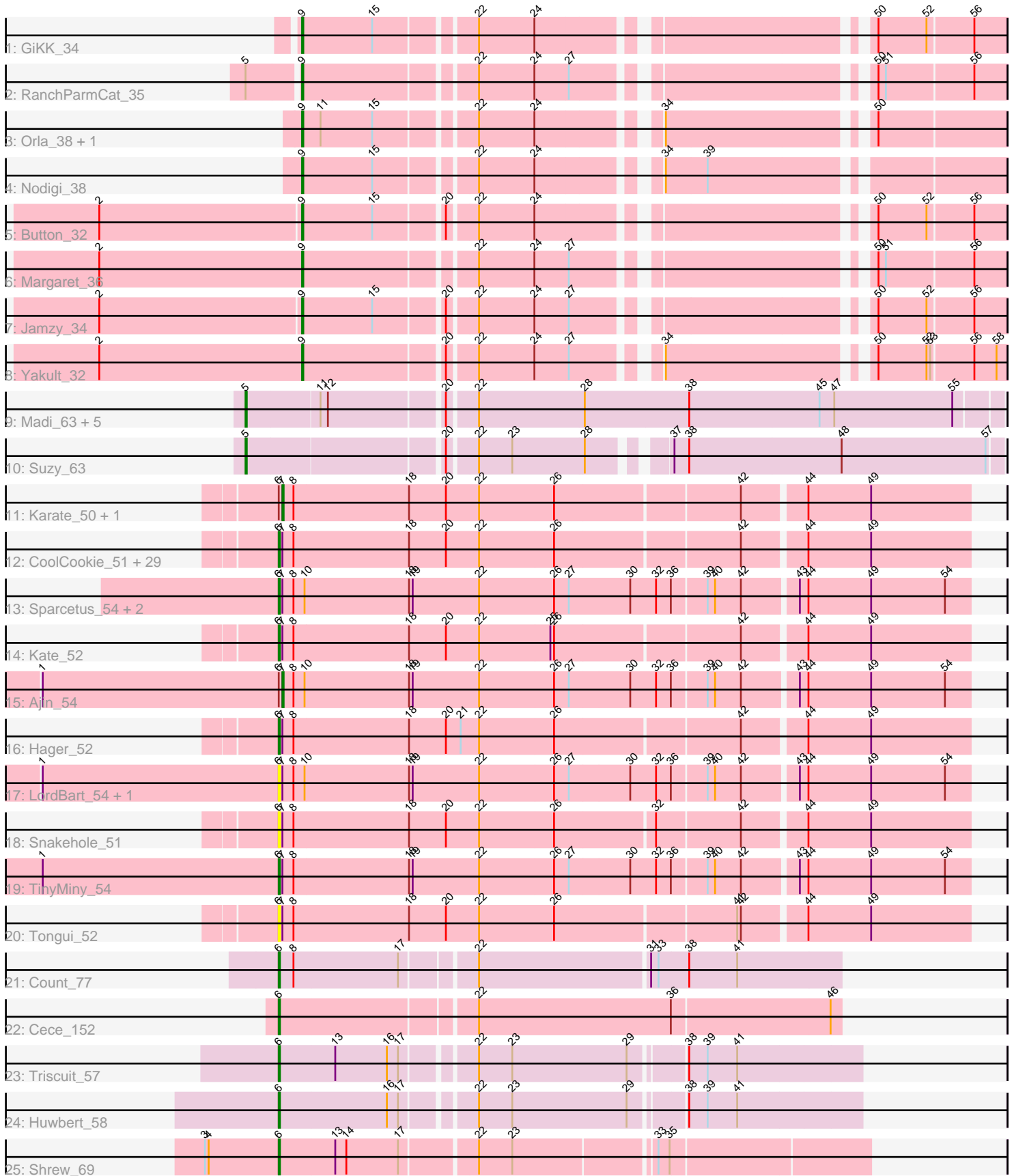


# Pham 214283



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 214283 Report

This analysis was run 02/22/25 on database version 588.

Pham number 214283 has 64 members, 8 are drafts.

