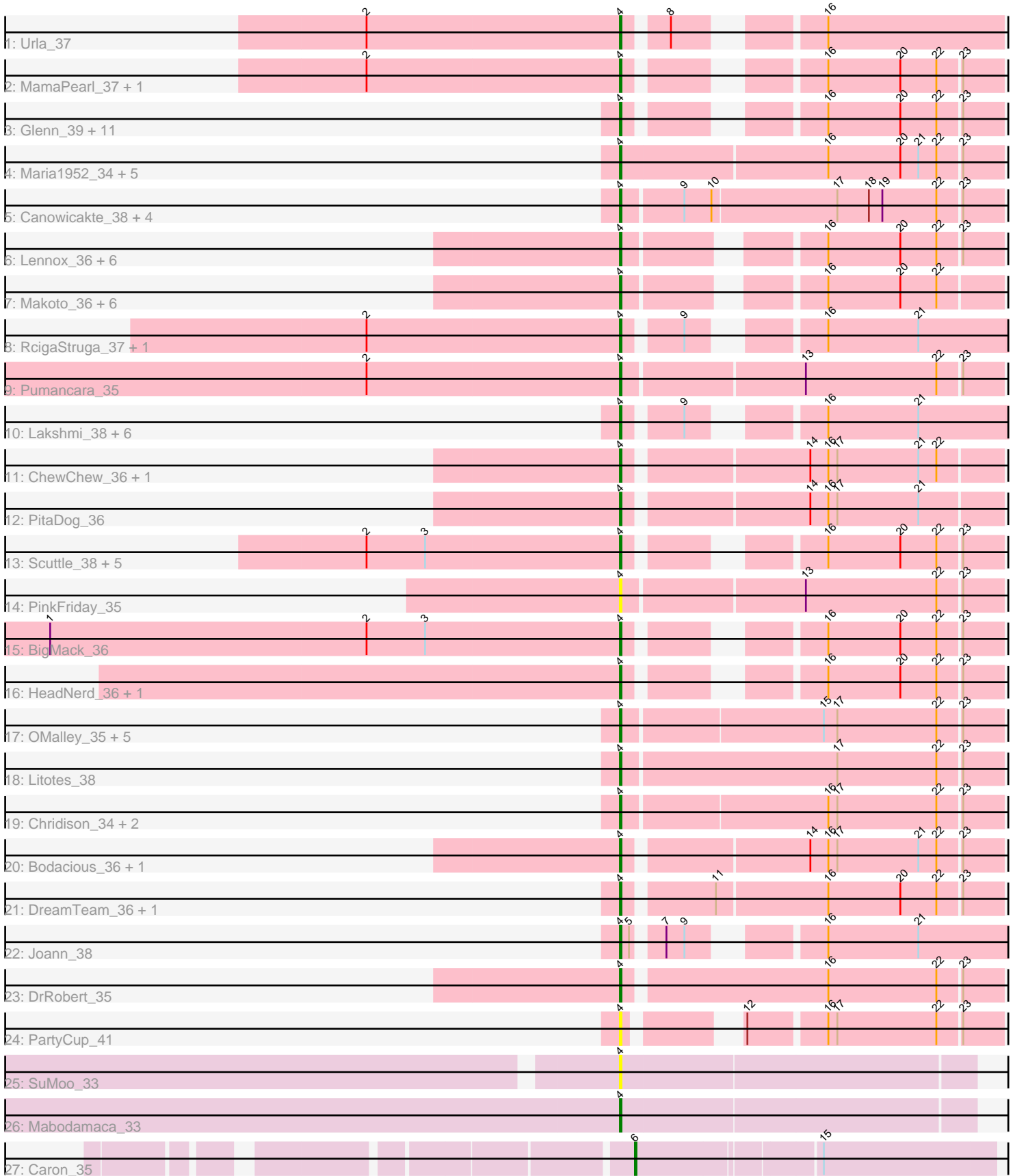


# Pham 163541



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 163541 Report

This analysis was run 04/28/24 on database version 559.

Pham number 163541 has 83 members, 4 are drafts.

