

# Pham 170002



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 170002 Report

This analysis was run 07/09/24 on database version 566.

Pham number 170002 has 57 members, 1 are drafts.

Phages represented in each track:

- Track 1 : Comrade\_259, Belfort\_264, Stigma\_261, SparkleGoddess\_263
- Track 2 : Kenrey\_264
- Track 3 : Comrade\_254
- Track 4 : Karp\_258, Belfort\_259
- Track 5 : Comrade\_246, Karp\_250, Stigma\_248, Belfort\_251
- Track 6 : Forrest\_257, Jada\_258
- Track 7 : Francob\_261
- Track 8 : Moab\_252
- Track 9 : Jada\_250, Forrest\_250
- Track 10 : Gilson\_258, Emma1919\_259, MeganTheeKilla\_260
- Track 11 : Gilson\_263, Francob\_266
- Track 12 : Limpid\_247, Annadreamy\_241
- Track 13 : Stigma\_256, SparkleGoddess\_258
- Track 14 : Emma1919\_264, Phredrick\_269, Forrest\_262, Jada\_263
- Track 15 : Patelgo\_254
- Track 16 : MeganTheeKilla\_253
- Track 17 : SparkleGoddess\_250
- Track 18 : SeresaTree\_255, Faust\_251
- Track 19 : Kenrey\_269
- Track 20 : Moab\_260, Patelgo\_263
- Track 21 : Kenrey\_258
- Track 22 : Gilson\_251, Francob\_255
- Track 23 : Beuffert\_251
- Track 24 : Blueeyedbeauty\_253
- Track 25 : Emma1919\_252, Phredrick\_257
- Track 26 : Phredrick\_264
- Track 27 : TunaTartare\_250
- Track 28 : Sham\_243
- Track 29 : Circinus\_242, BillNye\_243
- Track 30 : Circinus\_213, BillNye\_213
- Track 31 : Wakanda\_225, Muntaha\_229
- Track 32 : Muntaha\_259
- Track 33 : Wakanda\_256

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

The start number called the most often in the published annotations is 34, it was called in 17 of the 56 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Belfort\_251, BillNye\_213, Circinus\_213, Comrade\_246, Emma1919\_252, Forrest\_250, Francob\_255, Gilson\_251, Jada\_250, Karp\_250, Kenrey\_258, MeganTheeKilla\_253, Moab\_252, Muntaha\_229, Phredrick\_257, Stigma\_248, Wakanda\_225,

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

- Patelgo\_254, SparkleGoddess\_250,

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

- Annadreamy\_241, Belfort\_259, Belfort\_264, Beuffert\_251, BillNye\_243, Blueeyedbeauty\_253, Circinus\_242, Comrade\_254, Comrade\_259, Emma1919\_259, Emma1919\_264, Faust\_251, Forrest\_257, Forrest\_262, Francob\_261, Francob\_266, Gilson\_258, Gilson\_263, Jada\_258, Jada\_263, Karp\_258, Kenrey\_264, Kenrey\_269, Limpid\_247, MeganTheeKilla\_260, Moab\_260, Muntaha\_259, Patelgo\_263, Phredrick\_264, Phredrick\_269, SeresaTree\_255, Sham\_243, SparkleGoddess\_258, SparkleGoddess\_263, Stigma\_256, Stigma\_261, TunaTartare\_250, Wakanda\_256,

### Summary by start number:

Start 13:

- Found in 15 of 57 ( 26.3% ) of genes in pham
- Manual Annotations of this start: 15 of 56
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Belfort\_259 (BK1), Comrade\_254 (BK1), Emma1919\_259 (BK1), Forrest\_257 (BK1), Francob\_261 (BK1), Gilson\_258 (BK1), Jada\_258 (BK1), Karp\_258 (BK1), Kenrey\_264 (BK1), MeganTheeKilla\_260 (BK1), Moab\_260 (BK1), Patelgo\_263 (BK1), Phredrick\_264 (BK1), SparkleGoddess\_258 (BK1), Stigma\_256 (BK1),

