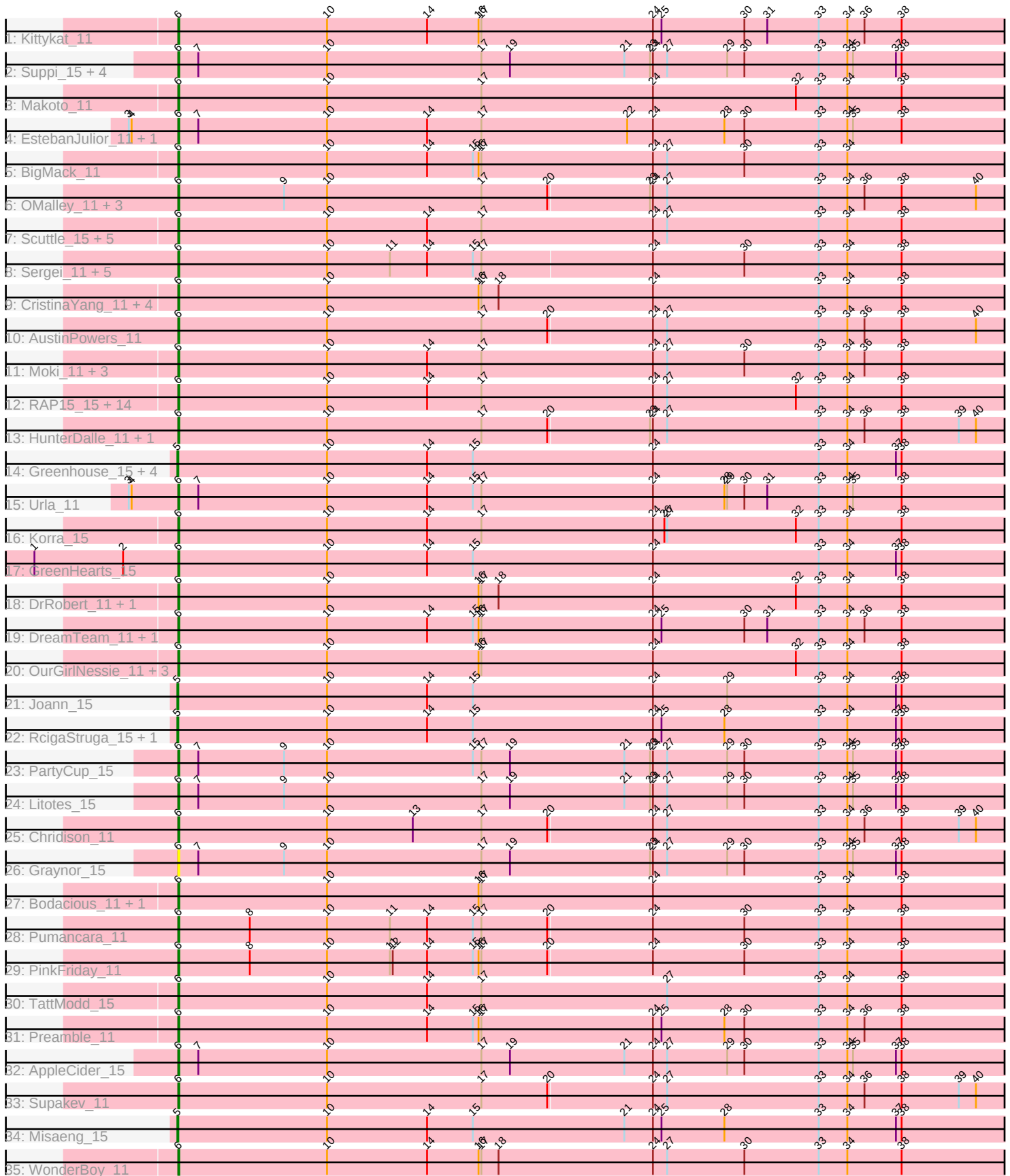




Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly 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 280334 Report

This analysis was run 02/07/26 on database version 634.

Pham number 280334 has 86 members, 2 are drafts.

Phages represented in each track:

- Track 1 : Kittykat\_11
- Track 2 : Suppi\_15, Canowicakte\_15, Wayne\_15, MrBoss\_15, CallieOMalley\_15
- Track 3 : Makoto\_11
- Track 4 : EstebanJulior\_11, MamaPearl\_11
- Track 5 : BigMack\_11
- Track 6 : OMalley\_11, Eunoia\_11, Aledel\_11, Riovina\_11
- Track 7 : Scuttle\_15, Carpal\_15, Fluke\_15, MrGloopy\_15, Riverdale\_15, Beethoven\_15
- Track 8 : Sergei\_11, KingBob\_11, Herb\_11, Temper16\_11, Maria1952\_11, Daiboju\_11
- Track 9 : CristinaYang\_11, Lasagna\_11, LilStuart\_11, Christian\_11, Nancia\_11
- Track 10 : AustinPowers\_11
- Track 11 : Moki\_11, Huckleberry\_11, HeadNerd\_11, Bennie\_11
- Track 12 : RAP15\_15, Wawa\_15, Potatoes\_15, Cholula\_15, Dino\_15, Jumboset\_15, Savage2526\_15, Glenn\_15, Vallejo\_15, Rozby\_15, Immaculata\_15, MeganNoll\_15, Kalizoi\_15, BrotherBLo\_15, Zorro\_15
- Track 13 : HunterDalle\_11, Vulture\_11
- Track 14 : Greenhouse\_15, Lakshmi\_15, Albanese\_15, Oxynfrius\_15, Nubia\_15
- Track 15 : Urla\_11
- Track 16 : Korra\_15
- Track 17 : GreenHearts\_15
- Track 18 : DrRobert\_11, Pterodactyl\_11
- Track 19 : DreamTeam\_11, Gisselle\_11
- Track 20 : OurGirlNessie\_11, PitaDog\_11, Lucy\_11, Lennox\_11
- Track 21 : Joann\_15
- Track 22 : RcigaStruga\_15, Huntingdon\_15
- Track 23 : PartyCup\_15
- Track 24 : Litotes\_15
- Track 25 : Chridison\_11
- Track 26 : Graynor\_15
- Track 27 : Bodacious\_11, ChewChew\_11
- Track 28 : Pumancara\_11
- Track 29 : PinkFriday\_11
- Track 30 : TattModd\_15
- Track 31 : Preamble\_11
- Track 32 : AppleCider\_15
- Track 33 : Supakev\_11