Phages represented in each track:

- Track 1 : Urla\_37
- Track 2 : MamaPearl\_37, EstebanJulior\_37
- Track 3 : Glenn\_39, Potatoes\_38, Huckleberry\_36, Riverdale\_39, Carpal\_38, Cholula\_38, Moki\_36, Kittykat\_37, Immaculata\_38, Preamble\_36, Vallejo\_39, BrotherBLo\_38
- Track 4 : Maria1952\_34, Temper16\_35, Sergei\_35, Daiboju\_35, KingBob\_35, Herb\_35
- Track 5 : Canowicakte\_38, Suppi\_38, Wayne\_38, CallieOMalley\_38, AppleCider\_38
- Track 6 : Lennox\_36, MrGloopy\_39, Jumboset\_39, Christian\_36, RAP15\_39, MeganNoll\_38, Savage2526\_39
- Track 7 : Makoto\_36, OurGirlNessie\_35, CristinaYang\_36, Lasagna\_35, LilStuart\_36, WonderBoy\_35, Pterodactyl\_36
- Track 8 : RcigaStruga\_37, Huntingdon\_37
- Track 9 : Pumancara\_35
- Track 10 : Lakshmi\_38, Oxynfrius\_38, Albanese\_38, Misaeng\_37, GreenHearts\_38, Nubia\_38, Greenhouse\_39
- Track 11 : ChewChew\_36, Lucy\_36
- Track 12 : PitaDog\_36
- Track 13 : Scuttle\_38, Korra\_38, Fluke\_39, Dino\_39, Zorro\_39, Wawa\_38
- Track 14 : PinkFriday\_35
- Track 15 : BigMack\_36
- Track 16 : HeadNerd\_36, Bennie\_36
- Track 17 : OMalley\_35, Riovina\_35, Eunoia\_35, Aledel\_35, Supakev\_35, AustinPowers\_35
- Track 18 : Litotes\_38
- Track 19 : Chridison\_34, Vulture\_35, HunterDalle\_35
- Track 20 : Bodacious\_36, Nancia\_36
- Track 21 : DreamTeam\_36, Gisselle\_36
- Track 22 : Joann\_38
- Track 23 : DrRobert\_35
- Track 24 : PartyCup\_41
- Track 25 : SuMoo\_33
- Track 26 : Mabodamaca\_33
- Track 27 : Caron\_35

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

The start number called the most often in the published annotations is 4, it was called in 78 of the 79 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Albanese\_38, Aledel\_35, AppleCider\_38, AustinPowers\_35, Bennie\_36, BigMack\_36, Bodacious\_36, BrotherBLo\_38, CallieOMalley\_38, Canowicakte\_38, Carpal\_38, ChewChew\_36, Cholula\_38, Chridison\_34, Christian\_36, CristinaYang\_36, Daiboju\_35, Dino\_39, DrRobert\_35, DreamTeam\_36, EstebanJulior\_37, Eunoia\_35, Fluke\_39, Gisselle\_36, Glenn\_39, GreenHearts\_38, Greenhouse\_39, HeadNerd\_36, Herb\_35, Huckleberry\_36, HunterDalle\_35, Huntingdon\_37, Immaculata\_38, Joann\_38, Jumboset\_39, KingBob\_35, Kittykat\_37, Korra\_38, Lakshmi\_38, Lasagna\_35, Lennox\_36, LilStuart\_36, Litotes\_38, Lucy\_36, Mabodamaca\_33, Makoto\_36, MamaPearl\_37, Maria1952\_34, MeganNoll\_38, Misaeng\_37, Moki\_36, MrGloopy\_39, Nancia\_36, Nubia\_38, OMalley\_35, OurGirlNessie\_35, Oxynfrius\_38, PartyCup\_41, PinkFriday\_35, PitaDog\_36, Potatoes\_38, Preamble\_36, Pterodactyl\_36, Pumancara\_35, RAP15\_39, RcigaStruga\_37, Riovina\_35, Riverdale\_39, Savage2526\_39, Scuttle\_38, Sergei\_35, SuMoo\_33, Supakev\_35, Suppi\_38, Temper16\_35, Urla\_37, Vallejo\_39, Vulture\_35, Wawa\_38, Wayne\_38, WonderBoy\_35, Zorro\_39,