Start 22:

- Found in 5 of 57 ( 8.8% ) of genes in pham
- Manual Annotations of this start: 1 of 56
- Called 20.0% of time when present
- Phage (with cluster) where this start called: SparkleGoddess\_250 (BK1),

Start 23:

- Found in 11 of 57 ( 19.3% ) of genes in pham
- Manual Annotations of this start: 11 of 56
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Belfort\_264 (BK1), Comrade\_259 (BK1), Emma1919\_264 (BK1), Forrest\_262 (BK1), Francob\_266 (BK1), Gilson\_263 (BK1), Jada\_263 (BK1), Kenrey\_269 (BK1), Phredrick\_269 (BK1), SparkleGoddess\_263 (BK1), Stigma\_261 (BK1),

Start 25:

- Found in 2 of 57 ( 3.5% ) of genes in pham
- Manual Annotations of this start: 1 of 56
- Called 50.0% of time when present

- Phage (with cluster) where this start called: Patelgo\_254 (BK1),

Start 31:

- Found in 4 of 57 ( 7.0% ) of genes in pham
- Manual Annotations of this start: 4 of 56
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Annadreamy\_241 (BK1), Beuffert\_251 (BK1), Blueeyedbeauty\_253 (BK1), Limpid\_247 (BK1),

Start 34:

- Found in 19 of 57 ( 33.3% ) of genes in pham
- Manual Annotations of this start: 17 of 56
- Called 89.5% of time when present
- Phage (with cluster) where this start called: Belfort\_251 (BK1), BillNye\_213 (BK2), Circinus\_213 (BK2), Comrade\_246 (BK1), Emma1919\_252 (BK1), Forrest\_250 (BK1), Francob\_255 (BK1), Gilson\_251 (BK1), Jada\_250 (BK1), Karp\_250 (BK1), Kenrey\_258 (BK1), MeganTheeKilla\_253 (BK1), Moab\_252 (BK1), Muntaha\_229 (BK2), Phredrick\_257 (BK1), Stigma\_248 (BK1), Wakanda\_225 (BK2),

Start 35:

- Found in 8 of 57 ( 14.0% ) of genes in pham
- Manual Annotations of this start: 7 of 56
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BillNye\_243 (BK2), Circinus\_242 (BK2), Faust\_251 (BK1), Muntaha\_259 (BK2), SeresaTree\_255 (BK1), Sham\_243 (BK1), TunaTartare\_250 (BK1), Wakanda\_256 (BK2),

### **Summary by clusters:**

There are 2 clusters represented in this pham: BK1, BK2,

Info for manual annotations of cluster BK1:

- Start number 13 was manually annotated 15 times for cluster BK1.
- Start number 22 was manually annotated 1 time for cluster BK1.
- Start number 23 was manually annotated 11 times for cluster BK1.
- Start number 25 was manually annotated 1 time for cluster BK1.
- Start number 31 was manually annotated 4 times for cluster BK1.
- Start number 34 was manually annotated 13 times for cluster BK1.
- Start number 35 was manually annotated 3 times for cluster BK1.

Info for manual annotations of cluster BK2:

- Start number 34 was manually annotated 4 times for cluster BK2.
- Start number 35 was manually annotated 4 times for cluster BK2.

### **Gene Information:**

Gene: Annadreamy\_241 Start: 115119, Stop: 115625, Start Num: 31

Candidate Starts for Annadreamy\_241:

(Start: 31 @115119 has 4 MA's), (48, 115254), (61, 115353), (76, 115422), (90, 115560), (96, 115605), (99, 115617),

Gene: Belfort\_264 Start: 125997, Stop: 126557, Start Num: 23  
Candidate Starts for Belfort\_264:  
(Start: 23 @125997 has 11 MA's), (44, 126117), (57, 126261), (64, 126291), (66, 126300), (75, 126345), (76, 126351), (82, 126420), (90, 126489), (91, 126504),