- Track 34 : Misaeng\_15
- Track 35 : WonderBoy\_11

### **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 75 of the 84 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aledel\_11, AppleCider\_15, AustinPowers\_11, Beethoven\_15, Bennie\_11, BigMack\_11, Bodacious\_11, BrotherBLo\_15, CallieOMalley\_15, Canowicakte\_15, Carpal\_15, ChewChew\_11, Cholula\_15, Chridison\_11, Christian\_11, CristinaYang\_11, Daiboju\_11, Dino\_15, DrRobert\_11, DreamTeam\_11, EstebanJulior\_11, Eunoia\_11, Fluke\_15, Gisselle\_11, Glenn\_15, Graynor\_15, GreenHearts\_15, HeadNerd\_11, Herb\_11, Huckleberry\_11, HunterDalle\_11, Immaculata\_15, Jumboset\_15, Kalizoi\_15, KingBob\_11, Kittykat\_11, Korra\_15, Lasagna\_11, Lennox\_11, LilStuart\_11, Litotes\_15, Lucy\_11, Makoto\_11, MamaPearl\_11, Maria1952\_11, MeganNoll\_15, Moki\_11, MrBoss\_15, MrGloopy\_15, Nancia\_11, OMalley\_11, OurGirlNessie\_11, PartyCup\_15, PinkFriday\_11, PitaDog\_11, Potatoes\_15, Preamble\_11, Pterodactyl\_11, Pumancara\_11, RAP15\_15, Riovina\_11, Riverdale\_15, Rozby\_15, Savage2526\_15, Scuttle\_15, Sergei\_11, Supakev\_11, Suppi\_15, TattModd\_15, Temper16\_11, Urla\_11, Vallejo\_15, Vulture\_11, Wawa\_15, Wayne\_15, WonderBoy\_11, Zorro\_15,

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

- 

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

- Albanese\_15, Greenhouse\_15, Huntingdon\_15, Joann\_15, Lakshmi\_15, Misaeng\_15, Nubia\_15, Oxyfnrius\_15, RcigaStruga\_15,

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

Start 5:

- Found in 9 of 86 ( 10.5% ) of genes in pham
- Manual Annotations of this start: 9 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Albanese\_15 (AK), Greenhouse\_15 (AK), Huntingdon\_15 (AK), Joann\_15 (AK), Lakshmi\_15 (AK), Misaeng\_15 (AK), Nubia\_15 (AK), Oxyfnrius\_15 (AK), RcigaStruga\_15 (AK),

Start 6:

- Found in 77 of 86 ( 89.5% ) of genes in pham
- Manual Annotations of this start: 75 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aledel\_11 (AK), AppleCider\_15 (AK), AustinPowers\_11 (AK), Beethoven\_15 (AK), Bennie\_11 (AK), BigMack\_11 (AK), Bodacious\_11 (AK), BrotherBLo\_15 (AK), CallieOMalley\_15 (AK), Canowicakte\_15 (AK), Carpal\_15 (AK), ChewChew\_11 (AK), Cholula\_15 (AK), Chridison\_11 (AK), Christian\_11 (AK), CristinaYang\_11 (AK), Daiboju\_11 (AK), Dino\_15 (AK),

DrRobert\_11 (AK), DreamTeam\_11 (AK), EstebanJulior\_11 (AK), Eunoia\_11 (AK), Fluke\_15 (AK), Gisselle\_11 (AK), Glenn\_15 (AK), Graynor\_15 (AK), GreenHearts\_15 (AK), HeadNerd\_11 (AK), Herb\_11 (AK), Huckleberry\_11 (AK), HunterDalle\_11 (AK), Immaculata\_15 (AK), Jumboset\_15 (AK), Kalizoi\_15 (AK), KingBob\_11 (AK), Kittykat\_11 (AK), Korra\_15 (AK), Lasagna\_11 (AK), Lennox\_11 (AK), LilStuart\_11 (AK), Litotes\_15 (AK), Lucy\_11 (AK), Makoto\_11 (AK), MamaPearl\_11 (AK), Maria1952\_11 (AK), MeganNoll\_15 (AK), Moki\_11 (AK), MrBoss\_15 (AK), MrGloopy\_15 (AK), Nancia\_11 (AK), OMalley\_11 (AK), OurGirlNessie\_11 (AK), PartyCup\_15 (AK), PinkFriday\_11 (AK), PitaDog\_11 (AK), Potatoes\_15 (AK), Preamble\_11 (AK), Pterodactyl\_11 (AK), Pumancara\_11 (AK), RAP15\_15 (AK), Rivovina\_11 (AK), Riverdale\_15 (AK), Rozby\_15 (AK), Savage2526\_15 (AK), Scuttle\_15 (AK), Sergei\_11 (AK), Supakev\_11 (AK), Suppi\_15 (AK), TattModd\_15 (AK), Temper16\_11 (AK), Urla\_11 (AK), Vallejo\_15 (AK), Vulture\_11 (AK), Wawa\_15 (AK), Wayne\_15 (AK), WonderBoy\_11 (AK), Zorro\_15 (AK),

