

Pham 292741



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 292741 Report

This analysis was run 04/18/26 on database version 643.

Pham number 292741 has 82 members, 2 are drafts.

Phages represented in each track:

- Track 1 : Eunoia\_24, OMalley\_24, Supakev\_24, Aledel\_24, Vulture\_24, HunterDalle\_24, Chridison\_24, AustinPowers\_24, Riovina\_24
- Track 2 : GreenHearts\_27, Lakshmi\_27, Oxynfrius\_27
- Track 3 : Preamble\_23, Immaculata\_27, Dino\_27, MeganNoll\_27, Carpal\_27, Vallejo\_27, Glenn\_27, RAP15\_27, Gisselle\_23, OurGirlNessie\_23, DreamTeam\_23, Wawa\_27, Zorro\_27, MamaPearl\_24, BigMack\_23, Kittykat\_23, EstebanJulior\_24, Scuttle\_27, Korra\_28, Jumboset\_27, Fluke\_27, MrGloopy\_27
- Track 4 : Bodacious\_23, Lucy\_23, DrRobert\_23, Nancia\_23, LilStuart\_23, Christian\_23, ChewChew\_23, Makoto\_23, Lennox\_23, PitaDog\_23, CristinaYang\_23, Pterodactyl\_23
- Track 5 : Rozby\_27, Lasagna\_23, Beethoven\_27, Kalizoi\_27, BrotherBLo\_27, Potatoes\_27, Cholula\_27, Savage2526\_27, TattModd\_27
- Track 6 : WonderBoy\_23
- Track 7 : AppleCider\_27, Graynor\_28, Wayne\_27, PartyCup\_27
- Track 8 : KingBob\_24, Daiboju\_24, Maria1952\_24, Temper16\_24, Herb\_24, Sergei\_24
- Track 9 : MrBoss\_28, Canowicakte\_27, Suppi\_27, Litotes\_27
- Track 10 : Huntingdon\_27, Misaeng\_27, RcigaStruga\_27
- Track 11 : Urla\_24
- Track 12 : Huckleberry\_23
- Track 13 : Pumancara\_23
- Track 14 : CallieOMalley\_27
- Track 15 : Bennie\_23
- Track 16 : HeadNerd\_23, Moki\_23
- Track 17 : Riverdale\_27
- Track 18 : PinkFriday\_23

### ***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 44 of the 80 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AppleCider\_27, Bennie\_23, BigMack\_23, Bodacious\_23, Canowicakte\_27, Carpal\_27, ChewChew\_23, Christian\_23, CristinaYang\_23, Dino\_27, DrRobert\_23, DreamTeam\_23, EstebanJulior\_24, Fluke\_27, Gisselle\_23, Glenn\_27, Graynor\_28, HeadNerd\_23, Immaculata\_27, Jumboset\_27, Kittykat\_23, Korra\_28, Lennox\_23, LilStuart\_23, Litotes\_27, Lucy\_23, Makoto\_23, MamaPearl\_24, MeganNoll\_27, Moki\_23, MrBoss\_28, MrGloopy\_27, Nancia\_23, OurGirlNessie\_23, PartyCup\_27, PitaDog\_23, Preamble\_23, Pterodactyl\_23, RAP15\_27, Scuttle\_27, Suppi\_27, Urla\_24, Vallejo\_27, Wawa\_27, Wayne\_27, Zorro\_27,

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

- Beethoven\_27, BrotherBLo\_27, CallieOMalley\_27, Cholula\_27, Huckleberry\_23, Kalizoi\_27, Lasagna\_23, Potatoes\_27, Riverdale\_27, Rozby\_27, Savage2526\_27, TattModd\_27, WonderBoy\_23,

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

- Aledel\_24, AustinPowers\_24, Chridison\_24, Daiboju\_24, Eunoia\_24, GreenHearts\_27, Herb\_24, HunterDalle\_24, Huntingdon\_27, KingBob\_24, Lakshmi\_27, Maria1952\_24, Misaeng\_27, OMalley\_24, Oxyfnrius\_27, PinkFriday\_23, Pumancara\_23, RcigaStruga\_27, Riovina\_24, Sergei\_24, Supakev\_24, Temper16\_24, Vulture\_24,