Gene: Belfort\_259 Start: 123969, Stop: 124658, Start Num: 13  
Candidate Starts for Belfort\_259:  
(Start: 13 @123969 has 15 MA's), (18, 124050), (33, 124098), (39, 124125), (45, 124170), (51, 124236), (63, 124329), (74, 124383), (77, 124401), (83, 124470), (90, 124533), (98, 124590),

Gene: Belfort\_251 Start: 119236, Stop: 119739, Start Num: 34  
Candidate Starts for Belfort\_251:  
(Start: 22 @119197 has 1 MA's), (Start: 34 @119236 has 17 MA's), (41, 119281), (50, 119371), (56, 119437), (76, 119530), (78, 119551), (90, 119674), (98, 119728),

Gene: Beuffert\_251 Start: 119885, Stop: 120391, Start Num: 31  
Candidate Starts for Beuffert\_251:  
(20, 119840), (24, 119861), (27, 119870), (29, 119873), (Start: 31 @119885 has 4 MA's), (47, 120008), (48, 120020), (49, 120023), (76, 120188), (99, 120383),

Gene: BillNye\_213 Start: 110662, Stop: 111204, Start Num: 34  
Candidate Starts for BillNye\_213:  
(Start: 34 @110662 has 17 MA's), (51, 110809), (72, 110956), (75, 110968), (76, 110974), (79, 111013), (89, 111097), (93, 111127),

Gene: BillNye\_243 Start: 122668, Stop: 123147, Start Num: 35  
Candidate Starts for BillNye\_243:  
(Start: 35 @122668 has 7 MA's), (52, 122794), (58, 122860), (67, 122908), (76, 122947), (88, 123064), (89, 123070), (98, 123136),

Gene: Blueeyedbeauty\_253 Start: 119883, Stop: 120389, Start Num: 31  
Candidate Starts for Blueeyedbeauty\_253:  
(24, 119859), (29, 119871), (Start: 31 @119883 has 4 MA's), (62, 120123), (69, 120153), (70, 120159), (76, 120186), (81, 120261), (99, 120381),

Gene: Circinus\_242 Start: 122175, Stop: 122654, Start Num: 35  
Candidate Starts for Circinus\_242:  
(Start: 35 @122175 has 7 MA's), (52, 122301), (58, 122367), (67, 122415), (76, 122454), (88, 122571), (89, 122577), (98, 122643),

Gene: Circinus\_213 Start: 110252, Stop: 110794, Start Num: 34  
Candidate Starts for Circinus\_213:  
(Start: 34 @110252 has 17 MA's), (51, 110399), (72, 110546), (75, 110558), (76, 110564), (79, 110603), (89, 110687), (93, 110717),

Gene: Comrade\_259 Start: 126136, Stop: 126696, Start Num: 23  
Candidate Starts for Comrade\_259:  
(Start: 23 @126136 has 11 MA's), (44, 126256), (57, 126400), (64, 126430), (66, 126439), (75, 126484), (76, 126490), (82, 126559), (90, 126628), (91, 126643),

Gene: Comrade\_254 Start: 124111, Stop: 124800, Start Num: 13  
Candidate Starts for Comrade\_254:

(Start: 13 @124111 has 15 MA's), (18, 124192), (33, 124240), (39, 124267), (45, 124312), (63, 124471), (74, 124525), (77, 124543), (83, 124612), (90, 124675), (98, 124732),

Gene: Comrade\_246 Start: 119378, Stop: 119881, Start Num: 34

Candidate Starts for Comrade\_246:

(Start: 22 @119339 has 1 MA's), (Start: 34 @119378 has 17 MA's), (41, 119423), (50, 119513), (56, 119579), (76, 119672), (78, 119693), (90, 119816), (98, 119870),

Gene: Emma1919\_259 Start: 122901, Stop: 123620, Start Num: 13

Candidate Starts for Emma1919\_259:

(1, 122649), (2, 122688), (3, 122742), (Start: 13 @122901 has 15 MA's), (15, 122952), (17, 122979), (28, 123033), (37, 123093), (39, 123111), (40, 123114), (41, 123117), (43, 123141), (45, 123156), (59, 123297), (77, 123387), (81, 123474), (86, 123519), (88, 123531), (90, 123546), (98, 123603), (100, 123609),