### Summary by clusters:

There is one cluster represented in this pham: AK

Info for manual annotations of cluster AK:

- Start number 5 was manually annotated 9 times for cluster AK.
- Start number 6 was manually annotated 75 times for cluster AK.

### Gene Information:

Gene: Albanese\_15 Start: 10902, Stop: 11810, Start Num: 5

Candidate Starts for Albanese\_15:

(Start: 5 @10902 has 9 MA's), (10, 11058), (14, 11163), (15, 11211), (24, 11400), (33, 11574), (34, 11604), (37, 11655), (38, 11661),

Gene: Aledel\_11 Start: 7979, Stop: 8884, Start Num: 6

Candidate Starts for Aledel\_11:

(Start: 6 @7979 has 75 MA's), (9, 8090), (10, 8135), (17, 8297), (20, 8366), (23, 8471), (24, 8474), (27, 8489), (33, 8648), (34, 8678), (36, 8696), (38, 8735), (40, 8813),

Gene: AppleCider\_15 Start: 10835, Stop: 11743, Start Num: 6

Candidate Starts for AppleCider\_15:

(Start: 6 @10835 has 75 MA's), (7, 10856), (10, 10991), (17, 11153), (19, 11183), (21, 11303), (24, 11333), (27, 11348), (29, 11411), (30, 11429), (33, 11507), (34, 11537), (35, 11543), (37, 11588), (38, 11594),

Gene: AustinPowers\_11 Start: 7980, Stop: 8885, Start Num: 6

Candidate Starts for AustinPowers\_11:

(Start: 6 @7980 has 75 MA's), (10, 8136), (17, 8298), (20, 8367), (24, 8475), (27, 8490), (33, 8649), (34, 8679), (36, 8697), (38, 8736), (40, 8814),

Gene: Beethoven\_15 Start: 10796, Stop: 11704, Start Num: 6

Candidate Starts for Beethoven\_15:

(Start: 6 @10796 has 75 MA's), (10, 10952), (14, 11057), (17, 11114), (24, 11294), (27, 11309), (33, 11468), (34, 11498), (38, 11555),

Gene: Bennie\_11 Start: 7938, Stop: 8846, Start Num: 6

Candidate Starts for Bennie\_11:

(Start: 6 @7938 has 75 MA's), (10, 8094), (14, 8199), (17, 8256), (24, 8436), (27, 8451), (30, 8532), (33, 8610), (34, 8640), (36, 8658), (38, 8697),

Gene: BigMack\_11 Start: 7938, Stop: 8846, Start Num: 6

Candidate Starts for BigMack\_11:

(Start: 6 @7938 has 75 MA's), (10, 8094), (14, 8199), (15, 8247), (16, 8253), (17, 8256), (24, 8436), (27, 8451), (30, 8532), (33, 8610), (34, 8640),

Gene: Bodacious\_11 Start: 7936, Stop: 8844, Start Num: 6

Candidate Starts for Bodacious\_11:

(Start: 6 @7936 has 75 MA's), (10, 8092), (16, 8251), (17, 8254), (24, 8434), (33, 8608), (34, 8638), (38, 8695),

Gene: BrotherBLo\_15 Start: 10803, Stop: 11711, Start Num: 6

Candidate Starts for BrotherBLo\_15:

(Start: 6 @10803 has 75 MA's), (10, 10959), (14, 11064), (17, 11121), (24, 11301), (27, 11316), (32, 11451), (33, 11475), (34, 11505), (38, 11562),

Gene: CallieOMalley\_15 Start: 10835, Stop: 11743, Start Num: 6

Candidate Starts for CallieOMalley\_15:

(Start: 6 @10835 has 75 MA's), (7, 10856), (10, 10991), (17, 11153), (19, 11183), (21, 11303), (23, 11330), (24, 11333), (27, 11348), (29, 11411), (30, 11429), (33, 11507), (34, 11537), (35, 11543), (37, 11588), (38, 11594),

Gene: Canowicakte\_15 Start: 10870, Stop: 11778, Start Num: 6

Candidate Starts for Canowicakte\_15:

(Start: 6 @10870 has 75 MA's), (7, 10891), (10, 11026), (17, 11188), (19, 11218), (21, 11338), (23, 11365), (24, 11368), (27, 11383), (29, 11446), (30, 11464), (33, 11542), (34, 11572), (35, 11578), (37, 11623), (38, 11629),

Gene: Carpal\_15 Start: 10803, Stop: 11711, Start Num: 6

Candidate Starts for Carpal\_15:

(Start: 6 @10803 has 75 MA's), (10, 10959), (14, 11064), (17, 11121), (24, 11301), (27, 11316), (33, 11475), (34, 11505), (38, 11562),

