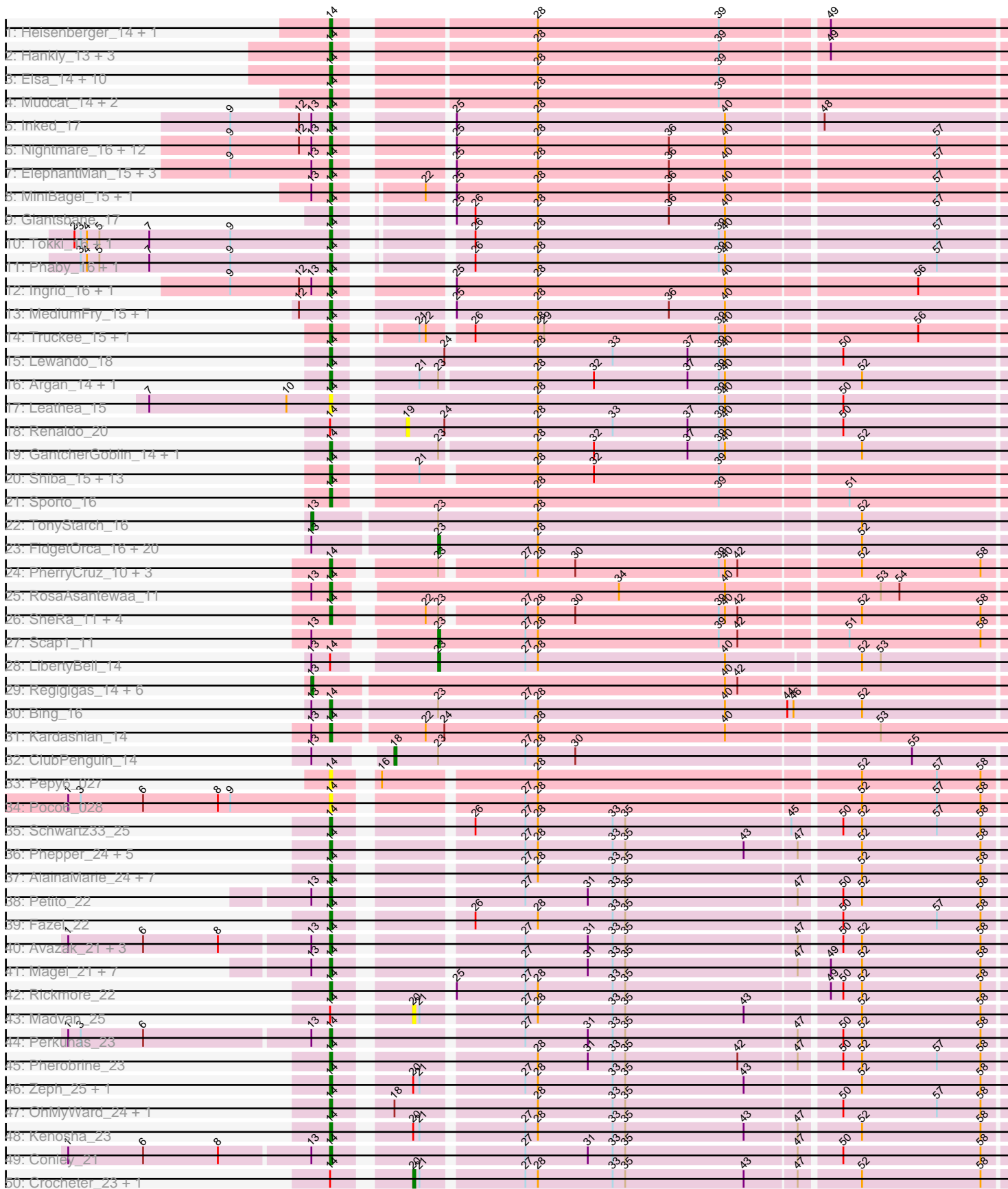


Pham 164868





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 164868 Report

This analysis was run 07/09/24 on database version 566.

Pham number 164868 has 171 members, 18 are drafts.

Phages represented in each track:

- Track 1 : Heisenberger\_14, Circum\_14
- Track 2 : Hankly\_13, KeaneyLin\_13, GoCrazy\_13, Benllo\_13
- Track 3 : Elsa\_14, Arcadia\_14, Correa\_14, Kardesai\_13, Mooshroom\_14, Dynamite\_14, Xenomorph\_13, Nason\_14, NapoleonB\_14, BenitoAntonio\_14, JEGGS\_14
- Track 4 : Mudcat\_14, Tribby\_14, Cheesy\_14
- Track 5 : Inked\_17
- Track 6 : Nightmare\_16, ScienceWizSam\_16, Darby\_15, AreFloNak\_15, Breylor17\_16, CastorTray\_17, Synopsis\_14, DevitoJr\_15, Teacup\_15, Trustiboi\_16, Nivinsha\_15, Gordon\_15, Tatanka\_14
- Track 7 : ElephantMan\_15, Brunswick\_15, CapnMurica\_15, Niktson\_15
- Track 8 : MiniBagel\_15, Tenno\_16
- Track 9 : Giantsbane\_17
- Track 10 : Tokki\_16, LilHuddy\_16
- Track 11 : Phaby\_16, Shepard\_16
- Track 12 : Ingrid\_16, Loretta\_16
- Track 13 : MediumFry\_15, Caterpillar\_15
- Track 14 : Truckee\_15, Makai\_16
- Track 15 : Lewando\_18
- Track 16 : Argan\_14, Uzumaki\_15
- Track 17 : Leathea\_15
- Track 18 : Renaldo\_20
- Track 19 : GantcherGoblin\_14, Zeina\_15
- Track 20 : Shiba\_15, DoctorPepper\_15, ProfFrink\_15, Michelle\_15, MrAaronian\_15, Djungelskog\_15, Salk\_15, Egad\_15, Stayer\_15, BronxBay\_15, Sloopyjoe\_15, Linda\_15, Raunak\_15, StarLord\_15
- Track 21 : Sporto\_16
- Track 22 : TonyStarch\_16
- Track 23 : FidgetOrca\_16, Maya\_16, Madamoto\_16, OlympicHelado\_16, CherryBlossom\_16, FrodoSwaggins\_16, IceWarrior\_16, Hoshi\_16, Jaylociraptor\_16, Meibysrarus\_16, Indigenous\_16, Soshi\_16, Rima\_16, GirlPower\_15, DrGrey\_16, Namu\_16, TieDye\_15, TaidaOne\_16, Spectropatronm\_16, Esketit\_16, Popy\_16
- Track 24 : PherryCruz\_10, GoblinVoyage\_11, Doxi13\_11, RavenPuff\_10
- Track 25 : RosaAsantewaa\_11
- Track 26 : SheRa\_11, HotFries\_10, Moozy\_11, Bilo\_11, Annihilus\_11
- Track 27 : Scap1\_11
- Track 28 : LibertyBell\_14

- Track 29 : Regigigas\_14, FromIndy\_14, Miek\_13, CricKo\_13, SendItCS\_12, Rainydai\_13, Thiqqums\_13
- Track 30 : Bing\_16
- Track 31 : Kardashian\_14
- Track 32 : ClubPenguin\_14
- Track 33 : Pepy6\_027
- Track 34 : Poco6\_028
- Track 35 : Schwartz33\_25
- Track 36 : Phepper\_24, Runhaar\_24, Burley\_24, Nadmeg\_24, Eddiemania\_25, Vardy\_24
- Track 37 : AlainaMarie\_24, Aflac\_24, Chikenjars\_24, Duffington\_24, Jodelie19\_24, Nithya\_24, EndAve\_24, Figliar\_24
- Track 38 : Petite\_22
- Track 39 : Fazel\_22
- Track 40 : Avazak\_21, FortCran\_21, Captrips\_21, Artorias\_21
- Track 41 : Magel\_21, Gill\_21, Tanis\_21, Capybara\_21, Gravy\_21, Kerry\_21, Odesza\_21, Roney\_21
- Track 42 : Rickmore\_22
- Track 43 : Madvan\_25
- Track 44 : Perkunas\_23
- Track 45 : Pherobrine\_23
- Track 46 : Zeph\_25, Hydrus\_25
- Track 47 : OhMyWard\_24, Mossy\_25
- Track 48 : Kenosha\_23
- Track 49 : Conley\_21
- Track 50 : Crocheter\_23, Untouchable\_23
- Track 51 : Secretariat\_22
- Track 52 : OlgasClover\_24
- Track 53 : DizzyRudy\_16
- Track 54 : Damascus\_16
- Track 55 : Count\_21
- Track 56 : Camille\_16
- Track 57 : Sunny4976\_13
- Track 58 : Jazzy4900\_14
- Track 59 : Paella\_30, Qui\_30
- Track 60 : Serenabean\_18

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

The start number called the most often in the published annotations is 14, it was called in 117 of the 153 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aflac\_24, AlainaMarie\_24, Annihilus\_11, Arcadia\_14, AreFloNak\_15, Argan\_14, Artorias\_21, Avazak\_21, BenitoAntonio\_14, Benllo\_13, Bilo\_11, Bing\_16, Breylor17\_16, BronxBay\_15, Brunswick\_15, Burley\_24, CapnMurica\_15, Captrips\_21, Capybara\_21, CastorTray\_17, Caterpillar\_15, Cheesy\_14, Chikenjars\_24, Circum\_14, Conley\_21, Correa\_14, Damascus\_16, Darby\_15, DevitoJr\_15, DizzyRudy\_16, Djungelskog\_15, DoctorPepper\_15, Doxi13\_11, Duffington\_24, Dynamite\_14, Eddiemania\_25, Egad\_15, ElephantMan\_15, Elsa\_14,

