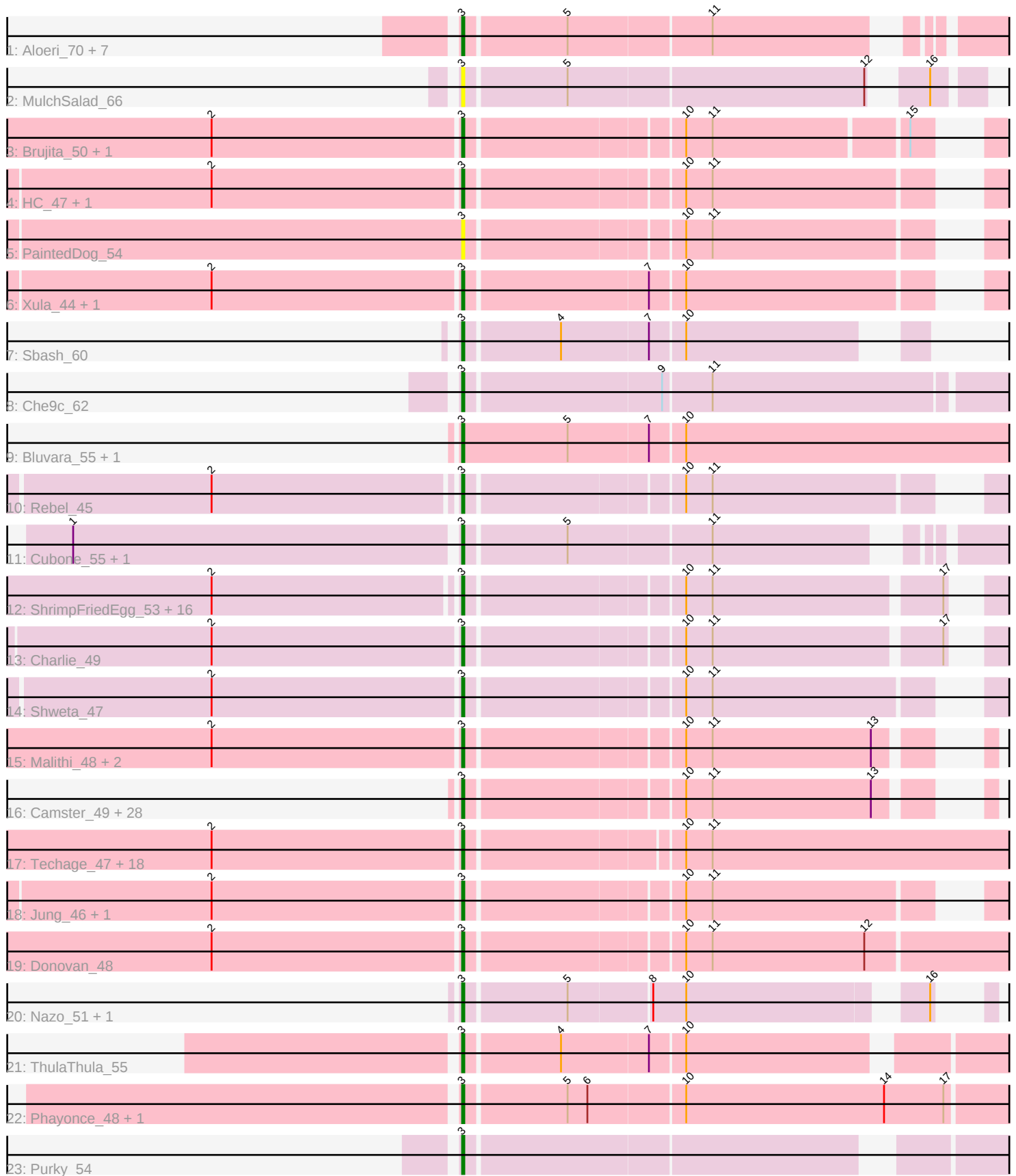


# Pham 323092



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 323092 Report

This analysis was run 09/05/26 on database version 662.

