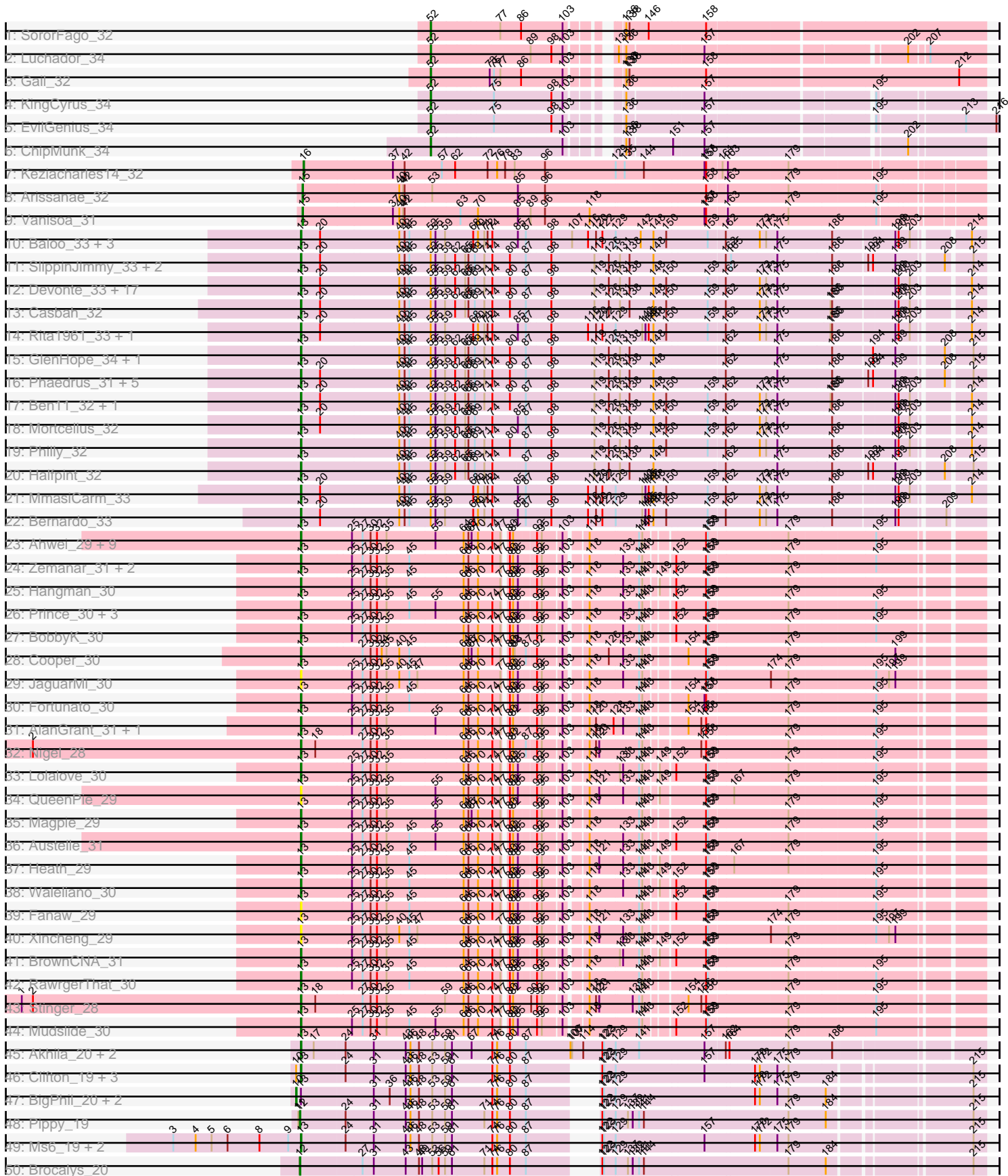
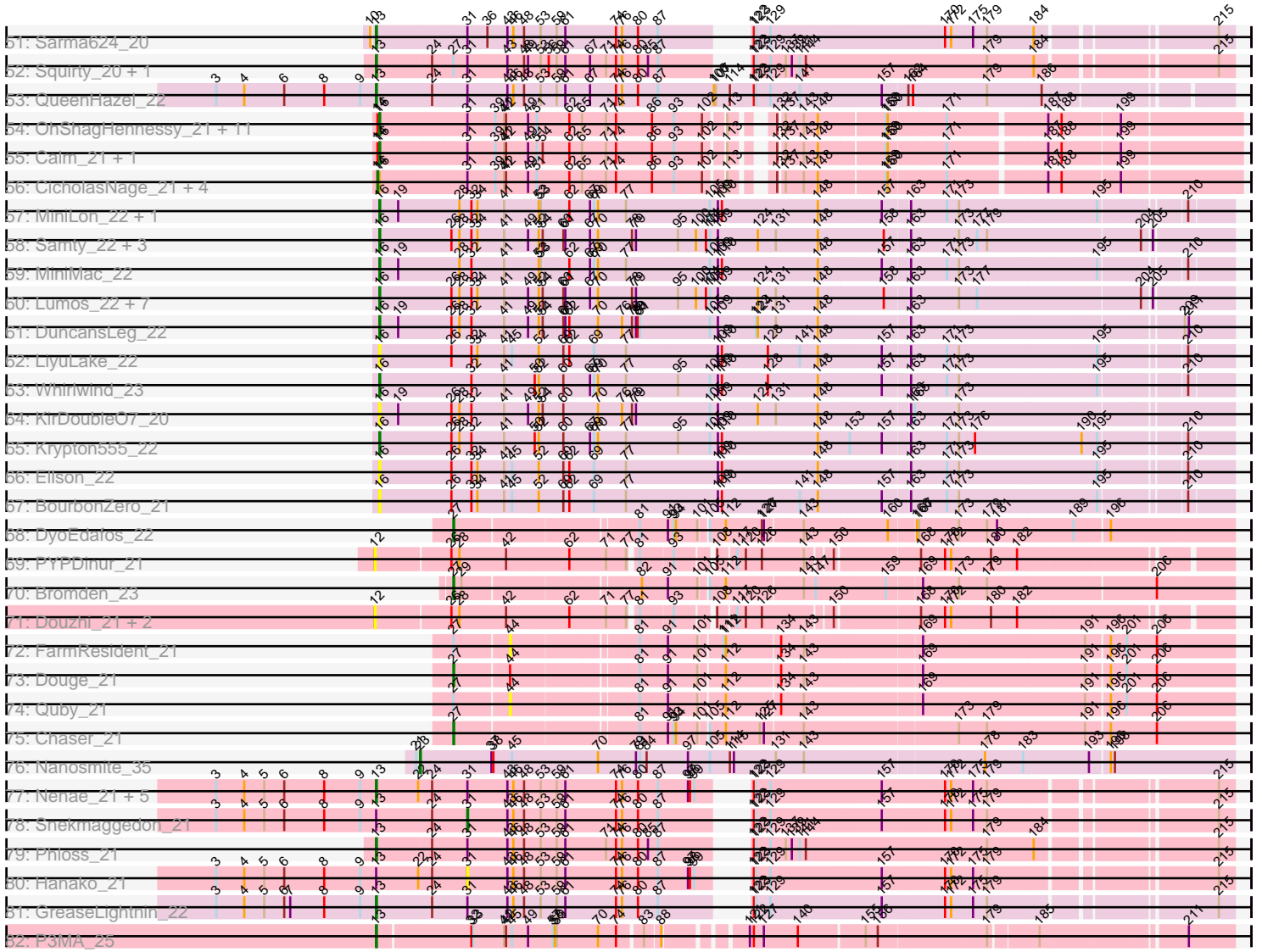


Pham 193777



Pham 193777



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 193777 Report

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

Pham number 193777 has 171 members, 28 are drafts.

Phages represented in each track:

- Track 1 : SororFago\_32
- Track 2 : Luchador\_34
- Track 3 : Gail\_32
- Track 4 : KingCyrus\_34
- Track 5 : EvilGenius\_34
- Track 6 : ChipMunk\_34
- Track 7 : Keziacharles14\_32
- Track 8 : Arissanae\_32
- Track 9 : Vanisoa\_31
- Track 10 : Baloo\_33, Athena\_34, Gervas\_33, Tydolla\_33
- Track 11 : SlippinJimmy\_33, Kamiyu\_33, Yinz\_33
- Track 12 : Devonte\_33, Nozo\_33, RagingRooster\_33, Marley1013\_33, Morty007\_33, Audrey\_33, Heathcliff\_33, ChaChing\_33, RomaT\_33, SynergyX\_33, Akoma\_33, Daisy\_33, Neos5\_33, Chandler\_33, LestyG\_33, OrangeOswald\_33, Abinghost\_33, Deenasa\_33
- Track 13 : Casbah\_32
- Track 14 : Rita1961\_33, Obutu\_33
- Track 15 : GlenHope\_34, Compostia\_34
- Track 16 : Phaedrus\_31, HarveySr\_33, Phlyer\_33, Jackstina\_30, Gadget\_34, Yahalom\_33
- Track 17 : Ben11\_32, Kronus\_32
- Track 18 : Mortcellus\_32
- Track 19 : Philly\_32
- Track 20 : Halfpint\_32
- Track 21 : MmasiCarm\_33
- Track 22 : Bernardo\_33
- Track 23 : Ahwei\_29, Poster\_29, JAMaL\_30, Hally898\_29, Antihero\_29, Lambano\_29, GinPorsche\_29, Epah\_29, Nanao\_29, ChrisnMich\_29
- Track 24 : Zemanar\_31, Hydro\_30, Mithril\_30
- Track 25 : Hangman\_30
- Track 26 : Prince\_30, Apex\_30, VioletZ\_30, Frederick\_30
- Track 27 : BobbyK\_30
- Track 28 : Cooper\_30
- Track 29 : JaguarMi\_30
- Track 30 : Fortunato\_30
- Track 31 : AlanGrant\_31, Vincenzo\_31
- Track 32 : Nigel\_28

- Track 33 : Lolalove\_30
- Track 34 : QueenPie\_29
- Track 35 : Magpie\_29
- Track 36 : Austelle\_31
- Track 37 : Heath\_29
- Track 38 : Waleliano\_30
- Track 39 : Fanaw\_29
- Track 40 : Xincheng\_29
- Track 41 : BrownCNA\_31
- Track 42 : RawrgerThat\_30
- Track 43 : Stinger\_28
- Track 44 : Mudslide\_30
- Track 45 : Akhila\_20, MilanaBonita\_20, Xula\_21
- Track 46 : Clifton\_19, LastJedi\_19, Crumble\_19, Koella\_19
- Track 47 : BigPhil\_20, Cerasum\_20, Velveteen\_20
- Track 48 : Pippy\_19
- Track 49 : Ms6\_19, Jamie19\_21, SpongeBob\_21
- Track 50 : Brocalys\_20
- Track 51 : Sarma624\_20
- Track 52 : Squirty\_20, Fulbright\_21
- Track 53 : QueenHazel\_22
- Track 54 : OhShagHennessy\_21, Tyson\_21, Halena\_21, Wamburgexpress\_21, Wyatt2\_21, Enceladus\_21, MAckerman\_21, AvadaKedavra\_21, Silverleaf\_21, Acquire49\_21, DirkDirk\_21, Rose5\_21
- Track 55 : Calm\_21, Zaria\_21
- Track 56 : CicholasNage\_21, Appletree2\_21, JoeDirt\_21, UPIE\_21, LeBron\_21
- Track 57 : MiniLon\_22, Lolly9\_22
- Track 58 : Samty\_22, Bellis\_22, Finnry\_22, Moostard\_22
- Track 59 : MiniMac\_22
- Track 60 : Lumos\_22, Nicholas\_22, MsGreen\_22, Snenia\_22, Kingsolomon\_22, Jubie\_22, Clautastrophe\_22, Jobypre\_22
- Track 61 : DuncansLeg\_22
- Track 62 : LiyuLake\_22
- Track 63 : Whirlwind\_23
- Track 64 : KirDoubleO7\_20
- Track 65 : Krypton555\_22
- Track 66 : Ellson\_22
- Track 67 : BourbonZero\_21
- Track 68 : DyoEdafos\_22
- Track 69 : PYPDinur\_21
- Track 70 : Bromden\_23
- Track 71 : Douzhi\_21, Sheng711\_21, BrainDrainer\_22
- Track 72 : FarmResident\_21
- Track 73 : Douge\_21
- Track 74 : Quby\_21
- Track 75 : Chaser\_21
- Track 76 : Nanosmite\_35
- Track 77 : Nenae\_21, PhancyPhin\_21, Redi\_21, BabeRuth\_21, ShrimpFriedEgg\_21, Purgamenstris\_21
- Track 78 : Snekmaggedon\_21
- Track 79 : Phloss\_21
- Track 80 : Hanako\_21
- Track 81 : GreaseLightnin\_22

- Track 82 : P3MA\_25

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

The start number called the most often in the published annotations is 13, it was called in 88 of the 143 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abinghost\_33, Ahwei\_29, Akhila\_20, Akoma\_33, AlanGrant\_31, Antihero\_29, Apex\_30, Athena\_34, Audrey\_33, Austelle\_31, BabeRuth\_21, Baloo\_33, Ben11\_32, Bernardo\_33, BobbyK\_30, BrownCNA\_31, Casbah\_32, ChaChing\_33, Chandler\_33, ChrisnMich\_29, Clifton\_19, Compostia\_34, Cooper\_30, Crumble\_19, Daisy\_33, Deenasa\_33, Devonte\_33, Epah\_29, Fanaw\_29, Fortunato\_30, Frederick\_30, Fulbright\_21, Gadget\_34, Gervas\_33, GinPorsche\_29, GlenHope\_34, GreaseLightnin\_22, Halfpint\_32, Hally898\_29, Hangman\_30, HarveySr\_33, Heath\_29, Heathcliff\_33, Hydro\_30, JAMaL\_30, Jackstina\_30, JaguarMi\_30, Jamie19\_21, Kamiyu\_33, Koella\_19, Kronus\_32, Lambano\_29, LastJedi\_19, LestyG\_33, Lolalove\_30, Magpie\_29, Marley1013\_33, MilanaBonita\_20, Mithril\_30, MmasiCarm\_33, Mortcellus\_32, Morty007\_33, Ms6\_19, Mudslide\_30, Nanao\_29, Nenae\_21, Neos5\_33, Nigel\_28, Nozo\_33, Obutu\_33, OrangeOswald\_33, P3MA\_25, Phaedrus\_31, PhancyPhin\_21, Philly\_32, Phloss\_21, Phlyer\_33, Poster\_29, Prince\_30, Purgamenstris\_21, QueenHazel\_22, QueenPie\_29, RagingRooster\_33, RawrgerThat\_30, Redi\_21, Rita1961\_33, RomaT\_33, Sarma624\_20, ShrimpFriedEgg\_21, SlippinJimmy\_33, SpongeBob\_21, Squirty\_20, Stinger\_28, SynergyX\_33, Tydolla\_33, Vincenzo\_31, VioletZ\_30, Waleliano\_30, Xincheng\_29, Xula\_21, Yahalom\_33, Yinz\_33, Zemanar\_31,

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

- BigPhil\_20, Cerasum\_20, Hanako\_21, Snekmaggedon\_21, Velveteen\_20,

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

- Acquire49\_21, Appletree2\_21, Arissanae\_32, AvadaKedavra\_21, Bellis\_22, BourbonZero\_21, BrainDrainer\_22, Brocalys\_20, Bromden\_23, Calm\_21, Chaser\_21, ChipMunk\_34, CicholasNage\_21, Clautastrophe\_22, DirkDirk\_21, Douge\_21, Douzhi\_21, DuncansLeg\_22, DyoEdafos\_22, Ellson\_22, Enceladus\_21, EvilGenius\_34, FarmResident\_21, Finnry\_22, Gail\_32, Halena\_21, Jobypre\_22, JoeDirt\_21, Jubie\_22, Keziacharles14\_32, KingCyrus\_34, Kingsolomon\_22, KirDoubleO7\_20, Krypton555\_22, LeBron\_21, LiyuLake\_22, Lolly9\_22, Luchador\_34, Lumos\_22, MAckerman\_21, MiniLon\_22, MiniMac\_22, Moostard\_22, MsGreen\_22, Nanosmite\_35, Nicholas\_22, OhShagHennessy\_21, PYPDinur\_21, Pippy\_19, Quby\_21, Rose5\_21, Samty\_22, Sheng711\_21, Silverleaf\_21, Slenia\_22, SororFago\_32, Tyson\_21, UPIE\_21, Vanisoa\_31, Wamburggrxpress\_21, Whirlwind\_23, Wyatt2\_21, Zaria\_21,

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

Start 10:

- Found in 8 of 171 ( 4.7% ) of genes in pham
- Manual Annotations of this start: 3 of 143
- Called 37.5% of time when present

- Phage (with cluster) where this start called: BigPhil\_20 (F1), Cerasum\_20 (F1), Velveteen\_20 (F1),

