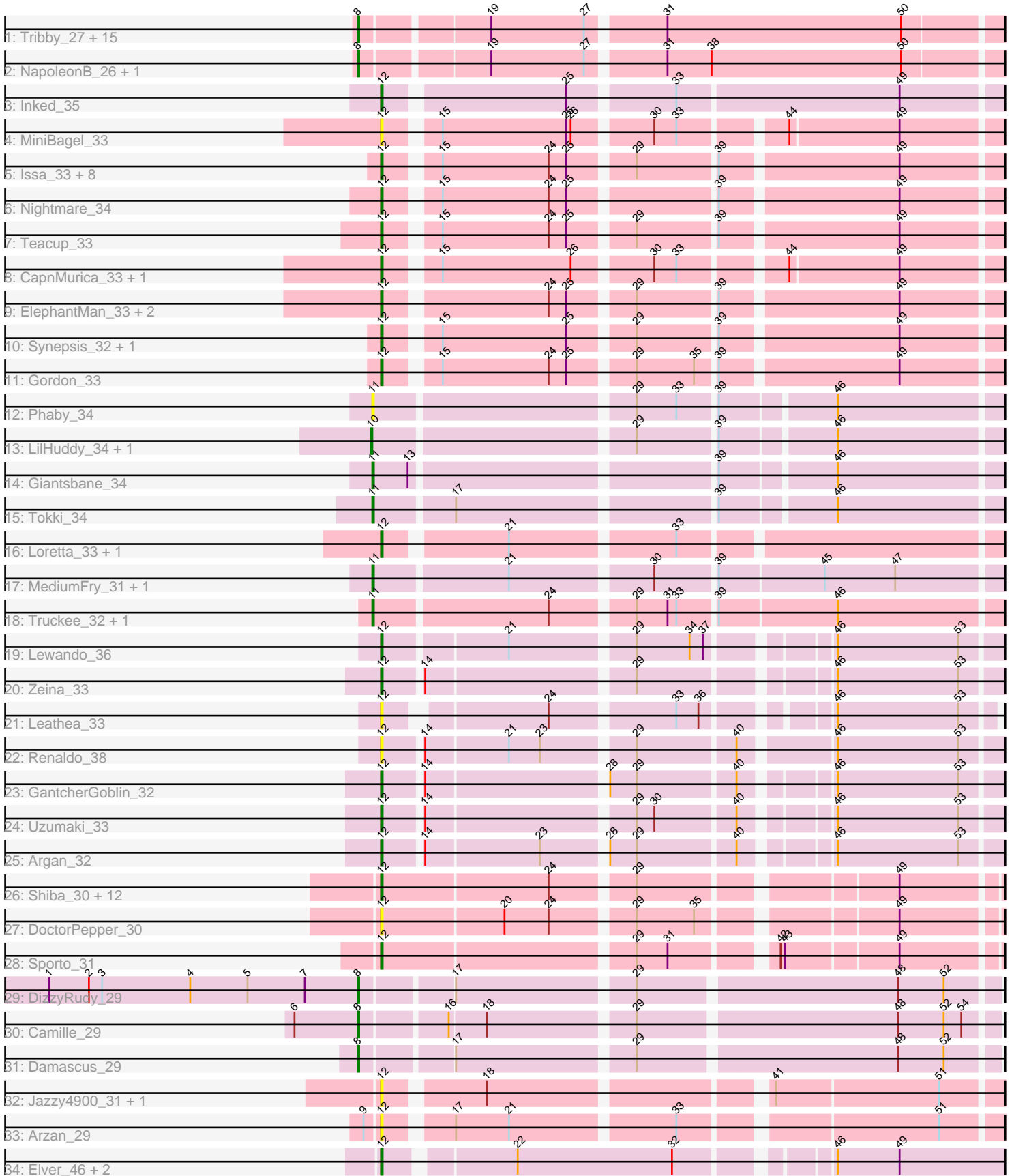


# Pham 156317



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 156317 Report

This analysis was run 04/12/24 on database version 558.

Pham number 156317 has 81 members, 17 are drafts.