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

- 

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

- Caron\_35,

## **Summary by start number:**

Start 4:

- Found in 82 of 83 ( 98.8% ) of genes in pham
- Manual Annotations of this start: 78 of 79
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Albanese\_38 (AK), Aledel\_35 (AK), AppleCider\_38 (AK), AustinPowers\_35 (AK), Bennie\_36 (AK), BigMack\_36 (AK), Bodacious\_36 (AK), BrotherBLo\_38 (AK), CallieOMalley\_38 (AK), Canowicakte\_38 (AK), Carpal\_38 (AK), ChewChew\_36 (AK), Cholula\_38 (AK), Chridison\_34 (AK), Christian\_36 (AK), CristinaYang\_36 (AK), Daiboju\_35 (AK), Dino\_39 (AK), DrRobert\_35 (AK), DreamTeam\_36 (AK), EstebanJulior\_37 (AK), Eunoia\_35 (AK), Fluke\_39 (AK), Gisselle\_36 (AK), Glenn\_39 (AK), GreenHearts\_38 (AK), Greenhouse\_39 (AK), HeadNerd\_36 (AK), Herb\_35 (AK), Huckleberry\_36 (AK), HunterDalle\_35 (AK), Huntingdon\_37 (AK), Immaculata\_38 (AK), Joann\_38 (AK), Jumboset\_39 (AK), KingBob\_35 (AK), Kittykat\_37 (AK), Korra\_38 (AK), Lakshmi\_38 (AK), Lasagna\_35 (AK), Lennox\_36 (AK), LilStuart\_36 (AK), Litotes\_38 (AK), Lucy\_36 (AK), Mabodamaca\_33 (EH), Makoto\_36 (AK), MamaPearl\_37 (AK), Maria1952\_34 (AK), MeganNoll\_38 (AK), Misaeng\_37 (AK), Moki\_36 (AK), MrGloopy\_39 (AK), Nancia\_36 (AK), Nubia\_38 (AK), OMalley\_35 (AK), OurGirlNessie\_35 (AK), Oxynfrius\_38 (AK), PartyCup\_41 (AK), PinkFriday\_35 (AK), PitaDog\_36 (AK), Potatoes\_38 (AK), Preamble\_36 (AK), Pterodactyl\_36 (AK), Pumancara\_35 (AK), RAP15\_39 (AK), RcigaStruga\_37 (AK), Riovina\_35 (AK), Riverdale\_39 (AK), Savage2526\_39 (AK), Scuttle\_38 (AK), Sergei\_35 (AK),

SuMoo\_33 (EH), Supakev\_35 (AK), Suppi\_38 (AK), Temper16\_35 (AK), Urla\_37 (AK), Vallejo\_39 (AK), Vulture\_35 (AK), Wawa\_38 (AK), Wayne\_38 (AK), WonderBoy\_35 (AK), Zorro\_39 (AK),

Start 6:

- Found in 1 of 83 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 79
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Caron\_35 (EH),

### **Summary by clusters:**

There are 2 clusters represented in this pham: AK, EH,

Info for manual annotations of cluster AK:

- Start number 4 was manually annotated 77 times for cluster AK.

Info for manual annotations of cluster EH:

- Start number 4 was manually annotated 1 time for cluster EH.
- Start number 6 was manually annotated 1 time for cluster EH.

### **Gene Information:**

Gene: Albanese\_38 Start: 27081, Stop: 27317, Start Num: 4

Candidate Starts for Albanese\_38:

(Start: 4 @27081 has 78 MA's), (9, 27114), (16, 27180), (21, 27240),

Gene: Aledel\_35 Start: 26376, Stop: 26621, Start Num: 4

Candidate Starts for Aledel\_35:

(Start: 4 @26376 has 78 MA's), (15, 26505), (17, 26514), (22, 26580), (23, 26595),

Gene: AppleCider\_38 Start: 26781, Stop: 27026, Start Num: 4

Candidate Starts for AppleCider\_38:

(Start: 4 @26781 has 78 MA's), (9, 26820), (10, 26838), (17, 26919), (18, 26940), (19, 26949), (22, 26985), (23, 27000),

Gene: AustinPowers\_35 Start: 26374, Stop: 26619, Start Num: 4

Candidate Starts for AustinPowers\_35:

(Start: 4 @26374 has 78 MA's), (15, 26503), (17, 26512), (22, 26578), (23, 26593),

Gene: Bennie\_36 Start: 25580, Stop: 25792, Start Num: 4

Candidate Starts for Bennie\_36:

(Start: 4 @25580 has 78 MA's), (16, 25679), (20, 25727), (22, 25751), (23, 25766),

Gene: BigMack\_36 Start: 25677, Stop: 25889, Start Num: 4

Candidate Starts for BigMack\_36:

(1, 25299), (2, 25509), (3, 25548), (Start: 4 @25677 has 78 MA's), (16, 25776), (20, 25824), (22, 25848), (23, 25863),

Gene: Bodacious\_36 Start: 25606, Stop: 25845, Start Num: 4

Candidate Starts for Bodacious\_36:

(Start: 4 @25606 has 78 MA's), (14, 25720), (16, 25732), (17, 25738), (21, 25792), (22, 25804), (23, 25819),

Gene: BrotherBLo\_38 Start: 26798, Stop: 27010, Start Num: 4

Candidate Starts for BrotherBLo\_38:

(Start: 4 @26798 has 78 MA's), (16, 26897), (20, 26945), (22, 26969), (23, 26984),

Gene: CallieOMalley\_38 Start: 26781, Stop: 27026, Start Num: 4

Candidate Starts for CallieOMalley\_38:

(Start: 4 @26781 has 78 MA's), (9, 26820), (10, 26838), (17, 26919), (18, 26940), (19, 26949), (22, 26985), (23, 27000),

Gene: Canowicakte\_38 Start: 26816, Stop: 27061, Start Num: 4

Candidate Starts for Canowicakte\_38:

(Start: 4 @26816 has 78 MA's), (9, 26855), (10, 26873), (17, 26954), (18, 26975), (19, 26984), (22, 27020), (23, 27035),

Gene: Caron\_35 Start: 24264, Stop: 24491, Start Num: 6

Candidate Starts for Caron\_35:

(Start: 6 @24264 has 1 MA's), (15, 24378),

Gene: Carpal\_38 Start: 26778, Stop: 26990, Start Num: 4

Candidate Starts for Carpal\_38:

(Start: 4 @26778 has 78 MA's), (16, 26877), (20, 26925), (22, 26949), (23, 26964),

Gene: ChewChew\_36 Start: 25601, Stop: 25840, Start Num: 4

Candidate Starts for ChewChew\_36:

(Start: 4 @25601 has 78 MA's), (14, 25715), (16, 25727), (17, 25733), (21, 25787), (22, 25799),

Gene: Cholula\_38 Start: 26824, Stop: 27036, Start Num: 4

Candidate Starts for Cholula\_38:

(Start: 4 @26824 has 78 MA's), (16, 26923), (20, 26971), (22, 26995), (23, 27010),

Gene: Chridison\_34 Start: 26344, Stop: 26589, Start Num: 4

Candidate Starts for Chridison\_34:

(Start: 4 @26344 has 78 MA's), (16, 26476), (17, 26482), (22, 26548), (23, 26563),

Gene: Christian\_36 Start: 25612, Stop: 25833, Start Num: 4

Candidate Starts for Christian\_36:

(Start: 4 @25612 has 78 MA's), (16, 25720), (20, 25768), (22, 25792), (23, 25807),

Gene: CristinaYang\_36 Start: 25615, Stop: 25836, Start Num: 4

Candidate Starts for CristinaYang\_36:

(Start: 4 @25615 has 78 MA's), (16, 25723), (20, 25771), (22, 25795),

Gene: Daiboju\_35 Start: 26410, Stop: 26658, Start Num: 4

Candidate Starts for Daiboju\_35:

(Start: 4 @26410 has 78 MA's), (16, 26545), (20, 26593), (21, 26605), (22, 26617), (23, 26632),

Gene: Dino\_39 Start: 26925, Stop: 27137, Start Num: 4

Candidate Starts for Dino\_39:

(2, 26757), (3, 26796), (Start: 4 @26925 has 78 MA's), (16, 27024), (20, 27072), (22, 27096), (23, 27111),