Gene: ChewChew\_11 Start: 7935, Stop: 8843, Start Num: 6

Candidate Starts for ChewChew\_11:

(Start: 6 @7935 has 75 MA's), (10, 8091), (16, 8250), (17, 8253), (24, 8433), (33, 8607), (34, 8637), (38, 8694),

Gene: Cholula\_15 Start: 10848, Stop: 11756, Start Num: 6

Candidate Starts for Cholula\_15:

(Start: 6 @10848 has 75 MA's), (10, 11004), (14, 11109), (17, 11166), (24, 11346), (27, 11361), (32, 11496), (33, 11520), (34, 11550), (38, 11607),

Gene: Chridison\_11 Start: 7980, Stop: 8885, Start Num: 6

Candidate Starts for Chridison\_11:

(Start: 6 @7980 has 75 MA's), (10, 8136), (13, 8226), (17, 8298), (20, 8367), (24, 8475), (27, 8490), (33, 8649), (34, 8679), (36, 8697), (38, 8736), (39, 8796), (40, 8814),

Gene: Christian\_11 Start: 7936, Stop: 8844, Start Num: 6

Candidate Starts for Christian\_11:

(Start: 6 @7936 has 75 MA's), (10, 8092), (16, 8251), (17, 8254), (18, 8272), (24, 8434), (33, 8608), (34, 8638), (38, 8695),

Gene: CristinaYang\_11 Start: 7936, Stop: 8844, Start Num: 6

Candidate Starts for CristinaYang\_11:

(Start: 6 @7936 has 75 MA's), (10, 8092), (16, 8251), (17, 8254), (18, 8272), (24, 8434), (33, 8608), (34, 8638), (38, 8695),

Gene: Daiboju\_11 Start: 7981, Stop: 8886, Start Num: 6

Candidate Starts for Daiboju\_11:

(Start: 6 @7981 has 75 MA's), (10, 8137), (11, 8203), (14, 8242), (15, 8290), (17, 8299), (24, 8476), (30, 8572), (33, 8650), (34, 8680), (38, 8737),

Gene: Dino\_15 Start: 10802, Stop: 11710, Start Num: 6

Candidate Starts for Dino\_15:

(Start: 6 @10802 has 75 MA's), (10, 10958), (14, 11063), (17, 11120), (24, 11300), (27, 11315), (32, 11450), (33, 11474), (34, 11504), (38, 11561),

Gene: DrRobert\_11 Start: 7936, Stop: 8844, Start Num: 6

Candidate Starts for DrRobert\_11:

(Start: 6 @7936 has 75 MA's), (10, 8092), (16, 8251), (17, 8254), (18, 8272), (24, 8434), (32, 8584), (33, 8608), (34, 8638), (38, 8695),

Gene: DreamTeam\_11 Start: 8003, Stop: 8911, Start Num: 6

Candidate Starts for DreamTeam\_11:

(Start: 6 @8003 has 75 MA's), (10, 8159), (14, 8264), (15, 8312), (16, 8318), (17, 8321), (24, 8501), (25, 8510), (30, 8597), (31, 8621), (33, 8675), (34, 8705), (36, 8723), (38, 8762),

Gene: EstebanJulior\_11 Start: 7982, Stop: 8890, Start Num: 6

Candidate Starts for EstebanJulior\_11:

(3, 7931), (4, 7934), (Start: 6 @7982 has 75 MA's), (7, 8003), (10, 8138), (14, 8243), (17, 8300), (22, 8453), (24, 8480), (28, 8555), (30, 8576), (33, 8654), (34, 8684), (35, 8690), (38, 8741),

Gene: Eunoia\_11 Start: 7979, Stop: 8884, Start Num: 6

Candidate Starts for Eunoia\_11:

(Start: 6 @7979 has 75 MA's), (9, 8090), (10, 8135), (17, 8297), (20, 8366), (23, 8471), (24, 8474), (27, 8489), (33, 8648), (34, 8678), (36, 8696), (38, 8735), (40, 8813),

Gene: Fluke\_15 Start: 10844, Stop: 11752, Start Num: 6

Candidate Starts for Fluke\_15:

(Start: 6 @10844 has 75 MA's), (10, 11000), (14, 11105), (17, 11162), (24, 11342), (27, 11357), (33, 11516), (34, 11546), (38, 11603),

Gene: Gisselle\_11 Start: 8003, Stop: 8911, Start Num: 6

Candidate Starts for Gisselle\_11:

(Start: 6 @8003 has 75 MA's), (10, 8159), (14, 8264), (15, 8312), (16, 8318), (17, 8321), (24, 8501), (25, 8510), (30, 8597), (31, 8621), (33, 8675), (34, 8705), (36, 8723), (38, 8762),

Gene: Glenn\_15 Start: 10854, Stop: 11762, Start Num: 6

Candidate Starts for Glenn\_15:

(Start: 6 @10854 has 75 MA's), (10, 11010), (14, 11115), (17, 11172), (24, 11352), (27, 11367), (32, 11502), (33, 11526), (34, 11556), (38, 11613),

Gene: Graynor\_15 Start: 10856, Stop: 11764, Start Num: 6

Candidate Starts for Graynor\_15:

(Start: 6 @10856 has 75 MA's), (7, 10877), (9, 10967), (10, 11012), (17, 11174), (19, 11204), (23, 11351), (24, 11354), (27, 11369), (29, 11432), (30, 11450), (33, 11528), (34, 11558), (35, 11564), (37, 11609), (38, 11615),