### Summary by start number:

Start 3:

- Found in 8 of 82 ( 9.8% ) of genes in pham
- Manual Annotations of this start: 1 of 80
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Pumancara\_23 (AK),

Start 4:

- Found in 17 of 82 ( 20.7% ) of genes in pham
- Manual Annotations of this start: 16 of 80
- Called 94.1% of time when present
- Phage (with cluster) where this start called: Aledel\_24 (AK), AustinPowers\_24 (AK), Chridison\_24 (AK), Daiboju\_24 (AK), Eunoia\_24 (AK), Herb\_24 (AK), HunterDalle\_24 (AK), KingBob\_24 (AK), Maria1952\_24 (AK), OMalley\_24 (AK), PinkFriday\_23 (AK), Riovina\_24 (AK), Sergei\_24 (AK), Supakev\_24 (AK), Temper16\_24 (AK), Vulture\_24 (AK),

Start 5:

- Found in 6 of 82 ( 7.3% ) of genes in pham
- Manual Annotations of this start: 6 of 80
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GreenHearts\_27 (AK), Huntingdon\_27 (AK), Lakshmi\_27 (AK), Misaeng\_27 (AK), Oxyfnrius\_27 (AK), RcigaStruga\_27 (AK),

Start 6:

- Found in 59 of 82 ( 72.0% ) of genes in pham
- Manual Annotations of this start: 44 of 80
- Called 78.0% of time when present
- Phage (with cluster) where this start called: AppleCider\_27 (AK), Bennie\_23 (AK), BigMack\_23 (AK), Bodacious\_23 (AK), Canowicakte\_27 (AK), Carpal\_27 (AK), ChewChew\_23 (AK), Christian\_23 (AK), CristinaYang\_23 (AK), Dino\_27 (AK),

DrRobert\_23 (AK), DreamTeam\_23 (AK), EstebanJulior\_24 (AK), Fluke\_27 (AK), Gisselle\_23 (AK), Glenn\_27 (AK), Graynor\_28 (AK), HeadNerd\_23 (AK), Immaculata\_27 (AK), Jumboset\_27 (AK), Kittykat\_23 (AK), Korra\_28 (AK), Lennox\_23 (AK), LilStuart\_23 (AK), Litotes\_27 (AK), Lucy\_23 (AK), Makoto\_23 (AK), MamaPearl\_24 (AK), MeganNoll\_27 (AK), Moki\_23 (AK), MrBoss\_28 (AK), MrGloopy\_27 (AK), Nancia\_23 (AK), OurGirlNessie\_23 (AK), PartyCup\_27 (AK), PitaDog\_23 (AK), Preamble\_23 (AK), Pterodactyl\_23 (AK), RAP15\_27 (AK), Scuttle\_27 (AK), Suppi\_27 (AK), Urla\_24 (AK), Vallejo\_27 (AK), Wawa\_27 (AK), Wayne\_27 (AK), Zorro\_27 (AK),

Start 7:

- Found in 59 of 82 ( 72.0% ) of genes in pham
- Manual Annotations of this start: 13 of 80
- Called 22.0% of time when present
- Phage (with cluster) where this start called: Beethoven\_27 (AK), BrotherBLo\_27 (AK), CallieOMalley\_27 (AK), Cholula\_27 (AK), Huckleberry\_23 (AK), Kalizoi\_27 (AK), Lasagna\_23 (AK), Potatoes\_27 (AK), Riverdale\_27 (AK), Rozby\_27 (AK), Savage2526\_27 (AK), TattModd\_27 (AK), WonderBoy\_23 (AK),

### **Summary by clusters:**

There is one cluster represented in this pham: AK

Info for manual annotations of cluster AK:

- Start number 3 was manually annotated 1 time for cluster AK.
- Start number 4 was manually annotated 16 times for cluster AK.
- Start number 5 was manually annotated 6 times for cluster AK.
- Start number 6 was manually annotated 44 times for cluster AK.
- Start number 7 was manually annotated 13 times for cluster AK.