Gene: DrRobert\_35 Start: 25374, Stop: 25616, Start Num: 4  
Candidate Starts for DrRobert\_35:  
(Start: 4 @25374 has 78 MA's), (16, 25503), (22, 25575), (23, 25590),

Gene: DreamTeam\_36 Start: 25704, Stop: 25943, Start Num: 4  
Candidate Starts for DreamTeam\_36:  
(Start: 4 @25704 has 78 MA's), (11, 25758), (16, 25830), (20, 25878), (22, 25902), (23, 25917),

Gene: EstebanJulior\_37 Start: 26761, Stop: 26973, Start Num: 4  
Candidate Starts for EstebanJulior\_37:  
(2, 26593), (Start: 4 @26761 has 78 MA's), (16, 26860), (20, 26908), (22, 26932), (23, 26947),

Gene: Eunoia\_35 Start: 26376, Stop: 26621, Start Num: 4  
Candidate Starts for Eunoia\_35:  
(Start: 4 @26376 has 78 MA's), (15, 26505), (17, 26514), (22, 26580), (23, 26595),

Gene: Fluke\_39 Start: 27041, Stop: 27253, Start Num: 4  
Candidate Starts for Fluke\_39:  
(2, 26873), (3, 26912), (Start: 4 @27041 has 78 MA's), (16, 27140), (20, 27188), (22, 27212), (23, 27227),

Gene: Gisselle\_36 Start: 25704, Stop: 25943, Start Num: 4  
Candidate Starts for Gisselle\_36:  
(Start: 4 @25704 has 78 MA's), (11, 25758), (16, 25830), (20, 25878), (22, 25902), (23, 25917),

Gene: Glenn\_39 Start: 27032, Stop: 27244, Start Num: 4  
Candidate Starts for Glenn\_39:  
(Start: 4 @27032 has 78 MA's), (16, 27131), (20, 27179), (22, 27203), (23, 27218),

Gene: GreenHearts\_38 Start: 27176, Stop: 27412, Start Num: 4  
Candidate Starts for GreenHearts\_38:  
(Start: 4 @27176 has 78 MA's), (9, 27209), (16, 27275), (21, 27335),

Gene: Greenhouse\_39 Start: 27089, Stop: 27325, Start Num: 4  
Candidate Starts for Greenhouse\_39:  
(Start: 4 @27089 has 78 MA's), (9, 27122), (16, 27188), (21, 27248),

Gene: HeadNerd\_36 Start: 25580, Stop: 25792, Start Num: 4  
Candidate Starts for HeadNerd\_36:  
(Start: 4 @25580 has 78 MA's), (16, 25679), (20, 25727), (22, 25751), (23, 25766),

Gene: Herb\_35 Start: 26409, Stop: 26657, Start Num: 4  
Candidate Starts for Herb\_35:  
(Start: 4 @26409 has 78 MA's), (16, 26544), (20, 26592), (21, 26604), (22, 26616), (23, 26631),

Gene: Huckleberry\_36 Start: 25563, Stop: 25775, Start Num: 4  
Candidate Starts for Huckleberry\_36:  
(Start: 4 @25563 has 78 MA's), (16, 25662), (20, 25710), (22, 25734), (23, 25749),

Gene: HunterDalle\_35 Start: 26343, Stop: 26588, Start Num: 4  
Candidate Starts for HunterDalle\_35:  
(Start: 4 @26343 has 78 MA's), (16, 26475), (17, 26481), (22, 26547), (23, 26562),

Gene: Huntingdon\_37 Start: 26819, Stop: 27055, Start Num: 4

Candidate Starts for Huntingdon\_37:

(2, 26651), (Start: 4 @26819 has 78 MA's), (9, 26852), (16, 26918), (21, 26978),

Gene: Immaculata\_38 Start: 26823, Stop: 27035, Start Num: 4

Candidate Starts for Immaculata\_38:

(Start: 4 @26823 has 78 MA's), (16, 26922), (20, 26970), (22, 26994), (23, 27009),

Gene: Joann\_38 Start: 27052, Stop: 27285, Start Num: 4

Candidate Starts for Joann\_38:

(Start: 4 @27052 has 78 MA's), (5, 27058), (7, 27073), (9, 27085), (16, 27151), (21, 27211),