Phages represented in each track:

- Track 1 : GiKK\_34
- Track 2 : RanchParmCat\_35
- Track 3 : Orla\_38, Hexbug\_38
- Track 4 : Nodigi\_38
- Track 5 : Button\_32
- Track 6 : Margaret\_36
- Track 7 : Jamzy\_34
- Track 8 : Yakult\_32
- Track 9 : Madi\_63, BiteSize\_63, Djokovic\_63, Terapin\_64, Beyoncage\_63, Sienna\_63
- Track 10 : Suzy\_63
- Track 11 : Karate\_50, PhunaPhoke\_51
- Track 12 : CoolCookie\_51, JingleBells\_51, Tedro\_51, Krampus\_51, Cybele\_51, Erudite\_50, OverHedge\_51, Hiddenleaf\_51, FreddieHg\_51, DannyDe\_51, MortySmith\_49, Artiphact\_51, AnnaSerena\_51, Gilda\_51, Rie18\_51, NarutoRun\_51, Pharpay\_51, Annapurna\_52, Aesir\_50, Chivey\_51, Potty\_51, JDawG\_50, Anakin\_51, Neptune\_51, SilentWarrior\_51, Crestdrop\_51, Poultruss\_50, Rachella\_51, Dauntless\_50, Haunter\_51
- Track 13 : Sparcetus\_54, Kors\_55, RikSengupta\_54
- Track 14 : Kate\_52
- Track 15 : Ajin\_54
- Track 16 : Hager\_52
- Track 17 : LordBart\_54, Bramble\_55
- Track 18 : Snakehole\_51
- Track 19 : TinyMiny\_54
- Track 20 : Tongui\_52
- Track 21 : Count\_77
- Track 22 : Cece\_152
- Track 23 : Triscuit\_57
- Track 24 : Huwbert\_58
- Track 25 : Shrew\_69

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

The start number called the most often in the published annotations is 6, it was called in 37 of the 56 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aesir\_50, Anakin\_51, AnnaSerena\_51, Annapurna\_52, Artiphact\_51, Bramble\_55, Cece\_152, Chivey\_51, CoolCookie\_51, Count\_77, Crestdrop\_51, Cybele\_51, DannyDe\_51, Dauntless\_50, Erudite\_50, FreddieHg\_51, Gilda\_51, Hager\_52, Haunter\_51, Hiddenleaf\_51, Huwbert\_58, JDawG\_50, JingleBells\_51, Kate\_52, Kors\_55, Krampus\_51, LordBart\_54, MortySmith\_49, NarutoRun\_51, Neptune\_51, OverHedge\_51, Pharpay\_51, Potty\_51, Poultruss\_50, Rachella\_51, Rie18\_51, RikSengupta\_54, Shrew\_69, SilentWarrior\_51, Snakehole\_51, Sparcetus\_54, Tedro\_51, TinyMiny\_54, Tongui\_52, Triscuit\_57,

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

- Ajin\_54, Karate\_50, PhunaPhoke\_51,

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

- Beyoncage\_63, BiteSize\_63, Button\_32, Djokovic\_63, GiKK\_34, Hexbug\_38, Jamzy\_34, Madi\_63, Margaret\_36, Nodigi\_38, Orla\_38, RanchParmCat\_35, Sienna\_63, Suzy\_63, Terapin\_64, Yakult\_32,

### Summary by start number:

Start 5:

- Found in 8 of 64 ( 12.5% ) of genes in pham
- Manual Annotations of this start: 7 of 56
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Beyoncage\_63 (DG1), BiteSize\_63 (DG1), Djokovic\_63 (DG1), Madi\_63 (DG1), Sienna\_63 (DG1), Suzy\_63 (DG1), Terapin\_64 (DG1),

Start 6:

- Found in 48 of 64 ( 75.0% ) of genes in pham
- Manual Annotations of this start: 37 of 56
- Called 93.8% of time when present
- Phage (with cluster) where this start called: Aesir\_50 (EF), Anakin\_51 (EF), AnnaSerena\_51 (EF), Annapurna\_52 (EF), Artiphact\_51 (EF), Bramble\_55 (EF), Cece\_152 (GD3), Chivey\_51 (EF), CoolCookie\_51 (EF), Count\_77 (EL), Crestdrop\_51 (EF), Cybele\_51 (EF), DannyDe\_51 (EF), Dauntless\_50 (EF), Erudite\_50 (EF), FreddieHg\_51 (EF), Gilda\_51 (EF), Hager\_52 (EF), Haunter\_51 (EF), Hiddenleaf\_51 (EF), Huwbert\_58 (GG), JDawG\_50 (EF), JingleBells\_51 (EF), Kate\_52 (EF), Kors\_55 (EF), Krampus\_51 (EF), LordBart\_54 (EF), MortySmith\_49 (EF), NarutoRun\_51 (EF), Neptune\_51 (EF), OverHedge\_51 (EF), Pharpay\_51 (EF), Potty\_51 (EF), Poultruss\_50 (EF), Rachella\_51 (EF), Rie18\_51 (EF), RikSengupta\_54 (EF), Shrew\_69 (singleton), SilentWarrior\_51 (EF), Snakehole\_51 (EF), Sparcetus\_54 (EF), Tedro\_51 (EF), TinyMiny\_54 (EF), Tongui\_52 (EF), Triscuit\_57 (GG),