Gene: GreenHearts\_15 Start: 10949, Stop: 11857, Start Num: 6

Candidate Starts for GreenHearts\_15:

(1, 10799), (2, 10892), (Start: 6 @10949 has 75 MA's), (10, 11105), (14, 11210), (15, 11258), (24, 11447), (33, 11621), (34, 11651), (37, 11702), (38, 11708),

Gene: Greenhouse\_15 Start: 10873, Stop: 11781, Start Num: 5

Candidate Starts for Greenhouse\_15:

(Start: 5 @10873 has 9 MA's), (10, 11029), (14, 11134), (15, 11182), (24, 11371), (33, 11545), (34, 11575), (37, 11626), (38, 11632),

Gene: HeadNerd\_11 Start: 7938, Stop: 8846, Start Num: 6

Candidate Starts for HeadNerd\_11:

(Start: 6 @7938 has 75 MA's), (10, 8094), (14, 8199), (17, 8256), (24, 8436), (27, 8451), (30, 8532), (33, 8610), (34, 8640), (36, 8658), (38, 8697),

Gene: Herb\_11 Start: 7981, Stop: 8886, Start Num: 6

Candidate Starts for Herb\_11:

(Start: 6 @7981 has 75 MA's), (10, 8137), (11, 8203), (14, 8242), (15, 8290), (17, 8299), (24, 8476), (30, 8572), (33, 8650), (34, 8680), (38, 8737),

Gene: Huckleberry\_11 Start: 7938, Stop: 8846, Start Num: 6

Candidate Starts for Huckleberry\_11:

(Start: 6 @7938 has 75 MA's), (10, 8094), (14, 8199), (17, 8256), (24, 8436), (27, 8451), (30, 8532), (33, 8610), (34, 8640), (36, 8658), (38, 8697),

Gene: HunterDalle\_11 Start: 7979, Stop: 8884, Start Num: 6

Candidate Starts for HunterDalle\_11:

(Start: 6 @7979 has 75 MA's), (10, 8135), (17, 8297), (20, 8366), (23, 8471), (24, 8474), (27, 8489), (33, 8648), (34, 8678), (36, 8696), (38, 8735), (39, 8795), (40, 8813),

Gene: Huntingdon\_15 Start: 10859, Stop: 11767, Start Num: 5

Candidate Starts for Huntingdon\_15:

(Start: 5 @10859 has 9 MA's), (10, 11015), (14, 11120), (15, 11168), (24, 11357), (25, 11366), (28, 11432), (33, 11531), (34, 11561), (37, 11612), (38, 11618),

Gene: Immaculata\_15 Start: 10848, Stop: 11756, Start Num: 6

Candidate Starts for Immaculata\_15:

(Start: 6 @10848 has 75 MA's), (10, 11004), (14, 11109), (17, 11166), (24, 11346), (27, 11361), (32, 11496), (33, 11520), (34, 11550), (38, 11607),

Gene: Joann\_15 Start: 10851, Stop: 11759, Start Num: 5

Candidate Starts for Joann\_15:

(Start: 5 @10851 has 9 MA's), (10, 11007), (14, 11112), (15, 11160), (24, 11349), (29, 11427), (33, 11523), (34, 11553), (37, 11604), (38, 11610),

Gene: Jumboset\_15 Start: 10797, Stop: 11705, Start Num: 6

Candidate Starts for Jumboset\_15:

(Start: 6 @10797 has 75 MA's), (10, 10953), (14, 11058), (17, 11115), (24, 11295), (27, 11310), (32, 11445), (33, 11469), (34, 11499), (38, 11556),

Gene: Kalizoi\_15 Start: 10796, Stop: 11704, Start Num: 6

Candidate Starts for Kalizoi\_15:

(Start: 6 @10796 has 75 MA's), (10, 10952), (14, 11057), (17, 11114), (24, 11294), (27, 11309), (32, 11444), (33, 11468), (34, 11498), (38, 11555),

Gene: KingBob\_11 Start: 7981, Stop: 8886, Start Num: 6

Candidate Starts for KingBob\_11:

(Start: 6 @7981 has 75 MA's), (10, 8137), (11, 8203), (14, 8242), (15, 8290), (17, 8299), (24, 8476), (30, 8572), (33, 8650), (34, 8680), (38, 8737),

Gene: Kittykat\_11 Start: 7979, Stop: 8887, Start Num: 6

Candidate Starts for Kittykat\_11:

(Start: 6 @7979 has 75 MA's), (10, 8135), (14, 8240), (16, 8294), (17, 8297), (24, 8477), (25, 8486), (30, 8573), (31, 8597), (33, 8651), (34, 8681), (36, 8699), (38, 8738),

Gene: Korra\_15 Start: 10802, Stop: 11710, Start Num: 6

Candidate Starts for Korra\_15:

(Start: 6 @10802 has 75 MA's), (10, 10958), (14, 11063), (17, 11120), (24, 11300), (26, 11312), (27, 11315), (32, 11450), (33, 11474), (34, 11504), (38, 11561),

Gene: Lakshmi\_15 Start: 10878, Stop: 11786, Start Num: 5

Candidate Starts for Lakshmi\_15:

(Start: 5 @10878 has 9 MA's), (10, 11034), (14, 11139), (15, 11187), (24, 11376), (33, 11550), (34, 11580), (37, 11631), (38, 11637),

