Starts for Quesadilla\_88:

(Start: 24 @65998 has 23 MA's), (36, 65896), (38, 65884), (48, 65815), (52, 65755),

Gene: RER2\_56 Start: 38924, Stop: 38697, Start Num: 23

Candidate Starts for RER2\_56:

(16, 38957), (Start: 21 @38927 has 1 MA's), (Start: 23 @38924 has 35 MA's), (30, 38873),

Gene: Rasputin\_62 Start: 42022, Stop: 41795, Start Num: 23

Candidate Starts for Rasputin\_62:

(16, 42055), (Start: 21 @42025 has 1 MA's), (Start: 23 @42022 has 35 MA's), (30, 41971),

Gene: Renkei\_86 Start: 65276, Stop: 65043, Start Num: 24

Candidate Starts for Renkei\_86:

(12, 65369), (17, 65312), (Start: 24 @65276 has 23 MA's), (31, 65228), (33, 65207), (36, 65177), (43, 65126),

Gene: Reprobate\_86 Start: 64884, Stop: 64666, Start Num: 24

Candidate Starts for Reprobate\_86:

(Start: 24 @64884 has 23 MA's), (30, 64833), (39, 64779),

Gene: RexFury\_61 Start: 42082, Stop: 41855, Start Num: 23

Candidate Starts for RexFury\_61:

(16, 42115), (Start: 21 @42085 has 1 MA's), (Start: 23 @42082 has 35 MA's), (30, 42031),

Gene: Rhodalysa\_62 Start: 42052, Stop: 41825, Start Num: 23

Candidate Starts for Rhodalysa\_62:

(16, 42085), (Start: 21 @42055 has 1 MA's), (Start: 23 @42052 has 35 MA's), (30, 42001),

Gene: Rich\_84 Start: 65290, Stop: 65120, Start Num: 24

Candidate Starts for Rich\_84:

(19, 65308), (Start: 24 @65290 has 23 MA's), (30, 65239), (39, 65185),

Gene: Rinkes\_84 Start: 65665, Stop: 65420, Start Num: 22  
Candidate Starts for Rinkes\_84:  
(1, 66364), (2, 66082), (3, 66046), (10, 65806), (Start: 22 @65665 has 1 MA's), (Start: 24 @65662 has 23 MA's), (31, 65614), (34, 65581), (40, 65539), (43, 65521), (51, 65455),

Gene: Serendipitous\_87 Start: 64709, Stop: 64542, Start Num: 24  
Candidate Starts for Serendipitous\_87:  
(Start: 24 @64709 has 23 MA's),

Gene: Shenyu\_88 Start: 65410, Stop: 65192, Start Num: 24  
Candidate Starts for Shenyu\_88:  
(Start: 24 @65410 has 23 MA's), (27, 65374), (30, 65359),

Gene: Shuman\_63 Start: 42003, Stop: 41776, Start Num: 23  
Candidate Starts for Shuman\_63:  
(16, 42036), (Start: 21 @42006 has 1 MA's), (Start: 23 @42003 has 35 MA's), (30, 41952),

Gene: StCroix\_61 Start: 42074, Stop: 41847, Start Num: 23  
Candidate Starts for StCroix\_61:  
(16, 42107), (Start: 21 @42077 has 1 MA's), (Start: 23 @42074 has 35 MA's), (30, 42023),

Gene: StinkyVeggy\_85 Start: 64809, Stop: 64591, Start Num: 24  
Candidate Starts for StinkyVeggy\_85:  
(Start: 24 @64809 has 23 MA's), (27, 64773), (30, 64758),

Gene: Swann\_62 Start: 42050, Stop: 41823, Start Num: 23  
Candidate Starts for Swann\_62:  
(16, 42083), (Start: 21 @42053 has 1 MA's), (Start: 23 @42050 has 35 MA's), (30, 41999),

Gene: TWAMP\_62 Start: 42052, Stop: 41825, Start Num: 23  
Candidate Starts for TWAMP\_62:  
(16, 42085), (Start: 21 @42055 has 1 MA's), (Start: 23 @42052 has 35 MA's), (30, 42001),

Gene: Takoda\_62 Start: 42235, Stop: 42008, Start Num: 23  
Candidate Starts for Takoda\_62:  
(14, 42292), (Start: 21 @42238 has 1 MA's), (Start: 23 @42235 has 35 MA's),

Gene: Taptic\_88 Start: 58560, Stop: 58742, Start Num: 24  
Candidate Starts for Taptic\_88:  
(18, 58539), (20, 58542), (Start: 24 @58560 has 23 MA's), (31, 58608), (32, 58614), (35, 58644), (36, 58650), (38, 58662), (40, 58683),

Gene: UhSalsa\_62 Start: 41993, Stop: 41766, Start Num: 23  
Candidate Starts for UhSalsa\_62:  
(16, 42026), (Start: 21 @41996 has 1 MA's), (Start: 23 @41993 has 35 MA's), (30, 41942),

Gene: Yogi\_63 Start: 42403, Stop: 42176, Start Num: 23  
Candidate Starts for Yogi\_63:  
(15, 42451), (16, 42436), (Start: 21 @42406 has 1 MA's), (Start: 23 @42403 has 35 MA's), (30, 42352),

Gene: Yoncess\_61 Start: 41810, Stop: 41583, Start Num: 23  
Candidate Starts for Yoncess\_61:  
(16, 41843), (Start: 21 @41813 has 1 MA's), (Start: 23 @41810 has 35 MA's), (30, 41759),

