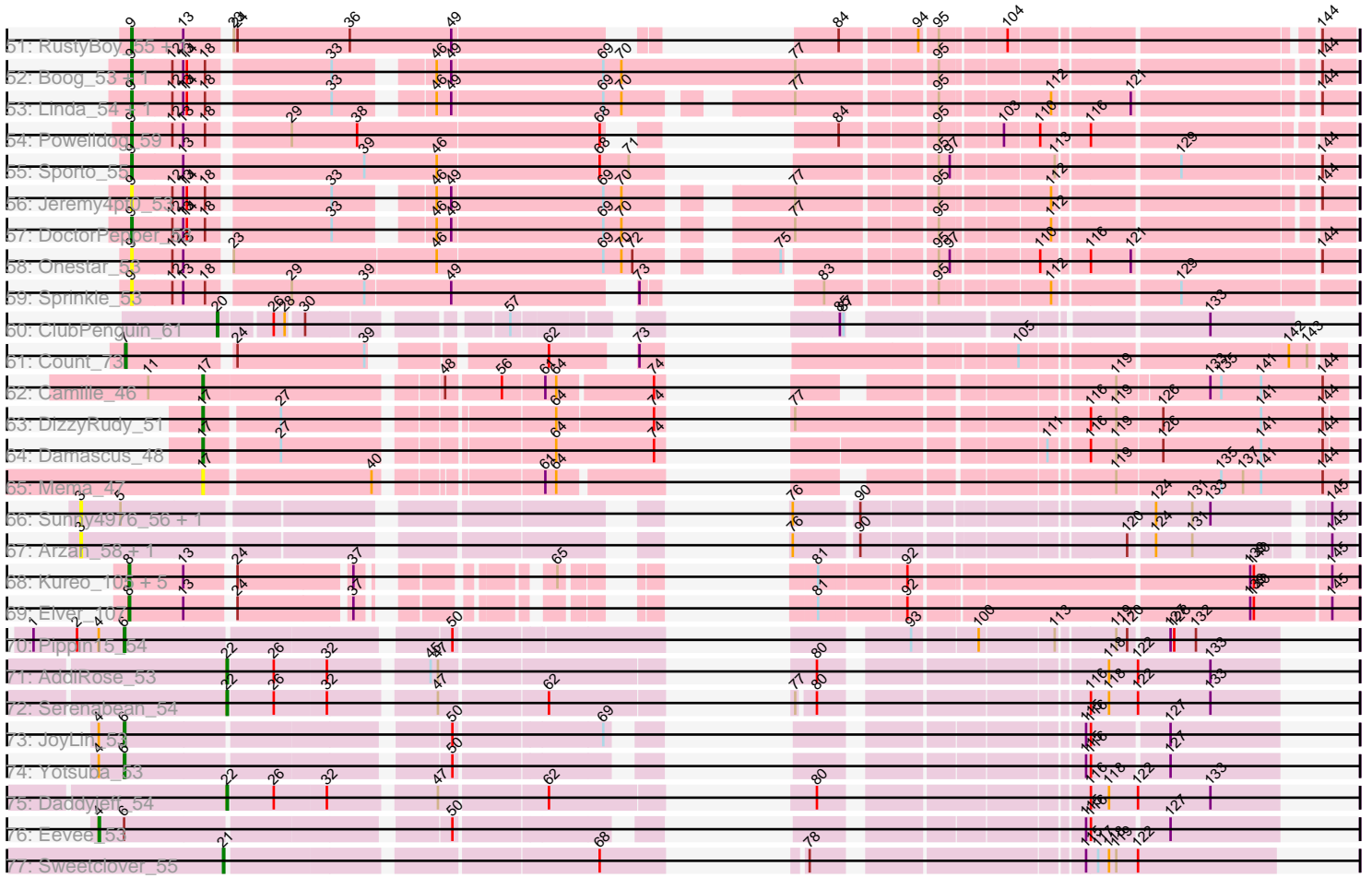


Pham 294524



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 294524 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294524 has 135 members, 35 are drafts.

Phages represented in each track:

- Track 1 : Benllo\_58, NapoleonB\_59, GoCrazy\_58, Hankly\_58, KeaneyLin\_58, Circum\_61, Dynamite\_59
- Track 2 : Mooshroom\_61, Kardesai\_60, YoshiYama\_59
- Track 3 : BenitoAntonio\_59, JEGGS\_58, Heisenberger\_58, Mudcat\_56
- Track 4 : Cheesy\_59
- Track 5 : Tribby\_61, Elsa\_59, Arcadia\_59, Correa\_56, Xenomorph\_56, Nason\_59
- Track 6 : Stardom\_56
- Track 7 : Bowling\_59
- Track 8 : LucySwiss\_54
- Track 9 : MiniBagel\_54
- Track 10 : DevitoJr\_54, Trustiboi\_54, Westerlin\_53, Gordon\_52, Nightmare\_56, ScienceWizSam\_55
- Track 11 : Tenno\_55, CapnMurica\_52
- Track 12 : Teacup\_55
- Track 13 : Issa\_53
- Track 14 : Nivinsha\_56, AreFloNak\_57
- Track 15 : Dinallo\_53
- Track 16 : Niktson\_54, ElephantMan\_54, Brunswick\_55
- Track 17 : Acai\_54
- Track 18 : Hemma\_51
- Track 19 : Synopsis\_53, Darby\_53
- Track 20 : Tatanka\_51
- Track 21 : Breylor17\_54
- Track 22 : CastorTray\_57
- Track 23 : Chlochlo\_55
- Track 24 : LilHuddy\_56, Shepard\_57
- Track 25 : Tipton\_56
- Track 26 : Bouchard\_54
- Track 27 : Tokki\_60, Phaby\_57
- Track 28 : Giantsbane\_57
- Track 29 : Loretta\_55, Ingrid\_58
- Track 30 : MediumFry\_53, Caterpillar\_52
- Track 31 : Anandi\_59
- Track 32 : Truckee\_53, Makai\_55
- Track 33 : Kinny\_61, Renaldo\_64
- Track 34 : Phaila\_61
- Track 35 : BarbieDoll\_62, Muglass\_60, Biscute\_58

- Track 36 : Leathea\_58
- Track 37 : Uzumaki\_55, Argan\_56
- Track 38 : Navi1117\_59
- Track 39 : Zeina\_59
- Track 40 : PoeMe\_59, Stardrop\_62
- Track 41 : Lewando\_61
- Track 42 : GantcherGoblin\_56, Tenney120\_59
- Track 43 : KevinMinion\_57
- Track 44 : Altjira\_60
- Track 45 : Barbonzobean\_64
- Track 46 : TrixiePhattel\_59
- Track 47 : Mardi\_58
- Track 48 : Inked\_59
- Track 49 : Zippen\_58
- Track 50 : MrAaronian\_54, Egad\_54, Stayer\_54, BronxBay\_54, Raunak\_57, StarLord\_54, Djungelskog\_53, Spain\_56, Sloopyjoe\_54, Shiba\_53, ProfFrink\_54, Michelle\_54
- Track 51 : RustyBoy\_55, Natasha\_55
- Track 52 : Boog\_53, HerbBucket\_54
- Track 53 : Linda\_54, Salk\_54
- Track 54 : PowellDog\_59
- Track 55 : Sporto\_55
- Track 56 : Jeremy4pt0\_53
- Track 57 : DoctorPepper\_53
- Track 58 : Onestar\_53
- Track 59 : Sprinkle\_53
- Track 60 : ClubPenguin\_61
- Track 61 : Count\_73
- Track 62 : Camille\_46
- Track 63 : DizzyRudy\_51
- Track 64 : Damascus\_48
- Track 65 : Mema\_47
- Track 66 : Sunny4976\_56, Jazzy4900\_57
- Track 67 : Arzan\_58, GernyBearimy\_65
- Track 68 : Kureo\_105, Paella\_107, Qui\_107, Gandionco\_104, JeNeSaisPas\_102, Marianna39\_105
- Track 69 : Elver\_107
- Track 70 : Pippin15\_54
- Track 71 : AddiRose\_53
- Track 72 : Serenabean\_54
- Track 73 : JoyLin\_53
- Track 74 : Yotsuba\_53
- Track 75 : Daddyjeff\_54
- Track 76 : Eevee\_53
- Track 77 : Sweetclover\_55