Gene: Lasagna\_11 Start: 7936, Stop: 8844, Start Num: 6

Candidate Starts for Lasagna\_11:

(Start: 6 @7936 has 75 MA's), (10, 8092), (16, 8251), (17, 8254), (18, 8272), (24, 8434), (33, 8608), (34, 8638), (38, 8695),

Gene: Lennox\_11 Start: 7936, Stop: 8844, Start Num: 6

Candidate Starts for Lennox\_11:

(Start: 6 @7936 has 75 MA's), (10, 8092), (16, 8251), (17, 8254), (24, 8434), (32, 8584), (33, 8608), (34, 8638), (38, 8695),

Gene: LilStuart\_11 Start: 7936, Stop: 8844, Start Num: 6

Candidate Starts for LilStuart\_11:

(Start: 6 @7936 has 75 MA's), (10, 8092), (16, 8251), (17, 8254), (18, 8272), (24, 8434), (33, 8608), (34, 8638), (38, 8695),

Gene: Litotes\_15 Start: 10820, Stop: 11728, Start Num: 6

Candidate Starts for Litotes\_15:

(Start: 6 @10820 has 75 MA's), (7, 10841), (9, 10931), (10, 10976), (17, 11138), (19, 11168), (21, 11288), (23, 11315), (24, 11318), (27, 11333), (29, 11396), (30, 11414), (33, 11492), (34, 11522), (35, 11528), (37, 11573), (38, 11579),

Gene: Lucy\_11 Start: 7927, Stop: 8835, Start Num: 6

Candidate Starts for Lucy\_11:

(Start: 6 @7927 has 75 MA's), (10, 8083), (16, 8242), (17, 8245), (24, 8425), (32, 8575), (33, 8599), (34, 8629), (38, 8686),

Gene: Makoto\_11 Start: 7936, Stop: 8844, Start Num: 6

Candidate Starts for Makoto\_11:

(Start: 6 @7936 has 75 MA's), (10, 8092), (17, 8254), (24, 8434), (32, 8584), (33, 8608), (34, 8638), (38, 8695),

Gene: MamaPearl\_11 Start: 7982, Stop: 8890, Start Num: 6

Candidate Starts for MamaPearl\_11:

(3, 7931), (4, 7934), (Start: 6 @7982 has 75 MA's), (7, 8003), (10, 8138), (14, 8243), (17, 8300), (22, 8453), (24, 8480), (28, 8555), (30, 8576), (33, 8654), (34, 8684), (35, 8690), (38, 8741),

Gene: Maria1952\_11 Start: 7981, Stop: 8886, Start Num: 6

Candidate Starts for Maria1952\_11:

(Start: 6 @7981 has 75 MA's), (10, 8137), (11, 8203), (14, 8242), (15, 8290), (17, 8299), (24, 8476), (30, 8572), (33, 8650), (34, 8680), (38, 8737),

Gene: MeganNoll\_15 Start: 10854, Stop: 11762, Start Num: 6

Candidate Starts for MeganNoll\_15:

(Start: 6 @10854 has 75 MA's), (10, 11010), (14, 11115), (17, 11172), (24, 11352), (27, 11367), (32, 11502), (33, 11526), (34, 11556), (38, 11613),

Gene: Misaeng\_15 Start: 10924, Stop: 11832, Start Num: 5

Candidate Starts for Misaeng\_15:

(Start: 5 @10924 has 9 MA's), (10, 11080), (14, 11185), (15, 11233), (21, 11392), (24, 11422), (25, 11431), (28, 11497), (33, 11596), (34, 11626), (37, 11677), (38, 11683),

Gene: Moki\_11 Start: 7938, Stop: 8846, Start Num: 6

Candidate Starts for Moki\_11:

(Start: 6 @7938 has 75 MA's), (10, 8094), (14, 8199), (17, 8256), (24, 8436), (27, 8451), (30, 8532), (33, 8610), (34, 8640), (36, 8658), (38, 8697),

Gene: MrBoss\_15 Start: 10820, Stop: 11728, Start Num: 6

Candidate Starts for MrBoss\_15:

(Start: 6 @10820 has 75 MA's), (7, 10841), (10, 10976), (17, 11138), (19, 11168), (21, 11288), (23, 11315), (24, 11318), (27, 11333), (29, 11396), (30, 11414), (33, 11492), (34, 11522), (35, 11528), (37, 11573), (38, 11579),

Gene: MrGloopy\_15 Start: 10787, Stop: 11695, Start Num: 6

Candidate Starts for MrGloopy\_15:

(Start: 6 @10787 has 75 MA's), (10, 10943), (14, 11048), (17, 11105), (24, 11285), (27, 11300), (33, 11459), (34, 11489), (38, 11546),

Gene: Nancia\_11 Start: 7936, Stop: 8844, Start Num: 6

Candidate Starts for Nancia\_11:

(Start: 6 @7936 has 75 MA's), (10, 8092), (16, 8251), (17, 8254), (18, 8272), (24, 8434), (33, 8608), (34, 8638), (38, 8695),

Gene: Nubia\_15 Start: 10838, Stop: 11746, Start Num: 5

Candidate Starts for Nubia\_15:

(Start: 5 @10838 has 9 MA's), (10, 10994), (14, 11099), (15, 11147), (24, 11336), (33, 11510), (34, 11540), (37, 11591), (38, 11597),

