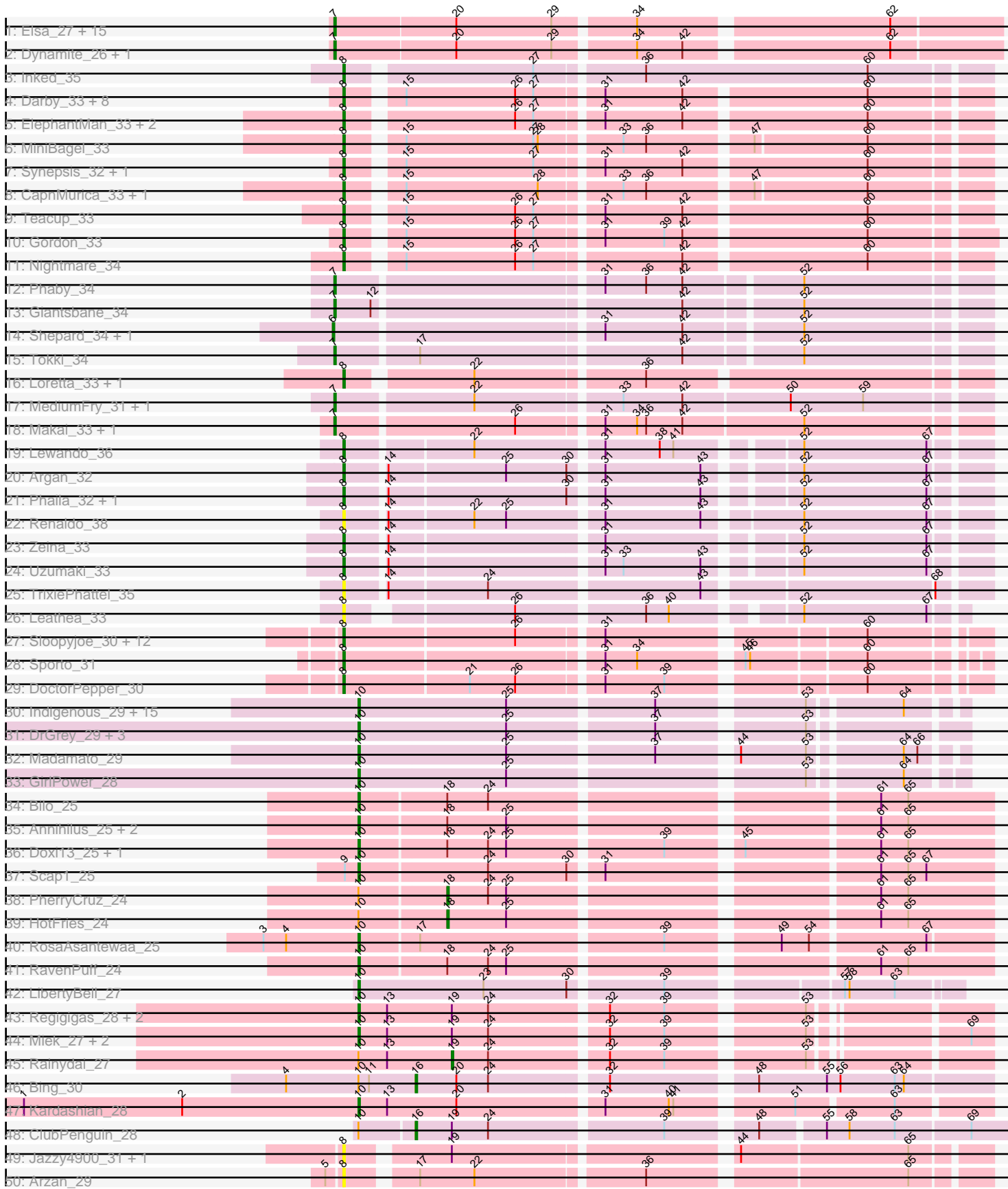
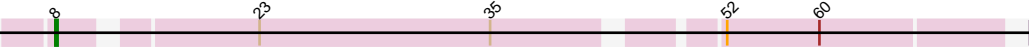


Pham 193842



51: E1ver\_46 + 2



A series of horizontal lines forming a ruled page for writing. The lines are evenly spaced and extend across the width of the page, starting from the top margin and ending at the bottom margin. The left side of the page has a dashed vertical line, suggesting it might be part of a notebook or a document with a binding.

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 193842 Report

This analysis was run 11/02/24 on database version 579.

Pham number 193842 has 124 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Elsa\_27, Mooshroom\_26, Circum\_27, KeaneyLin\_25, GoCrazy\_25, BenitoAntonio\_27, Kardesai\_25, Hankly\_25, Arcadia\_27, Tribby\_27, Nason\_27, Cheesy\_27, Mudcat\_26, JEGGS\_26, Benllo\_25, Heisenberger\_26
- Track 2 : Dynamite\_26, NapoleonB\_26
- Track 3 : Inked\_35
- Track 4 : Darby\_33, Nivinsha\_33, AreFloNak\_33, CastorTray\_35, ScienceWizSam\_35, Issa\_33, Trustiboi\_34, DevitoJr\_33, Tatanka\_33
- Track 5 : ElephantMan\_33, Brunswick\_33, Niktson\_33
- Track 6 : MiniBagel\_33
- Track 7 : Synopsis\_32, Breylor17\_34
- Track 8 : CapnMurica\_33, Tenno\_34
- Track 9 : Teacup\_33
- Track 10 : Gordon\_33
- Track 11 : Nightmare\_34
- Track 12 : Phaby\_34
- Track 13 : Giantsbane\_34
- Track 14 : Shepard\_34, LilHuddy\_34
- Track 15 : Tokki\_34
- Track 16 : Loretta\_33, Ingrid\_33
- Track 17 : MediumFry\_31, Caterpillar\_31
- Track 18 : Makai\_33, Truckee\_32
- Track 19 : Lewando\_36
- Track 20 : Argan\_32
- Track 21 : Phaila\_32, GantcherGoblin\_32
- Track 22 : Renaldo\_38
- Track 23 : Zeina\_33
- Track 24 : Uzumaki\_33
- Track 25 : TrixiePhattel\_35
- Track 26 : Leathea\_33
- Track 27 : Sloopyjoe\_30, StarLord\_30, Shiba\_30, Djungelskog\_30, Salk\_30, Egad\_30, Stayer\_30, BronxBay\_30, Raunak\_31, Michelle\_30, MrAaronian\_30, ProfFrink\_30, Linda\_30
- Track 28 : Sporto\_31
- Track 29 : DoctorPepper\_30
- Track 30 : Indigenous\_29, Maya\_29, Meibysrarus\_29, Jaylociraptor\_29, Hoshi\_29, FidgetOrca\_29, TaidaOne\_29, TonyStarch\_29, IceWarrior\_29, CherryBlossom\_29, Rima\_29, Esketit\_29, Spectropatronm\_29, OlympicHelado\_29, TieDye\_28, Namu\_29