Pham number 323092 has 102 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Aloeri\_70, ChickenDinner\_69, DocMcStuffins\_69, Misha28\_67, Awesomesauce\_69, Piper2020\_70, LilSpotty\_66, TootsiePop\_67
- Track 2 : MulchSalad\_66
- Track 3 : Brujita\_50, Island3\_50
- Track 4 : HC\_47, Babsiella\_49
- Track 5 : PaintedDog\_54
- Track 6 : Xula\_44, QueenHazel\_45
- Track 7 : Sbash\_60
- Track 8 : Che9c\_62
- Track 9 : Bluvarya\_55, Stuck\_62
- Track 10 : Rebel\_45
- Track 11 : Cubone\_55, SkinnyPete\_47
- Track 12 : ShrimpFriedEgg\_53, Impisi\_54, Nenae\_53, Spinach\_53, Jamie19\_47, Hanako\_53, Purgamenstris\_53, Panchino\_46, BabeRuth\_54, Andies\_46, PhancyPhin\_53, SpongeBob\_47, Bosection6\_47, Redi\_53, Phrann\_50, Snekmaggedon\_47, Raymond7\_47
- Track 13 : Charlie\_49
- Track 14 : Shweta\_47
- Track 15 : Malithi\_48, Necropolis\_47, Dynamo\_48
- Track 16 : Camster\_49, CactusJack\_48, Thespis\_48, PeanutPie\_49, Xeno\_50, GreaseLightnin\_49, Willsammy\_47, Pygmy\_52, Phineas\_50, StevieRay\_48, Glaske\_48, Brusacoram\_48, KilKor\_48, Phalm\_48, Silvy\_48, Gavriela\_48, Juniormint\_49, Bogie\_52, Megiddo\_48, HUHilltop\_50, Shipwreck\_52, Ksquared\_48, Bunnies\_49, StressBall\_48, Bhagsy\_49, Atcoo\_48, Philonius\_50, Sonah\_49, Aggie\_48
- Track 17 : Techage\_47, Phegasus\_48, Venti\_48, Vidya\_47, FirstPlacePfu\_48, GaloreK\_47, Etoile\_47, Chubbello\_47, Kari\_47, Zilizebeth\_48, Jebeks\_49, Langerak\_48, Fishburne\_47, Journey\_48, Mangethe\_48, Majeke\_48, Bartholomew\_47, Polkaroo\_48, BronnyJr\_46
- Track 18 : Jung\_46, Arib1\_48
- Track 19 : Donovan\_48
- Track 20 : Nazo\_51, BigNuz\_50
- Track 21 : ThulaThula\_55
- Track 22 : Phayonce\_48, Mao1\_66
- Track 23 : Purky\_54

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

The start number called the most often in the published annotations is 3, it was called in 91 of the 91 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aggie\_48, Aloeri\_70, Andies\_46, Arib1\_48, Atcoo\_48, Awesomesauce\_69, BabeRuth\_54, Babsiella\_49, Bartholomew\_47, Bhagsy\_49, BigNuz\_50, Bluvara\_55, Bogie\_52, Bosection6\_47, BronnyJr\_46, Brujita\_50, Brusacoram\_48, Bunnies\_49, CactusJack\_48, Camster\_49, Charlie\_49, Che9c\_62, ChickenDinner\_69, Chubbello\_47, Cubone\_55, DocMcStuffins\_69, Donovan\_48, Dynamo\_48, Etoile\_47, FirstPlacePfu\_48, Fishburne\_47, GaloreK\_47, Gavriela\_48, Glaske\_48, GreaseLightnin\_49, HC\_47, HUHilltop\_50, Hanako\_53, Impisi\_54, Island3\_50, Jamie19\_47, Jebeks\_49, Journey\_48, Jung\_46, Juniormint\_49, Kari\_47, KilKor\_48, Ksquared\_48, Langerak\_48, LilSpotty\_66, Majeke\_48, Malithi\_48, Mangethe\_48, Mao1\_66, Megiddo\_48, Misha28\_67, MulchSalad\_66, Nazo\_51, Necropolis\_47, Nenae\_53, PaintedDog\_54, Panchino\_46, PeanutPie\_49, Phalm\_48, PhancyPhin\_53, Phayonce\_48, Phegusus\_48, Philonius\_50, Phineas\_50, Phrann\_50, Piper2020\_70, Polkaro\_48, Purgamenstris\_53, Purky\_54, Pygmy\_52, QueenHazel\_45, Raymond7\_47, Rebel\_45, Redi\_53, Sbash\_60, Shipwreck\_52, ShrimpFriedEgg\_53, Shweta\_47, Silvy\_48, SkinnyPete\_47, Snekmaggon\_47, Sonah\_49, Spinach\_53, SpongeBob\_47, StevieRay\_48, StressBall\_48, Stuck\_62, Techage\_47, Thespis\_48, ThulaThula\_55, TootsiePop\_67, Venti\_48, Vidya\_47, Willsammy\_47, Xeno\_50, Xula\_44, Zilizebeth\_48,

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

- 

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

- 

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

Start 3:

- Found in 102 of 102 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 91 of 91
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aggie\_48 (N), Aloeri\_70 (F1), Andies\_46 (N), Arib1\_48 (P1), Atcoo\_48 (P1), Awesomesauce\_69 (F1), BabeRuth\_54 (N), Babsiella\_49 (I1), Bartholomew\_47 (P1), Bhagsy\_49 (P1), BigNuz\_50 (P4), Bluvara\_55 (I3), Bogie\_52 (P1), Bosection6\_47 (N), BronnyJr\_46 (P1), Brujita\_50 (I1), Brusacoram\_48 (P1), Bunnies\_49 (P1), CactusJack\_48 (P1), Camster\_49 (P1), Charlie\_49 (N), Che9c\_62 (I2), ChickenDinner\_69 (F1), Chubbello\_47 (P1), Cubone\_55 (N), DocMcStuffins\_69 (F1), Donovan\_48 (P1), Dynamo\_48 (P1), Etoile\_47 (P1), FirstPlacePfu\_48 (P1), Fishburne\_47 (P1), GaloreK\_47 (P1), Gavriela\_48 (P1), Glaske\_48 (P1), GreaseLightnin\_49 (P1), HC\_47 (I1), HUHilltop\_50 (P1), Hanako\_53 (N), Impisi\_54 (N), Island3\_50 (I1), Jamie19\_47 (N), Jebeks\_49 (P1), Journey\_48 (N), Jung\_46 (P1), Juniormint\_49 (P1), Kari\_47 (P1), KilKor\_48 (P1), Ksquared\_48 (P1), Langerak\_48 (P1), LilSpotty\_66 (singleton), Majeke\_48 (P1), Malithi\_48 (P1), Mangethe\_48 (P1), Mao1\_66 (AD), Megiddo\_48 (P1), Misha28\_67 (F1), MulchSalad\_66 (F7), Nazo\_51 (P4), Necropolis\_47 (P1), Nenae\_53 (N), PaintedDog\_54 (I1), Panchino\_46 (N), PeanutPie\_49 (P1), Phalm\_48

(P1), PhancyPhin\_53 (N), Phayonce\_48 (P5), Phegasus\_48 (P1), Philonius\_50 (N), Phineas\_50 (P1), Phrann\_50 (N), Piper2020\_70 (F1), Polkaroo\_48 (P1), Purgamenstris\_53 (N), Purky\_54 (P6), Pygmy\_52 (P1), QueenHazel\_45 (I1), Raymond7\_47 (N), Rebel\_45 (N), Redi\_53 (N), Sbash\_60 (I2), Shipwreck\_52 (P1), ShrimpFriedEgg\_53 (N), Shweta\_47 (N), Silvy\_48 (N), SkinnyPete\_47 (N), Snekmaggedon\_47 (N), Sonah\_49 (P1), Spinach\_53 (N), SpongeBob\_47 (N), StevieRay\_48 (P1), StressBall\_48 (P1), Stuck\_62 (I2), Techage\_47 (P1), Thespis\_48 (P1), ThulaThula\_55 (P5), TootsiePop\_67 (F1), Venti\_48 (P1), Vidya\_47 (P1), Willsammy\_47 (P1), Xeno\_50 (N), Xula\_44 (I1), Zilizebeth\_48 (P1),

### **Summary by clusters:**

There are 12 clusters represented in this pham: F1, singleton, P1, P6, AD, P4, F7, I1, I3, P5, N, I2,

Info for manual annotations of cluster AD:

- Start number 3 was manually annotated 1 time for cluster AD.

Info for manual annotations of cluster F1:

- Start number 3 was manually annotated 7 times for cluster F1.

Info for manual annotations of cluster I1:

- Start number 3 was manually annotated 6 times for cluster I1.

Info for manual annotations of cluster I2:

- Start number 3 was manually annotated 3 times for cluster I2.

Info for manual annotations of cluster N:

- Start number 3 was manually annotated 25 times for cluster N.

Info for manual annotations of cluster P1:

- Start number 3 was manually annotated 43 times for cluster P1.

Info for manual annotations of cluster P4:

- Start number 3 was manually annotated 2 times for cluster P4.

Info for manual annotations of cluster P5:

- Start number 3 was manually annotated 2 times for cluster P5.

Info for manual annotations of cluster P6:

- Start number 3 was manually annotated 1 time for cluster P6.

### **Gene Information:**

Gene: Aggie\_48 Start: 33321, Stop: 33659, Start Num: 3

Candidate Starts for Aggie\_48:

(Start: 3 @33321 has 91 MA's), (10, 33414), (11, 33426), (13, 33498),

Gene: Aloeri\_70 Start: 43386, Stop: 43640, Start Num: 3

Candidate Starts for Aloeri\_70:

(Start: 3 @43386 has 91 MA's), (5, 43431), (11, 43494),

Gene: Andies\_46 Start: 33704, Stop: 34066, Start Num: 3

Candidate Starts for Andies\_46:

(2, 33596), (Start: 3 @33704 has 91 MA's), (10, 33797), (11, 33809), (17, 33908),

Gene: Arib1\_48 Start: 33541, Stop: 33789, Start Num: 3

Candidate Starts for Arib1\_48:

(2, 33430), (Start: 3 @33541 has 91 MA's), (10, 33634), (11, 33646),

Gene: Atcoo\_48 Start: 34210, Stop: 34548, Start Num: 3

Candidate Starts for Atcoo\_48:

(Start: 3 @34210 has 91 MA's), (10, 34303), (11, 34315), (13, 34387),

Gene: Awesomesauce\_69 Start: 42469, Stop: 42723, Start Num: 3

Candidate Starts for Awesomesauce\_69:

(Start: 3 @42469 has 91 MA's), (5, 42514), (11, 42577),

Gene: BabeRuth\_54 Start: 35425, Stop: 35787, Start Num: 3

Candidate Starts for BabeRuth\_54:

(2, 35317), (Start: 3 @35425 has 91 MA's), (10, 35518), (11, 35530), (17, 35629),

Gene: Babsiella\_49 Start: 34394, Stop: 34642, Start Num: 3

Candidate Starts for Babsiella\_49:

(2, 34283), (Start: 3 @34394 has 91 MA's), (10, 34487), (11, 34499),

Gene: Bartholomew\_47 Start: 33532, Stop: 33813, Start Num: 3

Candidate Starts for Bartholomew\_47:

(2, 33421), (Start: 3 @33532 has 91 MA's), (10, 33625), (11, 33637),

Gene: Bhagsy\_49 Start: 33715, Stop: 34053, Start Num: 3

Candidate Starts for Bhagsy\_49:

(Start: 3 @33715 has 91 MA's), (10, 33808), (11, 33820), (13, 33892),

Gene: BigNuz\_50 Start: 35709, Stop: 36041, Start Num: 3

Candidate Starts for BigNuz\_50:

(Start: 3 @35709 has 91 MA's), (5, 35754), (8, 35790), (10, 35805), (16, 35901),

Gene: Bluvara\_55 Start: 39295, Stop: 39582, Start Num: 3

Candidate Starts for Bluvara\_55:

(Start: 3 @39295 has 91 MA's), (5, 39343), (7, 39379), (10, 39394),

Gene: Bogie\_52 Start: 35981, Stop: 36319, Start Num: 3

Candidate Starts for Bogie\_52:

(Start: 3 @35981 has 91 MA's), (10, 36074), (11, 36086), (13, 36158),

Gene: Bosection6\_47 Start: 33170, Stop: 33532, Start Num: 3

Candidate Starts for Bosection6\_47:

(2, 33062), (Start: 3 @33170 has 91 MA's), (10, 33263), (11, 33275), (17, 33374),

Gene: BronnyJr\_46 Start: 34028, Stop: 34309, Start Num: 3

Candidate Starts for BronnyJr\_46:

(2, 33917), (Start: 3 @34028 has 91 MA's), (10, 34121), (11, 34133),

Gene: Brujita\_50 Start: 35851, Stop: 36060, Start Num: 3

Candidate Starts for Brujita\_50:

(2, 35740), (Start: 3 @35851 has 91 MA's), (10, 35944), (11, 35956), (15, 36040),

Gene: Brusacoram\_48 Start: 33716, Stop: 34054, Start Num: 3

Candidate Starts for Brusacoram\_48:

(Start: 3 @33716 has 91 MA's), (10, 33809), (11, 33821), (13, 33893),

Gene: Bunnies\_49 Start: 33730, Stop: 34068, Start Num: 3

Candidate Starts for Bunnies\_49:

(Start: 3 @33730 has 91 MA's), (10, 33823), (11, 33835), (13, 33907),

Gene: CactusJack\_48 Start: 33980, Stop: 34318, Start Num: 3

Candidate Starts for CactusJack\_48:

(Start: 3 @33980 has 91 MA's), (10, 34073), (11, 34085), (13, 34157),

Gene: Camster\_49 Start: 33737, Stop: 34075, Start Num: 3

Candidate Starts for Camster\_49:

(Start: 3 @33737 has 91 MA's), (10, 33830), (11, 33842), (13, 33914),

Gene: Charlie\_49 Start: 32909, Stop: 33271, Start Num: 3

Candidate Starts for Charlie\_49:

(2, 32798), (Start: 3 @32909 has 91 MA's), (10, 33002), (11, 33014), (17, 33113),

Gene: Che9c\_62 Start: 44754, Stop: 45029, Start Num: 3

Candidate Starts for Che9c\_62:

(Start: 3 @44754 has 91 MA's), (9, 44841), (11, 44862),

Gene: ChickenDinner\_69 Start: 43386, Stop: 43640, Start Num: 3

Candidate Starts for ChickenDinner\_69:

(Start: 3 @43386 has 91 MA's), (5, 43431), (11, 43494),

Gene: Chubbello\_47 Start: 33528, Stop: 33809, Start Num: 3

Candidate Starts for Chubbello\_47:

(2, 33417), (Start: 3 @33528 has 91 MA's), (10, 33621), (11, 33633),

Gene: Cubone\_55 Start: 33959, Stop: 34213, Start Num: 3

Candidate Starts for Cubone\_55:

(1, 33788), (Start: 3 @33959 has 91 MA's), (5, 34004), (11, 34067),

Gene: DocMcStuffins\_69 Start: 43386, Stop: 43640, Start Num: 3

Candidate Starts for DocMcStuffins\_69:

(Start: 3 @43386 has 91 MA's), (5, 43431), (11, 43494),

Gene: Donovan\_48 Start: 33555, Stop: 33947, Start Num: 3

Candidate Starts for Donovan\_48:

(2, 33444), (Start: 3 @33555 has 91 MA's), (10, 33648), (11, 33660), (12, 33729),

Gene: Dynamo\_48 Start: 34015, Stop: 34353, Start Num: 3

Candidate Starts for Dynamo\_48:

(2, 33904), (Start: 3 @34015 has 91 MA's), (10, 34108), (11, 34120), (13, 34192),

Gene: Etoile\_47 Start: 33532, Stop: 33813, Start Num: 3  
Candidate Starts for Etoile\_47:  
(2, 33421), (Start: 3 @33532 has 91 MA's), (10, 33625), (11, 33637),

Gene: FirstPlacePfu\_48 Start: 33564, Stop: 33845, Start Num: 3  
Candidate Starts for FirstPlacePfu\_48:  
(2, 33453), (Start: 3 @33564 has 91 MA's), (10, 33657), (11, 33669),

Gene: Fishburne\_47 Start: 33532, Stop: 33813, Start Num: 3  
Candidate Starts for Fishburne\_47:  
(2, 33421), (Start: 3 @33532 has 91 MA's), (10, 33625), (11, 33637),

Gene: GaloreK\_47 Start: 33528, Stop: 33809, Start Num: 3  
Candidate Starts for GaloreK\_47:  
(2, 33417), (Start: 3 @33528 has 91 MA's), (10, 33621), (11, 33633),

Gene: Gavriela\_48 Start: 33980, Stop: 34318, Start Num: 3  
Candidate Starts for Gavriela\_48:  
(Start: 3 @33980 has 91 MA's), (10, 34073), (11, 34085), (13, 34157),

Gene: Glaske\_48 Start: 33980, Stop: 34318, Start Num: 3  
Candidate Starts for Glaske\_48:  
(Start: 3 @33980 has 91 MA's), (10, 34073), (11, 34085), (13, 34157),

Gene: GreaseLightnin\_49 Start: 33959, Stop: 34297, Start Num: 3  
Candidate Starts for GreaseLightnin\_49:  
(Start: 3 @33959 has 91 MA's), (10, 34052), (11, 34064), (13, 34136),

Gene: HC\_47 Start: 33178, Stop: 33426, Start Num: 3  
Candidate Starts for HC\_47:  
(2, 33067), (Start: 3 @33178 has 91 MA's), (10, 33271), (11, 33283),

Gene: HUHilltop\_50 Start: 34238, Stop: 34576, Start Num: 3  
Candidate Starts for HUHilltop\_50:  
(Start: 3 @34238 has 91 MA's), (10, 34331), (11, 34343), (13, 34415),

Gene: Hanako\_53 Start: 35425, Stop: 35787, Start Num: 3  
Candidate Starts for Hanako\_53:  
(2, 35317), (Start: 3 @35425 has 91 MA's), (10, 35518), (11, 35530), (17, 35629),

Gene: Impisi\_54 Start: 35222, Stop: 35584, Start Num: 3  
Candidate Starts for Impisi\_54:  
(2, 35114), (Start: 3 @35222 has 91 MA's), (10, 35315), (11, 35327), (17, 35426),

Gene: Island3\_50 Start: 35851, Stop: 36060, Start Num: 3  
Candidate Starts for Island3\_50:  
(2, 35740), (Start: 3 @35851 has 91 MA's), (10, 35944), (11, 35956), (15, 36040),

Gene: Jamie19\_47 Start: 33716, Stop: 34078, Start Num: 3  
Candidate Starts for Jamie19\_47:  
(2, 33608), (Start: 3 @33716 has 91 MA's), (10, 33809), (11, 33821), (17, 33920),

Gene: Jebeks\_49 Start: 33592, Stop: 33873, Start Num: 3

Candidate Starts for Jebeks\_49:

(2, 33481), (Start: 3 @33592 has 91 MA's), (10, 33685), (11, 33697),

Gene: Journey\_48 Start: 32909, Stop: 33190, Start Num: 3

Candidate Starts for Journey\_48:

(2, 32798), (Start: 3 @32909 has 91 MA's), (10, 33002), (11, 33014),

Gene: Jung\_46 Start: 33493, Stop: 33741, Start Num: 3

Candidate Starts for Jung\_46:

(2, 33382), (Start: 3 @33493 has 91 MA's), (10, 33586), (11, 33598),

Gene: Juniormint\_49 Start: 33752, Stop: 34090, Start Num: 3

Candidate Starts for Juniormint\_49:

(Start: 3 @33752 has 91 MA's), (10, 33845), (11, 33857), (13, 33929),

Gene: Kari\_47 Start: 33529, Stop: 33810, Start Num: 3

Candidate Starts for Kari\_47:

(2, 33418), (Start: 3 @33529 has 91 MA's), (10, 33622), (11, 33634),

Gene: KilKor\_48 Start: 33980, Stop: 34318, Start Num: 3

Candidate Starts for KilKor\_48:

(Start: 3 @33980 has 91 MA's), (10, 34073), (11, 34085), (13, 34157),

Gene: Ksquared\_48 Start: 33730, Stop: 34068, Start Num: 3

Candidate Starts for Ksquared\_48:

(Start: 3 @33730 has 91 MA's), (10, 33823), (11, 33835), (13, 33907),

Gene: Langerak\_48 Start: 33548, Stop: 33829, Start Num: 3

Candidate Starts for Langerak\_48:

(2, 33437), (Start: 3 @33548 has 91 MA's), (10, 33641), (11, 33653),

Gene: LilSpotty\_66 Start: 41177, Stop: 41446, Start Num: 3

Candidate Starts for LilSpotty\_66:

(Start: 3 @41177 has 91 MA's), (5, 41222), (11, 41285),

Gene: Majeke\_48 Start: 33573, Stop: 33854, Start Num: 3

Candidate Starts for Majeke\_48:

(2, 33462), (Start: 3 @33573 has 91 MA's), (10, 33666), (11, 33678),

Gene: Malithi\_48 Start: 33448, Stop: 33786, Start Num: 3

Candidate Starts for Malithi\_48:

(2, 33337), (Start: 3 @33448 has 91 MA's), (10, 33541), (11, 33553), (13, 33625),

Gene: Mangethe\_48 Start: 33573, Stop: 33854, Start Num: 3

Candidate Starts for Mangethe\_48:

(2, 33462), (Start: 3 @33573 has 91 MA's), (10, 33666), (11, 33678),

Gene: Mao1\_66 Start: 49457, Stop: 49738, Start Num: 3

Candidate Starts for Mao1\_66:

(Start: 3 @49457 has 91 MA's), (5, 49502), (6, 49511), (10, 49553), (14, 49643), (17, 49670),

Gene: Megiddo\_48 Start: 33980, Stop: 34318, Start Num: 3

Candidate Starts for Megiddo\_48:

(Start: 3 @33980 has 91 MA's), (10, 34073), (11, 34085), (13, 34157),

Gene: Misha28\_67 Start: 42474, Stop: 42728, Start Num: 3

Candidate Starts for Misha28\_67:

(Start: 3 @42474 has 91 MA's), (5, 42519), (11, 42582),

Gene: MulchSalad\_66 Start: 40577, Stop: 40789, Start Num: 3

Candidate Starts for MulchSalad\_66:

(Start: 3 @40577 has 91 MA's), (5, 40622), (12, 40754), (16, 40769),

Gene: Nazo\_51 Start: 35906, Stop: 36238, Start Num: 3

Candidate Starts for Nazo\_51:

(Start: 3 @35906 has 91 MA's), (5, 35951), (8, 35987), (10, 36002), (16, 36098),

Gene: Necropolis\_47 Start: 33604, Stop: 33942, Start Num: 3

Candidate Starts for Necropolis\_47:

(2, 33493), (Start: 3 @33604 has 91 MA's), (10, 33697), (11, 33709), (13, 33781),

Gene: Nenae\_53 Start: 35427, Stop: 35789, Start Num: 3

Candidate Starts for Nenae\_53:

(2, 35319), (Start: 3 @35427 has 91 MA's), (10, 35520), (11, 35532), (17, 35631),

Gene: PaintedDog\_54 Start: 36368, Stop: 36616, Start Num: 3

Candidate Starts for PaintedDog\_54:

(Start: 3 @36368 has 91 MA's), (10, 36461), (11, 36473),

Gene: Panchino\_46 Start: 35062, Stop: 35424, Start Num: 3

Candidate Starts for Panchino\_46:

(2, 34954), (Start: 3 @35062 has 91 MA's), (10, 35155), (11, 35167), (17, 35266),

Gene: PeanutPie\_49 Start: 33715, Stop: 34056, Start Num: 3

Candidate Starts for PeanutPie\_49:

(Start: 3 @33715 has 91 MA's), (10, 33808), (11, 33820), (13, 33892),

Gene: Phalm\_48 Start: 33980, Stop: 34318, Start Num: 3

Candidate Starts for Phalm\_48:

(Start: 3 @33980 has 91 MA's), (10, 34073), (11, 34085), (13, 34157),

Gene: PhancyPhin\_53 Start: 35421, Stop: 35783, Start Num: 3

Candidate Starts for PhancyPhin\_53:

(2, 35313), (Start: 3 @35421 has 91 MA's), (10, 35514), (11, 35526), (17, 35625),

Gene: Phayonce\_48 Start: 35619, Stop: 35900, Start Num: 3

Candidate Starts for Phayonce\_48:

(Start: 3 @35619 has 91 MA's), (5, 35664), (6, 35673), (10, 35715), (14, 35805), (17, 35832),

Gene: Phegasus\_48 Start: 33540, Stop: 33821, Start Num: 3

Candidate Starts for Phegasus\_48:

(2, 33429), (Start: 3 @33540 has 91 MA's), (10, 33633), (11, 33645),

Gene: Philonius\_50 Start: 32850, Stop: 33188, Start Num: 3

Candidate Starts for Philonius\_50:

(Start: 3 @32850 has 91 MA's), (10, 32943), (11, 32955), (13, 33027),

Gene: Phineas\_50 Start: 34573, Stop: 34911, Start Num: 3

Candidate Starts for Phineas\_50:

(Start: 3 @34573 has 91 MA's), (10, 34666), (11, 34678), (13, 34750),

Gene: Phrann\_50 Start: 35704, Stop: 36066, Start Num: 3

Candidate Starts for Phrann\_50:

(2, 35596), (Start: 3 @35704 has 91 MA's), (10, 35797), (11, 35809), (17, 35908),

Gene: Piper2020\_70 Start: 43369, Stop: 43623, Start Num: 3

Candidate Starts for Piper2020\_70:

(Start: 3 @43369 has 91 MA's), (5, 43414), (11, 43477),

Gene: Polkaroo\_48 Start: 33536, Stop: 33817, Start Num: 3

Candidate Starts for Polkaroo\_48:

(2, 33425), (Start: 3 @33536 has 91 MA's), (10, 33629), (11, 33641),

Gene: Purgamenstris\_53 Start: 35425, Stop: 35787, Start Num: 3

Candidate Starts for Purgamenstris\_53:

(2, 35317), (Start: 3 @35425 has 91 MA's), (10, 35518), (11, 35530), (17, 35629),

Gene: Purky\_54 Start: 36323, Stop: 36583, Start Num: 3

Candidate Starts for Purky\_54:

(Start: 3 @36323 has 91 MA's),

Gene: Pygmy\_52 Start: 36037, Stop: 36375, Start Num: 3

Candidate Starts for Pygmy\_52:

(Start: 3 @36037 has 91 MA's), (10, 36130), (11, 36142), (13, 36214),

Gene: QueenHazel\_45 Start: 33693, Stop: 33944, Start Num: 3

Candidate Starts for QueenHazel\_45:

(2, 33582), (Start: 3 @33693 has 91 MA's), (7, 33774), (10, 33789),

Gene: Raymond7\_47 Start: 35213, Stop: 35575, Start Num: 3

Candidate Starts for Raymond7\_47:

(2, 35105), (Start: 3 @35213 has 91 MA's), (10, 35306), (11, 35318), (17, 35417),

Gene: Rebel\_45 Start: 31555, Stop: 31803, Start Num: 3

Candidate Starts for Rebel\_45:

(2, 31447), (Start: 3 @31555 has 91 MA's), (10, 31648), (11, 31660),

Gene: Redi\_53 Start: 35424, Stop: 35786, Start Num: 3

Candidate Starts for Redi\_53:

(2, 35316), (Start: 3 @35424 has 91 MA's), (10, 35517), (11, 35529), (17, 35628),

Gene: Sbash\_60 Start: 42587, Stop: 42808, Start Num: 3

Candidate Starts for Sbash\_60:

(Start: 3 @42587 has 91 MA's), (4, 42629), (7, 42668), (10, 42683),

Gene: Shipwreck\_52 Start: 36012, Stop: 36350, Start Num: 3

Candidate Starts for Shipwreck\_52:

(Start: 3 @36012 has 91 MA's), (10, 36105), (11, 36117), (13, 36189),

Gene: ShrimpFriedEgg\_53 Start: 35424, Stop: 35786, Start Num: 3  
Candidate Starts for ShrimpFriedEgg\_53:  
(2, 35316), (Start: 3 @35424 has 91 MA's), (10, 35517), (11, 35529), (17, 35628),