Phages represented in each track:

- Track 1 : Tribby\_27, KeaneyLin\_25, Elsa\_27, Arcadia\_27, GoCrazy\_25, BenitoAntonio\_27, Nason\_27, Kardesai\_25, Mooshroom\_25, Hankly\_25, Benllo\_25, Mudcat\_26, JEGGS\_26, Cheesy\_27, Circum\_27, Heisenberger\_26
- Track 2 : NapoleonB\_26, Dynamite\_26
- Track 3 : Inked\_35
- Track 4 : MiniBagel\_33
- Track 5 : Issa\_33, DevitoJr\_33, Darby\_33, Nivinsha\_33, Trustiboi\_34, AreFloNak\_33, Tatanka\_33, CastorTray\_35, ScienceWizSam\_35
- Track 6 : Nightmare\_34
- Track 7 : Teacup\_33
- Track 8 : CapnMurica\_33, Tenno\_34
- Track 9 : ElephantMan\_33, Niktson\_33, Brunswick\_33
- Track 10 : Synopsis\_32, Breylor17\_34
- Track 11 : Gordon\_33
- Track 12 : Phaby\_34
- Track 13 : LilHuddy\_34, Shepard\_34
- Track 14 : Giantsbane\_34
- Track 15 : Tokki\_34
- Track 16 : Loretta\_33, Ingrid\_33
- Track 17 : MediumFry\_31, Caterpillar\_31
- Track 18 : Truckee\_32, Makai\_33
- Track 19 : Lewando\_36
- Track 20 : Zeina\_33
- Track 21 : Leathea\_33
- Track 22 : Renaldo\_38
- Track 23 : GantcherGoblin\_32
- Track 24 : Uzumaki\_33
- Track 25 : Argan\_32
- Track 26 : Shiba\_30, MrAaronian\_30, Djungelskog\_30, Michelle\_30, Sloopyjoe\_30, ProfFrink\_31, Salk\_30, Raunak\_31, StarLord\_30, Stayer\_30, BronxBay\_30, Linda\_30, Egad\_30
- Track 27 : DoctorPepper\_30
- Track 28 : Sporto\_31
- Track 29 : DizzyRudy\_29
- Track 30 : Camille\_29
- Track 31 : Damascus\_29
- Track 32 : Jazzy4900\_31, Sunny4976\_30

- Track 33 : Arzan\_29
- Track 34 : Elver\_46, Paella\_47, Qui\_47

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

The start number called the most often in the published annotations is 12, it was called in 37 of the 64 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AreFloNak\_33, Argan\_32, Arzan\_29, Breylor17\_34, BronxBay\_30, Brunswick\_33, CapnMurica\_33, CastorTray\_35, Darby\_33, DevitoJr\_33, Djungelskog\_30, DoctorPepper\_30, Egad\_30, ElephantMan\_33, Elver\_46, GantcherGoblin\_32, Gordon\_33, Ingrid\_33, Inked\_35, Issa\_33, Jazzy4900\_31, Leathea\_33, Lewando\_36, Linda\_30, Loretta\_33, Michelle\_30, MiniBagel\_33, MrAaronian\_30, Nightmare\_34, Niktson\_33, Nivinsha\_33, Paella\_47, ProfFrink\_31, Qui\_47, Raunak\_31, Renaldo\_38, Salk\_30, ScienceWizSam\_35, Shiba\_30, Sloopyjoe\_30, Sporto\_31, StarLord\_30, Stayer\_30, Sunny4976\_30, Synopsis\_32, Tatanka\_33, Teacup\_33, Tenno\_34, Trustiboi\_34, Uzumaki\_33, Zeina\_33,

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

- 

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

- Arcadia\_27, BenitoAntonio\_27, Benllo\_25, Camille\_29, Caterpillar\_31, Cheesy\_27, Circum\_27, Damascus\_29, DizzyRudy\_29, Dynamite\_26, Elsa\_27, Giantsbane\_34, GoCrazy\_25, Hankly\_25, Heisenberger\_26, JEGGS\_26, Kardesai\_25, KeaneyLin\_25, LilHuddy\_34, Makai\_33, MediumFry\_31, Mooshroom\_25, Mudcat\_26, NapoleonB\_26, Nason\_27, Phaby\_34, Shepard\_34, Tokki\_34, Tribby\_27, Truckee\_32,

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

Start 8:

- Found in 21 of 81 ( 25.9% ) of genes in pham
- Manual Annotations of this start: 19 of 64
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arcadia\_27 (AM), BenitoAntonio\_27 (AM), Benllo\_25 (AM), Camille\_29 (EL), Cheesy\_27 (AM), Circum\_27 (AM), Damascus\_29 (EL), DizzyRudy\_29 (EL), Dynamite\_26 (AM), Elsa\_27 (AM), GoCrazy\_25 (AM), Hankly\_25 (AM), Heisenberger\_26 (AM), JEGGS\_26 (AM), Kardesai\_25 (AM), KeaneyLin\_25 (AM), Mooshroom\_25 (AM), Mudcat\_26 (AM), NapoleonB\_26 (AM), Nason\_27 (AM), Tribby\_27 (AM),

Start 10:

- Found in 2 of 81 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 2 of 64
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LilHuddy\_34 (AU2), Shepard\_34 (AU2),

Start 11:

- Found in 7 of 81 ( 8.6% ) of genes in pham
- Manual Annotations of this start: 6 of 64
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Caterpillar\_31 (AU4), Giantsbane\_34 (AU2), Makai\_33 (AU5), MediumFry\_31 (AU4), Phaby\_34 (AU2), Tokki\_34 (AU2), Truckee\_32 (AU5),

Start 12:

- Found in 51 of 81 ( 63.0% ) of genes in pham
- Manual Annotations of this start: 37 of 64
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AreFloNak\_33 (AU1), Argan\_32 (AU6), Arzan\_29 (FI), Breylor17\_34 (AU1), BronxBay\_30 (AW), Brunswick\_33 (AU1), CapnMurica\_33 (AU1), CastorTray\_35 (AU1), Darby\_33 (AU1), DevitoJr\_33 (AU1), Djungelskog\_30 (AW), DoctorPepper\_30 (AW), Egad\_30 (AW), ElephantMan\_33 (AU1), Elver\_46 (FK), GantcherGoblin\_32 (AU6), Gordon\_33 (AU1), Ingrid\_33 (AU3), Inked\_35 (AU), Issa\_33 (AU1), Jazzy4900\_31 (FI), Leathea\_33 (AU6), Lewando\_36 (AU6), Linda\_30 (AW), Loretta\_33 (AU3), Michelle\_30 (AW), MiniBagel\_33 (AU1), MrAaronian\_30 (AW), Nightmare\_34 (AU1), Niktson\_33 (AU1), Nivinsha\_33 (AU1), Paella\_47 (FK), ProfFrink\_31 (AW), Qui\_47 (FK), Raunak\_31 (AW), Renaldo\_38 (AU6), Salk\_30 (AW), ScienceWizSam\_35 (AU1), Shiba\_30 (AW), Sloopyjoe\_30 (AW), Sporto\_31 (AW), StarLord\_30 (AW), Stayer\_30 (AW), Sunny4976\_30 (FI), Synopsis\_32 (AU1), Tatanka\_33 (AU1), Teacup\_33 (AU1), Tenno\_34 (AU1), Trustiboi\_34 (AU1), Uzumaki\_33 (AU6), Zeina\_33 (AU6),

### Summary by clusters:

There are 12 clusters represented in this pham: EL, AM, AU1, AU3, AU2, AU5, AU4, AW, AU6, FI, FK, AU,

Info for manual annotations of cluster AM:

- Start number 8 was manually annotated 16 times for cluster AM.

Info for manual annotations of cluster AU:

- Start number 12 was manually annotated 1 time for cluster AU.

Info for manual annotations of cluster AU1:

- Start number 12 was manually annotated 15 times for cluster AU1.

Info for manual annotations of cluster AU2:

- Start number 10 was manually annotated 2 times for cluster AU2.
- Start number 11 was manually annotated 2 times for cluster AU2.

Info for manual annotations of cluster AU3:

- Start number 12 was manually annotated 2 times for cluster AU3.

Info for manual annotations of cluster AU4:

- Start number 11 was manually annotated 2 times for cluster AU4.

Info for manual annotations of cluster AU5:

- Start number 11 was manually annotated 2 times for cluster AU5.

Info for manual annotations of cluster AU6:

- Start number 12 was manually annotated 5 times for cluster AU6.

Info for manual annotations of cluster AW:

- Start number 12 was manually annotated 12 times for cluster AW.

Info for manual annotations of cluster EL:

- Start number 8 was manually annotated 3 times for cluster EL.

Info for manual annotations of cluster FK:

- Start number 12 was manually annotated 2 times for cluster FK.

