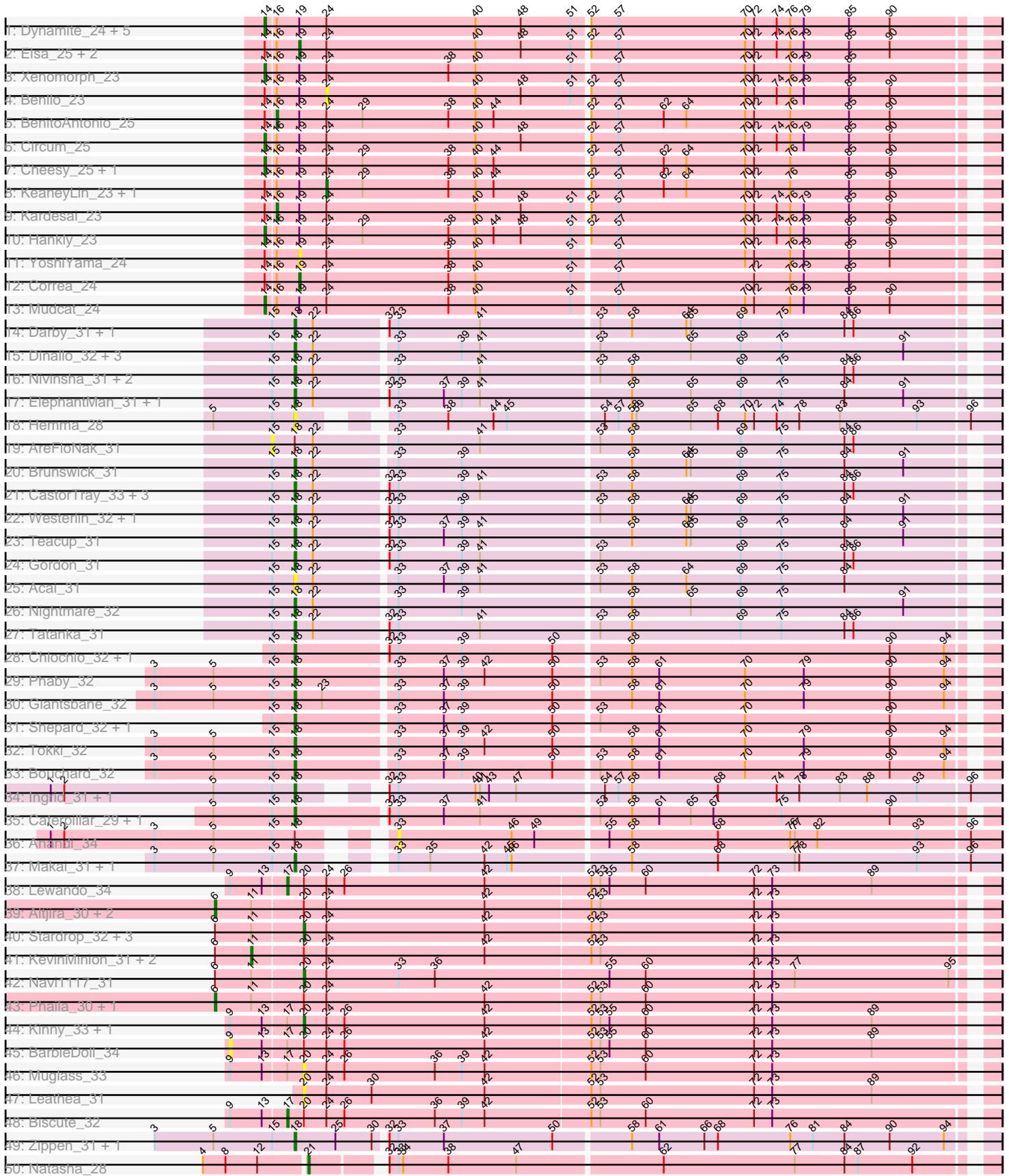
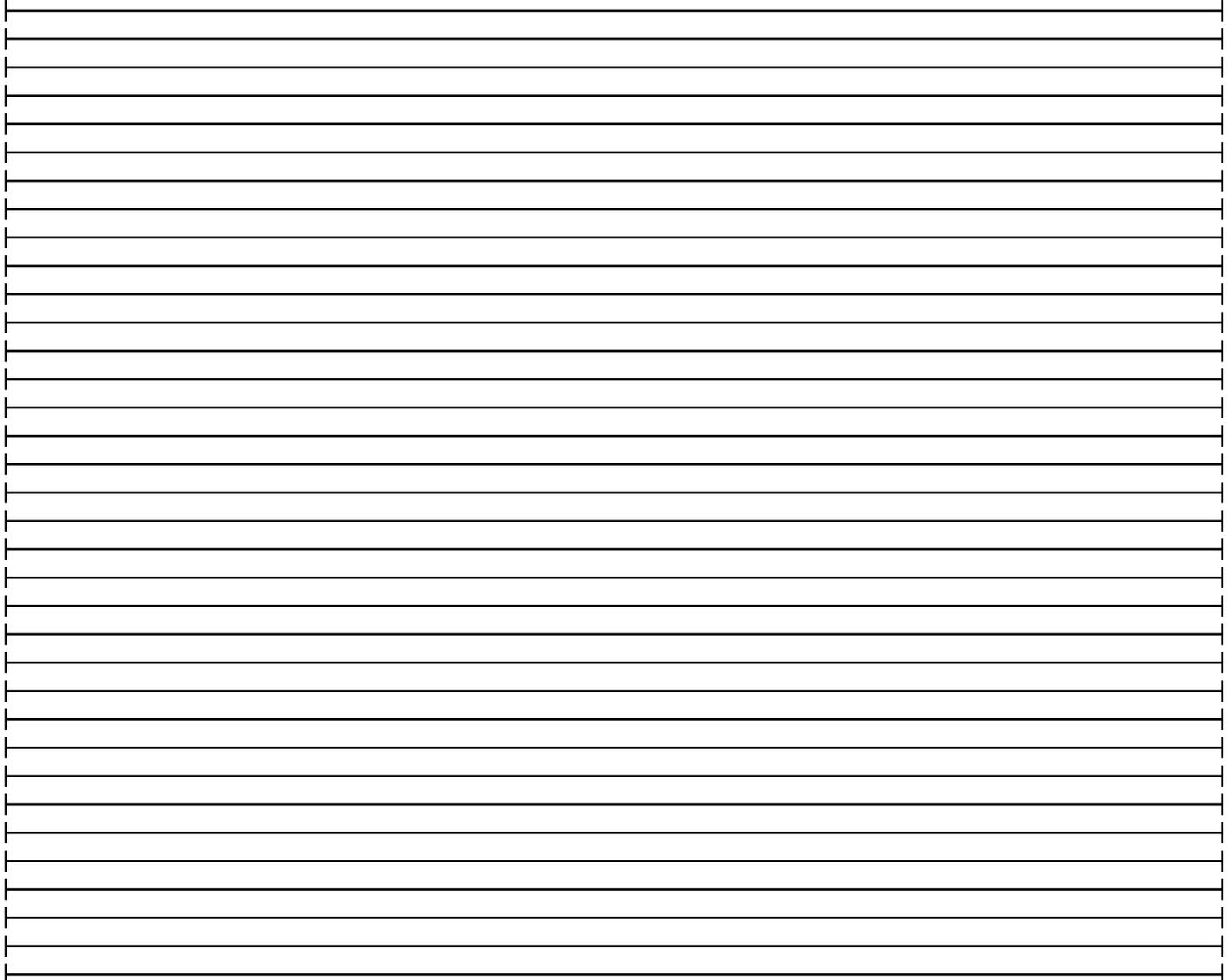
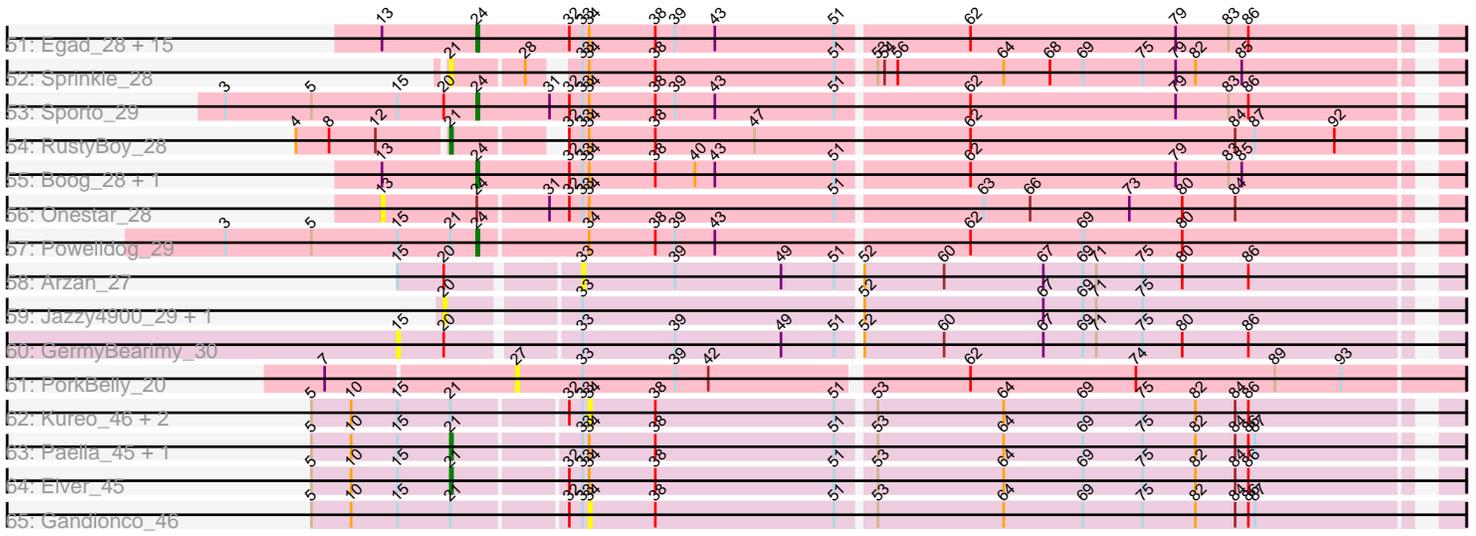


Pham 283620



Pham 283620



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 283620 Report

This analysis was run 02/23/26 on database version 636.