### **Gene Information:**

Gene: Aledel\_24 Start: 21143, Stop: 21451, Start Num: 4

Candidate Starts for Aledel\_24:

(Start: 4 @21143 has 16 MA's), (10, 21218), (11, 21233), (14, 21266), (16, 21311),

Gene: AppleCider\_27 Start: 21543, Stop: 21836, Start Num: 6

Candidate Starts for AppleCider\_27:

(Start: 6 @21543 has 44 MA's), (Start: 7 @21546 has 13 MA's), (10, 21603), (12, 21630), (13, 21636), (15, 21693), (16, 21696),

Gene: AustinPowers\_24 Start: 21144, Stop: 21452, Start Num: 4

Candidate Starts for AustinPowers\_24:

(Start: 4 @21144 has 16 MA's), (10, 21219), (11, 21234), (14, 21267), (16, 21312),

Gene: Beethoven\_27 Start: 21516, Stop: 21806, Start Num: 7

Candidate Starts for Beethoven\_27:

(Start: 6 @21513 has 44 MA's), (Start: 7 @21516 has 13 MA's), (10, 21573), (11, 21588), (14, 21621), (16, 21666), (19, 21741),

Gene: Bennie\_23 Start: 19979, Stop: 20272, Start Num: 6

Candidate Starts for Bennie\_23:

(Start: 6 @19979 has 44 MA's), (Start: 7 @19982 has 13 MA's), (10, 20039), (11, 20054), (14, 20087), (16, 20132),

Gene: BigMack\_23 Start: 19973, Stop: 20266, Start Num: 6

Candidate Starts for BigMack\_23:

(Start: 6 @19973 has 44 MA's), (Start: 7 @19976 has 13 MA's), (10, 20033), (11, 20048), (14, 20081), (16, 20126), (19, 20201),

Gene: Bodacious\_23 Start: 19993, Stop: 20286, Start Num: 6

Candidate Starts for Bodacious\_23:

(Start: 6 @19993 has 44 MA's), (Start: 7 @19996 has 13 MA's), (10, 20053), (14, 20101), (16, 20146), (19, 20221),

Gene: BrotherBLo\_27 Start: 21522, Stop: 21812, Start Num: 7

Candidate Starts for BrotherBLo\_27:

(Start: 6 @21519 has 44 MA's), (Start: 7 @21522 has 13 MA's), (10, 21579), (11, 21594), (14, 21627), (16, 21672), (19, 21747),

Gene: CallieOMalley\_27 Start: 21546, Stop: 21836, Start Num: 7

Candidate Starts for CallieOMalley\_27:

(Start: 6 @21543 has 44 MA's), (Start: 7 @21546 has 13 MA's), (10, 21603), (12, 21630), (13, 21636), (15, 21693), (16, 21696),

Gene: Canowicakte\_27 Start: 21578, Stop: 21871, Start Num: 6

Candidate Starts for Canowicakte\_27:

(Start: 6 @21578 has 44 MA's), (Start: 7 @21581 has 13 MA's), (10, 21638), (11, 21653), (12, 21665), (13, 21671), (16, 21731),

Gene: Carpal\_27 Start: 21520, Stop: 21813, Start Num: 6

Candidate Starts for Carpal\_27:

(Start: 6 @21520 has 44 MA's), (Start: 7 @21523 has 13 MA's), (10, 21580), (11, 21595), (14, 21628), (16, 21673), (19, 21748),

Gene: ChewChew\_23 Start: 19988, Stop: 20281, Start Num: 6

Candidate Starts for ChewChew\_23:

(Start: 6 @19988 has 44 MA's), (Start: 7 @19991 has 13 MA's), (10, 20048), (14, 20096), (16, 20141), (19, 20216),

Gene: Cholula\_27 Start: 21569, Stop: 21859, Start Num: 7

Candidate Starts for Cholula\_27:

(Start: 6 @21566 has 44 MA's), (Start: 7 @21569 has 13 MA's), (10, 21626), (11, 21641), (14, 21674), (16, 21719), (19, 21794),

Gene: Chridison\_24 Start: 21144, Stop: 21452, Start Num: 4

Candidate Starts for Chridison\_24:

(Start: 4 @21144 has 16 MA's), (10, 21219), (11, 21234), (14, 21267), (16, 21312),

Gene: Christian\_23 Start: 19989, Stop: 20282, Start Num: 6

Candidate Starts for Christian\_23:

(Start: 6 @19989 has 44 MA's), (Start: 7 @19992 has 13 MA's), (10, 20049), (14, 20097), (16, 20142), (19, 20217),

Gene: CristinaYang\_23 Start: 19993, Stop: 20286, Start Num: 6

Candidate Starts for CristinaYang\_23:

(Start: 6 @19993 has 44 MA's), (Start: 7 @19996 has 13 MA's), (10, 20053), (14, 20101), (16, 20146), (19, 20221),

Gene: Daiboju\_24 Start: 21133, Stop: 21441, Start Num: 4

Candidate Starts for Daiboju\_24:

(Start: 3 @21127 has 1 MA's), (Start: 4 @21133 has 16 MA's), (9, 21196), (13, 21241), (16, 21301), (18, 21337), (19, 21376),

Gene: Dino\_27 Start: 21518, Stop: 21811, Start Num: 6

Candidate Starts for Dino\_27:

(Start: 6 @21518 has 44 MA's), (Start: 7 @21521 has 13 MA's), (10, 21578), (11, 21593), (14, 21626), (16, 21671), (19, 21746),

Gene: DrRobert\_23 Start: 19989, Stop: 20282, Start Num: 6

Candidate Starts for DrRobert\_23:

(Start: 6 @19989 has 44 MA's), (Start: 7 @19992 has 13 MA's), (10, 20049), (14, 20097), (16, 20142), (19, 20217),

Gene: DreamTeam\_23 Start: 20028, Stop: 20321, Start Num: 6

Candidate Starts for DreamTeam\_23:

(Start: 6 @20028 has 44 MA's), (Start: 7 @20031 has 13 MA's), (10, 20088), (11, 20103), (14, 20136), (16, 20181), (19, 20256),

Gene: EstebanJulior\_24 Start: 21156, Stop: 21449, Start Num: 6

Candidate Starts for EstebanJulior\_24:

(Start: 6 @21156 has 44 MA's), (Start: 7 @21159 has 13 MA's), (10, 21216), (11, 21231), (14, 21264), (16, 21309), (19, 21384),

Gene: Eunoia\_24 Start: 21143, Stop: 21451, Start Num: 4

Candidate Starts for Eunoia\_24:

(Start: 4 @21143 has 16 MA's), (10, 21218), (11, 21233), (14, 21266), (16, 21311),

Gene: Fluke\_27 Start: 21561, Stop: 21854, Start Num: 6

Candidate Starts for Fluke\_27:

(Start: 6 @21561 has 44 MA's), (Start: 7 @21564 has 13 MA's), (10, 21621), (11, 21636), (14, 21669), (16, 21714), (19, 21789),

Gene: Gisselle\_23 Start: 20028, Stop: 20321, Start Num: 6

Candidate Starts for Gisselle\_23:

(Start: 6 @20028 has 44 MA's), (Start: 7 @20031 has 13 MA's), (10, 20088), (11, 20103), (14, 20136), (16, 20181), (19, 20256),

Gene: Glenn\_27 Start: 21570, Stop: 21863, Start Num: 6

Candidate Starts for Glenn\_27:

(Start: 6 @21570 has 44 MA's), (Start: 7 @21573 has 13 MA's), (10, 21630), (11, 21645), (14, 21678), (16, 21723), (19, 21798),

Gene: Graynor\_28 Start: 21564, Stop: 21857, Start Num: 6

Candidate Starts for Graynor\_28:

(Start: 6 @21564 has 44 MA's), (Start: 7 @21567 has 13 MA's), (10, 21624), (12, 21651), (13, 21657), (15, 21714), (16, 21717),

Gene: GreenHearts\_27 Start: 21643, Stop: 21948, Start Num: 5

Candidate Starts for GreenHearts\_27:

(1, 21523), (2, 21595), (Start: 5 @21643 has 6 MA's), (8, 21685), (10, 21715), (16, 21808),

Gene: HeadNerd\_23 Start: 19979, Stop: 20272, Start Num: 6

Candidate Starts for HeadNerd\_23:

(Start: 6 @19979 has 44 MA's), (Start: 7 @19982 has 13 MA's), (10, 20039), (11, 20054), (14, 20087), (16, 20132), (17, 20165),

Gene: Herb\_24 Start: 21133, Stop: 21441, Start Num: 4

Candidate Starts for Herb\_24:

(Start: 3 @21127 has 1 MA's), (Start: 4 @21133 has 16 MA's), (9, 21196), (13, 21241), (16, 21301), (18, 21337), (19, 21376),

Gene: Huckleberry\_23 Start: 19982, Stop: 20272, Start Num: 7

Candidate Starts for Huckleberry\_23:

(Start: 6 @19979 has 44 MA's), (Start: 7 @19982 has 13 MA's), (10, 20039), (11, 20054), (14, 20087), (16, 20132), (17, 20165),

Gene: HunterDalle\_24 Start: 21143, Stop: 21451, Start Num: 4

Candidate Starts for HunterDalle\_24:

(Start: 4 @21143 has 16 MA's), (10, 21218), (11, 21233), (14, 21266), (16, 21311),

Gene: Huntingdon\_27 Start: 21534, Stop: 21839, Start Num: 5

Candidate Starts for Huntingdon\_27:

(Start: 5 @21534 has 6 MA's), (10, 21606), (13, 21639), (14, 21654), (16, 21699),

Gene: Immaculata\_27 Start: 21565, Stop: 21858, Start Num: 6

Candidate Starts for Immaculata\_27:

(Start: 6 @21565 has 44 MA's), (Start: 7 @21568 has 13 MA's), (10, 21625), (11, 21640), (14, 21673), (16, 21718), (19, 21793),

Gene: Jumboset\_27 Start: 21513, Stop: 21806, Start Num: 6

Candidate Starts for Jumboset\_27:

(Start: 6 @21513 has 44 MA's), (Start: 7 @21516 has 13 MA's), (10, 21573), (11, 21588), (14, 21621), (16, 21666), (19, 21741),

Gene: Kalizoi\_27 Start: 21515, Stop: 21805, Start Num: 7

Candidate Starts for Kalizoi\_27:

(Start: 6 @21512 has 44 MA's), (Start: 7 @21515 has 13 MA's), (10, 21572), (11, 21587), (14, 21620), (16, 21665), (19, 21740),

Gene: KingBob\_24 Start: 21133, Stop: 21441, Start Num: 4

Candidate Starts for KingBob\_24:

(Start: 3 @21127 has 1 MA's), (Start: 4 @21133 has 16 MA's), (9, 21196), (13, 21241), (16, 21301), (18, 21337), (19, 21376),

Gene: Kittykat\_23 Start: 20013, Stop: 20306, Start Num: 6

Candidate Starts for Kittykat\_23:

(Start: 6 @20013 has 44 MA's), (Start: 7 @20016 has 13 MA's), (10, 20073), (11, 20088), (14, 20121), (16, 20166), (19, 20241),

Gene: Korra\_28 Start: 21518, Stop: 21811, Start Num: 6  
Candidate Starts for Korra\_28:  
(Start: 6 @21518 has 44 MA's), (Start: 7 @21521 has 13 MA's), (10, 21578), (11, 21593), (14, 21626),  
(16, 21671), (19, 21746),

Gene: Lakshmi\_27 Start: 21527, Stop: 21832, Start Num: 5  
Candidate Starts for Lakshmi\_27:  
(1, 21407), (2, 21479), (Start: 5 @21527 has 6 MA's), (8, 21569), (10, 21599), (16, 21692),

Gene: Lasagna\_23 Start: 19992, Stop: 20282, Start Num: 7  
Candidate Starts for Lasagna\_23:  
(Start: 6 @19989 has 44 MA's), (Start: 7 @19992 has 13 MA's), (10, 20049), (11, 20064), (14, 20097),  
(16, 20142), (19, 20217),

Gene: Lennox\_23 Start: 19977, Stop: 20270, Start Num: 6  
Candidate Starts for Lennox\_23:  
(Start: 6 @19977 has 44 MA's), (Start: 7 @19980 has 13 MA's), (10, 20037), (14, 20085), (16, 20130),  
(19, 20205),

Gene: LilStuart\_23 Start: 19981, Stop: 20274, Start Num: 6  
Candidate Starts for LilStuart\_23:  
(Start: 6 @19981 has 44 MA's), (Start: 7 @19984 has 13 MA's), (10, 20041), (14, 20089), (16, 20134),  
(19, 20209),