Start 7:

- Found in 43 of 64 ( 67.2% ) of genes in pham
- Manual Annotations of this start: 3 of 56
- Called 7.0% of time when present

- Phage (with cluster) where this start called: Ajin\_54 (EF), Karate\_50 (EF), PhunaPhoke\_51 (EF),

Start 9:

- Found in 9 of 64 ( 14.1% ) of genes in pham
- Manual Annotations of this start: 9 of 56
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Button\_32 (CT), GiKK\_34 (CT), Hexbug\_38 (CT), Jamzy\_34 (CT), Margaret\_36 (CT), Nodigi\_38 (CT), Orla\_38 (CT), RanchParmCat\_35 (CT), Yakult\_32 (CT),

### **Summary by clusters:**

There are 7 clusters represented in this pham: EL, singleton, GD3, EF, GG, DG1, CT,

Info for manual annotations of cluster CT:

- Start number 9 was manually annotated 9 times for cluster CT.

Info for manual annotations of cluster DG1:

- Start number 5 was manually annotated 7 times for cluster DG1.

Info for manual annotations of cluster EF:

- Start number 6 was manually annotated 32 times for cluster EF.
- Start number 7 was manually annotated 3 times for cluster EF.

Info for manual annotations of cluster EL:

- Start number 6 was manually annotated 1 time for cluster EL.

Info for manual annotations of cluster GD3:

- Start number 6 was manually annotated 1 time for cluster GD3.

Info for manual annotations of cluster GG:

- Start number 6 was manually annotated 2 times for cluster GG.

### **Gene Information:**

Gene: Aesir\_50 Start: 36292, Stop: 36837, Start Num: 6

Candidate Starts for Aesir\_50:

(Start: 6 @36292 has 37 MA's), (Start: 7 @36295 has 3 MA's), (8, 36304), (18, 36397), (20, 36427), (22, 36454), (26, 36514), (42, 36658), (44, 36706), (49, 36757),

Gene: Ajin\_54 Start: 37227, Stop: 37772, Start Num: 7

Candidate Starts for Ajin\_54:

(1, 37032), (Start: 6 @37224 has 37 MA's), (Start: 7 @37227 has 3 MA's), (8, 37236), (10, 37245), (18, 37329), (19, 37332), (22, 37386), (26, 37446), (27, 37458), (30, 37506), (32, 37527), (36, 37539), (39, 37566), (40, 37572), (42, 37593), (43, 37635), (44, 37641), (49, 37692), (54, 37752),

Gene: Anakin\_51 Start: 36651, Stop: 37196, Start Num: 6

Candidate Starts for Anakin\_51:

(Start: 6 @36651 has 37 MA's), (Start: 7 @36654 has 3 MA's), (8, 36663), (18, 36756), (20, 36786), (22, 36813), (26, 36873), (42, 37017), (44, 37065), (49, 37116),

Gene: AnnaSerena\_51 Start: 36685, Stop: 37230, Start Num: 6

Candidate Starts for AnnaSerena\_51:

(Start: 6 @36685 has 37 MA's), (Start: 7 @36688 has 3 MA's), (8, 36697), (18, 36790), (20, 36820), (22, 36847), (26, 36907), (42, 37051), (44, 37099), (49, 37150),

Gene: Annapurna\_52 Start: 35759, Stop: 36304, Start Num: 6

Candidate Starts for Annapurna\_52:

(Start: 6 @35759 has 37 MA's), (Start: 7 @35762 has 3 MA's), (8, 35771), (18, 35864), (20, 35894), (22, 35921), (26, 35981), (42, 36125), (44, 36173), (49, 36224),

Gene: Artiphact\_51 Start: 36675, Stop: 37220, Start Num: 6

Candidate Starts for Artiphact\_51:

(Start: 6 @36675 has 37 MA's), (Start: 7 @36678 has 3 MA's), (8, 36687), (18, 36780), (20, 36810), (22, 36837), (26, 36897), (42, 37041), (44, 37089), (49, 37140),

Gene: Beyoncage\_63 Start: 45935, Stop: 46522, Start Num: 5

Candidate Starts for Beyoncage\_63:

(Start: 5 @45935 has 7 MA's), (11, 45992), (12, 45998), (20, 46085), (22, 46106), (28, 46190), (38, 46274), (45, 46379), (47, 46391), (55, 46487),

Gene: BiteSize\_63 Start: 46021, Stop: 46608, Start Num: 5

Candidate Starts for BiteSize\_63:

(Start: 5 @46021 has 7 MA's), (11, 46078), (12, 46084), (20, 46171), (22, 46192), (28, 46276), (38, 46360), (45, 46465), (47, 46477), (55, 46573),

Gene: Bramble\_55 Start: 37273, Stop: 37821, Start Num: 6

Candidate Starts for Bramble\_55:

(1, 37081), (Start: 6 @37273 has 37 MA's), (Start: 7 @37276 has 3 MA's), (8, 37285), (10, 37294), (18, 37378), (19, 37381), (22, 37435), (26, 37495), (27, 37507), (30, 37555), (32, 37576), (36, 37588), (39, 37615), (40, 37621), (42, 37642), (43, 37684), (44, 37690), (49, 37741), (54, 37801),

Gene: Button\_32 Start: 24393, Stop: 23887, Start Num: 9

Candidate Starts for Button\_32:

(2, 24555), (Start: 9 @24393 has 9 MA's), (15, 24336), (20, 24285), (22, 24264), (24, 24219), (50, 23988), (52, 23949), (56, 23913),

Gene: Cece\_152 Start: 95876, Stop: 96316, Start Num: 6

Candidate Starts for Cece\_152:

(Start: 6 @95876 has 37 MA's), (22, 96026), (36, 96182), (46, 96308),

Gene: Chivey\_51 Start: 35720, Stop: 36265, Start Num: 6

Candidate Starts for Chivey\_51:

(Start: 6 @35720 has 37 MA's), (Start: 7 @35723 has 3 MA's), (8, 35732), (18, 35825), (20, 35855), (22, 35882), (26, 35942), (42, 36086), (44, 36134), (49, 36185),

Gene: CoolCookie\_51 Start: 36678, Stop: 37223, Start Num: 6

Candidate Starts for CoolCookie\_51:

(Start: 6 @36678 has 37 MA's), (Start: 7 @36681 has 3 MA's), (8, 36690), (18, 36783), (20, 36813), (22, 36840), (26, 36900), (42, 37044), (44, 37092), (49, 37143),

Gene: Count\_77 Start: 54096, Stop: 54533, Start Num: 6

Candidate Starts for Count\_77:

(Start: 6 @54096 has 37 MA's), (8, 54108), (17, 54192), (22, 54246), (31, 54381), (33, 54387), (38, 54411), (41, 54450),

Gene: Crestdrop\_51 Start: 35900, Stop: 36445, Start Num: 6

Candidate Starts for Crestdrop\_51:

(Start: 6 @35900 has 37 MA's), (Start: 7 @35903 has 3 MA's), (8, 35912), (18, 36005), (20, 36035), (22, 36062), (26, 36122), (42, 36266), (44, 36314), (49, 36365),

Gene: Cybele\_51 Start: 36651, Stop: 37196, Start Num: 6

Candidate Starts for Cybele\_51:

(Start: 6 @36651 has 37 MA's), (Start: 7 @36654 has 3 MA's), (8, 36663), (18, 36756), (20, 36786), (22, 36813), (26, 36873), (42, 37017), (44, 37065), (49, 37116),

Gene: DannyDe\_51 Start: 35714, Stop: 36259, Start Num: 6

Candidate Starts for DannyDe\_51:

(Start: 6 @35714 has 37 MA's), (Start: 7 @35717 has 3 MA's), (8, 35726), (18, 35819), (20, 35849), (22, 35876), (26, 35936), (42, 36080), (44, 36128), (49, 36179),

Gene: Dauntless\_50 Start: 36227, Stop: 36772, Start Num: 6

Candidate Starts for Dauntless\_50:

(Start: 6 @36227 has 37 MA's), (Start: 7 @36230 has 3 MA's), (8, 36239), (18, 36332), (20, 36362), (22, 36389), (26, 36449), (42, 36593), (44, 36641), (49, 36692),

Gene: Djokovic\_63 Start: 45934, Stop: 46521, Start Num: 5

Candidate Starts for Djokovic\_63:

(Start: 5 @45934 has 7 MA's), (11, 45991), (12, 45997), (20, 46084), (22, 46105), (28, 46189), (38, 46273), (45, 46378), (47, 46390), (55, 46486),

Gene: Erudite\_50 Start: 36227, Stop: 36772, Start Num: 6

Candidate Starts for Erudite\_50:

(Start: 6 @36227 has 37 MA's), (Start: 7 @36230 has 3 MA's), (8, 36239), (18, 36332), (20, 36362), (22, 36389), (26, 36449), (42, 36593), (44, 36641), (49, 36692),

Gene: FreddieHg\_51 Start: 35730, Stop: 36275, Start Num: 6

Candidate Starts for FreddieHg\_51:

(Start: 6 @35730 has 37 MA's), (Start: 7 @35733 has 3 MA's), (8, 35742), (18, 35835), (20, 35865), (22, 35892), (26, 35952), (42, 36096), (44, 36144), (49, 36195),

Gene: GiKK\_34 Start: 24696, Stop: 24190, Start Num: 9

Candidate Starts for GiKK\_34:

(Start: 9 @24696 has 9 MA's), (15, 24639), (22, 24567), (24, 24522), (50, 24291), (52, 24252), (56, 24216),

Gene: Gilda\_51 Start: 36672, Stop: 37217, Start Num: 6

Candidate Starts for Gilda\_51:

(Start: 6 @36672 has 37 MA's), (Start: 7 @36675 has 3 MA's), (8, 36684), (18, 36777), (20, 36807), (22, 36834), (26, 36894), (42, 37038), (44, 37086), (49, 37137),

Gene: Hager\_52 Start: 36092, Stop: 36637, Start Num: 6

Candidate Starts for Hager\_52:

(Start: 6 @36092 has 37 MA's), (Start: 7 @36095 has 3 MA's), (8, 36104), (18, 36197), (20, 36227), (21, 36239), (22, 36254), (26, 36314), (42, 36458), (44, 36506), (49, 36557),

Gene: Haunter\_51 Start: 35892, Stop: 36437, Start Num: 6  
Candidate Starts for Haunter\_51:  
(Start: 6 @35892 has 37 MA's), (Start: 7 @35895 has 3 MA's), (8, 35904), (18, 35997), (20, 36027),  
(22, 36054), (26, 36114), (42, 36258), (44, 36306), (49, 36357),

Gene: Hexbug\_38 Start: 26930, Stop: 26424, Start Num: 9  
Candidate Starts for Hexbug\_38:  
(Start: 9 @26930 has 9 MA's), (11, 26915), (15, 26873), (22, 26801), (24, 26756), (34, 26675), (50,  
26525),

Gene: Hiddenleaf\_51 Start: 35720, Stop: 36265, Start Num: 6  
Candidate Starts for Hiddenleaf\_51:  
(Start: 6 @35720 has 37 MA's), (Start: 7 @35723 has 3 MA's), (8, 35732), (18, 35825), (20, 35855),  
(22, 35882), (26, 35942), (42, 36086), (44, 36134), (49, 36185),

Gene: Huwbert\_58 Start: 36365, Stop: 36808, Start Num: 6  
Candidate Starts for Huwbert\_58:  
(Start: 6 @36365 has 37 MA's), (16, 36452), (17, 36461), (22, 36512), (23, 36539), (29, 36632), (38,  
36671), (39, 36686), (41, 36710),

Gene: JDawG\_50 Start: 36287, Stop: 36832, Start Num: 6  
Candidate Starts for JDawG\_50:  
(Start: 6 @36287 has 37 MA's), (Start: 7 @36290 has 3 MA's), (8, 36299), (18, 36392), (20, 36422),  
(22, 36449), (26, 36509), (42, 36653), (44, 36701), (49, 36752),

Gene: Jamzy\_34 Start: 24705, Stop: 24199, Start Num: 9  
Candidate Starts for Jamzy\_34:  
(2, 24867), (Start: 9 @24705 has 9 MA's), (15, 24648), (20, 24597), (22, 24576), (24, 24531), (27,  
24504), (50, 24300), (52, 24261), (56, 24225),