Pham number 283620 has 120 members, 34 are drafts.

Phages represented in each track:

- Track 1 : Dynamite\_24, Mooshroom\_24, Bowling\_25, NapoleonB\_24, JEGGS\_24, Heisenberger\_24
- Track 2 : Elsa\_25, Arcadia\_25, Nason\_25
- Track 3 : Xenomorph\_23
- Track 4 : Benllo\_23
- Track 5 : BenitoAntonio\_25
- Track 6 : Circum\_25
- Track 7 : Cheesy\_25, Tribby\_25
- Track 8 : KeaneyLin\_23, GoCrazy\_23
- Track 9 : Kardesai\_23
- Track 10 : Hankly\_23
- Track 11 : YoshiYama\_24
- Track 12 : Correa\_24
- Track 13 : Mudcat\_24
- Track 14 : Darby\_31, Synopsis\_30
- Track 15 : Dinallo\_32, MiniBagel\_31, CapnMurica\_31, Tenno\_32
- Track 16 : Nivinsha\_31, ScienceWizSam\_33, Breylor17\_32
- Track 17 : ElephantMan\_31, Niktson\_31
- Track 18 : Hemma\_28
- Track 19 : AreFloNak\_31
- Track 20 : Brunswick\_31
- Track 21 : CastorTray\_33, Issa\_31, Trustiboi\_32, DevitoJr\_31
- Track 22 : Westerlin\_32, LucySwiss\_31
- Track 23 : Teacup\_31
- Track 24 : Gordon\_31
- Track 25 : Acai\_31
- Track 26 : Nightmare\_32
- Track 27 : Tatanka\_31
- Track 28 : Chlochlo\_32, Tipton\_32
- Track 29 : Phaby\_32
- Track 30 : Giantsbane\_32
- Track 31 : Shepard\_32, LilHuddy\_32
- Track 32 : Tokki\_32
- Track 33 : Bouchard\_32
- Track 34 : Ingrid\_31, Loretta\_31
- Track 35 : Caterpillar\_29, MediumFry\_29
- Track 36 : Anandi\_34

- Track 37 : Makai\_31, Truckee\_30
- Track 38 : Lewando\_34
- Track 39 : Altjira\_30, Zeina\_31, PoeMe\_32
- Track 40 : Stardrop\_32, Argan\_30, GantcherGoblin\_30, Uzumaki\_31
- Track 41 : KevinMinion\_31, Mardi\_32, Tenney120\_31
- Track 42 : Navi1117\_31
- Track 43 : Phaila\_30, TrixiePhattel\_31
- Track 44 : Kinny\_33, Renaldo\_36
- Track 45 : BarbieDoll\_34
- Track 46 : Muglass\_33
- Track 47 : Leathea\_31
- Track 48 : Biscute\_32
- Track 49 : Zippen\_31, Inked\_33
- Track 50 : Natasha\_28
- Track 51 : Egad\_28, ProfFrink\_28, StarLord\_28, Spain\_27, Salk\_28, Raunak\_28, BronxBay\_28, Shiba\_28, MrAaronian\_28, DoctorPepper\_28, Stayer\_28, Jeremy4pt0\_27, Linda\_28, Michelle\_28, Sloopyjoe\_28, Djungelskog\_28
- Track 52 : Sprinkle\_28
- Track 53 : Sporto\_29
- Track 54 : RustyBoy\_28
- Track 55 : Boog\_28, HerbBucket\_27
- Track 56 : Onestar\_28
- Track 57 : Powelldog\_29
- Track 58 : Arzan\_27
- Track 59 : Jazzy4900\_29, Sunny4976\_28
- Track 60 : GermyBearimy\_30
- Track 61 : PorkBelly\_20
- Track 62 : Kureo\_46, Marianna39\_46, JeNeSaisPas\_44
- Track 63 : Paella\_45, Qui\_45
- Track 64 : Elver\_45
- Track 65 : Gandionco\_46

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

The start number called the most often in the published annotations is 18, it was called in 34 of the 86 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acai\_31, Bouchard\_32, Breylor17\_32, Brunswick\_31, CapnMurica\_31, CastorTray\_33, Caterpillar\_29, Chlochlo\_32, Darby\_31, DevitoJr\_31, Dinallo\_32, ElephantMan\_31, Giantsbane\_32, Gordon\_31, Hemma\_28, Ingrid\_31, Inked\_33, Issa\_31, LilHuddy\_32, Loretta\_31, LucySwiss\_31, Makai\_31, MediumFry\_29, MiniBagel\_31, Nightmare\_32, Niktson\_31, Nivinsha\_31, Phaby\_32, ScienceWizSam\_33, Shepard\_32, Synopsis\_30, Tatanka\_31, Teacup\_31, Tenno\_32, Tipton\_32, Tokki\_32, Truckee\_30, Trustiboi\_32, Westerlin\_32, Zippen\_31,

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

- Anandi\_34, AreFloNak\_31,

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

- Altjira\_30, Arcadia\_25, Argan\_30, Arzan\_27, BarbieDoll\_34, BenitoAntonio\_25, Benllo\_23, Biscute\_32, Boog\_28, Bowling\_25, BronxBay\_28, Cheesy\_25, Circum\_25, Correa\_24, Djungelskog\_28, DoctorPepper\_28, Dynamite\_24, Egad\_28, Elsa\_25, Elver\_45, Gandionco\_46, GantcherGoblin\_30, GermyBearimy\_30, GoCrazy\_23, Hankly\_23, Heisenberger\_24, HerbBucket\_27, JEGGS\_24, Jazzy4900\_29, JeNeSaisPas\_44, Jeremy4pt0\_27, Kardesai\_23, KeaneyLin\_23, KevinMinion\_31, Kinny\_33, Kureo\_46, Leathea\_31, Lewando\_34, Linda\_28, Mardi\_32, Marianna39\_46, Michelle\_28, Mooshroom\_24, MrAaronian\_28, Mudcat\_24, Muglass\_33, NapoleonB\_24, Nason\_25, Natasha\_28, Navi1117\_31, Onestar\_28, Paella\_45, Phaila\_30, PoeMe\_32, PorkBelly\_20, PowellDog\_29, ProfFrink\_28, Qui\_45, Raunak\_28, Renaldo\_36, RustyBoy\_28, Salk\_28, Shiba\_28, Sloopyjoe\_28, Spain\_27, Sporto\_29, Sprinkle\_28, StarLord\_28, Stardrop\_32, Stayer\_28, Sunny4976\_28, Tenney120\_31, Tribby\_25, TrixiePhattel\_31, Uzumaki\_31, Xenomorph\_23, YoshiYama\_24, Zeina\_31,

### Summary by start number:

#### Start 6:

- Found in 13 of 120 ( 10.8% ) of genes in pham
- Manual Annotations of this start: 2 of 86
- Called 38.5% of time when present
- Phage (with cluster) where this start called: Altjira\_30 (AU6), Phaila\_30 (AU6), PoeMe\_32 (AU6), TrixiePhattel\_31 (AU6), Zeina\_31 (AU6),

#### Start 9:

- Found in 6 of 120 ( 5.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 16.7% of time when present
- Phage (with cluster) where this start called: BarbieDoll\_34 (AU6),

#### Start 11:

- Found in 13 of 120 ( 10.8% ) of genes in pham
- Manual Annotations of this start: 2 of 86
- Called 23.1% of time when present
- Phage (with cluster) where this start called: KevinMinion\_31 (AU6), Mardi\_32 (AU6), Tenney120\_31 (AU6),

#### Start 13:

- Found in 25 of 120 ( 20.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 4.0% of time when present
- Phage (with cluster) where this start called: Onestar\_28 (AW),

#### Start 14:

- Found in 22 of 120 ( 18.3% ) of genes in pham
- Manual Annotations of this start: 12 of 86
- Called 54.5% of time when present
- Phage (with cluster) where this start called: Bowling\_25 (AM), Cheesy\_25 (AM), Circum\_25 (AM), Dynamite\_24 (AM), Hankly\_23 (AM), Heisenberger\_24 (AM), JEGGS\_24 (AM), Mooshroom\_24 (AM), Mudcat\_24 (AM), NapoleonB\_24 (AM), Tribby\_25 (AM), Xenomorph\_23 (AM),

#### Start 15:

- Found in 53 of 120 ( 44.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 3.8% of time when present
- Phage (with cluster) where this start called: AreFloNak\_31 (AU1), GermyBearimy\_30 (FI),

Start 16:

- Found in 22 of 120 ( 18.3% ) of genes in pham
- Manual Annotations of this start: 2 of 86
- Called 9.1% of time when present
- Phage (with cluster) where this start called: BenitoAntonio\_25 (AM), Kardesai\_23 (AM),

Start 17:

- Found in 6 of 120 ( 5.0% ) of genes in pham
- Manual Annotations of this start: 2 of 86
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Biscute\_32 (AU6), Lewando\_34 (AU6),

Start 18:

- Found in 42 of 120 ( 35.0% ) of genes in pham
- Manual Annotations of this start: 34 of 86
- Called 95.2% of time when present
- Phage (with cluster) where this start called: Acai\_31 (AU1), Bouchard\_32 (AU2), Breylor17\_32 (AU1), Brunswick\_31 (AU1), CapnMurica\_31 (AU1), CastorTray\_33 (AU1), Caterpillar\_29 (AU4), Chlochlo\_32 (AU2), Darby\_31 (AU1), DevitoJr\_31 (AU1), Dinallo\_32 (AU1), ElephantMan\_31 (AU1), Giantsbane\_32 (AU2), Gordon\_31 (AU1), Hemma\_28 (AU1), Ingrid\_31 (AU3), Inked\_33 (AU7), Issa\_31 (AU1), LilHuddy\_32 (AU2), Loretta\_31 (AU3), LucySwiss\_31 (AU1), Makai\_31 (AU5), MediumFry\_29 (AU4), MiniBagel\_31 (AU1), Nightmare\_32 (AU1), Niktson\_31 (AU1), Nivinsha\_31 (AU1), Phaby\_32 (AU2), ScienceWizSam\_33 (AU1), Shepard\_32 (AU2), Synopsis\_30 (AU1), Tatanka\_31 (AU1), Teacup\_31 (AU1), Tenno\_32 (AU1), Tipton\_32 (AU2), Tokki\_32 (AU2), Truckee\_30 (AU5), Trustiboi\_32 (AU1), Westerlin\_32 (AU1), Zippen\_31 (AU7),

Start 19:

- Found in 22 of 120 ( 18.3% ) of genes in pham
- Manual Annotations of this start: 4 of 86
- Called 22.7% of time when present
- Phage (with cluster) where this start called: Arcadia\_25 (AM), Correa\_24 (AM), Elsa\_25 (AM), Nason\_25 (AM), YoshiYama\_24 (AM),

Start 20:

- Found in 25 of 120 ( 20.8% ) of genes in pham
- Manual Annotations of this start: 5 of 86
- Called 44.0% of time when present
- Phage (with cluster) where this start called: Argan\_30 (AU6), GantcherGoblin\_30 (AU6), Jazzy4900\_29 (FI), Kinny\_33 (AU6), Leathea\_31 (AU6), Muglass\_33 (AU6), Navi1117\_31 (AU6), Renaldo\_36 (AU6), Stardrop\_32 (AU6), Sunny4976\_28 (FI), Uzumaki\_31 (AU6),

Start 21:

- Found in 11 of 120 ( 9.2% ) of genes in pham

- Manual Annotations of this start: 5 of 86
- Called 54.5% of time when present
- Phage (with cluster) where this start called: Elver\_45 (FK), Natasha\_28 (AW), Paella\_45 (FK), Qui\_45 (FK), RustyBoy\_28 (AW), Sprinkle\_28 (AW),

#### Start 24:

- Found in 63 of 120 ( 52.5% ) of genes in pham
- Manual Annotations of this start: 18 of 86
- Called 36.5% of time when present
- Phage (with cluster) where this start called: Benllo\_23 (AM), Boog\_28 (AW), BronxBay\_28 (AW), Djungelskog\_28 (AW), DoctorPepper\_28 (AW), Egad\_28 (AW), GoCrazy\_23 (AM), HerbBucket\_27 (AW), Jeremy4pt0\_27 (AW), KeaneyLin\_23 (AM), Linda\_28 (AW), Michelle\_28 (AW), MrAaronian\_28 (AW), PowellDog\_29 (AW), ProfFrink\_28 (AW), Raunak\_28 (AW), Salk\_28 (AW), Shiba\_28 (AW), Sloopyjoe\_28 (AW), Spain\_27 (AW), Sporto\_29 (AW), StarLord\_28 (AW), Stayer\_28 (AW),

#### Start 27:

- Found in 1 of 120 ( 0.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PorkBelly\_20 (FJ),

#### Start 33:

- Found in 78 of 120 ( 65.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 2.6% of time when present
- Phage (with cluster) where this start called: Anandi\_34 (AU4), Arzan\_27 (FI),

#### Start 34:

- Found in 31 of 120 ( 25.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 12.9% of time when present
- Phage (with cluster) where this start called: Gandionco\_46 (FK), JeNeSaisPas\_44 (FK), Kureo\_46 (FK), Marianna39\_46 (FK),

### Summary by clusters:

There are 12 clusters represented in this pham: AU7, AM, AU1, AU3, AU2, AU5, AU4, AW, AU6, FI, FJ, FK,

#### Info for manual annotations of cluster AM:

- Start number 14 was manually annotated 12 times for cluster AM.
- Start number 16 was manually annotated 2 times for cluster AM.
- Start number 19 was manually annotated 4 times for cluster AM.
- Start number 24 was manually annotated 2 times for cluster AM.

#### Info for manual annotations of cluster AU1:

- Start number 18 was manually annotated 19 times for cluster AU1.

#### Info for manual annotations of cluster AU2:

- Start number 18 was manually annotated 7 times for cluster AU2.

#### Info for manual annotations of cluster AU3:

- Start number 18 was manually annotated 2 times for cluster AU3.

Info for manual annotations of cluster AU4:

- Start number 18 was manually annotated 2 times for cluster AU4.

Info for manual annotations of cluster AU5:

- Start number 18 was manually annotated 2 times for cluster AU5.

Info for manual annotations of cluster AU6:

- Start number 6 was manually annotated 2 times for cluster AU6.
- Start number 11 was manually annotated 2 times for cluster AU6.
- Start number 17 was manually annotated 2 times for cluster AU6.
- Start number 20 was manually annotated 5 times for cluster AU6.

Info for manual annotations of cluster AU7:

- Start number 18 was manually annotated 2 times for cluster AU7.

Info for manual annotations of cluster AW:

- Start number 21 was manually annotated 2 times for cluster AW.
- Start number 24 was manually annotated 16 times for cluster AW.

Info for manual annotations of cluster FK:

- Start number 21 was manually annotated 3 times for cluster FK.

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

Gene: Acai\_31 Start: 27716, Stop: 28159, Start Num: 18

Candidate Starts for Acai\_31:

(15, 27701), (Start: 18 @27716 has 34 MA's), (22, 27728), (33, 27779), (37, 27809), (39, 27821), (41, 27833), (53, 27908), (58, 27929), (64, 27965), (69, 28001), (75, 28028), (84, 28070),

Gene: Altjira\_30 Start: 26927, Stop: 27430, Start Num: 6

Candidate Starts for Altjira\_30:

(Start: 6 @26927 has 2 MA's), (Start: 11 @26951 has 2 MA's), (Start: 20 @26984 has 5 MA's), (Start: 24 @26999 has 18 MA's), (42, 27104), (52, 27173), (53, 27179), (72, 27281), (73, 27293),

Gene: Anandi\_34 Start: 28320, Stop: 28712, Start Num: 33

Candidate Starts for Anandi\_34:

(1, 28119), (2, 28128), (3, 28188), (5, 28227), (15, 28266), (Start: 18 @28281 has 34 MA's), (33, 28320), (46, 28395), (49, 28410), (55, 28455), (58, 28470), (68, 28527), (76, 28575), (77, 28578), (82, 28593), (93, 28659), (96, 28692),

Gene: Arcadia\_25 Start: 24095, Stop: 24541, Start Num: 19

Candidate Starts for Arcadia\_25:

(Start: 14 @24074 has 12 MA's), (Start: 16 @24080 has 2 MA's), (Start: 19 @24095 has 4 MA's), (Start: 24 @24113 has 18 MA's), (40, 24212), (48, 24242), (51, 24275), (52, 24284), (57, 24302), (70, 24386), (72, 24392), (74, 24407), (76, 24416), (79, 24425), (85, 24455), (90, 24482),

Gene: AreFloNak\_31 Start: 27662, Stop: 28120, Start Num: 15

Candidate Starts for AreFloNak\_31:

(15, 27662), (Start: 18 @27677 has 34 MA's), (22, 27689), (33, 27740), (41, 27794), (53, 27869), (58, 27890), (69, 27962), (75, 27989), (84, 28031), (86, 28037),

Gene: Argan\_30 Start: 26251, Stop: 26697, Start Num: 20

Candidate Starts for Argan\_30:

(Start: 6 @26194 has 2 MA's), (Start: 11 @26218 has 2 MA's), (Start: 20 @26251 has 5 MA's), (Start: 24 @26266 has 18 MA's), (42, 26371), (52, 26440), (53, 26446), (72, 26548), (73, 26560),

Gene: Arzan\_27 Start: 25038, Stop: 25418, Start Num: 33

Candidate Starts for Arzan\_27:

(15, 24963), (Start: 20 @24984 has 5 MA's), (33, 25038), (39, 25080), (49, 25128), (51, 25152), (52, 25161), (60, 25197), (67, 25242), (69, 25260), (71, 25266), (75, 25287), (80, 25305), (86, 25335),

Gene: BarbieDoll\_34 Start: 28185, Stop: 28676, Start Num: 9

Candidate Starts for BarbieDoll\_34:

(9, 28185), (13, 28206), (Start: 17 @28221 has 2 MA's), (Start: 20 @28230 has 5 MA's), (Start: 24 @28245 has 18 MA's), (26, 28257), (42, 28350), (52, 28419), (53, 28425), (55, 28431), (60, 28455), (72, 28527), (73, 28539), (89, 28605),