#### Start 12:

- Found in 6 of 171 ( 3.5% ) of genes in pham
- Manual Annotations of this start: 2 of 143
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BrainDrainer\_22 (L4), Brocalys\_20 (F1), Douzhi\_21 (L4), PYPDinur\_21 (L4), Pippy\_19 (F1), Sheng711\_21 (L4),

#### Start 13:

- Found in 108 of 171 ( 63.2% ) of genes in pham
- Manual Annotations of this start: 88 of 143
- Called 95.4% of time when present
- Phage (with cluster) where this start called: Abinghost\_33 (B3), Ahwei\_29 (B4), Akhila\_20 (F1), Akoma\_33 (B3), AlanGrant\_31 (B4), Antihero\_29 (B4), Apex\_30 (B4), Athena\_34 (B3), Audrey\_33 (B3), Austelle\_31 (B4), BabeRuth\_21 (N), Baloo\_33 (B3), Ben11\_32 (B3), Bernardo\_33 (B3), BobbyK\_30 (B4), BrownCNA\_31 (B4), Casbah\_32 (B3), ChaChing\_33 (B3), Chandler\_33 (B3), ChrisnMich\_29 (B4), Clifton\_19 (F1), Compostia\_34 (B3), Cooper\_30 (B4), Crumble\_19 (F1), Daisy\_33 (B3), Deenasa\_33 (B3), Devonte\_33 (B3), Epah\_29 (B4), Fanaw\_29 (B4), Fortunato\_30 (B4), Frederick\_30 (B4), Fulbright\_21 (N), Gadget\_34 (B3), Gervas\_33 (B3), GinPorsche\_29 (B4), GlenHope\_34 (B3), GreaseLightnin\_22 (P1), Halfpint\_32 (B3), Hally898\_29 (B4), Hangman\_30 (B4), HarveySr\_33 (B3), Heath\_29 (B4), Heathcliff\_33 (B3), Hydro\_30 (B4), JAMaL\_30 (B4), Jackstina\_30 (B3), JaguarMi\_30 (B4), Jamie19\_21 (N), Kamiyu\_33 (B3), Koella\_19 (F1), Kronus\_32 (B3), Lambano\_29 (B4), LastJedi\_19 (F1), LestyG\_33 (B3), Lolalove\_30 (B4), Magpie\_29 (B4), Marley1013\_33 (B3), MilanaBonita\_20 (F1), Mithril\_30 (B4), MmasiCarm\_33 (B3), Mortcellus\_32 (B3), Morty007\_33 (B3), Ms6\_19 (F1), Mudslide\_30 (B4), Nanao\_29 (B4), Nenae\_21 (N), Neos5\_33 (B3), Nigel\_28 (B4), Nozo\_33 (B3), Obutu\_33 (B3), OrangeOswald\_33 (B3), P3MA\_25 (singleton), Phaedrus\_31 (B3), PhancyPhin\_21 (N), Philly\_32 (B3), Phloss\_21 (N), Phlyer\_33 (B3), Poster\_29 (B4), Prince\_30 (B4), Purgamenstris\_21 (N), QueenHazel\_22 (I1), QueenPie\_29 (B4), RagingRooster\_33 (B3), RawrgerThat\_30 (B4), Redi\_21 (N), Rita1961\_33 (B3), RomaT\_33 (B3), Sarma624\_20 (F1), ShrimpFriedEgg\_21 (N), SlippinJimmy\_33 (B3), SpongeBob\_21 (N), Squirty\_20 (F3), Stinger\_28 (B4), SynergyX\_33 (B3), Tydolla\_33 (B3), Vincenzo\_31 (B4), VioletZ\_30 (B4), Waleliano\_30 (B4), Xincheng\_29 (B4), Xula\_21 (I1), Yahalom\_33 (B3), Yinz\_33 (B3), Zemanar\_31 (B4),

#### Start 14:

- Found in 19 of 171 ( 11.1% ) of genes in pham
- Manual Annotations of this start: 5 of 143
- Called 26.3% of time when present
- Phage (with cluster) where this start called: Appletree2\_21 (L1), CicholasNage\_21 (L1), JoeDirt\_21 (L1), LeBron\_21 (L1), UPIE\_21 (L1),

#### Start 15:

- Found in 2 of 171 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 2 of 143
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arissanee\_32 (A9), Vanisoa\_31 (A9),

#### Start 16:

- Found in 42 of 171 ( 24.6% ) of genes in pham
- Manual Annotations of this start: 31 of 143
- Called 88.1% of time when present
- Phage (with cluster) where this start called: Acquire49\_21 (L1), AvadaKedavra\_21 (L1), Bellis\_22 (L3), BourbonZero\_21 (L3), Calm\_21 (L1), Clautastrophe\_22 (L3), DirkDirk\_21 (L1), DuncansLeg\_22 (L3), Ellson\_22 (L3), Enceladus\_21 (L1), Finnry\_22 (L3), Halena\_21 (L1), Jobypre\_22 (L3), Jubie\_22 (L3), Keziacharles14\_32 (A9), Kingsolomon\_22 (L3), KirDoubleO7\_20 (L3), Krypton555\_22 (L3), LiyuLake\_22 (L3), Lolly9\_22 (L3), Lumos\_22 (L3), MAckerman\_21 (L1), MiniLon\_22 (L3), MiniMac\_22 (L3), Moostard\_22 (L3), MsGreen\_22 (L3), Nicholas\_22 (L3), OhShagHennessy\_21 (L1), Rose5\_21 (L1), Samty\_22 (L3), Silverleaf\_21 (L1), Snenia\_22 (L3), Tyson\_21 (L1), Wamburggrxpress\_21 (L1), Whirlwind\_23 (L3), Wyatt2\_21 (L1), Zaria\_21 (L1),

#### Start 23:

- Found in 1 of 171 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 143
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nanosmite\_35 (M3),

#### Start 27:

- Found in 46 of 171 ( 26.9% ) of genes in pham
- Manual Annotations of this start: 4 of 143
- Called 8.7% of time when present
- Phage (with cluster) where this start called: Bromden\_23 (L4), Chaser\_21 (L4), Douge\_21 (L4), DyoEdafos\_22 (L4),

#### Start 31:

- Found in 48 of 171 ( 28.1% ) of genes in pham
- Manual Annotations of this start: 1 of 143
- Called 4.2% of time when present
- Phage (with cluster) where this start called: Hanako\_21 (N), Snekmaggedon\_21 (N),

#### Start 44:

- Found in 3 of 171 ( 1.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 66.7% of time when present
- Phage (with cluster) where this start called: FarmResident\_21 (L4), Quby\_21 (L4),

#### Start 52:

- Found in 71 of 171 ( 41.5% ) of genes in pham
- Manual Annotations of this start: 6 of 143
- Called 8.5% of time when present
- Phage (with cluster) where this start called: ChipMunk\_34 (A2), EvilGenius\_34 (A2), Gail\_32 (A14), KingCyrus\_34 (A2), Luchador\_34 (A14), SororFago\_32 (A14),

### Summary by clusters:

There are 15 clusters represented in this pham: F1, singleton, P1, A14, I1, L1, F3, N, B4, L4, A2, L3, M3, B3, A9,

Info for manual annotations of cluster A14:

- Start number 52 was manually annotated 3 times for cluster A14.

Info for manual annotations of cluster A2:

- Start number 52 was manually annotated 3 times for cluster A2.

Info for manual annotations of cluster A9:

- Start number 15 was manually annotated 2 times for cluster A9.
- Start number 16 was manually annotated 1 time for cluster A9.

Info for manual annotations of cluster B3:

- Start number 13 was manually annotated 41 times for cluster B3.

Info for manual annotations of cluster B4:

- Start number 13 was manually annotated 25 times for cluster B4.

Info for manual annotations of cluster F1:

- Start number 10 was manually annotated 3 times for cluster F1.
- Start number 12 was manually annotated 2 times for cluster F1.
- Start number 13 was manually annotated 7 times for cluster F1.

Info for manual annotations of cluster F3:

- Start number 13 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster I1:

- Start number 13 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster L1:

- Start number 14 was manually annotated 5 times for cluster L1.
- Start number 16 was manually annotated 14 times for cluster L1.

Info for manual annotations of cluster L3:

- Start number 16 was manually annotated 16 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 27 was manually annotated 4 times for cluster L4.

Info for manual annotations of cluster M3:

- Start number 23 was manually annotated 1 time for cluster M3.

Info for manual annotations of cluster N:

- Start number 13 was manually annotated 10 times for cluster N.
- Start number 31 was manually annotated 1 time for cluster N.

Info for manual annotations of cluster P1:

- Start number 13 was manually annotated 1 time for cluster P1.

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

Gene: Abinghost\_33 Start: 32219, Stop: 33421, Start Num: 13

Candidate Starts for Abinghost\_33:

(Start: 13 @32219 has 88 MA's), (20, 32252), (40, 32396), (42, 32405), (45, 32414), (Start: 52 @32453 has 6 MA's), (55, 32462), (59, 32480), (62, 32498), (65, 32516), (66, 32522), (69, 32534),



(71, 32552), (74, 32567), (80, 32600), (87, 32627), (98, 32672), (119, 32753), (126, 32780), (131, 32798), (138, 32816), (148, 32858), (150, 32882), (159, 32957), (162, 32987), (172, 33047), (173, 33059), (175, 33077), (186, 33179), (199, 33284), (200, 33290), (203, 33308), (214, 33395),

Gene: Acquire49\_21 Start: 21688, Stop: 22860, Start Num: 16

Candidate Starts for Acquire49\_21:

(Start: 14 @21685 has 5 MA's), (Start: 16 @21688 has 31 MA's), (Start: 31 @21814 has 1 MA's), (39, 21856), (41, 21868), (42, 21871), (49, 21904), (51, 21916), (62, 21964), (65, 21982), (71, 22018), (74, 22033), (86, 22084), (93, 22114), (102, 22156), (113, 22180), (132, 22216), (137, 22222), (143, 22249), (148, 22267), (159, 22360), (160, 22363), (171, 22447), (187, 22585), (188, 22603), (199, 22687),

Gene: Ahwei\_29 Start: 31578, Stop: 32735, Start Num: 13

Candidate Starts for Ahwei\_29:

(Start: 13 @31578 has 88 MA's), (25, 31671), (Start: 27 @31686 has 4 MA's), (30, 31701), (32, 31713), (35, 31731), (55, 31821), (64, 31872), (66, 31881), (67, 31887), (70, 31899), (74, 31926), (77, 31941), (80, 31947), (82, 31953), (92, 31986), (95, 31995), (103, 32028), (118, 32061), (141, 32151), (143, 32157), (158, 32256), (159, 32259), (179, 32403), (195, 32556),

Gene: Akhila\_20 Start: 20281, Stop: 21492, Start Num: 13

Candidate Starts for Akhila\_20:

(Start: 13 @20281 has 88 MA's), (17, 20305), (24, 20362), (Start: 31 @20410 has 1 MA's), (43, 20470), (46, 20479), (48, 20494), (53, 20518), (59, 20542), (61, 20554), (67, 20590), (74, 20629), (76, 20638), (80, 20662), (87, 20692), (106, 20776), (107, 20779), (114, 20800), (122, 20836), (123, 20839), (129, 20860), (141, 20902), (157, 21019), (162, 21055), (164, 21061), (179, 21166), (186, 21247),

Gene: Akoma\_33 Start: 32223, Stop: 33425, Start Num: 13

Candidate Starts for Akoma\_33:

(Start: 13 @32223 has 88 MA's), (20, 32256), (40, 32400), (42, 32409), (45, 32418), (Start: 52 @32457 has 6 MA's), (55, 32466), (59, 32484), (62, 32502), (65, 32520), (66, 32526), (69, 32538), (71, 32556), (74, 32571), (80, 32604), (87, 32631), (98, 32676), (119, 32757), (126, 32784), (131, 32802), (138, 32820), (148, 32862), (150, 32886), (159, 32961), (162, 32991), (172, 33051), (173, 33063), (175, 33081), (186, 33183), (199, 33288), (200, 33294), (203, 33312), (214, 33399),

Gene: AlanGrant\_31 Start: 33326, Stop: 34483, Start Num: 13

Candidate Starts for AlanGrant\_31:

(Start: 13 @33326 has 88 MA's), (25, 33419), (Start: 27 @33434 has 4 MA's), (30, 33449), (32, 33461), (35, 33479), (55, 33569), (64, 33620), (66, 33629), (70, 33647), (74, 33674), (77, 33689), (80, 33695), (82, 33701), (92, 33734), (95, 33743), (103, 33776), (118, 33809), (120, 33821), (128, 33854), (133, 33869), (141, 33899), (143, 33905), (154, 33971), (156, 33995), (158, 34004), (179, 34151), (195, 34304),

Gene: Antihero\_29 Start: 31578, Stop: 32735, Start Num: 13

Candidate Starts for Antihero\_29:

(Start: 13 @31578 has 88 MA's), (25, 31671), (Start: 27 @31686 has 4 MA's), (30, 31701), (32, 31713), (35, 31731), (55, 31821), (64, 31872), (66, 31881), (67, 31887), (70, 31899), (74, 31926), (77, 31941), (80, 31947), (82, 31953), (92, 31986), (95, 31995), (103, 32028), (118, 32061), (141, 32151), (143, 32157), (158, 32256), (159, 32259), (179, 32403), (195, 32556),

Gene: Apex\_30 Start: 32785, Stop: 33942, Start Num: 13

Candidate Starts for Apex\_30:

(Start: 13 @32785 has 88 MA's), (25, 32878), (Start: 27 @32893 has 4 MA's), (30, 32908), (32, 32920), (35, 32938), (45, 32980), (55, 33028), (64, 33079), (66, 33088), (70, 33106), (74, 33133), (77, 33148), (80, 33154), (82, 33160), (85, 33166), (92, 33193), (95, 33202), (103, 33235), (118, 33268), (133, 33328), (141, 33358), (143, 33364), (152, 33409), (158, 33463), (159, 33466), (179, 33610), (195, 33763),

Gene: Appletree2\_21 Start: 21628, Stop: 22803, Start Num: 14

Candidate Starts for Appletree2\_21:

(Start: 14 @21628 has 5 MA's), (Start: 16 @21631 has 31 MA's), (Start: 31 @21757 has 1 MA's), (39, 21799), (41, 21811), (42, 21814), (49, 21847), (51, 21859), (62, 21907), (65, 21925), (71, 21961), (74, 21976), (86, 22027), (93, 22057), (102, 22099), (113, 22123), (132, 22159), (137, 22165), (143, 22192), (148, 22210), (159, 22303), (160, 22306), (171, 22390), (187, 22528), (188, 22546), (199, 22630),

Gene: Arissanae\_32 Start: 24817, Stop: 26022, Start Num: 15

Candidate Starts for Arissanae\_32:

(Start: 15 @24817 has 2 MA's), (40, 24994), (41, 25000), (42, 25003), (53, 25054), (85, 25210), (96, 25258), (158, 25552), (163, 25585), (179, 25696), (195, 25852),

Gene: Athena\_34 Start: 32970, Stop: 34172, Start Num: 13

Candidate Starts for Athena\_34:

(Start: 13 @32970 has 88 MA's), (20, 33003), (40, 33147), (42, 33156), (45, 33165), (Start: 52 @33204 has 6 MA's), (55, 33213), (59, 33231), (68, 33282), (70, 33291), (71, 33303), (72, 33309), (74, 33318), (85, 33363), (87, 33378), (98, 33423), (107, 33462), (116, 33492), (120, 33507), (122, 33519), (129, 33543), (142, 33588), (148, 33609), (150, 33633), (159, 33708), (162, 33738), (172, 33798), (173, 33810), (175, 33828), (186, 33930), (199, 34035), (200, 34041), (203, 34059), (214, 34146),

Gene: Audrey\_33 Start: 32219, Stop: 33421, Start Num: 13

Candidate Starts for Audrey\_33:

(Start: 13 @32219 has 88 MA's), (20, 32252), (40, 32396), (42, 32405), (45, 32414), (Start: 52 @32453 has 6 MA's), (55, 32462), (59, 32480), (62, 32498), (65, 32516), (66, 32522), (69, 32534), (71, 32552), (74, 32567), (80, 32600), (87, 32627), (98, 32672), (119, 32753), (126, 32780), (131, 32798), (138, 32816), (148, 32858), (150, 32882), (159, 32957), (162, 32987), (172, 33047), (173, 33059), (175, 33077), (186, 33179), (199, 33284), (200, 33290), (203, 33308), (214, 33395),

Gene: Austelle\_31 Start: 33241, Stop: 34398, Start Num: 13

Candidate Starts for Austelle\_31:

(Start: 13 @33241 has 88 MA's), (25, 33334), (Start: 27 @33349 has 4 MA's), (30, 33364), (32, 33376), (35, 33394), (45, 33436), (55, 33484), (64, 33535), (66, 33544), (70, 33562), (74, 33589), (77, 33604), (80, 33610), (82, 33616), (85, 33622), (92, 33649), (95, 33658), (103, 33691), (118, 33724), (133, 33784), (141, 33814), (143, 33820), (152, 33865), (158, 33919), (159, 33922), (179, 34066), (195, 34219),

Gene: AvadaKedavra\_21 Start: 21698, Stop: 22870, Start Num: 16

Candidate Starts for AvadaKedavra\_21:

(Start: 14 @21695 has 5 MA's), (Start: 16 @21698 has 31 MA's), (Start: 31 @21824 has 1 MA's), (39, 21866), (41, 21878), (42, 21881), (49, 21914), (51, 21926), (62, 21974), (65, 21992), (71, 22028), (74, 22043), (86, 22094), (93, 22124), (102, 22166), (113, 22190), (132, 22226), (137, 22232), (143, 22259), (148, 22277), (159, 22370), (160, 22373), (171, 22457), (187, 22595), (188, 22613), (199, 22697),

Gene: BabeRuth\_21 Start: 19877, Stop: 21031, Start Num: 13

Candidate Starts for BabeRuth\_21:

(3, 19640), (4, 19682), (5, 19712), (6, 19742), (8, 19802), (9, 19856), (Start: 13 @19877 has 88 MA's), (22, 19940), (24, 19958), (Start: 31 @20006 has 1 MA's), (43, 20066), (46, 20075), (48, 20090), (53, 20114), (59, 20138), (61, 20150), (74, 20225), (76, 20234), (80, 20258), (87, 20288), (97, 20333), (98, 20336), (99, 20342), (122, 20372), (123, 20375), (129, 20396), (157, 20555), (170, 20645), (172, 20654), (175, 20684), (179, 20705), (215, 21008),

Gene: Baloo\_33 Start: 32222, Stop: 33424, Start Num: 13

Candidate Starts for Baloo\_33:

(Start: 13 @32222 has 88 MA's), (20, 32255), (40, 32399), (42, 32408), (45, 32417), (Start: 52 @32456 has 6 MA's), (55, 32465), (59, 32483), (68, 32534), (70, 32543), (71, 32555), (72, 32561), (74, 32570), (85, 32615), (87, 32630), (98, 32675), (107, 32714), (116, 32744), (120, 32759), (122, 32771), (129, 32795), (142, 32840), (148, 32861), (150, 32885), (159, 32960), (162, 32990), (172, 33050), (173, 33062), (175, 33080), (186, 33182), (199, 33287), (200, 33293), (203, 33311), (214, 33398),

Gene: Bellis\_22 Start: 22249, Stop: 23466, Start Num: 16

Candidate Starts for Bellis\_22:

(Start: 16 @22249 has 31 MA's), (26, 22351), (28, 22363), (32, 22381), (34, 22390), (41, 22429), (49, 22465), (Start: 52 @22480 has 6 MA's), (54, 22486), (60, 22516), (61, 22519), (67, 22555), (70, 22567), (78, 22618), (79, 22621), (95, 22681), (100, 22708), (104, 22723), (105, 22729), (109, 22741), (124, 22801), (131, 22825), (148, 22885), (158, 22981), (163, 23014), (173, 23086), (177, 23110), (179, 23125), (204, 23338), (205, 23350),

Gene: Ben11\_32 Start: 32041, Stop: 33243, Start Num: 13

Candidate Starts for Ben11\_32:

(Start: 13 @32041 has 88 MA's), (20, 32074), (40, 32218), (42, 32227), (45, 32236), (Start: 52 @32275 has 6 MA's), (55, 32284), (59, 32302), (62, 32320), (65, 32338), (66, 32344), (69, 32356), (71, 32374), (74, 32389), (80, 32422), (87, 32449), (98, 32494), (119, 32575), (126, 32602), (131, 32620), (138, 32638), (148, 32680), (150, 32704), (159, 32779), (162, 32809), (172, 32869), (173, 32881), (175, 32899), (185, 32998), (186, 33001), (199, 33106), (200, 33112), (203, 33130), (214, 33217),

Gene: Bernardo\_33 Start: 32309, Stop: 33511, Start Num: 13

Candidate Starts for Bernardo\_33:

(Start: 13 @32309 has 88 MA's), (20, 32342), (40, 32486), (42, 32495), (45, 32504), (Start: 52 @32543 has 6 MA's), (55, 32552), (59, 32570), (68, 32621), (70, 32630), (71, 32642), (74, 32657), (85, 32702), (87, 32717), (98, 32762), (116, 32831), (120, 32846), (122, 32858), (129, 32882), (143, 32930), (145, 32936), (146, 32942), (148, 32948), (150, 32972), (159, 33047), (162, 33077), (172, 33137), (173, 33149), (175, 33167), (186, 33269), (199, 33374), (200, 33380), (209, 33449),

Gene: BigPhil\_20 Start: 20087, Stop: 21244, Start Num: 10

Candidate Starts for BigPhil\_20:

(Start: 10 @20087 has 3 MA's), (Start: 13 @20090 has 88 MA's), (Start: 31 @20219 has 1 MA's), (36, 20249), (43, 20279), (46, 20288), (48, 20303), (53, 20327), (59, 20351), (61, 20363), (74, 20438), (76, 20447), (80, 20471), (87, 20501), (122, 20585), (123, 20588), (129, 20609), (170, 20858), (172, 20867), (175, 20897), (179, 20918), (184, 20987), (215, 21221),

Gene: BobbyK\_30 Start: 32610, Stop: 33767, Start Num: 13

Candidate Starts for BobbyK\_30:

(Start: 13 @32610 has 88 MA's), (25, 32703), (Start: 27 @32718 has 4 MA's), (30, 32733), (32, 32745), (35, 32763), (64, 32904), (66, 32913), (70, 32931), (74, 32958), (77, 32973), (80, 32979), (82, 32985), (85, 32991), (92, 33018), (95, 33027), (103, 33060), (118, 33093), (133, 33153), (141, 33183),

(143, 33189), (152, 33234), (158, 33288), (159, 33291), (179, 33435), (195, 33588),

Gene: BourbonZero\_21 Start: 22227, Stop: 23426, Start Num: 16

Candidate Starts for BourbonZero\_21:

(Start: 16 @22227 has 31 MA's), (26, 22329), (32, 22359), (34, 22368), (41, 22407), (45, 22419), (Start: 52 @22458 has 6 MA's), (60, 22494), (62, 22503), (69, 22539), (77, 22587), (109, 22719), (110, 22725), (141, 22839), (148, 22863), (157, 22956), (163, 22992), (171, 23046), (173, 23064), (195, 23256), (210, 23364),

Gene: BrainDrainer\_22 Start: 21566, Stop: 22720, Start Num: 12

Candidate Starts for BrainDrainer\_22:

(Start: 12 @21566 has 2 MA's), (26, 21668), (28, 21680), (42, 21749), (62, 21842), (71, 21896), (77, 21926), (81, 21935), (93, 21974), (108, 22022), (117, 22046), (120, 22058), (126, 22082), (150, 22172), (168, 22289), (170, 22325), (172, 22334), (180, 22391), (182, 22430),

Gene: Brocalys\_20 Start: 19901, Stop: 21058, Start Num: 12

Candidate Starts for Brocalys\_20:

(Start: 12 @19901 has 2 MA's), (Start: 27 @20009 has 4 MA's), (Start: 31 @20030 has 1 MA's), (43, 20090), (48, 20114), (49, 20120), (53, 20138), (56, 20150), (59, 20162), (61, 20174), (71, 20234), (74, 20249), (76, 20258), (80, 20282), (87, 20312), (122, 20396), (123, 20399), (129, 20420), (137, 20441), (139, 20450), (141, 20462), (144, 20471), (179, 20732), (184, 20801), (215, 21035),

Gene: Bromden\_23 Start: 22120, Stop: 23205, Start Num: 27

Candidate Starts for Bromden\_23:

(Start: 27 @22120 has 4 MA's), (29, 22132), (82, 22375), (91, 22411), (101, 22450), (105, 22459), (112, 22483), (143, 22594), (147, 22609), (159, 22711), (169, 22756), (173, 22810), (179, 22849), (206, 23092),

Gene: BrownCNA\_31 Start: 32871, Stop: 34028, Start Num: 13

Candidate Starts for BrownCNA\_31:

(Start: 13 @32871 has 88 MA's), (25, 32964), (Start: 27 @32979 has 4 MA's), (30, 32994), (32, 33006), (35, 33024), (45, 33066), (64, 33165), (66, 33174), (70, 33192), (74, 33219), (77, 33234), (80, 33240), (82, 33246), (85, 33252), (92, 33279), (95, 33288), (103, 33321), (118, 33354), (131, 33408), (133, 33414), (141, 33444), (143, 33450), (149, 33471), (152, 33495), (158, 33549), (159, 33552), (179, 33696),

Gene: Calm\_21 Start: 21702, Stop: 22874, Start Num: 16

Candidate Starts for Calm\_21:

(Start: 14 @21699 has 5 MA's), (Start: 16 @21702 has 31 MA's), (Start: 31 @21828 has 1 MA's), (39, 21870), (41, 21882), (42, 21885), (49, 21918), (51, 21930), (54, 21939), (62, 21978), (65, 21996), (71, 22032), (74, 22047), (86, 22098), (93, 22128), (102, 22170), (113, 22194), (132, 22230), (137, 22236), (143, 22263), (148, 22281), (159, 22374), (160, 22377), (171, 22461), (187, 22599), (188, 22617), (199, 22701),

Gene: Casbah\_32 Start: 32071, Stop: 33273, Start Num: 13

Candidate Starts for Casbah\_32:

(Start: 13 @32071 has 88 MA's), (20, 32104), (40, 32248), (42, 32257), (45, 32266), (Start: 52 @32305 has 6 MA's), (55, 32314), (59, 32332), (62, 32350), (65, 32368), (66, 32374), (69, 32386), (71, 32404), (74, 32419), (80, 32452), (87, 32479), (98, 32524), (119, 32605), (126, 32632), (131, 32650), (138, 32668), (148, 32710), (150, 32734), (159, 32809), (162, 32839), (172, 32899), (173, 32911), (175, 32929), (185, 33028), (186, 33031), (199, 33136), (200, 33142), (203, 33160), (214, 33247),

Gene: Cerasum\_20 Start: 20087, Stop: 21244, Start Num: 10

Candidate Starts for Cerasum\_20:

(Start: 10 @20087 has 3 MA's), (Start: 13 @20090 has 88 MA's), (Start: 31 @20219 has 1 MA's), (36, 20249), (43, 20279), (46, 20288), (48, 20303), (53, 20327), (59, 20351), (61, 20363), (74, 20438), (76, 20447), (80, 20471), (87, 20501), (122, 20585), (123, 20588), (129, 20609), (170, 20858), (172, 20867), (175, 20897), (179, 20918), (184, 20987), (215, 21221),

Gene: ChaChing\_33 Start: 32234, Stop: 33436, Start Num: 13

Candidate Starts for ChaChing\_33:

(Start: 13 @32234 has 88 MA's), (20, 32267), (40, 32411), (42, 32420), (45, 32429), (Start: 52 @32468 has 6 MA's), (55, 32477), (59, 32495), (62, 32513), (65, 32531), (66, 32537), (69, 32549), (71, 32567), (74, 32582), (80, 32615), (87, 32642), (98, 32687), (119, 32768), (126, 32795), (131, 32813), (138, 32831), (148, 32873), (150, 32897), (159, 32972), (162, 33002), (172, 33062), (173, 33074), (175, 33092), (186, 33194), (199, 33299), (200, 33305), (203, 33323), (214, 33410),

Gene: Chandler\_33 Start: 33002, Stop: 34204, Start Num: 13

Candidate Starts for Chandler\_33:

(Start: 13 @33002 has 88 MA's), (20, 33035), (40, 33179), (42, 33188), (45, 33197), (Start: 52 @33236 has 6 MA's), (55, 33245), (59, 33263), (62, 33281), (65, 33299), (66, 33305), (69, 33317), (71, 33335), (74, 33350), (80, 33383), (87, 33410), (98, 33455), (119, 33536), (126, 33563), (131, 33581), (138, 33599), (148, 33641), (150, 33665), (159, 33740), (162, 33770), (172, 33830), (173, 33842), (175, 33860), (186, 33962), (199, 34067), (200, 34073), (203, 34091), (214, 34178),

Gene: Chaser\_21 Start: 21531, Stop: 22616, Start Num: 27

Candidate Starts for Chaser\_21:

(Start: 27 @21531 has 4 MA's), (81, 21783), (91, 21822), (93, 21831), (94, 21834), (101, 21861), (105, 21870), (112, 21894), (125, 21945), (127, 21951), (143, 22005), (173, 22221), (179, 22260), (191, 22401), (196, 22434), (206, 22503),

Gene: ChipMunk\_34 Start: 25662, Stop: 26558, Start Num: 52

Candidate Starts for ChipMunk\_34:

(Start: 52 @25662 has 6 MA's), (103, 25893), (136, 25956), (138, 25962), (151, 26034), (157, 26088), (202, 26424),

Gene: ChrisnMich\_29 Start: 31570, Stop: 32727, Start Num: 13

Candidate Starts for ChrisnMich\_29:

(Start: 13 @31570 has 88 MA's), (25, 31663), (Start: 27 @31678 has 4 MA's), (30, 31693), (32, 31705), (35, 31723), (55, 31813), (64, 31864), (66, 31873), (67, 31879), (70, 31891), (74, 31918), (77, 31933), (80, 31939), (82, 31945), (92, 31978), (95, 31987), (103, 32020), (118, 32053), (141, 32143), (143, 32149), (158, 32248), (159, 32251), (179, 32395), (195, 32548),

Gene: CicholasNage\_21 Start: 21687, Stop: 22862, Start Num: 14

Candidate Starts for CicholasNage\_21:

(Start: 14 @21687 has 5 MA's), (Start: 16 @21690 has 31 MA's), (Start: 31 @21816 has 1 MA's), (39, 21858), (41, 21870), (42, 21873), (49, 21906), (51, 21918), (62, 21966), (65, 21984), (71, 22020), (74, 22035), (86, 22086), (93, 22116), (102, 22158), (113, 22182), (132, 22218), (137, 22224), (143, 22251), (148, 22269), (159, 22362), (160, 22365), (171, 22449), (187, 22587), (188, 22605), (199, 22689),

Gene: Clautastrophe\_22 Start: 22247, Stop: 23464, Start Num: 16

Candidate Starts for Clautastrophe\_22:

(Start: 16 @22247 has 31 MA's), (26, 22349), (28, 22361), (32, 22379), (34, 22388), (41, 22427), (49, 22463), (Start: 52 @22478 has 6 MA's), (54, 22484), (60, 22514), (61, 22517), (67, 22553), (70,

22565), (78, 22616), (79, 22619), (95, 22679), (100, 22706), (104, 22721), (105, 22727), (109, 22739), (124, 22799), (131, 22823), (148, 22883), (158, 22979), (163, 23012), (173, 23084), (177, 23108), (204, 23336), (205, 23348),

Gene: Clifton\_19 Start: 20217, Stop: 21371, Start Num: 13

Candidate Starts for Clifton\_19:

(Start: 10 @20214 has 3 MA's), (Start: 13 @20217 has 88 MA's), (24, 20298), (Start: 31 @20346 has 1 MA's), (43, 20406), (46, 20415), (48, 20430), (53, 20454), (59, 20478), (61, 20490), (74, 20565), (76, 20574), (80, 20598), (87, 20628), (122, 20712), (123, 20715), (129, 20736), (157, 20895), (170, 20985), (172, 20994), (175, 21024), (179, 21045), (215, 21348),

Gene: Compostia\_34 Start: 32649, Stop: 33851, Start Num: 13

Candidate Starts for Compostia\_34:

(Start: 13 @32649 has 88 MA's), (40, 32826), (42, 32835), (45, 32844), (Start: 52 @32883 has 6 MA's), (55, 32892), (59, 32910), (62, 32928), (65, 32946), (66, 32952), (69, 32964), (71, 32982), (74, 32997), (80, 33030), (87, 33057), (98, 33102), (119, 33183), (126, 33210), (131, 33228), (138, 33246), (148, 33288), (162, 33417), (175, 33507), (186, 33609), (194, 33675), (199, 33714), (208, 33786), (215, 33828),

Gene: Cooper\_30 Start: 31786, Stop: 32946, Start Num: 13

Candidate Starts for Cooper\_30:

(Start: 13 @31786 has 88 MA's), (Start: 27 @31894 has 4 MA's), (30, 31909), (32, 31921), (34, 31930), (35, 31939), (40, 31963), (45, 31981), (64, 32080), (66, 32089), (67, 32095), (70, 32107), (74, 32134), (77, 32149), (80, 32155), (82, 32161), (83, 32164), (87, 32182), (92, 32197), (103, 32239), (118, 32272), (126, 32308), (133, 32332), (141, 32362), (143, 32368), (154, 32434), (158, 32467), (159, 32470), (179, 32614), (199, 32803),

Gene: Crumble\_19 Start: 20264, Stop: 21418, Start Num: 13

Candidate Starts for Crumble\_19:

(Start: 10 @20261 has 3 MA's), (Start: 13 @20264 has 88 MA's), (24, 20345), (Start: 31 @20393 has 1 MA's), (43, 20453), (46, 20462), (48, 20477), (53, 20501), (59, 20525), (61, 20537), (74, 20612), (76, 20621), (80, 20645), (87, 20675), (122, 20759), (123, 20762), (129, 20783), (157, 20942), (170, 21032), (172, 21041), (175, 21071), (179, 21092), (215, 21395),