Gene: Emma1919\_264 Start: 125172, Stop: 125729, Start Num: 23

Candidate Starts for Emma1919\_264:

(Start: 23 @125172 has 11 MA's), (32, 125199), (51, 125364), (53, 125376), (65, 125469), (67, 125484), (76, 125523), (77, 125532), (90, 125661), (92, 125679),

Gene: Emma1919\_252 Start: 118200, Stop: 118700, Start Num: 34

Candidate Starts for Emma1919\_252:

(Start: 34 @118200 has 17 MA's), (42, 118254), (52, 118347), (70, 118464), (76, 118491), (78, 118512), (90, 118635), (95, 118677),

Gene: Faust\_251 Start: 120587, Stop: 121060, Start Num: 35

Candidate Starts for Faust\_251:

(Start: 35 @120587 has 7 MA's), (40, 120614), (52, 120713), (60, 120782), (68, 120821), (76, 120860), (85, 120965), (87, 120974), (95, 121037), (96, 121040),

Gene: Forrest\_257 Start: 123360, Stop: 124052, Start Num: 13

Candidate Starts for Forrest\_257:

(5, 123285), (Start: 13 @123360 has 15 MA's), (16, 123414), (28, 123492), (37, 123552), (41, 123576), (45, 123615), (46, 123618), (51, 123681), (54, 123696), (77, 123846), (79, 123879), (88, 123966), (90, 123981), (91, 123996), (98, 124038),

Gene: Forrest\_250 Start: 118548, Stop: 119048, Start Num: 34

Candidate Starts for Forrest\_250:

(19, 118485), (Start: 34 @118548 has 17 MA's), (42, 118602), (52, 118695), (70, 118812), (76, 118839), (78, 118860), (84, 118929), (90, 118983), (96, 119028),

Gene: Forrest\_262 Start: 125609, Stop: 126166, Start Num: 23

Candidate Starts for Forrest\_262:

(Start: 23 @125609 has 11 MA's), (32, 125636), (51, 125801), (53, 125813), (65, 125906), (67, 125921), (76, 125960), (77, 125969), (90, 126098), (92, 126116),

Gene: Francob\_261 Start: 123723, Stop: 124442, Start Num: 13

Candidate Starts for Francob\_261:

(4, 123648), (Start: 13 @123723 has 15 MA's), (15, 123774), (17, 123801), (28, 123855), (37, 123915), (39, 123933), (40, 123936), (41, 123939), (43, 123963), (45, 123978), (59, 124119), (77, 124209), (81, 124296), (86, 124341), (88, 124353), (90, 124368), (98, 124425), (100, 124431),

Gene: Francob\_266 Start: 125994, Stop: 126551, Start Num: 23

Candidate Starts for Francob\_266:

(Start: 23 @125994 has 11 MA's), (32, 126021), (36, 126054), (51, 126186), (53, 126198), (65, 126291), (67, 126306), (76, 126345), (77, 126354), (90, 126483), (92, 126501),

Gene: Francob\_255 Start: 119293, Stop: 119793, Start Num: 34

Candidate Starts for Francob\_255:

(Start: 34 @119293 has 17 MA's), (42, 119347), (51, 119437), (52, 119440), (70, 119557), (76, 119584), (78, 119605), (90, 119728), (95, 119770),

Gene: Gilson\_258 Start: 123260, Stop: 123979, Start Num: 13

Candidate Starts for Gilson\_258:

(1, 123008), (2, 123047), (3, 123101), (Start: 13 @123260 has 15 MA's), (15, 123311), (17, 123338), (28, 123392), (37, 123452), (39, 123470), (40, 123473), (41, 123476), (43, 123500), (45, 123515), (59, 123656), (77, 123746), (81, 123833), (86, 123878), (88, 123890), (90, 123905), (98, 123962), (100, 123968),