Gene: JingleBells\_51 Start: 35822, Stop: 36367, Start Num: 6  
Candidate Starts for JingleBells\_51:  
(Start: 6 @35822 has 37 MA's), (Start: 7 @35825 has 3 MA's), (8, 35834), (18, 35927), (20, 35957),  
(22, 35984), (26, 36044), (42, 36188), (44, 36236), (49, 36287),

Gene: Karate\_50 Start: 36483, Stop: 37025, Start Num: 7  
Candidate Starts for Karate\_50:  
(Start: 6 @36480 has 37 MA's), (Start: 7 @36483 has 3 MA's), (8, 36492), (18, 36585), (20, 36615),  
(22, 36642), (26, 36702), (42, 36846), (44, 36894), (49, 36945),

Gene: Kate\_52 Start: 36590, Stop: 37135, Start Num: 6  
Candidate Starts for Kate\_52:  
(Start: 6 @36590 has 37 MA's), (Start: 7 @36593 has 3 MA's), (8, 36602), (18, 36695), (20, 36725),  
(22, 36752), (25, 36809), (26, 36812), (42, 36956), (44, 37004), (49, 37055),

Gene: Kors\_55 Start: 37313, Stop: 37861, Start Num: 6  
Candidate Starts for Kors\_55:  
(Start: 6 @37313 has 37 MA's), (Start: 7 @37316 has 3 MA's), (8, 37325), (10, 37334), (18, 37418),  
(19, 37421), (22, 37475), (26, 37535), (27, 37547), (30, 37595), (32, 37616), (36, 37628), (39, 37655),  
(40, 37661), (42, 37682), (43, 37724), (44, 37730), (49, 37781), (54, 37841),

Gene: Krampus\_51 Start: 36686, Stop: 37231, Start Num: 6  
Candidate Starts for Krampus\_51:

(Start: 6 @36686 has 37 MA's), (Start: 7 @36689 has 3 MA's), (8, 36698), (18, 36791), (20, 36821), (22, 36848), (26, 36908), (42, 37052), (44, 37100), (49, 37151),

Gene: LordBart\_54 Start: 37210, Stop: 37758, Start Num: 6

Candidate Starts for LordBart\_54:

(1, 37018), (Start: 6 @37210 has 37 MA's), (Start: 7 @37213 has 3 MA's), (8, 37222), (10, 37231), (18, 37315), (19, 37318), (22, 37372), (26, 37432), (27, 37444), (30, 37492), (32, 37513), (36, 37525), (39, 37552), (40, 37558), (42, 37579), (43, 37621), (44, 37627), (49, 37678), (54, 37738),

Gene: Madi\_63 Start: 46012, Stop: 46599, Start Num: 5

Candidate Starts for Madi\_63:

(Start: 5 @46012 has 7 MA's), (11, 46069), (12, 46075), (20, 46162), (22, 46183), (28, 46267), (38, 46351), (45, 46456), (47, 46468), (55, 46564),

Gene: Margaret\_36 Start: 25349, Stop: 24843, Start Num: 9

Candidate Starts for Margaret\_36:

(2, 25514), (Start: 9 @25349 has 9 MA's), (22, 25220), (24, 25175), (27, 25148), (50, 24944), (51, 24938), (56, 24869),

Gene: MortySmith\_49 Start: 35704, Stop: 36249, Start Num: 6

Candidate Starts for MortySmith\_49:

(Start: 6 @35704 has 37 MA's), (Start: 7 @35707 has 3 MA's), (8, 35716), (18, 35809), (20, 35839), (22, 35866), (26, 35926), (42, 36070), (44, 36118), (49, 36169),

Gene: NarutoRun\_51 Start: 36651, Stop: 37196, Start Num: 6

Candidate Starts for NarutoRun\_51:

(Start: 6 @36651 has 37 MA's), (Start: 7 @36654 has 3 MA's), (8, 36663), (18, 36756), (20, 36786), (22, 36813), (26, 36873), (42, 37017), (44, 37065), (49, 37116),

Gene: Neptune\_51 Start: 36651, Stop: 37196, Start Num: 6

Candidate Starts for Neptune\_51:

(Start: 6 @36651 has 37 MA's), (Start: 7 @36654 has 3 MA's), (8, 36663), (18, 36756), (20, 36786), (22, 36813), (26, 36873), (42, 37017), (44, 37065), (49, 37116),