Gene: Litotes\_27 Start: 21528, Stop: 21821, Start Num: 6  
Candidate Starts for Litotes\_27:  
(Start: 6 @21528 has 44 MA's), (Start: 7 @21531 has 13 MA's), (10, 21588), (11, 21603), (12, 21615),  
(13, 21621), (16, 21681),

Gene: Lucy\_23 Start: 19969, Stop: 20262, Start Num: 6  
Candidate Starts for Lucy\_23:  
(Start: 6 @19969 has 44 MA's), (Start: 7 @19972 has 13 MA's), (10, 20029), (14, 20077), (16, 20122),  
(19, 20197),

Gene: Makoto\_23 Start: 19989, Stop: 20282, Start Num: 6  
Candidate Starts for Makoto\_23:  
(Start: 6 @19989 has 44 MA's), (Start: 7 @19992 has 13 MA's), (10, 20049), (14, 20097), (16, 20142),  
(19, 20217),

Gene: MamaPearl\_24 Start: 21156, Stop: 21449, Start Num: 6  
Candidate Starts for MamaPearl\_24:  
(Start: 6 @21156 has 44 MA's), (Start: 7 @21159 has 13 MA's), (10, 21216), (11, 21231), (14, 21264),  
(16, 21309), (19, 21384),

Gene: Maria1952\_24 Start: 21133, Stop: 21441, Start Num: 4  
Candidate Starts for Maria1952\_24:  
(Start: 3 @21127 has 1 MA's), (Start: 4 @21133 has 16 MA's), (9, 21196), (13, 21241), (16, 21301),  
(18, 21337), (19, 21376),

Gene: MeganNoll\_27 Start: 21570, Stop: 21863, Start Num: 6  
Candidate Starts for MeganNoll\_27:  
(Start: 6 @21570 has 44 MA's), (Start: 7 @21573 has 13 MA's), (10, 21630), (11, 21645), (14, 21678),  
(16, 21723), (19, 21798),

Gene: Misaeng\_27 Start: 21637, Stop: 21942, Start Num: 5

Candidate Starts for Misaeng\_27:

(Start: 5 @21637 has 6 MA's), (10, 21709), (13, 21742), (14, 21757), (16, 21802),

Gene: Moki\_23 Start: 19979, Stop: 20272, Start Num: 6

Candidate Starts for Moki\_23:

(Start: 6 @19979 has 44 MA's), (Start: 7 @19982 has 13 MA's), (10, 20039), (11, 20054), (14, 20087), (16, 20132), (17, 20165),

Gene: MrBoss\_28 Start: 21528, Stop: 21821, Start Num: 6

Candidate Starts for MrBoss\_28:

(Start: 6 @21528 has 44 MA's), (Start: 7 @21531 has 13 MA's), (10, 21588), (11, 21603), (12, 21615), (13, 21621), (16, 21681),

Gene: MrGloopy\_27 Start: 21504, Stop: 21797, Start Num: 6

Candidate Starts for MrGloopy\_27:

(Start: 6 @21504 has 44 MA's), (Start: 7 @21507 has 13 MA's), (10, 21564), (11, 21579), (14, 21612), (16, 21657), (19, 21732),

Gene: Nancia\_23 Start: 19993, Stop: 20286, Start Num: 6

Candidate Starts for Nancia\_23:

(Start: 6 @19993 has 44 MA's), (Start: 7 @19996 has 13 MA's), (10, 20053), (14, 20101), (16, 20146), (19, 20221),

Gene: OMalley\_24 Start: 21143, Stop: 21451, Start Num: 4

Candidate Starts for OMalley\_24:

(Start: 4 @21143 has 16 MA's), (10, 21218), (11, 21233), (14, 21266), (16, 21311),

Gene: OurGirlNessie\_23 Start: 19969, Stop: 20262, Start Num: 6

Candidate Starts for OurGirlNessie\_23:

(Start: 6 @19969 has 44 MA's), (Start: 7 @19972 has 13 MA's), (10, 20029), (11, 20044), (14, 20077), (16, 20122), (19, 20197),

Gene: Oxynfrius\_27 Start: 21500, Stop: 21805, Start Num: 5

Candidate Starts for Oxynfrius\_27:

(1, 21380), (2, 21452), (Start: 5 @21500 has 6 MA's), (8, 21542), (10, 21572), (16, 21665),

Gene: PartyCup\_27 Start: 21575, Stop: 21868, Start Num: 6

Candidate Starts for PartyCup\_27:

(Start: 6 @21575 has 44 MA's), (Start: 7 @21578 has 13 MA's), (10, 21635), (12, 21662), (13, 21668), (15, 21725), (16, 21728),

Gene: PinkFriday\_23 Start: 20015, Stop: 20323, Start Num: 4

Candidate Starts for PinkFriday\_23:

(Start: 3 @20009 has 1 MA's), (Start: 4 @20015 has 16 MA's), (9, 20078), (11, 20105), (13, 20123), (14, 20138), (16, 20183), (18, 20219), (19, 20258),

Gene: PitaDog\_23 Start: 19980, Stop: 20273, Start Num: 6

Candidate Starts for PitaDog\_23:

(Start: 6 @19980 has 44 MA's), (Start: 7 @19983 has 13 MA's), (10, 20040), (14, 20088), (16, 20133), (19, 20208),

Gene: Potatoes\_27 Start: 21569, Stop: 21859, Start Num: 7  
Candidate Starts for Potatoes\_27:  
(Start: 6 @21566 has 44 MA's), (Start: 7 @21569 has 13 MA's), (10, 21626), (11, 21641), (14, 21674),  
(16, 21719), (19, 21794),

Gene: Preamble\_23 Start: 19990, Stop: 20283, Start Num: 6  
Candidate Starts for Preamble\_23:  
(Start: 6 @19990 has 44 MA's), (Start: 7 @19993 has 13 MA's), (10, 20050), (11, 20065), (14, 20098),  
(16, 20143), (19, 20218),

Gene: Pterodactyl\_23 Start: 19971, Stop: 20264, Start Num: 6  
Candidate Starts for Pterodactyl\_23:  
(Start: 6 @19971 has 44 MA's), (Start: 7 @19974 has 13 MA's), (10, 20031), (14, 20079), (16, 20124),  
(19, 20199),

Gene: Pumancara\_23 Start: 19991, Stop: 20305, Start Num: 3  
Candidate Starts for Pumancara\_23:  
(Start: 3 @19991 has 1 MA's), (Start: 4 @19997 has 16 MA's), (9, 20060), (11, 20087), (13, 20105),  
(14, 20120), (16, 20165), (19, 20240),

Gene: RAP15\_27 Start: 21570, Stop: 21863, Start Num: 6  
Candidate Starts for RAP15\_27:  
(Start: 6 @21570 has 44 MA's), (Start: 7 @21573 has 13 MA's), (10, 21630), (11, 21645), (14, 21678),  
(16, 21723), (19, 21798),

Gene: RcigaStruga\_27 Start: 21534, Stop: 21839, Start Num: 5  
Candidate Starts for RcigaStruga\_27:  
(Start: 5 @21534 has 6 MA's), (10, 21606), (13, 21639), (14, 21654), (16, 21699),

Gene: Riovina\_24 Start: 21143, Stop: 21451, Start Num: 4  
Candidate Starts for Riovina\_24:  
(Start: 4 @21143 has 16 MA's), (10, 21218), (11, 21233), (14, 21266), (16, 21311),

Gene: Riverdale\_27 Start: 21503, Stop: 21793, Start Num: 7  
Candidate Starts for Riverdale\_27:  
(Start: 6 @21500 has 44 MA's), (Start: 7 @21503 has 13 MA's), (10, 21560), (11, 21575), (14, 21608),  
(15, 21650), (16, 21653), (19, 21728),

Gene: Rozby\_27 Start: 21504, Stop: 21794, Start Num: 7  
Candidate Starts for Rozby\_27:  
(Start: 6 @21501 has 44 MA's), (Start: 7 @21504 has 13 MA's), (10, 21561), (11, 21576), (14, 21609),  
(16, 21654), (19, 21729),

Gene: Savage2526\_27 Start: 21567, Stop: 21857, Start Num: 7  
Candidate Starts for Savage2526\_27:  
(Start: 6 @21564 has 44 MA's), (Start: 7 @21567 has 13 MA's), (10, 21624), (11, 21639), (14, 21672),  
(16, 21717), (19, 21792),

