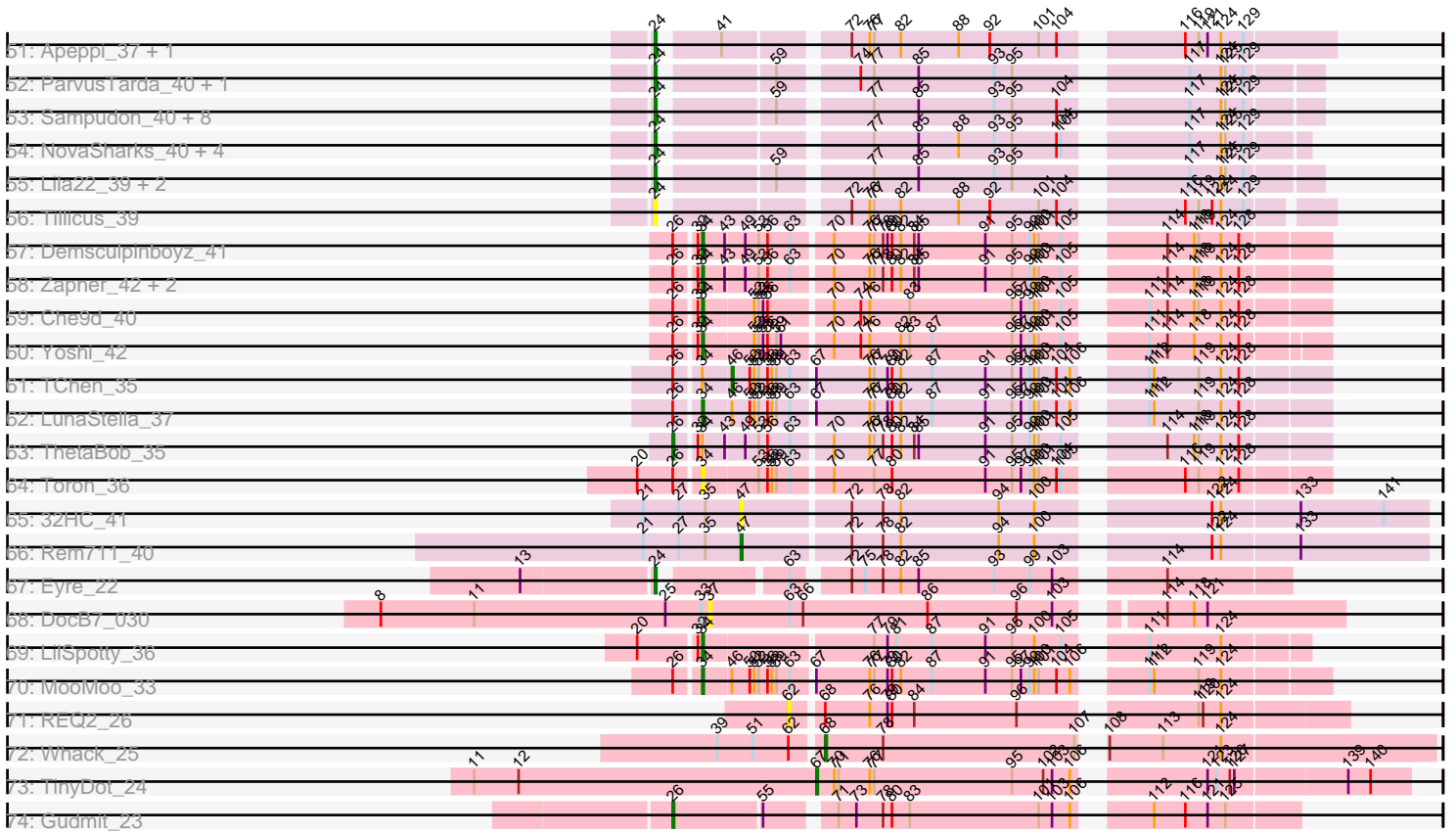




# Pham 192341



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 192341 Report

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

Pham number 192341 has 192 members, 23 are drafts.

Phages represented in each track:

- Track 1 : 8UZL\_31, FF47\_31
- Track 2 : Maco6\_29
- Track 3 : Muddy\_31
- Track 4 : ClubL\_54, Geeche\_53, Engineer\_56, Miskis\_56, Bachita\_56, Abscondus\_53, Dusty\_52, PhinkBoden\_54, Cucurbita\_56, Lozinak\_55, Culver\_54, Smoothie\_56, Norvs\_55, Aphelion\_54, Toniann\_54
- Track 5 : WilliamBoone\_54
- Track 6 : OneUp\_48
- Track 7 : BrutonGaster\_43
- Track 8 : KappaFarmDelta\_26
- Track 9 : PrincePatrick\_24, William\_25, Fairfaxidum\_24
- Track 10 : Petra\_26
- Track 11 : Obliviate\_24, ZiggyZoo\_24, CarolAnn\_25, Blino\_25
- Track 12 : JuJu\_25
- Track 13 : EMSquaredA\_26, EnalisNailo\_26, Pollux\_26, Marteena\_26, BritBrat\_26, Bradissa\_26, Lilas\_26, Floral\_26
- Track 14 : Angelique\_27
- Track 15 : Pepperoni\_23
- Track 16 : Suscepit\_26, Agueybana\_25, BoyNamedSue\_25, Zameen\_26, AlumE\_25, Neobush\_26, Antonio\_26, PantheRoc\_25, Maridalia\_25, Eudoria\_26, Trumpet\_26, Tayonia\_26, Manasvini\_26, Yeezy\_26, Kita\_26
- Track 17 : Hyzer\_26
- Track 18 : Nettuno\_22, Matteo\_22, Pickett\_22
- Track 19 : Lamberg\_22, EdnaMode\_22, Lton\_22
- Track 20 : BaxterFox\_24
- Track 21 : Faith5x5\_22
- Track 22 : OneDirection\_21
- Track 23 : Moosehead\_22
- Track 24 : BBQValindra\_25
- Track 25 : Schnabeltier\_25
- Track 26 : Bowser\_25, MagicMan\_25
- Track 27 : TaronosaurusRx\_25
- Track 28 : Dmitri\_26
- Track 29 : HannahD\_25, GEazy\_25
- Track 30 : Doggs\_25
- Track 31 : RayTheFireFly\_26
- Track 32 : Bunker\_25

- Track 33 : Opie\_25
- Track 34 : BackstagePass\_25
- Track 35 : Eyes\_25
- Track 36 : Coriander\_26
- Track 37 : ZAYM\_26
- Track 38 : Evamon\_42, Portcullis\_44, Jambalaya\_43, Halo3\_43, Twister6\_45, Salvador\_42, Savbucketdawg\_43, Danyall\_45
- Track 39 : Phlop\_42, Fugax\_46, Togo\_42, Barb\_45, Fireball\_44, PullumCavea\_42, PinkCoffee\_45, ClamChowder\_45, SmokingBunny\_43, Nubi\_43, TillyBobJoe\_43
- Track 40 : Valary\_45, KimmyK\_44, Wizard\_42, Arri\_46, VanDeWege\_46, Gezellig\_44, RogerDodger\_46, CoveyB\_46
- Track 41 : Mutzi\_42
- Track 42 : Shinji\_43
- Track 43 : Bakery\_48
- Track 44 : YungMoney\_46
- Track 45 : Clown\_49
- Track 46 : Malisha\_28, Spooky\_27, Squiddly\_29
- Track 47 : Periwinkle\_29
- Track 48 : Phistory\_28, Kamaru\_27, Leroy\_27, Lutum\_27, Horus\_27, Phabuloso\_26, CheeseTouch\_27, Getalong\_28, BearBQ\_26, Kenna\_26, Frickyeah\_26, Holliday\_27, Apricot\_26, Budski\_27, BENtherdunthat\_27, Whitney\_28, Asapag\_27, Crater\_25, Kuwabara\_26, Birdsong\_26, MortyNRick\_26
- Track 49 : LitninMcQueen\_26
- Track 50 : NorManre\_41, GOATification\_41, Fulcrum\_41, Gibbin\_41, DoobyDoo\_39, DaviePasture\_40, Patos\_41, Zany\_39
- Track 51 : Apeppi\_37, LuckyLeo\_39
- Track 52 : ParvusTarda\_40, BirthdayBoy\_41
- Track 53 : Sampudon\_40, Jalebi\_39, MoiGyank\_42, Yikes\_41, OtterstedtS21\_40, Ranch\_40, GretelLyn\_40, Sadboi\_41, Lambo\_40
- Track 54 : NovaSharks\_40, Jamemuya19\_40, Alyssamiracle\_41, Rumi\_40, Genamy16\_41
- Track 55 : Lila22\_39, Erutan\_40, Wojtek\_39
- Track 56 : Tillicus\_39
- Track 57 : Demsculpinboyz\_41
- Track 58 : Zapner\_42, Jabbawokkie\_43, Avani\_40
- Track 59 : Che9d\_40
- Track 60 : Yoshi\_42
- Track 61 : TChen\_35
- Track 62 : LunaStella\_37
- Track 63 : ThetaBob\_35
- Track 64 : Toron\_36
- Track 65 : 32HC\_41
- Track 66 : Rem711\_40
- Track 67 : Eyre\_22
- Track 68 : DocB7\_030
- Track 69 : LilSpotty\_36
- Track 70 : MooMoo\_33
- Track 71 : REQ2\_26
- Track 72 : Whack\_25
- Track 73 : TinyDot\_24
- Track 74 : Gudmit\_23

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

The start number called the most often in the published annotations is 67, it was called in 50 of the 169 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Angelique\_27, Arri\_46, BBQValindra\_25, BackstagePass\_25, Blino\_25, Bowser\_25, Bradissa\_26, BritBrat\_26, Bunker\_25, CarolAnn\_25, CoveyB\_46, Danyall\_45, EMSquaredA\_26, EdnaMode\_22, EnalisNailo\_26, Evamon\_42, Eyes\_25, Fairfaxidum\_24, Faith5x5\_22, Floral\_26, GEazy\_25, Gezellig\_44, Halo3\_43, HannahD\_25, Jambalaya\_43, JuJu\_25, KappaFarmDelta\_26, KimmyK\_44, Lamberg\_22, Lilas\_26, Lton\_22, MagicMan\_25, Marteena\_26, Matteo\_22, Moosehead\_22, Nettuno\_22, Obliviate\_24, OneDirection\_21, Opie\_25, Pepperoni\_23, Pickett\_22, Pollux\_26, Portcullis\_44, PrincePatrick\_24, RogerDodger\_46, Salvador\_42, Savbucketdawg\_43, TaronosaurusRx\_25, TinyDot\_24, Twister6\_45, Valary\_45, VanDeWege\_46, William\_25, Wizard\_42, ZAYM\_26, ZiggyZoo\_24,

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

- Bakery\_48, Barb\_45, ClamChowder\_45, Coriander\_26, Dmitri\_26, Doggs\_25, Fireball\_44, Fugax\_46, LunaStella\_37, MooMoo\_33, Mutzi\_42, Nubi\_43, Phlop\_42, PinkCoffee\_45, PullumCavea\_42, RayTheFireFly\_26, Schnabeltier\_25, Shinji\_43, SmokingBunny\_43, TChen\_35, TillyBobJoe\_43, Togo\_42, YungMoney\_46,

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

- 32HC\_41, 8UZL\_31, Abscondus\_53, Agueybana\_25, AlumE\_25, Alyssamiracle\_41, Antonio\_26, Apeppi\_37, Aphelion\_54, Apricot\_26, Asapag\_27, Avani\_40, BENTherdunthat\_27, Bachita\_56, BaxterFox\_24, BearBQ\_26, Birdsong\_26, BirthdayBoy\_41, BoyNamedSue\_25, BrutonGaster\_43, Budski\_27, Che9d\_40, CheeseTouch\_27, Clown\_49, ClubL\_54, Crater\_25, Cucurbita\_56, Culver\_54, DaviePasture\_40, Demsculpinboyz\_41, DocB7\_030, DoobyDoo\_39, Dusty\_52, Engineer\_56, Erutan\_40, Eudoria\_26, Eyre\_22, FF47\_31, Frickyeah\_26, Fulcrum\_41, GOATification\_41, Geeche\_53, Genamy16\_41, Getalong\_28, Gibbin\_41, Gretellyn\_40, Gudmit\_23, Holliday\_27, Horus\_27, Hyzer\_26, Jabbawokkie\_43, Jalebi\_39, Jamemuya19\_40, Kamaru\_27, Kenna\_26, Kita\_26, Kuwabara\_26, Lambo\_40, Leroy\_27, LilSpotty\_36, Lila22\_39, LitninMcQueen\_26, Lozinak\_55, LuckyLeo\_39, Lutum\_27, Maco6\_29, Malisha\_28, Manasvini\_26, Maridalia\_25, Miskis\_56, MoiGyank\_42, MortyNRick\_26, Muddy\_31, Neobush\_26, NorManre\_41, Norvs\_55, NovaSharks\_40, OneUp\_48, OtterstedtS21\_40, PantheRoc\_25, ParvusTarda\_40, Patos\_41, Periwinkle\_29, Petra\_26, Phabuloso\_26, PhinkBoden\_54, Phistory\_28, REQ2\_26, Ranch\_40, Rem711\_40, Rumi\_40, Sadboi\_41, Sampudon\_40, Smoothie\_56, Spooky\_27, Squiddly\_29, Suscepit\_26, Tayonia\_26, ThetaBob\_35, Tillicus\_39, Toniann\_54, Toron\_36, Trumpet\_26, Whack\_25, Whitney\_28, WilliamBoone\_54, Wojtek\_39, Yeezy\_26, Yikes\_41, Yoshi\_42, Zameen\_26, Zany\_39, Zapner\_42,