Gene: Daisy\_33 Start: 32246, Stop: 33448, Start Num: 13

Candidate Starts for Daisy\_33:

(Start: 13 @32246 has 88 MA's), (20, 32279), (40, 32423), (42, 32432), (45, 32441), (Start: 52 @32480 has 6 MA's), (55, 32489), (59, 32507), (62, 32525), (65, 32543), (66, 32549), (69, 32561), (71, 32579), (74, 32594), (80, 32627), (87, 32654), (98, 32699), (119, 32780), (126, 32807), (131, 32825), (138, 32843), (148, 32885), (150, 32909), (159, 32984), (162, 33014), (172, 33074), (173, 33086), (175, 33104), (186, 33206), (199, 33311), (200, 33317), (203, 33335), (214, 33422),

Gene: Deenasa\_33 Start: 32985, Stop: 34187, Start Num: 13

Candidate Starts for Deenasa\_33:

(Start: 13 @32985 has 88 MA's), (20, 33018), (40, 33162), (42, 33171), (45, 33180), (Start: 52 @33219 has 6 MA's), (55, 33228), (59, 33246), (62, 33264), (65, 33282), (66, 33288), (69, 33300), (71, 33318), (74, 33333), (80, 33366), (87, 33393), (98, 33438), (119, 33519), (126, 33546), (131, 33564), (138, 33582), (148, 33624), (150, 33648), (159, 33723), (162, 33753), (172, 33813), (173, 33825), (175, 33843), (186, 33945), (199, 34050), (200, 34056), (203, 34074), (214, 34161),

Gene: Devonte\_33 Start: 32210, Stop: 33412, Start Num: 13

Candidate Starts for Devonte\_33:

(Start: 13 @32210 has 88 MA's), (20, 32243), (40, 32387), (42, 32396), (45, 32405), (Start: 52 @32444 has 6 MA's), (55, 32453), (59, 32471), (62, 32489), (65, 32507), (66, 32513), (69, 32525), (71, 32543), (74, 32558), (80, 32591), (87, 32618), (98, 32663), (119, 32744), (126, 32771), (131, 32789), (138, 32807), (148, 32849), (150, 32873), (159, 32948), (162, 32978), (172, 33038), (173, 33050), (175, 33068), (186, 33170), (199, 33275), (200, 33281), (203, 33299), (214, 33386),

Gene: DirkDirk\_21 Start: 21671, Stop: 22843, Start Num: 16

Candidate Starts for DirkDirk\_21:

(Start: 14 @21668 has 5 MA's), (Start: 16 @21671 has 31 MA's), (Start: 31 @21797 has 1 MA's), (39, 21839), (41, 21851), (42, 21854), (49, 21887), (51, 21899), (62, 21947), (65, 21965), (71, 22001), (74, 22016), (86, 22067), (93, 22097), (102, 22139), (113, 22163), (132, 22199), (137, 22205), (143, 22232), (148, 22250), (159, 22343), (160, 22346), (171, 22430), (187, 22568), (188, 22586), (199, 22670),

Gene: Douge\_21 Start: 21469, Stop: 22554, Start Num: 27

Candidate Starts for Douge\_21:

(Start: 27 @21469 has 4 MA's), (44, 21547), (81, 21721), (91, 21760), (101, 21799), (112, 21832), (134, 21910), (143, 21943), (169, 22105), (191, 22339), (196, 22372), (201, 22396), (206, 22441),

Gene: Douzhi\_21 Start: 21427, Stop: 22581, Start Num: 12

Candidate Starts for Douzhi\_21:

(Start: 12 @21427 has 2 MA's), (26, 21529), (28, 21541), (42, 21610), (62, 21703), (71, 21757), (77, 21787), (81, 21796), (93, 21835), (108, 21883), (117, 21907), (120, 21919), (126, 21943), (150, 22033), (168, 22150), (170, 22186), (172, 22195), (180, 22252), (182, 22291),

Gene: DuncansLeg\_22 Start: 22232, Stop: 23449, Start Num: 16

Candidate Starts for DuncansLeg\_22:

(Start: 16 @22232 has 31 MA's), (19, 22259), (26, 22334), (28, 22346), (32, 22364), (41, 22412), (49, 22448), (Start: 52 @22463 has 6 MA's), (54, 22469), (60, 22499), (61, 22502), (62, 22508), (70, 22550), (76, 22586), (78, 22601), (79, 22604), (80, 22607), (81, 22610), (105, 22712), (109, 22724), (123, 22781), (124, 22784), (131, 22808), (148, 22868), (163, 22997), (209, 23375), (211, 23381),

Gene: DyoEdafos\_22 Start: 21679, Stop: 22761, Start Num: 27

Candidate Starts for DyoEdafos\_22:

(Start: 27 @21679 has 4 MA's), (81, 21931), (91, 21970), (93, 21979), (94, 21982), (101, 22009), (105, 22018), (112, 22042), (126, 22096), (127, 22099), (143, 22153), (160, 22273), (166, 22306), (167, 22309), (173, 22369), (179, 22408), (181, 22423), (189, 22534), (196, 22582),

Gene: Ellson\_22 Start: 22237, Stop: 23436, Start Num: 16

Candidate Starts for Ellson\_22:

(Start: 16 @22237 has 31 MA's), (26, 22339), (32, 22369), (34, 22378), (41, 22417), (45, 22429), (Start: 52 @22468 has 6 MA's), (60, 22504), (62, 22513), (69, 22549), (77, 22597), (109, 22729), (110, 22735), (148, 22873), (163, 23002), (171, 23056), (173, 23074), (195, 23266), (210, 23374),

Gene: Enceladus\_21 Start: 21672, Stop: 22844, Start Num: 16

Candidate Starts for Enceladus\_21:

(Start: 14 @21669 has 5 MA's), (Start: 16 @21672 has 31 MA's), (Start: 31 @21798 has 1 MA's), (39, 21840), (41, 21852), (42, 21855), (49, 21888), (51, 21900), (62, 21948), (65, 21966), (71, 22002), (74, 22017), (86, 22068), (93, 22098), (102, 22140), (113, 22164), (132, 22200), (137, 22206), (143, 22233), (148, 22251), (159, 22344), (160, 22347), (171, 22431), (187, 22569), (188, 22587), (199, 22671),

Gene: Epah\_29 Start: 31578, Stop: 32735, Start Num: 13

Candidate Starts for Epah\_29:

(Start: 13 @31578 has 88 MA's), (25, 31671), (Start: 27 @31686 has 4 MA's), (30, 31701), (32, 31713), (35, 31731), (55, 31821), (64, 31872), (66, 31881), (67, 31887), (70, 31899), (74, 31926), (77, 31941), (80, 31947), (82, 31953), (92, 31986), (95, 31995), (103, 32028), (118, 32061), (141, 32151), (143, 32157), (158, 32256), (159, 32259), (179, 32403), (195, 32556),

Gene: EvilGenius\_34 Start: 25671, Stop: 26591, Start Num: 52

Candidate Starts for EvilGenius\_34:

(Start: 52 @25671 has 6 MA's), (75, 25779), (98, 25881), (103, 25902), (136, 25965), (157, 26097), (195, 26379), (213, 26529), (216, 26586),

Gene: Fanaw\_29 Start: 32276, Stop: 33433, Start Num: 13

Candidate Starts for Fanaw\_29:

(Start: 13 @32276 has 88 MA's), (25, 32369), (Start: 27 @32384 has 4 MA's), (30, 32399), (32, 32411), (35, 32429), (45, 32471), (64, 32570), (66, 32579), (70, 32597), (74, 32624), (77, 32639), (80, 32645), (82, 32651), (85, 32657), (92, 32684), (95, 32693), (103, 32726), (118, 32759), (141, 32849), (143, 32855), (152, 32900), (158, 32954), (159, 32957), (179, 33101), (195, 33254),

Gene: FarmResident\_21 Start: 21591, Stop: 22598, Start Num: 44

Candidate Starts for FarmResident\_21:

(Start: 27 @21513 has 4 MA's), (44, 21591), (81, 21765), (91, 21804), (101, 21843), (111, 21873), (112, 21876), (134, 21954), (143, 21987), (169, 22149), (191, 22383), (196, 22416), (201, 22440), (206, 22485),

Gene: Finnry\_22 Start: 22251, Stop: 23468, Start Num: 16

Candidate Starts for Finnry\_22:

(Start: 16 @22251 has 31 MA's), (26, 22353), (28, 22365), (32, 22383), (34, 22392), (41, 22431), (49, 22467), (Start: 52 @22482 has 6 MA's), (54, 22488), (60, 22518), (61, 22521), (67, 22557), (70, 22569), (78, 22620), (79, 22623), (95, 22683), (100, 22710), (104, 22725), (105, 22731), (109, 22743), (124, 22803), (131, 22827), (148, 22887), (158, 22983), (163, 23016), (173, 23088), (177, 23112), (179, 23127), (204, 23340), (205, 23352),

Gene: Fortunato\_30 Start: 32604, Stop: 33761, Start Num: 13

Candidate Starts for Fortunato\_30:

(Start: 13 @32604 has 88 MA's), (25, 32697), (Start: 27 @32712 has 4 MA's), (30, 32727), (32, 32739), (35, 32757), (45, 32799), (64, 32898), (66, 32907), (70, 32925), (74, 32952), (77, 32967), (80, 32973), (82, 32979), (85, 32985), (92, 33012), (95, 33021), (103, 33054), (118, 33087), (141, 33177), (143, 33183), (154, 33249), (157, 33279), (158, 33282), (179, 33429), (195, 33582),

Gene: Frederick\_30 Start: 32610, Stop: 33767, Start Num: 13

Candidate Starts for Frederick\_30:

(Start: 13 @32610 has 88 MA's), (25, 32703), (Start: 27 @32718 has 4 MA's), (30, 32733), (32, 32745), (35, 32763), (45, 32805), (55, 32853), (64, 32904), (66, 32913), (70, 32931), (74, 32958), (77, 32973), (80, 32979), (82, 32985), (85, 32991), (92, 33018), (95, 33027), (103, 33060), (118, 33093), (133, 33153), (141, 33183), (143, 33189), (152, 33234), (158, 33288), (159, 33291), (179, 33435), (195, 33588),

Gene: Fulbright\_21 Start: 20200, Stop: 21357, Start Num: 13

Candidate Starts for Fulbright\_21:

(Start: 13 @20200 has 88 MA's), (24, 20281), (Start: 27 @20308 has 4 MA's), (Start: 31 @20329 has 1 MA's), (43, 20389), (48, 20413), (49, 20419), (53, 20437), (56, 20449), (59, 20461), (61, 20473), (67, 20509), (71, 20533), (74, 20548), (76, 20557), (80, 20581), (85, 20596), (87, 20611), (122, 20695), (123, 20698), (129, 20719), (137, 20740), (139, 20749), (141, 20761), (144, 20770), (179, 21031),



(184, 21100), (215, 21334),

Gene: Gadget\_34 Start: 32229, Stop: 33431, Start Num: 13

Candidate Starts for Gadget\_34:

(Start: 13 @32229 has 88 MA's), (20, 32262), (40, 32406), (42, 32415), (45, 32424), (Start: 52 @32463 has 6 MA's), (55, 32472), (59, 32490), (62, 32508), (65, 32526), (66, 32532), (69, 32544), (71, 32562), (74, 32577), (80, 32610), (87, 32637), (98, 32682), (119, 32763), (126, 32790), (131, 32808), (138, 32826), (148, 32868), (162, 32997), (175, 33087), (186, 33189), (192, 33246), (194, 33255), (199, 33294), (208, 33366), (215, 33408),

Gene: Gail\_32 Start: 24477, Stop: 25421, Start Num: 52

Candidate Starts for Gail\_32:

(Start: 52 @24477 has 6 MA's), (73, 24582), (75, 24588), (77, 24600), (86, 24636), (103, 24711), (136, 24774), (137, 24777), (138, 24780), (158, 24915), (212, 25371),

Gene: Gervas\_33 Start: 32200, Stop: 33402, Start Num: 13

Candidate Starts for Gervas\_33:

(Start: 13 @32200 has 88 MA's), (20, 32233), (40, 32377), (42, 32386), (45, 32395), (Start: 52 @32434 has 6 MA's), (55, 32443), (59, 32461), (68, 32512), (70, 32521), (71, 32533), (72, 32539), (74, 32548), (85, 32593), (87, 32608), (98, 32653), (107, 32692), (116, 32722), (120, 32737), (122, 32749), (129, 32773), (142, 32818), (148, 32839), (150, 32863), (159, 32938), (162, 32968), (172, 33028), (173, 33040), (175, 33058), (186, 33160), (199, 33265), (200, 33271), (203, 33289), (214, 33376),

Gene: GinPorsche\_29 Start: 31578, Stop: 32735, Start Num: 13

Candidate Starts for GinPorsche\_29:

(Start: 13 @31578 has 88 MA's), (25, 31671), (Start: 27 @31686 has 4 MA's), (30, 31701), (32, 31713), (35, 31731), (55, 31821), (64, 31872), (66, 31881), (67, 31887), (70, 31899), (74, 31926), (77, 31941), (80, 31947), (82, 31953), (92, 31986), (95, 31995), (103, 32028), (118, 32061), (141, 32151), (143, 32157), (158, 32256), (159, 32259), (179, 32403), (195, 32556),

Gene: GlenHope\_34 Start: 32212, Stop: 33414, Start Num: 13

Candidate Starts for GlenHope\_34:

(Start: 13 @32212 has 88 MA's), (40, 32389), (42, 32398), (45, 32407), (Start: 52 @32446 has 6 MA's), (55, 32455), (59, 32473), (62, 32491), (65, 32509), (66, 32515), (69, 32527), (71, 32545), (74, 32560), (80, 32593), (87, 32620), (98, 32665), (119, 32746), (126, 32773), (131, 32791), (138, 32809), (148, 32851), (162, 32980), (175, 33070), (186, 33172), (194, 33238), (199, 33277), (208, 33349), (215, 33391),

Gene: GreaseLightnin\_22 Start: 21355, Stop: 22509, Start Num: 13

Candidate Starts for GreaseLightnin\_22:

(3, 21118), (4, 21160), (5, 21190), (6, 21220), (7, 21229), (8, 21280), (9, 21334), (Start: 13 @21355 has 88 MA's), (24, 21436), (Start: 31 @21484 has 1 MA's), (43, 21544), (46, 21553), (48, 21568), (53, 21592), (59, 21616), (61, 21628), (74, 21703), (76, 21712), (80, 21736), (87, 21766), (122, 21850), (123, 21853), (129, 21874), (157, 22033), (170, 22123), (172, 22132), (175, 22162), (179, 22183), (215, 22486),

Gene: Halena\_21 Start: 21699, Stop: 22871, Start Num: 16

Candidate Starts for Halena\_21:

(Start: 14 @21696 has 5 MA's), (Start: 16 @21699 has 31 MA's), (Start: 31 @21825 has 1 MA's), (39, 21867), (41, 21879), (42, 21882), (49, 21915), (51, 21927), (62, 21975), (65, 21993), (71, 22029), (74, 22044), (86, 22095), (93, 22125), (102, 22167), (113, 22191), (132, 22227), (137, 22233), (143, 22260), (148, 22278), (159, 22371), (160, 22374), (171, 22458), (187, 22596), (188, 22614), (199,

22698),

Gene: Halfpint\_32 Start: 32038, Stop: 33240, Start Num: 13

Candidate Starts for Halfpint\_32:

(Start: 13 @32038 has 88 MA's), (40, 32215), (42, 32224), (45, 32233), (Start: 52 @32272 has 6 MA's), (55, 32281), (59, 32299), (62, 32317), (65, 32335), (66, 32341), (69, 32353), (71, 32371), (74, 32386), (87, 32446), (98, 32491), (119, 32572), (126, 32599), (131, 32617), (138, 32635), (148, 32677), (162, 32806), (175, 32896), (186, 32998), (192, 33055), (194, 33064), (199, 33103), (208, 33175), (215, 33217),

Gene: Hally898\_29 Start: 31590, Stop: 32747, Start Num: 13

Candidate Starts for Hally898\_29:

(Start: 13 @31590 has 88 MA's), (25, 31683), (Start: 27 @31698 has 4 MA's), (30, 31713), (32, 31725), (35, 31743), (55, 31833), (64, 31884), (66, 31893), (67, 31899), (70, 31911), (74, 31938), (77, 31953), (80, 31959), (82, 31965), (92, 31998), (95, 32007), (103, 32040), (118, 32073), (141, 32163), (143, 32169), (158, 32268), (159, 32271), (179, 32415), (195, 32568),

Gene: Hanako\_21 Start: 20006, Stop: 21031, Start Num: 31

Candidate Starts for Hanako\_21:

(3, 19640), (4, 19682), (5, 19712), (6, 19742), (8, 19802), (9, 19856), (Start: 13 @19877 has 88 MA's), (22, 19940), (24, 19958), (Start: 31 @20006 has 1 MA's), (43, 20066), (46, 20075), (48, 20090), (53, 20114), (59, 20138), (61, 20150), (74, 20225), (76, 20234), (80, 20258), (87, 20288), (97, 20333), (98, 20336), (99, 20342), (122, 20372), (123, 20375), (129, 20396), (157, 20555), (170, 20645), (172, 20654), (175, 20684), (179, 20705), (215, 21008),

Gene: Hangman\_30 Start: 32602, Stop: 33759, Start Num: 13

Candidate Starts for Hangman\_30:

(Start: 13 @32602 has 88 MA's), (25, 32695), (Start: 27 @32710 has 4 MA's), (30, 32725), (32, 32737), (35, 32755), (45, 32797), (64, 32896), (66, 32905), (70, 32923), (77, 32965), (80, 32971), (82, 32977), (85, 32983), (92, 33010), (95, 33019), (103, 33052), (118, 33085), (133, 33145), (141, 33175), (143, 33181), (149, 33202), (152, 33226), (158, 33280), (159, 33283), (179, 33427),

Gene: HarveySr\_33 Start: 32202, Stop: 33404, Start Num: 13

Candidate Starts for HarveySr\_33:

(Start: 13 @32202 has 88 MA's), (20, 32235), (40, 32379), (42, 32388), (45, 32397), (Start: 52 @32436 has 6 MA's), (55, 32445), (59, 32463), (62, 32481), (65, 32499), (66, 32505), (69, 32517), (71, 32535), (74, 32550), (80, 32583), (87, 32610), (98, 32655), (119, 32736), (126, 32763), (131, 32781), (138, 32799), (148, 32841), (162, 32970), (175, 33060), (186, 33162), (192, 33219), (194, 33228), (199, 33267), (208, 33339), (215, 33381),

Gene: Heath\_29 Start: 32206, Stop: 33363, Start Num: 13

Candidate Starts for Heath\_29:

(Start: 13 @32206 has 88 MA's), (25, 32299), (Start: 27 @32314 has 4 MA's), (30, 32329), (32, 32341), (35, 32359), (45, 32401), (64, 32500), (66, 32509), (70, 32527), (74, 32554), (77, 32569), (80, 32575), (82, 32581), (85, 32587), (92, 32614), (95, 32623), (103, 32656), (118, 32689), (121, 32707), (133, 32749), (141, 32779), (143, 32785), (149, 32806), (158, 32884), (159, 32887), (167, 32932), (179, 33031), (195, 33184),

Gene: Heathcliff\_33 Start: 32184, Stop: 33386, Start Num: 13

Candidate Starts for Heathcliff\_33:

(Start: 13 @32184 has 88 MA's), (20, 32217), (40, 32361), (42, 32370), (45, 32379), (Start: 52 @32418 has 6 MA's), (55, 32427), (59, 32445), (62, 32463), (65, 32481), (66, 32487), (69, 32499), (71, 32517), (74, 32532), (80, 32565), (87, 32592), (98, 32637), (119, 32718), (126, 32745), (131,

32763), (138, 32781), (148, 32823), (150, 32847), (159, 32922), (162, 32952), (172, 33012), (173, 33024), (175, 33042), (186, 33144), (199, 33249), (200, 33255), (203, 33273), (214, 33360),

Gene: Hydro\_30 Start: 32619, Stop: 33776, Start Num: 13

Candidate Starts for Hydro\_30:

(Start: 13 @32619 has 88 MA's), (25, 32712), (Start: 27 @32727 has 4 MA's), (30, 32742), (32, 32754), (35, 32772), (45, 32814), (64, 32913), (66, 32922), (70, 32940), (74, 32967), (77, 32982), (80, 32988), (82, 32994), (85, 33000), (92, 33027), (95, 33036), (103, 33069), (118, 33102), (133, 33162), (141, 33192), (143, 33198), (152, 33243), (158, 33297), (159, 33300), (179, 33444), (195, 33597),

Gene: JAMaL\_30 Start: 32789, Stop: 33946, Start Num: 13

Candidate Starts for JAMaL\_30:

(Start: 13 @32789 has 88 MA's), (25, 32882), (Start: 27 @32897 has 4 MA's), (30, 32912), (32, 32924), (35, 32942), (55, 33032), (64, 33083), (66, 33092), (67, 33098), (70, 33110), (74, 33137), (77, 33152), (80, 33158), (82, 33164), (92, 33197), (95, 33206), (103, 33239), (118, 33272), (141, 33362), (143, 33368), (158, 33467), (159, 33470), (179, 33614), (195, 33767),

Gene: Jackstina\_30 Start: 32142, Stop: 33344, Start Num: 13

Candidate Starts for Jackstina\_30:

(Start: 13 @32142 has 88 MA's), (20, 32175), (40, 32319), (42, 32328), (45, 32337), (Start: 52 @32376 has 6 MA's), (55, 32385), (59, 32403), (62, 32421), (65, 32439), (66, 32445), (69, 32457), (71, 32475), (74, 32490), (80, 32523), (87, 32550), (98, 32595), (119, 32676), (126, 32703), (131, 32721), (138, 32739), (148, 32781), (162, 32910), (175, 33000), (186, 33102), (192, 33159), (194, 33168), (199, 33207), (208, 33279), (215, 33321),

Gene: JaguarMi\_30 Start: 32084, Stop: 33241, Start Num: 13

Candidate Starts for JaguarMi\_30:

(Start: 13 @32084 has 88 MA's), (25, 32177), (Start: 27 @32192 has 4 MA's), (30, 32207), (32, 32219), (35, 32237), (40, 32261), (45, 32279), (47, 32294), (64, 32378), (66, 32387), (70, 32405), (77, 32447), (80, 32453), (82, 32459), (85, 32465), (92, 32492), (95, 32501), (103, 32534), (118, 32567), (133, 32627), (141, 32657), (143, 32663), (158, 32762), (159, 32765), (174, 32876), (179, 32909), (195, 33062), (197, 33086), (199, 33098),

Gene: Jamie19\_21 Start: 19877, Stop: 21031, Start Num: 13

Candidate Starts for Jamie19\_21:

(3, 19640), (4, 19682), (5, 19712), (6, 19742), (8, 19802), (9, 19856), (Start: 13 @19877 has 88 MA's), (24, 19958), (Start: 31 @20006 has 1 MA's), (43, 20066), (46, 20075), (48, 20090), (53, 20114), (59, 20138), (61, 20150), (74, 20225), (76, 20234), (80, 20258), (87, 20288), (122, 20372), (123, 20375), (129, 20396), (157, 20555), (170, 20645), (172, 20654), (175, 20684), (179, 20705), (215, 21008),

Gene: Jobypre\_22 Start: 22247, Stop: 23464, Start Num: 16

Candidate Starts for Jobypre\_22:

(Start: 16 @22247 has 31 MA's), (26, 22349), (28, 22361), (32, 22379), (34, 22388), (41, 22427), (49, 22463), (Start: 52 @22478 has 6 MA's), (54, 22484), (60, 22514), (61, 22517), (67, 22553), (70, 22565), (78, 22616), (79, 22619), (95, 22679), (100, 22706), (104, 22721), (105, 22727), (109, 22739), (124, 22799), (131, 22823), (148, 22883), (158, 22979), (163, 23012), (173, 23084), (177, 23108), (204, 23336), (205, 23348),

Gene: JoeDirt\_21 Start: 21667, Stop: 22842, Start Num: 14

Candidate Starts for JoeDirt\_21:

(Start: 14 @21667 has 5 MA's), (Start: 16 @21670 has 31 MA's), (Start: 31 @21796 has 1 MA's), (39, 21838), (41, 21850), (42, 21853), (49, 21886), (51, 21898), (62, 21946), (65, 21964), (71, 22000), (74, 22015), (86, 22066), (93, 22096), (102, 22138), (113, 22162), (132, 22198), (137, 22204), (143,

22231), (148, 22249), (159, 22342), (160, 22345), (171, 22429), (187, 22567), (188, 22585), (199, 22669),

Gene: Jubie\_22 Start: 22248, Stop: 23465, Start Num: 16

Candidate Starts for Jubie\_22:

(Start: 16 @22248 has 31 MA's), (26, 22350), (28, 22362), (32, 22380), (34, 22389), (41, 22428), (49, 22464), (Start: 52 @22479 has 6 MA's), (54, 22485), (60, 22515), (61, 22518), (67, 22554), (70, 22566), (78, 22617), (79, 22620), (95, 22680), (100, 22707), (104, 22722), (105, 22728), (109, 22740), (124, 22800), (131, 22824), (148, 22884), (158, 22980), (163, 23013), (173, 23085), (177, 23109), (204, 23337), (205, 23349),

Gene: Kamiyu\_33 Start: 32188, Stop: 33390, Start Num: 13

Candidate Starts for Kamiyu\_33:

(Start: 13 @32188 has 88 MA's), (20, 32221), (40, 32365), (42, 32374), (45, 32383), (Start: 52 @32422 has 6 MA's), (55, 32431), (59, 32449), (62, 32467), (65, 32485), (66, 32491), (69, 32503), (71, 32521), (74, 32536), (80, 32569), (87, 32596), (98, 32641), (119, 32722), (126, 32749), (131, 32767), (138, 32785), (148, 32827), (162, 32956), (165, 32965), (175, 33046), (186, 33148), (192, 33205), (194, 33214), (199, 33253), (208, 33325), (215, 33367),

Gene: Keziacharles14\_32 Start: 24883, Stop: 26085, Start Num: 16

Candidate Starts for Keziacharles14\_32:

(Start: 16 @24883 has 31 MA's), (37, 25045), (42, 25066), (57, 25135), (62, 25159), (72, 25219), (76, 25237), (78, 25252), (83, 25267), (96, 25321), (129, 25453), (135, 25468), (144, 25504), (157, 25612), (158, 25615), (161, 25642), (163, 25648), (179, 25759),

Gene: KingCyrus\_34 Start: 25662, Stop: 26561, Start Num: 52

Candidate Starts for KingCyrus\_34:

(Start: 52 @25662 has 6 MA's), (75, 25773), (98, 25875), (103, 25896), (136, 25959), (157, 26091), (195, 26373),

Gene: Kingsolomon\_22 Start: 22247, Stop: 23464, Start Num: 16

Candidate Starts for Kingsolomon\_22:

(Start: 16 @22247 has 31 MA's), (26, 22349), (28, 22361), (32, 22379), (34, 22388), (41, 22427), (49, 22463), (Start: 52 @22478 has 6 MA's), (54, 22484), (60, 22514), (61, 22517), (67, 22553), (70, 22565), (78, 22616), (79, 22619), (95, 22679), (100, 22706), (104, 22721), (105, 22727), (109, 22739), (124, 22799), (131, 22823), (148, 22883), (158, 22979), (163, 23012), (173, 23084), (177, 23108), (204, 23336), (205, 23348),

Gene: KirDoubleO7\_20 Start: 22241, Stop: 23458, Start Num: 16

Candidate Starts for KirDoubleO7\_20:

(Start: 16 @22241 has 31 MA's), (19, 22268), (26, 22343), (28, 22355), (32, 22373), (41, 22421), (49, 22457), (Start: 52 @22472 has 6 MA's), (54, 22478), (60, 22508), (70, 22559), (76, 22595), (78, 22610), (79, 22613), (105, 22721), (109, 22733), (124, 22793), (131, 22817), (148, 22877), (163, 23006), (165, 23012), (173, 23078),

Gene: Koella\_19 Start: 20229, Stop: 21383, Start Num: 13

Candidate Starts for Koella\_19:

(Start: 10 @20226 has 3 MA's), (Start: 13 @20229 has 88 MA's), (24, 20310), (Start: 31 @20358 has 1 MA's), (43, 20418), (46, 20427), (48, 20442), (53, 20466), (59, 20490), (61, 20502), (74, 20577), (76, 20586), (80, 20610), (87, 20640), (122, 20724), (123, 20727), (129, 20748), (157, 20907), (170, 20997), (172, 21006), (175, 21036), (179, 21057), (215, 21360),

Gene: Kronus\_32 Start: 32802, Stop: 34004, Start Num: 13

Candidate Starts for Kronus\_32:

(Start: 13 @32802 has 88 MA's), (20, 32835), (40, 32979), (42, 32988), (45, 32997), (Start: 52 @33036 has 6 MA's), (55, 33045), (59, 33063), (62, 33081), (65, 33099), (66, 33105), (69, 33117), (71, 33135), (74, 33150), (80, 33183), (87, 33210), (98, 33255), (119, 33336), (126, 33363), (131, 33381), (138, 33399), (148, 33441), (150, 33465), (159, 33540), (162, 33570), (172, 33630), (173, 33642), (175, 33660), (185, 33759), (186, 33762), (199, 33867), (200, 33873), (203, 33891), (214, 33978),

Gene: Krypton555\_22 Start: 22170, Stop: 23369, Start Num: 16

Candidate Starts for Krypton555\_22:

(Start: 16 @22170 has 31 MA's), (26, 22272), (28, 22284), (32, 22302), (41, 22350), (50, 22395), (Start: 52 @22401 has 6 MA's), (60, 22437), (67, 22476), (69, 22482), (70, 22488), (77, 22530), (95, 22602), (105, 22650), (109, 22662), (110, 22668), (148, 22806), (153, 22851), (157, 22899), (163, 22935), (171, 22989), (173, 23007), (176, 23028), (190, 23178), (195, 23199), (210, 23307),

Gene: Lambano\_29 Start: 31590, Stop: 32747, Start Num: 13

Candidate Starts for Lambano\_29:

(Start: 13 @31590 has 88 MA's), (25, 31683), (Start: 27 @31698 has 4 MA's), (30, 31713), (32, 31725), (35, 31743), (55, 31833), (64, 31884), (66, 31893), (67, 31899), (70, 31911), (74, 31938), (77, 31953), (80, 31959), (82, 31965), (92, 31998), (95, 32007), (103, 32040), (118, 32073), (141, 32163), (143, 32169), (158, 32268), (159, 32271), (179, 32415), (195, 32568),

Gene: LastJedi\_19 Start: 20260, Stop: 21414, Start Num: 13

Candidate Starts for LastJedi\_19:

(Start: 10 @20257 has 3 MA's), (Start: 13 @20260 has 88 MA's), (24, 20341), (Start: 31 @20389 has 1 MA's), (43, 20449), (46, 20458), (48, 20473), (53, 20497), (59, 20521), (61, 20533), (74, 20608), (76, 20617), (80, 20641), (87, 20671), (122, 20755), (123, 20758), (129, 20779), (157, 20938), (170, 21028), (172, 21037), (175, 21067), (179, 21088), (215, 21391),

Gene: LeBron\_21 Start: 21711, Stop: 22886, Start Num: 14

Candidate Starts for LeBron\_21:

(Start: 14 @21711 has 5 MA's), (Start: 16 @21714 has 31 MA's), (Start: 31 @21840 has 1 MA's), (39, 21882), (41, 21894), (42, 21897), (49, 21930), (51, 21942), (62, 21990), (65, 22008), (71, 22044), (74, 22059), (86, 22110), (93, 22140), (102, 22182), (113, 22206), (132, 22242), (137, 22248), (143, 22275), (148, 22293), (159, 22386), (160, 22389), (171, 22473), (187, 22611), (188, 22629), (199, 22713),

Gene: LestyG\_33 Start: 32223, Stop: 33425, Start Num: 13

Candidate Starts for LestyG\_33:

(Start: 13 @32223 has 88 MA's), (20, 32256), (40, 32400), (42, 32409), (45, 32418), (Start: 52 @32457 has 6 MA's), (55, 32466), (59, 32484), (62, 32502), (65, 32520), (66, 32526), (69, 32538), (71, 32556), (74, 32571), (80, 32604), (87, 32631), (98, 32676), (119, 32757), (126, 32784), (131, 32802), (138, 32820), (148, 32862), (150, 32886), (159, 32961), (162, 32991), (172, 33051), (173, 33063), (175, 33081), (186, 33183), (199, 33288), (200, 33294), (203, 33312), (214, 33399),

Gene: LiyuLake\_22 Start: 22229, Stop: 23428, Start Num: 16

Candidate Starts for LiyuLake\_22:

(Start: 16 @22229 has 31 MA's), (26, 22331), (32, 22361), (34, 22370), (41, 22409), (45, 22421), (Start: 52 @22460 has 6 MA's), (60, 22496), (62, 22505), (69, 22541), (77, 22589), (109, 22721), (110, 22727), (128, 22796), (141, 22841), (148, 22865), (157, 22958), (163, 22994), (171, 23048), (173, 23066), (195, 23258), (210, 23366),

Gene: Lolalove\_30 Start: 32616, Stop: 33773, Start Num: 13

Candidate Starts for Lolalove\_30:

(Start: 13 @32616 has 88 MA's), (25, 32709), (Start: 27 @32724 has 4 MA's), (30, 32739), (32, 32751), (35, 32769), (64, 32910), (66, 32919), (70, 32937), (74, 32964), (77, 32979), (80, 32985), (82, 32991), (85, 32997), (92, 33024), (95, 33033), (103, 33066), (118, 33099), (131, 33153), (133, 33159), (141, 33189), (143, 33195), (149, 33216), (152, 33240), (158, 33294), (159, 33297), (179, 33441), (195, 33594),