EndAve\_24, Fazel\_22, Figliar\_24, FortCran\_21, GantcherGoblin\_14, Giantsbane\_17, Gill\_21, GoCrazy\_13, GoblinVoyage\_11, Gordon\_15, Gravy\_21, Hankly\_13, Heisenberger\_14, HotFries\_10, Hydrus\_25, Ingrid\_16, Inked\_17, JEGGS\_14, Jodelie19\_24, Kardashian\_14, Kardesai\_13, KeaneyLin\_13, Kenosha\_23, Kerry\_21, Leathea\_15, Lewando\_18, LilHuddy\_16, Linda\_15, Loretta\_16, Magel\_21, Makai\_16, MediumFry\_15, Michelle\_15, MiniBagel\_15, Mooshroom\_14, Moozy\_11, Mossy\_25, MrAaronian\_15, Mudcat\_14, Nadmeg\_24, NapoleonB\_14, Nason\_14, Nightmare\_16, Niktson\_15, Nithya\_24, Nivinsha\_15, Odesza\_21, OhMyWard\_24, OlgasClover\_24, Pepy6\_027, Perkunas\_23, Petito\_22, Phaby\_16, Phepper\_24, Pherobrine\_23, PherryCruz\_10, Poco6\_028, ProfFrink\_15, Raunak\_15, RavenPuff\_10, Rickmore\_22, Roney\_21, RosaAsantewaa\_11, Runhaar\_24, Salk\_15, Schwartz33\_25, ScienceWizSam\_16, Secretariat\_22, Serenabean\_18, SheRa\_11, Shepard\_16, Shiba\_15, Sloopyjoe\_15, Sporto\_16, StarLord\_15, Stayer\_15, Sunny4976\_13, Synopsis\_14, Tanis\_21, Tatanka\_14, Teacup\_15, Tenno\_16, Tokki\_16, Tribby\_14, Truckee\_15, Trustiboi\_16, Uzumaki\_15, Vardy\_24, Xenomorph\_13, Zeina\_15, Zeph\_25,

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

- Camille\_16, Crocheter\_23, Jazzy4900\_14, LibertyBell\_14, Madvan\_25, Paella\_30, Qui\_30, Renaldo\_20, Untouchable\_23,

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

- CherryBlossom\_16, ClubPenguin\_14, Count\_21, CricKo\_13, DrGrey\_16, Esketit\_16, FidgetOrca\_16, FrodoSwaggins\_16, FromIndy\_14, GirlPower\_15, Hoshi\_16, IceWarrior\_16, Indigenous\_16, Jaylociraptor\_16, Madamato\_16, Maya\_16, Meibysrarus\_16, Miek\_13, Namu\_16, OlympicHelado\_16, Popy\_16, Rainydai\_13, Regigigas\_14, Rima\_16, Scap1\_11, SendItCS\_12, Soshi\_16, Spectropatronm\_16, TaidaOne\_16, Thiqqums\_13, TieDye\_15, TonyStarch\_16,

### Summary by start number:

Start 11:

- Found in 1 of 171 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 153
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Count\_21 (EL),

Start 13:

- Found in 76 of 171 ( 44.4% ) of genes in pham
- Manual Annotations of this start: 6 of 153
- Called 10.5% of time when present
- Phage (with cluster) where this start called: CricKo\_13 (BI4), FromIndy\_14 (BI4), Miek\_13 (BI4), Rainydai\_13 (BI4), Regigigas\_14 (BI4), SendItCS\_12 (BI4), Thiqqums\_13 (BI4), TonyStarch\_16 (BI1),

Start 14:

- Found in 139 of 171 ( 81.3% ) of genes in pham
- Manual Annotations of this start: 117 of 153
- Called 93.5% of time when present
- Phage (with cluster) where this start called: Aflac\_24 (DJ), AlainaMarie\_24 (DJ), Annihilus\_11 (BI2), Arcadia\_14 (AM), AreFloNak\_15 (AU1), Argan\_14 (AU6), Artorias\_21 (DJ), Avazak\_21 (DJ), BenitoAntonio\_14 (AM), Benllo\_13 (AM), Bilo\_11 (BI2), Bing\_16 (BI5), Breylor17\_16 (AU1), BronxBay\_15 (AW), Brunswick\_15 (AU1),

Burley\_24 (DJ), CapnMurica\_15 (AU1), Captrips\_21 (DJ), Capybara\_21 (DJ), CastorTray\_17 (AU1), Caterpillar\_15 (AU4), Cheesy\_14 (AM), Chikenjars\_24 (DJ), Circum\_14 (AM), Conley\_21 (DJ), Correa\_14 (AM), Damascus\_16 (EL), Darby\_15 (AU1), DevitoJr\_15 (AU1), DizzyRudy\_16 (EL), Djungelskog\_15 (AW), DoctorPepper\_15 (AW), Doxi13\_11 (BI2), Duffington\_24 (DJ), Dynamite\_14 (AM), Eddiemania\_25 (DJ), Egad\_15 (AW), ElephantMan\_15 (AU1), Elsa\_14 (AM), EndAve\_24 (DJ), Fazel\_22 (DJ), Figliar\_24 (DJ), FortCran\_21 (DJ), GantcherGoblin\_14 (AU6), Giantsbane\_17 (AU2), Gill\_21 (DJ), GoCrazy\_13 (AM), GoblinVoyage\_11 (BI2), Gordon\_15 (AU1), Gravy\_21 (DJ), Hankly\_13 (AM), Heisenberger\_14 (AM), HotFries\_10 (BI2), Hydrus\_25 (DJ), Ingrid\_16 (AU3), Inked\_17 (AU), JEGGS\_14 (AM), Jodelie19\_24 (DJ), Kardashian\_14 (BI6), Kardesai\_13 (AM), KeaneyLin\_13 (AM), Kenosha\_23 (DJ), Kerry\_21 (DJ), Leathea\_15 (AU6), Lewando\_18 (AU6), LilHuddy\_16 (AU2), Linda\_15 (AW), Loretta\_16 (AU3), Magel\_21 (DJ), Makai\_16 (AU5), MediumFry\_15 (AU4), Michelle\_15 (AW), MiniBagel\_15 (AU1), Mooshroom\_14 (AM), Moozy\_11 (BI2), Mossy\_25 (DJ), MrAaronian\_15 (AW), Mudcat\_14 (AM), Nadmeg\_24 (DJ), NapoleonB\_14 (AM), Nason\_14 (AM), Nightmare\_16 (AU1), Niktson\_15 (AU1), Nithya\_24 (DJ), Nivinsha\_15 (AU1), Odesza\_21 (DJ), OhMyWard\_24 (DJ), OlgasClover\_24 (DJ), Pepy6\_027 (CC), Perkunas\_23 (DJ), Petite\_22 (DJ), Phaby\_16 (AU2), Phepper\_24 (DJ), Pherobrine\_23 (DJ), PherryCruz\_10 (BI2), Poco6\_028 (CC), ProfFrink\_15 (AW), Raunak\_15 (AW), RavenPuff\_10 (BI2), Rickmore\_22 (DJ), Roney\_21 (DJ), RosaAsantewaa\_11 (BI2), Runhaar\_24 (DJ), Salk\_15 (AW), Schwartz33\_25 (DJ), ScienceWizSam\_16 (AU1), Secretariat\_22 (DJ), Serenabean\_18 (HA), SheRa\_11 (BI2), Shepard\_16 (AU2), Shiba\_15 (AW), Sloopyjoe\_15 (AW), Sporto\_16 (AW), StarLord\_15 (AW), Stayer\_15 (AW), Sunny4976\_13 (FI), Synopsis\_14 (AU1), Tanis\_21 (DJ), Tatanka\_14 (AU1), Teacup\_15 (AU1), Tenno\_16 (AU1), Tokki\_16 (AU2), Tribby\_14 (AM), Truckee\_15 (AU5), Trustiboi\_16 (AU1), Uzumaki\_15 (AU6), Vardy\_24 (DJ), Xenomorph\_13 (AM), Zeina\_15 (AU6), Zeph\_25 (DJ),

#### Start 18:

- Found in 3 of 171 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 153
- Called 33.3% of time when present
- Phage (with cluster) where this start called: ClubPenguin\_14 (BI7),

#### Start 19:

- Found in 1 of 171 ( 0.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Renaldo\_20 (AU6),

#### Start 20:

- Found in 8 of 171 ( 4.7% ) of genes in pham
- Manual Annotations of this start: 2 of 153
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Crocheter\_23 (DJ), Jazzy4900\_14 (FI), Madvan\_25 (DJ), Untouchable\_23 (DJ),

#### Start 23:

- Found in 39 of 171 ( 22.8% ) of genes in pham
- Manual Annotations of this start: 23 of 153
- Called 59.0% of time when present

- Phage (with cluster) where this start called: CherryBlossom\_16 (BI1), DrGrey\_16 (BI1), Esketit\_16 (BI1), FidgetOrca\_16 (BI1), FrodoSwaggins\_16 (BI1), GirlPower\_15 (BI1), Hoshi\_16 (BI1), IceWarrior\_16 (BI1), Indigenous\_16 (BI1), Jaylociraptor\_16 (BI1), LibertyBell\_14 (BI3), Madamoto\_16 (BI1), Maya\_16 (BI1), Meibysrarus\_16 (BI1), Namu\_16 (BI1), OlympicHelado\_16 (BI1), Popy\_16 (BI1), Rima\_16 (BI1), Scap1\_11 (BI2), Soshi\_16 (BI1), Spectropatronm\_16 (BI1), TaidaOne\_16 (BI1), TieDye\_15 (BI1),

#### Start 25:

- Found in 28 of 171 ( 16.4% ) of genes in pham
- Manual Annotations of this start: 2 of 153
- Called 7.1% of time when present
- Phage (with cluster) where this start called: Paella\_30 (FK), Qui\_30 (FK),

#### Start 26:

- Found in 10 of 171 ( 5.8% ) of genes in pham
- Manual Annotations of this start: 1 of 153
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Camille\_16 (EL),

### Summary by clusters:

There are 22 clusters represented in this pham: DJ, FI, FK, HA, AU1, AU3, AU2, AU5, AU4, AU6, EL, CC, AM, AU, AW, BI6, BI7, BI4, BI5, BI2, BI3, BI1,

Info for manual annotations of cluster AM:

- Start number 14 was manually annotated 19 times for cluster AM.