Gene: Jumboset\_39 Start: 26907, Stop: 27152, Start Num: 4

Candidate Starts for Jumboset\_39:

(Start: 4 @26907 has 78 MA's), (16, 27039), (20, 27087), (22, 27111), (23, 27126),

Gene: KingBob\_35 Start: 26410, Stop: 26658, Start Num: 4

Candidate Starts for KingBob\_35:

(Start: 4 @26410 has 78 MA's), (16, 26545), (20, 26593), (21, 26605), (22, 26617), (23, 26632),

Gene: Kittykat\_37 Start: 25831, Stop: 26043, Start Num: 4

Candidate Starts for Kittykat\_37:

(Start: 4 @25831 has 78 MA's), (16, 25930), (20, 25978), (22, 26002), (23, 26017),

Gene: Korra\_38 Start: 26777, Stop: 26989, Start Num: 4

Candidate Starts for Korra\_38:

(2, 26609), (3, 26648), (Start: 4 @26777 has 78 MA's), (16, 26876), (20, 26924), (22, 26948), (23, 26963),

Gene: Lakshmi\_38 Start: 27055, Stop: 27291, Start Num: 4

Candidate Starts for Lakshmi\_38:

(Start: 4 @27055 has 78 MA's), (9, 27088), (16, 27154), (21, 27214),

Gene: Lasagna\_35 Start: 25389, Stop: 25610, Start Num: 4

Candidate Starts for Lasagna\_35:

(Start: 4 @25389 has 78 MA's), (16, 25497), (20, 25545), (22, 25569),

Gene: Lennox\_36 Start: 25600, Stop: 25821, Start Num: 4

Candidate Starts for Lennox\_36:

(Start: 4 @25600 has 78 MA's), (16, 25708), (20, 25756), (22, 25780), (23, 25795),

Gene: LilStuart\_36 Start: 25603, Stop: 25824, Start Num: 4

Candidate Starts for LilStuart\_36:

(Start: 4 @25603 has 78 MA's), (16, 25711), (20, 25759), (22, 25783),

Gene: Litotes\_38 Start: 26766, Stop: 27014, Start Num: 4

Candidate Starts for Litotes\_38:

(Start: 4 @26766 has 78 MA's), (17, 26907), (22, 26973), (23, 26988),

Gene: Lucy\_36 Start: 25582, Stop: 25821, Start Num: 4

Candidate Starts for Lucy\_36:

(Start: 4 @25582 has 78 MA's), (14, 25696), (16, 25708), (17, 25714), (21, 25768), (22, 25780),

Gene: Mabodamaca\_33 Start: 24562, Stop: 24792, Start Num: 4  
Candidate Starts for Mabodamaca\_33:  
(Start: 4 @24562 has 78 MA's),

Gene: Makoto\_36 Start: 25611, Stop: 25832, Start Num: 4  
Candidate Starts for Makoto\_36:  
(Start: 4 @25611 has 78 MA's), (16, 25719), (20, 25767), (22, 25791),

Gene: MamaPearl\_37 Start: 26761, Stop: 26973, Start Num: 4  
Candidate Starts for MamaPearl\_37:  
(2, 26593), (Start: 4 @26761 has 78 MA's), (16, 26860), (20, 26908), (22, 26932), (23, 26947),

Gene: Maria1952\_34 Start: 26409, Stop: 26657, Start Num: 4  
Candidate Starts for Maria1952\_34:  
(Start: 4 @26409 has 78 MA's), (16, 26544), (20, 26592), (21, 26604), (22, 26616), (23, 26631),

Gene: MeganNoll\_38 Start: 26964, Stop: 27209, Start Num: 4  
Candidate Starts for MeganNoll\_38:  
(Start: 4 @26964 has 78 MA's), (16, 27096), (20, 27144), (22, 27168), (23, 27183),

Gene: Misaeng\_37 Start: 27052, Stop: 27288, Start Num: 4  
Candidate Starts for Misaeng\_37:  
(Start: 4 @27052 has 78 MA's), (9, 27085), (16, 27151), (21, 27211),