Gene: Lolly9\_22 Start: 22045, Stop: 23244, Start Num: 16

Candidate Starts for Lolly9\_22:

(Start: 16 @22045 has 31 MA's), (19, 22072), (28, 22159), (32, 22177), (34, 22186), (41, 22225), (Start: 52 @22276 has 6 MA's), (53, 22279), (62, 22321), (67, 22351), (69, 22357), (70, 22363), (77, 22405), (105, 22525), (109, 22537), (110, 22543), (148, 22681), (157, 22774), (163, 22810), (171, 22864), (173, 22882), (195, 23074), (210, 23182),

Gene: Luchador\_34 Start: 25731, Stop: 26627, Start Num: 52

Candidate Starts for Luchador\_34:

(Start: 52 @25731 has 6 MA's), (89, 25905), (98, 25941), (103, 25962), (130, 26016), (136, 26025), (157, 26157), (202, 26493), (207, 26523),

Gene: Lumos\_22 Start: 22244, Stop: 23461, Start Num: 16

Candidate Starts for Lumos\_22:

(Start: 16 @22244 has 31 MA's), (26, 22346), (28, 22358), (32, 22376), (34, 22385), (41, 22424), (49, 22460), (Start: 52 @22475 has 6 MA's), (54, 22481), (60, 22511), (61, 22514), (67, 22550), (70, 22562), (78, 22613), (79, 22616), (95, 22676), (100, 22703), (104, 22718), (105, 22724), (109, 22736), (124, 22796), (131, 22820), (148, 22880), (158, 22976), (163, 23009), (173, 23081), (177, 23105), (204, 23333), (205, 23345),

Gene: MAckerman\_21 Start: 21688, Stop: 22860, Start Num: 16

Candidate Starts for MAckerman\_21:

(Start: 14 @21685 has 5 MA's), (Start: 16 @21688 has 31 MA's), (Start: 31 @21814 has 1 MA's), (39, 21856), (41, 21868), (42, 21871), (49, 21904), (51, 21916), (62, 21964), (65, 21982), (71, 22018), (74, 22033), (86, 22084), (93, 22114), (102, 22156), (113, 22180), (132, 22216), (137, 22222), (143, 22249), (148, 22267), (159, 22360), (160, 22363), (171, 22447), (187, 22585), (188, 22603), (199, 22687),

Gene: Magpie\_29 Start: 32448, Stop: 33605, Start Num: 13

Candidate Starts for Magpie\_29:

(Start: 13 @32448 has 88 MA's), (25, 32541), (Start: 27 @32556 has 4 MA's), (30, 32571), (32, 32583), (35, 32601), (55, 32691), (64, 32742), (66, 32751), (67, 32757), (70, 32769), (74, 32796), (77, 32811), (80, 32817), (82, 32823), (92, 32856), (95, 32865), (103, 32898), (118, 32931), (141, 33021), (143, 33027), (158, 33126), (159, 33129), (179, 33273), (195, 33426),

Gene: Marley1013\_33 Start: 33001, Stop: 34203, Start Num: 13

Candidate Starts for Marley1013\_33:

(Start: 13 @33001 has 88 MA's), (20, 33034), (40, 33178), (42, 33187), (45, 33196), (Start: 52 @33235 has 6 MA's), (55, 33244), (59, 33262), (62, 33280), (65, 33298), (66, 33304), (69, 33316), (71, 33334), (74, 33349), (80, 33382), (87, 33409), (98, 33454), (119, 33535), (126, 33562), (131, 33580), (138, 33598), (148, 33640), (150, 33664), (159, 33739), (162, 33769), (172, 33829), (173, 33841), (175, 33859), (186, 33961), (199, 34066), (200, 34072), (203, 34090), (214, 34177),

Gene: MilanaBonita\_20 Start: 20281, Stop: 21492, Start Num: 13

Candidate Starts for MilanaBonita\_20:

(Start: 13 @20281 has 88 MA's), (17, 20305), (24, 20362), (Start: 31 @20410 has 1 MA's), (43, 20470), (46, 20479), (48, 20494), (53, 20518), (59, 20542), (61, 20554), (67, 20590), (74, 20629), (76, 20638), (80, 20662), (87, 20692), (106, 20776), (107, 20779), (114, 20800), (122, 20836), (123, 20839), (129, 20860), (141, 20902), (157, 21019), (162, 21055), (164, 21061), (179, 21166), (186, 21247),

Gene: MiniLon\_22 Start: 22045, Stop: 23244, Start Num: 16

Candidate Starts for MiniLon\_22:

(Start: 16 @22045 has 31 MA's), (19, 22072), (28, 22159), (32, 22177), (34, 22186), (41, 22225), (Start: 52 @22276 has 6 MA's), (53, 22279), (62, 22321), (67, 22351), (69, 22357), (70, 22363), (77, 22405), (105, 22525), (109, 22537), (110, 22543), (148, 22681), (157, 22774), (163, 22810), (171, 22864), (173, 22882), (195, 23074), (210, 23182),

Gene: MiniMac\_22 Start: 22046, Stop: 23245, Start Num: 16

Candidate Starts for MiniMac\_22:

(Start: 16 @22046 has 31 MA's), (19, 22073), (28, 22160), (32, 22178), (41, 22226), (Start: 52 @22277 has 6 MA's), (53, 22280), (62, 22322), (67, 22352), (69, 22358), (70, 22364), (77, 22406), (105, 22526), (109, 22538), (110, 22544), (148, 22682), (157, 22775), (163, 22811), (171, 22865), (173, 22883), (195, 23075), (210, 23183),

Gene: Mithril\_30 Start: 32620, Stop: 33777, Start Num: 13

Candidate Starts for Mithril\_30:

(Start: 13 @32620 has 88 MA's), (25, 32713), (Start: 27 @32728 has 4 MA's), (30, 32743), (32, 32755), (35, 32773), (45, 32815), (64, 32914), (66, 32923), (70, 32941), (74, 32968), (77, 32983), (80, 32989), (82, 32995), (85, 33001), (92, 33028), (95, 33037), (103, 33070), (118, 33103), (133, 33163), (141, 33193), (143, 33199), (152, 33244), (158, 33298), (159, 33301), (179, 33445), (195, 33598),

Gene: MmasiCarm\_33 Start: 32205, Stop: 33407, Start Num: 13

Candidate Starts for MmasiCarm\_33:

(Start: 13 @32205 has 88 MA's), (20, 32238), (40, 32382), (42, 32391), (45, 32400), (Start: 52 @32439 has 6 MA's), (55, 32448), (59, 32466), (68, 32517), (70, 32526), (71, 32538), (72, 32544), (74, 32553), (85, 32598), (87, 32613), (98, 32658), (116, 32727), (120, 32742), (122, 32754), (129, 32778), (143, 32826), (145, 32832), (146, 32838), (148, 32844), (150, 32868), (159, 32943), (162, 32973), (172, 33033), (173, 33045), (175, 33063), (186, 33165), (199, 33270), (200, 33276), (203, 33294), (214, 33381),

Gene: Moostard\_22 Start: 22250, Stop: 23467, Start Num: 16

Candidate Starts for Moostard\_22:

(Start: 16 @22250 has 31 MA's), (26, 22352), (28, 22364), (32, 22382), (34, 22391), (41, 22430), (49, 22466), (Start: 52 @22481 has 6 MA's), (54, 22487), (60, 22517), (61, 22520), (67, 22556), (70, 22568), (78, 22619), (79, 22622), (95, 22682), (100, 22709), (104, 22724), (105, 22730), (109, 22742), (124, 22802), (131, 22826), (148, 22886), (158, 22982), (163, 23015), (173, 23087), (177, 23111), (179, 23126), (204, 23339), (205, 23351),

Gene: Mortcellus\_32 Start: 32857, Stop: 34059, Start Num: 13

Candidate Starts for Mortcellus\_32:

(Start: 13 @32857 has 88 MA's), (20, 32890), (40, 33034), (42, 33043), (45, 33052), (Start: 52 @33091 has 6 MA's), (55, 33100), (59, 33118), (62, 33136), (65, 33154), (66, 33160), (69, 33172), (74, 33205), (85, 33250), (87, 33265), (98, 33310), (119, 33391), (126, 33418), (131, 33436), (138, 33454), (148, 33496), (150, 33520), (159, 33595), (162, 33625), (172, 33685), (173, 33697), (175, 33715), (186, 33817), (199, 33922), (200, 33928), (203, 33946), (214, 34033),

Gene: Morty007\_33 Start: 33001, Stop: 34203, Start Num: 13

Candidate Starts for Morty007\_33:

(Start: 13 @33001 has 88 MA's), (20, 33034), (40, 33178), (42, 33187), (45, 33196), (Start: 52 @33235 has 6 MA's), (55, 33244), (59, 33262), (62, 33280), (65, 33298), (66, 33304), (69, 33316), (71, 33334), (74, 33349), (80, 33382), (87, 33409), (98, 33454), (119, 33535), (126, 33562), (131, 33580), (138, 33598), (148, 33640), (150, 33664), (159, 33739), (162, 33769), (172, 33829), (173, 33841), (175, 33859), (186, 33961), (199, 34066), (200, 34072), (203, 34090), (214, 34177),

Gene: Ms6\_19 Start: 19730, Stop: 20884, Start Num: 13

Candidate Starts for Ms6\_19:

(3, 19493), (4, 19535), (5, 19565), (6, 19595), (8, 19655), (9, 19709), (Start: 13 @19730 has 88 MA's), (24, 19811), (Start: 31 @19859 has 1 MA's), (43, 19919), (46, 19928), (48, 19943), (53, 19967), (59, 19991), (61, 20003), (74, 20078), (76, 20087), (80, 20111), (87, 20141), (122, 20225), (123, 20228), (129, 20249), (157, 20408), (170, 20498), (172, 20507), (175, 20537), (179, 20558), (215, 20861),

Gene: MsGreen\_22 Start: 22247, Stop: 23464, Start Num: 16

Candidate Starts for MsGreen\_22:

(Start: 16 @22247 has 31 MA's), (26, 22349), (28, 22361), (32, 22379), (34, 22388), (41, 22427), (49, 22463), (Start: 52 @22478 has 6 MA's), (54, 22484), (60, 22514), (61, 22517), (67, 22553), (70, 22565), (78, 22616), (79, 22619), (95, 22679), (100, 22706), (104, 22721), (105, 22727), (109, 22739), (124, 22799), (131, 22823), (148, 22883), (158, 22979), (163, 23012), (173, 23084), (177, 23108), (204, 23336), (205, 23348),

Gene: Mudslide\_30 Start: 32852, Stop: 34009, Start Num: 13

Candidate Starts for Mudslide\_30:

(Start: 13 @32852 has 88 MA's), (25, 32945), (Start: 27 @32960 has 4 MA's), (30, 32975), (32, 32987), (35, 33005), (45, 33047), (55, 33095), (64, 33146), (66, 33155), (70, 33173), (74, 33200), (77, 33215), (80, 33221), (82, 33227), (85, 33233), (92, 33260), (95, 33269), (103, 33302), (118, 33335), (141, 33425), (143, 33431), (152, 33476), (158, 33530), (159, 33533), (179, 33677), (195, 33830),

Gene: Nanao\_29 Start: 31577, Stop: 32734, Start Num: 13

Candidate Starts for Nanao\_29:

(Start: 13 @31577 has 88 MA's), (25, 31670), (Start: 27 @31685 has 4 MA's), (30, 31700), (32, 31712), (35, 31730), (55, 31820), (64, 31871), (66, 31880), (67, 31886), (70, 31898), (74, 31925), (77, 31940), (80, 31946), (82, 31952), (92, 31985), (95, 31994), (103, 32027), (118, 32060), (141, 32150), (143, 32156), (158, 32255), (159, 32258), (179, 32402), (195, 32555),

Gene: Nanosmite\_35 Start: 27723, Stop: 28895, Start Num: 23

Candidate Starts for Nanosmite\_35:

(21, 27717), (Start: 23 @27723 has 1 MA's), (37, 27828), (38, 27831), (45, 27858), (70, 27984), (79, 28038), (81, 28044), (84, 28053), (97, 28113), (105, 28146), (114, 28176), (115, 28182), (131, 28242), (143, 28284), (178, 28539), (183, 28593), (193, 28689), (196, 28716), (198, 28722),

Gene: Nenae\_21 Start: 19877, Stop: 21031, Start Num: 13

Candidate Starts for Nenae\_21:

(3, 19640), (4, 19682), (5, 19712), (6, 19742), (8, 19802), (9, 19856), (Start: 13 @19877 has 88 MA's), (22, 19940), (24, 19958), (Start: 31 @20006 has 1 MA's), (43, 20066), (46, 20075), (48, 20090), (53, 20114), (59, 20138), (61, 20150), (74, 20225), (76, 20234), (80, 20258), (87, 20288), (97, 20333), (98, 20336), (99, 20342), (122, 20372), (123, 20375), (129, 20396), (157, 20555), (170, 20645), (172, 20654), (175, 20684), (179, 20705), (215, 21008),

Gene: Neos5\_33 Start: 33020, Stop: 34222, Start Num: 13

Candidate Starts for Neos5\_33:



(Start: 13 @33020 has 88 MA's), (20, 33053), (40, 33197), (42, 33206), (45, 33215), (Start: 52 @33254 has 6 MA's), (55, 33263), (59, 33281), (62, 33299), (65, 33317), (66, 33323), (69, 33335), (71, 33353), (74, 33368), (80, 33401), (87, 33428), (98, 33473), (119, 33554), (126, 33581), (131, 33599), (138, 33617), (148, 33659), (150, 33683), (159, 33758), (162, 33788), (172, 33848), (173, 33860), (175, 33878), (186, 33980), (199, 34085), (200, 34091), (203, 34109), (214, 34196),

Gene: Nicholas\_22 Start: 22247, Stop: 23464, Start Num: 16

Candidate Starts for Nicholas\_22:

(Start: 16 @22247 has 31 MA's), (26, 22349), (28, 22361), (32, 22379), (34, 22388), (41, 22427), (49, 22463), (Start: 52 @22478 has 6 MA's), (54, 22484), (60, 22514), (61, 22517), (67, 22553), (70, 22565), (78, 22616), (79, 22619), (95, 22679), (100, 22706), (104, 22721), (105, 22727), (109, 22739), (124, 22799), (131, 22823), (148, 22883), (158, 22979), (163, 23012), (173, 23084), (177, 23108), (204, 23336), (205, 23348),

Gene: Nigel\_28 Start: 31491, Stop: 32651, Start Num: 13

Candidate Starts for Nigel\_28:

(2, 30987), (Start: 13 @31491 has 88 MA's), (18, 31518), (Start: 27 @31602 has 4 MA's), (30, 31617), (32, 31629), (35, 31647), (64, 31788), (66, 31797), (70, 31815), (74, 31842), (77, 31857), (80, 31863), (82, 31869), (87, 31887), (92, 31902), (95, 31911), (103, 31944), (118, 31977), (120, 31989), (121, 31995), (141, 32067), (143, 32073), (156, 32163), (158, 32172), (179, 32319), (195, 32472),

Gene: Nozo\_33 Start: 32981, Stop: 34183, Start Num: 13

Candidate Starts for Nozo\_33:

(Start: 13 @32981 has 88 MA's), (20, 33014), (40, 33158), (42, 33167), (45, 33176), (Start: 52 @33215 has 6 MA's), (55, 33224), (59, 33242), (62, 33260), (65, 33278), (66, 33284), (69, 33296), (71, 33314), (74, 33329), (80, 33362), (87, 33389), (98, 33434), (119, 33515), (126, 33542), (131, 33560), (138, 33578), (148, 33620), (150, 33644), (159, 33719), (162, 33749), (172, 33809), (173, 33821), (175, 33839), (186, 33941), (199, 34046), (200, 34052), (203, 34070), (214, 34157),

Gene: Obutu\_33 Start: 32205, Stop: 33407, Start Num: 13

Candidate Starts for Obutu\_33:

(Start: 13 @32205 has 88 MA's), (20, 32238), (40, 32382), (42, 32391), (45, 32400), (Start: 52 @32439 has 6 MA's), (55, 32448), (59, 32466), (68, 32517), (70, 32526), (71, 32538), (72, 32544), (74, 32553), (85, 32598), (87, 32613), (98, 32658), (116, 32727), (120, 32742), (122, 32754), (129, 32778), (143, 32826), (145, 32832), (146, 32838), (148, 32844), (150, 32868), (159, 32943), (162, 32973), (172, 33033), (173, 33045), (175, 33063), (185, 33162), (186, 33165), (199, 33270), (200, 33276), (203, 33294), (214, 33381),

Gene: OhShagHennessy\_21 Start: 21653, Stop: 22825, Start Num: 16

Candidate Starts for OhShagHennessy\_21:

(Start: 14 @21650 has 5 MA's), (Start: 16 @21653 has 31 MA's), (Start: 31 @21779 has 1 MA's), (39, 21821), (41, 21833), (42, 21836), (49, 21869), (51, 21881), (62, 21929), (65, 21947), (71, 21983), (74, 21998), (86, 22049), (93, 22079), (102, 22121), (113, 22145), (132, 22181), (137, 22187), (143, 22214), (148, 22232), (159, 22325), (160, 22328), (171, 22412), (187, 22550), (188, 22568), (199, 22652),

Gene: OrangeOswald\_33 Start: 32222, Stop: 33424, Start Num: 13

Candidate Starts for OrangeOswald\_33:

(Start: 13 @32222 has 88 MA's), (20, 32255), (40, 32399), (42, 32408), (45, 32417), (Start: 52 @32456 has 6 MA's), (55, 32465), (59, 32483), (62, 32501), (65, 32519), (66, 32525), (69, 32537), (71, 32555), (74, 32570), (80, 32603), (87, 32630), (98, 32675), (119, 32756), (126, 32783), (131, 32801), (138, 32819), (148, 32861), (150, 32885), (159, 32960), (162, 32990), (172, 33050), (173, 33062), (175, 33080), (186, 33182), (199, 33287), (200, 33293), (203, 33311), (214, 33398),

Gene: P3MA\_25 Start: 20906, Stop: 22060, Start Num: 13

Candidate Starts for P3MA\_25:

(Start: 13 @20906 has 88 MA's), (32, 21038), (33, 21041), (41, 21086), (42, 21089), (45, 21098), (49, 21122), (57, 21158), (58, 21161), (59, 21164), (70, 21224), (74, 21251), (83, 21284), (88, 21302), (121, 21398), (122, 21404), (127, 21419), (140, 21464), (155, 21554), (156, 21572), (179, 21728), (185, 21794), (211, 21992),

Gene: PYPDinur\_21 Start: 21427, Stop: 22581, Start Num: 12

Candidate Starts for PYPDinur\_21:

(Start: 12 @21427 has 2 MA's), (26, 21529), (28, 21541), (42, 21610), (62, 21703), (71, 21757), (77, 21787), (81, 21796), (93, 21835), (108, 21883), (117, 21907), (120, 21919), (126, 21943), (143, 22003), (150, 22033), (168, 22150), (170, 22186), (172, 22195), (180, 22252), (182, 22291),

Gene: Phaedrus\_31 Start: 32138, Stop: 33340, Start Num: 13

Candidate Starts for Phaedrus\_31:

(Start: 13 @32138 has 88 MA's), (20, 32171), (40, 32315), (42, 32324), (45, 32333), (Start: 52 @32372 has 6 MA's), (55, 32381), (59, 32399), (62, 32417), (65, 32435), (66, 32441), (69, 32453), (71, 32471), (74, 32486), (80, 32519), (87, 32546), (98, 32591), (119, 32672), (126, 32699), (131, 32717), (138, 32735), (148, 32777), (162, 32906), (175, 32996), (186, 33098), (192, 33155), (194, 33164), (199, 33203), (208, 33275), (215, 33317),

Gene: PhancyPhin\_21 Start: 19874, Stop: 21028, Start Num: 13

Candidate Starts for PhancyPhin\_21:

(3, 19637), (4, 19679), (5, 19709), (6, 19739), (8, 19799), (9, 19853), (Start: 13 @19874 has 88 MA's), (22, 19937), (24, 19955), (Start: 31 @20003 has 1 MA's), (43, 20063), (46, 20072), (48, 20087), (53, 20111), (59, 20135), (61, 20147), (74, 20222), (76, 20231), (80, 20255), (87, 20285), (97, 20330), (98, 20333), (99, 20339), (122, 20369), (123, 20372), (129, 20393), (157, 20552), (170, 20642), (172, 20651), (175, 20681), (179, 20702), (215, 21005),

Gene: Philly\_32 Start: 32073, Stop: 33275, Start Num: 13

Candidate Starts for Philly\_32:

(Start: 13 @32073 has 88 MA's), (40, 32250), (42, 32259), (45, 32268), (Start: 52 @32307 has 6 MA's), (55, 32316), (59, 32334), (62, 32352), (65, 32370), (66, 32376), (69, 32388), (71, 32406), (74, 32421), (80, 32454), (87, 32481), (98, 32526), (119, 32607), (126, 32634), (131, 32652), (138, 32670), (148, 32712), (150, 32736), (159, 32811), (162, 32841), (172, 32901), (173, 32913), (175, 32931), (186, 33033), (199, 33138), (200, 33144), (203, 33162), (214, 33249),

Gene: Phloss\_21 Start: 20203, Stop: 21360, Start Num: 13

Candidate Starts for Phloss\_21:

(Start: 13 @20203 has 88 MA's), (24, 20284), (Start: 31 @20332 has 1 MA's), (43, 20392), (46, 20401), (48, 20416), (53, 20440), (59, 20464), (61, 20476), (71, 20536), (74, 20551), (76, 20560), (80, 20584), (85, 20599), (87, 20614), (122, 20698), (123, 20701), (129, 20722), (137, 20743), (139, 20752), (141, 20764), (144, 20773), (179, 21034), (184, 21103), (215, 21337),

Gene: Phlyer\_33 Start: 32957, Stop: 34159, Start Num: 13

Candidate Starts for Phlyer\_33:

(Start: 13 @32957 has 88 MA's), (20, 32990), (40, 33134), (42, 33143), (45, 33152), (Start: 52 @33191 has 6 MA's), (55, 33200), (59, 33218), (62, 33236), (65, 33254), (66, 33260), (69, 33272), (71, 33290), (74, 33305), (80, 33338), (87, 33365), (98, 33410), (119, 33491), (126, 33518), (131, 33536), (138, 33554), (148, 33596), (162, 33725), (175, 33815), (186, 33917), (192, 33974), (194, 33983), (199, 34022), (208, 34094), (215, 34136),

Gene: Pippy\_19 Start: 20253, Stop: 21410, Start Num: 12

Candidate Starts for Pippy\_19:

(11, 20250), (Start: 12 @20253 has 2 MA's), (24, 20334), (Start: 31 @20382 has 1 MA's), (43, 20442), (46, 20451), (48, 20466), (53, 20490), (59, 20514), (61, 20526), (71, 20586), (74, 20601), (76, 20610), (80, 20634), (87, 20664), (122, 20748), (123, 20751), (129, 20772), (137, 20793), (139, 20802), (141, 20814), (144, 20823), (179, 21084), (184, 21153), (215, 21387),

Gene: Poster\_29 Start: 31578, Stop: 32735, Start Num: 13

Candidate Starts for Poster\_29:

(Start: 13 @31578 has 88 MA's), (25, 31671), (Start: 27 @31686 has 4 MA's), (30, 31701), (32, 31713), (35, 31731), (55, 31821), (64, 31872), (66, 31881), (67, 31887), (70, 31899), (74, 31926), (77, 31941), (80, 31947), (82, 31953), (92, 31986), (95, 31995), (103, 32028), (118, 32061), (141, 32151), (143, 32157), (158, 32256), (159, 32259), (179, 32403), (195, 32556),

Gene: Prince\_30 Start: 32761, Stop: 33918, Start Num: 13

Candidate Starts for Prince\_30:

(Start: 13 @32761 has 88 MA's), (25, 32854), (Start: 27 @32869 has 4 MA's), (30, 32884), (32, 32896), (35, 32914), (45, 32956), (55, 33004), (64, 33055), (66, 33064), (70, 33082), (74, 33109), (77, 33124), (80, 33130), (82, 33136), (85, 33142), (92, 33169), (95, 33178), (103, 33211), (118, 33244), (133, 33304), (141, 33334), (143, 33340), (152, 33385), (158, 33439), (159, 33442), (179, 33586), (195, 33739),

Gene: Purgamenstris\_21 Start: 19877, Stop: 21031, Start Num: 13

Candidate Starts for Purgamenstris\_21:

(3, 19640), (4, 19682), (5, 19712), (6, 19742), (8, 19802), (9, 19856), (Start: 13 @19877 has 88 MA's), (22, 19940), (24, 19958), (Start: 31 @20006 has 1 MA's), (43, 20066), (46, 20075), (48, 20090), (53, 20114), (59, 20138), (61, 20150), (74, 20225), (76, 20234), (80, 20258), (87, 20288), (97, 20333), (98, 20336), (99, 20342), (122, 20372), (123, 20375), (129, 20396), (157, 20555), (170, 20645), (172, 20654), (175, 20684), (179, 20705), (215, 21008),

Gene: Quby\_21 Start: 21546, Stop: 22553, Start Num: 44

Candidate Starts for Quby\_21:

(Start: 27 @21468 has 4 MA's), (44, 21546), (81, 21720), (91, 21759), (101, 21798), (112, 21831), (134, 21909), (143, 21942), (169, 22104), (191, 22338), (196, 22371), (201, 22395), (206, 22440),

Gene: QueenHazel\_22 Start: 21423, Stop: 22634, Start Num: 13

Candidate Starts for QueenHazel\_22:

(3, 21186), (4, 21228), (6, 21288), (8, 21348), (9, 21402), (Start: 13 @21423 has 88 MA's), (24, 21504), (Start: 31 @21552 has 1 MA's), (43, 21612), (46, 21621), (48, 21636), (53, 21660), (59, 21684), (61, 21696), (67, 21732), (74, 21771), (76, 21780), (80, 21804), (87, 21834), (106, 21918), (107, 21921), (114, 21942), (122, 21978), (123, 21981), (129, 22002), (141, 22044), (157, 22161), (162, 22197), (164, 22203), (179, 22308), (186, 22389),

Gene: QueenPie\_29 Start: 32702, Stop: 33859, Start Num: 13

Candidate Starts for QueenPie\_29:

(Start: 13 @32702 has 88 MA's), (25, 32795), (Start: 27 @32810 has 4 MA's), (30, 32825), (32, 32837), (35, 32855), (55, 32945), (64, 32996), (66, 33005), (70, 33023), (74, 33050), (77, 33065), (80, 33071), (82, 33077), (85, 33083), (92, 33110), (95, 33119), (103, 33152), (118, 33185), (121, 33203), (133, 33245), (141, 33275), (143, 33281), (149, 33302), (158, 33380), (159, 33383), (167, 33428), (179, 33527), (195, 33680),

Gene: RagingRooster\_33 Start: 32223, Stop: 33425, Start Num: 13

Candidate Starts for RagingRooster\_33:

(Start: 13 @32223 has 88 MA's), (20, 32256), (40, 32400), (42, 32409), (45, 32418), (Start: 52 @32457 has 6 MA's), (55, 32466), (59, 32484), (62, 32502), (65, 32520), (66, 32526), (69, 32538), (71, 32556), (74, 32571), (80, 32604), (87, 32631), (98, 32676), (119, 32757), (126, 32784), (131, 32802), (138, 32820), (148, 32862), (150, 32886), (159, 32961), (162, 32991), (172, 33051), (173, 33063), (175, 33081), (186, 33183), (199, 33288), (200, 33294), (203, 33312), (214, 33399),

Gene: RawrgerThat\_30 Start: 32607, Stop: 33764, Start Num: 13

Candidate Starts for RawrgerThat\_30:

(Start: 13 @32607 has 88 MA's), (25, 32700), (Start: 27 @32715 has 4 MA's), (30, 32730), (32, 32742), (35, 32760), (45, 32802), (64, 32901), (66, 32910), (70, 32928), (74, 32955), (77, 32970), (80, 32976), (82, 32982), (85, 32988), (92, 33015), (95, 33024), (103, 33057), (118, 33090), (141, 33180), (143, 33186), (158, 33285), (159, 33288), (179, 33432), (195, 33585),

Gene: Redi\_21 Start: 19877, Stop: 21031, Start Num: 13

Candidate Starts for Redi\_21:

(3, 19640), (4, 19682), (5, 19712), (6, 19742), (8, 19802), (9, 19856), (Start: 13 @19877 has 88 MA's), (22, 19940), (24, 19958), (Start: 31 @20006 has 1 MA's), (43, 20066), (46, 20075), (48, 20090), (53, 20114), (59, 20138), (61, 20150), (74, 20225), (76, 20234), (80, 20258), (87, 20288), (97, 20333), (98, 20336), (99, 20342), (122, 20372), (123, 20375), (129, 20396), (157, 20555), (170, 20645), (172, 20654), (175, 20684), (179, 20705), (215, 21008),

Gene: Rita1961\_33 Start: 32206, Stop: 33408, Start Num: 13

Candidate Starts for Rita1961\_33:

(Start: 13 @32206 has 88 MA's), (20, 32239), (40, 32383), (42, 32392), (45, 32401), (Start: 52 @32440 has 6 MA's), (55, 32449), (59, 32467), (68, 32518), (70, 32527), (71, 32539), (72, 32545), (74, 32554), (85, 32599), (87, 32614), (98, 32659), (116, 32728), (120, 32743), (122, 32755), (129, 32779), (143, 32827), (145, 32833), (146, 32839), (148, 32845), (150, 32869), (159, 32944), (162, 32974), (172, 33034), (173, 33046), (175, 33064), (185, 33163), (186, 33166), (199, 33271), (200, 33277), (203, 33295), (214, 33382),

Gene: RomaT\_33 Start: 32996, Stop: 34198, Start Num: 13

Candidate Starts for RomaT\_33:

(Start: 13 @32996 has 88 MA's), (20, 33029), (40, 33173), (42, 33182), (45, 33191), (Start: 52 @33230 has 6 MA's), (55, 33239), (59, 33257), (62, 33275), (65, 33293), (66, 33299), (69, 33311), (71, 33329), (74, 33344), (80, 33377), (87, 33404), (98, 33449), (119, 33530), (126, 33557), (131, 33575), (138, 33593), (148, 33635), (150, 33659), (159, 33734), (162, 33764), (172, 33824), (173, 33836), (175, 33854), (186, 33956), (199, 34061), (200, 34067), (203, 34085), (214, 34172),

Gene: Rose5\_21 Start: 21688, Stop: 22860, Start Num: 16

Candidate Starts for Rose5\_21:

(Start: 14 @21685 has 5 MA's), (Start: 16 @21688 has 31 MA's), (Start: 31 @21814 has 1 MA's), (39, 21856), (41, 21868), (42, 21871), (49, 21904), (51, 21916), (62, 21964), (65, 21982), (71, 22018), (74, 22033), (86, 22084), (93, 22114), (102, 22156), (113, 22180), (132, 22216), (137, 22222), (143, 22249), (148, 22267), (159, 22360), (160, 22363), (171, 22447), (187, 22585), (188, 22603), (199, 22687),

Gene: Samty\_22 Start: 22250, Stop: 23467, Start Num: 16

Candidate Starts for Samty\_22:

(Start: 16 @22250 has 31 MA's), (26, 22352), (28, 22364), (32, 22382), (34, 22391), (41, 22430), (49, 22466), (Start: 52 @22481 has 6 MA's), (54, 22487), (60, 22517), (61, 22520), (67, 22556), (70, 22568), (78, 22619), (79, 22622), (95, 22682), (100, 22709), (104, 22724), (105, 22730), (109, 22742), (124, 22802), (131, 22826), (148, 22886), (158, 22982), (163, 23015), (173, 23087), (177, 23111), (179, 23126), (204, 23339), (205, 23351),

Gene: Sarma624\_20 Start: 20090, Stop: 21244, Start Num: 13

Candidate Starts for Sarma624\_20:

(Start: 10 @20087 has 3 MA's), (Start: 13 @20090 has 88 MA's), (Start: 31 @20219 has 1 MA's), (36, 20249), (43, 20279), (46, 20288), (48, 20303), (53, 20327), (59, 20351), (61, 20363), (74, 20438), (76, 20447), (80, 20471), (87, 20501), (122, 20585), (123, 20588), (129, 20609), (170, 20858), (172, 20867), (175, 20897), (179, 20918), (184, 20987), (215, 21221),

Gene: Sheng711\_21 Start: 21427, Stop: 22581, Start Num: 12

Candidate Starts for Sheng711\_21:

(Start: 12 @21427 has 2 MA's), (26, 21529), (28, 21541), (42, 21610), (62, 21703), (71, 21757), (77, 21787), (81, 21796), (93, 21835), (108, 21883), (117, 21907), (120, 21919), (126, 21943), (150, 22033), (168, 22150), (170, 22186), (172, 22195), (180, 22252), (182, 22291),

Gene: ShrimpFriedEgg\_21 Start: 19877, Stop: 21031, Start Num: 13

Candidate Starts for ShrimpFriedEgg\_21:

(3, 19640), (4, 19682), (5, 19712), (6, 19742), (8, 19802), (9, 19856), (Start: 13 @19877 has 88 MA's), (22, 19940), (24, 19958), (Start: 31 @20006 has 1 MA's), (43, 20066), (46, 20075), (48, 20090), (53, 20114), (59, 20138), (61, 20150), (74, 20225), (76, 20234), (80, 20258), (87, 20288), (97, 20333), (98, 20336), (99, 20342), (122, 20372), (123, 20375), (129, 20396), (157, 20555), (170, 20645), (172, 20654), (175, 20684), (179, 20705), (215, 21008),