Info for manual annotations of cluster AU:

- Start number 14 was manually annotated 1 time for cluster AU.

Info for manual annotations of cluster AU1:

- Start number 14 was manually annotated 17 times for cluster AU1.

Info for manual annotations of cluster AU2:

- Start number 14 was manually annotated 4 times for cluster AU2.

Info for manual annotations of cluster AU3:

- Start number 14 was manually annotated 2 times for cluster AU3.

Info for manual annotations of cluster AU4:

- Start number 14 was manually annotated 2 times for cluster AU4.

Info for manual annotations of cluster AU5:

- Start number 14 was manually annotated 2 times for cluster AU5.

Info for manual annotations of cluster AU6:

- Start number 14 was manually annotated 5 times for cluster AU6.

Info for manual annotations of cluster AW:

- Start number 14 was manually annotated 12 times for cluster AW.

Info for manual annotations of cluster BI1:

- Start number 13 was manually annotated 1 time for cluster BI1.
- Start number 23 was manually annotated 21 times for cluster BI1.

Info for manual annotations of cluster BI2:

- Start number 14 was manually annotated 10 times for cluster BI2.
- Start number 23 was manually annotated 1 time for cluster BI2.

Info for manual annotations of cluster BI3:

- Start number 23 was manually annotated 1 time for cluster BI3.

Info for manual annotations of cluster BI4:

- Start number 13 was manually annotated 5 times for cluster BI4.

Info for manual annotations of cluster BI5:

- Start number 14 was manually annotated 1 time for cluster BI5.

Info for manual annotations of cluster BI6:

- Start number 14 was manually annotated 1 time for cluster BI6.

Info for manual annotations of cluster BI7:

- Start number 18 was manually annotated 1 time for cluster BI7.

Info for manual annotations of cluster DJ:

- Start number 14 was manually annotated 39 times for cluster DJ.
- Start number 20 was manually annotated 2 times for cluster DJ.

Info for manual annotations of cluster EL:

- Start number 11 was manually annotated 1 time for cluster EL.
- Start number 14 was manually annotated 2 times for cluster EL.
- Start number 26 was manually annotated 1 time for cluster EL.

Info for manual annotations of cluster FK:

- Start number 25 was manually annotated 2 times for cluster FK.

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

Gene: Aflac\_24 Start: 18141, Stop: 18443, Start Num: 14

Candidate Starts for Aflac\_24:

(Start: 14 @18141 has 117 MA's), (27, 18219), (28, 18225), (33, 18261), (35, 18267), (52, 18375), (58, 18432),

Gene: AlainaMarie\_24 Start: 18128, Stop: 18430, Start Num: 14

Candidate Starts for AlainaMarie\_24:

(Start: 14 @18128 has 117 MA's), (27, 18206), (28, 18212), (33, 18248), (35, 18254), (52, 18362), (58, 18419),

Gene: Annihilus\_11 Start: 8133, Stop: 8435, Start Num: 14

Candidate Starts for Annihilus\_11:



(Start: 14 @8133 has 117 MA's), (22, 8169), (Start: 23 @8175 has 23 MA's), (27, 8211), (28, 8217), (30, 8235), (39, 8304), (40, 8307), (42, 8313), (52, 8367), (58, 8424),

Gene: Arcadia\_14 Start: 10729, Stop: 11031, Start Num: 14

Candidate Starts for Arcadia\_14:

(Start: 14 @10729 has 117 MA's), (28, 10813), (39, 10900),

Gene: AreFloNak\_15 Start: 11529, Stop: 11828, Start Num: 14

Candidate Starts for AreFloNak\_15:

(9, 11481), (12, 11514), (Start: 13 @11520 has 6 MA's), (Start: 14 @11529 has 117 MA's), (Start: 25 @11571 has 2 MA's), (28, 11610), (36, 11673), (40, 11700), (57, 11796),

Gene: Argan\_14 Start: 10931, Stop: 11233, Start Num: 14

Candidate Starts for Argan\_14:

(Start: 14 @10931 has 117 MA's), (21, 10961), (Start: 23 @10970 has 23 MA's), (28, 11015), (32, 11042), (37, 11087), (39, 11102), (40, 11105), (52, 11165),

Gene: Artorias\_21 Start: 15482, Stop: 15784, Start Num: 14

Candidate Starts for Artorias\_21:

(1, 15359), (6, 15395), (8, 15431), (Start: 13 @15473 has 6 MA's), (Start: 14 @15482 has 117 MA's), (27, 15560), (31, 15590), (33, 15602), (35, 15608), (47, 15689), (50, 15707), (52, 15716), (58, 15773),

Gene: Avazak\_21 Start: 15489, Stop: 15791, Start Num: 14

Candidate Starts for Avazak\_21:

(1, 15366), (6, 15402), (8, 15438), (Start: 13 @15480 has 6 MA's), (Start: 14 @15489 has 117 MA's), (27, 15567), (31, 15597), (33, 15609), (35, 15615), (47, 15696), (50, 15714), (52, 15723), (58, 15780),

Gene: BenitoAntonio\_14 Start: 10337, Stop: 10639, Start Num: 14

Candidate Starts for BenitoAntonio\_14:

(Start: 14 @10337 has 117 MA's), (28, 10421), (39, 10508),

Gene: Benllo\_13 Start: 10339, Stop: 10641, Start Num: 14

Candidate Starts for Benllo\_13:

(Start: 14 @10339 has 117 MA's), (28, 10423), (39, 10510), (49, 10558),

Gene: Bilo\_11 Start: 8625, Stop: 8927, Start Num: 14

Candidate Starts for Bilo\_11:

(Start: 14 @8625 has 117 MA's), (22, 8661), (Start: 23 @8667 has 23 MA's), (27, 8703), (28, 8709), (30, 8727), (39, 8796), (40, 8799), (42, 8805), (52, 8859), (58, 8916),

Gene: Bing\_16 Start: 10620, Stop: 10940, Start Num: 14

Candidate Starts for Bing\_16:

(Start: 13 @10611 has 6 MA's), (Start: 14 @10620 has 117 MA's), (Start: 23 @10668 has 23 MA's), (27, 10710), (28, 10716), (40, 10806), (44, 10836), (46, 10839), (52, 10872),

Gene: Breylor17\_16 Start: 12194, Stop: 12493, Start Num: 14

Candidate Starts for Breylor17\_16:

(9, 12146), (12, 12179), (Start: 13 @12185 has 6 MA's), (Start: 14 @12194 has 117 MA's), (Start: 25 @12236 has 2 MA's), (28, 12275), (36, 12338), (40, 12365), (57, 12461),

Gene: BronxBay\_15 Start: 10761, Stop: 11060, Start Num: 14

Candidate Starts for BronxBay\_15:

(Start: 14 @10761 has 117 MA's), (21, 10791), (28, 10842), (32, 10869), (39, 10929),

Gene: Brunswick\_15 Start: 11644, Stop: 11943, Start Num: 14

Candidate Starts for Brunswick\_15:

(9, 11596), (Start: 13 @11635 has 6 MA's), (Start: 14 @11644 has 117 MA's), (Start: 25 @11686 has 2 MA's), (28, 11725), (36, 11788), (40, 11815), (57, 11911),

Gene: Burley\_24 Start: 17881, Stop: 18183, Start Num: 14

Candidate Starts for Burley\_24:

(Start: 14 @17881 has 117 MA's), (27, 17959), (28, 17965), (33, 18001), (35, 18007), (43, 18064), (47, 18088), (52, 18115), (58, 18172),

Gene: Camille\_16 Start: 10644, Stop: 10892, Start Num: 26

Candidate Starts for Camille\_16:

(Start: 14 @10587 has 117 MA's), (Start: 26 @10644 has 1 MA's), (28, 10674), (42, 10770),

Gene: CapnMurica\_15 Start: 12744, Stop: 13043, Start Num: 14

Candidate Starts for CapnMurica\_15:

(9, 12696), (Start: 13 @12735 has 6 MA's), (Start: 14 @12744 has 117 MA's), (Start: 25 @12786 has 2 MA's), (28, 12825), (36, 12888), (40, 12915), (57, 13011),

Gene: Captrips\_21 Start: 15489, Stop: 15791, Start Num: 14

Candidate Starts for Captrips\_21:

(1, 15366), (6, 15402), (8, 15438), (Start: 13 @15480 has 6 MA's), (Start: 14 @15489 has 117 MA's), (27, 15567), (31, 15597), (33, 15609), (35, 15615), (47, 15696), (50, 15714), (52, 15723), (58, 15780),

Gene: Capybara\_21 Start: 15208, Stop: 15510, Start Num: 14

Candidate Starts for Capybara\_21:

(Start: 13 @15199 has 6 MA's), (Start: 14 @15208 has 117 MA's), (27, 15286), (31, 15316), (33, 15328), (35, 15334), (47, 15415), (49, 15427), (52, 15442), (58, 15499),

Gene: CastorTray\_17 Start: 12045, Stop: 12344, Start Num: 14

Candidate Starts for CastorTray\_17:

(9, 11997), (12, 12030), (Start: 13 @12036 has 6 MA's), (Start: 14 @12045 has 117 MA's), (Start: 25 @12087 has 2 MA's), (28, 12126), (36, 12189), (40, 12216), (57, 12312),

Gene: Caterpillar\_15 Start: 11214, Stop: 11513, Start Num: 14

Candidate Starts for Caterpillar\_15:

(12, 11199), (Start: 14 @11214 has 117 MA's), (Start: 25 @11256 has 2 MA's), (28, 11295), (36, 11358), (40, 11385),

Gene: Cheesy\_14 Start: 10339, Stop: 10641, Start Num: 14

Candidate Starts for Cheesy\_14:

(Start: 14 @10339 has 117 MA's), (28, 10423), (39, 10510),

Gene: CherryBlossom\_16 Start: 11145, Stop: 11411, Start Num: 23

Candidate Starts for CherryBlossom\_16:

(Start: 13 @11088 has 6 MA's), (Start: 23 @11145 has 23 MA's), (28, 11193), (52, 11343),

Gene: Chikenjars\_24 Start: 18131, Stop: 18433, Start Num: 14

Candidate Starts for Chikenjars\_24:

(Start: 14 @18131 has 117 MA's), (27, 18209), (28, 18215), (33, 18251), (35, 18257), (52, 18365), (58, 18422),

Gene: Circum\_14 Start: 10342, Stop: 10644, Start Num: 14  
Candidate Starts for Circum\_14:  
(Start: 14 @10342 has 117 MA's), (28, 10426), (39, 10513), (49, 10561),

Gene: ClubPenguin\_14 Start: 11154, Stop: 11441, Start Num: 18  
Candidate Starts for ClubPenguin\_14:  
(Start: 13 @11127 has 6 MA's), (Start: 18 @11154 has 1 MA's), (Start: 23 @11175 has 23 MA's), (27, 11217), (28, 11223), (30, 11241), (55, 11397),

Gene: Conley\_21 Start: 15506, Stop: 15808, Start Num: 14  
Candidate Starts for Conley\_21:  
(1, 15383), (6, 15419), (8, 15455), (Start: 13 @15497 has 6 MA's), (Start: 14 @15506 has 117 MA's), (27, 15584), (31, 15614), (33, 15626), (35, 15632), (47, 15713), (50, 15731), (58, 15797),

Gene: Correa\_14 Start: 10339, Stop: 10641, Start Num: 14  
Candidate Starts for Correa\_14:  
(Start: 14 @10339 has 117 MA's), (28, 10423), (39, 10510),

Gene: Count\_21 Start: 13666, Stop: 14001, Start Num: 11  
Candidate Starts for Count\_21:  
(Start: 11 @13666 has 1 MA's), (15, 13696), (28, 13786), (40, 13876),

Gene: CricKo\_13 Start: 9815, Stop: 10138, Start Num: 13  
Candidate Starts for CricKo\_13:  
(Start: 13 @9815 has 6 MA's), (40, 10010), (42, 10016),

Gene: Crocheter\_23 Start: 16871, Stop: 17143, Start Num: 20  
Candidate Starts for Crocheter\_23:  
(Start: 14 @16841 has 117 MA's), (Start: 20 @16871 has 2 MA's), (21, 16874), (27, 16919), (28, 16925), (33, 16961), (35, 16967), (43, 17024), (47, 17048), (52, 17075), (58, 17132),

Gene: Damascus\_16 Start: 10466, Stop: 10771, Start Num: 14  
Candidate Starts for Damascus\_16:  
(Start: 14 @10466 has 117 MA's), (28, 10553), (32, 10580), (41, 10646), (42, 10649), (57, 10739),

Gene: Darby\_15 Start: 11511, Stop: 11810, Start Num: 14  
Candidate Starts for Darby\_15:  
(9, 11463), (12, 11496), (Start: 13 @11502 has 6 MA's), (Start: 14 @11511 has 117 MA's), (Start: 25 @11553 has 2 MA's), (28, 11592), (36, 11655), (40, 11682), (57, 11778),

Gene: DevitoJr\_15 Start: 11650, Stop: 11949, Start Num: 14  
Candidate Starts for DevitoJr\_15:  
(9, 11602), (12, 11635), (Start: 13 @11641 has 6 MA's), (Start: 14 @11650 has 117 MA's), (Start: 25 @11692 has 2 MA's), (28, 11731), (36, 11794), (40, 11821), (57, 11917),

Gene: DizzyRudy\_16 Start: 10464, Stop: 10769, Start Num: 14  
Candidate Starts for DizzyRudy\_16:  
(Start: 14 @10464 has 117 MA's), (28, 10551), (41, 10644), (42, 10647), (57, 10737),

Gene: Djungelskog\_15 Start: 10761, Stop: 11060, Start Num: 14  
Candidate Starts for Djungelskog\_15:  
(Start: 14 @10761 has 117 MA's), (21, 10791), (28, 10842), (32, 10869), (39, 10929),

Gene: DoctorPepper\_15 Start: 10761, Stop: 11060, Start Num: 14  
Candidate Starts for DoctorPepper\_15:  
(Start: 14 @10761 has 117 MA's), (21, 10791), (28, 10842), (32, 10869), (39, 10929),

Gene: Doxi13\_11 Start: 8104, Stop: 8406, Start Num: 14  
Candidate Starts for Doxi13\_11:  
(Start: 14 @8104 has 117 MA's), (Start: 23 @8146 has 23 MA's), (27, 8182), (28, 8188), (30, 8206),  
(39, 8275), (40, 8278), (42, 8284), (52, 8338), (58, 8395),

Gene: DrGrey\_16 Start: 11647, Stop: 11913, Start Num: 23  
Candidate Starts for DrGrey\_16:  
(Start: 13 @11590 has 6 MA's), (Start: 23 @11647 has 23 MA's), (28, 11695), (52, 11845),

Gene: Duffington\_24 Start: 18116, Stop: 18418, Start Num: 14  
Candidate Starts for Duffington\_24:  
(Start: 14 @18116 has 117 MA's), (27, 18194), (28, 18200), (33, 18236), (35, 18242), (52, 18350), (58,  
18407),

Gene: Dynamite\_14 Start: 10339, Stop: 10641, Start Num: 14  
Candidate Starts for Dynamite\_14:  
(Start: 14 @10339 has 117 MA's), (28, 10423), (39, 10510),

Gene: Eddiemania\_25 Start: 18778, Stop: 19080, Start Num: 14  
Candidate Starts for Eddiemania\_25:  
(Start: 14 @18778 has 117 MA's), (27, 18856), (28, 18862), (33, 18898), (35, 18904), (43, 18961), (47,  
18985), (52, 19012), (58, 19069),

Gene: Egad\_15 Start: 10762, Stop: 11061, Start Num: 14  
Candidate Starts for Egad\_15:  
(Start: 14 @10762 has 117 MA's), (21, 10792), (28, 10843), (32, 10870), (39, 10930),

Gene: ElephantMan\_15 Start: 12215, Stop: 12514, Start Num: 14  
Candidate Starts for ElephantMan\_15:  
(9, 12167), (Start: 13 @12206 has 6 MA's), (Start: 14 @12215 has 117 MA's), (Start: 25 @12257 has  
2 MA's), (28, 12296), (36, 12359), (40, 12386), (57, 12482),

Gene: Elsa\_14 Start: 10729, Stop: 11031, Start Num: 14  
Candidate Starts for Elsa\_14:  
(Start: 14 @10729 has 117 MA's), (28, 10813), (39, 10900),

Gene: EndAve\_24 Start: 18131, Stop: 18433, Start Num: 14  
Candidate Starts for EndAve\_24:  
(Start: 14 @18131 has 117 MA's), (27, 18209), (28, 18215), (33, 18251), (35, 18257), (52, 18365), (58,  
18422),

Gene: Esketit\_16 Start: 11128, Stop: 11394, Start Num: 23  
Candidate Starts for Esketit\_16:  
(Start: 13 @11071 has 6 MA's), (Start: 23 @11128 has 23 MA's), (28, 11176), (52, 11326),

Gene: Fazel\_22 Start: 17164, Stop: 17466, Start Num: 14  
Candidate Starts for Fazel\_22:  
(Start: 14 @17164 has 117 MA's), (Start: 26 @17218 has 1 MA's), (28, 17248), (33, 17284), (35,  
17290), (50, 17389), (57, 17434), (58, 17455),

Gene: FidgetOrca\_16 Start: 11134, Stop: 11400, Start Num: 23  
Candidate Starts for FidgetOrca\_16:  
(Start: 13 @11077 has 6 MA's), (Start: 23 @11134 has 23 MA's), (28, 11182), (52, 11332),