Gene: Moki\_36 Start: 25725, Stop: 25937, Start Num: 4  
Candidate Starts for Moki\_36:  
(Start: 4 @25725 has 78 MA's), (16, 25824), (20, 25872), (22, 25896), (23, 25911),

Gene: MrGloopy\_39 Start: 26893, Stop: 27138, Start Num: 4  
Candidate Starts for MrGloopy\_39:  
(Start: 4 @26893 has 78 MA's), (16, 27025), (20, 27073), (22, 27097), (23, 27112),

Gene: Nancia\_36 Start: 25606, Stop: 25845, Start Num: 4  
Candidate Starts for Nancia\_36:  
(Start: 4 @25606 has 78 MA's), (14, 25720), (16, 25732), (17, 25738), (21, 25792), (22, 25804), (23, 25819),

Gene: Nubia\_38 Start: 27006, Stop: 27242, Start Num: 4  
Candidate Starts for Nubia\_38:  
(Start: 4 @27006 has 78 MA's), (9, 27039), (16, 27105), (21, 27165),

Gene: OMalley\_35 Start: 26376, Stop: 26621, Start Num: 4  
Candidate Starts for OMalley\_35:  
(Start: 4 @26376 has 78 MA's), (15, 26505), (17, 26514), (22, 26580), (23, 26595),

Gene: OurGirlNessie\_35 Start: 25355, Stop: 25576, Start Num: 4  
Candidate Starts for OurGirlNessie\_35:  
(Start: 4 @25355 has 78 MA's), (16, 25463), (20, 25511), (22, 25535),

Gene: Oxynfrius\_38 Start: 27033, Stop: 27269, Start Num: 4  
Candidate Starts for Oxynfrius\_38:  
(Start: 4 @27033 has 78 MA's), (9, 27066), (16, 27132), (21, 27192),



Gene: PartyCup\_41 Start: 27013, Stop: 27228, Start Num: 4  
Candidate Starts for PartyCup\_41:  
(Start: 4 @27013 has 78 MA's), (12, 27067), (16, 27115), (17, 27121), (22, 27187), (23, 27202),

Gene: PinkFriday\_35 Start: 25525, Stop: 25770, Start Num: 4  
Candidate Starts for PinkFriday\_35:  
(Start: 4 @25525 has 78 MA's), (13, 25642), (22, 25729), (23, 25744),

Gene: PitaDog\_36 Start: 25594, Stop: 25833, Start Num: 4  
Candidate Starts for PitaDog\_36:  
(Start: 4 @25594 has 78 MA's), (14, 25708), (16, 25720), (17, 25726), (21, 25780),

Gene: Potatoes\_38 Start: 26824, Stop: 27036, Start Num: 4  
Candidate Starts for Potatoes\_38:  
(Start: 4 @26824 has 78 MA's), (16, 26923), (20, 26971), (22, 26995), (23, 27010),

Gene: Preamble\_36 Start: 25688, Stop: 25900, Start Num: 4  
Candidate Starts for Preamble\_36:  
(Start: 4 @25688 has 78 MA's), (16, 25787), (20, 25835), (22, 25859), (23, 25874),

Gene: Pterodactyl\_36 Start: 25592, Stop: 25813, Start Num: 4  
Candidate Starts for Pterodactyl\_36:  
(Start: 4 @25592 has 78 MA's), (16, 25700), (20, 25748), (22, 25772),

Gene: Pumancara\_35 Start: 25437, Stop: 25682, Start Num: 4  
Candidate Starts for Pumancara\_35:  
(2, 25269), (Start: 4 @25437 has 78 MA's), (13, 25554), (22, 25641), (23, 25656),

Gene: RAP15\_39 Start: 26964, Stop: 27209, Start Num: 4  
Candidate Starts for RAP15\_39:  
(Start: 4 @26964 has 78 MA's), (16, 27096), (20, 27144), (22, 27168), (23, 27183),

Gene: RcigaStruga\_37 Start: 26819, Stop: 27055, Start Num: 4  
Candidate Starts for RcigaStruga\_37:  
(2, 26651), (Start: 4 @26819 has 78 MA's), (9, 26852), (16, 26918), (21, 26978),