Gene: OMalley\_11 Start: 7979, Stop: 8884, Start Num: 6

Candidate Starts for OMalley\_11:

(Start: 6 @7979 has 75 MA's), (9, 8090), (10, 8135), (17, 8297), (20, 8366), (23, 8471), (24, 8474), (27, 8489), (33, 8648), (34, 8678), (36, 8696), (38, 8735), (40, 8813),

Gene: OurGirlNessie\_11 Start: 7927, Stop: 8835, Start Num: 6

Candidate Starts for OurGirlNessie\_11:

(Start: 6 @7927 has 75 MA's), (10, 8083), (16, 8242), (17, 8245), (24, 8425), (32, 8575), (33, 8599), (34, 8629), (38, 8686),

Gene: Oxynfrius\_15 Start: 10851, Stop: 11759, Start Num: 5

Candidate Starts for Oxynfrius\_15:

(Start: 5 @10851 has 9 MA's), (10, 11007), (14, 11112), (15, 11160), (24, 11349), (33, 11523), (34, 11553), (37, 11604), (38, 11610),

Gene: PartyCup\_15 Start: 10867, Stop: 11775, Start Num: 6

Candidate Starts for PartyCup\_15:

(Start: 6 @10867 has 75 MA's), (7, 10888), (9, 10978), (10, 11023), (15, 11176), (17, 11185), (19, 11215), (21, 11335), (23, 11362), (24, 11365), (27, 11380), (29, 11443), (30, 11461), (33, 11539), (34, 11569), (35, 11575), (37, 11620), (38, 11626),

Gene: PinkFriday\_11 Start: 7979, Stop: 8884, Start Num: 6

Candidate Starts for PinkFriday\_11:

(Start: 6 @7979 has 75 MA's), (8, 8054), (10, 8135), (11, 8201), (12, 8204), (14, 8240), (15, 8288), (16, 8294), (17, 8297), (20, 8366), (24, 8474), (30, 8570), (33, 8648), (34, 8678), (38, 8735),

Gene: PitaDog\_11 Start: 7927, Stop: 8835, Start Num: 6

Candidate Starts for PitaDog\_11:

(Start: 6 @7927 has 75 MA's), (10, 8083), (16, 8242), (17, 8245), (24, 8425), (32, 8575), (33, 8599), (34, 8629), (38, 8686),

Gene: Potatoes\_15 Start: 10848, Stop: 11756, Start Num: 6

Candidate Starts for Potatoes\_15:

(Start: 6 @10848 has 75 MA's), (10, 11004), (14, 11109), (17, 11166), (24, 11346), (27, 11361), (32, 11496), (33, 11520), (34, 11550), (38, 11607),

Gene: Preamble\_11 Start: 7937, Stop: 8845, Start Num: 6

Candidate Starts for Preamble\_11:

(Start: 6 @7937 has 75 MA's), (10, 8093), (14, 8198), (15, 8246), (16, 8252), (17, 8255), (24, 8435), (25, 8444), (28, 8510), (30, 8531), (33, 8609), (34, 8639), (36, 8657), (38, 8696),

Gene: Pterodactyl\_11 Start: 7928, Stop: 8836, Start Num: 6

Candidate Starts for Pterodactyl\_11:

(Start: 6 @7928 has 75 MA's), (10, 8084), (16, 8243), (17, 8246), (18, 8264), (24, 8426), (32, 8576), (33, 8600), (34, 8630), (38, 8687),

Gene: Pumancara\_11 Start: 7978, Stop: 8883, Start Num: 6

Candidate Starts for Pumancara\_11:

(Start: 6 @7978 has 75 MA's), (8, 8053), (10, 8134), (11, 8200), (14, 8239), (15, 8287), (17, 8296), (20, 8365), (24, 8473), (30, 8569), (33, 8647), (34, 8677), (38, 8734),

Gene: RAP15\_15 Start: 10854, Stop: 11762, Start Num: 6

Candidate Starts for RAP15\_15:

(Start: 6 @10854 has 75 MA's), (10, 11010), (14, 11115), (17, 11172), (24, 11352), (27, 11367), (32, 11502), (33, 11526), (34, 11556), (38, 11613),

Gene: RcigaStruga\_15 Start: 10859, Stop: 11767, Start Num: 5

Candidate Starts for RcigaStruga\_15:

(Start: 5 @10859 has 9 MA's), (10, 11015), (14, 11120), (15, 11168), (24, 11357), (25, 11366), (28, 11432), (33, 11531), (34, 11561), (37, 11612), (38, 11618),

Gene: Riovina\_11 Start: 7979, Stop: 8884, Start Num: 6

Candidate Starts for Riovina\_11:

(Start: 6 @7979 has 75 MA's), (9, 8090), (10, 8135), (17, 8297), (20, 8366), (23, 8471), (24, 8474), (27, 8489), (33, 8648), (34, 8678), (36, 8696), (38, 8735), (40, 8813),

Gene: Riverdale\_15 Start: 10785, Stop: 11693, Start Num: 6

Candidate Starts for Riverdale\_15:

(Start: 6 @10785 has 75 MA's), (10, 10941), (14, 11046), (17, 11103), (24, 11283), (27, 11298), (33, 11457), (34, 11487), (38, 11544),

Gene: Rozby\_15 Start: 10785, Stop: 11693, Start Num: 6

Candidate Starts for Rozby\_15:

(Start: 6 @10785 has 75 MA's), (10, 10941), (14, 11046), (17, 11103), (24, 11283), (27, 11298), (32, 11433), (33, 11457), (34, 11487), (38, 11544),

Gene: Savage2526\_15 Start: 10848, Stop: 11756, Start Num: 6

Candidate Starts for Savage2526\_15:

(Start: 6 @10848 has 75 MA's), (10, 11004), (14, 11109), (17, 11166), (24, 11346), (27, 11361), (32, 11496), (33, 11520), (34, 11550), (38, 11607),

Gene: Scuttle\_15 Start: 10854, Stop: 11762, Start Num: 6

Candidate Starts for Scuttle\_15:

(Start: 6 @10854 has 75 MA's), (10, 11010), (14, 11115), (17, 11172), (24, 11352), (27, 11367), (33, 11526), (34, 11556), (38, 11613),

Gene: Sergei\_11 Start: 7981, Stop: 8886, Start Num: 6

Candidate Starts for Sergei\_11:

(Start: 6 @7981 has 75 MA's), (10, 8137), (11, 8203), (14, 8242), (15, 8290), (17, 8299), (24, 8476), (30, 8572), (33, 8650), (34, 8680), (38, 8737),

Gene: Supakev\_11 Start: 7981, Stop: 8886, Start Num: 6

Candidate Starts for Supakev\_11:

(Start: 6 @7981 has 75 MA's), (10, 8137), (17, 8299), (20, 8368), (24, 8476), (27, 8491), (33, 8650), (34, 8680), (36, 8698), (38, 8737), (39, 8797), (40, 8815),

Gene: Suppi\_15 Start: 10870, Stop: 11778, Start Num: 6

Candidate Starts for Suppi\_15:

(Start: 6 @10870 has 75 MA's), (7, 10891), (10, 11026), (17, 11188), (19, 11218), (21, 11338), (23, 11365), (24, 11368), (27, 11383), (29, 11446), (30, 11464), (33, 11542), (34, 11572), (35, 11578), (37, 11623), (38, 11629),

Gene: TattModd\_15 Start: 10848, Stop: 11756, Start Num: 6

Candidate Starts for TattModd\_15:

(Start: 6 @10848 has 75 MA's), (10, 11004), (14, 11109), (17, 11166), (27, 11361), (33, 11520), (34, 11550), (38, 11607),

Gene: Temper16\_11 Start: 7981, Stop: 8886, Start Num: 6

Candidate Starts for Temper16\_11:

(Start: 6 @7981 has 75 MA's), (10, 8137), (11, 8203), (14, 8242), (15, 8290), (17, 8299), (24, 8476), (30, 8572), (33, 8650), (34, 8680), (38, 8737),

Gene: Urla\_11 Start: 7985, Stop: 8893, Start Num: 6

Candidate Starts for Urla\_11:

(3, 7934), (4, 7937), (Start: 6 @7985 has 75 MA's), (7, 8006), (10, 8141), (14, 8246), (15, 8294), (17, 8303), (24, 8483), (28, 8558), (29, 8561), (30, 8579), (31, 8603), (33, 8657), (34, 8687), (35, 8693), (38, 8744),

Gene: Vallejo\_15 Start: 10786, Stop: 11694, Start Num: 6

Candidate Starts for Vallejo\_15:

(Start: 6 @10786 has 75 MA's), (10, 10942), (14, 11047), (17, 11104), (24, 11284), (27, 11299), (32, 11434), (33, 11458), (34, 11488), (38, 11545),

Gene: Vulture\_11 Start: 7979, Stop: 8884, Start Num: 6

Candidate Starts for Vulture\_11:

(Start: 6 @7979 has 75 MA's), (10, 8135), (17, 8297), (20, 8366), (23, 8471), (24, 8474), (27, 8489), (33, 8648), (34, 8678), (36, 8696), (38, 8735), (39, 8795), (40, 8813),

Gene: Wawa\_15 Start: 10823, Stop: 11731, Start Num: 6

Candidate Starts for Wawa\_15:

(Start: 6 @10823 has 75 MA's), (10, 10979), (14, 11084), (17, 11141), (24, 11321), (27, 11336), (32, 11471), (33, 11495), (34, 11525), (38, 11582),

Gene: Wayne\_15 Start: 10916, Stop: 11824, Start Num: 6

Candidate Starts for Wayne\_15:

(Start: 6 @10916 has 75 MA's), (7, 10937), (10, 11072), (17, 11234), (19, 11264), (21, 11384), (23, 11411), (24, 11414), (27, 11429), (29, 11492), (30, 11510), (33, 11588), (34, 11618), (35, 11624), (37, 11669), (38, 11675),

Gene: WonderBoy\_11 Start: 7936, Stop: 8844, Start Num: 6

Candidate Starts for WonderBoy\_11:

(Start: 6 @7936 has 75 MA's), (10, 8092), (14, 8197), (16, 8251), (17, 8254), (18, 8272), (24, 8434), (27, 8449), (30, 8530), (33, 8608), (34, 8638), (38, 8695),

Gene: Zorro\_15 Start: 10802, Stop: 11710, Start Num: 6

Candidate Starts for Zorro\_15:

(Start: 6 @10802 has 75 MA's), (10, 10958), (14, 11063), (17, 11120), (24, 11300), (27, 11315), (32, 11450), (33, 11474), (34, 11504), (38, 11561),