- Track 31 : DrGrey\_29, Popy\_29, Soshi\_29, FrodoSwaggins\_29
- Track 32 : Madamato\_29
- Track 33 : GirlPower\_28
- Track 34 : Bilo\_25
- Track 35 : Annihilus\_25, SheRa\_25, Moozy\_25
- Track 36 : Doxi13\_25, GoblinVoyage\_25
- Track 37 : Scap1\_25
- Track 38 : PherryCruz\_24
- Track 39 : HotFries\_24
- Track 40 : RosaAsantewaa\_25
- Track 41 : RavenPuff\_24
- Track 42 : LibertyBell\_27
- Track 43 : Regigigas\_28, Thiqqums\_27, CricKo\_27
- Track 44 : Miek\_27, SendItCS\_26, FromIndy\_28
- Track 45 : Rainydai\_27
- Track 46 : Bing\_30
- Track 47 : Kardashian\_28
- Track 48 : ClubPenguin\_28
- Track 49 : Jazzy4900\_31, Sunny4976\_30
- Track 50 : Arzan\_29
- Track 51 : 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 8, it was called in 41 of the 109 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, Phaila\_32, ProfFrink\_30, 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, TrixiePhattel\_35, 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:

- Annihilus\_25, Arcadia\_27, BenitoAntonio\_27, Benllo\_25, Bilo\_25, Bing\_30, Caterpillar\_31, Cheesy\_27, CherryBlossom\_29, Circum\_27, ClubPenguin\_28, CricKo\_27, Doxi13\_25, DrGrey\_29, Dynamite\_26, Elsa\_27, Esketit\_29, FidgetOrca\_29, FrodoSwaggins\_29, FromIndy\_28, Giantsbane\_34, GirlPower\_28, GoCrazy\_25, GoblinVoyage\_25, Hankly\_25, Heisenberger\_26, Hoshi\_29, HotFries\_24, IceWarrior\_29, Indigenous\_29, JEGGS\_26, Jaylociraptor\_29, Kardashian\_28, Kardesai\_25, KeaneyLin\_25, LibertyBell\_27, LilHuddy\_34, Madamato\_29, Makai\_33, Maya\_29, MediumFry\_31, Meibysrarus\_29, Miek\_27,

Mooshroom\_26, Moozy\_25, Mudcat\_26, Namo\_29, NapoleonB\_26, Nason\_27, OlympicHelado\_29, Phaby\_34, PherryCruz\_24, Popy\_29, Rainydai\_27, RavenPuff\_24, Regigigas\_28, Rima\_29, RosaAsantewaa\_25, Scap1\_25, SendItCS\_26, SheRa\_25, Shepard\_34, Soshi\_29, SpectroPatronm\_29, TaidaOne\_29, Thiqqums\_27, TieDye\_28, Tokki\_34, TonyStarch\_29, Tribby\_27, Truckee\_32,

### Summary by start number:

#### Start 6:

- Found in 2 of 124 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LilHuddy\_34 (AU2), Shepard\_34 (AU2),

#### Start 7:

- Found in 25 of 124 ( 20.2% ) of genes in pham
- Manual Annotations of this start: 24 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arcadia\_27 (AM), BenitoAntonio\_27 (AM), Benllo\_25 (AM), Caterpillar\_31 (AU4), Cheesy\_27 (AM), Circum\_27 (AM), Dynamite\_26 (AM), Elsa\_27 (AM), Giantsbane\_34 (AU2), GoCrazy\_25 (AM), Hankly\_25 (AM), Heisenberger\_26 (AM), JEGGS\_26 (AM), Kardesai\_25 (AM), KeaneyLin\_25 (AM), Makai\_33 (AU5), MediumFry\_31 (AU4), Mooshroom\_26 (AM), Mudcat\_26 (AM), NapoleonB\_26 (AM), Nason\_27 (AM), Phaby\_34 (AU2), Tokki\_34 (AU2), Tribby\_27 (AM), Truckee\_32 (AU5),

#### Start 8:

- Found in 53 of 124 ( 42.7% ) of genes in pham
- Manual Annotations of this start: 41 of 109
- 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), Phaila\_32 (AU6), ProfFrink\_30 (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), TrixiePhattel\_35 (AU6), Trustiboi\_34 (AU1), Uzumaki\_33 (AU6), Zeina\_33 (AU6),

#### Start 10:

- Found in 44 of 124 ( 35.5% ) of genes in pham
- Manual Annotations of this start: 37 of 109
- Called 88.6% of time when present
- Phage (with cluster) where this start called: Annihilus\_25 (BI2), Bilo\_25 (BI2), CherryBlossom\_29 (BI1), CricKo\_27 (BI4), Doxi13\_25 (BI2), DrGrey\_29 (BI1), Esketit\_29 (BI1), FidgetOrca\_29 (BI1), FrodoSwaggins\_29 (BI1), FromIndy\_28 (BI4),