Gene: BenitoAntonio\_25 Start: 23696, Stop: 24157, Start Num: 16

Candidate Starts for BenitoAntonio\_25:

(Start: 14 @23690 has 12 MA's), (Start: 16 @23696 has 2 MA's), (Start: 19 @23711 has 4 MA's), (Start: 24 @23729 has 18 MA's), (29, 23753), (38, 23810), (40, 23828), (44, 23840), (52, 23900), (57, 23918), (62, 23948), (64, 23963), (70, 24002), (72, 24008), (76, 24032), (85, 24071), (90, 24098),

Gene: Benllo\_23 Start: 24013, Stop: 24441, Start Num: 24

Candidate Starts for Benllo\_23:

(Start: 14 @23974 has 12 MA's), (Start: 16 @23980 has 2 MA's), (Start: 19 @23995 has 4 MA's), (Start: 24 @24013 has 18 MA's), (40, 24112), (48, 24142), (51, 24175), (52, 24184), (57, 24202), (70, 24286), (72, 24292), (74, 24307), (76, 24316), (79, 24325), (85, 24355), (90, 24382),

Gene: Biscute\_32 Start: 27867, Stop: 28322, Start Num: 17

Candidate Starts for Biscute\_32:

(9, 27831), (13, 27852), (Start: 17 @27867 has 2 MA's), (Start: 20 @27876 has 5 MA's), (Start: 24 @27891 has 18 MA's), (26, 27903), (36, 27963), (39, 27981), (42, 27996), (52, 28065), (53, 28071), (60, 28101), (72, 28173), (73, 28185),

Gene: Boog\_28 Start: 24847, Stop: 25275, Start Num: 24

Candidate Starts for Boog\_28:

(13, 24805), (Start: 24 @24847 has 18 MA's), (32, 24889), (33, 24895), (34, 24898), (38, 24928), (40, 24946), (43, 24955), (51, 25009), (62, 25066), (79, 25159), (83, 25183), (85, 25189),

Gene: Bouchard\_32 Start: 27859, Stop: 28302, Start Num: 18

Candidate Starts for Bouchard\_32:

(3, 27766), (5, 27805), (15, 27844), (Start: 18 @27859 has 34 MA's), (33, 27922), (37, 27952), (39, 27964), (50, 28024), (53, 28051), (58, 28072), (61, 28090), (70, 28147), (79, 28186), (90, 28243), (94, 28279),

Gene: Bowling\_25 Start: 23788, Stop: 24255, Start Num: 14

Candidate Starts for Bowling\_25:

(Start: 14 @23788 has 12 MA's), (Start: 16 @23794 has 2 MA's), (Start: 19 @23809 has 4 MA's), (Start: 24 @23827 has 18 MA's), (40, 23926), (48, 23956), (51, 23989), (52, 23998), (57, 24016), (70,

24100), (72, 24106), (74, 24121), (76, 24130), (79, 24139), (85, 24169), (90, 24196),

Gene: Breylor17\_32 Start: 28283, Stop: 28726, Start Num: 18

Candidate Starts for Breylor17\_32:

(15, 28268), (Start: 18 @28283 has 34 MA's), (22, 28295), (33, 28346), (41, 28400), (53, 28475), (58, 28496), (69, 28568), (75, 28595), (84, 28637), (86, 28643),

Gene: BronxBay\_28 Start: 24846, Stop: 25274, Start Num: 24

Candidate Starts for BronxBay\_28:

(13, 24804), (Start: 24 @24846 has 18 MA's), (32, 24888), (33, 24894), (34, 24897), (38, 24927), (39, 24936), (43, 24954), (51, 25008), (62, 25065), (79, 25158), (83, 25182), (86, 25191),

Gene: Brunswick\_31 Start: 27749, Stop: 28192, Start Num: 18

Candidate Starts for Brunswick\_31:

(15, 27734), (Start: 18 @27749 has 34 MA's), (22, 27761), (33, 27812), (39, 27854), (58, 27962), (64, 27998), (65, 28001), (69, 28034), (75, 28061), (84, 28103), (91, 28142),

Gene: CapnMurica\_31 Start: 28835, Stop: 29278, Start Num: 18

Candidate Starts for CapnMurica\_31:

(15, 28820), (Start: 18 @28835 has 34 MA's), (22, 28847), (33, 28898), (39, 28940), (41, 28952), (53, 29027), (65, 29087), (69, 29120), (75, 29147), (91, 29228),

Gene: CastorTray\_33 Start: 28141, Stop: 28584, Start Num: 18

Candidate Starts for CastorTray\_33:

(15, 28126), (Start: 18 @28141 has 34 MA's), (22, 28153), (32, 28198), (33, 28204), (39, 28246), (41, 28258), (53, 28333), (58, 28354), (69, 28426), (75, 28453), (84, 28495), (86, 28501),

Gene: Caterpillar\_29 Start: 26915, Stop: 27358, Start Num: 18

Candidate Starts for Caterpillar\_29:

(5, 26861), (15, 26900), (Start: 18 @26915 has 34 MA's), (32, 26972), (33, 26978), (37, 27008), (41, 27032), (53, 27107), (58, 27128), (61, 27146), (65, 27167), (67, 27182), (75, 27227), (90, 27299),

Gene: Cheesy\_25 Start: 23789, Stop: 24256, Start Num: 14

Candidate Starts for Cheesy\_25:

(Start: 14 @23789 has 12 MA's), (Start: 16 @23795 has 2 MA's), (Start: 19 @23810 has 4 MA's), (Start: 24 @23828 has 18 MA's), (29, 23852), (38, 23909), (40, 23927), (44, 23939), (52, 23999), (57, 24017), (62, 24047), (64, 24062), (70, 24101), (72, 24107), (76, 24131), (85, 24170), (90, 24197),

Gene: Chlochlo\_32 Start: 27895, Stop: 28338, Start Num: 18

Candidate Starts for Chlochlo\_32:

(15, 27880), (Start: 18 @27895 has 34 MA's), (32, 27952), (33, 27958), (39, 28000), (50, 28060), (58, 28108), (90, 28279), (94, 28315),

Gene: Circum\_25 Start: 23796, Stop: 24263, Start Num: 14

Candidate Starts for Circum\_25:

(Start: 14 @23796 has 12 MA's), (Start: 16 @23802 has 2 MA's), (Start: 19 @23817 has 4 MA's), (Start: 24 @23835 has 18 MA's), (40, 23934), (48, 23964), (52, 24006), (57, 24024), (70, 24108), (72, 24114), (74, 24129), (76, 24138), (79, 24147), (85, 24177), (90, 24204),

Gene: Correa\_24 Start: 23325, Stop: 23771, Start Num: 19

Candidate Starts for Correa\_24:

(Start: 14 @23304 has 12 MA's), (Start: 16 @23310 has 2 MA's), (Start: 19 @23325 has 4 MA's), (Start: 24 @23343 has 18 MA's), (38, 23424), (40, 23442), (51, 23505), (57, 23532), (72, 23622), (76,

23646), (79, 23655), (85, 23685),

Gene: Darby\_31 Start: 27587, Stop: 28030, Start Num: 18

Candidate Starts for Darby\_31:

(15, 27572), (Start: 18 @27587 has 34 MA's), (22, 27599), (32, 27644), (33, 27650), (41, 27704), (53, 27779), (58, 27800), (64, 27836), (65, 27839), (69, 27872), (75, 27899), (84, 27941), (86, 27947),

Gene: DevitoJr\_31 Start: 27758, Stop: 28201, Start Num: 18

Candidate Starts for DevitoJr\_31:

(15, 27743), (Start: 18 @27758 has 34 MA's), (22, 27770), (32, 27815), (33, 27821), (39, 27863), (41, 27875), (53, 27950), (58, 27971), (69, 28043), (75, 28070), (84, 28112), (86, 28118),

Gene: Dinallo\_32 Start: 28823, Stop: 29266, Start Num: 18

Candidate Starts for Dinallo\_32:

(15, 28808), (Start: 18 @28823 has 34 MA's), (22, 28835), (33, 28886), (39, 28928), (41, 28940), (53, 29015), (65, 29075), (69, 29108), (75, 29135), (91, 29216),

Gene: Djungelskog\_28 Start: 24846, Stop: 25274, Start Num: 24

Candidate Starts for Djungelskog\_28:

(13, 24804), (Start: 24 @24846 has 18 MA's), (32, 24888), (33, 24894), (34, 24897), (38, 24927), (39, 24936), (43, 24954), (51, 25008), (62, 25065), (79, 25158), (83, 25182), (86, 25191),

Gene: DoctorPepper\_28 Start: 24846, Stop: 25274, Start Num: 24

Candidate Starts for DoctorPepper\_28:

(13, 24804), (Start: 24 @24846 has 18 MA's), (32, 24888), (33, 24894), (34, 24897), (38, 24927), (39, 24936), (43, 24954), (51, 25008), (62, 25065), (79, 25158), (83, 25182), (86, 25191),

Gene: Dynamite\_24 Start: 23597, Stop: 24064, Start Num: 14

Candidate Starts for Dynamite\_24:

(Start: 14 @23597 has 12 MA's), (Start: 16 @23603 has 2 MA's), (Start: 19 @23618 has 4 MA's), (Start: 24 @23636 has 18 MA's), (40, 23735), (48, 23765), (51, 23798), (52, 23807), (57, 23825), (70, 23909), (72, 23915), (74, 23930), (76, 23939), (79, 23948), (85, 23978), (90, 24005),

Gene: Egad\_28 Start: 24847, Stop: 25275, Start Num: 24

Candidate Starts for Egad\_28:

(13, 24805), (Start: 24 @24847 has 18 MA's), (32, 24889), (33, 24895), (34, 24898), (38, 24928), (39, 24937), (43, 24955), (51, 25009), (62, 25066), (79, 25159), (83, 25183), (86, 25192),

Gene: ElephantMan\_31 Start: 28289, Stop: 28732, Start Num: 18

Candidate Starts for ElephantMan\_31:

(15, 28274), (Start: 18 @28289 has 34 MA's), (22, 28301), (32, 28346), (33, 28352), (37, 28382), (39, 28394), (41, 28406), (58, 28502), (65, 28541), (69, 28574), (75, 28601), (84, 28643), (91, 28682),

Gene: Elsa\_25 Start: 24095, Stop: 24541, Start Num: 19

Candidate Starts for Elsa\_25:

(Start: 14 @24074 has 12 MA's), (Start: 16 @24080 has 2 MA's), (Start: 19 @24095 has 4 MA's), (Start: 24 @24113 has 18 MA's), (40, 24212), (48, 24242), (51, 24275), (52, 24284), (57, 24302), (70, 24386), (72, 24392), (74, 24407), (76, 24416), (79, 24425), (85, 24455), (90, 24482),

Gene: Elver\_45 Start: 36454, Stop: 36888, Start Num: 21

Candidate Starts for Elver\_45:

(5, 36391), (10, 36409), (15, 36430), (Start: 21 @36454 has 5 MA's), (32, 36502), (33, 36508), (34, 36511), (38, 36541), (51, 36622), (53, 36637), (64, 36694), (69, 36730), (75, 36757), (82, 36781), (84,

36799), (86, 36805),

Gene: Gandionco\_46 Start: 37033, Stop: 37410, Start Num: 34

Candidate Starts for Gandionco\_46:

(5, 36913), (10, 36931), (15, 36952), (Start: 21 @36976 has 5 MA's), (32, 37024), (33, 37030), (34, 37033), (38, 37063), (51, 37144), (53, 37159), (64, 37216), (69, 37252), (75, 37279), (82, 37303), (84, 37321), (86, 37327), (87, 37330),

Gene: GantcherGoblin\_30 Start: 26290, Stop: 26736, Start Num: 20

Candidate Starts for GantcherGoblin\_30:

(Start: 6 @26233 has 2 MA's), (Start: 11 @26257 has 2 MA's), (Start: 20 @26290 has 5 MA's), (Start: 24 @26305 has 18 MA's), (42, 26410), (52, 26479), (53, 26485), (72, 26587), (73, 26599),

Gene: GermyBearimy\_30 Start: 25394, Stop: 25849, Start Num: 15

Candidate Starts for GermyBearimy\_30:

(15, 25394), (Start: 20 @25415 has 5 MA's), (33, 25469), (39, 25511), (49, 25559), (51, 25583), (52, 25592), (60, 25628), (67, 25673), (69, 25691), (71, 25697), (75, 25718), (80, 25736), (86, 25766),

Gene: Giantsbane\_32 Start: 26755, Stop: 27198, Start Num: 18

Candidate Starts for Giantsbane\_32:

(3, 26662), (5, 26701), (15, 26740), (Start: 18 @26755 has 34 MA's), (23, 26773), (33, 26818), (37, 26848), (39, 26860), (50, 26920), (58, 26968), (61, 26986), (70, 27043), (79, 27082), (90, 27139), (94, 27175),

Gene: GoCrazy\_23 Start: 23636, Stop: 24064, Start Num: 24

Candidate Starts for GoCrazy\_23:

(Start: 14 @23597 has 12 MA's), (Start: 16 @23603 has 2 MA's), (Start: 19 @23618 has 4 MA's), (Start: 24 @23636 has 18 MA's), (29, 23660), (38, 23717), (40, 23735), (44, 23747), (52, 23807), (57, 23825), (62, 23855), (64, 23870), (70, 23909), (72, 23915), (76, 23939), (85, 23978), (90, 24005),

Gene: Gordon\_31 Start: 28863, Stop: 29306, Start Num: 18

Candidate Starts for Gordon\_31:

(15, 28848), (Start: 18 @28863 has 34 MA's), (22, 28875), (32, 28920), (33, 28926), (39, 28968), (41, 28980), (53, 29055), (69, 29148), (75, 29175), (84, 29217), (86, 29223),

Gene: Hankly\_23 Start: 22819, Stop: 23286, Start Num: 14

Candidate Starts for Hankly\_23:

(Start: 14 @22819 has 12 MA's), (Start: 16 @22825 has 2 MA's), (Start: 19 @22840 has 4 MA's), (Start: 24 @22858 has 18 MA's), (29, 22882), (38, 22939), (40, 22957), (44, 22969), (48, 22987), (51, 23020), (52, 23029), (57, 23047), (70, 23131), (72, 23137), (74, 23152), (76, 23161), (79, 23170), (85, 23200), (90, 23227),

Gene: Heisenberger\_24 Start: 23467, Stop: 23934, Start Num: 14

Candidate Starts for Heisenberger\_24:

(Start: 14 @23467 has 12 MA's), (Start: 16 @23473 has 2 MA's), (Start: 19 @23488 has 4 MA's), (Start: 24 @23506 has 18 MA's), (40, 23605), (48, 23635), (51, 23668), (52, 23677), (57, 23695), (70, 23779), (72, 23785), (74, 23800), (76, 23809), (79, 23818), (85, 23848), (90, 23875),

Gene: Hemma\_28 Start: 24206, Stop: 24637, Start Num: 18

Candidate Starts for Hemma\_28:

(5, 24152), (15, 24191), (Start: 18 @24206 has 34 MA's), (33, 24245), (38, 24278), (44, 24308), (45, 24317), (54, 24377), (57, 24386), (58, 24395), (59, 24398), (65, 24434), (68, 24452), (70, 24470), (72, 24476), (74, 24491), (78, 24506), (83, 24533), (93, 24584), (96, 24617),

Gene: HerbBucket\_27 Start: 24847, Stop: 25275, Start Num: 24

Candidate Starts for HerbBucket\_27:

(13, 24805), (Start: 24 @24847 has 18 MA's), (32, 24889), (33, 24895), (34, 24898), (38, 24928), (40, 24946), (43, 24955), (51, 25009), (62, 25066), (79, 25159), (83, 25183), (85, 25189),

Gene: Ingrid\_31 Start: 27486, Stop: 27917, Start Num: 18

Candidate Starts for Ingrid\_31:

(1, 27324), (2, 27333), (5, 27432), (15, 27471), (Start: 18 @27486 has 34 MA's), (32, 27519), (33, 27525), (40, 27576), (41, 27579), (43, 27585), (47, 27603), (54, 27657), (57, 27666), (58, 27675), (68, 27732), (74, 27771), (78, 27786), (83, 27813), (88, 27831), (93, 27864), (96, 27897),

Gene: Inked\_33 Start: 28494, Stop: 28937, Start Num: 18

Candidate Starts for Inked\_33:

(3, 28401), (5, 28440), (15, 28479), (Start: 18 @28494 has 34 MA's), (25, 28521), (30, 28545), (32, 28551), (33, 28557), (37, 28587), (50, 28659), (58, 28707), (61, 28725), (66, 28755), (68, 28764), (76, 28812), (81, 28827), (84, 28848), (90, 28878), (94, 28914),

Gene: Issa\_31 Start: 27567, Stop: 28010, Start Num: 18

Candidate Starts for Issa\_31:

(15, 27552), (Start: 18 @27567 has 34 MA's), (22, 27579), (32, 27624), (33, 27630), (39, 27672), (41, 27684), (53, 27759), (58, 27780), (69, 27852), (75, 27879), (84, 27921), (86, 27927),

Gene: JEGGS\_24 Start: 23521, Stop: 23988, Start Num: 14

Candidate Starts for JEGGS\_24:

(Start: 14 @23521 has 12 MA's), (Start: 16 @23527 has 2 MA's), (Start: 19 @23542 has 4 MA's), (Start: 24 @23560 has 18 MA's), (40, 23659), (48, 23689), (51, 23722), (52, 23731), (57, 23749), (70, 23833), (72, 23839), (74, 23854), (76, 23863), (79, 23872), (85, 23902), (90, 23929),

Gene: Jazzy4900\_29 Start: 26238, Stop: 26672, Start Num: 20

Candidate Starts for Jazzy4900\_29:

(Start: 20 @26238 has 5 MA's), (33, 26292), (52, 26415), (67, 26496), (69, 26514), (71, 26520), (75, 26541),

Gene: JeNeSaisPas\_44 Start: 37046, Stop: 37423, Start Num: 34

Candidate Starts for JeNeSaisPas\_44:

(5, 36926), (10, 36944), (15, 36965), (Start: 21 @36989 has 5 MA's), (32, 37037), (33, 37043), (34, 37046), (38, 37076), (51, 37157), (53, 37172), (64, 37229), (69, 37265), (75, 37292), (82, 37316), (84, 37334), (86, 37340),

Gene: Jeremy4pt0\_27 Start: 24846, Stop: 25274, Start Num: 24

Candidate Starts for Jeremy4pt0\_27:

(13, 24804), (Start: 24 @24846 has 18 MA's), (32, 24888), (33, 24894), (34, 24897), (38, 24927), (39, 24936), (43, 24954), (51, 25008), (62, 25065), (79, 25158), (83, 25182), (86, 25191),

Gene: Kardesai\_23 Start: 23206, Stop: 23667, Start Num: 16

Candidate Starts for Kardesai\_23:

(Start: 14 @23200 has 12 MA's), (Start: 16 @23206 has 2 MA's), (Start: 19 @23221 has 4 MA's), (Start: 24 @23239 has 18 MA's), (40, 23338), (48, 23368), (51, 23401), (52, 23410), (57, 23428), (70, 23512), (72, 23518), (74, 23533), (76, 23542), (79, 23551), (85, 23581), (90, 23608),

Gene: KeaneyLin\_23 Start: 23636, Stop: 24064, Start Num: 24

Candidate Starts for KeaneyLin\_23:

(Start: 14 @23597 has 12 MA's), (Start: 16 @23603 has 2 MA's), (Start: 19 @23618 has 4 MA's), (Start: 24 @23636 has 18 MA's), (29, 23660), (38, 23717), (40, 23735), (44, 23747), (52, 23807), (57, 23825), (62, 23855), (64, 23870), (70, 23909), (72, 23915), (76, 23939), (85, 23978), (90, 24005),

Gene: KevinMinion\_31 Start: 27351, Stop: 27830, Start Num: 11

Candidate Starts for KevinMinion\_31:

(Start: 6 @27327 has 2 MA's), (Start: 11 @27351 has 2 MA's), (Start: 20 @27384 has 5 MA's), (Start: 24 @27399 has 18 MA's), (42, 27504), (52, 27573), (53, 27579), (72, 27681), (73, 27693),

Gene: Kinny\_33 Start: 28143, Stop: 28589, Start Num: 20

Candidate Starts for Kinny\_33:

(9, 28098), (13, 28119), (Start: 17 @28134 has 2 MA's), (Start: 20 @28143 has 5 MA's), (Start: 24 @28158 has 18 MA's), (26, 28170), (42, 28263), (52, 28332), (53, 28338), (55, 28344), (60, 28368), (72, 28440), (73, 28452), (89, 28518),

Gene: Kureo\_46 Start: 35856, Stop: 36233, Start Num: 34

Candidate Starts for Kureo\_46:

(5, 35736), (10, 35754), (15, 35775), (Start: 21 @35799 has 5 MA's), (32, 35847), (33, 35853), (34, 35856), (38, 35886), (51, 35967), (53, 35982), (64, 36039), (69, 36075), (75, 36102), (82, 36126), (84, 36144), (86, 36150),

Gene: Leathea\_31 Start: 26183, Stop: 26632, Start Num: 20

Candidate Starts for Leathea\_31:

(Start: 20 @26183 has 5 MA's), (Start: 24 @26198 has 18 MA's), (30, 26228), (42, 26303), (52, 26372), (53, 26378), (72, 26480), (73, 26492), (89, 26558),

Gene: Lewando\_34 Start: 28203, Stop: 28658, Start Num: 17

Candidate Starts for Lewando\_34:

(9, 28167), (13, 28188), (Start: 17 @28203 has 2 MA's), (Start: 20 @28212 has 5 MA's), (Start: 24 @28227 has 18 MA's), (26, 28239), (42, 28332), (52, 28401), (53, 28407), (55, 28413), (60, 28437), (72, 28509), (73, 28521), (89, 28587),

Gene: LilHuddy\_32 Start: 27938, Stop: 28381, Start Num: 18

Candidate Starts for LilHuddy\_32:

(15, 27923), (Start: 18 @27938 has 34 MA's), (33, 28001), (37, 28031), (39, 28043), (50, 28103), (53, 28130), (61, 28169), (70, 28226), (90, 28322),

Gene: Linda\_28 Start: 24846, Stop: 25274, Start Num: 24

Candidate Starts for Linda\_28:

(13, 24804), (Start: 24 @24846 has 18 MA's), (32, 24888), (33, 24894), (34, 24897), (38, 24927), (39, 24936), (43, 24954), (51, 25008), (62, 25065), (79, 25158), (83, 25182), (86, 25191),

Gene: Loretta\_31 Start: 27486, Stop: 27917, Start Num: 18

Candidate Starts for Loretta\_31:

(1, 27324), (2, 27333), (5, 27432), (15, 27471), (Start: 18 @27486 has 34 MA's), (32, 27519), (33, 27525), (40, 27576), (41, 27579), (43, 27585), (47, 27603), (54, 27657), (57, 27666), (58, 27675), (68, 27732), (74, 27771), (78, 27786), (83, 27813), (88, 27831), (93, 27864), (96, 27897),

Gene: LucySwiss\_31 Start: 27592, Stop: 28035, Start Num: 18

Candidate Starts for LucySwiss\_31:

(15, 27577), (Start: 18 @27592 has 34 MA's), (22, 27604), (32, 27649), (33, 27655), (39, 27697), (53, 27784), (58, 27805), (64, 27841), (65, 27844), (69, 27877), (75, 27904), (84, 27946), (91, 27985),

Gene: Makai\_31 Start: 27724, Stop: 28155, Start Num: 18

Candidate Starts for Makai\_31:

(3, 27631), (5, 27670), (15, 27709), (Start: 18 @27724 has 34 MA's), (33, 27763), (35, 27784), (42, 27820), (45, 27835), (46, 27838), (58, 27913), (68, 27970), (77, 28021), (78, 28024), (93, 28102), (96, 28135),

Gene: Mardi\_32 Start: 26785, Stop: 27264, Start Num: 11

Candidate Starts for Mardi\_32:

(Start: 6 @26761 has 2 MA's), (Start: 11 @26785 has 2 MA's), (Start: 20 @26818 has 5 MA's), (Start: 24 @26833 has 18 MA's), (42, 26938), (52, 27007), (53, 27013), (72, 27115), (73, 27127),

Gene: Marianna39\_46 Start: 37033, Stop: 37410, Start Num: 34

Candidate Starts for Marianna39\_46:

(5, 36913), (10, 36931), (15, 36952), (Start: 21 @36976 has 5 MA's), (32, 37024), (33, 37030), (34, 37033), (38, 37063), (51, 37144), (53, 37159), (64, 37216), (69, 37252), (75, 37279), (82, 37303), (84, 37321), (86, 37327),

Gene: MediumFry\_29 Start: 26917, Stop: 27360, Start Num: 18

Candidate Starts for MediumFry\_29:

(5, 26863), (15, 26902), (Start: 18 @26917 has 34 MA's), (32, 26974), (33, 26980), (37, 27010), (41, 27034), (53, 27109), (58, 27130), (61, 27148), (65, 27169), (67, 27184), (75, 27229), (90, 27301),

Gene: Michelle\_28 Start: 24846, Stop: 25274, Start Num: 24

Candidate Starts for Michelle\_28:

(13, 24804), (Start: 24 @24846 has 18 MA's), (32, 24888), (33, 24894), (34, 24897), (38, 24927), (39, 24936), (43, 24954), (51, 25008), (62, 25065), (79, 25158), (83, 25182), (86, 25191),

Gene: MiniBagel\_31 Start: 28814, Stop: 29257, Start Num: 18

Candidate Starts for MiniBagel\_31:

(15, 28799), (Start: 18 @28814 has 34 MA's), (22, 28826), (33, 28877), (39, 28919), (41, 28931), (53, 29006), (65, 29066), (69, 29099), (75, 29126), (91, 29207),

Gene: Mooshroom\_24 Start: 23200, Stop: 23667, Start Num: 14

Candidate Starts for Mooshroom\_24:

(Start: 14 @23200 has 12 MA's), (Start: 16 @23206 has 2 MA's), (Start: 19 @23221 has 4 MA's), (Start: 24 @23239 has 18 MA's), (40, 23338), (48, 23368), (51, 23401), (52, 23410), (57, 23428), (70, 23512), (72, 23518), (74, 23533), (76, 23542), (79, 23551), (85, 23581), (90, 23608),

Gene: MrAaronian\_28 Start: 24846, Stop: 25274, Start Num: 24

Candidate Starts for MrAaronian\_28:

(13, 24804), (Start: 24 @24846 has 18 MA's), (32, 24888), (33, 24894), (34, 24897), (38, 24927), (39, 24936), (43, 24954), (51, 25008), (62, 25065), (79, 25158), (83, 25182), (86, 25191),

Gene: Mudcat\_24 Start: 25498, Stop: 25965, Start Num: 14

Candidate Starts for Mudcat\_24:

(Start: 14 @25498 has 12 MA's), (Start: 16 @25504 has 2 MA's), (Start: 19 @25519 has 4 MA's), (Start: 24 @25537 has 18 MA's), (38, 25618), (40, 25636), (51, 25699), (57, 25726), (70, 25810), (72, 25816), (76, 25840), (79, 25849), (85, 25879), (90, 25906),

Gene: Muglass\_33 Start: 27780, Stop: 28226, Start Num: 20

Candidate Starts for Muglass\_33:

(9, 27735), (13, 27756), (Start: 17 @27771 has 2 MA's), (Start: 20 @27780 has 5 MA's), (Start: 24 @27795 has 18 MA's), (26, 27807), (36, 27867), (39, 27885), (42, 27900), (52, 27969), (53, 27975),

(60, 28005), (72, 28077), (73, 28089),

Gene: NapoleonB\_24 Start: 23597, Stop: 24064, Start Num: 14

Candidate Starts for NapoleonB\_24:

(Start: 14 @23597 has 12 MA's), (Start: 16 @23603 has 2 MA's), (Start: 19 @23618 has 4 MA's), (Start: 24 @23636 has 18 MA's), (40, 23735), (48, 23765), (51, 23798), (52, 23807), (57, 23825), (70, 23909), (72, 23915), (74, 23930), (76, 23939), (79, 23948), (85, 23978), (90, 24005),