Gene: Riovina\_35 Start: 26376, Stop: 26621, Start Num: 4  
Candidate Starts for Riovina\_35:  
(Start: 4 @26376 has 78 MA's), (15, 26505), (17, 26514), (22, 26580), (23, 26595),

Gene: Riverdale\_39 Start: 26962, Stop: 27174, Start Num: 4  
Candidate Starts for Riverdale\_39:  
(Start: 4 @26962 has 78 MA's), (16, 27061), (20, 27109), (22, 27133), (23, 27148),

Gene: Savage2526\_39 Start: 26958, Stop: 27203, Start Num: 4  
Candidate Starts for Savage2526\_39:  
(Start: 4 @26958 has 78 MA's), (16, 27090), (20, 27138), (22, 27162), (23, 27177),

Gene: Scuttle\_38 Start: 26951, Stop: 27163, Start Num: 4  
Candidate Starts for Scuttle\_38:  
(2, 26783), (3, 26822), (Start: 4 @26951 has 78 MA's), (16, 27050), (20, 27098), (22, 27122), (23, 27137),

Gene: Sergei\_35 Start: 26410, Stop: 26658, Start Num: 4  
Candidate Starts for Sergei\_35:  
(Start: 4 @26410 has 78 MA's), (16, 26545), (20, 26593), (21, 26605), (22, 26617), (23, 26632),

Gene: SuMoo\_33 Start: 23508, Stop: 23738, Start Num: 4  
Candidate Starts for SuMoo\_33:  
(Start: 4 @23508 has 78 MA's),

Gene: Supakev\_35 Start: 26376, Stop: 26621, Start Num: 4  
Candidate Starts for Supakev\_35:  
(Start: 4 @26376 has 78 MA's), (15, 26505), (17, 26514), (22, 26580), (23, 26595),

Gene: Suppi\_38 Start: 26816, Stop: 27061, Start Num: 4  
Candidate Starts for Suppi\_38:  
(Start: 4 @26816 has 78 MA's), (9, 26855), (10, 26873), (17, 26954), (18, 26975), (19, 26984), (22, 27020), (23, 27035),

Gene: Temper16\_35 Start: 26410, Stop: 26658, Start Num: 4  
Candidate Starts for Temper16\_35:  
(Start: 4 @26410 has 78 MA's), (16, 26545), (20, 26593), (21, 26605), (22, 26617), (23, 26632),

Gene: Urla\_37 Start: 26775, Stop: 26990, Start Num: 4  
Candidate Starts for Urla\_37:  
(2, 26607), (Start: 4 @26775 has 78 MA's), (8, 26799), (16, 26874),

Gene: Vallejo\_39 Start: 26965, Stop: 27177, Start Num: 4  
Candidate Starts for Vallejo\_39:  
(Start: 4 @26965 has 78 MA's), (16, 27064), (20, 27112), (22, 27136), (23, 27151),

Gene: Vulture\_35 Start: 26343, Stop: 26588, Start Num: 4  
Candidate Starts for Vulture\_35:  
(Start: 4 @26343 has 78 MA's), (16, 26475), (17, 26481), (22, 26547), (23, 26562),

Gene: Wawa\_38 Start: 26798, Stop: 27010, Start Num: 4  
Candidate Starts for Wawa\_38:  
(2, 26630), (3, 26669), (Start: 4 @26798 has 78 MA's), (16, 26897), (20, 26945), (22, 26969), (23, 26984),

Gene: Wayne\_38 Start: 26862, Stop: 27107, Start Num: 4  
Candidate Starts for Wayne\_38:  
(Start: 4 @26862 has 78 MA's), (9, 26901), (10, 26919), (17, 27000), (18, 27021), (19, 27030), (22, 27066), (23, 27081),

Gene: WonderBoy\_35 Start: 25584, Stop: 25805, Start Num: 4  
Candidate Starts for WonderBoy\_35:  
(Start: 4 @25584 has 78 MA's), (16, 25692), (20, 25740), (22, 25764),

Gene: Zorro\_39 Start: 26925, Stop: 27137, Start Num: 4  
Candidate Starts for Zorro\_39:  
(2, 26757), (3, 26796), (Start: 4 @26925 has 78 MA's), (16, 27024), (20, 27072), (22, 27096), (23, 27111),