GirlPower\_28 (BI1), GoblinVoyage\_25 (BI2), Hoshi\_29 (BI1), IceWarrior\_29 (BI1), Indigenous\_29 (BI1), Jaylociraptor\_29 (BI1), Kardashian\_28 (BI6), LibertyBell\_27 (BI3), Madamato\_29 (BI1), Maya\_29 (BI1), Meibysrarus\_29 (BI1), Miek\_27 (BI4), Moozy\_25 (BI2), Namu\_29 (BI1), OlympicHelado\_29 (BI1), Popy\_29 (BI1), RavenPuff\_24 (BI2), Regigigas\_28 (BI4), Rima\_29 (BI1), RosaAsantewaa\_25 (BI2), Scap1\_25 (BI2), SendItCS\_26 (BI4), SheRa\_25 (BI2), Soshi\_29 (BI1), Spectropatronm\_29 (BI1), TaidaOne\_29 (BI1), Thiqqums\_27 (BI4), TieDye\_28 (BI1), TonyStarch\_29 (BI1),

Start 16:

- Found in 2 of 124 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bing\_30 (BI5), ClubPenguin\_28 (BI7),

Start 18:

- Found in 9 of 124 ( 7.3% ) of genes in pham
- Manual Annotations of this start: 2 of 109
- Called 22.2% of time when present
- Phage (with cluster) where this start called: HotFries\_24 (BI2), PherryCruz\_24 (BI2),

Start 19:

- Found in 10 of 124 ( 8.1% ) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Rainydai\_27 (BI4),

### **Summary by clusters:**

There are 18 clusters represented in this pham: BI7, AU, FK, AM, AU1, AU3, AU2, AU5, AU4, AW, AU6, BI6, FI, BI4, BI5, BI2, BI3, BI1,

Info for manual annotations of cluster AM:

- Start number 7 was manually annotated 17 times for cluster AM.

Info for manual annotations of cluster AU:

- Start number 8 was manually annotated 1 time for cluster AU.

Info for manual annotations of cluster AU1:

- Start number 8 was manually annotated 17 times for cluster AU1.

Info for manual annotations of cluster AU2:

- Start number 6 was manually annotated 2 times for cluster AU2.
- Start number 7 was manually annotated 3 times for cluster AU2.

Info for manual annotations of cluster AU3:

- Start number 8 was manually annotated 2 times for cluster AU3.

Info for manual annotations of cluster AU4:

- Start number 7 was manually annotated 2 times for cluster AU4.

Info for manual annotations of cluster AU5:

- Start number 7 was manually annotated 2 times for cluster AU5.

Info for manual annotations of cluster AU6:

- Start number 8 was manually annotated 5 times for cluster AU6.

Info for manual annotations of cluster AW:

- Start number 8 was manually annotated 14 times for cluster AW.

Info for manual annotations of cluster BI1:

- Start number 10 was manually annotated 22 times for cluster BI1.

Info for manual annotations of cluster BI2:

- Start number 10 was manually annotated 9 times for cluster BI2.
- Start number 18 was manually annotated 2 times for cluster BI2.

Info for manual annotations of cluster BI3:

- Start number 10 was manually annotated 1 time for cluster BI3.

Info for manual annotations of cluster BI4:

- Start number 10 was manually annotated 4 times for cluster BI4.
- Start number 19 was manually annotated 1 time for cluster BI4.

Info for manual annotations of cluster BI5:

- Start number 16 was manually annotated 1 time for cluster BI5.

Info for manual annotations of cluster BI6:

- Start number 10 was manually annotated 1 time for cluster BI6.

Info for manual annotations of cluster BI7:

- Start number 16 was manually annotated 1 time for cluster BI7.

Info for manual annotations of cluster FK:

- Start number 8 was manually annotated 2 times for cluster FK.

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

Gene: Annihilus\_25 Start: 22331, Stop: 22720, Start Num: 10

Candidate Starts for Annihilus\_25:

(Start: 10 @22331 has 37 MA's), (Start: 18 @22385 has 2 MA's), (25, 22424), (61, 22646), (65, 22664),

Gene: Arcadia\_27 Start: 24836, Stop: 25252, Start Num: 7

Candidate Starts for Arcadia\_27:

(Start: 7 @24836 has 24 MA's), (20, 24914), (29, 24977), (34, 25025), (62, 25181),

Gene: AreFloNak\_33 Start: 28429, Stop: 28821, Start Num: 8

Candidate Starts for AreFloNak\_33:

(Start: 8 @28429 has 41 MA's), (15, 28459), (26, 28531), (27, 28543), (31, 28582), (42, 28633), (60, 28747),

Gene: Argan\_32 Start: 26978, Stop: 27364, Start Num: 8

Candidate Starts for Argan\_32:

(Start: 8 @26978 has 41 MA's), (14, 27002), (25, 27077), (30, 27116), (31, 27134), (43, 27197), (52, 27248), (67, 27329),

Gene: Arzan\_29 Start: 25708, Stop: 26094, Start Num: 8

Candidate Starts for Arzan\_29:

(5, 25699), (Start: 8 @25708 has 41 MA's), (17, 25747), (22, 25783), (36, 25888), (65, 26047),

Gene: BenitoAntonio\_27 Start: 24452, Stop: 24868, Start Num: 7

Candidate Starts for BenitoAntonio\_27:

(Start: 7 @24452 has 24 MA's), (20, 24530), (29, 24593), (34, 24641), (62, 24797),

Gene: Benllo\_25 Start: 24736, Stop: 25152, Start Num: 7

Candidate Starts for Benllo\_25:

(Start: 7 @24736 has 24 MA's), (20, 24814), (29, 24877), (34, 24925), (62, 25081),

Gene: Bilo\_25 Start: 22822, Stop: 23211, Start Num: 10

Candidate Starts for Bilo\_25:

(Start: 10 @22822 has 37 MA's), (Start: 18 @22876 has 2 MA's), (24, 22903), (61, 23137), (65, 23155),

Gene: Bing\_30 Start: 25162, Stop: 25521, Start Num: 16

Candidate Starts for Bing\_30:

(4, 25078), (Start: 10 @25126 has 37 MA's), (11, 25132), (Start: 16 @25162 has 2 MA's), (20, 25189), (24, 25210), (32, 25282), (48, 25369), (55, 25414), (56, 25423), (63, 25459), (64, 25465),

Gene: Breylor17\_34 Start: 29035, Stop: 29427, Start Num: 8

Candidate Starts for Breylor17\_34:

(Start: 8 @29035 has 41 MA's), (15, 29065), (27, 29149), (31, 29188), (42, 29239), (60, 29353),

Gene: BronxBay\_30 Start: 25582, Stop: 25971, Start Num: 8

Candidate Starts for BronxBay\_30:

(Start: 8 @25582 has 41 MA's), (26, 25693), (31, 25744), (60, 25900),

Gene: Brunswick\_33 Start: 28500, Stop: 28892, Start Num: 8

Candidate Starts for Brunswick\_33:

(Start: 8 @28500 has 41 MA's), (26, 28602), (27, 28614), (31, 28653), (42, 28704), (60, 28818),

Gene: CapnMurica\_33 Start: 29586, Stop: 29975, Start Num: 8

Candidate Starts for CapnMurica\_33:

(Start: 8 @29586 has 41 MA's), (15, 29616), (28, 29703), (33, 29751), (36, 29766), (47, 29829), (60, 29901),

Gene: CastorTray\_35 Start: 28893, Stop: 29285, Start Num: 8

Candidate Starts for CastorTray\_35:

(Start: 8 @28893 has 41 MA's), (15, 28923), (26, 28995), (27, 29007), (31, 29046), (42, 29097), (60, 29211),

Gene: Caterpillar\_31 Start: 27666, Stop: 28076, Start Num: 7

Candidate Starts for Caterpillar\_31:

(Start: 7 @27666 has 24 MA's), (22, 27753), (33, 27843), (42, 27882), (50, 27951), (59, 27999),

Gene: Cheesy\_27 Start: 24551, Stop: 24967, Start Num: 7



Candidate Starts for Cheesy\_27:

(Start: 7 @24551 has 24 MA's), (20, 24629), (29, 24692), (34, 24740), (62, 24896),

Gene: CherryBlossom\_29 Start: 25276, Stop: 25635, Start Num: 10

Candidate Starts for CherryBlossom\_29:

(Start: 10 @25276 has 37 MA's), (25, 25372), (37, 25462), (53, 25549), (64, 25603),

Gene: Circum\_27 Start: 24558, Stop: 24974, Start Num: 7

Candidate Starts for Circum\_27:

(Start: 7 @24558 has 24 MA's), (20, 24636), (29, 24699), (34, 24747), (62, 24903),

Gene: ClubPenguin\_28 Start: 24936, Stop: 25301, Start Num: 16

Candidate Starts for ClubPenguin\_28:

(Start: 10 @24903 has 37 MA's), (Start: 16 @24936 has 2 MA's), (Start: 19 @24960 has 1 MA's), (24, 24984), (39, 25092), (48, 25143), (55, 25182), (58, 25197), (63, 25227), (69, 25275),

Gene: CricKo\_27 Start: 24163, Stop: 24540, Start Num: 10

Candidate Starts for CricKo\_27:

(Start: 10 @24163 has 37 MA's), (13, 24181), (Start: 19 @24223 has 1 MA's), (24, 24247), (32, 24319), (39, 24355), (53, 24436),

Gene: Darby\_33 Start: 28339, Stop: 28731, Start Num: 8

Candidate Starts for Darby\_33:

(Start: 8 @28339 has 41 MA's), (15, 28369), (26, 28441), (27, 28453), (31, 28492), (42, 28543), (60, 28657),

Gene: DevitoJr\_33 Start: 28510, Stop: 28902, Start Num: 8

Candidate Starts for DevitoJr\_33:

(Start: 8 @28510 has 41 MA's), (15, 28540), (26, 28612), (27, 28624), (31, 28663), (42, 28714), (60, 28828),

Gene: Djungelskog\_30 Start: 25582, Stop: 25971, Start Num: 8

Candidate Starts for Djungelskog\_30:

(Start: 8 @25582 has 41 MA's), (26, 25693), (31, 25744), (60, 25900),

Gene: DoctorPepper\_30 Start: 25582, Stop: 25971, Start Num: 8

Candidate Starts for DoctorPepper\_30:

(Start: 8 @25582 has 41 MA's), (21, 25663), (26, 25693), (31, 25744), (39, 25783), (60, 25900),

Gene: Doxi13\_25 Start: 22302, Stop: 22691, Start Num: 10

Candidate Starts for Doxi13\_25:

(Start: 10 @22302 has 37 MA's), (Start: 18 @22356 has 2 MA's), (24, 22383), (25, 22395), (39, 22491), (45, 22533), (61, 22617), (65, 22635),

Gene: DrGrey\_29 Start: 25776, Stop: 26141, Start Num: 10

Candidate Starts for DrGrey\_29:

(Start: 10 @25776 has 37 MA's), (25, 25872), (37, 25962), (53, 26049),

Gene: Dynamite\_26 Start: 24359, Stop: 24775, Start Num: 7

Candidate Starts for Dynamite\_26:

(Start: 7 @24359 has 24 MA's), (20, 24437), (29, 24500), (34, 24548), (42, 24578), (62, 24704),

Gene: Egad\_30 Start: 25583, Stop: 25972, Start Num: 8

Candidate Starts for Egad\_30:

(Start: 8 @25583 has 41 MA's), (26, 25694), (31, 25745), (60, 25901),

Gene: ElephantMan\_33 Start: 29040, Stop: 29432, Start Num: 8

Candidate Starts for ElephantMan\_33:

(Start: 8 @29040 has 41 MA's), (26, 29142), (27, 29154), (31, 29193), (42, 29244), (60, 29358),

Gene: Elsa\_27 Start: 24836, Stop: 25252, Start Num: 7

Candidate Starts for Elsa\_27:

(Start: 7 @24836 has 24 MA's), (20, 24914), (29, 24977), (34, 25025), (62, 25181),

Gene: Elver\_46 Start: 37243, Stop: 37635, Start Num: 8

Candidate Starts for Elver\_46:

(Start: 8 @37243 has 41 MA's), (23, 37321), (35, 37426), (52, 37513), (60, 37555),

Gene: Esketit\_29 Start: 25259, Stop: 25618, Start Num: 10

Candidate Starts for Esketit\_29:

(Start: 10 @25259 has 37 MA's), (25, 25355), (37, 25445), (53, 25532), (64, 25586),

Gene: FidgetOrca\_29 Start: 25265, Stop: 25624, Start Num: 10

Candidate Starts for FidgetOrca\_29:

(Start: 10 @25265 has 37 MA's), (25, 25361), (37, 25451), (53, 25538), (64, 25592),

Gene: FrodoSwaggins\_29 Start: 25776, Stop: 26141, Start Num: 10

Candidate Starts for FrodoSwaggins\_29:

(Start: 10 @25776 has 37 MA's), (25, 25872), (37, 25962), (53, 26049),

Gene: FromIndy\_28 Start: 24151, Stop: 24528, Start Num: 10

Candidate Starts for FromIndy\_28:

(Start: 10 @24151 has 37 MA's), (13, 24169), (Start: 19 @24211 has 1 MA's), (24, 24235), (32, 24307), (39, 24343), (53, 24424), (69, 24514),

Gene: GantcherGoblin\_32 Start: 27017, Stop: 27403, Start Num: 8

Candidate Starts for GantcherGoblin\_32:

(Start: 8 @27017 has 41 MA's), (14, 27041), (30, 27155), (31, 27173), (43, 27236), (52, 27287), (67, 27368),

Gene: Giantsbane\_34 Start: 27528, Stop: 27932, Start Num: 7

Candidate Starts for Giantsbane\_34:

(Start: 7 @27528 has 24 MA's), (12, 27552), (42, 27744), (52, 27816),

Gene: GirlPower\_28 Start: 26747, Stop: 27109, Start Num: 10

Candidate Starts for GirlPower\_28:

(Start: 10 @26747 has 37 MA's), (25, 26843), (53, 27020), (64, 27074),

Gene: GoCrazy\_25 Start: 24359, Stop: 24775, Start Num: 7

Candidate Starts for GoCrazy\_25:

(Start: 7 @24359 has 24 MA's), (20, 24437), (29, 24500), (34, 24548), (62, 24704),

Gene: GoblinVoyage\_25 Start: 22302, Stop: 22691, Start Num: 10

Candidate Starts for GoblinVoyage\_25:

(Start: 10 @22302 has 37 MA's), (Start: 18 @22356 has 2 MA's), (24, 22383), (25, 22395), (39, 22491), (45, 22533), (61, 22617), (65, 22635),

Gene: Gordon\_33 Start: 29615, Stop: 30010, Start Num: 8

Candidate Starts for Gordon\_33:

(Start: 8 @29615 has 41 MA's), (15, 29645), (26, 29717), (27, 29729), (31, 29768), (39, 29807), (42, 29819), (60, 29933),

Gene: Hankly\_25 Start: 23581, Stop: 23997, Start Num: 7

Candidate Starts for Hankly\_25:

(Start: 7 @23581 has 24 MA's), (20, 23659), (29, 23722), (34, 23770), (62, 23926),

Gene: Heisenberger\_26 Start: 24229, Stop: 24645, Start Num: 7

Candidate Starts for Heisenberger\_26:

(Start: 7 @24229 has 24 MA's), (20, 24307), (29, 24370), (34, 24418), (62, 24574),

Gene: Hoshi\_29 Start: 25259, Stop: 25618, Start Num: 10

Candidate Starts for Hoshi\_29:

(Start: 10 @25259 has 37 MA's), (25, 25355), (37, 25445), (53, 25532), (64, 25586),

Gene: HotFries\_24 Start: 22355, Stop: 22690, Start Num: 18

Candidate Starts for HotFries\_24:

(Start: 10 @22301 has 37 MA's), (Start: 18 @22355 has 2 MA's), (25, 22394), (61, 22616), (65, 22634),

Gene: IceWarrior\_29 Start: 25259, Stop: 25618, Start Num: 10

Candidate Starts for IceWarrior\_29:

(Start: 10 @25259 has 37 MA's), (25, 25355), (37, 25445), (53, 25532), (64, 25586),

Gene: Indigenous\_29 Start: 25259, Stop: 25618, Start Num: 10

Candidate Starts for Indigenous\_29:

(Start: 10 @25259 has 37 MA's), (25, 25355), (37, 25445), (53, 25532), (64, 25586),

Gene: Ingrid\_33 Start: 28232, Stop: 28624, Start Num: 8

Candidate Starts for Ingrid\_33:

(Start: 8 @28232 has 41 MA's), (22, 28307), (36, 28412),

Gene: Inked\_35 Start: 29245, Stop: 29646, Start Num: 8

Candidate Starts for Inked\_35:

(Start: 8 @29245 has 41 MA's), (27, 29359), (36, 29425), (60, 29572),

Gene: Issa\_33 Start: 28319, Stop: 28711, Start Num: 8

Candidate Starts for Issa\_33:

(Start: 8 @28319 has 41 MA's), (15, 28349), (26, 28421), (27, 28433), (31, 28472), (42, 28523), (60, 28637),

Gene: JEGGS\_26 Start: 24283, Stop: 24699, Start Num: 7

Candidate Starts for JEGGS\_26:

(Start: 7 @24283 has 24 MA's), (20, 24361), (29, 24424), (34, 24472), (62, 24628),

Gene: Jaylociraptor\_29 Start: 25259, Stop: 25618, Start Num: 10

Candidate Starts for Jaylociraptor\_29:

(Start: 10 @25259 has 37 MA's), (25, 25355), (37, 25445), (53, 25532), (64, 25586),

Gene: Jazzy4900\_31 Start: 26962, Stop: 27348, Start Num: 8

Candidate Starts for Jazzy4900\_31:

(Start: 8 @26962 has 41 MA's), (Start: 19 @27022 has 1 MA's), (44, 27193), (65, 27301),

Gene: Kardashian\_28 Start: 25209, Stop: 25595, Start Num: 10

Candidate Starts for Kardashian\_28:

(1, 24987), (2, 25092), (Start: 10 @25209 has 37 MA's), (13, 25227), (20, 25272), (31, 25362), (40, 25404), (41, 25407), (51, 25476), (63, 25536),

Gene: Kardesai\_25 Start: 23962, Stop: 24378, Start Num: 7

Candidate Starts for Kardesai\_25:

(Start: 7 @23962 has 24 MA's), (20, 24040), (29, 24103), (34, 24151), (62, 24307),

Gene: KeaneyLin\_25 Start: 24359, Stop: 24775, Start Num: 7

Candidate Starts for KeaneyLin\_25:

(Start: 7 @24359 has 24 MA's), (20, 24437), (29, 24500), (34, 24548), (62, 24704),

Gene: Leathea\_33 Start: 26912, Stop: 27271, Start Num: 8

Candidate Starts for Leathea\_33:

(Start: 8 @26912 has 41 MA's), (26, 27008), (36, 27086), (40, 27101), (52, 27170), (67, 27251),

Gene: Lewando\_36 Start: 28935, Stop: 29321, Start Num: 8

Candidate Starts for Lewando\_36:

(Start: 8 @28935 has 41 MA's), (22, 29013), (31, 29091), (38, 29127), (41, 29136), (52, 29205), (67, 29286),

Gene: LibertyBell\_27 Start: 24107, Stop: 24475, Start Num: 10

Candidate Starts for LibertyBell\_27:

(Start: 10 @24107 has 37 MA's), (23, 24188), (30, 24242), (39, 24299), (57, 24401), (58, 24404), (63, 24434),

Gene: LilHuddy\_34 Start: 28688, Stop: 29092, Start Num: 6

Candidate Starts for LilHuddy\_34:

(Start: 6 @28688 has 2 MA's), (31, 28853), (42, 28904), (52, 28976),

Gene: Linda\_30 Start: 25582, Stop: 25971, Start Num: 8

Candidate Starts for Linda\_30:

(Start: 8 @25582 has 41 MA's), (26, 25693), (31, 25744), (60, 25900),

Gene: Loretta\_33 Start: 28232, Stop: 28624, Start Num: 8

Candidate Starts for Loretta\_33:

(Start: 8 @28232 has 41 MA's), (22, 28307), (36, 28412),

Gene: Madamoto\_29 Start: 25237, Stop: 25596, Start Num: 10

Candidate Starts for Madamoto\_29:

(Start: 10 @25237 has 37 MA's), (25, 25333), (37, 25423), (44, 25468), (53, 25510), (64, 25564), (66, 25573),

Gene: Makai\_33 Start: 28464, Stop: 28874, Start Num: 7

Candidate Starts for Makai\_33:

(Start: 7 @28464 has 24 MA's), (26, 28578), (31, 28629), (34, 28650), (36, 28656), (42, 28680), (52, 28758),

Gene: Maya\_29 Start: 25273, Stop: 25632, Start Num: 10

Candidate Starts for Maya\_29:

(Start: 10 @25273 has 37 MA's), (25, 25369), (37, 25459), (53, 25546), (64, 25600),

Gene: MediumFry\_31 Start: 27668, Stop: 28078, Start Num: 7

Candidate Starts for MediumFry\_31:

(Start: 7 @27668 has 24 MA's), (22, 27755), (33, 27845), (42, 27884), (50, 27953), (59, 28001),

Gene: Meibysrarus\_29 Start: 25259, Stop: 25618, Start Num: 10

Candidate Starts for Meibysrarus\_29:

(Start: 10 @25259 has 37 MA's), (25, 25355), (37, 25445), (53, 25532), (64, 25586),

Gene: Michelle\_30 Start: 25582, Stop: 25971, Start Num: 8

Candidate Starts for Michelle\_30:

(Start: 8 @25582 has 41 MA's), (26, 25693), (31, 25744), (60, 25900),

Gene: Miek\_27 Start: 24163, Stop: 24540, Start Num: 10

Candidate Starts for Miek\_27:

(Start: 10 @24163 has 37 MA's), (13, 24181), (Start: 19 @24223 has 1 MA's), (24, 24247), (32, 24319), (39, 24355), (53, 24436), (69, 24526),

Gene: MiniBagel\_33 Start: 29565, Stop: 29954, Start Num: 8

Candidate Starts for MiniBagel\_33:

(Start: 8 @29565 has 41 MA's), (15, 29595), (27, 29679), (28, 29682), (33, 29730), (36, 29745), (47, 29808), (60, 29880),

Gene: Mooshroom\_26 Start: 23962, Stop: 24378, Start Num: 7

Candidate Starts for Mooshroom\_26:

(Start: 7 @23962 has 24 MA's), (20, 24040), (29, 24103), (34, 24151), (62, 24307),

Gene: Moozy\_25 Start: 22318, Stop: 22707, Start Num: 10

Candidate Starts for Moozy\_25:

(Start: 10 @22318 has 37 MA's), (Start: 18 @22372 has 2 MA's), (25, 22411), (61, 22633), (65, 22651),

Gene: MrAaronian\_30 Start: 25582, Stop: 25971, Start Num: 8

Candidate Starts for MrAaronian\_30:

(Start: 8 @25582 has 41 MA's), (26, 25693), (31, 25744), (60, 25900),

Gene: Mudcat\_26 Start: 26260, Stop: 26676, Start Num: 7

Candidate Starts for Mudcat\_26:

(Start: 7 @26260 has 24 MA's), (20, 26338), (29, 26401), (34, 26449), (62, 26605),

Gene: Namo\_29 Start: 25265, Stop: 25624, Start Num: 10

Candidate Starts for Namo\_29:

(Start: 10 @25265 has 37 MA's), (25, 25361), (37, 25451), (53, 25538), (64, 25592),

Gene: NapoleonB\_26 Start: 24359, Stop: 24775, Start Num: 7

Candidate Starts for NapoleonB\_26:

(Start: 7 @24359 has 24 MA's), (20, 24437), (29, 24500), (34, 24548), (42, 24578), (62, 24704),

Gene: Nason\_27 Start: 24836, Stop: 25252, Start Num: 7

Candidate Starts for Nason\_27:

(Start: 7 @24836 has 24 MA's), (20, 24914), (29, 24977), (34, 25025), (62, 25181),

Gene: Nightmare\_34 Start: 28878, Stop: 29270, Start Num: 8  
Candidate Starts for Nightmare\_34:  
(Start: 8 @28878 has 41 MA's), (15, 28908), (26, 28980), (27, 28992), (42, 29082), (60, 29196),

Gene: Niktson\_33 Start: 29040, Stop: 29432, Start Num: 8  
Candidate Starts for Niktson\_33:  
(Start: 8 @29040 has 41 MA's), (26, 29142), (27, 29154), (31, 29193), (42, 29244), (60, 29358),