Gene: Nason\_25 Start: 24095, Stop: 24541, Start Num: 19

Candidate Starts for Nason\_25:

(Start: 14 @24074 has 12 MA's), (Start: 16 @24080 has 2 MA's), (Start: 19 @24095 has 4 MA's), (Start: 24 @24113 has 18 MA's), (40, 24212), (48, 24242), (51, 24275), (52, 24284), (57, 24302), (70, 24386), (72, 24392), (74, 24407), (76, 24416), (79, 24425), (85, 24455), (90, 24482),

Gene: Natasha\_28 Start: 24254, Stop: 24679, Start Num: 21

Candidate Starts for Natasha\_28:

(4, 24188), (8, 24203), (12, 24224), (Start: 21 @24254 has 5 MA's), (32, 24293), (33, 24299), (34, 24302), (38, 24332), (47, 24377), (62, 24470), (77, 24557), (84, 24590), (87, 24599), (92, 24635),

Gene: Navi1117\_31 Start: 26457, Stop: 26903, Start Num: 20

Candidate Starts for Navi1117\_31:

(Start: 6 @26400 has 2 MA's), (Start: 11 @26424 has 2 MA's), (Start: 20 @26457 has 5 MA's), (Start: 24 @26472 has 18 MA's), (33, 26520), (36, 26544), (55, 26658), (60, 26682), (72, 26754), (73, 26766), (77, 26781), (95, 26883),

Gene: Nightmare\_32 Start: 28127, Stop: 28570, Start Num: 18

Candidate Starts for Nightmare\_32:

(15, 28112), (Start: 18 @28127 has 34 MA's), (22, 28139), (33, 28190), (39, 28232), (58, 28340), (65, 28379), (69, 28412), (75, 28439), (91, 28520),

Gene: Niktson\_31 Start: 28289, Stop: 28732, Start Num: 18

Candidate Starts for Niktson\_31:

(15, 28274), (Start: 18 @28289 has 34 MA's), (22, 28301), (32, 28346), (33, 28352), (37, 28382), (39, 28394), (41, 28406), (58, 28502), (65, 28541), (69, 28574), (75, 28601), (84, 28643), (91, 28682),

Gene: Nivinsha\_31 Start: 27677, Stop: 28120, Start Num: 18

Candidate Starts for Nivinsha\_31:

(15, 27662), (Start: 18 @27677 has 34 MA's), (22, 27689), (33, 27740), (41, 27794), (53, 27869), (58, 27890), (69, 27962), (75, 27989), (84, 28031), (86, 28037),

Gene: Onestar\_28 Start: 24587, Stop: 25054, Start Num: 13

Candidate Starts for Onestar\_28:

(13, 24587), (Start: 24 @24629 has 18 MA's), (31, 24659), (32, 24668), (33, 24674), (34, 24677), (51, 24788), (63, 24851), (66, 24872), (73, 24917), (80, 24941), (84, 24965),

Gene: Paella\_45 Start: 36456, Stop: 36890, Start Num: 21

Candidate Starts for Paella\_45:

(5, 36393), (10, 36411), (15, 36432), (Start: 21 @36456 has 5 MA's), (33, 36510), (34, 36513), (38, 36543), (51, 36624), (53, 36639), (64, 36696), (69, 36732), (75, 36759), (82, 36783), (84, 36801), (86, 36807), (87, 36810),

Gene: Phaby\_32 Start: 27870, Stop: 28313, Start Num: 18

Candidate Starts for Phaby\_32:

(3, 27777), (5, 27816), (15, 27855), (Start: 18 @27870 has 34 MA's), (33, 27933), (37, 27963), (39, 27975), (42, 27990), (50, 28035), (53, 28062), (58, 28083), (61, 28101), (70, 28158), (79, 28197), (90, 28254), (94, 28290),

Gene: Phaila\_30 Start: 25811, Stop: 26314, Start Num: 6

Candidate Starts for Phaila\_30:

(Start: 6 @25811 has 2 MA's), (Start: 11 @25835 has 2 MA's), (Start: 20 @25868 has 5 MA's), (Start: 24 @25883 has 18 MA's), (42, 25988), (52, 26057), (53, 26063), (60, 26093), (72, 26165), (73, 26177),

Gene: PoeMe\_32 Start: 27089, Stop: 27592, Start Num: 6

Candidate Starts for PoeMe\_32:

(Start: 6 @27089 has 2 MA's), (Start: 11 @27113 has 2 MA's), (Start: 20 @27146 has 5 MA's), (Start: 24 @27161 has 18 MA's), (42, 27266), (52, 27335), (53, 27341), (72, 27443), (73, 27455),

Gene: PorkBelly\_20 Start: 19379, Stop: 19798, Start Num: 27

Candidate Starts for PorkBelly\_20:

(7, 19295), (27, 19379), (33, 19409), (39, 19451), (42, 19466), (62, 19577), (74, 19652), (89, 19715), (93, 19745),

Gene: Powelldog\_29 Start: 24544, Stop: 24969, Start Num: 24

Candidate Starts for Powelldog\_29:

(3, 24430), (5, 24469), (15, 24508), (Start: 21 @24532 has 5 MA's), (Start: 24 @24544 has 18 MA's), (34, 24592), (38, 24622), (39, 24631), (43, 24649), (62, 24760), (69, 24811), (80, 24856),

Gene: ProfFrink\_28 Start: 24846, Stop: 25274, Start Num: 24

Candidate Starts for ProfFrink\_28:

(13, 24804), (Start: 24 @24846 has 18 MA's), (32, 24888), (33, 24894), (34, 24897), (38, 24927), (39, 24936), (43, 24954), (51, 25008), (62, 25065), (79, 25158), (83, 25182), (86, 25191),

Gene: Qui\_45 Start: 36456, Stop: 36890, Start Num: 21

Candidate Starts for Qui\_45:

(5, 36393), (10, 36411), (15, 36432), (Start: 21 @36456 has 5 MA's), (33, 36510), (34, 36513), (38, 36543), (51, 36624), (53, 36639), (64, 36696), (69, 36732), (75, 36759), (82, 36783), (84, 36801), (86, 36807), (87, 36810),

Gene: Raunak\_28 Start: 24846, Stop: 25274, Start Num: 24

Candidate Starts for Raunak\_28:

(13, 24804), (Start: 24 @24846 has 18 MA's), (32, 24888), (33, 24894), (34, 24897), (38, 24927), (39, 24936), (43, 24954), (51, 25008), (62, 25065), (79, 25158), (83, 25182), (86, 25191),

Gene: Renaldo\_36 Start: 28221, Stop: 28667, Start Num: 20

Candidate Starts for Renaldo\_36:

(9, 28176), (13, 28197), (Start: 17 @28212 has 2 MA's), (Start: 20 @28221 has 5 MA's), (Start: 24 @28236 has 18 MA's), (26, 28248), (42, 28341), (52, 28410), (53, 28416), (55, 28422), (60, 28446), (72, 28518), (73, 28530), (89, 28596),

Gene: RustyBoy\_28 Start: 24236, Stop: 24661, Start Num: 21

Candidate Starts for RustyBoy\_28:

(4, 24170), (8, 24185), (12, 24206), (Start: 21 @24236 has 5 MA's), (32, 24275), (33, 24281), (34, 24284), (38, 24314), (47, 24359), (62, 24452), (84, 24572), (87, 24581), (92, 24617),

Gene: Salk\_28 Start: 24846, Stop: 25274, Start Num: 24

Candidate Starts for Salk\_28:

(13, 24804), (Start: 24 @24846 has 18 MA's), (32, 24888), (33, 24894), (34, 24897), (38, 24927), (39, 24936), (43, 24954), (51, 25008), (62, 25065), (79, 25158), (83, 25182), (86, 25191),

Gene: ScienceWizSam\_33 Start: 28078, Stop: 28521, Start Num: 18

Candidate Starts for ScienceWizSam\_33:

(15, 28063), (Start: 18 @28078 has 34 MA's), (22, 28090), (33, 28141), (41, 28195), (53, 28270), (58, 28291), (69, 28363), (75, 28390), (84, 28432), (86, 28438),

Gene: Shepard\_32 Start: 27935, Stop: 28378, Start Num: 18

Candidate Starts for Shepard\_32:

(15, 27920), (Start: 18 @27935 has 34 MA's), (33, 27998), (37, 28028), (39, 28040), (50, 28100), (53, 28127), (61, 28166), (70, 28223), (90, 28319),

Gene: Shiba\_28 Start: 24846, Stop: 25274, Start Num: 24

Candidate Starts for Shiba\_28:

(13, 24804), (Start: 24 @24846 has 18 MA's), (32, 24888), (33, 24894), (34, 24897), (38, 24927), (39, 24936), (43, 24954), (51, 25008), (62, 25065), (79, 25158), (83, 25182), (86, 25191),

Gene: Sloopyjoe\_28 Start: 24847, Stop: 25275, Start Num: 24

Candidate Starts for Sloopyjoe\_28:

(13, 24805), (Start: 24 @24847 has 18 MA's), (32, 24889), (33, 24895), (34, 24898), (38, 24928), (39, 24937), (43, 24955), (51, 25009), (62, 25066), (79, 25159), (83, 25183), (86, 25192),

Gene: Spain\_27 Start: 24846, Stop: 25274, Start Num: 24

Candidate Starts for Spain\_27:

(13, 24804), (Start: 24 @24846 has 18 MA's), (32, 24888), (33, 24894), (34, 24897), (38, 24927), (39, 24936), (43, 24954), (51, 25008), (62, 25065), (79, 25158), (83, 25182), (86, 25191),