Gene: Nodigi\_38 Start: 26927, Stop: 26421, Start Num: 9

Candidate Starts for Nodigi\_38:

(Start: 9 @26927 has 9 MA's), (15, 26870), (22, 26798), (24, 26753), (34, 26672), (39, 26639),

Gene: Orla\_38 Start: 26901, Stop: 26395, Start Num: 9

Candidate Starts for Orla\_38:

(Start: 9 @26901 has 9 MA's), (11, 26886), (15, 26844), (22, 26772), (24, 26727), (34, 26646), (50, 26496),

Gene: OverHedge\_51 Start: 36548, Stop: 37093, Start Num: 6

Candidate Starts for OverHedge\_51:

(Start: 6 @36548 has 37 MA's), (Start: 7 @36551 has 3 MA's), (8, 36560), (18, 36653), (20, 36683), (22, 36710), (26, 36770), (42, 36914), (44, 36962), (49, 37013),

Gene: Pharpay\_51 Start: 36696, Stop: 37241, Start Num: 6

Candidate Starts for Pharpay\_51:

(Start: 6 @36696 has 37 MA's), (Start: 7 @36699 has 3 MA's), (8, 36708), (18, 36801), (20, 36831), (22, 36858), (26, 36918), (42, 37062), (44, 37110), (49, 37161),



Gene: PhunaPhoke\_51 Start: 36669, Stop: 37211, Start Num: 7

Candidate Starts for PhunaPhoke\_51:

(Start: 6 @36666 has 37 MA's), (Start: 7 @36669 has 3 MA's), (8, 36678), (18, 36771), (20, 36801), (22, 36828), (26, 36888), (42, 37032), (44, 37080), (49, 37131),

Gene: Potty\_51 Start: 36578, Stop: 37123, Start Num: 6

Candidate Starts for Potty\_51:

(Start: 6 @36578 has 37 MA's), (Start: 7 @36581 has 3 MA's), (8, 36590), (18, 36683), (20, 36713), (22, 36740), (26, 36800), (42, 36944), (44, 36992), (49, 37043),

Gene: Poultress\_50 Start: 36896, Stop: 37441, Start Num: 6

Candidate Starts for Poultress\_50:

(Start: 6 @36896 has 37 MA's), (Start: 7 @36899 has 3 MA's), (8, 36908), (18, 37001), (20, 37031), (22, 37058), (26, 37118), (42, 37262), (44, 37310), (49, 37361),

Gene: Rachella\_51 Start: 36677, Stop: 37222, Start Num: 6

Candidate Starts for Rachella\_51:

(Start: 6 @36677 has 37 MA's), (Start: 7 @36680 has 3 MA's), (8, 36689), (18, 36782), (20, 36812), (22, 36839), (26, 36899), (42, 37043), (44, 37091), (49, 37142),

Gene: RanchParmCat\_35 Start: 25554, Stop: 25048, Start Num: 9

Candidate Starts for RanchParmCat\_35:

(Start: 5 @25593 has 7 MA's), (Start: 9 @25554 has 9 MA's), (22, 25425), (24, 25380), (27, 25353), (50, 25149), (51, 25143), (56, 25074),

Gene: Rie18\_51 Start: 36174, Stop: 36719, Start Num: 6

Candidate Starts for Rie18\_51:

(Start: 6 @36174 has 37 MA's), (Start: 7 @36177 has 3 MA's), (8, 36186), (18, 36279), (20, 36309), (22, 36336), (26, 36396), (42, 36540), (44, 36588), (49, 36639),

Gene: RikSengupta\_54 Start: 37338, Stop: 37886, Start Num: 6

Candidate Starts for RikSengupta\_54:

(Start: 6 @37338 has 37 MA's), (Start: 7 @37341 has 3 MA's), (8, 37350), (10, 37359), (18, 37443), (19, 37446), (22, 37500), (26, 37560), (27, 37572), (30, 37620), (32, 37641), (36, 37653), (39, 37680), (40, 37686), (42, 37707), (43, 37749), (44, 37755), (49, 37806), (54, 37866),

Gene: Shrew\_69 Start: 40329, Stop: 40781, Start Num: 6

Candidate Starts for Shrew\_69:

(3, 40269), (4, 40272), (Start: 6 @40329 has 37 MA's), (13, 40374), (14, 40383), (17, 40425), (22, 40482), (23, 40509), (33, 40617), (35, 40626),