Gene: Nivinsha\_33 Start: 28429, Stop: 28821, Start Num: 8  
Candidate Starts for Nivinsha\_33:  
(Start: 8 @28429 has 41 MA's), (15, 28459), (26, 28531), (27, 28543), (31, 28582), (42, 28633), (60, 28747),

Gene: OlympicHelado\_29 Start: 25265, Stop: 25624, Start Num: 10  
Candidate Starts for OlympicHelado\_29:  
(Start: 10 @25265 has 37 MA's), (25, 25361), (37, 25451), (53, 25538), (64, 25592),

Gene: Paella\_47 Start: 37245, Stop: 37637, Start Num: 8  
Candidate Starts for Paella\_47:  
(Start: 8 @37245 has 41 MA's), (23, 37323), (35, 37428), (52, 37515), (60, 37557),

Gene: Phaby\_34 Start: 28643, Stop: 29047, Start Num: 7  
Candidate Starts for Phaby\_34:  
(Start: 7 @28643 has 24 MA's), (31, 28808), (36, 28835), (42, 28859), (52, 28931),

Gene: Phaila\_32 Start: 26595, Stop: 26981, Start Num: 8  
Candidate Starts for Phaila\_32:  
(Start: 8 @26595 has 41 MA's), (14, 26619), (30, 26733), (31, 26751), (43, 26814), (52, 26865), (67, 26946),

Gene: PherryCruz\_24 Start: 22357, Stop: 22692, Start Num: 18  
Candidate Starts for PherryCruz\_24:  
(Start: 10 @22303 has 37 MA's), (Start: 18 @22357 has 2 MA's), (24, 22384), (25, 22396), (61, 22618), (65, 22636),

Gene: Popy\_29 Start: 25776, Stop: 26141, Start Num: 10  
Candidate Starts for Popy\_29:  
(Start: 10 @25776 has 37 MA's), (25, 25872), (37, 25962), (53, 26049),

Gene: ProfFrink\_30 Start: 25582, Stop: 25971, Start Num: 8  
Candidate Starts for ProfFrink\_30:  
(Start: 8 @25582 has 41 MA's), (26, 25693), (31, 25744), (60, 25900),

Gene: Qui\_47 Start: 37245, Stop: 37637, Start Num: 8  
Candidate Starts for Qui\_47:  
(Start: 8 @37245 has 41 MA's), (23, 37323), (35, 37428), (52, 37515), (60, 37557),

Gene: Rainydai\_27 Start: 24223, Stop: 24540, Start Num: 19  
Candidate Starts for Rainydai\_27:  
(Start: 10 @24163 has 37 MA's), (13, 24181), (Start: 19 @24223 has 1 MA's), (24, 24247), (32, 24319), (39, 24355), (53, 24436),

Gene: Raunak\_31 Start: 25582, Stop: 25971, Start Num: 8  
Candidate Starts for Raunak\_31:  
(Start: 8 @25582 has 41 MA's), (26, 25693), (31, 25744), (60, 25900),

Gene: RavenPuff\_24 Start: 22303, Stop: 22692, Start Num: 10  
Candidate Starts for RavenPuff\_24:  
(Start: 10 @22303 has 37 MA's), (Start: 18 @22357 has 2 MA's), (24, 22384), (25, 22396), (61, 22618), (65, 22636),

Gene: Regigigas\_28 Start: 24163, Stop: 24540, Start Num: 10  
Candidate Starts for Regigigas\_28:  
(Start: 10 @24163 has 37 MA's), (13, 24181), (Start: 19 @24223 has 1 MA's), (24, 24247), (32, 24319), (39, 24355), (53, 24436),

Gene: Renaldo\_38 Start: 28944, Stop: 29336, Start Num: 8  
Candidate Starts for Renaldo\_38:  
(Start: 8 @28944 has 41 MA's), (14, 28968), (22, 29022), (25, 29043), (31, 29100), (43, 29163), (52, 29220), (67, 29301),

Gene: Rima\_29 Start: 25265, Stop: 25624, Start Num: 10  
Candidate Starts for Rima\_29:  
(Start: 10 @25265 has 37 MA's), (25, 25361), (37, 25451), (53, 25538), (64, 25592),

Gene: RosaAsantewaa\_25 Start: 22174, Stop: 22560, Start Num: 10  
Candidate Starts for RosaAsantewaa\_25:  
(3, 22111), (4, 22126), (Start: 10 @22174 has 37 MA's), (17, 22210), (39, 22363), (49, 22429), (54, 22447), (67, 22519),

Gene: Salk\_30 Start: 25582, Stop: 25971, Start Num: 8  
Candidate Starts for Salk\_30:  
(Start: 8 @25582 has 41 MA's), (26, 25693), (31, 25744), (60, 25900),

Gene: Scap1\_25 Start: 22251, Stop: 22640, Start Num: 10  
Candidate Starts for Scap1\_25:  
(9, 22242), (Start: 10 @22251 has 37 MA's), (24, 22332), (30, 22383), (31, 22401), (61, 22566), (65, 22584), (67, 22596),

Gene: ScienceWizSam\_35 Start: 28830, Stop: 29222, Start Num: 8  
Candidate Starts for ScienceWizSam\_35:  
(Start: 8 @28830 has 41 MA's), (15, 28860), (26, 28932), (27, 28944), (31, 28983), (42, 29034), (60, 29148),

Gene: SendItCS\_26 Start: 24163, Stop: 24540, Start Num: 10  
Candidate Starts for SendItCS\_26:  
(Start: 10 @24163 has 37 MA's), (13, 24181), (Start: 19 @24223 has 1 MA's), (24, 24247), (32, 24319), (39, 24355), (53, 24436), (69, 24526),

Gene: SheRa\_25 Start: 22302, Stop: 22691, Start Num: 10  
Candidate Starts for SheRa\_25:  
(Start: 10 @22302 has 37 MA's), (Start: 18 @22356 has 2 MA's), (25, 22395), (61, 22617), (65, 22635),

Gene: Shepard\_34 Start: 28685, Stop: 29089, Start Num: 6

Candidate Starts for Shepard\_34:

(Start: 6 @28685 has 2 MA's), (31, 28850), (42, 28901), (52, 28973),

Gene: Shiba\_30 Start: 25582, Stop: 25971, Start Num: 8

Candidate Starts for Shiba\_30:

(Start: 8 @25582 has 41 MA's), (26, 25693), (31, 25744), (60, 25900),

Gene: Sloopyjoe\_30 Start: 25583, Stop: 25972, Start Num: 8

Candidate Starts for Sloopyjoe\_30:

(Start: 8 @25583 has 41 MA's), (26, 25694), (31, 25745), (60, 25901),

Gene: Soshi\_29 Start: 25782, Stop: 26147, Start Num: 10

Candidate Starts for Soshi\_29:

(Start: 10 @25782 has 37 MA's), (25, 25878), (37, 25968), (53, 26055),

Gene: Spectropatronm\_29 Start: 25259, Stop: 25618, Start Num: 10

Candidate Starts for Spectropatronm\_29:

(Start: 10 @25259 has 37 MA's), (25, 25355), (37, 25445), (53, 25532), (64, 25586),

Gene: Sporto\_31 Start: 26752, Stop: 27138, Start Num: 8

Candidate Starts for Sporto\_31:

(Start: 8 @26752 has 41 MA's), (31, 26914), (34, 26935), (45, 26995), (46, 26998), (60, 27070),

Gene: StarLord\_30 Start: 25583, Stop: 25972, Start Num: 8

Candidate Starts for StarLord\_30:

(Start: 8 @25583 has 41 MA's), (26, 25694), (31, 25745), (60, 25901),

Gene: Stayer\_30 Start: 25582, Stop: 25971, Start Num: 8

Candidate Starts for Stayer\_30:

(Start: 8 @25582 has 41 MA's), (26, 25693), (31, 25744), (60, 25900),

Gene: Sunny4976\_30 Start: 26962, Stop: 27348, Start Num: 8

Candidate Starts for Sunny4976\_30:

(Start: 8 @26962 has 41 MA's), (Start: 19 @27022 has 1 MA's), (44, 27193), (65, 27301),

Gene: Synopsis\_32 Start: 28493, Stop: 28885, Start Num: 8

Candidate Starts for Synopsis\_32:

(Start: 8 @28493 has 41 MA's), (15, 28523), (27, 28607), (31, 28646), (42, 28697), (60, 28811),

Gene: TaidaOne\_29 Start: 25907, Stop: 26266, Start Num: 10

Candidate Starts for TaidaOne\_29:

(Start: 10 @25907 has 37 MA's), (25, 26003), (37, 26093), (53, 26180), (64, 26234),

Gene: Tatanka\_33 Start: 28977, Stop: 29369, Start Num: 8

Candidate Starts for Tatanka\_33:

(Start: 8 @28977 has 41 MA's), (15, 29007), (26, 29079), (27, 29091), (31, 29130), (42, 29181), (60, 29295),

Gene: Teacup\_33 Start: 28347, Stop: 28739, Start Num: 8

Candidate Starts for Teacup\_33:

(Start: 8 @28347 has 41 MA's), (15, 28377), (26, 28449), (27, 28461), (31, 28500), (42, 28551), (60, 28665),



Gene: Tenno\_34 Start: 29574, Stop: 29963, Start Num: 8  
Candidate Starts for Tenno\_34:  
(Start: 8 @29574 has 41 MA's), (15, 29604), (28, 29691), (33, 29739), (36, 29754), (47, 29817), (60, 29889),

Gene: Thiqqums\_27 Start: 24163, Stop: 24540, Start Num: 10  
Candidate Starts for Thiqqums\_27:  
(Start: 10 @24163 has 37 MA's), (13, 24181), (Start: 19 @24223 has 1 MA's), (24, 24247), (32, 24319), (39, 24355), (53, 24436),

Gene: TieDye\_28 Start: 24951, Stop: 25310, Start Num: 10  
Candidate Starts for TieDye\_28:  
(Start: 10 @24951 has 37 MA's), (25, 25047), (37, 25137), (53, 25224), (64, 25278),

Gene: Tokki\_34 Start: 28659, Stop: 29063, Start Num: 7  
Candidate Starts for Tokki\_34:  
(Start: 7 @28659 has 24 MA's), (17, 28710), (42, 28875), (52, 28947),

Gene: TonyStarch\_29 Start: 25265, Stop: 25624, Start Num: 10  
Candidate Starts for TonyStarch\_29:  
(Start: 10 @25265 has 37 MA's), (25, 25361), (37, 25451), (53, 25538), (64, 25592),

Gene: Tribby\_27 Start: 24551, Stop: 24967, Start Num: 7  
Candidate Starts for Tribby\_27:  
(Start: 7 @24551 has 24 MA's), (20, 24629), (29, 24692), (34, 24740), (62, 24896),

Gene: TrixiePhattel\_35 Start: 27141, Stop: 27533, Start Num: 8  
Candidate Starts for TrixiePhattel\_35:  
(Start: 8 @27141 has 41 MA's), (14, 27165), (24, 27228), (43, 27360), (68, 27501),

Gene: Truckee\_32 Start: 28509, Stop: 28919, Start Num: 7  
Candidate Starts for Truckee\_32:  
(Start: 7 @28509 has 24 MA's), (26, 28623), (31, 28674), (34, 28695), (36, 28701), (42, 28725), (52, 28803),

Gene: Trustiboi\_34 Start: 29046, Stop: 29438, Start Num: 8  
Candidate Starts for Trustiboi\_34:  
(Start: 8 @29046 has 41 MA's), (15, 29076), (26, 29148), (27, 29160), (31, 29199), (42, 29250), (60, 29364),

Gene: Uzumaki\_33 Start: 27836, Stop: 28222, Start Num: 8  
Candidate Starts for Uzumaki\_33:  
(Start: 8 @27836 has 41 MA's), (14, 27860), (31, 27992), (33, 28004), (43, 28055), (52, 28106), (67, 28187),

Gene: Zeina\_33 Start: 27217, Stop: 27603, Start Num: 8  
Candidate Starts for Zeina\_33:  
(Start: 8 @27217 has 41 MA's), (14, 27241), (31, 27373), (52, 27487), (67, 27568),