Gene: Sporto\_29 Start: 26058, Stop: 26486, Start Num: 24

Candidate Starts for Sporto\_29:

(3, 25944), (5, 25983), (15, 26022), (Start: 20 @26043 has 5 MA's), (Start: 24 @26058 has 18 MA's), (31, 26091), (32, 26100), (33, 26106), (34, 26109), (38, 26139), (39, 26148), (43, 26166), (51, 26220), (62, 26277), (79, 26370), (83, 26394), (86, 26403),

Gene: Sprinkle\_28 Start: 24960, Stop: 25385, Start Num: 21

Candidate Starts for Sprinkle\_28:

(Start: 21 @24960 has 5 MA's), (28, 24990), (33, 25005), (34, 25008), (38, 25038), (51, 25119), (53, 25134), (54, 25137), (56, 25143), (64, 25191), (68, 25212), (69, 25227), (75, 25254), (79, 25269), (82, 25278), (85, 25299),

Gene: StarLord\_28 Start: 24847, Stop: 25275, Start Num: 24

Candidate Starts for StarLord\_28:

(13, 24805), (Start: 24 @24847 has 18 MA's), (32, 24889), (33, 24895), (34, 24898), (38, 24928), (39, 24937), (43, 24955), (51, 25009), (62, 25066), (79, 25159), (83, 25183), (86, 25192),

Gene: Stardrop\_32 Start: 26842, Stop: 27288, Start Num: 20

Candidate Starts for Stardrop\_32:

(Start: 6 @26785 has 2 MA's), (Start: 11 @26809 has 2 MA's), (Start: 20 @26842 has 5 MA's), (Start: 24 @26857 has 18 MA's), (42, 26962), (52, 27031), (53, 27037), (72, 27139), (73, 27151),

Gene: Stayer\_28 Start: 24846, Stop: 25274, Start Num: 24

Candidate Starts for Stayer\_28:

(13, 24804), (Start: 24 @24846 has 18 MA's), (32, 24888), (33, 24894), (34, 24897), (38, 24927), (39, 24936), (43, 24954), (51, 25008), (62, 25065), (79, 25158), (83, 25182), (86, 25191),

Gene: Sunny4976\_28 Start: 26238, Stop: 26672, Start Num: 20

Candidate Starts for Sunny4976\_28:

(Start: 20 @26238 has 5 MA's), (33, 26292), (52, 26415), (67, 26496), (69, 26514), (71, 26520), (75, 26541),

Gene: Synopsis\_30 Start: 27741, Stop: 28184, Start Num: 18

Candidate Starts for Synopsis\_30:

(15, 27726), (Start: 18 @27741 has 34 MA's), (22, 27753), (32, 27798), (33, 27804), (41, 27858), (53, 27933), (58, 27954), (64, 27990), (65, 27993), (69, 28026), (75, 28053), (84, 28095), (86, 28101),

Gene: Tatanka\_31 Start: 28225, Stop: 28668, Start Num: 18

Candidate Starts for Tatanka\_31:

(15, 28210), (Start: 18 @28225 has 34 MA's), (22, 28237), (32, 28282), (33, 28288), (41, 28342), (53, 28417), (58, 28438), (69, 28510), (75, 28537), (84, 28579), (86, 28585),

Gene: Teacup\_31 Start: 27597, Stop: 28040, Start Num: 18

Candidate Starts for Teacup\_31:

(15, 27582), (Start: 18 @27597 has 34 MA's), (22, 27609), (32, 27654), (33, 27660), (37, 27690), (39, 27702), (41, 27714), (58, 27810), (64, 27846), (65, 27849), (69, 27882), (75, 27909), (84, 27951), (91, 27990),

Gene: Tenney120\_31 Start: 26546, Stop: 27025, Start Num: 11

Candidate Starts for Tenney120\_31:

(Start: 6 @26522 has 2 MA's), (Start: 11 @26546 has 2 MA's), (Start: 20 @26579 has 5 MA's), (Start: 24 @26594 has 18 MA's), (42, 26699), (52, 26768), (53, 26774), (72, 26876), (73, 26888),

Gene: Tenno\_32 Start: 28823, Stop: 29266, Start Num: 18

Candidate Starts for Tenno\_32:

(15, 28808), (Start: 18 @28823 has 34 MA's), (22, 28835), (33, 28886), (39, 28928), (41, 28940), (53, 29015), (65, 29075), (69, 29108), (75, 29135), (91, 29216),

Gene: Tipton\_32 Start: 27931, Stop: 28374, Start Num: 18

Candidate Starts for Tipton\_32:

(15, 27916), (Start: 18 @27931 has 34 MA's), (32, 27988), (33, 27994), (39, 28036), (50, 28096), (58, 28144), (90, 28315), (94, 28351),

Gene: Tokki\_32 Start: 27886, Stop: 28329, Start Num: 18

Candidate Starts for Tokki\_32:

(3, 27793), (5, 27832), (15, 27871), (Start: 18 @27886 has 34 MA's), (33, 27949), (37, 27979), (39, 27991), (42, 28006), (50, 28051), (58, 28099), (61, 28117), (70, 28174), (79, 28213), (90, 28270), (94, 28306),

Gene: Tribby\_25 Start: 23789, Stop: 24256, Start Num: 14

Candidate Starts for Tribby\_25:

(Start: 14 @23789 has 12 MA's), (Start: 16 @23795 has 2 MA's), (Start: 19 @23810 has 4 MA's), (Start: 24 @23828 has 18 MA's), (29, 23852), (38, 23909), (40, 23927), (44, 23939), (52, 23999), (57, 24017), (62, 24047), (64, 24062), (70, 24101), (72, 24107), (76, 24131), (85, 24170), (90, 24197),

Gene: TrixiePhattel\_31 Start: 26358, Stop: 26861, Start Num: 6

Candidate Starts for TrixiePhattel\_31:

(Start: 6 @26358 has 2 MA's), (Start: 11 @26382 has 2 MA's), (Start: 20 @26415 has 5 MA's), (Start: 24 @26430 has 18 MA's), (42, 26535), (52, 26604), (53, 26610), (60, 26640), (72, 26712), (73, 26724),

Gene: Truckee\_30 Start: 27769, Stop: 28200, Start Num: 18

Candidate Starts for Truckee\_30:

(3, 27676), (5, 27715), (15, 27754), (Start: 18 @27769 has 34 MA's), (33, 27808), (35, 27829), (42, 27865), (45, 27880), (46, 27883), (58, 27958), (68, 28015), (77, 28066), (78, 28069), (93, 28147), (96, 28180),

Gene: Trustiboi\_32 Start: 28294, Stop: 28737, Start Num: 18

Candidate Starts for Trustiboi\_32:

(15, 28279), (Start: 18 @28294 has 34 MA's), (22, 28306), (32, 28351), (33, 28357), (39, 28399), (41, 28411), (53, 28486), (58, 28507), (69, 28579), (75, 28606), (84, 28648), (86, 28654),

Gene: Uzumaki\_31 Start: 27109, Stop: 27555, Start Num: 20

Candidate Starts for Uzumaki\_31:

(Start: 6 @27052 has 2 MA's), (Start: 11 @27076 has 2 MA's), (Start: 20 @27109 has 5 MA's), (Start: 24 @27124 has 18 MA's), (42, 27229), (52, 27298), (53, 27304), (72, 27406), (73, 27418),

Gene: Westerlin\_32 Start: 29406, Stop: 29849, Start Num: 18

Candidate Starts for Westerlin\_32:

(15, 29391), (Start: 18 @29406 has 34 MA's), (22, 29418), (32, 29463), (33, 29469), (39, 29511), (53, 29598), (58, 29619), (64, 29655), (65, 29658), (69, 29691), (75, 29718), (84, 29760), (91, 29799),

Gene: Xenomorph\_23 Start: 23807, Stop: 24274, Start Num: 14

Candidate Starts for Xenomorph\_23:

(Start: 14 @23807 has 12 MA's), (Start: 16 @23813 has 2 MA's), (Start: 19 @23828 has 4 MA's), (Start: 24 @23846 has 18 MA's), (38, 23927), (40, 23945), (51, 24008), (57, 24035), (70, 24119), (72, 24125), (76, 24149), (79, 24158), (85, 24188),

Gene: YoshiYama\_24 Start: 23859, Stop: 24305, Start Num: 19

Candidate Starts for YoshiYama\_24:

(Start: 14 @23838 has 12 MA's), (Start: 16 @23844 has 2 MA's), (Start: 19 @23859 has 4 MA's), (Start: 24 @23877 has 18 MA's), (38, 23958), (40, 23976), (51, 24039), (57, 24066), (70, 24150), (72, 24156), (76, 24180), (79, 24189), (85, 24219), (90, 24246),

Gene: Zeina\_31 Start: 26433, Stop: 26936, Start Num: 6

Candidate Starts for Zeina\_31:

(Start: 6 @26433 has 2 MA's), (Start: 11 @26457 has 2 MA's), (Start: 20 @26490 has 5 MA's), (Start: 24 @26505 has 18 MA's), (42, 26610), (52, 26679), (53, 26685), (72, 26787), (73, 26799),

Gene: Zippen\_31 Start: 28073, Stop: 28516, Start Num: 18

Candidate Starts for Zippen\_31:

(3, 27980), (5, 28019), (15, 28058), (Start: 18 @28073 has 34 MA's), (25, 28100), (30, 28124), (32, 28130), (33, 28136), (37, 28166), (50, 28238), (58, 28286), (61, 28304), (66, 28334), (68, 28343), (76, 28391), (81, 28406), (84, 28427), (90, 28457), (94, 28493),