### ***Gene Information:***

Gene: Arcadia\_27 Start: 24836, Stop: 25252, Start Num: 8

Candidate Starts for Arcadia\_27:

(Start: 8 @24836 has 19 MA's), (19, 24914), (27, 24977), (31, 25025), (50, 25181),

Gene: AreFloNak\_33 Start: 28429, Stop: 28821, Start Num: 12

Candidate Starts for AreFloNak\_33:

(Start: 12 @28429 has 37 MA's), (15, 28459), (24, 28531), (25, 28543), (29, 28582), (39, 28633), (49, 28747),

Gene: Argan\_32 Start: 26978, Stop: 27364, Start Num: 12

Candidate Starts for Argan\_32:

(Start: 12 @26978 has 37 MA's), (14, 27002), (23, 27077), (28, 27116), (29, 27134), (40, 27197), (46, 27248), (53, 27329),

Gene: Arzan\_29 Start: 25708, Stop: 26094, Start Num: 12

Candidate Starts for Arzan\_29:

(9, 25699), (Start: 12 @25708 has 37 MA's), (17, 25747), (21, 25783), (33, 25888), (51, 26047),

Gene: BenitoAntonio\_27 Start: 24452, Stop: 24868, Start Num: 8

Candidate Starts for BenitoAntonio\_27:

(Start: 8 @24452 has 19 MA's), (19, 24530), (27, 24593), (31, 24641), (50, 24797),

Gene: Benllo\_25 Start: 24736, Stop: 25152, Start Num: 8

Candidate Starts for Benllo\_25:

(Start: 8 @24736 has 19 MA's), (19, 24814), (27, 24877), (31, 24925), (50, 25081),

Gene: Breylor17\_34 Start: 29035, Stop: 29427, Start Num: 12

Candidate Starts for Breylor17\_34:

(Start: 12 @29035 has 37 MA's), (15, 29065), (25, 29149), (29, 29188), (39, 29239), (49, 29353),

Gene: BronxBay\_30 Start: 25582, Stop: 25971, Start Num: 12

Candidate Starts for BronxBay\_30:

(Start: 12 @25582 has 37 MA's), (24, 25693), (29, 25744), (49, 25900),

Gene: Brunswick\_33 Start: 28500, Stop: 28892, Start Num: 12

Candidate Starts for Brunswick\_33:

(Start: 12 @28500 has 37 MA's), (24, 28602), (25, 28614), (29, 28653), (39, 28704), (49, 28818),

Gene: Camille\_29 Start: 23493, Stop: 23894, Start Num: 8

Candidate Starts for Camille\_29:

(6, 23451), (Start: 8 @23493 has 19 MA's), (16, 23547), (18, 23571), (29, 23664), (48, 23832), (52, 23862), (54, 23874),

Gene: CapnMurica\_33 Start: 29586, Stop: 29975, Start Num: 12

Candidate Starts for CapnMurica\_33:

(Start: 12 @29586 has 37 MA's), (15, 29616), (26, 29703), (30, 29751), (33, 29766), (44, 29829), (49, 29901),

Gene: CastorTray\_35 Start: 28893, Stop: 29285, Start Num: 12

Candidate Starts for CastorTray\_35:

(Start: 12 @28893 has 37 MA's), (15, 28923), (24, 28995), (25, 29007), (29, 29046), (39, 29097), (49, 29211),

Gene: Caterpillar\_31 Start: 27666, Stop: 28076, Start Num: 11

Candidate Starts for Caterpillar\_31:

(Start: 11 @27666 has 6 MA's), (21, 27753), (30, 27843), (39, 27882), (45, 27951), (47, 27999),

Gene: Cheesy\_27 Start: 24551, Stop: 24967, Start Num: 8

Candidate Starts for Cheesy\_27:

(Start: 8 @24551 has 19 MA's), (19, 24629), (27, 24692), (31, 24740), (50, 24896),

Gene: Circum\_27 Start: 24558, Stop: 24974, Start Num: 8

Candidate Starts for Circum\_27:

(Start: 8 @24558 has 19 MA's), (19, 24636), (27, 24699), (31, 24747), (50, 24903),

Gene: Damascus\_29 Start: 24399, Stop: 24800, Start Num: 8

Candidate Starts for Damascus\_29:

(Start: 8 @24399 has 19 MA's), (17, 24456), (29, 24570), (48, 24738), (52, 24768),

Gene: Darby\_33 Start: 28339, Stop: 28731, Start Num: 12

Candidate Starts for Darby\_33:

(Start: 12 @28339 has 37 MA's), (15, 28369), (24, 28441), (25, 28453), (29, 28492), (39, 28543), (49, 28657),

Gene: DevitoJr\_33 Start: 28510, Stop: 28902, Start Num: 12

Candidate Starts for DevitoJr\_33:

(Start: 12 @28510 has 37 MA's), (15, 28540), (24, 28612), (25, 28624), (29, 28663), (39, 28714), (49, 28828),

Gene: DizzyRudy\_29 Start: 24315, Stop: 24716, Start Num: 8

Candidate Starts for DizzyRudy\_29:

(1, 24105), (2, 24132), (3, 24141), (4, 24201), (5, 24240), (7, 24279), (Start: 8 @24315 has 19 MA's), (17, 24372), (29, 24486), (48, 24654), (52, 24684),

Gene: Djungelskog\_30 Start: 25582, Stop: 25971, Start Num: 12

Candidate Starts for Djungelskog\_30:

(Start: 12 @25582 has 37 MA's), (24, 25693), (29, 25744), (49, 25900),

Gene: DoctorPepper\_30 Start: 25582, Stop: 25971, Start Num: 12

Candidate Starts for DoctorPepper\_30:

(Start: 12 @25582 has 37 MA's), (20, 25663), (24, 25693), (29, 25744), (35, 25783), (49, 25900),

Gene: Dynamite\_26 Start: 24359, Stop: 24775, Start Num: 8

Candidate Starts for Dynamite\_26:

(Start: 8 @24359 has 19 MA's), (19, 24437), (27, 24500), (31, 24548), (38, 24578), (50, 24704),

Gene: Egad\_30 Start: 25583, Stop: 25972, Start Num: 12

Candidate Starts for Egad\_30:

(Start: 12 @25583 has 37 MA's), (24, 25694), (29, 25745), (49, 25901),

Gene: ElephantMan\_33 Start: 29040, Stop: 29432, Start Num: 12

Candidate Starts for ElephantMan\_33:

(Start: 12 @29040 has 37 MA's), (24, 29142), (25, 29154), (29, 29193), (39, 29244), (49, 29358),

Gene: Elsa\_27 Start: 24836, Stop: 25252, Start Num: 8

Candidate Starts for Elsa\_27:

(Start: 8 @24836 has 19 MA's), (19, 24914), (27, 24977), (31, 25025), (50, 25181),

Gene: Elver\_46 Start: 37243, Stop: 37635, Start Num: 12

Candidate Starts for Elver\_46:

(Start: 12 @37243 has 37 MA's), (22, 37321), (32, 37426), (46, 37513), (49, 37555),

Gene: GantcherGoblin\_32 Start: 27017, Stop: 27403, Start Num: 12

Candidate Starts for GantcherGoblin\_32:

(Start: 12 @27017 has 37 MA's), (14, 27041), (28, 27155), (29, 27173), (40, 27236), (46, 27287), (53, 27368),

Gene: Giantsbane\_34 Start: 27528, Stop: 27932, Start Num: 11

Candidate Starts for Giantsbane\_34:

(Start: 11 @27528 has 6 MA's), (13, 27552), (39, 27744), (46, 27816),

Gene: GoCrazy\_25 Start: 24359, Stop: 24775, Start Num: 8

Candidate Starts for GoCrazy\_25:

(Start: 8 @24359 has 19 MA's), (19, 24437), (27, 24500), (31, 24548), (50, 24704),

Gene: Gordon\_33 Start: 29615, Stop: 30010, Start Num: 12

Candidate Starts for Gordon\_33:

(Start: 12 @29615 has 37 MA's), (15, 29645), (24, 29717), (25, 29729), (29, 29768), (35, 29807), (39, 29819), (49, 29933),

Gene: Hankly\_25 Start: 23581, Stop: 23997, Start Num: 8

Candidate Starts for Hankly\_25:

(Start: 8 @23581 has 19 MA's), (19, 23659), (27, 23722), (31, 23770), (50, 23926),

Gene: Heisenberger\_26 Start: 24229, Stop: 24645, Start Num: 8

Candidate Starts for Heisenberger\_26:

(Start: 8 @24229 has 19 MA's), (19, 24307), (27, 24370), (31, 24418), (50, 24574),

Gene: Ingrid\_33 Start: 28232, Stop: 28624, Start Num: 12

Candidate Starts for Ingrid\_33:

(Start: 12 @28232 has 37 MA's), (21, 28307), (33, 28412),

Gene: Inked\_35 Start: 29245, Stop: 29646, Start Num: 12

Candidate Starts for Inked\_35:

(Start: 12 @29245 has 37 MA's), (25, 29359), (33, 29425), (49, 29572),

Gene: Issa\_33 Start: 28319, Stop: 28711, Start Num: 12

Candidate Starts for Issa\_33:

(Start: 12 @28319 has 37 MA's), (15, 28349), (24, 28421), (25, 28433), (29, 28472), (39, 28523), (49, 28637),

Gene: JEGGS\_26 Start: 24283, Stop: 24699, Start Num: 8

Candidate Starts for JEGGS\_26:

(Start: 8 @24283 has 19 MA's), (19, 24361), (27, 24424), (31, 24472), (50, 24628),

Gene: Jazzy4900\_31 Start: 26962, Stop: 27348, Start Num: 12

Candidate Starts for Jazzy4900\_31:

(Start: 12 @26962 has 37 MA's), (18, 27022), (41, 27193), (51, 27301),

Gene: Kardesai\_25 Start: 23962, Stop: 24378, Start Num: 8

Candidate Starts for Kardesai\_25:

(Start: 8 @23962 has 19 MA's), (19, 24040), (27, 24103), (31, 24151), (50, 24307),

Gene: KeaneyLin\_25 Start: 24359, Stop: 24775, Start Num: 8

Candidate Starts for KeaneyLin\_25:

(Start: 8 @24359 has 19 MA's), (19, 24437), (27, 24500), (31, 24548), (50, 24704),

Gene: Leathea\_33 Start: 26912, Stop: 27271, Start Num: 12

Candidate Starts for Leathea\_33:

(Start: 12 @26912 has 37 MA's), (24, 27008), (33, 27086), (36, 27101), (46, 27170), (53, 27251),

Gene: Lewando\_36 Start: 28935, Stop: 29321, Start Num: 12

Candidate Starts for Lewando\_36:

(Start: 12 @28935 has 37 MA's), (21, 29013), (29, 29091), (34, 29127), (37, 29136), (46, 29205), (53, 29286),

Gene: LilHuddy\_34 Start: 28688, Stop: 29092, Start Num: 10

Candidate Starts for LilHuddy\_34:

(Start: 10 @28688 has 2 MA's), (29, 28853), (39, 28904), (46, 28976),

Gene: Linda\_30 Start: 25582, Stop: 25971, Start Num: 12

Candidate Starts for Linda\_30:

(Start: 12 @25582 has 37 MA's), (24, 25693), (29, 25744), (49, 25900),

Gene: Loretta\_33 Start: 28232, Stop: 28624, Start Num: 12

Candidate Starts for Loretta\_33:

(Start: 12 @28232 has 37 MA's), (21, 28307), (33, 28412),

Gene: Makai\_33 Start: 28464, Stop: 28874, Start Num: 11

Candidate Starts for Makai\_33:

(Start: 11 @28464 has 6 MA's), (24, 28578), (29, 28629), (31, 28650), (33, 28656), (39, 28680), (46, 28758),

Gene: MediumFry\_31 Start: 27668, Stop: 28078, Start Num: 11

Candidate Starts for MediumFry\_31:

(Start: 11 @27668 has 6 MA's), (21, 27755), (30, 27845), (39, 27884), (45, 27953), (47, 28001),



Gene: Michelle\_30 Start: 25582, Stop: 25971, Start Num: 12  
Candidate Starts for Michelle\_30:  
(Start: 12 @25582 has 37 MA's), (24, 25693), (29, 25744), (49, 25900),

Gene: MiniBagel\_33 Start: 29565, Stop: 29954, Start Num: 12  
Candidate Starts for MiniBagel\_33:  
(Start: 12 @29565 has 37 MA's), (15, 29595), (25, 29679), (26, 29682), (30, 29730), (33, 29745), (44, 29808), (49, 29880),