Gene: Gilson\_263 Start: 125531, Stop: 126088, Start Num: 23

Candidate Starts for Gilson\_263:

(Start: 23 @125531 has 11 MA's), (32, 125558), (36, 125591), (51, 125723), (53, 125735), (65, 125828), (67, 125843), (76, 125882), (77, 125891), (90, 126020), (92, 126038),

Gene: Gilson\_251 Start: 118558, Stop: 119058, Start Num: 34

Candidate Starts for Gilson\_251:

(Start: 34 @118558 has 17 MA's), (42, 118612), (51, 118702), (52, 118705), (70, 118822), (76, 118849), (78, 118870), (90, 118993), (95, 119035),

Gene: Jada\_250 Start: 117788, Stop: 118288, Start Num: 34

Candidate Starts for Jada\_250:

(19, 117725), (Start: 34 @117788 has 17 MA's), (42, 117842), (52, 117935), (70, 118052), (76, 118079), (78, 118100), (84, 118169), (90, 118223), (96, 118268),

Gene: Jada\_258 Start: 122600, Stop: 123292, Start Num: 13

Candidate Starts for Jada\_258:

(5, 122525), (Start: 13 @122600 has 15 MA's), (16, 122654), (28, 122732), (37, 122792), (41, 122816), (45, 122855), (46, 122858), (51, 122921), (54, 122936), (77, 123086), (79, 123119), (88, 123206), (90, 123221), (91, 123236), (98, 123278),

Gene: Jada\_263 Start: 124849, Stop: 125406, Start Num: 23

Candidate Starts for Jada\_263:

(Start: 23 @124849 has 11 MA's), (32, 124876), (51, 125041), (53, 125053), (65, 125146), (67, 125161), (76, 125200), (77, 125209), (90, 125338), (92, 125356),

Gene: Karp\_258 Start: 125566, Stop: 126255, Start Num: 13

Candidate Starts for Karp\_258:

(Start: 13 @125566 has 15 MA's), (18, 125647), (33, 125695), (39, 125722), (45, 125767), (51, 125833), (63, 125926), (74, 125980), (77, 125998), (83, 126067), (90, 126130), (98, 126187),

Gene: Karp\_250 Start: 120834, Stop: 121337, Start Num: 34

Candidate Starts for Karp\_250:

(Start: 22 @120795 has 1 MA's), (Start: 34 @120834 has 17 MA's), (41, 120879), (50, 120969), (56, 121035), (76, 121128), (78, 121149), (90, 121272), (98, 121326),

Gene: Kenrey\_264 Start: 124500, Stop: 125192, Start Num: 13

Candidate Starts for Kenrey\_264:

(Start: 13 @124500 has 15 MA's), (15, 124551), (28, 124632), (37, 124692), (38, 124707), (45, 124755), (46, 124758), (54, 124836), (77, 124986), (79, 125019), (88, 125106), (90, 125121), (91, 125136), (97, 125172), (98, 125178),

Gene: Kenrey\_269 Start: 126743, Stop: 127300, Start Num: 23

Candidate Starts for Kenrey\_269:

(Start: 23 @126743 has 11 MA's), (32, 126770), (51, 126935), (53, 126947), (65, 127040), (67, 127055), (76, 127094), (77, 127103), (90, 127232), (91, 127247), (92, 127250),

Gene: Kenrey\_258 Start: 119950, Stop: 120450, Start Num: 34

Candidate Starts for Kenrey\_258:

(Start: 34 @119950 has 17 MA's), (42, 120004), (52, 120097), (70, 120214), (76, 120241), (78, 120262), (84, 120331), (90, 120385),

Gene: Limpid\_247 Start: 120432, Stop: 120938, Start Num: 31

Candidate Starts for Limpid\_247:

(Start: 31 @120432 has 4 MA's), (48, 120567), (61, 120666), (76, 120735), (90, 120873), (96, 120918), (99, 120930),

Gene: MeganTheeKilla\_253 Start: 118359, Stop: 118859, Start Num: 34

Candidate Starts for MeganTheeKilla\_253:

(Start: 34 @118359 has 17 MA's), (42, 118413), (52, 118506), (70, 118623), (76, 118650), (78, 118671), (90, 118794), (95, 118836),

Gene: MeganTheeKilla\_260 Start: 123071, Stop: 123790, Start Num: 13

Candidate Starts for MeganTheeKilla\_260:

(1, 122819), (2, 122858), (3, 122912), (Start: 13 @123071 has 15 MA's), (15, 123122), (17, 123149), (28, 123203), (37, 123263), (39, 123281), (40, 123284), (41, 123287), (43, 123311), (45, 123326), (59, 123467), (77, 123557), (81, 123644), (86, 123689), (88, 123701), (90, 123716), (98, 123773), (100, 123779),

Gene: Moab\_252 Start: 120522, Stop: 121022, Start Num: 34

Candidate Starts for Moab\_252:

(21, 120471), (Start: 25 @120489 has 1 MA's), (Start: 34 @120522 has 17 MA's), (49, 120645), (74, 120804), (76, 120813), (78, 120834),

Gene: Moab\_260 Start: 125006, Stop: 125689, Start Num: 13

Candidate Starts for Moab\_260:

(12, 125000), (Start: 13 @125006 has 15 MA's), (15, 125051), (16, 125054), (26, 125129), (28, 125132), (41, 125216), (45, 125255), (54, 125336), (59, 125396), (74, 125468), (77, 125486), (79, 125519), (88, 125603), (90, 125618), (98, 125675),

Gene: Muntaha\_259 Start: 123170, Stop: 123649, Start Num: 35

Candidate Starts for Muntaha\_259:

(14, 123047), (Start: 35 @123170 has 7 MA's), (52, 123296), (58, 123362), (67, 123410), (76, 123449), (77, 123458), (89, 123572), (98, 123638),

Gene: Muntaha\_229 Start: 110982, Stop: 111503, Start Num: 34

Candidate Starts for Muntaha\_229:

(Start: 34 @110982 has 17 MA's), (51, 111123), (56, 111183), (71, 111252), (73, 111273), (76, 111288), (80, 111351),



Gene: Patelgo\_254 Start: 121436, Stop: 121969, Start Num: 25

Candidate Starts for Patelgo\_254:

(21, 121418), (Start: 25 @121436 has 1 MA's), (Start: 34 @121469 has 17 MA's), (49, 121592), (74, 121751), (76, 121760), (78, 121781),

Gene: Patelgo\_263 Start: 125938, Stop: 126621, Start Num: 13

Candidate Starts for Patelgo\_263:

(12, 125932), (Start: 13 @125938 has 15 MA's), (15, 125983), (16, 125986), (26, 126061), (28, 126064), (41, 126148), (45, 126187), (54, 126268), (59, 126328), (74, 126400), (77, 126418), (79, 126451), (88, 126535), (90, 126550), (98, 126607),

Gene: Phredrick\_269 Start: 125970, Stop: 126527, Start Num: 23

Candidate Starts for Phredrick\_269:

(Start: 23 @125970 has 11 MA's), (32, 125997), (51, 126162), (53, 126174), (65, 126267), (67, 126282), (76, 126321), (77, 126330), (90, 126459), (92, 126477),

Gene: Phredrick\_264 Start: 123744, Stop: 124418, Start Num: 13

Candidate Starts for Phredrick\_264:

(5, 123669), (Start: 13 @123744 has 15 MA's), (17, 123822), (30, 123873), (51, 124041), (53, 124053), (59, 124116), (77, 124206), (79, 124239), (86, 124317), (88, 124329), (90, 124344), (92, 124362), (97, 124395), (98, 124401), (100, 124407),

Gene: Phredrick\_257 Start: 119042, Stop: 119542, Start Num: 34

Candidate Starts for Phredrick\_257:

(Start: 34 @119042 has 17 MA's), (42, 119096), (52, 119189), (70, 119306), (76, 119333), (78, 119354), (90, 119477), (95, 119519),