Gene: Silverleaf\_21 Start: 21688, Stop: 22860, Start Num: 16

Candidate Starts for Silverleaf\_21:

(Start: 14 @21685 has 5 MA's), (Start: 16 @21688 has 31 MA's), (Start: 31 @21814 has 1 MA's), (39, 21856), (41, 21868), (42, 21871), (49, 21904), (51, 21916), (62, 21964), (65, 21982), (71, 22018), (74, 22033), (86, 22084), (93, 22114), (102, 22156), (113, 22180), (132, 22216), (137, 22222), (143, 22249), (148, 22267), (159, 22360), (160, 22363), (171, 22447), (187, 22585), (188, 22603), (199, 22687),

Gene: SlippinJimmy\_33 Start: 32984, Stop: 34186, Start Num: 13

Candidate Starts for SlippinJimmy\_33:

(Start: 13 @32984 has 88 MA's), (20, 33017), (40, 33161), (42, 33170), (45, 33179), (Start: 52 @33218 has 6 MA's), (55, 33227), (59, 33245), (62, 33263), (65, 33281), (66, 33287), (69, 33299), (71, 33317), (74, 33332), (80, 33365), (87, 33392), (98, 33437), (119, 33518), (126, 33545), (131, 33563), (138, 33581), (148, 33623), (162, 33752), (165, 33761), (175, 33842), (186, 33944), (192, 34001), (194, 34010), (199, 34049), (208, 34121), (215, 34163),

Gene: Snekmaggedon\_21 Start: 20006, Stop: 21031, Start Num: 31

Candidate Starts for Snekmaggedon\_21:

(3, 19640), (4, 19682), (5, 19712), (6, 19742), (8, 19802), (9, 19856), (Start: 13 @19877 has 88 MA's), (24, 19958), (Start: 31 @20006 has 1 MA's), (43, 20066), (46, 20075), (48, 20090), (53, 20114), (59, 20138), (61, 20150), (74, 20225), (76, 20234), (80, 20258), (87, 20288), (122, 20372), (123, 20375), (129, 20396), (157, 20555), (170, 20645), (172, 20654), (175, 20684), (179, 20705), (215, 21008),

Gene: Snenia\_22 Start: 22248, Stop: 23465, Start Num: 16

Candidate Starts for Snenia\_22:

(Start: 16 @22248 has 31 MA's), (26, 22350), (28, 22362), (32, 22380), (34, 22389), (41, 22428), (49, 22464), (Start: 52 @22479 has 6 MA's), (54, 22485), (60, 22515), (61, 22518), (67, 22554), (70, 22566), (78, 22617), (79, 22620), (95, 22680), (100, 22707), (104, 22722), (105, 22728), (109, 22740), (124, 22800), (131, 22824), (148, 22884), (158, 22980), (163, 23013), (173, 23085), (177, 23109), (204, 23337), (205, 23349),

Gene: SororFago\_32 Start: 24455, Stop: 25399, Start Num: 52

Candidate Starts for SororFago\_32:

(Start: 52 @24455 has 6 MA's), (77, 24578), (86, 24614), (103, 24689), (136, 24752), (138, 24758), (146, 24791), (158, 24893),

Gene: SpongeBob\_21 Start: 19877, Stop: 21031, Start Num: 13

Candidate Starts for SpongeBob\_21:

(3, 19640), (4, 19682), (5, 19712), (6, 19742), (8, 19802), (9, 19856), (Start: 13 @19877 has 88 MA's), (24, 19958), (Start: 31 @20006 has 1 MA's), (43, 20066), (46, 20075), (48, 20090), (53, 20114), (59, 20138), (61, 20150), (74, 20225), (76, 20234), (80, 20258), (87, 20288), (122, 20372), (123, 20375), (129, 20396), (157, 20555), (170, 20645), (172, 20654), (175, 20684), (179, 20705), (215, 21008),

Gene: Squirty\_20 Start: 19922, Stop: 21079, Start Num: 13

Candidate Starts for Squirty\_20:

(Start: 13 @19922 has 88 MA's), (24, 20003), (Start: 27 @20030 has 4 MA's), (Start: 31 @20051 has 1 MA's), (43, 20111), (48, 20135), (49, 20141), (53, 20159), (56, 20171), (59, 20183), (61, 20195), (67, 20231), (71, 20255), (74, 20270), (76, 20279), (80, 20303), (85, 20318), (87, 20333), (122, 20417), (123, 20420), (129, 20441), (137, 20462), (139, 20471), (141, 20483), (144, 20492), (179, 20753), (184, 20822), (215, 21056),

Gene: Stinger\_28 Start: 31182, Stop: 32339, Start Num: 13

Candidate Starts for Stinger\_28:

(1, 30657), (2, 30678), (Start: 13 @31182 has 88 MA's), (18, 31209), (Start: 27 @31290 has 4 MA's), (30, 31305), (32, 31317), (35, 31335), (59, 31443), (64, 31476), (66, 31485), (70, 31503), (74, 31530), (77, 31545), (80, 31551), (82, 31557), (90, 31581), (92, 31590), (95, 31599), (103, 31632), (118, 31665), (120, 31677), (121, 31683), (139, 31743), (141, 31755), (143, 31761), (154, 31827), (156, 31851), (158, 31860), (179, 32007), (195, 32160),

Gene: SynergyX\_33 Start: 32223, Stop: 33425, Start Num: 13

Candidate Starts for SynergyX\_33:

(Start: 13 @32223 has 88 MA's), (20, 32256), (40, 32400), (42, 32409), (45, 32418), (Start: 52 @32457 has 6 MA's), (55, 32466), (59, 32484), (62, 32502), (65, 32520), (66, 32526), (69, 32538), (71, 32556), (74, 32571), (80, 32604), (87, 32631), (98, 32676), (119, 32757), (126, 32784), (131, 32802), (138, 32820), (148, 32862), (150, 32886), (159, 32961), (162, 32991), (172, 33051), (173, 33063), (175, 33081), (186, 33183), (199, 33288), (200, 33294), (203, 33312), (214, 33399),

Gene: Tydolla\_33 Start: 32957, Stop: 34159, Start Num: 13

Candidate Starts for Tydolla\_33:

(Start: 13 @32957 has 88 MA's), (20, 32990), (40, 33134), (42, 33143), (45, 33152), (Start: 52 @33191 has 6 MA's), (55, 33200), (59, 33218), (68, 33269), (70, 33278), (71, 33290), (72, 33296), (74, 33305), (85, 33350), (87, 33365), (98, 33410), (107, 33449), (116, 33479), (120, 33494), (122, 33506), (129, 33530), (142, 33575), (148, 33596), (150, 33620), (159, 33695), (162, 33725), (172, 33785), (173, 33797), (175, 33815), (186, 33917), (199, 34022), (200, 34028), (203, 34046), (214, 34133),

Gene: Tyson\_21 Start: 21688, Stop: 22860, Start Num: 16

Candidate Starts for Tyson\_21:

(Start: 14 @21685 has 5 MA's), (Start: 16 @21688 has 31 MA's), (Start: 31 @21814 has 1 MA's), (39, 21856), (41, 21868), (42, 21871), (49, 21904), (51, 21916), (62, 21964), (65, 21982), (71, 22018), (74, 22033), (86, 22084), (93, 22114), (102, 22156), (113, 22180), (132, 22216), (137, 22222), (143, 22249), (148, 22267), (159, 22360), (160, 22363), (171, 22447), (187, 22585), (188, 22603), (199, 22687),

Gene: UPIE\_21 Start: 21683, Stop: 22858, Start Num: 14

Candidate Starts for UPIE\_21:

(Start: 14 @21683 has 5 MA's), (Start: 16 @21686 has 31 MA's), (Start: 31 @21812 has 1 MA's), (39, 21854), (41, 21866), (42, 21869), (49, 21902), (51, 21914), (62, 21962), (65, 21980), (71, 22016), (74, 22031), (86, 22082), (93, 22112), (102, 22154), (113, 22178), (132, 22214), (137, 22220), (143, 22247), (148, 22265), (159, 22358), (160, 22361), (171, 22445), (187, 22583), (188, 22601), (199, 22685),

Gene: Vanisoa\_31 Start: 24621, Stop: 25826, Start Num: 15

Candidate Starts for Vanisoa\_31:

(Start: 15 @24621 has 2 MA's), (37, 24786), (40, 24798), (41, 24804), (42, 24807), (63, 24909), (70, 24942), (85, 25014), (89, 25038), (96, 25062), (118, 25146), (157, 25353), (158, 25356), (163, 25389), (179, 25500), (195, 25656),

Gene: Velveteen\_20 Start: 20087, Stop: 21244, Start Num: 10

Candidate Starts for Velveteen\_20:

(Start: 10 @20087 has 3 MA's), (Start: 13 @20090 has 88 MA's), (Start: 31 @20219 has 1 MA's), (36, 20249), (43, 20279), (46, 20288), (48, 20303), (53, 20327), (59, 20351), (61, 20363), (74, 20438), (76, 20447), (80, 20471), (87, 20501), (122, 20585), (123, 20588), (129, 20609), (170, 20858), (172, 20867), (175, 20897), (179, 20918), (184, 20987), (215, 21221),

Gene: Vincenzo\_31 Start: 33326, Stop: 34483, Start Num: 13

Candidate Starts for Vincenzo\_31:

(Start: 13 @33326 has 88 MA's), (25, 33419), (Start: 27 @33434 has 4 MA's), (30, 33449), (32, 33461), (35, 33479), (55, 33569), (64, 33620), (66, 33629), (70, 33647), (74, 33674), (77, 33689), (80, 33695), (82, 33701), (92, 33734), (95, 33743), (103, 33776), (118, 33809), (120, 33821), (128, 33854), (133, 33869), (141, 33899), (143, 33905), (154, 33971), (156, 33995), (158, 34004), (179, 34151), (195, 34304),

Gene: VioletZ\_30 Start: 32678, Stop: 33835, Start Num: 13

Candidate Starts for VioletZ\_30:

(Start: 13 @32678 has 88 MA's), (25, 32771), (Start: 27 @32786 has 4 MA's), (30, 32801), (32, 32813), (35, 32831), (45, 32873), (55, 32921), (64, 32972), (66, 32981), (70, 32999), (74, 33026), (77, 33041), (80, 33047), (82, 33053), (85, 33059), (92, 33086), (95, 33095), (103, 33128), (118, 33161), (133, 33221), (141, 33251), (143, 33257), (152, 33302), (158, 33356), (159, 33359), (179, 33503), (195, 33656),

Gene: Waleliano\_30 Start: 32605, Stop: 33762, Start Num: 13

Candidate Starts for Waleliano\_30:

(Start: 13 @32605 has 88 MA's), (25, 32698), (Start: 27 @32713 has 4 MA's), (30, 32728), (32, 32740), (35, 32758), (45, 32800), (64, 32899), (66, 32908), (70, 32926), (74, 32953), (77, 32968), (80, 32974), (82, 32980), (85, 32986), (92, 33013), (95, 33022), (103, 33055), (118, 33088), (133, 33148), (141, 33178), (143, 33184), (149, 33205), (152, 33229), (158, 33283), (159, 33286), (195, 33583),

Gene: Wamburgxpress\_21 Start: 21701, Stop: 22873, Start Num: 16

Candidate Starts for Wamburgxpress\_21:

(Start: 14 @21698 has 5 MA's), (Start: 16 @21701 has 31 MA's), (Start: 31 @21827 has 1 MA's), (39, 21869), (41, 21881), (42, 21884), (49, 21917), (51, 21929), (62, 21977), (65, 21995), (71, 22031), (74, 22046), (86, 22097), (93, 22127), (102, 22169), (113, 22193), (132, 22229), (137, 22235), (143, 22262), (148, 22280), (159, 22373), (160, 22376), (171, 22460), (187, 22598), (188, 22616), (199, 22700),

Gene: Whirlwind\_23 Start: 22004, Stop: 23203, Start Num: 16

Candidate Starts for Whirlwind\_23:

(Start: 16 @22004 has 31 MA's), (32, 22136), (41, 22184), (50, 22229), (Start: 52 @22235 has 6 MA's), (60, 22271), (67, 22310), (69, 22316), (70, 22322), (77, 22364), (95, 22436), (105, 22484), (109, 22496), (110, 22502), (128, 22571), (148, 22640), (157, 22733), (163, 22769), (171, 22823), (173, 22841), (195, 23033), (210, 23141),

Gene: Wyatt2\_21 Start: 21688, Stop: 22860, Start Num: 16

Candidate Starts for Wyatt2\_21:

(Start: 14 @21685 has 5 MA's), (Start: 16 @21688 has 31 MA's), (Start: 31 @21814 has 1 MA's), (39, 21856), (41, 21868), (42, 21871), (49, 21904), (51, 21916), (62, 21964), (65, 21982), (71, 22018), (74, 22033), (86, 22084), (93, 22114), (102, 22156), (113, 22180), (132, 22216), (137, 22222), (143, 22249), (148, 22267), (159, 22360), (160, 22363), (171, 22447), (187, 22585), (188, 22603), (199, 22687),

Gene: Xincheng\_29 Start: 32060, Stop: 33217, Start Num: 13

Candidate Starts for Xincheng\_29:

(Start: 13 @32060 has 88 MA's), (25, 32153), (Start: 27 @32168 has 4 MA's), (30, 32183), (32, 32195), (35, 32213), (40, 32237), (45, 32255), (47, 32270), (64, 32354), (66, 32363), (70, 32381), (77, 32423), (80, 32429), (82, 32435), (85, 32441), (92, 32468), (95, 32477), (103, 32510), (118, 32543), (121, 32561), (133, 32603), (141, 32633), (143, 32639), (158, 32738), (159, 32741), (174, 32852), (179, 32885), (195, 33038), (197, 33062), (199, 33074),

Gene: Xula\_21 Start: 20946, Stop: 22157, Start Num: 13

Candidate Starts for Xula\_21:

(Start: 13 @20946 has 88 MA's), (17, 20970), (24, 21027), (Start: 31 @21075 has 1 MA's), (43, 21135), (46, 21144), (48, 21159), (53, 21183), (59, 21207), (61, 21219), (67, 21255), (74, 21294), (76, 21303), (80, 21327), (87, 21357), (106, 21441), (107, 21444), (114, 21465), (122, 21501), (123, 21504), (129, 21525), (141, 21567), (157, 21684), (162, 21720), (164, 21726), (179, 21831), (186, 21912),

Gene: Yahalom\_33 Start: 32232, Stop: 33434, Start Num: 13

Candidate Starts for Yahalom\_33:

(Start: 13 @32232 has 88 MA's), (20, 32265), (40, 32409), (42, 32418), (45, 32427), (Start: 52 @32466 has 6 MA's), (55, 32475), (59, 32493), (62, 32511), (65, 32529), (66, 32535), (69, 32547), (71, 32565), (74, 32580), (80, 32613), (87, 32640), (98, 32685), (119, 32766), (126, 32793), (131, 32811), (138, 32829), (148, 32871), (162, 33000), (175, 33090), (186, 33192), (192, 33249), (194, 33258), (199, 33297), (208, 33369), (215, 33411),

Gene: Yinz\_33 Start: 32255, Stop: 33457, Start Num: 13

Candidate Starts for Yinz\_33:

(Start: 13 @32255 has 88 MA's), (20, 32288), (40, 32432), (42, 32441), (45, 32450), (Start: 52 @32489 has 6 MA's), (55, 32498), (59, 32516), (62, 32534), (65, 32552), (66, 32558), (69, 32570), (71, 32588), (74, 32603), (80, 32636), (87, 32663), (98, 32708), (119, 32789), (126, 32816), (131, 32834), (138, 32852), (148, 32894), (162, 33023), (165, 33032), (175, 33113), (186, 33215), (192, 33272), (194, 33281), (199, 33320), (208, 33392), (215, 33434),

Gene: Zaria\_21 Start: 21702, Stop: 22874, Start Num: 16

Candidate Starts for Zaria\_21:

(Start: 14 @21699 has 5 MA's), (Start: 16 @21702 has 31 MA's), (Start: 31 @21828 has 1 MA's), (39, 21870), (41, 21882), (42, 21885), (49, 21918), (51, 21930), (54, 21939), (62, 21978), (65, 21996), (71, 22032), (74, 22047), (86, 22098), (93, 22128), (102, 22170), (113, 22194), (132, 22230), (137, 22236), (143, 22263), (148, 22281), (159, 22374), (160, 22377), (171, 22461), (187, 22599), (188, 22617), (199, 22701),



Gene: Zemanar\_31 Start: 32608, Stop: 33765, Start Num: 13

Candidate Starts for Zemanar\_31:

(Start: 13 @32608 has 88 MA's), (25, 32701), (Start: 27 @32716 has 4 MA's), (30, 32731), (32, 32743), (35, 32761), (45, 32803), (64, 32902), (66, 32911), (70, 32929), (74, 32956), (77, 32971), (80, 32977), (82, 32983), (85, 32989), (92, 33016), (95, 33025), (103, 33058), (118, 33091), (133, 33151), (141, 33181), (143, 33187), (152, 33232), (158, 33286), (159, 33289), (179, 33433), (195, 33586),