Gene: Shweta\_47 Start: 33486, Stop: 33734, Start Num: 3  
Candidate Starts for Shweta\_47:  
(2, 33375), (Start: 3 @33486 has 91 MA's), (10, 33579), (11, 33591),

Gene: Silvy\_48 Start: 33321, Stop: 33659, Start Num: 3  
Candidate Starts for Silvy\_48:  
(Start: 3 @33321 has 91 MA's), (10, 33414), (11, 33426), (13, 33498),

Gene: SkinnyPete\_47 Start: 32845, Stop: 33099, Start Num: 3  
Candidate Starts for SkinnyPete\_47:  
(1, 32674), (Start: 3 @32845 has 91 MA's), (5, 32890), (11, 32953),

Gene: Snekmaggedon\_47 Start: 33716, Stop: 34078, Start Num: 3  
Candidate Starts for Snekmaggedon\_47:  
(2, 33608), (Start: 3 @33716 has 91 MA's), (10, 33809), (11, 33821), (17, 33920),

Gene: Sonah\_49 Start: 33709, Stop: 34047, Start Num: 3  
Candidate Starts for Sonah\_49:  
(Start: 3 @33709 has 91 MA's), (10, 33802), (11, 33814), (13, 33886),

Gene: Spinach\_53 Start: 35424, Stop: 35786, Start Num: 3  
Candidate Starts for Spinach\_53:  
(2, 35316), (Start: 3 @35424 has 91 MA's), (10, 35517), (11, 35529), (17, 35628),

Gene: SpongeBob\_47 Start: 33716, Stop: 34078, Start Num: 3  
Candidate Starts for SpongeBob\_47:  
(2, 33608), (Start: 3 @33716 has 91 MA's), (10, 33809), (11, 33821), (17, 33920),

Gene: StevieRay\_48 Start: 33682, Stop: 34020, Start Num: 3  
Candidate Starts for StevieRay\_48:  
(Start: 3 @33682 has 91 MA's), (10, 33775), (11, 33787), (13, 33859),

Gene: StressBall\_48 Start: 33980, Stop: 34318, Start Num: 3  
Candidate Starts for StressBall\_48:  
(Start: 3 @33980 has 91 MA's), (10, 34073), (11, 34085), (13, 34157),

Gene: Stuck\_62 Start: 44148, Stop: 44435, Start Num: 3  
Candidate Starts for Stuck\_62:  
(Start: 3 @44148 has 91 MA's), (5, 44196), (7, 44232), (10, 44247),

Gene: Techage\_47 Start: 33558, Stop: 33839, Start Num: 3  
Candidate Starts for Techage\_47:  
(2, 33447), (Start: 3 @33558 has 91 MA's), (10, 33651), (11, 33663),

Gene: Thespis\_48 Start: 33716, Stop: 34054, Start Num: 3  
Candidate Starts for Thespis\_48:  
(Start: 3 @33716 has 91 MA's), (10, 33809), (11, 33821), (13, 33893),

Gene: ThulaThula\_55 Start: 38396, Stop: 38662, Start Num: 3  
Candidate Starts for ThulaThula\_55:  
(Start: 3 @38396 has 91 MA's), (4, 38438), (7, 38477), (10, 38492),

Gene: TootsiePop\_67 Start: 42474, Stop: 42728, Start Num: 3  
Candidate Starts for TootsiePop\_67:  
(Start: 3 @42474 has 91 MA's), (5, 42519), (11, 42582),

Gene: Venti\_48 Start: 33532, Stop: 33813, Start Num: 3  
Candidate Starts for Venti\_48:  
(2, 33421), (Start: 3 @33532 has 91 MA's), (10, 33625), (11, 33637),

Gene: Vidya\_47 Start: 33565, Stop: 33846, Start Num: 3  
Candidate Starts for Vidya\_47:  
(2, 33454), (Start: 3 @33565 has 91 MA's), (10, 33658), (11, 33670),

Gene: Willsammy\_47 Start: 33463, Stop: 33801, Start Num: 3  
Candidate Starts for Willsammy\_47:  
(Start: 3 @33463 has 91 MA's), (10, 33556), (11, 33568), (13, 33640),

Gene: Xeno\_50 Start: 33058, Stop: 33396, Start Num: 3  
Candidate Starts for Xeno\_50:  
(Start: 3 @33058 has 91 MA's), (10, 33151), (11, 33163), (13, 33235),

Gene: Xula\_44 Start: 33295, Stop: 33546, Start Num: 3  
Candidate Starts for Xula\_44:  
(2, 33184), (Start: 3 @33295 has 91 MA's), (7, 33376), (10, 33391),

Gene: Zilizebeth\_48 Start: 33564, Stop: 33845, Start Num: 3  
Candidate Starts for Zilizebeth\_48:  
(2, 33453), (Start: 3 @33564 has 91 MA's), (10, 33657), (11, 33669),