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

The start number called the most often in the published annotations is 10, it was called in 34 of the 100 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acai\_54, Anandi\_59, AreFloNak\_57, Bouchard\_54, Breylor17\_54, Brunswick\_55, CapnMurica\_52, CastorTray\_57, Caterpillar\_52, Chlochlo\_55, Darby\_53, DevitoJr\_54, Dinallo\_53, ElephantMan\_54, Giantsbane\_57, Gordon\_52, Hemma\_51, Ingrid\_58, Inked\_59, Issa\_53, LilHuddy\_56, Loretta\_55, LucySwiss\_54, Makai\_55, MediumFry\_53, MiniBagel\_54, Nightmare\_56, Niktson\_54, Nivinsha\_56, Phaby\_57, ScienceWizSam\_55, Shepard\_57, Synepsis\_53, Tatanka\_51, Teacup\_55, Tenno\_55, Tipton\_56, Tokki\_60, Truckee\_53, Trustiboi\_54, Westerlin\_53, Zippen\_58,

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

- 

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

- AddiRose\_53, Altjira\_60, Arcadia\_59, Argan\_56, Arzan\_58, BarbieDoll\_62, Barbonzobean\_64, BenitoAntonio\_59, Benllo\_58, Biscute\_58, Boog\_53, Bowling\_59, BronxBay\_54, Camille\_46, Cheesy\_59, Circum\_61, ClubPenguin\_61, Correa\_56, Count\_73, Daddyjeff\_54, Damascus\_48, DizzyRudy\_51, Djungelskog\_53, DoctorPepper\_53, Dynamite\_59, Eevee\_53, Egad\_54, Elsa\_59, Elver\_107, Gandionco\_104, GantcherGoblin\_56, GermyBearimy\_65, GoCrazy\_58, Hankly\_58, Heisenberger\_58, HerbBucket\_54, JEGGS\_58, Jazzy4900\_57, JeNeSaisPas\_102, Jeremy4pt0\_53, JoyLin\_53, Kardesai\_60, KeaneyLin\_58, KevinMinion\_57, Kinny\_61, Kureo\_105, Leathea\_58, Lewando\_61, Linda\_54, Mardi\_58, Marianna39\_105, Mema\_47, Michelle\_54, Mooshroom\_61, MrAaronian\_54, Mudcat\_56, Muglass\_60, NapoleonB\_59, Nason\_59, Natasha\_55, Navi1117\_59, Onestar\_53, Paella\_107, Phaila\_61, Pippin15\_54, PoeMe\_59, PowellDog\_59, ProfFrink\_54, Qui\_107, Raunak\_57, Renaldo\_64, RustyBoy\_55, Salk\_54, Serenabean\_54, Shiba\_53, Sloopyjoe\_54, Spain\_56, Sporto\_55, Sprinkle\_53, StarLord\_54, Stardom\_56, Stardrop\_62, Stayer\_54, Sunny4976\_56, Sweetclover\_55, Tenney120\_59, Tribby\_61, TrixiePhattel\_59, Uzumaki\_55, Xenomorph\_56, YoshiYama\_59, Yotsuba\_53, Zeina\_59,

### Summary by start number:

Start 3:

- Found in 4 of 135 ( 3.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arzan\_58 (FI), GermyBearimy\_65 (FI), Jazzy4900\_57 (FI), Sunny4976\_56 (FI),

Start 4:

- Found in 4 of 135 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 1 of 100
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Eevee\_53 (JA),

Start 6:

- Found in 4 of 135 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 3 of 100
- Called 75.0% of time when present
- Phage (with cluster) where this start called: JoyLin\_53 (JA), Pippin15\_54 (JA), Yotsuba\_53 (JA),

Start 7:

- Found in 1 of 135 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 100
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Count\_73 (EL),

Start 8:

- Found in 30 of 135 ( 22.2% ) of genes in pham
- Manual Annotations of this start: 24 of 100
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arcadia\_59 (AM), BenitoAntonio\_59 (AM), Benllo\_58 (AM), Bowling\_59 (AM), Cheesy\_59 (AM), Circum\_61 (AM), Correa\_56 (AM), Dynamite\_59 (AM), Elsa\_59 (AM), Elver\_107 (FK), Gandionco\_104 (FK), GoCrazy\_58 (AM), Hankly\_58 (AM), Heisenberger\_58 (AM), JEGGS\_58 (AM), JeNeSaisPas\_102 (FK), Kardesai\_60 (AM), KeaneyLin\_58 (AM), Kureo\_105 (FK), Marianna39\_105 (FK), Mooshroom\_61 (AM), Mudcat\_56 (AM), NapoleonB\_59 (AM), Nason\_59 (AM), Paella\_107 (FK), Qui\_107 (FK), Stardom\_56 (AM), Tribby\_61 (AM), Xenomorph\_56 (AM), YoshiYama\_59 (AM),

Start 9:

- Found in 24 of 135 ( 17.8% ) of genes in pham
- Manual Annotations of this start: 18 of 100
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Boog\_53 (AW), BronxBay\_54 (AW), Djungelskog\_53 (AW), DoctorPepper\_53 (AW), Egad\_54 (AW), HerbBucket\_54 (AW), Jeremy4pt0\_53 (AW), Linda\_54 (AW), Michelle\_54 (AW), MrAaronian\_54 (AW), Natasha\_55 (AW), Onestar\_53 (AW), Powelldog\_59 (AW), ProfFrink\_54 (AW), Raunak\_57 (AW), RustyBoy\_55 (AW), Salk\_54 (AW), Shiba\_53 (AW), Sloopyjoe\_54 (AW), Spain\_56 (AW), Sporto\_55 (AW), Sprinkle\_53 (AW), StarLord\_54 (AW), Stayer\_54 (AW),

Start 10:

- Found in 42 of 135 ( 31.1% ) of genes in pham
- Manual Annotations of this start: 34 of 100
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Acai\_54 (AU1), Anandi\_59 (AU4), AreFloNak\_57 (AU1), Bouchard\_54 (AU2), Breylor17\_54 (AU1), Brunswick\_55 (AU1), CapnMurica\_52 (AU1), CastorTray\_57 (AU1), Caterpillar\_52 (AU4), Chlochlo\_55 (AU2), Darby\_53 (AU1), DevitoJr\_54 (AU1), Dinallo\_53 (AU1), ElephantMan\_54 (AU1), Giantsbane\_57 (AU2), Gordon\_52 (AU1), Hemma\_51 (AU1), Ingrid\_58 (AU3), Inked\_59 (AU7), Issa\_53 (AU1), LilHuddy\_56 (AU2), Loretta\_55 (AU3), LucySwiss\_54 (AU1), Makai\_55 (AU5), MediumFry\_53 (AU4), MiniBagel\_54 (AU1), Nightmare\_56 (AU1), Niktson\_54 (AU1), Nivinsha\_56 (AU1), Phaby\_57 (AU2), ScienceWizSam\_55 (AU1), Shepard\_57 (AU2), Synopsis\_53 (AU1), Tatanka\_51 (AU1), Teacup\_55 (AU1), Tenno\_55 (AU1), Tipton\_56 (AU2), Tokki\_60 (AU2), Truckee\_53 (AU5), Trustiboi\_54 (AU1), Westerlin\_53 (AU1), Zippen\_58 (AU7),

Start 16:

- Found in 21 of 135 ( 15.6% ) of genes in pham
- Manual Annotations of this start: 11 of 100
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Altjira\_60 (AU6), Argan\_56 (AU6), BarbieDoll\_62 (AU6), Barbonzobean\_64 (AU6), Biscute\_58 (AU6), GantcherGoblin\_56 (AU6), KevinMinion\_57 (AU6), Kinny\_61 (AU6), Leathea\_58 (AU6), Lewando\_61 (AU6), Mardi\_58 (AU6), Muglass\_60 (AU6), Navi1117\_59 (AU6), Phaila\_61 (AU6), PoeMe\_59 (AU6), Renaldo\_64 (AU6), Stardrop\_62 (AU6), Tenney120\_59 (AU6), TrixiePhattel\_59 (AU6), Uzumaki\_55 (AU6), Zeina\_59 (AU6),

Start 17:

- Found in 4 of 135 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 3 of 100
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Camille\_46 (EL), Damascus\_48 (EL), DizzyRudy\_51 (EL), Mema\_47 (EL),

Start 20:

- Found in 1 of 135 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 100
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ClubPenguin\_61 (BI7),

Start 21:

- Found in 1 of 135 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 100
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sweetclover\_55 (JA),

Start 22:

- Found in 3 of 135 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 3 of 100
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AddiRose\_53 (JA), Daddyjeff\_54 (JA), Serenabean\_54 (JA),

### **Summary by clusters:**

There are 14 clusters represented in this pham: BI7, AU7, EL, AM, AU1, AU3, AU2, AU5, AU4, AW, AU6, FI, FK, JA,

Info for manual annotations of cluster AM:

- Start number 8 was manually annotated 21 times for cluster AM.