Gene: Scuttle\_27 Start: 21569, Stop: 21862, Start Num: 6  
Candidate Starts for Scuttle\_27:  
(Start: 6 @21569 has 44 MA's), (Start: 7 @21572 has 13 MA's), (10, 21629), (11, 21644), (14, 21677),  
(16, 21722), (19, 21797),

Gene: Sergei\_24 Start: 21133, Stop: 21441, Start Num: 4  
Candidate Starts for Sergei\_24:  
(Start: 3 @21127 has 1 MA's), (Start: 4 @21133 has 16 MA's), (9, 21196), (13, 21241), (16, 21301),  
(18, 21337), (19, 21376),

Gene: Supakev\_24 Start: 21145, Stop: 21453, Start Num: 4  
Candidate Starts for Supakev\_24:  
(Start: 4 @21145 has 16 MA's), (10, 21220), (11, 21235), (14, 21268), (16, 21313),

Gene: Suppi\_27 Start: 21578, Stop: 21871, Start Num: 6  
Candidate Starts for Suppi\_27:  
(Start: 6 @21578 has 44 MA's), (Start: 7 @21581 has 13 MA's), (10, 21638), (11, 21653), (12, 21665),  
(13, 21671), (16, 21731),

Gene: TattModd\_27 Start: 21566, Stop: 21856, Start Num: 7  
Candidate Starts for TattModd\_27:  
(Start: 6 @21563 has 44 MA's), (Start: 7 @21566 has 13 MA's), (10, 21623), (11, 21638), (14, 21671),  
(16, 21716), (19, 21791),

Gene: Temper16\_24 Start: 21133, Stop: 21441, Start Num: 4  
Candidate Starts for Temper16\_24:  
(Start: 3 @21127 has 1 MA's), (Start: 4 @21133 has 16 MA's), (9, 21196), (13, 21241), (16, 21301),  
(18, 21337), (19, 21376),

Gene: Urla\_24 Start: 21158, Stop: 21451, Start Num: 6  
Candidate Starts for Urla\_24:  
(Start: 6 @21158 has 44 MA's), (Start: 7 @21161 has 13 MA's), (9, 21206), (10, 21218), (11, 21233),  
(14, 21266), (16, 21311), (19, 21386),

Gene: Vallejo\_27 Start: 21502, Stop: 21795, Start Num: 6  
Candidate Starts for Vallejo\_27:  
(Start: 6 @21502 has 44 MA's), (Start: 7 @21505 has 13 MA's), (10, 21562), (11, 21577), (14, 21610),  
(16, 21655), (19, 21730),

Gene: Vulture\_24 Start: 21143, Stop: 21451, Start Num: 4  
Candidate Starts for Vulture\_24:  
(Start: 4 @21143 has 16 MA's), (10, 21218), (11, 21233), (14, 21266), (16, 21311),

Gene: Wawa\_27 Start: 21539, Stop: 21832, Start Num: 6  
Candidate Starts for Wawa\_27:  
(Start: 6 @21539 has 44 MA's), (Start: 7 @21542 has 13 MA's), (10, 21599), (11, 21614), (14, 21647),  
(16, 21692), (19, 21767),

Gene: Wayne\_27 Start: 21624, Stop: 21917, Start Num: 6  
Candidate Starts for Wayne\_27:  
(Start: 6 @21624 has 44 MA's), (Start: 7 @21627 has 13 MA's), (10, 21684), (12, 21711), (13, 21717),  
(15, 21774), (16, 21777),

Gene: WonderBoy\_23 Start: 19973, Stop: 20263, Start Num: 7  
Candidate Starts for WonderBoy\_23:  
(Start: 6 @19970 has 44 MA's), (Start: 7 @19973 has 13 MA's), (10, 20030), (14, 20078), (16, 20123),  
(19, 20198),

Gene: Zorro\_27 Start: 21518, Stop: 21811, Start Num: 6

Candidate Starts for Zorro\_27:

(Start: 6 @21518 has 44 MA's), (Start: 7 @21521 has 13 MA's), (10, 21578), (11, 21593), (14, 21626), (16, 21671), (19, 21746),