## **Summary by start number:**

Start 15:

- Found in 18 of 192 ( 9.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 5.6% of time when present

- Phage (with cluster) where this start called: Coriander\_26 (DB),

#### Start 16:

- Found in 4 of 192 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 3 of 169
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Dmitri\_26 (DB), Doggs\_25 (DB), RayTheFireFly\_26 (DB),

#### Start 17:

- Found in 26 of 192 ( 13.5% ) of genes in pham
- Manual Annotations of this start: 24 of 169
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apricot\_26 (DN3), Asapag\_27 (DN1), BENTherdunthat\_27 (DN1), BearBQ\_26 (DN), Birdsong\_26 (DN), Budski\_27 (DN), CheeseTouch\_27 (DN1), Crater\_25 (DN3), Frickyeah\_26 (DN1), Getalong\_28 (DN1), Holliday\_27 (DN1), Horus\_27 (DN1), Kamaru\_27 (DN1), Kenna\_26 (DN1), Kuwabara\_26 (DN4), Leroy\_27 (DN1), LitninMcQueen\_26 (DN1), Lutum\_27 (DN1), Malisha\_28 (DN), MortyNRick\_26 (DN), Periwinkle\_29 (DN1), Phabuloso\_26 (DN1), Phistory\_28 (DN1), Spooky\_27 (DN2), Squiddly\_29 (DN2), Whitney\_28 (DN1),

#### Start 22:

- Found in 18 of 192 ( 9.4% ) of genes in pham
- Manual Annotations of this start: 14 of 169
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abscondus\_53 (CQ1), Aphelion\_54 (CQ1), Bachita\_56 (CQ1), BrutonGaster\_43 (CQ2), ClubL\_54 (CQ1), Cucurbita\_56 (CQ1), Culver\_54 (CQ1), Dusty\_52 (CQ1), Engineer\_56 (CQ1), Geeche\_53 (CQ1), Lozinak\_55 (CQ1), Miskis\_56 (CQ1), Norvs\_55 (CQ1), OneUp\_48 (CQ2), PhinkBoden\_54 (CQ1), Smoothie\_56 (CQ1), Toniann\_54 (CQ1), WilliamBoone\_54 (CQ1),

#### Start 23:

- Found in 15 of 192 ( 7.8% ) of genes in pham
- Manual Annotations of this start: 14 of 169
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bakery\_48 (DC1), Barb\_45 (DC1), ClamChowder\_45 (DC1), Fireball\_44 (DC1), Fugax\_46 (DC1), Mutzi\_42 (DC1), Nubi\_43 (DC1), Phlop\_42 (DC1), PinkCoffee\_45 (DC1), PullumCavea\_42 (DC1), Shinji\_43 (DC1), SmokingBunny\_43 (DC1), TillyBobJoe\_43 (DC1), Togo\_42 (DC1), YungMoney\_46 (DC1),

#### Start 24:

- Found in 49 of 192 ( 25.5% ) of genes in pham
- Manual Annotations of this start: 46 of 169
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agueybana\_25 (CZ1), AlumE\_25 (CZ1), Alyssamiracle\_41 (DV), Antonio\_26 (CZ1), Apeppi\_37 (DV), BaxterFox\_24 (CZ3), BirthdayBoy\_41 (DV), BoyNamedSue\_25 (CZ1), DaviePasture\_40 (DV), DoobyDoo\_39 (DV), Erutan\_40 (DV), Eudoria\_26 (CZ1), Eyre\_22 (singleton), Fulcrum\_41 (DV), GOATification\_41 (DV), Genamy16\_41 (DV), Gibbin\_41 (DV), GretellLyn\_40 (DV), Hyzer\_26 (CZ1), Jalebi\_39 (DV), Jamemuya19\_40 (DV), Kita\_26 (CZ1), Lambo\_40 (DV), Lila22\_39 (DV), LuckyLeo\_39 (DV), Manasvini\_26 (CZ1),

Maridalia\_25 (CZ1), MoiGyank\_42 (DV), Neobush\_26 (CZ1), NorManre\_41 (DV), NovaSharks\_40 (DV), OtterstedtS21\_40 (DV), PantheRoc\_25 (CZ3), ParvusTarda\_40 (DV), Patos\_41 (DV), Petra\_26 (CV), Ranch\_40 (DV), Rumi\_40 (DV), Sadboi\_41 (DV), Sampudon\_40 (DV), Susceptit\_26 (CZ1), Tayonia\_26 (CZ1), Tillicus\_39 (DV), Trumpet\_26 (CZ1), Wojtek\_39 (DV), Yeezy\_26 (CZ3), Yikes\_41 (DV), Zameen\_26 (CZ1), Zany\_39 (DV),

Start 26:

- Found in 12 of 192 ( 6.2% ) of genes in pham
- Manual Annotations of this start: 2 of 169
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Gudmit\_23 (singleton), ThetaBob\_35 (F4),

Start 31:

- Found in 3 of 192 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 169
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 8UZL\_31 (AB), FF47\_31 (AB), Muddy\_31 (AB),

Start 33:

- Found in 2 of 192 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 1 of 169
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Maco6\_29 (AB),

Start 34:

- Found in 12 of 192 ( 6.2% ) of genes in pham
- Manual Annotations of this start: 9 of 169
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Avani\_40 (F2), Che9d\_40 (F2), Demsculpinboyz\_41 (F2), Jabbawokkie\_43 (F2), LilSpotty\_36 (singleton), LunaStella\_37 (F4), MooMoo\_33 (singleton), Toron\_36 (F6), Yoshi\_42 (F2), Zapner\_42 (F2),

Start 37:

- Found in 1 of 192 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DocB7\_030 (singleton),

Start 46:

- Found in 3 of 192 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 169
- Called 33.3% of time when present
- Phage (with cluster) where this start called: TChen\_35 (F4),

Start 47:

- Found in 29 of 192 ( 15.1% ) of genes in pham
- Manual Annotations of this start: 1 of 169
- Called 6.9% of time when present
- Phage (with cluster) where this start called: 32HC\_41 (Z), Rem711\_40 (Z),

Start 54:

- Found in 1 of 192 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 169
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Clown\_49 (DC2),

Start 62:

- Found in 2 of 192 ( 1.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: REQ2\_26 (singleton),

Start 67:

- Found in 79 of 192 ( 41.1% ) of genes in pham
- Manual Annotations of this start: 50 of 169
- Called 70.9% of time when present
- Phage (with cluster) where this start called: Angelique\_27 (CY1), Arri\_46 (DC1), BBQValindra\_25 (DB), BackstagePass\_25 (DB), Blino\_25 (CV), Bowser\_25 (DB), Bradissa\_26 (CY1), BritBrat\_26 (CY2), Bunker\_25 (DB), CarolAnn\_25 (CV), CoveyB\_46 (DC1), Danyall\_45 (DC1), EMSquaredA\_26 (CY1), EdnaMode\_22 (CZ2), EnalisNailo\_26 (CY1), Evamon\_42 (DC1), Eyes\_25 (DB), Fairfaxidum\_24 (CV), Faith5x5\_22 (CZ6), Floral\_26 (CY1), GEazy\_25 (DB), Gezellig\_44 (DC1), Halo3\_43 (DC1), HannahD\_25 (DB), Jambalaya\_43 (DC1), JuJu\_25 (CV), KappaFarmDelta\_26 (CV), KimmyK\_44 (DC1), Lamberg\_22 (CZ2), Lilas\_26 (CY1), Lton\_22 (CZ), MagicMan\_25 (DB), Marteena\_26 (CY1), Matteo\_22 (CZ2), Moosehead\_22 (CZ6), Nettuno\_22 (CZ2), Obliviate\_24 (CV), OneDirection\_21 (CZ6), Opie\_25 (DB), Pepperoni\_23 (CZ), Pickett\_22 (CZ2), Pollux\_26 (CY1), Portcullis\_44 (DC1), PrincePatrick\_24 (CV), RogerDodger\_46 (DC1), Salvador\_42 (DC1), Savbucketdawg\_43 (DC1), TaronosaurusRx\_25 (DB), TinyDot\_24 (singleton), Twister6\_45 (DC1), Valary\_45 (DC1), VanDeWege\_46 (DC1), William\_25 (CV), Wizard\_42 (DC1), ZAYM\_26 (DB), ZiggyZoo\_24 (CV),

Start 68:

- Found in 4 of 192 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 1 of 169
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Whack\_25 (singleton),

Start 69:

- Found in 15 of 192 ( 7.8% ) of genes in pham
- Manual Annotations of this start: 1 of 169
- Called 6.7% of time when present
- Phage (with cluster) where this start called: Schnabeltier\_25 (DB),

**Summary by clusters:**

There are 25 clusters represented in this pham: DN, singleton, CZ2, CZ3, CZ1, CZ6, DV, DN4, DN1, DN3, DN2, CQ2, CQ1, CY2, CY1, AB, DB, CZ, Z, DC2, CV, DC1, F2, F4, F6,

Info for manual annotations of cluster AB:

- Start number 31 was manually annotated 1 time for cluster AB.



- Start number 33 was manually annotated 1 time for cluster AB.

Info for manual annotations of cluster CQ1:

- Start number 22 was manually annotated 12 times for cluster CQ1.

Info for manual annotations of cluster CQ2:

- Start number 22 was manually annotated 2 times for cluster CQ2.

Info for manual annotations of cluster CV:

- Start number 24 was manually annotated 1 time for cluster CV.
- Start number 67 was manually annotated 9 times for cluster CV.

Info for manual annotations of cluster CY1:

- Start number 67 was manually annotated 8 times for cluster CY1.

Info for manual annotations of cluster CY2:

- Start number 67 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster CZ:

- Start number 67 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 24 was manually annotated 13 times for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 67 was manually annotated 5 times for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 24 was manually annotated 3 times for cluster CZ3.

Info for manual annotations of cluster CZ6:

- Start number 67 was manually annotated 3 times for cluster CZ6.

Info for manual annotations of cluster DB:

- Start number 16 was manually annotated 3 times for cluster DB.
- Start number 67 was manually annotated 8 times for cluster DB.
- Start number 69 was manually annotated 1 time for cluster DB.

Info for manual annotations of cluster DC1:

- Start number 23 was manually annotated 14 times for cluster DC1.
- Start number 67 was manually annotated 14 times for cluster DC1.

Info for manual annotations of cluster DC2:

- Start number 54 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DN:

- Start number 17 was manually annotated 4 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 17 was manually annotated 15 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 17 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster DN3:

- Start number 17 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 17 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DV:

- Start number 24 was manually annotated 28 times for cluster DV.

Info for manual annotations of cluster F2:

- Start number 34 was manually annotated 6 times for cluster F2.

Info for manual annotations of cluster F4:

- Start number 26 was manually annotated 1 time for cluster F4.
- Start number 34 was manually annotated 1 time for cluster F4.
- Start number 46 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster Z:

- Start number 47 was manually annotated 1 time for cluster Z.

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

Gene: 32HC\_41 Start: 30730, Stop: 31161, Start Num: 47

Candidate Starts for 32HC\_41:

(21, 30664), (27, 30688), (35, 30706), (Start: 47 @30730 has 1 MA's), (72, 30799), (78, 30820), (82, 30832), (94, 30898), (100, 30922), (122, 31021), (124, 31027), (133, 31078), (141, 31132),

Gene: 8UZL\_31 Start: 24782, Stop: 25192, Start Num: 31

Candidate Starts for 8UZL\_31:

(18, 24731), (Start: 31 @24782 has 1 MA's), (45, 24800), (64, 24845), (79, 24902), (112, 25061), (118, 25088), (119, 25091), (121, 25097), (124, 25106), (139, 25187),

Gene: Abscondus\_53 Start: 33557, Stop: 34012, Start Num: 22

Candidate Starts for Abscondus\_53:

(19, 33542), (Start: 22 @33557 has 14 MA's), (29, 33584), (44, 33611), (58, 33641), (64, 33656), (77, 33704), (78, 33710), (80, 33716), (93, 33785), (100, 33812), (103, 33824), (114, 33902), (123, 33935), (124, 33938), (131, 33959),

Gene: Agueybana\_25 Start: 21812, Stop: 22186, Start Num: 24

Candidate Starts for Agueybana\_25:

(13, 21728), (Start: 24 @21812 has 46 MA's), (48, 21860), (63, 21884), (65, 21890), (72, 21914), (75, 21923), (78, 21935), (119, 22127), (121, 22133), (122, 22136),

Gene: AlumE\_25 Start: 21811, Stop: 22185, Start Num: 24

Candidate Starts for AlumE\_25:

(13, 21727), (Start: 24 @21811 has 46 MA's), (48, 21859), (63, 21883), (65, 21889), (72, 21913), (75, 21922), (78, 21934), (119, 22126), (121, 22132), (122, 22135),

Gene: Alyssamiracle\_41 Start: 31366, Stop: 31752, Start Num: 24

Candidate Starts for Alyssamiracle\_41:

(Start: 24 @31366 has 46 MA's), (77, 31486), (85, 31516), (88, 31543), (93, 31567), (95, 31579), (104, 31609), (105, 31612), (117, 31678), (124, 31699), (125, 31702), (129, 31714),

Gene: Angelique\_27 Start: 22414, Stop: 22800, Start Num: 67

Candidate Starts for Angelique\_27:

(Start: 67 @22414 has 50 MA's), (Start: 69 @22423 has 1 MA's), (71, 22429), (76, 22450), (100, 22561), (106, 22585), (115, 22633), (120, 22654), (121, 22657), (127, 22675), (130, 22684), (133, 22717), (142, 22783),

Gene: Antonio\_26 Start: 21932, Stop: 22306, Start Num: 24

Candidate Starts for Antonio\_26:

(13, 21848), (Start: 24 @21932 has 46 MA's), (48, 21980), (63, 22004), (65, 22010), (72, 22034), (75, 22043), (78, 22055), (119, 22247), (121, 22253), (122, 22256),

Gene: Apeppi\_37 Start: 32448, Stop: 32855, Start Num: 24

Candidate Starts for Apeppi\_37:

(Start: 24 @32448 has 46 MA's), (41, 32481), (72, 32553), (76, 32565), (77, 32568), (82, 32586), (88, 32625), (92, 32646), (101, 32679), (104, 32691), (116, 32757), (119, 32766), (121, 32772), (124, 32781), (129, 32796),

Gene: Aphelion\_54 Start: 33826, Stop: 34281, Start Num: 22

Candidate Starts for Aphelion\_54:

(19, 33811), (Start: 22 @33826 has 14 MA's), (29, 33853), (44, 33880), (58, 33910), (64, 33925), (77, 33973), (78, 33979), (80, 33985), (93, 34054), (100, 34081), (103, 34093), (114, 34171), (123, 34204), (124, 34207), (131, 34228),

Gene: Apricot\_26 Start: 20622, Stop: 21062, Start Num: 17

Candidate Starts for Apricot\_26:

(Start: 17 @20622 has 24 MA's), (32, 20679), (Start: 47 @20706 has 1 MA's), (78, 20796), (87, 20829), (95, 20883), (96, 20886), (97, 20889), (100, 20898), (101, 20901), (106, 20922), (110, 20934), (120, 20991), (122, 20997), (124, 21003), (125, 21006), (126, 21009), (129, 21018), (131, 21024), (133, 21051),

Gene: Arri\_46 Start: 35970, Stop: 36359, Start Num: 67

Candidate Starts for Arri\_46:

(Start: 67 @35970 has 50 MA's), (75, 35997), (76, 36000), (78, 36009), (87, 36042), (89, 36069), (93, 36084), (97, 36102), (100, 36111), (101, 36114), (106, 36135), (119, 36201), (120, 36204), (121, 36207), (126, 36222), (127, 36225), (130, 36234), (131, 36237), (139, 36297),

Gene: Asapag\_27 Start: 21064, Stop: 21504, Start Num: 17

Candidate Starts for Asapag\_27:

(Start: 17 @21064 has 24 MA's), (32, 21121), (Start: 47 @21148 has 1 MA's), (78, 21238), (87, 21271), (95, 21325), (96, 21328), (97, 21331), (100, 21340), (101, 21343), (106, 21364), (110, 21376), (120, 21433), (122, 21439), (124, 21445), (125, 21448), (126, 21451), (129, 21460), (131, 21466), (133, 21493),

Gene: Avani\_40 Start: 28789, Stop: 29178, Start Num: 34

Candidate Starts for Avani\_40:

(Start: 26 @28774 has 2 MA's), (32, 28786), (Start: 34 @28789 has 9 MA's), (43, 28804), (49, 28816), (53, 28825), (56, 28831), (63, 28846), (70, 28870), (76, 28894), (77, 28897), (78, 28903), (80, 28909), (82, 28915), (84, 28924), (85, 28927), (91, 28972), (95, 28990), (99, 29002), (100, 29005), (101, 29008), (105, 29023), (114, 29074), (118, 29092), (119, 29095), (124, 29110), (128, 29122),

Gene: BBQValindra\_25 Start: 21046, Stop: 21432, Start Num: 67

Candidate Starts for BBQValindra\_25:

(Start: 67 @21046 has 50 MA's), (Start: 69 @21055 has 1 MA's), (71, 21061), (76, 21082), (100, 21193), (106, 21217), (120, 21286), (121, 21289), (126, 21304), (127, 21307), (130, 21316), (142, 21415),

Gene: BENtherdunthat\_27 Start: 21061, Stop: 21501, Start Num: 17

Candidate Starts for BENtherdunthat\_27:

(Start: 17 @21061 has 24 MA's), (32, 21118), (Start: 47 @21145 has 1 MA's), (78, 21235), (87, 21268), (95, 21322), (96, 21325), (97, 21328), (100, 21337), (101, 21340), (106, 21361), (110, 21373), (120, 21430), (122, 21436), (124, 21442), (125, 21445), (126, 21448), (129, 21457), (131, 21463), (133, 21490),

Gene: Bachita\_56 Start: 34259, Stop: 34714, Start Num: 22

Candidate Starts for Bachita\_56:

(19, 34244), (Start: 22 @34259 has 14 MA's), (29, 34286), (44, 34313), (58, 34343), (64, 34358), (77, 34406), (78, 34412), (80, 34418), (93, 34487), (100, 34514), (103, 34526), (114, 34604), (123, 34637), (124, 34640), (131, 34661),

Gene: BackstagePass\_25 Start: 21178, Stop: 21564, Start Num: 67

Candidate Starts for BackstagePass\_25:

(Start: 67 @21178 has 50 MA's), (Start: 69 @21187 has 1 MA's), (71, 21193), (75, 21211), (76, 21214), (97, 21316), (100, 21325), (106, 21349), (120, 21418), (121, 21421), (125, 21433), (126, 21436), (127, 21439), (142, 21547),

Gene: Bakery\_48 Start: 37078, Stop: 37512, Start Num: 23

Candidate Starts for Bakery\_48:

(14, 37018), (15, 37042), (Start: 23 @37078 has 14 MA's), (45, 37129), (55, 37153), (Start: 67 @37183 has 50 MA's), (75, 37216), (79, 37231), (80, 37234), (82, 37240), (103, 37342), (112, 37390), (114, 37399), (124, 37435), (126, 37441), (135, 37489),

Gene: Barb\_45 Start: 36050, Stop: 36484, Start Num: 23

Candidate Starts for Barb\_45:

(14, 35990), (15, 36014), (Start: 23 @36050 has 14 MA's), (55, 36125), (Start: 67 @36155 has 50 MA's), (75, 36188), (79, 36203), (80, 36206), (103, 36314), (112, 36362), (114, 36371), (124, 36407), (126, 36413), (129, 36422),

Gene: BaxterFox\_24 Start: 21132, Stop: 21506, Start Num: 24

Candidate Starts for BaxterFox\_24:

(7, 20949), (9, 20961), (10, 20967), (13, 21048), (Start: 24 @21132 has 46 MA's), (63, 21204), (65, 21210), (72, 21234), (75, 21243), (78, 21255), (82, 21267), (92, 21327), (103, 21369), (119, 21447), (121, 21453), (122, 21456),

Gene: BearBQ\_26 Start: 21901, Stop: 22341, Start Num: 17

Candidate Starts for BearBQ\_26:

(Start: 17 @21901 has 24 MA's), (32, 21958), (Start: 47 @21985 has 1 MA's), (78, 22075), (87, 22108), (95, 22162), (96, 22165), (97, 22168), (100, 22177), (101, 22180), (106, 22201), (110, 22213), (120, 22270), (122, 22276), (124, 22282), (125, 22285), (126, 22288), (129, 22297), (131, 22303), (133, 22330),

Gene: Birdsong\_26 Start: 20794, Stop: 21234, Start Num: 17

Candidate Starts for Birdsong\_26:

(Start: 17 @20794 has 24 MA's), (32, 20851), (Start: 47 @20878 has 1 MA's), (78, 20968), (87, 21001), (95, 21055), (96, 21058), (97, 21061), (100, 21070), (101, 21073), (106, 21094), (110, 21106), (120, 21163), (122, 21169), (124, 21175), (125, 21178), (126, 21181), (129, 21190), (131, 21196), (133, 21223),

Gene: BirthdayBoy\_41 Start: 33095, Stop: 33490, Start Num: 24

Candidate Starts for BirthdayBoy\_41:

(Start: 24 @33095 has 46 MA's), (59, 33161), (74, 33206), (77, 33215), (85, 33245), (93, 33296), (95, 33308), (117, 33407), (124, 33428), (125, 33431), (129, 33443),

Gene: Blino\_25 Start: 20905, Stop: 21255, Start Num: 67

Candidate Starts for Blino\_25:

(Start: 67 @20905 has 50 MA's), (77, 20938), (95, 21031), (97, 21037), (98, 21040), (104, 21061), (106, 21070), (112, 21103), (126, 21154), (131, 21169), (138, 21220),

Gene: Bowser\_25 Start: 20957, Stop: 21343, Start Num: 67

Candidate Starts for Bowser\_25:

(Start: 67 @20957 has 50 MA's), (Start: 69 @20966 has 1 MA's), (71, 20972), (76, 20993), (97, 21095), (100, 21104), (106, 21128), (120, 21197), (121, 21200), (125, 21212), (126, 21215), (127, 21218), (130, 21227), (142, 21326),

Gene: BoyNamedSue\_25 Start: 21811, Stop: 22185, Start Num: 24

Candidate Starts for BoyNamedSue\_25:

(13, 21727), (Start: 24 @21811 has 46 MA's), (48, 21859), (63, 21883), (65, 21889), (72, 21913), (75, 21922), (78, 21934), (119, 22126), (121, 22132), (122, 22135),

Gene: Bradissa\_26 Start: 21680, Stop: 22060, Start Num: 67

Candidate Starts for Bradissa\_26:

(Start: 67 @21680 has 50 MA's), (75, 21707), (76, 21710), (78, 21719), (87, 21752), (89, 21779), (97, 21812), (100, 21821), (106, 21845), (120, 21914), (121, 21917), (126, 21932), (127, 21935), (130, 21944), (139, 22007), (143, 22049),

Gene: BritBrat\_26 Start: 21533, Stop: 21913, Start Num: 67

Candidate Starts for BritBrat\_26:

(Start: 67 @21533 has 50 MA's), (75, 21560), (76, 21563), (78, 21572), (87, 21605), (89, 21632), (97, 21665), (100, 21674), (106, 21698), (120, 21767), (121, 21770), (126, 21785), (127, 21788), (130, 21797), (139, 21860), (143, 21902),

Gene: BrutonGaster\_43 Start: 30940, Stop: 31359, Start Num: 22

Candidate Starts for BrutonGaster\_43:

(19, 30928), (Start: 22 @30940 has 14 MA's), (64, 31015), (Start: 68 @31030 has 1 MA's), (75, 31057), (76, 31060), (77, 31063), (79, 31072), (81, 31078), (84, 31090), (93, 31144), (105, 31189), (107, 31198), (123, 31288), (124, 31291), (131, 31312),

Gene: Budski\_27 Start: 21169, Stop: 21609, Start Num: 17

Candidate Starts for Budski\_27:

(Start: 17 @21169 has 24 MA's), (32, 21226), (Start: 47 @21253 has 1 MA's), (78, 21343), (87, 21376), (95, 21430), (96, 21433), (97, 21436), (100, 21445), (101, 21448), (106, 21469), (110, 21481), (120, 21538), (122, 21544), (124, 21550), (125, 21553), (126, 21556), (129, 21565), (131, 21571), (133, 21598),

Gene: Bunker\_25 Start: 21159, Stop: 21545, Start Num: 67

Candidate Starts for Bunker\_25:

(Start: 67 @21159 has 50 MA's), (Start: 69 @21168 has 1 MA's), (71, 21174), (76, 21195), (100, 21306), (106, 21330), (120, 21399), (121, 21402), (127, 21420), (130, 21429), (136, 21465), (142, 21528),

Gene: CarolAnn\_25 Start: 20904, Stop: 21254, Start Num: 67

Candidate Starts for CarolAnn\_25:

(Start: 67 @20904 has 50 MA's), (77, 20937), (95, 21030), (97, 21036), (98, 21039), (104, 21060), (106, 21069), (112, 21102), (126, 21153), (131, 21168), (138, 21219),

Gene: Che9d\_40 Start: 28798, Stop: 29187, Start Num: 34

Candidate Starts for Che9d\_40:

(Start: 26 @28783 has 2 MA's), (32, 28795), (Start: 34 @28798 has 9 MA's), (52, 28831), (53, 28834), (55, 28837), (56, 28840), (70, 28879), (74, 28897), (76, 28903), (83, 28930), (95, 28999), (97, 29005), (99, 29011), (100, 29014), (101, 29017), (105, 29032), (111, 29071), (114, 29083), (118, 29101), (119, 29104), (124, 29119), (128, 29131),

Gene: CheeseTouch\_27 Start: 21055, Stop: 21495, Start Num: 17

Candidate Starts for CheeseTouch\_27:

(Start: 17 @21055 has 24 MA's), (32, 21112), (Start: 47 @21139 has 1 MA's), (78, 21229), (87, 21262), (95, 21316), (96, 21319), (97, 21322), (100, 21331), (101, 21334), (106, 21355), (110, 21367), (120, 21424), (122, 21430), (124, 21436), (125, 21439), (126, 21442), (129, 21451), (131, 21457), (133, 21484),

Gene: ClamChowder\_45 Start: 36050, Stop: 36484, Start Num: 23

Candidate Starts for ClamChowder\_45:

(14, 35990), (15, 36014), (Start: 23 @36050 has 14 MA's), (55, 36125), (Start: 67 @36155 has 50 MA's), (75, 36188), (79, 36203), (80, 36206), (103, 36314), (112, 36362), (114, 36371), (124, 36407), (126, 36413), (129, 36422),

Gene: Clown\_49 Start: 38210, Stop: 38572, Start Num: 54

Candidate Starts for Clown\_49:

(Start: 54 @38210 has 1 MA's), (57, 38216), (60, 38222), (80, 38288), (81, 38291), (84, 38303), (85, 38306), (97, 38375), (98, 38378), (101, 38387), (117, 38468), (118, 38471), (124, 38489), (127, 38498), (128, 38501),

Gene: ClubL\_54 Start: 33748, Stop: 34203, Start Num: 22

Candidate Starts for ClubL\_54:

(19, 33733), (Start: 22 @33748 has 14 MA's), (29, 33775), (44, 33802), (58, 33832), (64, 33847), (77, 33895), (78, 33901), (80, 33907), (93, 33976), (100, 34003), (103, 34015), (114, 34093), (123, 34126), (124, 34129), (131, 34150),

Gene: Coriander\_26 Start: 22086, Stop: 22541, Start Num: 15

Candidate Starts for Coriander\_26:

(1, 21702), (3, 21777), (4, 21846), (5, 21888), (6, 21909), (15, 22086), (Start: 16 @22098 has 3 MA's), (28, 22146), (38, 22167), (40, 22170), (53, 22197), (55, 22200), (58, 22206), (Start: 67 @22230 has 50 MA's), (70, 22242), (91, 22344), (96, 22365), (97, 22368), (100, 22377), (101, 22380), (105, 22395), (118, 22464), (124, 22482), (126, 22488), (132, 22527),

Gene: CoveyB\_46 Start: 35788, Stop: 36177, Start Num: 67

Candidate Starts for CoveyB\_46:

(Start: 67 @35788 has 50 MA's), (75, 35815), (76, 35818), (78, 35827), (87, 35860), (89, 35887), (93, 35902), (97, 35920), (100, 35929), (101, 35932), (106, 35953), (119, 36019), (120, 36022), (121, 36025), (126, 36040), (127, 36043), (130, 36052), (131, 36055), (139, 36115),

Gene: Crater\_25 Start: 20622, Stop: 21062, Start Num: 17

Candidate Starts for Crater\_25:

(Start: 17 @20622 has 24 MA's), (32, 20679), (Start: 47 @20706 has 1 MA's), (78, 20796), (87, 20829), (95, 20883), (96, 20886), (97, 20889), (100, 20898), (101, 20901), (106, 20922), (110, 20934), (120, 20991), (122, 20997), (124, 21003), (125, 21006), (126, 21009), (129, 21018), (131, 21024), (133, 21051),

Gene: Cucurbita\_56 Start: 35118, Stop: 35573, Start Num: 22

Candidate Starts for Cucurbita\_56:

(19, 35103), (Start: 22 @35118 has 14 MA's), (29, 35145), (44, 35172), (58, 35202), (64, 35217), (77, 35265), (78, 35271), (80, 35277), (93, 35346), (100, 35373), (103, 35385), (114, 35463), (123, 35496), (124, 35499), (131, 35520),

Gene: Culver\_54 Start: 33557, Stop: 34012, Start Num: 22

Candidate Starts for Culver\_54:

(19, 33542), (Start: 22 @33557 has 14 MA's), (29, 33584), (44, 33611), (58, 33641), (64, 33656), (77, 33704), (78, 33710), (80, 33716), (93, 33785), (100, 33812), (103, 33824), (114, 33902), (123, 33935), (124, 33938), (131, 33959),

Gene: Danyall\_45 Start: 35790, Stop: 36179, Start Num: 67

Candidate Starts for Danyall\_45:

(Start: 67 @35790 has 50 MA's), (75, 35817), (76, 35820), (78, 35829), (87, 35862), (89, 35889), (93, 35904), (97, 35922), (100, 35931), (106, 35955), (119, 36021), (120, 36024), (121, 36027), (126, 36042), (127, 36045), (130, 36054), (139, 36117),

Gene: DaviePasture\_40 Start: 32896, Stop: 33291, Start Num: 24

Candidate Starts for DaviePasture\_40:

(Start: 24 @32896 has 46 MA's), (59, 32962), (77, 33016), (93, 33097), (95, 33109), (104, 33139), (117, 33208), (124, 33229), (125, 33232), (129, 33244),

Gene: Demsculpinboyz\_41 Start: 28731, Stop: 29120, Start Num: 34

Candidate Starts for Demsculpinboyz\_41:

(Start: 26 @28716 has 2 MA's), (32, 28728), (Start: 34 @28731 has 9 MA's), (43, 28746), (49, 28758), (53, 28767), (56, 28773), (63, 28788), (70, 28812), (76, 28836), (77, 28839), (78, 28845), (79, 28848), (80, 28851), (82, 28857), (84, 28866), (85, 28869), (91, 28914), (95, 28932), (99, 28944), (100, 28947), (101, 28950), (105, 28965), (114, 29016), (118, 29034), (119, 29037), (124, 29052), (128, 29064),

Gene: Dmitri\_26 Start: 22153, Stop: 22593, Start Num: 16

Candidate Starts for Dmitri\_26:

(Start: 16 @22153 has 3 MA's), (28, 22201), (40, 22225), (53, 22252), (55, 22255), (58, 22261), (Start: 67 @22285 has 50 MA's), (70, 22297), (91, 22399), (96, 22420), (97, 22423), (100, 22432), (101, 22435), (105, 22450), (118, 22519), (124, 22537), (134, 22588),

Gene: DocB7\_030 Start: 34120, Stop: 34521, Start Num: 37

Candidate Starts for DocB7\_030:

(8, 33898), (11, 33961), (25, 34090), (Start: 33 @34114 has 1 MA's), (37, 34120), (63, 34174), (66, 34183), (86, 34267), (96, 34327), (103, 34351), (114, 34402), (118, 34420), (121, 34429),

Gene: Doggs\_25 Start: 21797, Stop: 22240, Start Num: 16

Candidate Starts for Doggs\_25:

(1, 21401), (3, 21476), (4, 21545), (5, 21587), (6, 21608), (15, 21785), (Start: 16 @21797 has 3 MA's), (28, 21845), (38, 21866), (40, 21869), (53, 21896), (55, 21899), (58, 21905), (Start: 67 @21929 has 50 MA's), (70, 21941), (91, 22043), (96, 22064), (97, 22067), (100, 22076), (101, 22079), (105, 22094), (118, 22163), (124, 22181), (126, 22187), (132, 22226),

Gene: DoobyDoo\_39 Start: 32046, Stop: 32441, Start Num: 24

Candidate Starts for DoobyDoo\_39:

(Start: 24 @32046 has 46 MA's), (59, 32112), (77, 32166), (93, 32247), (95, 32259), (104, 32289), (117, 32358), (124, 32379), (125, 32382), (129, 32394),

Gene: Dusty\_52 Start: 33557, Stop: 34012, Start Num: 22

Candidate Starts for Dusty\_52:

(19, 33542), (Start: 22 @33557 has 14 MA's), (29, 33584), (44, 33611), (58, 33641), (64, 33656), (77, 33704), (78, 33710), (80, 33716), (93, 33785), (100, 33812), (103, 33824), (114, 33902), (123, 33935), (124, 33938), (131, 33959),

Gene: EMSquaredA\_26 Start: 21533, Stop: 21913, Start Num: 67

Candidate Starts for EMSquaredA\_26:

(Start: 67 @21533 has 50 MA's), (75, 21560), (76, 21563), (78, 21572), (87, 21605), (89, 21632), (97, 21665), (100, 21674), (106, 21698), (120, 21767), (121, 21770), (126, 21785), (127, 21788), (130, 21797), (139, 21860), (143, 21902),

Gene: EdnaMode\_22 Start: 18339, Stop: 18710, Start Num: 67

Candidate Starts for EdnaMode\_22:

(Start: 67 @18339 has 50 MA's), (75, 18366), (76, 18369), (78, 18378), (89, 18438), (97, 18471), (100, 18480), (106, 18504), (120, 18573), (121, 18576), (127, 18594), (128, 18597), (130, 18603), (131, 18606), (139, 18666),

Gene: EnalisNailo\_26 Start: 21682, Stop: 22062, Start Num: 67

Candidate Starts for EnalisNailo\_26:

(Start: 67 @21682 has 50 MA's), (75, 21709), (76, 21712), (78, 21721), (87, 21754), (89, 21781), (97, 21814), (100, 21823), (106, 21847), (120, 21916), (121, 21919), (126, 21934), (127, 21937), (130, 21946), (139, 22009), (143, 22051),

Gene: Engineer\_56 Start: 34232, Stop: 34687, Start Num: 22

Candidate Starts for Engineer\_56:

(19, 34217), (Start: 22 @34232 has 14 MA's), (29, 34259), (44, 34286), (58, 34316), (64, 34331), (77, 34379), (78, 34385), (80, 34391), (93, 34460), (100, 34487), (103, 34499), (114, 34577), (123, 34610), (124, 34613), (131, 34634),

Gene: Erutan\_40 Start: 32554, Stop: 32949, Start Num: 24

Candidate Starts for Erutan\_40:

(Start: 24 @32554 has 46 MA's), (59, 32620), (77, 32674), (85, 32704), (93, 32755), (95, 32767), (117, 32866), (124, 32887), (125, 32890), (129, 32902),

Gene: Eudoria\_26 Start: 21932, Stop: 22306, Start Num: 24

Candidate Starts for Eudoria\_26:

(13, 21848), (Start: 24 @21932 has 46 MA's), (48, 21980), (63, 22004), (65, 22010), (72, 22034), (75, 22043), (78, 22055), (119, 22247), (121, 22253), (122, 22256),

Gene: Evamon\_42 Start: 35809, Stop: 36198, Start Num: 67

Candidate Starts for Evamon\_42:



(Start: 67 @35809 has 50 MA's), (75, 35836), (76, 35839), (78, 35848), (87, 35881), (89, 35908), (93, 35923), (97, 35941), (100, 35950), (106, 35974), (119, 36040), (120, 36043), (121, 36046), (126, 36061), (127, 36064), (130, 36073), (139, 36136),

Gene: Eyes\_25 Start: 21050, Stop: 21436, Start Num: 67

Candidate Starts for Eyes\_25:

(Start: 67 @21050 has 50 MA's), (Start: 69 @21059 has 1 MA's), (71, 21065), (75, 21083), (76, 21086), (97, 21188), (100, 21197), (106, 21221), (120, 21290), (121, 21293), (125, 21305), (126, 21308), (127, 21311), (130, 21320), (142, 21419),

Gene: Eyre\_22 Start: 19166, Stop: 19540, Start Num: 24

Candidate Starts for Eyre\_22:

(13, 19082), (Start: 24 @19166 has 46 MA's), (63, 19238), (72, 19268), (75, 19277), (78, 19289), (82, 19301), (85, 19313), (93, 19364), (99, 19388), (103, 19403), (114, 19460),

Gene: FF47\_31 Start: 24709, Stop: 25119, Start Num: 31

Candidate Starts for FF47\_31:

(18, 24658), (Start: 31 @24709 has 1 MA's), (45, 24727), (64, 24772), (79, 24829), (112, 24988), (118, 25015), (119, 25018), (121, 25024), (124, 25033), (139, 25114),

Gene: Fairfaxidum\_24 Start: 21186, Stop: 21560, Start Num: 67

Candidate Starts for Fairfaxidum\_24:

(Start: 67 @21186 has 50 MA's), (76, 21222), (95, 21318), (96, 21321), (106, 21357), (122, 21432), (123, 21435), (127, 21447),

Gene: Faith5x5\_22 Start: 18281, Stop: 18646, Start Num: 67

Candidate Starts for Faith5x5\_22:

(Start: 67 @18281 has 50 MA's), (Start: 69 @18290 has 1 MA's), (76, 18317), (77, 18320), (79, 18329), (89, 18386), (90, 18392), (106, 18452), (120, 18521), (121, 18524), (126, 18539), (128, 18545), (130, 18551), (131, 18554),

Gene: Fireball\_44 Start: 35995, Stop: 36429, Start Num: 23

Candidate Starts for Fireball\_44:

(14, 35935), (15, 35959), (Start: 23 @35995 has 14 MA's), (55, 36070), (Start: 67 @36100 has 50 MA's), (75, 36133), (79, 36148), (80, 36151), (103, 36259), (112, 36307), (114, 36316), (124, 36352), (126, 36358), (129, 36367),

Gene: Floral\_26 Start: 21533, Stop: 21913, Start Num: 67

Candidate Starts for Floral\_26:

(Start: 67 @21533 has 50 MA's), (75, 21560), (76, 21563), (78, 21572), (87, 21605), (89, 21632), (97, 21665), (100, 21674), (106, 21698), (120, 21767), (121, 21770), (126, 21785), (127, 21788), (130, 21797), (139, 21860), (143, 21902),