Gene: Figliar\_24 Start: 18141, Stop: 18443, Start Num: 14  
Candidate Starts for Figliar\_24:  
(Start: 14 @18141 has 117 MA's), (27, 18219), (28, 18225), (33, 18261), (35, 18267), (52, 18375), (58, 18432),

Gene: FortCran\_21 Start: 15482, Stop: 15784, Start Num: 14  
Candidate Starts for FortCran\_21:  
(1, 15359), (6, 15395), (8, 15431), (Start: 13 @15473 has 6 MA's), (Start: 14 @15482 has 117 MA's), (27, 15560), (31, 15590), (33, 15602), (35, 15608), (47, 15689), (50, 15707), (52, 15716), (58, 15773),

Gene: FrodoSwaggins\_16 Start: 11647, Stop: 11913, Start Num: 23  
Candidate Starts for FrodoSwaggins\_16:  
(Start: 13 @11590 has 6 MA's), (Start: 23 @11647 has 23 MA's), (28, 11695), (52, 11845),

Gene: FromIndy\_14 Start: 9800, Stop: 10123, Start Num: 13  
Candidate Starts for FromIndy\_14:  
(Start: 13 @9800 has 6 MA's), (40, 9995), (42, 10001),

Gene: GantcherGoblin\_14 Start: 10931, Stop: 11233, Start Num: 14  
Candidate Starts for GantcherGoblin\_14:  
(Start: 14 @10931 has 117 MA's), (Start: 23 @10970 has 23 MA's), (28, 11015), (32, 11042), (37, 11087), (39, 11102), (40, 11105), (52, 11165),

Gene: Giantsbane\_17 Start: 12880, Stop: 13176, Start Num: 14  
Candidate Starts for Giantsbane\_17:  
(Start: 14 @12880 has 117 MA's), (Start: 25 @12919 has 2 MA's), (Start: 26 @12928 has 1 MA's), (28, 12958), (36, 13021), (40, 13048), (57, 13144),

Gene: Gill\_21 Start: 15208, Stop: 15510, Start Num: 14  
Candidate Starts for Gill\_21:  
(Start: 13 @15199 has 6 MA's), (Start: 14 @15208 has 117 MA's), (27, 15286), (31, 15316), (33, 15328), (35, 15334), (47, 15415), (49, 15427), (52, 15442), (58, 15499),

Gene: GirlPower\_15 Start: 12613, Stop: 12879, Start Num: 23  
Candidate Starts for GirlPower\_15:  
(Start: 13 @12556 has 6 MA's), (Start: 23 @12613 has 23 MA's), (28, 12661), (52, 12811),

Gene: GoCrazy\_13 Start: 10339, Stop: 10641, Start Num: 14  
Candidate Starts for GoCrazy\_13:  
(Start: 14 @10339 has 117 MA's), (28, 10423), (39, 10510), (49, 10558),

Gene: GoblinVoyage\_11 Start: 8104, Stop: 8406, Start Num: 14  
Candidate Starts for GoblinVoyage\_11:  
(Start: 14 @8104 has 117 MA's), (Start: 23 @8146 has 23 MA's), (27, 8182), (28, 8188), (30, 8206), (39, 8275), (40, 8278), (42, 8284), (52, 8338), (58, 8395),

Gene: Gordon\_15 Start: 12774, Stop: 13073, Start Num: 14  
Candidate Starts for Gordon\_15:

(9, 12726), (12, 12759), (Start: 13 @12765 has 6 MA's), (Start: 14 @12774 has 117 MA's), (Start: 25 @12816 has 2 MA's), (28, 12855), (36, 12918), (40, 12945), (57, 13041),

Gene: Gravy\_21 Start: 15208, Stop: 15510, Start Num: 14

Candidate Starts for Gravy\_21:

(Start: 13 @15199 has 6 MA's), (Start: 14 @15208 has 117 MA's), (27, 15286), (31, 15316), (33, 15328), (35, 15334), (47, 15415), (49, 15427), (52, 15442), (58, 15499),

Gene: Hankly\_13 Start: 10363, Stop: 10665, Start Num: 14

Candidate Starts for Hankly\_13:

(Start: 14 @10363 has 117 MA's), (28, 10447), (39, 10534), (49, 10582),

Gene: Heisenberger\_14 Start: 10342, Stop: 10644, Start Num: 14

Candidate Starts for Heisenberger\_14:

(Start: 14 @10342 has 117 MA's), (28, 10426), (39, 10513), (49, 10561),

Gene: Hoshi\_16 Start: 11128, Stop: 11394, Start Num: 23

Candidate Starts for Hoshi\_16:

(Start: 13 @11071 has 6 MA's), (Start: 23 @11128 has 23 MA's), (28, 11176), (52, 11326),

Gene: HotFries\_10 Start: 8103, Stop: 8405, Start Num: 14

Candidate Starts for HotFries\_10:

(Start: 14 @8103 has 117 MA's), (22, 8139), (Start: 23 @8145 has 23 MA's), (27, 8181), (28, 8187), (30, 8205), (39, 8274), (40, 8277), (42, 8283), (52, 8337), (58, 8394),

Gene: Hydrus\_25 Start: 18648, Stop: 18950, Start Num: 14

Candidate Starts for Hydrus\_25:

(Start: 14 @18648 has 117 MA's), (Start: 20 @18678 has 2 MA's), (21, 18681), (27, 18726), (28, 18732), (33, 18768), (35, 18774), (43, 18831), (52, 18882), (58, 18939),

Gene: IceWarrior\_16 Start: 11128, Stop: 11394, Start Num: 23

Candidate Starts for IceWarrior\_16:

(Start: 13 @11071 has 6 MA's), (Start: 23 @11128 has 23 MA's), (28, 11176), (52, 11326),

Gene: Indigenous\_16 Start: 11128, Stop: 11394, Start Num: 23

Candidate Starts for Indigenous\_16:

(Start: 13 @11071 has 6 MA's), (Start: 23 @11128 has 23 MA's), (28, 11176), (52, 11326),

Gene: Ingrid\_16 Start: 12505, Stop: 12804, Start Num: 14

Candidate Starts for Ingrid\_16:

(9, 12457), (12, 12490), (Start: 13 @12496 has 6 MA's), (Start: 14 @12505 has 117 MA's), (Start: 25 @12547 has 2 MA's), (28, 12586), (40, 12676), (56, 12763),

Gene: Inked\_17 Start: 12280, Stop: 12579, Start Num: 14

Candidate Starts for Inked\_17:

(9, 12232), (12, 12265), (Start: 13 @12271 has 6 MA's), (Start: 14 @12280 has 117 MA's), (Start: 25 @12322 has 2 MA's), (28, 12361), (40, 12451), (48, 12493),

Gene: JEGGS\_14 Start: 10341, Stop: 10643, Start Num: 14

Candidate Starts for JEGGS\_14:

(Start: 14 @10341 has 117 MA's), (28, 10425), (39, 10512),

Gene: Jaylociraptor\_16 Start: 11128, Stop: 11394, Start Num: 23

Candidate Starts for Jaylociraptor\_16:

(Start: 13 @11071 has 6 MA's), (Start: 23 @11128 has 23 MA's), (28, 11176), (52, 11326),

Gene: Jazzy4900\_14 Start: 10104, Stop: 10382, Start Num: 20

Candidate Starts for Jazzy4900\_14:

(12, 10062), (Start: 13 @10068 has 6 MA's), (Start: 14 @10077 has 117 MA's), (16, 10089), (Start: 20 @10104 has 2 MA's), (28, 10164), (40, 10254),

Gene: Jodelie19\_24 Start: 18135, Stop: 18437, Start Num: 14

Candidate Starts for Jodelie19\_24:

(Start: 14 @18135 has 117 MA's), (27, 18213), (28, 18219), (33, 18255), (35, 18261), (52, 18369), (58, 18426),

Gene: Kardashian\_14 Start: 10831, Stop: 11148, Start Num: 14

Candidate Starts for Kardashian\_14:

(Start: 13 @10822 has 6 MA's), (Start: 14 @10831 has 117 MA's), (22, 10873), (24, 10882), (28, 10927), (40, 11017), (53, 11086),

Gene: Kardesai\_13 Start: 10339, Stop: 10641, Start Num: 14

Candidate Starts for Kardesai\_13:

(Start: 14 @10339 has 117 MA's), (28, 10423), (39, 10510),

Gene: KeaneyLin\_13 Start: 10339, Stop: 10641, Start Num: 14

Candidate Starts for KeaneyLin\_13:

(Start: 14 @10339 has 117 MA's), (28, 10423), (39, 10510), (49, 10558),

Gene: Kenosha\_23 Start: 17252, Stop: 17554, Start Num: 14

Candidate Starts for Kenosha\_23:

(Start: 14 @17252 has 117 MA's), (Start: 20 @17282 has 2 MA's), (21, 17285), (27, 17330), (28, 17336), (33, 17372), (35, 17378), (43, 17435), (47, 17459), (52, 17486), (58, 17543),

Gene: Kerry\_21 Start: 15208, Stop: 15510, Start Num: 14

Candidate Starts for Kerry\_21:

(Start: 13 @15199 has 6 MA's), (Start: 14 @15208 has 117 MA's), (27, 15286), (31, 15316), (33, 15328), (35, 15334), (47, 15415), (49, 15427), (52, 15442), (58, 15499),

Gene: Leathea\_15 Start: 11101, Stop: 11406, Start Num: 14

Candidate Starts for Leathea\_15:

(7, 11014), (10, 11080), (Start: 14 @11101 has 117 MA's), (28, 11188), (39, 11275), (40, 11278), (50, 11329),

Gene: Lewando\_18 Start: 12883, Stop: 13188, Start Num: 14

Candidate Starts for Lewando\_18:

(Start: 14 @12883 has 117 MA's), (24, 12925), (28, 12970), (33, 13006), (37, 13042), (39, 13057), (40, 13060), (50, 13111),

Gene: LibertyBell\_14 Start: 9801, Stop: 10067, Start Num: 23

Candidate Starts for LibertyBell\_14:

(Start: 13 @9753 has 6 MA's), (Start: 14 @9762 has 117 MA's), (Start: 23 @9801 has 23 MA's), (27, 9843), (28, 9849), (40, 9939), (52, 9999), (53, 10008),

Gene: LilHuddy\_16 Start: 12342, Stop: 12638, Start Num: 14

Candidate Starts for LilHuddy\_16:

(2, 12219), (3, 12222), (4, 12225), (5, 12231), (7, 12255), (9, 12294), (Start: 14 @12342 has 117 MA's), (Start: 26 @12390 has 1 MA's), (28, 12420), (39, 12507), (40, 12510), (57, 12606),

Gene: Linda\_15 Start: 10761, Stop: 11060, Start Num: 14

Candidate Starts for Linda\_15:

(Start: 14 @10761 has 117 MA's), (21, 10791), (28, 10842), (32, 10869), (39, 10929),

Gene: Loretta\_16 Start: 12505, Stop: 12804, Start Num: 14

Candidate Starts for Loretta\_16:

(9, 12457), (12, 12490), (Start: 13 @12496 has 6 MA's), (Start: 14 @12505 has 117 MA's), (Start: 25 @12547 has 2 MA's), (28, 12586), (40, 12676), (56, 12763),

Gene: Madamoto\_16 Start: 11113, Stop: 11379, Start Num: 23

Candidate Starts for Madamoto\_16:

(Start: 13 @11056 has 6 MA's), (Start: 23 @11113 has 23 MA's), (28, 11161), (52, 11311),

Gene: Madvan\_25 Start: 17944, Stop: 18216, Start Num: 20

Candidate Starts for Madvan\_25:

(Start: 14 @17914 has 117 MA's), (Start: 20 @17944 has 2 MA's), (21, 17947), (27, 17992), (28, 17998), (33, 18034), (35, 18040), (43, 18097), (52, 18148), (58, 18205),

Gene: Magel\_21 Start: 15208, Stop: 15510, Start Num: 14

Candidate Starts for Magel\_21:

(Start: 13 @15199 has 6 MA's), (Start: 14 @15208 has 117 MA's), (27, 15286), (31, 15316), (33, 15328), (35, 15334), (47, 15415), (49, 15427), (52, 15442), (58, 15499),

Gene: Makai\_16 Start: 12188, Stop: 12484, Start Num: 14

Candidate Starts for Makai\_16:

(Start: 14 @12188 has 117 MA's), (21, 12215), (22, 12218), (Start: 26 @12236 has 1 MA's), (28, 12266), (29, 12269), (39, 12353), (40, 12356), (56, 12443),

Gene: Maya\_16 Start: 11142, Stop: 11408, Start Num: 23

Candidate Starts for Maya\_16:

(Start: 13 @11085 has 6 MA's), (Start: 23 @11142 has 23 MA's), (28, 11190), (52, 11340),

Gene: MediumFry\_15 Start: 11243, Stop: 11542, Start Num: 14

Candidate Starts for MediumFry\_15:

(12, 11228), (Start: 14 @11243 has 117 MA's), (Start: 25 @11285 has 2 MA's), (28, 11324), (36, 11387), (40, 11414),

Gene: Meibysrarus\_16 Start: 11128, Stop: 11394, Start Num: 23

Candidate Starts for Meibysrarus\_16:

(Start: 13 @11071 has 6 MA's), (Start: 23 @11128 has 23 MA's), (28, 11176), (52, 11326),

Gene: Michelle\_15 Start: 10761, Stop: 11060, Start Num: 14

Candidate Starts for Michelle\_15:

(Start: 14 @10761 has 117 MA's), (21, 10791), (28, 10842), (32, 10869), (39, 10929),

Gene: Miek\_13 Start: 9815, Stop: 10138, Start Num: 13

Candidate Starts for Miek\_13:

(Start: 13 @9815 has 6 MA's), (40, 10010), (42, 10016),

Gene: MiniBagel\_15 Start: 12732, Stop: 13028, Start Num: 14



Candidate Starts for MiniBagel\_15:

(Start: 13 @12723 has 6 MA's), (Start: 14 @12732 has 117 MA's), (22, 12762), (Start: 25 @12771 has 2 MA's), (28, 12810), (36, 12873), (40, 12900), (57, 12996),

Gene: Mooshroom\_14 Start: 10339, Stop: 10641, Start Num: 14

Candidate Starts for Mooshroom\_14:

(Start: 14 @10339 has 117 MA's), (28, 10423), (39, 10510),

Gene: Moozy\_11 Start: 8120, Stop: 8422, Start Num: 14

Candidate Starts for Moozy\_11:

(Start: 14 @8120 has 117 MA's), (22, 8156), (Start: 23 @8162 has 23 MA's), (27, 8198), (28, 8204), (30, 8222), (39, 8291), (40, 8294), (42, 8300), (52, 8354), (58, 8411),

Gene: Mossy\_25 Start: 19339, Stop: 19641, Start Num: 14

Candidate Starts for Mossy\_25:

(Start: 14 @19339 has 117 MA's), (Start: 18 @19360 has 1 MA's), (28, 19423), (33, 19459), (35, 19465), (50, 19564), (57, 19609), (58, 19630),

Gene: MrAaronian\_15 Start: 10761, Stop: 11060, Start Num: 14

Candidate Starts for MrAaronian\_15:

(Start: 14 @10761 has 117 MA's), (21, 10791), (28, 10842), (32, 10869), (39, 10929),

Gene: Mudcat\_14 Start: 10340, Stop: 10642, Start Num: 14

Candidate Starts for Mudcat\_14:

(Start: 14 @10340 has 117 MA's), (28, 10424), (39, 10511),

Gene: Nadmeg\_24 Start: 17915, Stop: 18217, Start Num: 14

Candidate Starts for Nadmeg\_24:

(Start: 14 @17915 has 117 MA's), (27, 17993), (28, 17999), (33, 18035), (35, 18041), (43, 18098), (47, 18122), (52, 18149), (58, 18206),

Gene: Namo\_16 Start: 11134, Stop: 11400, Start Num: 23

Candidate Starts for Namo\_16:

(Start: 13 @11077 has 6 MA's), (Start: 23 @11134 has 23 MA's), (28, 11182), (52, 11332),

Gene: NapoleonB\_14 Start: 10339, Stop: 10641, Start Num: 14

Candidate Starts for NapoleonB\_14:

(Start: 14 @10339 has 117 MA's), (28, 10423), (39, 10510),

Gene: Nason\_14 Start: 10729, Stop: 11031, Start Num: 14

Candidate Starts for Nason\_14:

(Start: 14 @10729 has 117 MA's), (28, 10813), (39, 10900),

Gene: Nightmare\_16 Start: 12048, Stop: 12347, Start Num: 14

Candidate Starts for Nightmare\_16:

(9, 12000), (12, 12033), (Start: 13 @12039 has 6 MA's), (Start: 14 @12048 has 117 MA's), (Start: 25 @12090 has 2 MA's), (28, 12129), (36, 12192), (40, 12219), (57, 12315),

Gene: Niktson\_15 Start: 12215, Stop: 12514, Start Num: 14

Candidate Starts for Niktson\_15:

(9, 12167), (Start: 13 @12206 has 6 MA's), (Start: 14 @12215 has 117 MA's), (Start: 25 @12257 has 2 MA's), (28, 12296), (36, 12359), (40, 12386), (57, 12482),

Gene: Nithya\_24 Start: 18128, Stop: 18430, Start Num: 14

Candidate Starts for Nithya\_24:

(Start: 14 @18128 has 117 MA's), (27, 18206), (28, 18212), (33, 18248), (35, 18254), (52, 18362), (58, 18419),

Gene: Nivinsha\_15 Start: 11529, Stop: 11828, Start Num: 14

Candidate Starts for Nivinsha\_15:

(9, 11481), (12, 11514), (Start: 13 @11520 has 6 MA's), (Start: 14 @11529 has 117 MA's), (Start: 25 @11571 has 2 MA's), (28, 11610), (36, 11673), (40, 11700), (57, 11796),

Gene: Odesza\_21 Start: 15208, Stop: 15510, Start Num: 14

Candidate Starts for Odesza\_21:

(Start: 13 @15199 has 6 MA's), (Start: 14 @15208 has 117 MA's), (27, 15286), (31, 15316), (33, 15328), (35, 15334), (47, 15415), (49, 15427), (52, 15442), (58, 15499),

Gene: OhMyWard\_24 Start: 18679, Stop: 18981, Start Num: 14

Candidate Starts for OhMyWard\_24:

(Start: 14 @18679 has 117 MA's), (Start: 18 @18700 has 1 MA's), (28, 18763), (33, 18799), (35, 18805), (50, 18904), (57, 18949), (58, 18970),

Gene: OlgasClover\_24 Start: 18864, Stop: 19166, Start Num: 14

Candidate Starts for OlgasClover\_24:

(Start: 14 @18864 has 117 MA's), (27, 18942), (28, 18948), (33, 18984), (35, 18990), (43, 19047), (52, 19098), (58, 19155),

Gene: OlympicHelado\_16 Start: 11134, Stop: 11400, Start Num: 23

Candidate Starts for OlympicHelado\_16:

(Start: 13 @11077 has 6 MA's), (Start: 23 @11134 has 23 MA's), (28, 11182), (52, 11332),

Gene: Paella\_30 Start: 21139, Stop: 21396, Start Num: 25

Candidate Starts for Paella\_30:

(12, 21076), (Start: 13 @21082 has 6 MA's), (Start: 14 @21091 has 117 MA's), (17, 21106), (Start: 25 @21139 has 2 MA's), (28, 21178), (30, 21196), (38, 21253), (40, 21268), (43, 21277),

Gene: Pepy6\_027 Start: 24605, Stop: 24907, Start Num: 14

Candidate Starts for Pepy6\_027:

(Start: 14 @24605 has 117 MA's), (16, 24620), (28, 24689), (52, 24839), (57, 24875), (58, 24896),

Gene: Perkunas\_23 Start: 16004, Stop: 16306, Start Num: 14

Candidate Starts for Perkunas\_23:

(1, 15881), (3, 15887), (6, 15917), (Start: 13 @15995 has 6 MA's), (Start: 14 @16004 has 117 MA's), (27, 16082), (31, 16112), (33, 16124), (35, 16130), (47, 16211), (50, 16229), (52, 16238), (58, 16295),

Gene: Petite\_22 Start: 15699, Stop: 16001, Start Num: 14

Candidate Starts for Petite\_22:

(Start: 13 @15690 has 6 MA's), (Start: 14 @15699 has 117 MA's), (27, 15777), (31, 15807), (33, 15819), (35, 15825), (47, 15906), (50, 15924), (52, 15933), (58, 15990),

Gene: Phaby\_16 Start: 12334, Stop: 12630, Start Num: 14

Candidate Starts for Phaby\_16:

(3, 12214), (4, 12217), (5, 12223), (7, 12247), (9, 12286), (Start: 14 @12334 has 117 MA's), (Start: 26 @12382 has 1 MA's), (28, 12412), (39, 12499), (40, 12502), (57, 12598),

Gene: Phepper\_24 Start: 17913, Stop: 18215, Start Num: 14

Candidate Starts for Phepper\_24:

(Start: 14 @17913 has 117 MA's), (27, 17991), (28, 17997), (33, 18033), (35, 18039), (43, 18096), (47, 18120), (52, 18147), (58, 18204),

Gene: Pherobrine\_23 Start: 17936, Stop: 18238, Start Num: 14

Candidate Starts for Pherobrine\_23:

(Start: 14 @17936 has 117 MA's), (28, 18020), (31, 18044), (33, 18056), (35, 18062), (42, 18116), (47, 18143), (50, 18161), (52, 18170), (57, 18206), (58, 18227),

Gene: PherryCruz\_10 Start: 8103, Stop: 8405, Start Num: 14

Candidate Starts for PherryCruz\_10:

(Start: 14 @8103 has 117 MA's), (Start: 23 @8145 has 23 MA's), (27, 8181), (28, 8187), (30, 8205), (39, 8274), (40, 8277), (42, 8283), (52, 8337), (58, 8394),

Gene: Poco6\_028 Start: 26618, Stop: 26920, Start Num: 14

Candidate Starts for Poco6\_028:

(1, 26492), (3, 26498), (6, 26528), (8, 26564), (9, 26570), (Start: 14 @26618 has 117 MA's), (27, 26696), (28, 26702), (52, 26852), (57, 26888), (58, 26909),

Gene: Popy\_16 Start: 11647, Stop: 11913, Start Num: 23

Candidate Starts for Popy\_16:

(Start: 13 @11590 has 6 MA's), (Start: 23 @11647 has 23 MA's), (28, 11695), (52, 11845),

Gene: ProfFrink\_15 Start: 10761, Stop: 11060, Start Num: 14

Candidate Starts for ProfFrink\_15:

(Start: 14 @10761 has 117 MA's), (21, 10791), (28, 10842), (32, 10869), (39, 10929),

Gene: Qui\_30 Start: 21139, Stop: 21396, Start Num: 25

Candidate Starts for Qui\_30:

(12, 21076), (Start: 13 @21082 has 6 MA's), (Start: 14 @21091 has 117 MA's), (17, 21106), (Start: 25 @21139 has 2 MA's), (28, 21178), (30, 21196), (38, 21253), (40, 21268), (43, 21277),

Gene: Rainydai\_13 Start: 9815, Stop: 10138, Start Num: 13

Candidate Starts for Rainydai\_13:

(Start: 13 @9815 has 6 MA's), (40, 10010), (42, 10016),

Gene: Raunak\_15 Start: 10761, Stop: 11060, Start Num: 14

Candidate Starts for Raunak\_15:

(Start: 14 @10761 has 117 MA's), (21, 10791), (28, 10842), (32, 10869), (39, 10929),

Gene: RavenPuff\_10 Start: 8103, Stop: 8405, Start Num: 14

Candidate Starts for RavenPuff\_10:

(Start: 14 @8103 has 117 MA's), (Start: 23 @8145 has 23 MA's), (27, 8181), (28, 8187), (30, 8205), (39, 8274), (40, 8277), (42, 8283), (52, 8337), (58, 8394),

Gene: Regigigas\_14 Start: 9815, Stop: 10138, Start Num: 13

Candidate Starts for Regigigas\_14:

(Start: 13 @9815 has 6 MA's), (40, 10010), (42, 10016),

Gene: Renaldo\_20 Start: 12908, Stop: 13189, Start Num: 19

Candidate Starts for Renaldo\_20:

(Start: 14 @12884 has 117 MA's), (19, 12908), (24, 12926), (28, 12971), (33, 13007), (37, 13043), (39, 13058), (40, 13061), (50, 13112),

Gene: Rickmore\_22 Start: 16159, Stop: 16461, Start Num: 14

Candidate Starts for Rickmore\_22:

(Start: 14 @16159 has 117 MA's), (Start: 25 @16204 has 2 MA's), (27, 16237), (28, 16243), (33, 16279), (35, 16285), (49, 16378), (50, 16384), (52, 16393), (58, 16450),

Gene: Rima\_16 Start: 11134, Stop: 11400, Start Num: 23

Candidate Starts for Rima\_16:

(Start: 13 @11077 has 6 MA's), (Start: 23 @11134 has 23 MA's), (28, 11182), (52, 11332),

Gene: Roney\_21 Start: 15208, Stop: 15510, Start Num: 14

Candidate Starts for Roney\_21:

(Start: 13 @15199 has 6 MA's), (Start: 14 @15208 has 117 MA's), (27, 15286), (31, 15316), (33, 15328), (35, 15334), (47, 15415), (49, 15427), (52, 15442), (58, 15499),

Gene: RosaAsantewaa\_11 Start: 8049, Stop: 8354, Start Num: 14

Candidate Starts for RosaAsantewaa\_11:

(Start: 13 @8040 has 6 MA's), (Start: 14 @8049 has 117 MA's), (34, 8175), (40, 8226), (53, 8295), (54, 8304),

Gene: Runhaar\_24 Start: 17915, Stop: 18217, Start Num: 14

Candidate Starts for Runhaar\_24:

(Start: 14 @17915 has 117 MA's), (27, 17993), (28, 17999), (33, 18035), (35, 18041), (43, 18098), (47, 18122), (52, 18149), (58, 18206),

Gene: Salk\_15 Start: 10761, Stop: 11060, Start Num: 14

Candidate Starts for Salk\_15:

(Start: 14 @10761 has 117 MA's), (21, 10791), (28, 10842), (32, 10869), (39, 10929),

Gene: Scap1\_11 Start: 8150, Stop: 8416, Start Num: 23

Candidate Starts for Scap1\_11:

(Start: 13 @8102 has 6 MA's), (Start: 23 @8150 has 23 MA's), (27, 8192), (28, 8198), (39, 8285), (42, 8294), (51, 8342), (58, 8405),

Gene: Schwartz33\_25 Start: 18248, Stop: 18550, Start Num: 14

Candidate Starts for Schwartz33\_25:

(Start: 14 @18248 has 117 MA's), (Start: 26 @18302 has 1 MA's), (27, 18326), (28, 18332), (33, 18368), (35, 18374), (45, 18452), (50, 18473), (52, 18482), (57, 18518), (58, 18539),

Gene: ScienceWizSam\_16 Start: 11484, Stop: 11783, Start Num: 14

Candidate Starts for ScienceWizSam\_16:

(9, 11436), (12, 11469), (Start: 13 @11475 has 6 MA's), (Start: 14 @11484 has 117 MA's), (Start: 25 @11526 has 2 MA's), (28, 11565), (36, 11628), (40, 11655), (57, 11751),

Gene: Secretariat\_22 Start: 16968, Stop: 17270, Start Num: 14

Candidate Starts for Secretariat\_22:

(Start: 14 @16968 has 117 MA's), (27, 17046), (28, 17052), (33, 17088), (35, 17094), (49, 17187), (50, 17193), (57, 17238), (58, 17259),

Gene: SendItCS\_12 Start: 9815, Stop: 10138, Start Num: 13

Candidate Starts for SendItCS\_12:

(Start: 13 @9815 has 6 MA's), (40, 10010), (42, 10016),

Gene: Serenabean\_18 Start: 14966, Stop: 15271, Start Num: 14

Candidate Starts for Serenabean\_18:

(Start: 14 @14966 has 117 MA's), (28, 15053), (33, 15089), (34, 15092), (40, 15143), (43, 15152), (51, 15197), (52, 15203),

Gene: SheRa\_11 Start: 8103, Stop: 8405, Start Num: 14

Candidate Starts for SheRa\_11:

(Start: 14 @8103 has 117 MA's), (22, 8139), (Start: 23 @8145 has 23 MA's), (27, 8181), (28, 8187), (30, 8205), (39, 8274), (40, 8277), (42, 8283), (52, 8337), (58, 8394),

Gene: Shepard\_16 Start: 12339, Stop: 12635, Start Num: 14

Candidate Starts for Shepard\_16:

(3, 12219), (4, 12222), (5, 12228), (7, 12252), (9, 12291), (Start: 14 @12339 has 117 MA's), (Start: 26 @12387 has 1 MA's), (28, 12417), (39, 12504), (40, 12507), (57, 12603),

Gene: Shiba\_15 Start: 10761, Stop: 11060, Start Num: 14

Candidate Starts for Shiba\_15:

(Start: 14 @10761 has 117 MA's), (21, 10791), (28, 10842), (32, 10869), (39, 10929),

Gene: Sloopyjoe\_15 Start: 10762, Stop: 11061, Start Num: 14

Candidate Starts for Sloopyjoe\_15:

(Start: 14 @10762 has 117 MA's), (21, 10792), (28, 10843), (32, 10870), (39, 10930),

Gene: Soshi\_16 Start: 11656, Stop: 11922, Start Num: 23

Candidate Starts for Soshi\_16:

(Start: 13 @11599 has 6 MA's), (Start: 23 @11656 has 23 MA's), (28, 11704), (52, 11854),

Gene: Spectropatronm\_16 Start: 11128, Stop: 11394, Start Num: 23

Candidate Starts for Spectropatronm\_16:

(Start: 13 @11071 has 6 MA's), (Start: 23 @11128 has 23 MA's), (28, 11176), (52, 11326),

Gene: Sporto\_16 Start: 11962, Stop: 12267, Start Num: 14

Candidate Starts for Sporto\_16:

(Start: 14 @11962 has 117 MA's), (28, 12049), (39, 12136), (51, 12193),

Gene: StarLord\_15 Start: 10762, Stop: 11061, Start Num: 14

Candidate Starts for StarLord\_15:

(Start: 14 @10762 has 117 MA's), (21, 10792), (28, 10843), (32, 10870), (39, 10930),

Gene: Stayer\_15 Start: 10761, Stop: 11060, Start Num: 14

Candidate Starts for Stayer\_15:

(Start: 14 @10761 has 117 MA's), (21, 10791), (28, 10842), (32, 10869), (39, 10929),

Gene: Sunny4976\_13 Start: 10077, Stop: 10382, Start Num: 14

Candidate Starts for Sunny4976\_13:

(12, 10062), (Start: 13 @10068 has 6 MA's), (Start: 14 @10077 has 117 MA's), (16, 10089), (Start: 20 @10104 has 2 MA's), (28, 10164), (40, 10254),

Gene: Synopsis\_14 Start: 11649, Stop: 11948, Start Num: 14

Candidate Starts for Synopsis\_14:

(9, 11601), (12, 11634), (Start: 13 @11640 has 6 MA's), (Start: 14 @11649 has 117 MA's), (Start: 25 @11691 has 2 MA's), (28, 11730), (36, 11793), (40, 11820), (57, 11916),

Gene: TaidaOne\_16 Start: 11776, Stop: 12042, Start Num: 23

Candidate Starts for TaidaOne\_16:

(Start: 13 @11719 has 6 MA's), (Start: 23 @11776 has 23 MA's), (28, 11824), (52, 11974),

Gene: Tanis\_21 Start: 15058, Stop: 15360, Start Num: 14

Candidate Starts for Tanis\_21:

(Start: 13 @15049 has 6 MA's), (Start: 14 @15058 has 117 MA's), (27, 15136), (31, 15166), (33, 15178), (35, 15184), (47, 15265), (49, 15277), (52, 15292), (58, 15349),

Gene: Tatanka\_14 Start: 11586, Stop: 11885, Start Num: 14

Candidate Starts for Tatanka\_14:

(9, 11538), (12, 11571), (Start: 13 @11577 has 6 MA's), (Start: 14 @11586 has 117 MA's), (Start: 25 @11628 has 2 MA's), (28, 11667), (36, 11730), (40, 11757), (57, 11853),

Gene: Teacup\_15 Start: 11490, Stop: 11789, Start Num: 14

Candidate Starts for Teacup\_15:

(9, 11442), (12, 11475), (Start: 13 @11481 has 6 MA's), (Start: 14 @11490 has 117 MA's), (Start: 25 @11532 has 2 MA's), (28, 11571), (36, 11634), (40, 11661), (57, 11757),

Gene: Tenno\_16 Start: 12741, Stop: 13037, Start Num: 14

Candidate Starts for Tenno\_16:

(Start: 13 @12732 has 6 MA's), (Start: 14 @12741 has 117 MA's), (22, 12771), (Start: 25 @12780 has 2 MA's), (28, 12819), (36, 12882), (40, 12909), (57, 13005),

Gene: Thiqqums\_13 Start: 9815, Stop: 10138, Start Num: 13

Candidate Starts for Thiqqums\_13:

(Start: 13 @9815 has 6 MA's), (40, 10010), (42, 10016),

Gene: TieDye\_15 Start: 10838, Stop: 11104, Start Num: 23

Candidate Starts for TieDye\_15:

(Start: 13 @10781 has 6 MA's), (Start: 23 @10838 has 23 MA's), (28, 10886), (52, 11036),

Gene: Tokki\_16 Start: 12384, Stop: 12680, Start Num: 14

Candidate Starts for Tokki\_16:

(2, 12261), (3, 12264), (4, 12267), (5, 12273), (7, 12297), (9, 12336), (Start: 14 @12384 has 117 MA's), (Start: 26 @12432 has 1 MA's), (28, 12462), (39, 12549), (40, 12552), (57, 12648),

Gene: TonyStarch\_16 Start: 11077, Stop: 11400, Start Num: 13

Candidate Starts for TonyStarch\_16:

(Start: 13 @11077 has 6 MA's), (Start: 23 @11134 has 23 MA's), (28, 11182), (52, 11332),

Gene: Tribby\_14 Start: 10339, Stop: 10641, Start Num: 14

Candidate Starts for Tribby\_14:

(Start: 14 @10339 has 117 MA's), (28, 10423), (39, 10510),

Gene: Truckee\_15 Start: 11593, Stop: 11889, Start Num: 14

Candidate Starts for Truckee\_15:

(Start: 14 @11593 has 117 MA's), (21, 11620), (22, 11623), (Start: 26 @11641 has 1 MA's), (28, 11671), (29, 11674), (39, 11758), (40, 11761), (56, 11848),

Gene: Trustiboi\_16 Start: 12213, Stop: 12512, Start Num: 14

Candidate Starts for Trustiboi\_16:

(9, 12165), (12, 12198), (Start: 13 @12204 has 6 MA's), (Start: 14 @12213 has 117 MA's), (Start: 25 @12255 has 2 MA's), (28, 12294), (36, 12357), (40, 12384), (57, 12480),

Gene: Untouchable\_23 Start: 16870, Stop: 17142, Start Num: 20

Candidate Starts for Untouchable\_23:

(Start: 14 @16840 has 117 MA's), (Start: 20 @16870 has 2 MA's), (21, 16873), (27, 16918), (28, 16924), (33, 16960), (35, 16966), (43, 17023), (47, 17047), (52, 17074), (58, 17131),

Gene: Uzumaki\_15 Start: 11214, Stop: 11516, Start Num: 14

Candidate Starts for Uzumaki\_15:

(Start: 14 @11214 has 117 MA's), (21, 11244), (Start: 23 @11253 has 23 MA's), (28, 11298), (32, 11325), (37, 11370), (39, 11385), (40, 11388), (52, 11448),

Gene: Vardy\_24 Start: 17880, Stop: 18182, Start Num: 14

Candidate Starts for Vardy\_24:

(Start: 14 @17880 has 117 MA's), (27, 17958), (28, 17964), (33, 18000), (35, 18006), (43, 18063), (47, 18087), (52, 18114), (58, 18171),

Gene: Xenomorph\_13 Start: 10339, Stop: 10641, Start Num: 14

Candidate Starts for Xenomorph\_13:

(Start: 14 @10339 has 117 MA's), (28, 10423), (39, 10510),

Gene: Zeina\_15 Start: 11224, Stop: 11526, Start Num: 14

Candidate Starts for Zeina\_15:

(Start: 14 @11224 has 117 MA's), (Start: 23 @11263 has 23 MA's), (28, 11308), (32, 11335), (37, 11380), (39, 11395), (40, 11398), (52, 11458),

Gene: Zeph\_25 Start: 18630, Stop: 18932, Start Num: 14

Candidate Starts for Zeph\_25:

(Start: 14 @18630 has 117 MA's), (Start: 20 @18660 has 2 MA's), (21, 18663), (27, 18708), (28, 18714), (33, 18750), (35, 18756), (43, 18813), (52, 18864), (58, 18921),