Info for manual annotations of cluster AU1:

- Start number 10 was manually annotated 19 times for cluster AU1.

Info for manual annotations of cluster AU2:

- Start number 10 was manually annotated 7 times for cluster AU2.

Info for manual annotations of cluster AU3:

- Start number 10 was manually annotated 2 times for cluster AU3.

Info for manual annotations of cluster AU4:

- Start number 10 was manually annotated 2 times for cluster AU4.

Info for manual annotations of cluster AU5:

- Start number 10 was manually annotated 2 times for cluster AU5.

Info for manual annotations of cluster AU6:

- Start number 16 was manually annotated 11 times for cluster AU6.

Info for manual annotations of cluster AU7:

- Start number 10 was manually annotated 2 times for cluster AU7.

Info for manual annotations of cluster AW:

- Start number 9 was manually annotated 18 times for cluster AW.

Info for manual annotations of cluster BI7:

- Start number 20 was manually annotated 1 time for cluster BI7.

Info for manual annotations of cluster EL:

- Start number 7 was manually annotated 1 time for cluster EL.
- Start number 17 was manually annotated 3 times for cluster EL.

Info for manual annotations of cluster FK:

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

Info for manual annotations of cluster JA:

- Start number 4 was manually annotated 1 time for cluster JA.
- Start number 6 was manually annotated 3 times for cluster JA.
- Start number 21 was manually annotated 1 time for cluster JA.
- Start number 22 was manually annotated 3 times for cluster JA.

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

Gene: Acai\_54 Start: 37297, Stop: 38052, Start Num: 10

Candidate Starts for Acai\_54:

(Start: 10 @37297 has 34 MA's), (33, 37447), (52, 37537), (55, 37549), (60, 37588), (80, 37669), (95, 37750), (98, 37765), (108, 37816), (147, 38044),

Gene: AddiRose\_53 Start: 34578, Stop: 35276, Start Num: 22

Candidate Starts for AddiRose\_53:

(Start: 22 @34578 has 3 MA's), (26, 34614), (32, 34656), (45, 34728), (47, 34734), (80, 34932), (118, 35136), (122, 35160), (133, 35220),

Gene: Altjira\_60 Start: 37225, Stop: 37941, Start Num: 16

Candidate Starts for Altjira\_60:

(Start: 16 @37225 has 11 MA's), (58, 37444), (91, 37564), (92, 37597), (95, 37618), (113, 37705), (146, 37924),

Gene: Anandi\_59 Start: 37643, Stop: 38389, Start Num: 10

Candidate Starts for Anandi\_59:

(Start: 10 @37643 has 34 MA's), (23, 37724), (31, 37796), (43, 37850), (67, 37958), (80, 38015), (85, 38033), (88, 38039), (95, 38096), (98, 38111), (102, 38129), (106, 38156),

Gene: Arcadia\_59 Start: 35986, Stop: 36783, Start Num: 8

Candidate Starts for Arcadia\_59:

(Start: 8 @35986 has 24 MA's), (34, 36148), (92, 36439), (96, 36472), (109, 36538), (117, 36586), (130, 36655), (139, 36706), (145, 36763),

Gene: AreFloNak\_57 Start: 37264, Stop: 38031, Start Num: 10

Candidate Starts for AreFloNak\_57:

(Start: 10 @37264 has 34 MA's), (33, 37414), (52, 37504), (55, 37516), (80, 37645), (95, 37729), (98, 37744), (147, 38023),

Gene: Argan\_56 Start: 35931, Stop: 36647, Start Num: 16

Candidate Starts for Argan\_56:

(Start: 16 @35931 has 11 MA's), (55, 36135), (58, 36150), (92, 36303), (95, 36324), (113, 36411), (123, 36483), (141, 36573), (146, 36630),

Gene: Arzan\_58 Start: 36809, Stop: 37624, Start Num: 3

Candidate Starts for Arzan\_58:

(3, 36809), (76, 37223), (90, 37271), (120, 37463), (124, 37481), (131, 37511), (145, 37607),

Gene: BarbieDoll\_62 Start: 37638, Stop: 38342, Start Num: 16

Candidate Starts for BarbieDoll\_62:

(Start: 16 @37638 has 11 MA's), (42, 37782), (92, 37998), (95, 38019), (101, 38052), (113, 38106), (114, 38121), (146, 38325),

Gene: Barbonzobean\_64 Start: 37901, Stop: 38590, Start Num: 16

Candidate Starts for Barbonzobean\_64:

(Start: 16 @37901 has 11 MA's), (42, 38045), (58, 38096), (63, 38114), (92, 38246), (95, 38267), (101, 38300), (113, 38354), (114, 38369), (146, 38573),

Gene: BenitoAntonio\_59 Start: 35510, Stop: 36310, Start Num: 8

Candidate Starts for BenitoAntonio\_59:

(Start: 8 @35510 has 24 MA's), (34, 35672), (39, 35693), (52, 35753), (69, 35852), (92, 35966), (96, 35999), (109, 36065), (115, 36104), (117, 36113), (130, 36182), (139, 36233), (145, 36290),

Gene: Benllo\_58 Start: 36188, Stop: 36988, Start Num: 8

Candidate Starts for Benllo\_58:

(Start: 8 @36188 has 24 MA's), (34, 36350), (39, 36371), (52, 36431), (69, 36530), (96, 36677), (109, 36743), (117, 36791), (130, 36860), (139, 36911), (145, 36968),

Gene: Biscute\_58 Start: 37290, Stop: 37994, Start Num: 16

Candidate Starts for Biscute\_58:

(Start: 16 @37290 has 11 MA's), (42, 37434), (92, 37650), (95, 37671), (101, 37704), (113, 37758), (114, 37773), (146, 37977),

Gene: Boog\_53 Start: 34696, Stop: 35613, Start Num: 9

Candidate Starts for Boog\_53:

(Start: 9 @34696 has 18 MA's), (12, 34729), (13, 34738), (14, 34741), (18, 34756), (33, 34849), (46, 34912), (49, 34924), (69, 35047), (70, 35062), (77, 35206), (95, 35311), (144, 35587),

Gene: Bouchard\_54 Start: 37255, Stop: 38007, Start Num: 10

Candidate Starts for Bouchard\_54:

(Start: 10 @37255 has 34 MA's), (19, 37321), (33, 37405), (60, 37546), (82, 37633), (86, 37648), (95, 37705),

Gene: Bowling\_59 Start: 35826, Stop: 36626, Start Num: 8

Candidate Starts for Bowling\_59:

(Start: 8 @35826 has 24 MA's), (34, 35988), (39, 36009), (52, 36069), (69, 36168), (92, 36282), (96, 36315), (109, 36381), (117, 36429), (130, 36498), (139, 36549), (145, 36606),

Gene: Breylor17\_54 Start: 37846, Stop: 38604, Start Num: 10

Candidate Starts for Breylor17\_54:

(Start: 10 @37846 has 34 MA's), (19, 37912), (33, 37996), (46, 38059), (52, 38086), (55, 38098), (60, 38137), (80, 38218), (95, 38302), (98, 38317), (147, 38596),

Gene: BronxBay\_54 Start: 34994, Stop: 35869, Start Num: 9

Candidate Starts for BronxBay\_54:

(Start: 9 @34994 has 18 MA's), (12, 35027), (13, 35036), (14, 35039), (18, 35054), (33, 35147), (46, 35210), (49, 35222), (69, 35345), (70, 35360), (77, 35462), (95, 35567), (97, 35576), (112, 35648), (121, 35705), (144, 35843),

Gene: Brunswick\_55 Start: 37137, Stop: 37901, Start Num: 10

Candidate Starts for Brunswick\_55:

(Start: 10 @37137 has 34 MA's), (33, 37287), (52, 37377), (54, 37386), (80, 37518), (95, 37599), (98, 37614), (147, 37893),

Gene: Camille\_46 Start: 32245, Stop: 32997, Start Num: 17

Candidate Starts for Camille\_46:

(11, 32200), (Start: 17 @32245 has 3 MA's), (48, 32425), (56, 32467), (61, 32500), (64, 32509), (74, 32584), (119, 32812), (133, 32884), (135, 32893), (141, 32926), (144, 32977),

Gene: CapnMurica\_52 Start: 38039, Stop: 38800, Start Num: 10

Candidate Starts for CapnMurica\_52:

(Start: 10 @38039 has 34 MA's), (33, 38189), (41, 38228), (52, 38279), (55, 38291), (80, 38417), (89, 38444), (95, 38498), (98, 38513), (108, 38564), (113, 38585), (147, 38792),

Gene: CastorTray\_57 Start: 37910, Stop: 38665, Start Num: 10

Candidate Starts for CastorTray\_57:

(Start: 10 @37910 has 34 MA's), (33, 38060), (52, 38150), (60, 38201), (80, 38282), (95, 38363), (98, 38378), (147, 38657),

Gene: Caterpillar\_52 Start: 36399, Stop: 37157, Start Num: 10

Candidate Starts for Caterpillar\_52:

(Start: 10 @36399 has 34 MA's), (33, 36549), (52, 36639), (60, 36690), (67, 36714), (80, 36771), (99, 36873), (147, 37152),

Gene: Cheesy\_59 Start: 35695, Stop: 36489, Start Num: 8

Candidate Starts for Cheesy\_59:

(Start: 8 @35695 has 24 MA's), (34, 35857), (52, 35938), (92, 36145), (96, 36178), (109, 36244), (115, 36283), (117, 36292), (130, 36361), (139, 36412), (145, 36469),

Gene: Chlochlo\_55 Start: 36999, Stop: 37757, Start Num: 10

Candidate Starts for Chlochlo\_55:

(Start: 10 @36999 has 34 MA's), (33, 37149), (60, 37290), (80, 37371), (95, 37455), (112, 37539),

Gene: Circum\_61 Start: 36379, Stop: 37179, Start Num: 8

Candidate Starts for Circum\_61:

(Start: 8 @36379 has 24 MA's), (34, 36541), (39, 36562), (52, 36622), (69, 36721), (96, 36868), (109, 36934), (117, 36982), (130, 37051), (139, 37102), (145, 37159),

Gene: ClubPenguin\_61 Start: 37048, Stop: 37701, Start Num: 20

Candidate Starts for ClubPenguin\_61:

(Start: 20 @37048 has 1 MA's), (26, 37087), (28, 37096), (30, 37108), (57, 37243), (85, 37378), (87, 37381), (133, 37633),

Gene: Correa\_56 Start: 34853, Stop: 35650, Start Num: 8

Candidate Starts for Correa\_56:

(Start: 8 @34853 has 24 MA's), (34, 35015), (92, 35306), (96, 35339), (109, 35405), (117, 35453), (130, 35522), (139, 35573), (145, 35630),

Gene: Count\_73 Start: 48676, Stop: 49458, Start Num: 7

Candidate Starts for Count\_73:

(Start: 7 @48676 has 1 MA's), (24, 48757), (39, 48862), (62, 48973), (73, 49021), (105, 49213), (142, 49417), (143, 49432),

Gene: Daddyjeff\_54 Start: 34798, Stop: 35496, Start Num: 22

Candidate Starts for Daddyjeff\_54:

(Start: 22 @34798 has 3 MA's), (26, 34834), (32, 34876), (47, 34954), (62, 35038), (80, 35152), (116, 35341), (118, 35356), (122, 35380), (133, 35440),

Gene: Damascus\_48 Start: 33623, Stop: 34393, Start Num: 17

Candidate Starts for Damascus\_48:

(Start: 17 @33623 has 3 MA's), (27, 33680), (64, 33878), (74, 33959), (111, 34160), (116, 34187), (119, 34208), (126, 34244), (141, 34325), (144, 34376),

Gene: Darby\_53 Start: 37084, Stop: 37848, Start Num: 10

Candidate Starts for Darby\_53:

(Start: 10 @37084 has 34 MA's), (33, 37234), (46, 37297), (52, 37324), (55, 37336), (80, 37462), (95, 37546), (98, 37561), (147, 37840),

Gene: DevitoJr\_54 Start: 37476, Stop: 38234, Start Num: 10

Candidate Starts for DevitoJr\_54:

(Start: 10 @37476 has 34 MA's), (33, 37626), (46, 37689), (52, 37716), (55, 37728), (60, 37767), (80, 37848), (95, 37932), (98, 37947), (147, 38226),

Gene: Dinallo\_53 Start: 38348, Stop: 39109, Start Num: 10

Candidate Starts for Dinallo\_53:

(Start: 10 @38348 has 34 MA's), (33, 38498), (41, 38537), (52, 38588), (55, 38600), (80, 38726), (89, 38753), (95, 38807), (98, 38822), (108, 38873), (113, 38894), (127, 38975), (147, 39101),

Gene: DizzyRudy\_51 Start: 33510, Stop: 34280, Start Num: 17

Candidate Starts for DizzyRudy\_51:

(Start: 17 @33510 has 3 MA's), (27, 33567), (64, 33765), (74, 33843), (77, 33855), (116, 34074), (119, 34095), (126, 34131), (141, 34212), (144, 34263),

Gene: Djungelskog\_53 Start: 34993, Stop: 35868, Start Num: 9

Candidate Starts for Djungelskog\_53:

(Start: 9 @34993 has 18 MA's), (12, 35026), (13, 35035), (14, 35038), (18, 35053), (33, 35146), (46, 35209), (49, 35221), (69, 35344), (70, 35359), (77, 35461), (95, 35566), (97, 35575), (112, 35647), (121, 35704), (144, 35842),

Gene: DoctorPepper\_53 Start: 34698, Stop: 35573, Start Num: 9

Candidate Starts for DoctorPepper\_53:

(Start: 9 @34698 has 18 MA's), (12, 34731), (13, 34740), (14, 34743), (18, 34758), (33, 34851), (46, 34914), (49, 34926), (69, 35049), (70, 35064), (77, 35166), (95, 35271), (112, 35352),

Gene: Dynamite\_59 Start: 35903, Stop: 36703, Start Num: 8

Candidate Starts for Dynamite\_59:

(Start: 8 @35903 has 24 MA's), (34, 36065), (39, 36086), (52, 36146), (69, 36245), (96, 36392), (109, 36458), (117, 36506), (130, 36575), (139, 36626), (145, 36683),

Gene: Eevee\_53 Start: 37769, Stop: 38530, Start Num: 4

Candidate Starts for Eevee\_53:

(Start: 4 @37769 has 1 MA's), (Start: 6 @37790 has 3 MA's), (50, 38033), (115, 38378), (116, 38381), (127, 38441),

Gene: Egad\_54 Start: 34995, Stop: 35870, Start Num: 9

Candidate Starts for Egad\_54:

(Start: 9 @34995 has 18 MA's), (12, 35028), (13, 35037), (14, 35040), (18, 35055), (33, 35148), (46, 35211), (49, 35223), (69, 35346), (70, 35361), (77, 35463), (95, 35568), (97, 35577), (112, 35649), (121, 35706), (144, 35844),

Gene: ElephantMan\_54 Start: 37760, Stop: 38524, Start Num: 10

Candidate Starts for ElephantMan\_54:

(Start: 10 @37760 has 34 MA's), (33, 37910), (52, 38000), (54, 38009), (80, 38141), (95, 38222), (98, 38237), (147, 38516),

Gene: Elsa\_59 Start: 35986, Stop: 36783, Start Num: 8

Candidate Starts for Elsa\_59:

(Start: 8 @35986 has 24 MA's), (34, 36148), (92, 36439), (96, 36472), (109, 36538), (117, 36586), (130, 36655), (139, 36706), (145, 36763),

Gene: Elver\_107 Start: 57707, Stop: 58456, Start Num: 8

Candidate Starts for Elver\_107:

(Start: 8 @57707 has 24 MA's), (13, 57752), (24, 57785), (37, 57872), (81, 58043), (92, 58109), (139, 58373), (140, 58376), (145, 58436),

Gene: Gandionco\_104 Start: 56521, Stop: 57270, Start Num: 8

Candidate Starts for Gandionco\_104:

(Start: 8 @56521 has 24 MA's), (13, 56566), (24, 56599), (37, 56686), (65, 56788), (81, 56857), (92, 56923), (139, 57187), (140, 57190), (145, 57250),

Gene: GantcherGoblin\_56 Start: 36006, Stop: 36722, Start Num: 16

Candidate Starts for GantcherGoblin\_56:

(Start: 16 @36006 has 11 MA's), (58, 36225), (92, 36378), (95, 36399), (113, 36486), (123, 36558), (141, 36648), (146, 36705),

Gene: GermyBearimy\_65 Start: 38173, Stop: 38988, Start Num: 3

Candidate Starts for GermyBearimy\_65:

(3, 38173), (76, 38587), (90, 38635), (120, 38827), (124, 38845), (131, 38875), (145, 38971),

Gene: Giantsbane\_57 Start: 36358, Stop: 37107, Start Num: 10

Candidate Starts for Giantsbane\_57:

(Start: 10 @36358 has 34 MA's), (33, 36508), (60, 36649), (82, 36733), (86, 36748), (95, 36805), (103, 36850),

Gene: GoCrazy\_58 Start: 35844, Stop: 36644, Start Num: 8

Candidate Starts for GoCrazy\_58:

(Start: 8 @35844 has 24 MA's), (34, 36006), (39, 36027), (52, 36087), (69, 36186), (96, 36333), (109, 36399), (117, 36447), (130, 36516), (139, 36567), (145, 36624),

Gene: Gordon\_52 Start: 37901, Stop: 38656, Start Num: 10

Candidate Starts for Gordon\_52:

(Start: 10 @37901 has 34 MA's), (33, 38051), (46, 38114), (52, 38141), (55, 38153), (60, 38192), (80, 38273), (95, 38357), (98, 38372), (147, 38651),

Gene: Hankly\_58 Start: 35118, Stop: 35918, Start Num: 8

Candidate Starts for Hankly\_58:

(Start: 8 @35118 has 24 MA's), (34, 35280), (39, 35301), (52, 35361), (69, 35460), (96, 35607), (109, 35673), (117, 35721), (130, 35790), (139, 35841), (145, 35898),

Gene: Heisenberger\_58 Start: 35412, Stop: 36188, Start Num: 8

Candidate Starts for Heisenberger\_58:

(Start: 8 @35412 has 24 MA's), (34, 35574), (39, 35595), (52, 35655), (69, 35730), (92, 35844), (96, 35877), (109, 35943), (115, 35982), (117, 35991), (130, 36060), (139, 36111), (145, 36168),

Gene: Hemma\_51 Start: 34205, Stop: 34957, Start Num: 10

Candidate Starts for Hemma\_51:

(Start: 10 @34205 has 34 MA's), (55, 34448), (80, 34565), (91, 34604), (95, 34661), (100, 34688), (106, 34721), (132, 34847), (139, 34892),

Gene: HerbBucket\_54 Start: 34693, Stop: 35610, Start Num: 9

Candidate Starts for HerbBucket\_54:

(Start: 9 @34693 has 18 MA's), (12, 34726), (13, 34735), (14, 34738), (18, 34753), (33, 34846), (46, 34909), (49, 34921), (69, 35044), (70, 35059), (77, 35203), (95, 35308), (144, 35584),

Gene: Ingrid\_58 Start: 37183, Stop: 37938, Start Num: 10

Candidate Starts for Ingrid\_58:

(Start: 10 @37183 has 34 MA's), (33, 37333), (44, 37390), (51, 37417), (52, 37423), (60, 37474), (67, 37498), (80, 37555), (95, 37639), (147, 37933),

Gene: Inked\_59 Start: 38306, Stop: 39055, Start Num: 10

Candidate Starts for Inked\_59:

(Start: 10 @38306 has 34 MA's), (33, 38456), (52, 38546), (54, 38555), (55, 38558), (60, 38597), (67, 38621), (80, 38678), (92, 38735), (95, 38756), (107, 38819), (147, 39050),

Gene: Issa\_53 Start: 37136, Stop: 37894, Start Num: 10

Candidate Starts for Issa\_53:

(Start: 10 @37136 has 34 MA's), (33, 37286), (46, 37349), (52, 37376), (55, 37388), (60, 37427), (80, 37508), (95, 37592), (98, 37607), (147, 37886),

Gene: JEGGS\_58 Start: 35467, Stop: 36267, Start Num: 8

Candidate Starts for JEGGS\_58:

(Start: 8 @35467 has 24 MA's), (34, 35629), (39, 35650), (52, 35710), (69, 35809), (92, 35923), (96, 35956), (109, 36022), (115, 36061), (117, 36070), (130, 36139), (139, 36190), (145, 36247),

Gene: Jazzy4900\_57 Start: 37585, Stop: 38403, Start Num: 3

Candidate Starts for Jazzy4900\_57:

(3, 37585), (5, 37618), (76, 37999), (90, 38047), (124, 38257), (131, 38287), (133, 38302), (145, 38386),

Gene: JeNeSaisPas\_102 Start: 57125, Stop: 57874, Start Num: 8

Candidate Starts for JeNeSaisPas\_102:

(Start: 8 @57125 has 24 MA's), (13, 57170), (24, 57203), (37, 57290), (65, 57392), (81, 57461), (92, 57527), (139, 57791), (140, 57794), (145, 57854),

Gene: Jeremy4pt0\_53 Start: 34693, Stop: 35568, Start Num: 9

Candidate Starts for Jeremy4pt0\_53:

(Start: 9 @34693 has 18 MA's), (12, 34726), (13, 34735), (14, 34738), (18, 34753), (33, 34846), (46, 34909), (49, 34921), (69, 35044), (70, 35059), (77, 35161), (95, 35266), (112, 35347), (144, 35542),

Gene: JoyLin\_53 Start: 37910, Stop: 38650, Start Num: 6

Candidate Starts for JoyLin\_53:

(Start: 4 @37889 has 1 MA's), (Start: 6 @37910 has 3 MA's), (50, 38153), (69, 38267), (115, 38498), (116, 38501), (127, 38561),

Gene: Kardesai\_60 Start: 36088, Stop: 36885, Start Num: 8

Candidate Starts for Kardesai\_60:

(Start: 8 @36088 has 24 MA's), (34, 36250), (92, 36541), (96, 36574), (109, 36640), (115, 36679), (117, 36688), (130, 36757), (139, 36808), (145, 36865),

Gene: KeaneyLin\_58 Start: 35844, Stop: 36644, Start Num: 8

Candidate Starts for KeaneyLin\_58:

(Start: 8 @35844 has 24 MA's), (34, 36006), (39, 36027), (52, 36087), (69, 36186), (96, 36333), (109, 36399), (117, 36447), (130, 36516), (139, 36567), (145, 36624),

Gene: KevinMinion\_57 Start: 36882, Stop: 37598, Start Num: 16

Candidate Starts for KevinMinion\_57:

(Start: 16 @36882 has 11 MA's), (58, 37101), (92, 37254), (95, 37275), (113, 37362), (141, 37524), (146, 37581),

Gene: Kinny\_61 Start: 38133, Stop: 38822, Start Num: 16

Candidate Starts for Kinny\_61:

(Start: 16 @38133 has 11 MA's), (42, 38277), (58, 38328), (63, 38346), (79, 38415), (92, 38478), (95, 38499), (101, 38532), (113, 38586), (114, 38601), (146, 38805),

Gene: Kureo\_105 Start: 56717, Stop: 57466, Start Num: 8

Candidate Starts for Kureo\_105:

(Start: 8 @56717 has 24 MA's), (13, 56762), (24, 56795), (37, 56882), (65, 56984), (81, 57053), (92, 57119), (139, 57383), (140, 57386), (145, 57446),

Gene: Leathea\_58 Start: 35757, Stop: 36464, Start Num: 16

Candidate Starts for Leathea\_58:

(Start: 16 @35757 has 11 MA's), (42, 35901), (53, 35943), (58, 35967), (59, 35985), (92, 36120), (95, 36141), (113, 36228), (146, 36447),

Gene: Lewando\_61 Start: 37710, Stop: 38414, Start Num: 16

Candidate Starts for Lewando\_61:

(Start: 16 @37710 has 11 MA's), (42, 37854), (90, 38034), (95, 38091), (113, 38178), (114, 38193), (146, 38397),

Gene: LilHuddy\_56 Start: 37293, Stop: 38045, Start Num: 10

Candidate Starts for LilHuddy\_56:

(Start: 10 @37293 has 34 MA's), (33, 37443), (60, 37584), (82, 37671), (86, 37686), (94, 37731), (95, 37743),

Gene: Linda\_54 Start: 34991, Stop: 35866, Start Num: 9

Candidate Starts for Linda\_54:

(Start: 9 @34991 has 18 MA's), (12, 35024), (13, 35033), (14, 35036), (18, 35051), (33, 35144), (46, 35207), (49, 35219), (69, 35342), (70, 35357), (77, 35459), (95, 35564), (112, 35645), (121, 35702), (144, 35840),

Gene: Loretta\_55 Start: 37183, Stop: 37938, Start Num: 10

Candidate Starts for Loretta\_55:

(Start: 10 @37183 has 34 MA's), (33, 37333), (44, 37390), (51, 37417), (52, 37423), (60, 37474), (67, 37498), (80, 37555), (95, 37639), (147, 37933),

Gene: LucySwiss\_54 Start: 36929, Stop: 37684, Start Num: 10

Candidate Starts for LucySwiss\_54:

(Start: 10 @36929 has 34 MA's), (33, 37079), (52, 37169), (60, 37220), (80, 37301), (95, 37382), (98, 37397), (108, 37448), (147, 37676),

Gene: Makai\_55 Start: 37391, Stop: 38140, Start Num: 10

Candidate Starts for Makai\_55:

(Start: 10 @37391 has 34 MA's), (15, 37436), (33, 37541), (80, 37751), (94, 37826), (95, 37838), (98, 37853), (112, 37922),

Gene: Mardi\_58 Start: 36478, Stop: 37194, Start Num: 16

Candidate Starts for Mardi\_58:

(Start: 16 @36478 has 11 MA's), (58, 36697), (91, 36817), (92, 36850), (95, 36871), (113, 36958), (123, 37030), (141, 37120), (146, 37177), (148, 37189),

Gene: Marianna39\_105 Start: 57132, Stop: 57881, Start Num: 8

Candidate Starts for Marianna39\_105:

(Start: 8 @57132 has 24 MA's), (13, 57177), (24, 57210), (37, 57297), (65, 57399), (81, 57468), (92, 57534), (139, 57798), (140, 57801), (145, 57861),

Gene: MediumFry\_53 Start: 36688, Stop: 37446, Start Num: 10

Candidate Starts for MediumFry\_53:

(Start: 10 @36688 has 34 MA's), (33, 36838), (52, 36928), (60, 36979), (67, 37003), (80, 37060), (99, 37162), (147, 37441),

Gene: Mema\_47 Start: 36166, Stop: 36906, Start Num: 17

Candidate Starts for Mema\_47:

(Start: 17 @36166 has 3 MA's), (40, 36298), (61, 36409), (64, 36418), (119, 36718), (135, 36802), (137, 36820), (141, 36835), (144, 36886),

Gene: Michelle\_54 Start: 34993, Stop: 35868, Start Num: 9

Candidate Starts for Michelle\_54:

(Start: 9 @34993 has 18 MA's), (12, 35026), (13, 35035), (14, 35038), (18, 35053), (33, 35146), (46, 35209), (49, 35221), (69, 35344), (70, 35359), (77, 35461), (95, 35566), (97, 35575), (112, 35647),

(121, 35704), (144, 35842),

Gene: MiniBagel\_54 Start: 38021, Stop: 38782, Start Num: 10

Candidate Starts for MiniBagel\_54:

(Start: 10 @38021 has 34 MA's), (33, 38171), (41, 38210), (52, 38261), (55, 38273), (80, 38399), (89, 38426), (95, 38480), (98, 38495), (108, 38546), (113, 38567), (147, 38774),

Gene: Mooshroom\_61 Start: 36088, Stop: 36885, Start Num: 8

Candidate Starts for Mooshroom\_61:

(Start: 8 @36088 has 24 MA's), (34, 36250), (92, 36541), (96, 36574), (109, 36640), (115, 36679), (117, 36688), (130, 36757), (139, 36808), (145, 36865),

Gene: MrAaronian\_54 Start: 34993, Stop: 35868, Start Num: 9

Candidate Starts for MrAaronian\_54:

(Start: 9 @34993 has 18 MA's), (12, 35026), (13, 35035), (14, 35038), (18, 35053), (33, 35146), (46, 35209), (49, 35221), (69, 35344), (70, 35359), (77, 35461), (95, 35566), (97, 35575), (112, 35647), (121, 35704), (144, 35842),

Gene: Mudcat\_56 Start: 36825, Stop: 37625, Start Num: 8

Candidate Starts for Mudcat\_56:

(Start: 8 @36825 has 24 MA's), (34, 36987), (39, 37008), (52, 37068), (69, 37167), (92, 37281), (96, 37314), (109, 37380), (115, 37419), (117, 37428), (130, 37497), (139, 37548), (145, 37605),

Gene: Muglass\_60 Start: 37194, Stop: 37898, Start Num: 16

Candidate Starts for Muglass\_60:

(Start: 16 @37194 has 11 MA's), (42, 37338), (92, 37554), (95, 37575), (101, 37608), (113, 37662), (114, 37677), (146, 37881),

Gene: NapoleonB\_59 Start: 35903, Stop: 36703, Start Num: 8

Candidate Starts for NapoleonB\_59:

(Start: 8 @35903 has 24 MA's), (34, 36065), (39, 36086), (52, 36146), (69, 36245), (96, 36392), (109, 36458), (117, 36506), (130, 36575), (139, 36626), (145, 36683),

Gene: Nason\_59 Start: 35986, Stop: 36783, Start Num: 8

Candidate Starts for Nason\_59:

(Start: 8 @35986 has 24 MA's), (34, 36148), (92, 36439), (96, 36472), (109, 36538), (117, 36586), (130, 36655), (139, 36706), (145, 36763),

Gene: Natasha\_55 Start: 34823, Stop: 35617, Start Num: 9

Candidate Starts for Natasha\_55:

(Start: 9 @34823 has 18 MA's), (13, 34865), (23, 34895), (24, 34898), (36, 34991), (49, 35075), (84, 35249), (94, 35306), (95, 35318), (104, 35366), (144, 35591),

Gene: Navi1117\_59 Start: 36699, Stop: 37415, Start Num: 16

Candidate Starts for Navi1117\_59:

(Start: 16 @36699 has 11 MA's), (58, 36918), (91, 37038), (92, 37071), (95, 37092), (113, 37179), (141, 37341), (146, 37398),

Gene: Nightmare\_56 Start: 38318, Stop: 39076, Start Num: 10

Candidate Starts for Nightmare\_56:

(Start: 10 @38318 has 34 MA's), (33, 38468), (46, 38531), (52, 38558), (55, 38570), (60, 38609), (80, 38690), (95, 38774), (98, 38789), (147, 39068),

Gene: Niktson\_54 Start: 37760, Stop: 38524, Start Num: 10

Candidate Starts for Niktson\_54:

(Start: 10 @37760 has 34 MA's), (33, 37910), (52, 38000), (54, 38009), (80, 38141), (95, 38222), (98, 38237), (147, 38516),

Gene: Nivinsha\_56 Start: 37264, Stop: 38031, Start Num: 10

Candidate Starts for Nivinsha\_56:

(Start: 10 @37264 has 34 MA's), (33, 37414), (52, 37504), (55, 37516), (80, 37645), (95, 37729), (98, 37744), (147, 38023),

Gene: Onestar\_53 Start: 34760, Stop: 35653, Start Num: 9

Candidate Starts for Onestar\_53:

(Start: 9 @34760 has 18 MA's), (12, 34793), (13, 34802), (23, 34832), (46, 34997), (69, 35132), (70, 35147), (72, 35156), (75, 35237), (95, 35345), (97, 35354), (110, 35417), (116, 35450), (121, 35483), (144, 35627),

Gene: Paella\_107 Start: 58297, Stop: 59046, Start Num: 8

Candidate Starts for Paella\_107:

(Start: 8 @58297 has 24 MA's), (13, 58342), (24, 58375), (37, 58462), (65, 58564), (81, 58633), (92, 58699), (139, 58963), (140, 58966), (145, 59026),

Gene: Phaby\_57 Start: 37911, Stop: 38663, Start Num: 10

Candidate Starts for Phaby\_57:

(Start: 10 @37911 has 34 MA's), (19, 37977), (33, 38061), (60, 38202), (82, 38289), (86, 38304), (94, 38349), (95, 38361),

Gene: Phaila\_61 Start: 36120, Stop: 36854, Start Num: 16

Candidate Starts for Phaila\_61:

(Start: 16 @36120 has 11 MA's), (35, 36231), (55, 36327), (58, 36342), (91, 36477), (92, 36510), (95, 36531), (113, 36618), (123, 36690), (141, 36780), (146, 36837),

Gene: Pippin15\_54 Start: 34805, Stop: 35566, Start Num: 6

Candidate Starts for Pippin15\_54:

(1, 34730), (2, 34766), (Start: 4 @34784 has 1 MA's), (Start: 6 @34805 has 3 MA's), (50, 35048), (93, 35291), (100, 35339), (113, 35396), (119, 35438), (120, 35447), (127, 35477), (128, 35480), (132, 35498),

Gene: PoeMe\_59 Start: 36624, Stop: 37340, Start Num: 16

Candidate Starts for PoeMe\_59:

(Start: 16 @36624 has 11 MA's), (58, 36843), (91, 36963), (92, 36996), (95, 37017), (113, 37104), (123, 37176), (146, 37323),

Gene: Powelldog\_59 Start: 36214, Stop: 37014, Start Num: 9

Candidate Starts for Powelldog\_59:

(Start: 9 @36214 has 18 MA's), (12, 36247), (13, 36256), (18, 36274), (29, 36334), (38, 36388), (68, 36586), (84, 36643), (95, 36712), (103, 36757), (110, 36784), (116, 36817),

Gene: ProfFrink\_54 Start: 34994, Stop: 35869, Start Num: 9

Candidate Starts for ProfFrink\_54:

(Start: 9 @34994 has 18 MA's), (12, 35027), (13, 35036), (14, 35039), (18, 35054), (33, 35147), (46, 35210), (49, 35222), (69, 35345), (70, 35360), (77, 35462), (95, 35567), (97, 35576), (112, 35648), (121, 35705), (144, 35843),

Gene: Qui\_107 Start: 58297, Stop: 59046, Start Num: 8

Candidate Starts for Qui\_107:

(Start: 8 @58297 has 24 MA's), (13, 58342), (24, 58375), (37, 58462), (65, 58564), (81, 58633), (92, 58699), (139, 58963), (140, 58966), (145, 59026),

Gene: Raunak\_57 Start: 34691, Stop: 35566, Start Num: 9

Candidate Starts for Raunak\_57:

(Start: 9 @34691 has 18 MA's), (12, 34724), (13, 34733), (14, 34736), (18, 34751), (33, 34844), (46, 34907), (49, 34919), (69, 35042), (70, 35057), (77, 35159), (95, 35264), (97, 35273), (112, 35345), (121, 35402), (144, 35540),

Gene: Renaldo\_64 Start: 37949, Stop: 38638, Start Num: 16

Candidate Starts for Renaldo\_64:

(Start: 16 @37949 has 11 MA's), (42, 38093), (58, 38144), (63, 38162), (79, 38231), (92, 38294), (95, 38315), (101, 38348), (113, 38402), (114, 38417), (146, 38621),

Gene: RustyBoy\_55 Start: 34804, Stop: 35598, Start Num: 9

Candidate Starts for RustyBoy\_55:

(Start: 9 @34804 has 18 MA's), (13, 34846), (23, 34876), (24, 34879), (36, 34972), (49, 35056), (84, 35230), (94, 35287), (95, 35299), (104, 35347), (144, 35572),

Gene: Salk\_54 Start: 34991, Stop: 35866, Start Num: 9

Candidate Starts for Salk\_54:

(Start: 9 @34991 has 18 MA's), (12, 35024), (13, 35033), (14, 35036), (18, 35051), (33, 35144), (46, 35207), (49, 35219), (69, 35342), (70, 35357), (77, 35459), (95, 35564), (112, 35645), (121, 35702), (144, 35840),

Gene: ScienceWizSam\_55 Start: 37372, Stop: 38130, Start Num: 10

Candidate Starts for ScienceWizSam\_55:

(Start: 10 @37372 has 34 MA's), (33, 37522), (46, 37585), (52, 37612), (55, 37624), (60, 37663), (80, 37744), (95, 37828), (98, 37843), (147, 38122),

Gene: Serenabean\_54 Start: 34832, Stop: 35524, Start Num: 22

Candidate Starts for Serenabean\_54:

(Start: 22 @34832 has 3 MA's), (26, 34868), (32, 34910), (47, 34988), (62, 35072), (77, 35168), (80, 35180), (116, 35369), (118, 35384), (122, 35408), (133, 35468),

Gene: Shepard\_57 Start: 37134, Stop: 37886, Start Num: 10

Candidate Starts for Shepard\_57:

(Start: 10 @37134 has 34 MA's), (33, 37284), (60, 37425), (82, 37512), (86, 37527), (94, 37572), (95, 37584),

Gene: Shiba\_53 Start: 34691, Stop: 35566, Start Num: 9

Candidate Starts for Shiba\_53:

(Start: 9 @34691 has 18 MA's), (12, 34724), (13, 34733), (14, 34736), (18, 34751), (33, 34844), (46, 34907), (49, 34919), (69, 35042), (70, 35057), (77, 35159), (95, 35264), (97, 35273), (112, 35345), (121, 35402), (144, 35540),

Gene: Sloopyjoe\_54 Start: 34995, Stop: 35870, Start Num: 9

Candidate Starts for Sloopyjoe\_54:

(Start: 9 @34995 has 18 MA's), (12, 35028), (13, 35037), (14, 35040), (18, 35055), (33, 35148), (46, 35211), (49, 35223), (69, 35346), (70, 35361), (77, 35463), (95, 35568), (97, 35577), (112, 35649), (121, 35706), (144, 35844),

Gene: Spain\_56 Start: 34993, Stop: 35868, Start Num: 9

Candidate Starts for Spain\_56:

(Start: 9 @34993 has 18 MA's), (12, 35026), (13, 35035), (14, 35038), (18, 35053), (33, 35146), (46, 35209), (49, 35221), (69, 35344), (70, 35359), (77, 35461), (95, 35566), (97, 35575), (112, 35647), (121, 35704), (144, 35842),

Gene: Sporto\_55 Start: 36496, Stop: 37332, Start Num: 9

Candidate Starts for Sporto\_55:

(Start: 9 @36496 has 18 MA's), (13, 36538), (39, 36676), (46, 36736), (68, 36868), (71, 36892), (95, 37027), (97, 37036), (113, 37111), (129, 37201), (144, 37306),

Gene: Sprinkle\_53 Start: 35525, Stop: 36328, Start Num: 9

Candidate Starts for Sprinkle\_53:

(Start: 9 @35525 has 18 MA's), (12, 35558), (13, 35567), (18, 35585), (29, 35645), (39, 35705), (49, 35774), (73, 35900), (83, 35939), (95, 36020), (112, 36101), (129, 36194),

Gene: StarLord\_54 Start: 34994, Stop: 35869, Start Num: 9

Candidate Starts for StarLord\_54:

(Start: 9 @34994 has 18 MA's), (12, 35027), (13, 35036), (14, 35039), (18, 35054), (33, 35147), (46, 35210), (49, 35222), (69, 35345), (70, 35360), (77, 35462), (95, 35567), (97, 35576), (112, 35648), (121, 35705), (144, 35843),

Gene: Stardom\_56 Start: 34644, Stop: 35447, Start Num: 8

Candidate Starts for Stardom\_56:

(Start: 8 @34644 has 24 MA's), (34, 34806), (69, 34989), (96, 35136), (109, 35202), (117, 35250), (130, 35319), (139, 35370), (145, 35427),

Gene: Stardrop\_62 Start: 36726, Stop: 37442, Start Num: 16

Candidate Starts for Stardrop\_62:

(Start: 16 @36726 has 11 MA's), (58, 36945), (91, 37065), (92, 37098), (95, 37119), (113, 37206), (123, 37278), (146, 37425),

Gene: Stayer\_54 Start: 34991, Stop: 35866, Start Num: 9

Candidate Starts for Stayer\_54:

(Start: 9 @34991 has 18 MA's), (12, 35024), (13, 35033), (14, 35036), (18, 35051), (33, 35144), (46, 35207), (49, 35219), (69, 35342), (70, 35357), (77, 35459), (95, 35564), (97, 35573), (112, 35645), (121, 35702), (144, 35840),

Gene: Sunny4976\_56 Start: 37585, Stop: 38403, Start Num: 3

Candidate Starts for Sunny4976\_56:

(3, 37585), (5, 37618), (76, 37999), (90, 38047), (124, 38257), (131, 38287), (133, 38302), (145, 38386),

Gene: Sweetclover\_55 Start: 33842, Stop: 34537, Start Num: 21

Candidate Starts for Sweetclover\_55:

(Start: 21 @33842 has 1 MA's), (68, 34124), (78, 34187), (115, 34382), (117, 34391), (118, 34400), (119, 34406), (122, 34424),

Gene: Synopsis\_53 Start: 37431, Stop: 38198, Start Num: 10

Candidate Starts for Synopsis\_53:

(Start: 10 @37431 has 34 MA's), (33, 37581), (46, 37644), (52, 37671), (55, 37683), (80, 37812), (95, 37896), (98, 37911), (147, 38190),

Gene: Tatanka\_51 Start: 37563, Stop: 38327, Start Num: 10

Candidate Starts for Tatanka\_51:

(Start: 10 @37563 has 34 MA's), (33, 37713), (52, 37803), (66, 37878), (80, 37944), (95, 38025), (98, 38040), (147, 38319),

Gene: Teacup\_55 Start: 37789, Stop: 38553, Start Num: 10

Candidate Starts for Teacup\_55:

(Start: 10 @37789 has 34 MA's), (33, 37939), (52, 38029), (54, 38038), (80, 38170), (95, 38251), (98, 38266), (108, 38317), (147, 38545),

Gene: Tenney120\_59 Start: 36666, Stop: 37382, Start Num: 16

Candidate Starts for Tenney120\_59:

(Start: 16 @36666 has 11 MA's), (58, 36885), (92, 37038), (95, 37059), (113, 37146), (123, 37218), (141, 37308), (146, 37365),

Gene: Tenno\_55 Start: 38094, Stop: 38855, Start Num: 10

Candidate Starts for Tenno\_55:

(Start: 10 @38094 has 34 MA's), (33, 38244), (41, 38283), (52, 38334), (55, 38346), (80, 38472), (89, 38499), (95, 38553), (98, 38568), (108, 38619), (113, 38640), (147, 38847),

Gene: Tipton\_56 Start: 37658, Stop: 38416, Start Num: 10

Candidate Starts for Tipton\_56:

(Start: 10 @37658 has 34 MA's), (19, 37724), (33, 37808), (60, 37949), (80, 38030), (95, 38114), (112, 38198),

Gene: Tokki\_60 Start: 37524, Stop: 38276, Start Num: 10

Candidate Starts for Tokki\_60:

(Start: 10 @37524 has 34 MA's), (19, 37590), (33, 37674), (60, 37815), (82, 37902), (86, 37917), (94, 37962), (95, 37974),

Gene: Tribby\_61 Start: 36239, Stop: 37036, Start Num: 8

Candidate Starts for Tribby\_61:

(Start: 8 @36239 has 24 MA's), (34, 36401), (92, 36692), (96, 36725), (109, 36791), (117, 36839), (130, 36908), (139, 36959), (145, 37016),

Gene: TrixiePhattel\_59 Start: 36099, Stop: 36839, Start Num: 16

Candidate Starts for TrixiePhattel\_59:

(Start: 16 @36099 has 11 MA's), (42, 36243), (91, 36459), (95, 36513), (113, 36600), (125, 36678), (132, 36708), (133, 36720), (134, 36723), (136, 36735), (138, 36750), (146, 36822),

Gene: Truckee\_53 Start: 37181, Stop: 37930, Start Num: 10

Candidate Starts for Truckee\_53:

(Start: 10 @37181 has 34 MA's), (15, 37226), (33, 37331), (80, 37541), (94, 37616), (95, 37628), (98, 37643), (112, 37712),

Gene: Trustiboi\_54 Start: 37632, Stop: 38390, Start Num: 10

Candidate Starts for Trustiboi\_54:

(Start: 10 @37632 has 34 MA's), (33, 37782), (46, 37845), (52, 37872), (55, 37884), (60, 37923), (80, 38004), (95, 38088), (98, 38103), (147, 38382),

Gene: Uzumaki\_55 Start: 36107, Stop: 36823, Start Num: 16

Candidate Starts for Uzumaki\_55:

(Start: 16 @36107 has 11 MA's), (55, 36311), (58, 36326), (92, 36479), (95, 36500), (113, 36587), (123, 36659), (141, 36749), (146, 36806),

Gene: Westerlin\_53 Start: 38645, Stop: 39403, Start Num: 10

Candidate Starts for Westerlin\_53:

(Start: 10 @38645 has 34 MA's), (33, 38795), (46, 38858), (52, 38885), (55, 38897), (60, 38936), (80, 39017), (95, 39101), (98, 39116), (147, 39395),

Gene: Xenomorph\_56 Start: 35657, Stop: 36454, Start Num: 8

Candidate Starts for Xenomorph\_56:

(Start: 8 @35657 has 24 MA's), (34, 35819), (92, 36110), (96, 36143), (109, 36209), (117, 36257), (130, 36326), (139, 36377), (145, 36434),

Gene: YoshiYama\_59 Start: 36296, Stop: 37093, Start Num: 8

Candidate Starts for YoshiYama\_59:

(Start: 8 @36296 has 24 MA's), (34, 36458), (92, 36749), (96, 36782), (109, 36848), (115, 36887), (117, 36896), (130, 36965), (139, 37016), (145, 37073),

Gene: Yotsuba\_53 Start: 37928, Stop: 38668, Start Num: 6

Candidate Starts for Yotsuba\_53:

(Start: 4 @37907 has 1 MA's), (Start: 6 @37928 has 3 MA's), (50, 38171), (115, 38516), (116, 38519), (127, 38579),

Gene: Zeina\_59 Start: 36674, Stop: 37390, Start Num: 16

Candidate Starts for Zeina\_59:

(Start: 16 @36674 has 11 MA's), (58, 36893), (91, 37013), (92, 37046), (95, 37067), (113, 37154), (141, 37316), (146, 37373),

Gene: Zippen\_58 Start: 38006, Stop: 38755, Start Num: 10

Candidate Starts for Zippen\_58:

(Start: 10 @38006 has 34 MA's), (25, 38093), (44, 38213), (52, 38246), (54, 38255), (60, 38297), (67, 38321), (80, 38378), (92, 38435), (95, 38456), (107, 38519), (147, 38750),