Gene: SeresaTree\_255 Start: 120812, Stop: 121285, Start Num: 35

Candidate Starts for SeresaTree\_255:

(Start: 35 @120812 has 7 MA's), (40, 120839), (52, 120938), (60, 121007), (68, 121046), (76, 121085), (85, 121190), (87, 121199), (95, 121262), (96, 121265),

Gene: Sham\_243 Start: 121073, Stop: 121546, Start Num: 35

Candidate Starts for Sham\_243:

(Start: 35 @121073 has 7 MA's), (54, 121208), (55, 121214), (56, 121247), (66, 121295), (74, 121337), (76, 121346), (85, 121451), (87, 121460), (89, 121472), (91, 121496), (94, 121505),

Gene: SparkleGoddess\_258 Start: 124835, Stop: 125527, Start Num: 13

Candidate Starts for SparkleGoddess\_258:

(8, 124802), (12, 124829), (Start: 13 @124835 has 15 MA's), (18, 124919), (33, 124967), (39, 124994), (45, 125039), (63, 125198), (74, 125252), (77, 125270), (83, 125339), (90, 125402), (98, 125459),

Gene: SparkleGoddess\_250 Start: 120070, Stop: 120612, Start Num: 22

Candidate Starts for SparkleGoddess\_250:

(Start: 22 @120070 has 1 MA's), (Start: 34 @120109 has 17 MA's), (41, 120154), (50, 120244), (56, 120310), (76, 120403), (78, 120424), (90, 120547), (98, 120601),

Gene: SparkleGoddess\_263 Start: 126863, Stop: 127423, Start Num: 23

Candidate Starts for SparkleGoddess\_263:

(Start: 23 @126863 has 11 MA's), (44, 126983), (57, 127127), (64, 127157), (66, 127166), (75, 127211), (76, 127217), (82, 127286), (90, 127355), (91, 127370),

Gene: Stigma\_261 Start: 126576, Stop: 127136, Start Num: 23

Candidate Starts for Stigma\_261:

(Start: 23 @126576 has 11 MA's), (44, 126696), (57, 126840), (64, 126870), (66, 126879), (75, 126924), (76, 126930), (82, 126999), (90, 127068), (91, 127083),

Gene: Stigma\_256 Start: 124548, Stop: 125240, Start Num: 13

Candidate Starts for Stigma\_256:

(8, 124515), (12, 124542), (Start: 13 @124548 has 15 MA's), (18, 124632), (33, 124680), (39, 124707), (45, 124752), (63, 124911), (74, 124965), (77, 124983), (83, 125052), (90, 125115), (98, 125172),

Gene: Stigma\_248 Start: 119821, Stop: 120324, Start Num: 34

Candidate Starts for Stigma\_248:

(Start: 22 @119782 has 1 MA's), (Start: 34 @119821 has 17 MA's), (41, 119866), (50, 119956), (56, 120022), (76, 120115), (78, 120136), (90, 120259), (98, 120313),

Gene: TunaTartare\_250 Start: 122541, Stop: 123014, Start Num: 35

Candidate Starts for TunaTartare\_250:

(Start: 35 @122541 has 7 MA's), (56, 122715), (57, 122727), (60, 122736), (76, 122814), (85, 122919), (89, 122940), (94, 122973),

Gene: Wakanda\_225 Start: 109969, Stop: 110490, Start Num: 34

Candidate Starts for Wakanda\_225:

(Start: 34 @109969 has 17 MA's), (51, 110110), (56, 110170), (71, 110239), (73, 110260), (76, 110275), (80, 110338),

Gene: Wakanda\_256 Start: 122334, Stop: 122813, Start Num: 35

Candidate Starts for Wakanda\_256:

(6, 122118), (7, 122124), (9, 122142), (10, 122148), (11, 122154), (Start: 35 @122334 has 7 MA's), (52, 122460), (58, 122526), (67, 122574), (76, 122613), (77, 122622), (89, 122736), (98, 122802),