Gene: Frickyeah\_26 Start: 20827, Stop: 21267, Start Num: 17

Candidate Starts for Frickyeah\_26:

(Start: 17 @20827 has 24 MA's), (32, 20884), (Start: 47 @20911 has 1 MA's), (78, 21001), (87, 21034), (95, 21088), (96, 21091), (97, 21094), (100, 21103), (101, 21106), (106, 21127), (110, 21139), (120, 21196), (122, 21202), (124, 21208), (125, 21211), (126, 21214), (129, 21223), (131, 21229), (133, 21256),

Gene: Fugax\_46 Start: 36042, Stop: 36476, Start Num: 23

Candidate Starts for Fugax\_46:

(14, 35982), (15, 36006), (Start: 23 @36042 has 14 MA's), (55, 36117), (Start: 67 @36147 has 50 MA's), (75, 36180), (79, 36195), (80, 36198), (103, 36306), (112, 36354), (114, 36363), (124, 36399), (126, 36405), (129, 36414),

Gene: Fulcrum\_41 Start: 33075, Stop: 33470, Start Num: 24

Candidate Starts for Fulcrum\_41:

(Start: 24 @33075 has 46 MA's), (59, 33141), (77, 33195), (93, 33276), (95, 33288), (104, 33318), (117, 33387), (124, 33408), (125, 33411), (129, 33423),

Gene: GEazy\_25 Start: 21065, Stop: 21451, Start Num: 67

Candidate Starts for GEazy\_25:

(Start: 67 @21065 has 50 MA's), (Start: 69 @21074 has 1 MA's), (71, 21080), (75, 21098), (76, 21101), (97, 21203), (100, 21212), (106, 21236), (120, 21305), (121, 21308), (126, 21323), (127, 21326), (130, 21335), (142, 21434),

Gene: GOATification\_41 Start: 33075, Stop: 33470, Start Num: 24

Candidate Starts for GOATification\_41:

(Start: 24 @33075 has 46 MA's), (59, 33141), (77, 33195), (93, 33276), (95, 33288), (104, 33318), (117, 33387), (124, 33408), (125, 33411), (129, 33423),

Gene: Geeche\_53 Start: 33648, Stop: 34103, Start Num: 22

Candidate Starts for Geeche\_53:

(19, 33633), (Start: 22 @33648 has 14 MA's), (29, 33675), (44, 33702), (58, 33732), (64, 33747), (77, 33795), (78, 33801), (80, 33807), (93, 33876), (100, 33903), (103, 33915), (114, 33993), (123, 34026), (124, 34029), (131, 34050),

Gene: Genamy16\_41 Start: 31366, Stop: 31752, Start Num: 24

Candidate Starts for Genamy16\_41:

(Start: 24 @31366 has 46 MA's), (77, 31486), (85, 31516), (88, 31543), (93, 31567), (95, 31579), (104, 31609), (105, 31612), (117, 31678), (124, 31699), (125, 31702), (129, 31714),

Gene: Getalong\_28 Start: 21864, Stop: 22304, Start Num: 17

Candidate Starts for Getalong\_28:

(Start: 17 @21864 has 24 MA's), (32, 21921), (Start: 47 @21948 has 1 MA's), (78, 22038), (87, 22071), (95, 22125), (96, 22128), (97, 22131), (100, 22140), (101, 22143), (106, 22164), (110, 22176), (120, 22233), (122, 22239), (124, 22245), (125, 22248), (126, 22251), (129, 22260), (131, 22266), (133, 22293),

Gene: Gezellig\_44 Start: 35941, Stop: 36330, Start Num: 67

Candidate Starts for Gezellig\_44:

(Start: 67 @35941 has 50 MA's), (75, 35968), (76, 35971), (78, 35980), (87, 36013), (89, 36040), (93, 36055), (97, 36073), (100, 36082), (101, 36085), (106, 36106), (119, 36172), (120, 36175), (121, 36178), (126, 36193), (127, 36196), (130, 36205), (131, 36208), (139, 36268),

Gene: Gibbin\_41 Start: 33173, Stop: 33559, Start Num: 24

Candidate Starts for Gibbin\_41:

(Start: 24 @33173 has 46 MA's), (59, 33239), (77, 33293), (93, 33374), (95, 33386), (104, 33416), (117, 33485), (124, 33506), (125, 33509), (129, 33521),

Gene: Gretellyn\_40 Start: 33439, Stop: 33834, Start Num: 24

Candidate Starts for Gretellyn\_40:

(Start: 24 @33439 has 46 MA's), (59, 33505), (77, 33559), (85, 33589), (93, 33640), (95, 33652), (104, 33682), (117, 33751), (124, 33772), (125, 33775), (129, 33787),

Gene: Gudmit\_23 Start: 19228, Stop: 19611, Start Num: 26

Candidate Starts for Gudmit\_23:

(Start: 26 @19228 has 2 MA's), (55, 19285), (71, 19324), (73, 19336), (78, 19354), (80, 19360), (83, 19372), (101, 19459), (103, 19468), (106, 19480), (112, 19516), (116, 19537), (121, 19552), (125, 19564),

Gene: Halo3\_43 Start: 36234, Stop: 36623, Start Num: 67

Candidate Starts for Halo3\_43:

(Start: 67 @36234 has 50 MA's), (75, 36261), (76, 36264), (78, 36273), (87, 36306), (89, 36333), (93, 36348), (97, 36366), (100, 36375), (106, 36399), (119, 36465), (120, 36468), (121, 36471), (126, 36486), (127, 36489), (130, 36498), (139, 36561),

Gene: HannahD\_25 Start: 21065, Stop: 21451, Start Num: 67

Candidate Starts for HannahD\_25:

(Start: 67 @21065 has 50 MA's), (Start: 69 @21074 has 1 MA's), (71, 21080), (75, 21098), (76, 21101), (97, 21203), (100, 21212), (106, 21236), (120, 21305), (121, 21308), (126, 21323), (127, 21326), (130, 21335), (142, 21434),

Gene: Holliday\_27 Start: 21169, Stop: 21609, Start Num: 17

Candidate Starts for Holliday\_27:

(Start: 17 @21169 has 24 MA's), (32, 21226), (Start: 47 @21253 has 1 MA's), (78, 21343), (87, 21376), (95, 21430), (96, 21433), (97, 21436), (100, 21445), (101, 21448), (106, 21469), (110, 21481), (120, 21538), (122, 21544), (124, 21550), (125, 21553), (126, 21556), (129, 21565), (131, 21571), (133, 21598),

Gene: Horus\_27 Start: 21086, Stop: 21526, Start Num: 17

Candidate Starts for Horus\_27:

(Start: 17 @21086 has 24 MA's), (32, 21143), (Start: 47 @21170 has 1 MA's), (78, 21260), (87, 21293), (95, 21347), (96, 21350), (97, 21353), (100, 21362), (101, 21365), (106, 21386), (110, 21398), (120, 21455), (122, 21461), (124, 21467), (125, 21470), (126, 21473), (129, 21482), (131, 21488), (133, 21515),

Gene: Hyzer\_26 Start: 22472, Stop: 22846, Start Num: 24

Candidate Starts for Hyzer\_26:

(Start: 24 @22472 has 46 MA's), (48, 22520), (63, 22544), (72, 22574), (75, 22583), (78, 22595), (82, 22607), (92, 22667), (119, 22787), (121, 22793),

Gene: Jabbawokkie\_43 Start: 30179, Stop: 30568, Start Num: 34

Candidate Starts for Jabbawokkie\_43:

(Start: 26 @30164 has 2 MA's), (32, 30176), (Start: 34 @30179 has 9 MA's), (43, 30194), (49, 30206), (53, 30215), (56, 30221), (63, 30236), (70, 30260), (76, 30284), (77, 30287), (78, 30293), (80, 30299), (82, 30305), (84, 30314), (85, 30317), (91, 30362), (95, 30380), (99, 30392), (100, 30395), (101, 30398), (105, 30413), (114, 30464), (118, 30482), (119, 30485), (124, 30500), (128, 30512),

Gene: Jalebi\_39 Start: 33608, Stop: 34003, Start Num: 24

Candidate Starts for Jalebi\_39:

(Start: 24 @33608 has 46 MA's), (59, 33674), (77, 33728), (85, 33758), (93, 33809), (95, 33821), (104, 33851), (117, 33920), (124, 33941), (125, 33944), (129, 33956),

Gene: Jambalaya\_43 Start: 35588, Stop: 35977, Start Num: 67

Candidate Starts for Jambalaya\_43:

(Start: 67 @35588 has 50 MA's), (75, 35615), (76, 35618), (78, 35627), (87, 35660), (89, 35687), (93, 35702), (97, 35720), (100, 35729), (106, 35753), (119, 35819), (120, 35822), (121, 35825), (126, 35840), (127, 35843), (130, 35852), (139, 35915),

Gene: Jamemuya19\_40 Start: 30956, Stop: 31342, Start Num: 24

Candidate Starts for Jamemuya19\_40:

(Start: 24 @30956 has 46 MA's), (77, 31076), (85, 31106), (88, 31133), (93, 31157), (95, 31169), (104, 31199), (105, 31202), (117, 31268), (124, 31289), (125, 31292), (129, 31304),

Gene: JuJu\_25 Start: 20877, Stop: 21227, Start Num: 67

Candidate Starts for JuJu\_25:

(Start: 67 @20877 has 50 MA's), (77, 20910), (80, 20922), (81, 20925), (91, 20985), (95, 21003), (99, 21015), (123, 21117), (124, 21120), (131, 21141),

Gene: Kamaru\_27 Start: 21169, Stop: 21609, Start Num: 17

Candidate Starts for Kamaru\_27:

(Start: 17 @21169 has 24 MA's), (32, 21226), (Start: 47 @21253 has 1 MA's), (78, 21343), (87, 21376), (95, 21430), (96, 21433), (97, 21436), (100, 21445), (101, 21448), (106, 21469), (110, 21481), (120, 21538), (122, 21544), (124, 21550), (125, 21553), (126, 21556), (129, 21565), (131, 21571), (133, 21598),

Gene: KappaFarmDelta\_26 Start: 21305, Stop: 21655, Start Num: 67

Candidate Starts for KappaFarmDelta\_26:

(Start: 67 @21305 has 50 MA's), (77, 21338), (95, 21431), (97, 21437), (98, 21440), (104, 21461), (106, 21470), (112, 21503), (126, 21554), (131, 21569),

Gene: Kenna\_26 Start: 21062, Stop: 21502, Start Num: 17

Candidate Starts for Kenna\_26:

(Start: 17 @21062 has 24 MA's), (32, 21119), (Start: 47 @21146 has 1 MA's), (78, 21236), (87, 21269), (95, 21323), (96, 21326), (97, 21329), (100, 21338), (101, 21341), (106, 21362), (110, 21374), (120, 21431), (122, 21437), (124, 21443), (125, 21446), (126, 21449), (129, 21458), (131, 21464), (133, 21491),

Gene: KimmyK\_44 Start: 36523, Stop: 36912, Start Num: 67

Candidate Starts for KimmyK\_44:

(Start: 67 @36523 has 50 MA's), (75, 36550), (76, 36553), (78, 36562), (87, 36595), (89, 36622), (93, 36637), (97, 36655), (100, 36664), (101, 36667), (106, 36688), (119, 36754), (120, 36757), (121, 36760), (126, 36775), (127, 36778), (130, 36787), (131, 36790), (139, 36850),

Gene: Kita\_26 Start: 21932, Stop: 22306, Start Num: 24

Candidate Starts for Kita\_26:

(13, 21848), (Start: 24 @21932 has 46 MA's), (48, 21980), (63, 22004), (65, 22010), (72, 22034), (75, 22043), (78, 22055), (119, 22247), (121, 22253), (122, 22256),

Gene: Kuwabara\_26 Start: 20488, Stop: 20928, Start Num: 17

Candidate Starts for Kuwabara\_26:

(Start: 17 @20488 has 24 MA's), (32, 20545), (Start: 47 @20572 has 1 MA's), (78, 20662), (87, 20695), (95, 20749), (96, 20752), (97, 20755), (100, 20764), (101, 20767), (106, 20788), (110, 20800), (120, 20857), (122, 20863), (124, 20869), (125, 20872), (126, 20875), (129, 20884), (131, 20890), (133, 20917),

Gene: Lamberg\_22 Start: 18339, Stop: 18710, Start Num: 67

Candidate Starts for Lamberg\_22:

(Start: 67 @18339 has 50 MA's), (75, 18366), (76, 18369), (78, 18378), (89, 18438), (97, 18471), (100, 18480), (106, 18504), (120, 18573), (121, 18576), (127, 18594), (128, 18597), (130, 18603), (131, 18606), (139, 18666),

Gene: Lambo\_40 Start: 33093, Stop: 33488, Start Num: 24

Candidate Starts for Lambo\_40:

(Start: 24 @33093 has 46 MA's), (59, 33159), (77, 33213), (85, 33243), (93, 33294), (95, 33306), (104, 33336), (117, 33405), (124, 33426), (125, 33429), (129, 33441),

Gene: Leroy\_27 Start: 21087, Stop: 21527, Start Num: 17

Candidate Starts for Leroy\_27:

(Start: 17 @21087 has 24 MA's), (32, 21144), (Start: 47 @21171 has 1 MA's), (78, 21261), (87, 21294), (95, 21348), (96, 21351), (97, 21354), (100, 21363), (101, 21366), (106, 21387), (110, 21399), (120, 21456), (122, 21462), (124, 21468), (125, 21471), (126, 21474), (129, 21483), (131, 21489), (133, 21516),

Gene: LilSpotty\_36 Start: 26778, Stop: 27152, Start Num: 34

Candidate Starts for LilSpotty\_36:

(20, 26739), (32, 26775), (Start: 34 @26778 has 9 MA's), (77, 26886), (79, 26895), (81, 26901), (87, 26925), (91, 26961), (95, 26979), (100, 26994), (105, 27012), (111, 27051), (124, 27099),

Gene: Lila22\_39 Start: 33048, Stop: 33443, Start Num: 24

Candidate Starts for Lila22\_39:

(Start: 24 @33048 has 46 MA's), (59, 33114), (77, 33168), (85, 33198), (93, 33249), (95, 33261), (117, 33360), (124, 33381), (125, 33384), (129, 33396),

Gene: Lilas\_26 Start: 21682, Stop: 22062, Start Num: 67

Candidate Starts for Lilas\_26:

(Start: 67 @21682 has 50 MA's), (75, 21709), (76, 21712), (78, 21721), (87, 21754), (89, 21781), (97, 21814), (100, 21823), (106, 21847), (120, 21916), (121, 21919), (126, 21934), (127, 21937), (130, 21946), (139, 22009), (143, 22051),

Gene: LitninMcQueen\_26 Start: 20818, Stop: 21258, Start Num: 17

Candidate Starts for LitninMcQueen\_26:

(Start: 17 @20818 has 24 MA's), (32, 20875), (Start: 47 @20902 has 1 MA's), (78, 20992), (87, 21025), (95, 21079), (96, 21082), (97, 21085), (100, 21094), (101, 21097), (106, 21118), (110, 21130), (120, 21187), (122, 21193), (124, 21199), (125, 21202), (129, 21214), (131, 21220), (133, 21247),

Gene: Lozinak\_55 Start: 34287, Stop: 34742, Start Num: 22

Candidate Starts for Lozinak\_55:

(19, 34272), (Start: 22 @34287 has 14 MA's), (29, 34314), (44, 34341), (58, 34371), (64, 34386), (77, 34434), (78, 34440), (80, 34446), (93, 34515), (100, 34542), (103, 34554), (114, 34632), (123, 34665), (124, 34668), (131, 34689),

Gene: Lton\_22 Start: 18368, Stop: 18739, Start Num: 67

Candidate Starts for Lton\_22:

(Start: 67 @18368 has 50 MA's), (75, 18395), (76, 18398), (78, 18407), (89, 18467), (97, 18500), (100, 18509), (106, 18533), (120, 18602), (121, 18605), (127, 18623), (128, 18626), (130, 18632), (131, 18635), (139, 18695),

Gene: LuckyLeo\_39 Start: 32448, Stop: 32855, Start Num: 24

Candidate Starts for LuckyLeo\_39:

(Start: 24 @32448 has 46 MA's), (41, 32481), (72, 32553), (76, 32565), (77, 32568), (82, 32586), (88, 32625), (92, 32646), (101, 32679), (104, 32691), (116, 32757), (119, 32766), (121, 32772), (124, 32781), (129, 32796),

Gene: LunaStella\_37 Start: 30071, Stop: 30460, Start Num: 34

Candidate Starts for LunaStella\_37:

(Start: 26 @30056 has 2 MA's), (Start: 34 @30071 has 9 MA's), (Start: 46 @30089 has 1 MA's), (50, 30101), (52, 30104), (53, 30107), (56, 30113), (58, 30116), (59, 30119), (63, 30128), (Start: 67 @30140 has 50 MA's), (76, 30176), (77, 30179), (79, 30188), (80, 30191), (82, 30197), (87, 30218), (91, 30254), (95, 30272), (97, 30278), (99, 30284), (100, 30287), (101, 30290), (104, 30302), (106, 30311), (111, 30344), (112, 30347), (119, 30377), (124, 30392), (128, 30404),

Gene: Lutum\_27 Start: 21062, Stop: 21502, Start Num: 17

Candidate Starts for Lutum\_27:

(Start: 17 @21062 has 24 MA's), (32, 21119), (Start: 47 @21146 has 1 MA's), (78, 21236), (87, 21269), (95, 21323), (96, 21326), (97, 21329), (100, 21338), (101, 21341), (106, 21362), (110, 21374), (120, 21431), (122, 21437), (124, 21443), (125, 21446), (126, 21449), (129, 21458), (131, 21464), (133, 21491),

Gene: Maco6\_29 Start: 24049, Stop: 24459, Start Num: 33

Candidate Starts for Maco6\_29:

(30, 24040), (Start: 33 @24049 has 1 MA's), (64, 24112), (79, 24169), (112, 24328), (121, 24364), (124, 24373), (139, 24454),

Gene: MagicMan\_25 Start: 21371, Stop: 21757, Start Num: 67

Candidate Starts for MagicMan\_25:

(Start: 67 @21371 has 50 MA's), (Start: 69 @21380 has 1 MA's), (71, 21386), (76, 21407), (97, 21509), (100, 21518), (106, 21542), (120, 21611), (121, 21614), (125, 21626), (126, 21629), (127, 21632), (130, 21641), (142, 21740),

Gene: Malisha\_28 Start: 22947, Stop: 23384, Start Num: 17

Candidate Starts for Malisha\_28:

(Start: 17 @22947 has 24 MA's), (32, 23004), (Start: 47 @23031 has 1 MA's), (49, 23034), (50, 23037), (58, 23052), (63, 23064), (79, 23124), (87, 23154), (96, 23211), (97, 23214), (101, 23226), (104, 23238), (105, 23241), (106, 23247), (110, 23259), (115, 23295), (116, 23304), (120, 23316), (122, 23322), (124, 23328), (125, 23331), (126, 23334), (129, 23343), (131, 23349),

Gene: Manasvini\_26 Start: 21932, Stop: 22306, Start Num: 24

Candidate Starts for Manasvini\_26:

(13, 21848), (Start: 24 @21932 has 46 MA's), (48, 21980), (63, 22004), (65, 22010), (72, 22034), (75, 22043), (78, 22055), (119, 22247), (121, 22253), (122, 22256),

Gene: Maridalia\_25 Start: 21932, Stop: 22306, Start Num: 24

Candidate Starts for Maridalia\_25:

(13, 21848), (Start: 24 @21932 has 46 MA's), (48, 21980), (63, 22004), (65, 22010), (72, 22034), (75, 22043), (78, 22055), (119, 22247), (121, 22253), (122, 22256),

Gene: Marteena\_26 Start: 21533, Stop: 21913, Start Num: 67

Candidate Starts for Marteena\_26:

(Start: 67 @21533 has 50 MA's), (75, 21560), (76, 21563), (78, 21572), (87, 21605), (89, 21632), (97, 21665), (100, 21674), (106, 21698), (120, 21767), (121, 21770), (126, 21785), (127, 21788), (130, 21797), (139, 21860), (143, 21902),

Gene: Matteo\_22 Start: 18276, Stop: 18656, Start Num: 67

Candidate Starts for Matteo\_22:

(Start: 67 @18276 has 50 MA's), (75, 18303), (76, 18306), (78, 18315), (87, 18348), (89, 18375), (97, 18408), (100, 18417), (106, 18441), (120, 18510), (121, 18513), (126, 18528), (127, 18531), (130, 18540), (139, 18603),

Gene: Miskis\_56 Start: 33592, Stop: 34047, Start Num: 22

Candidate Starts for Miskis\_56:

(19, 33577), (Start: 22 @33592 has 14 MA's), (29, 33619), (44, 33646), (58, 33676), (64, 33691), (77, 33739), (78, 33745), (80, 33751), (93, 33820), (100, 33847), (103, 33859), (114, 33937), (123, 33970), (124, 33973), (131, 33994),

Gene: MoiGyank\_42 Start: 33478, Stop: 33873, Start Num: 24

Candidate Starts for MoiGyank\_42:

(Start: 24 @33478 has 46 MA's), (59, 33544), (77, 33598), (85, 33628), (93, 33679), (95, 33691), (104, 33721), (117, 33790), (124, 33811), (125, 33814), (129, 33826),

Gene: MooMoo\_33 Start: 28618, Stop: 29007, Start Num: 34

Candidate Starts for MooMoo\_33:

(Start: 26 @28603 has 2 MA's), (Start: 34 @28618 has 9 MA's), (Start: 46 @28636 has 1 MA's), (50, 28648), (52, 28651), (53, 28654), (56, 28660), (58, 28663), (59, 28666), (63, 28675), (Start: 67 @28687 has 50 MA's), (76, 28723), (77, 28726), (79, 28735), (80, 28738), (82, 28744), (87, 28765), (91, 28801), (95, 28819), (97, 28825), (99, 28831), (100, 28834), (101, 28837), (104, 28849), (106, 28858), (111, 28891), (112, 28894), (119, 28924), (124, 28939),

Gene: Moosehead\_22 Start: 18289, Stop: 18654, Start Num: 67

Candidate Starts for Moosehead\_22:

(Start: 67 @18289 has 50 MA's), (Start: 69 @18298 has 1 MA's), (79, 18337), (89, 18394), (90, 18400), (113, 18502), (119, 18526), (120, 18529), (121, 18532), (126, 18547), (128, 18553), (130, 18559), (131, 18562),

Gene: MortyNRick\_26 Start: 20794, Stop: 21234, Start Num: 17

Candidate Starts for MortyNRick\_26:

(Start: 17 @20794 has 24 MA's), (32, 20851), (Start: 47 @20878 has 1 MA's), (78, 20968), (87, 21001), (95, 21055), (96, 21058), (97, 21061), (100, 21070), (101, 21073), (106, 21094), (110, 21106), (120, 21163), (122, 21169), (124, 21175), (125, 21178), (126, 21181), (129, 21190), (131, 21196), (133, 21223),

Gene: Muddy\_31 Start: 24990, Stop: 25400, Start Num: 31

Candidate Starts for Muddy\_31:

(Start: 31 @24990 has 1 MA's), (64, 25053), (105, 25227), (106, 25233), (107, 25236), (112, 25269), (118, 25296), (121, 25305), (124, 25314), (137, 25377), (139, 25395),

Gene: Mutzi\_42 Start: 36730, Stop: 37164, Start Num: 23

Candidate Starts for Mutzi\_42:

(14, 36670), (15, 36694), (Start: 23 @36730 has 14 MA's), (55, 36805), (Start: 67 @36835 has 50 MA's), (75, 36868), (79, 36883), (80, 36886), (103, 36994), (112, 37042), (124, 37087), (126, 37093), (129, 37102),

Gene: Neobush\_26 Start: 21932, Stop: 22306, Start Num: 24

Candidate Starts for Neobush\_26:

(13, 21848), (Start: 24 @21932 has 46 MA's), (48, 21980), (63, 22004), (65, 22010), (72, 22034), (75, 22043), (78, 22055), (119, 22247), (121, 22253), (122, 22256),

Gene: Nettuno\_22 Start: 18342, Stop: 18710, Start Num: 67

Candidate Starts for Nettuno\_22:

(Start: 67 @18342 has 50 MA's), (75, 18369), (76, 18372), (78, 18381), (87, 18414), (89, 18441), (97, 18474), (100, 18483), (106, 18507), (120, 18576), (121, 18579), (126, 18594), (127, 18597), (130, 18606), (139, 18669),

Gene: NorManre\_41 Start: 32684, Stop: 33079, Start Num: 24

Candidate Starts for NorManre\_41:

(Start: 24 @32684 has 46 MA's), (59, 32750), (77, 32804), (93, 32885), (95, 32897), (104, 32927), (117, 32996), (124, 33017), (125, 33020), (129, 33032),

Gene: Norvs\_55 Start: 33831, Stop: 34286, Start Num: 22

Candidate Starts for Norvs\_55:

(19, 33816), (Start: 22 @33831 has 14 MA's), (29, 33858), (44, 33885), (58, 33915), (64, 33930), (77, 33978), (78, 33984), (80, 33990), (93, 34059), (100, 34086), (103, 34098), (114, 34176), (123, 34209), (124, 34212), (131, 34233),

Gene: NovaSharks\_40 Start: 30956, Stop: 31342, Start Num: 24

Candidate Starts for NovaSharks\_40:

(Start: 24 @30956 has 46 MA's), (77, 31076), (85, 31106), (88, 31133), (93, 31157), (95, 31169), (104, 31199), (105, 31202), (117, 31268), (124, 31289), (125, 31292), (129, 31304),

Gene: Nubi\_43 Start: 35875, Stop: 36309, Start Num: 23

Candidate Starts for Nubi\_43:

(14, 35815), (15, 35839), (Start: 23 @35875 has 14 MA's), (55, 35950), (Start: 67 @35980 has 50 MA's), (75, 36013), (79, 36028), (80, 36031), (103, 36139), (112, 36187), (114, 36196), (124, 36232), (126, 36238), (129, 36247),

Gene: Obliviate\_24 Start: 20727, Stop: 21077, Start Num: 67

Candidate Starts for Obliviate\_24:

(Start: 67 @20727 has 50 MA's), (77, 20760), (95, 20853), (97, 20859), (98, 20862), (104, 20883), (106, 20892), (112, 20925), (126, 20976), (131, 20991), (138, 21042),

Gene: OneDirection\_21 Start: 18308, Stop: 18682, Start Num: 67

Candidate Starts for OneDirection\_21:

(11, 18086), (12, 18116), (Start: 67 @18308 has 50 MA's), (70, 18320), (71, 18323), (76, 18344), (77, 18347), (79, 18356), (87, 18386), (95, 18440), (103, 18467), (106, 18479), (121, 18551), (123, 18557),

Gene: OneUp\_48 Start: 31264, Stop: 31683, Start Num: 22

Candidate Starts for OneUp\_48:

(19, 31252), (Start: 22 @31264 has 14 MA's), (36, 31288), (64, 31339), (Start: 68 @31354 has 1 MA's), (75, 31381), (76, 31384), (77, 31387), (78, 31393), (79, 31396), (84, 31414), (93, 31468), (106, 31519), (107, 31522), (109, 31543), (123, 31612), (124, 31615), (131, 31636),

Gene: Opie\_25 Start: 21395, Stop: 21781, Start Num: 67

Candidate Starts for Opie\_25:

(Start: 67 @21395 has 50 MA's), (Start: 69 @21404 has 1 MA's), (71, 21410), (75, 21428), (76, 21431), (97, 21533), (99, 21539), (100, 21542), (106, 21566), (119, 21632), (120, 21635), (121, 21638), (125, 21650), (126, 21653), (127, 21656), (130, 21665), (142, 21764),

Gene: OtterstedtS21\_40 Start: 32755, Stop: 33150, Start Num: 24

Candidate Starts for OtterstedtS21\_40:



(Start: 24 @32755 has 46 MA's), (59, 32821), (77, 32875), (85, 32905), (93, 32956), (95, 32968), (104, 32998), (117, 33067), (124, 33088), (125, 33091), (129, 33103),

Gene: PantheRoc\_25 Start: 21130, Stop: 21504, Start Num: 24  
Candidate Starts for PantheRoc\_25:

(13, 21046), (Start: 24 @21130 has 46 MA's), (48, 21178), (63, 21202), (65, 21208), (72, 21232), (75, 21241), (78, 21253), (119, 21445), (121, 21451), (122, 21454),

Gene: ParvusTarda\_40 Start: 32223, Stop: 32618, Start Num: 24  
Candidate Starts for ParvusTarda\_40:

(Start: 24 @32223 has 46 MA's), (59, 32289), (74, 32334), (77, 32343), (85, 32373), (93, 32424), (95, 32436), (117, 32535), (124, 32556), (125, 32559), (129, 32571),

Gene: Patos\_41 Start: 32684, Stop: 33079, Start Num: 24  
Candidate Starts for Patos\_41:

(Start: 24 @32684 has 46 MA's), (59, 32750), (77, 32804), (93, 32885), (95, 32897), (104, 32927), (117, 32996), (124, 33017), (125, 33020), (129, 33032),

Gene: Pepperoni\_23 Start: 19151, Stop: 19531, Start Num: 67  
Candidate Starts for Pepperoni\_23:

(Start: 67 @19151 has 50 MA's), (75, 19178), (76, 19181), (78, 19190), (87, 19223), (89, 19250), (97, 19283), (100, 19292), (106, 19316), (120, 19385), (121, 19388), (127, 19406), (128, 19409), (130, 19415), (131, 19418), (139, 19478),

Gene: Periwinkle\_29 Start: 21531, Stop: 21971, Start Num: 17  
Candidate Starts for Periwinkle\_29:

(Start: 17 @21531 has 24 MA's), (32, 21588), (Start: 47 @21615 has 1 MA's), (78, 21705), (87, 21738), (95, 21792), (96, 21795), (97, 21798), (100, 21807), (101, 21810), (106, 21831), (110, 21843), (116, 21888), (120, 21900), (122, 21906), (124, 21912), (125, 21915), (126, 21918), (129, 21927), (131, 21933), (133, 21960),

Gene: Petra\_26 Start: 20781, Stop: 21155, Start Num: 24  
Candidate Starts for Petra\_26:

(Start: 24 @20781 has 46 MA's), (41, 20814), (48, 20829), (72, 20883), (75, 20892), (78, 20904), (92, 20976), (119, 21096), (121, 21102), (124, 21111),

Gene: Phabuloso\_26 Start: 20818, Stop: 21258, Start Num: 17  
Candidate Starts for Phabuloso\_26:

(Start: 17 @20818 has 24 MA's), (32, 20875), (Start: 47 @20902 has 1 MA's), (78, 20992), (87, 21025), (95, 21079), (96, 21082), (97, 21085), (100, 21094), (101, 21097), (106, 21118), (110, 21130), (120, 21187), (122, 21193), (124, 21199), (125, 21202), (126, 21205), (129, 21214), (131, 21220), (133, 21247),

Gene: PhinkBoden\_54 Start: 34212, Stop: 34667, Start Num: 22  
Candidate Starts for PhinkBoden\_54:

(19, 34197), (Start: 22 @34212 has 14 MA's), (29, 34239), (44, 34266), (58, 34296), (64, 34311), (77, 34359), (78, 34365), (80, 34371), (93, 34440), (100, 34467), (103, 34479), (114, 34557), (123, 34590), (124, 34593), (131, 34614),

Gene: Phistory\_28 Start: 21852, Stop: 22292, Start Num: 17  
Candidate Starts for Phistory\_28:

(Start: 17 @21852 has 24 MA's), (32, 21909), (Start: 47 @21936 has 1 MA's), (78, 22026), (87, 22059), (95, 22113), (96, 22116), (97, 22119), (100, 22128), (101, 22131), (106, 22152), (110, 22164),

(120, 22221), (122, 22227), (124, 22233), (125, 22236), (126, 22239), (129, 22248), (131, 22254), (133, 22281),

Gene: Phlop\_42 Start: 35956, Stop: 36390, Start Num: 23

Candidate Starts for Phlop\_42:

(14, 35896), (15, 35920), (Start: 23 @35956 has 14 MA's), (55, 36031), (Start: 67 @36061 has 50 MA's), (75, 36094), (79, 36109), (80, 36112), (103, 36220), (112, 36268), (114, 36277), (124, 36313), (126, 36319), (129, 36328),

Gene: Pickett\_22 Start: 18266, Stop: 18634, Start Num: 67

Candidate Starts for Pickett\_22:

(Start: 67 @18266 has 50 MA's), (75, 18293), (76, 18296), (78, 18305), (87, 18338), (89, 18365), (97, 18398), (100, 18407), (106, 18431), (120, 18500), (121, 18503), (126, 18518), (127, 18521), (130, 18530), (139, 18593),

Gene: PinkCoffee\_45 Start: 36059, Stop: 36493, Start Num: 23

Candidate Starts for PinkCoffee\_45:

(14, 35999), (15, 36023), (Start: 23 @36059 has 14 MA's), (55, 36134), (Start: 67 @36164 has 50 MA's), (75, 36197), (79, 36212), (80, 36215), (103, 36323), (112, 36371), (114, 36380), (124, 36416), (126, 36422), (129, 36431),

Gene: Pollux\_26 Start: 21533, Stop: 21913, Start Num: 67

Candidate Starts for Pollux\_26:

(Start: 67 @21533 has 50 MA's), (75, 21560), (76, 21563), (78, 21572), (87, 21605), (89, 21632), (97, 21665), (100, 21674), (106, 21698), (120, 21767), (121, 21770), (126, 21785), (127, 21788), (130, 21797), (139, 21860), (143, 21902),

Gene: Portcullis\_44 Start: 35309, Stop: 35698, Start Num: 67

Candidate Starts for Portcullis\_44:

(Start: 67 @35309 has 50 MA's), (75, 35336), (76, 35339), (78, 35348), (87, 35381), (89, 35408), (93, 35423), (97, 35441), (100, 35450), (106, 35474), (119, 35540), (120, 35543), (121, 35546), (126, 35561), (127, 35564), (130, 35573), (139, 35636),

Gene: PrincePatrick\_24 Start: 21182, Stop: 21556, Start Num: 67

Candidate Starts for PrincePatrick\_24:

(Start: 67 @21182 has 50 MA's), (76, 21218), (95, 21314), (96, 21317), (106, 21353), (122, 21428), (123, 21431), (127, 21443),

Gene: PullumCavea\_42 Start: 35956, Stop: 36390, Start Num: 23

Candidate Starts for PullumCavea\_42:

(14, 35896), (15, 35920), (Start: 23 @35956 has 14 MA's), (55, 36031), (Start: 67 @36061 has 50 MA's), (75, 36094), (79, 36109), (80, 36112), (103, 36220), (112, 36268), (114, 36277), (124, 36313), (126, 36319), (129, 36328),

Gene: REQ2\_26 Start: 22510, Stop: 22854, Start Num: 62

Candidate Starts for REQ2\_26:

(62, 22510), (Start: 68 @22528 has 1 MA's), (76, 22558), (79, 22570), (80, 22573), (84, 22588), (96, 22657), (119, 22759), (120, 22762), (124, 22774),

Gene: Ranch\_40 Start: 31581, Stop: 31976, Start Num: 24

Candidate Starts for Ranch\_40:

(Start: 24 @31581 has 46 MA's), (59, 31647), (77, 31701), (85, 31731), (93, 31782), (95, 31794), (104, 31824), (117, 31893), (124, 31914), (125, 31917), (129, 31929),

Gene: RayTheFireFly\_26 Start: 22130, Stop: 22573, Start Num: 16

Candidate Starts for RayTheFireFly\_26:

(1, 21734), (2, 21785), (5, 21920), (6, 21941), (15, 22118), (Start: 16 @22130 has 3 MA's), (28, 22178), (40, 22202), (53, 22229), (55, 22232), (58, 22238), (Start: 67 @22262 has 50 MA's), (70, 22274), (91, 22376), (96, 22397), (97, 22400), (100, 22409), (101, 22412), (105, 22427), (124, 22514),

Gene: Rem711\_40 Start: 30711, Stop: 31142, Start Num: 47

Candidate Starts for Rem711\_40:

(21, 30645), (27, 30669), (35, 30687), (Start: 47 @30711 has 1 MA's), (72, 30780), (78, 30801), (82, 30813), (94, 30879), (100, 30903), (122, 31002), (124, 31008), (133, 31059),

Gene: RogerDodger\_46 Start: 36138, Stop: 36527, Start Num: 67

Candidate Starts for RogerDodger\_46:

(Start: 67 @36138 has 50 MA's), (75, 36165), (76, 36168), (78, 36177), (87, 36210), (89, 36237), (93, 36252), (97, 36270), (100, 36279), (101, 36282), (106, 36303), (119, 36369), (120, 36372), (121, 36375), (126, 36390), (127, 36393), (130, 36402), (131, 36405), (139, 36465),

Gene: Rumi\_40 Start: 30959, Stop: 31345, Start Num: 24

Candidate Starts for Rumi\_40:

(Start: 24 @30959 has 46 MA's), (77, 31079), (85, 31109), (88, 31136), (93, 31160), (95, 31172), (104, 31202), (105, 31205), (117, 31271), (124, 31292), (125, 31295), (129, 31307),

Gene: Sadboi\_41 Start: 33440, Stop: 33835, Start Num: 24

Candidate Starts for Sadboi\_41:

(Start: 24 @33440 has 46 MA's), (59, 33506), (77, 33560), (85, 33590), (93, 33641), (95, 33653), (104, 33683), (117, 33752), (124, 33773), (125, 33776), (129, 33788),

Gene: Salvador\_42 Start: 35807, Stop: 36196, Start Num: 67

Candidate Starts for Salvador\_42:

(Start: 67 @35807 has 50 MA's), (75, 35834), (76, 35837), (78, 35846), (87, 35879), (89, 35906), (93, 35921), (97, 35939), (100, 35948), (106, 35972), (119, 36038), (120, 36041), (121, 36044), (126, 36059), (127, 36062), (130, 36071), (139, 36134),

Gene: Sampudon\_40 Start: 33608, Stop: 34003, Start Num: 24

Candidate Starts for Sampudon\_40:

(Start: 24 @33608 has 46 MA's), (59, 33674), (77, 33728), (85, 33758), (93, 33809), (95, 33821), (104, 33851), (117, 33920), (124, 33941), (125, 33944), (129, 33956),

Gene: Savbucketdawg\_43 Start: 35588, Stop: 35977, Start Num: 67

Candidate Starts for Savbucketdawg\_43:

(Start: 67 @35588 has 50 MA's), (75, 35615), (76, 35618), (78, 35627), (87, 35660), (89, 35687), (93, 35702), (97, 35720), (100, 35729), (106, 35753), (119, 35819), (120, 35822), (121, 35825), (126, 35840), (127, 35843), (130, 35852), (139, 35915),

Gene: Schnabeltier\_25 Start: 21381, Stop: 21758, Start Num: 69

Candidate Starts for Schnabeltier\_25:

(Start: 67 @21372 has 50 MA's), (Start: 69 @21381 has 1 MA's), (71, 21387), (76, 21408), (97, 21510), (100, 21519), (106, 21543), (120, 21612), (121, 21615), (125, 21627), (126, 21630), (127, 21633), (130, 21642), (142, 21741),