Gene: Sienna\_63 Start: 46012, Stop: 46599, Start Num: 5

Candidate Starts for Sienna\_63:

(Start: 5 @46012 has 7 MA's), (11, 46069), (12, 46075), (20, 46162), (22, 46183), (28, 46267), (38, 46351), (45, 46456), (47, 46468), (55, 46564),

Gene: SilentWarrior\_51 Start: 35690, Stop: 36235, Start Num: 6

Candidate Starts for SilentWarrior\_51:

(Start: 6 @35690 has 37 MA's), (Start: 7 @35693 has 3 MA's), (8, 35702), (18, 35795), (20, 35825), (22, 35852), (26, 35912), (42, 36056), (44, 36104), (49, 36155),

Gene: Snakehole\_51 Start: 35698, Stop: 36243, Start Num: 6

Candidate Starts for Snakehole\_51:

(Start: 6 @35698 has 37 MA's), (Start: 7 @35701 has 3 MA's), (8, 35710), (18, 35803), (20, 35833), (22, 35860), (26, 35920), (32, 35998), (42, 36064), (44, 36112), (49, 36163),

Gene: Sparcetus\_54 Start: 37215, Stop: 37763, Start Num: 6

Candidate Starts for Sparcetus\_54:

(Start: 6 @37215 has 37 MA's), (Start: 7 @37218 has 3 MA's), (8, 37227), (10, 37236), (18, 37320), (19, 37323), (22, 37377), (26, 37437), (27, 37449), (30, 37497), (32, 37518), (36, 37530), (39, 37557), (40, 37563), (42, 37584), (43, 37626), (44, 37632), (49, 37683), (54, 37743),

Gene: Suzy\_63 Start: 47223, Stop: 47792, Start Num: 5

Candidate Starts for Suzy\_63:

(Start: 5 @47223 has 7 MA's), (20, 47373), (22, 47394), (23, 47421), (28, 47478), (37, 47529), (38, 47541), (48, 47664), (57, 47781),

Gene: Tedro\_51 Start: 36110, Stop: 36655, Start Num: 6

Candidate Starts for Tedro\_51:

(Start: 6 @36110 has 37 MA's), (Start: 7 @36113 has 3 MA's), (8, 36122), (18, 36215), (20, 36245), (22, 36272), (26, 36332), (42, 36476), (44, 36524), (49, 36575),

Gene: Terapin\_64 Start: 45936, Stop: 46523, Start Num: 5

Candidate Starts for Terapin\_64:

(Start: 5 @45936 has 7 MA's), (11, 45993), (12, 45999), (20, 46086), (22, 46107), (28, 46191), (38, 46275), (45, 46380), (47, 46392), (55, 46488),

Gene: TinyMiny\_54 Start: 37236, Stop: 37784, Start Num: 6

Candidate Starts for TinyMiny\_54:

(1, 37044), (Start: 6 @37236 has 37 MA's), (Start: 7 @37239 has 3 MA's), (8, 37248), (18, 37341), (19, 37344), (22, 37398), (26, 37458), (27, 37470), (30, 37518), (32, 37539), (36, 37551), (39, 37578), (40, 37584), (42, 37605), (43, 37647), (44, 37653), (49, 37704), (54, 37764),

Gene: Tongui\_52 Start: 36089, Stop: 36634, Start Num: 6

Candidate Starts for Tongui\_52:

(Start: 6 @36089 has 37 MA's), (Start: 7 @36092 has 3 MA's), (8, 36101), (18, 36194), (20, 36224), (22, 36251), (26, 36311), (41, 36452), (42, 36455), (44, 36503), (49, 36554),

Gene: Triscuit\_57 Start: 36287, Stop: 36730, Start Num: 6

Candidate Starts for Triscuit\_57:

(Start: 6 @36287 has 37 MA's), (13, 36332), (16, 36374), (17, 36383), (22, 36434), (23, 36461), (29, 36554), (38, 36593), (39, 36608), (41, 36632),

Gene: Yakult\_32 Start: 24317, Stop: 23811, Start Num: 9

Candidate Starts for Yakult\_32:

(2, 24482), (Start: 9 @24317 has 9 MA's), (20, 24209), (22, 24188), (24, 24143), (27, 24116), (34, 24062), (50, 23912), (52, 23873), (53, 23870), (56, 23837), (58, 23819),