Gene: Mooshroom\_25 Start: 23962, Stop: 24378, Start Num: 8  
Candidate Starts for Mooshroom\_25:  
(Start: 8 @23962 has 19 MA's), (19, 24040), (27, 24103), (31, 24151), (50, 24307),

Gene: MrAaronian\_30 Start: 25582, Stop: 25971, Start Num: 12  
Candidate Starts for MrAaronian\_30:  
(Start: 12 @25582 has 37 MA's), (24, 25693), (29, 25744), (49, 25900),

Gene: Mudcat\_26 Start: 26260, Stop: 26676, Start Num: 8  
Candidate Starts for Mudcat\_26:  
(Start: 8 @26260 has 19 MA's), (19, 26338), (27, 26401), (31, 26449), (50, 26605),

Gene: NapoleonB\_26 Start: 24359, Stop: 24775, Start Num: 8  
Candidate Starts for NapoleonB\_26:  
(Start: 8 @24359 has 19 MA's), (19, 24437), (27, 24500), (31, 24548), (38, 24578), (50, 24704),

Gene: Nason\_27 Start: 24836, Stop: 25252, Start Num: 8  
Candidate Starts for Nason\_27:  
(Start: 8 @24836 has 19 MA's), (19, 24914), (27, 24977), (31, 25025), (50, 25181),

Gene: Nightmare\_34 Start: 28878, Stop: 29270, Start Num: 12  
Candidate Starts for Nightmare\_34:  
(Start: 12 @28878 has 37 MA's), (15, 28908), (24, 28980), (25, 28992), (39, 29082), (49, 29196),

Gene: Niktson\_33 Start: 29040, Stop: 29432, Start Num: 12  
Candidate Starts for Niktson\_33:  
(Start: 12 @29040 has 37 MA's), (24, 29142), (25, 29154), (29, 29193), (39, 29244), (49, 29358),

Gene: Nivinsha\_33 Start: 28429, Stop: 28821, Start Num: 12  
Candidate Starts for Nivinsha\_33:  
(Start: 12 @28429 has 37 MA's), (15, 28459), (24, 28531), (25, 28543), (29, 28582), (39, 28633), (49, 28747),

Gene: Paella\_47 Start: 37245, Stop: 37637, Start Num: 12  
Candidate Starts for Paella\_47:  
(Start: 12 @37245 has 37 MA's), (22, 37323), (32, 37428), (46, 37515), (49, 37557),

Gene: Phaby\_34 Start: 28643, Stop: 29047, Start Num: 11  
Candidate Starts for Phaby\_34:  
(Start: 11 @28643 has 6 MA's), (29, 28808), (33, 28835), (39, 28859), (46, 28931),

Gene: ProfFrink\_31 Start: 25582, Stop: 25971, Start Num: 12  
Candidate Starts for ProfFrink\_31:

(Start: 12 @25582 has 37 MA's), (24, 25693), (29, 25744), (49, 25900),

Gene: Qui\_47 Start: 37245, Stop: 37637, Start Num: 12

Candidate Starts for Qui\_47:

(Start: 12 @37245 has 37 MA's), (22, 37323), (32, 37428), (46, 37515), (49, 37557),

Gene: Raunak\_31 Start: 25582, Stop: 25971, Start Num: 12

Candidate Starts for Raunak\_31:

(Start: 12 @25582 has 37 MA's), (24, 25693), (29, 25744), (49, 25900),

Gene: Renaldo\_38 Start: 28944, Stop: 29336, Start Num: 12

Candidate Starts for Renaldo\_38:

(Start: 12 @28944 has 37 MA's), (14, 28968), (21, 29022), (23, 29043), (29, 29100), (40, 29163), (46, 29220), (53, 29301),

Gene: Salk\_30 Start: 25582, Stop: 25971, Start Num: 12

Candidate Starts for Salk\_30:

(Start: 12 @25582 has 37 MA's), (24, 25693), (29, 25744), (49, 25900),

Gene: ScienceWizSam\_35 Start: 28830, Stop: 29222, Start Num: 12

Candidate Starts for ScienceWizSam\_35:

(Start: 12 @28830 has 37 MA's), (15, 28860), (24, 28932), (25, 28944), (29, 28983), (39, 29034), (49, 29148),

Gene: Shepard\_34 Start: 28685, Stop: 29089, Start Num: 10

Candidate Starts for Shepard\_34:

(Start: 10 @28685 has 2 MA's), (29, 28850), (39, 28901), (46, 28973),

Gene: Shiba\_30 Start: 25582, Stop: 25971, Start Num: 12

Candidate Starts for Shiba\_30:

(Start: 12 @25582 has 37 MA's), (24, 25693), (29, 25744), (49, 25900),

Gene: Sloopyjoe\_30 Start: 25583, Stop: 25972, Start Num: 12

Candidate Starts for Sloopyjoe\_30:

(Start: 12 @25583 has 37 MA's), (24, 25694), (29, 25745), (49, 25901),

Gene: Sporto\_31 Start: 26752, Stop: 27138, Start Num: 12

Candidate Starts for Sporto\_31:

(Start: 12 @26752 has 37 MA's), (29, 26914), (31, 26935), (42, 26995), (43, 26998), (49, 27070),

Gene: StarLord\_30 Start: 25583, Stop: 25972, Start Num: 12

Candidate Starts for StarLord\_30:

(Start: 12 @25583 has 37 MA's), (24, 25694), (29, 25745), (49, 25901),

Gene: Stayer\_30 Start: 25582, Stop: 25971, Start Num: 12

Candidate Starts for Stayer\_30:

(Start: 12 @25582 has 37 MA's), (24, 25693), (29, 25744), (49, 25900),

Gene: Sunny4976\_30 Start: 26962, Stop: 27348, Start Num: 12

Candidate Starts for Sunny4976\_30:

(Start: 12 @26962 has 37 MA's), (18, 27022), (41, 27193), (51, 27301),

Gene: Synopsis\_32 Start: 28493, Stop: 28885, Start Num: 12

Candidate Starts for Synopsis\_32:

(Start: 12 @28493 has 37 MA's), (15, 28523), (25, 28607), (29, 28646), (39, 28697), (49, 28811),

Gene: Tatanka\_33 Start: 28977, Stop: 29369, Start Num: 12

Candidate Starts for Tatanka\_33:

(Start: 12 @28977 has 37 MA's), (15, 29007), (24, 29079), (25, 29091), (29, 29130), (39, 29181), (49, 29295),

Gene: Teacup\_33 Start: 28347, Stop: 28739, Start Num: 12

Candidate Starts for Teacup\_33:

(Start: 12 @28347 has 37 MA's), (15, 28377), (24, 28449), (25, 28461), (29, 28500), (39, 28551), (49, 28665),

Gene: Tenno\_34 Start: 29574, Stop: 29963, Start Num: 12

Candidate Starts for Tenno\_34:

(Start: 12 @29574 has 37 MA's), (15, 29604), (26, 29691), (30, 29739), (33, 29754), (44, 29817), (49, 29889),

Gene: Tokki\_34 Start: 28659, Stop: 29063, Start Num: 11

Candidate Starts for Tokki\_34:

(Start: 11 @28659 has 6 MA's), (17, 28710), (39, 28875), (46, 28947),

Gene: Tribby\_27 Start: 24551, Stop: 24967, Start Num: 8

Candidate Starts for Tribby\_27:

(Start: 8 @24551 has 19 MA's), (19, 24629), (27, 24692), (31, 24740), (50, 24896),

Gene: Truckee\_32 Start: 28509, Stop: 28919, Start Num: 11

Candidate Starts for Truckee\_32:

(Start: 11 @28509 has 6 MA's), (24, 28623), (29, 28674), (31, 28695), (33, 28701), (39, 28725), (46, 28803),

Gene: Trustiboi\_34 Start: 29046, Stop: 29438, Start Num: 12

Candidate Starts for Trustiboi\_34:

(Start: 12 @29046 has 37 MA's), (15, 29076), (24, 29148), (25, 29160), (29, 29199), (39, 29250), (49, 29364),

Gene: Uzumaki\_33 Start: 27836, Stop: 28222, Start Num: 12

Candidate Starts for Uzumaki\_33:

(Start: 12 @27836 has 37 MA's), (14, 27860), (29, 27992), (30, 28004), (40, 28055), (46, 28106), (53, 28187),

Gene: Zeina\_33 Start: 27217, Stop: 27603, Start Num: 12

Candidate Starts for Zeina\_33:

(Start: 12 @27217 has 37 MA's), (14, 27241), (29, 27373), (46, 27487), (53, 27568),