Gene: Shinji\_43 Start: 35312, Stop: 35746, Start Num: 23

Candidate Starts for Shinji\_43:

(14, 35252), (15, 35276), (Start: 23 @35312 has 14 MA's), (28, 35333), (40, 35357), (42, 35360), (55, 35387), (Start: 67 @35417 has 50 MA's), (79, 35465), (80, 35468), (82, 35474), (97, 35555), (103, 35576), (107, 35591), (112, 35624), (124, 35669), (126, 35675), (129, 35684), (135, 35723),

Gene: SmokingBunny\_43 Start: 35861, Stop: 36295, Start Num: 23

Candidate Starts for SmokingBunny\_43:

(14, 35801), (15, 35825), (Start: 23 @35861 has 14 MA's), (55, 35936), (Start: 67 @35966 has 50 MA's), (75, 35999), (79, 36014), (80, 36017), (103, 36125), (112, 36173), (114, 36182), (124, 36218), (126, 36224), (129, 36233),

Gene: Smoothie\_56 Start: 34287, Stop: 34742, Start Num: 22

Candidate Starts for Smoothie\_56:

(19, 34272), (Start: 22 @34287 has 14 MA's), (29, 34314), (44, 34341), (58, 34371), (64, 34386), (77, 34434), (78, 34440), (80, 34446), (93, 34515), (100, 34542), (103, 34554), (114, 34632), (123, 34665), (124, 34668), (131, 34689),

Gene: Spooky\_27 Start: 21156, Stop: 21593, Start Num: 17

Candidate Starts for Spooky\_27:

(Start: 17 @21156 has 24 MA's), (32, 21213), (Start: 47 @21240 has 1 MA's), (49, 21243), (50, 21246), (58, 21261), (63, 21273), (79, 21333), (87, 21363), (96, 21420), (97, 21423), (101, 21435), (104, 21447), (105, 21450), (106, 21456), (110, 21468), (115, 21504), (116, 21513), (120, 21525), (122, 21531), (124, 21537), (125, 21540), (126, 21543), (129, 21552), (131, 21558),

Gene: Squiddly\_29 Start: 22568, Stop: 23005, Start Num: 17

Candidate Starts for Squiddly\_29:

(Start: 17 @22568 has 24 MA's), (32, 22625), (Start: 47 @22652 has 1 MA's), (49, 22655), (50, 22658), (58, 22673), (63, 22685), (79, 22745), (87, 22775), (96, 22832), (97, 22835), (101, 22847), (104, 22859), (105, 22862), (106, 22868), (110, 22880), (115, 22916), (116, 22925), (120, 22937), (122, 22943), (124, 22949), (125, 22952), (126, 22955), (129, 22964), (131, 22970),

Gene: Suscepit\_26 Start: 21932, Stop: 22306, Start Num: 24

Candidate Starts for Suscepit\_26:

(13, 21848), (Start: 24 @21932 has 46 MA's), (48, 21980), (63, 22004), (65, 22010), (72, 22034), (75, 22043), (78, 22055), (119, 22247), (121, 22253), (122, 22256),

Gene: TChen\_35 Start: 30090, Stop: 30461, Start Num: 46

Candidate Starts for TChen\_35:

(Start: 26 @30057 has 2 MA's), (Start: 34 @30072 has 9 MA's), (Start: 46 @30090 has 1 MA's), (50, 30102), (52, 30105), (53, 30108), (56, 30114), (58, 30117), (59, 30120), (63, 30129), (Start: 67 @30141 has 50 MA's), (76, 30177), (77, 30180), (79, 30189), (80, 30192), (82, 30198), (87, 30219), (91, 30255), (95, 30273), (97, 30279), (99, 30285), (100, 30288), (101, 30291), (104, 30303), (106, 30312), (111, 30345), (112, 30348), (119, 30378), (124, 30393), (128, 30405),

Gene: TaronosaurusRx\_25 Start: 21403, Stop: 21789, Start Num: 67

Candidate Starts for TaronosaurusRx\_25:

(Start: 67 @21403 has 50 MA's), (Start: 69 @21412 has 1 MA's), (71, 21418), (79, 21451), (82, 21460), (97, 21541), (100, 21550), (106, 21574), (120, 21643), (121, 21646), (126, 21661), (127, 21664), (130, 21673), (131, 21676), (142, 21772),

Gene: Tayonia\_26 Start: 21932, Stop: 22306, Start Num: 24

Candidate Starts for Tayonia\_26:

(13, 21848), (Start: 24 @21932 has 46 MA's), (48, 21980), (63, 22004), (65, 22010), (72, 22034), (75, 22043), (78, 22055), (119, 22247), (121, 22253), (122, 22256),

Gene: ThetaBob\_35 Start: 29008, Stop: 29412, Start Num: 26

Candidate Starts for ThetaBob\_35:

(Start: 26 @29008 has 2 MA's), (32, 29020), (Start: 34 @29023 has 9 MA's), (43, 29038), (49, 29050), (53, 29059), (56, 29065), (63, 29080), (70, 29104), (76, 29128), (77, 29131), (78, 29137), (80, 29143), (82, 29149), (84, 29158), (85, 29161), (91, 29206), (95, 29224), (99, 29236), (100, 29239), (101, 29242), (105, 29257), (114, 29308), (118, 29326), (119, 29329), (124, 29344), (128, 29356),

Gene: Tillicus\_39 Start: 32042, Stop: 32440, Start Num: 24

Candidate Starts for Tillicus\_39:

(Start: 24 @32042 has 46 MA's), (72, 32147), (76, 32159), (77, 32162), (82, 32180), (88, 32219), (92, 32240), (101, 32273), (104, 32285), (116, 32351), (119, 32360), (122, 32369), (124, 32375), (129, 32390),

Gene: TillyBobJoe\_43 Start: 35665, Stop: 36099, Start Num: 23

Candidate Starts for TillyBobJoe\_43:

(14, 35605), (15, 35629), (Start: 23 @35665 has 14 MA's), (55, 35740), (Start: 67 @35770 has 50 MA's), (75, 35803), (79, 35818), (80, 35821), (103, 35929), (112, 35977), (114, 35986), (124, 36022), (126, 36028), (129, 36037),

Gene: TinyDot\_24 Start: 18787, Stop: 19161, Start Num: 67

Candidate Starts for TinyDot\_24:

(11, 18565), (12, 18595), (Start: 67 @18787 has 50 MA's), (70, 18799), (71, 18802), (76, 18823), (77, 18826), (95, 18919), (102, 18940), (103, 18946), (106, 18958), (121, 19030), (123, 19036), (126, 19045), (127, 19048), (139, 19120), (140, 19135),

Gene: Togo\_42 Start: 35861, Stop: 36295, Start Num: 23

Candidate Starts for Togo\_42:

(14, 35801), (15, 35825), (Start: 23 @35861 has 14 MA's), (55, 35936), (Start: 67 @35966 has 50 MA's), (75, 35999), (79, 36014), (80, 36017), (103, 36125), (112, 36173), (114, 36182), (124, 36218), (126, 36224), (129, 36233),

Gene: Toniann\_54 Start: 33774, Stop: 34229, Start Num: 22

Candidate Starts for Toniann\_54:

(19, 33759), (Start: 22 @33774 has 14 MA's), (29, 33801), (44, 33828), (58, 33858), (64, 33873), (77, 33921), (78, 33927), (80, 33933), (93, 34002), (100, 34029), (103, 34041), (114, 34119), (123, 34152), (124, 34155), (131, 34176),

Gene: Toron\_36 Start: 29915, Stop: 30304, Start Num: 34

Candidate Starts for Toron\_36:

(20, 29876), (Start: 26 @29900 has 2 MA's), (Start: 34 @29915 has 9 MA's), (53, 29951), (56, 29957), (58, 29960), (59, 29963), (63, 29972), (70, 29996), (77, 30023), (80, 30035), (91, 30098), (95, 30116), (97, 30122), (99, 30128), (100, 30131), (101, 30134), (104, 30146), (105, 30149), (116, 30212), (119, 30221), (124, 30236), (128, 30248),

Gene: Trumpet\_26 Start: 21932, Stop: 22306, Start Num: 24

Candidate Starts for Trumpet\_26:

(13, 21848), (Start: 24 @21932 has 46 MA's), (48, 21980), (63, 22004), (65, 22010), (72, 22034), (75, 22043), (78, 22055), (119, 22247), (121, 22253), (122, 22256),

Gene: Twister6\_45 Start: 35701, Stop: 36090, Start Num: 67

Candidate Starts for Twister6\_45:

(Start: 67 @35701 has 50 MA's), (75, 35728), (76, 35731), (78, 35740), (87, 35773), (89, 35800), (93, 35815), (97, 35833), (100, 35842), (106, 35866), (119, 35932), (120, 35935), (121, 35938), (126, 35953), (127, 35956), (130, 35965), (139, 36028),

Gene: Valary\_45 Start: 36743, Stop: 37132, Start Num: 67

Candidate Starts for Valary\_45:

(Start: 67 @36743 has 50 MA's), (75, 36770), (76, 36773), (78, 36782), (87, 36815), (89, 36842), (93, 36857), (97, 36875), (100, 36884), (101, 36887), (106, 36908), (119, 36974), (120, 36977), (121, 36980), (126, 36995), (127, 36998), (130, 37007), (131, 37010), (139, 37070),

Gene: VanDeWege\_46 Start: 36035, Stop: 36424, Start Num: 67

Candidate Starts for VanDeWege\_46:

(Start: 67 @36035 has 50 MA's), (75, 36062), (76, 36065), (78, 36074), (87, 36107), (89, 36134), (93, 36149), (97, 36167), (100, 36176), (101, 36179), (106, 36200), (119, 36266), (120, 36269), (121, 36272), (126, 36287), (127, 36290), (130, 36299), (131, 36302), (139, 36362),

Gene: Whack\_25 Start: 21433, Stop: 21819, Start Num: 68

Candidate Starts for Whack\_25:

(39, 21367), (51, 21391), (62, 21415), (Start: 68 @21433 has 1 MA's), (78, 21472), (107, 21601), (108, 21604), (113, 21640), (124, 21679),

Gene: Whitney\_28 Start: 21973, Stop: 22413, Start Num: 17

Candidate Starts for Whitney\_28:

(Start: 17 @21973 has 24 MA's), (32, 22030), (Start: 47 @22057 has 1 MA's), (78, 22147), (87, 22180), (95, 22234), (96, 22237), (97, 22240), (100, 22249), (101, 22252), (106, 22273), (110, 22285), (120, 22342), (122, 22348), (124, 22354), (125, 22357), (126, 22360), (129, 22369), (131, 22375), (133, 22402),

Gene: William\_25 Start: 20929, Stop: 21303, Start Num: 67

Candidate Starts for William\_25:

(Start: 67 @20929 has 50 MA's), (76, 20965), (95, 21061), (96, 21064), (106, 21100), (122, 21175), (123, 21178), (127, 21190),

Gene: WilliamBoone\_54 Start: 33126, Stop: 33575, Start Num: 22

Candidate Starts for WilliamBoone\_54:

(19, 33111), (Start: 22 @33126 has 14 MA's), (44, 33174), (58, 33204), (63, 33216), (72, 33252), (77, 33267), (93, 33348), (95, 33360), (110, 33432), (114, 33465), (124, 33501), (131, 33522),

Gene: Wizard\_42 Start: 35941, Stop: 36330, Start Num: 67

Candidate Starts for Wizard\_42:

(Start: 67 @35941 has 50 MA's), (75, 35968), (76, 35971), (78, 35980), (87, 36013), (89, 36040), (93, 36055), (97, 36073), (100, 36082), (101, 36085), (106, 36106), (119, 36172), (120, 36175), (121, 36178), (126, 36193), (127, 36196), (130, 36205), (131, 36208), (139, 36268),

Gene: Wojtek\_39 Start: 32308, Stop: 32703, Start Num: 24

Candidate Starts for Wojtek\_39:

(Start: 24 @32308 has 46 MA's), (59, 32374), (77, 32428), (85, 32458), (93, 32509), (95, 32521), (117, 32620), (124, 32641), (125, 32644), (129, 32656),

Gene: Yeezy\_26 Start: 21154, Stop: 21528, Start Num: 24

Candidate Starts for Yeezy\_26:

(13, 21070), (Start: 24 @21154 has 46 MA's), (48, 21202), (63, 21226), (65, 21232), (72, 21256), (75, 21265), (78, 21277), (119, 21469), (121, 21475), (122, 21478),

Gene: Yikes\_41 Start: 33687, Stop: 34082, Start Num: 24

Candidate Starts for Yikes\_41:

(Start: 24 @33687 has 46 MA's), (59, 33753), (77, 33807), (85, 33837), (93, 33888), (95, 33900), (104, 33930), (117, 33999), (124, 34020), (125, 34023), (129, 34035),

Gene: Yoshi\_42 Start: 29099, Stop: 29485, Start Num: 34

Candidate Starts for Yoshi\_42:

(Start: 26 @29084 has 2 MA's), (32, 29096), (Start: 34 @29099 has 9 MA's), (52, 29132), (53, 29135), (55, 29138), (56, 29141), (59, 29147), (61, 29150), (70, 29180), (74, 29198), (76, 29204), (82, 29225), (83, 29231), (87, 29246), (95, 29300), (97, 29306), (99, 29312), (100, 29315), (101, 29318), (105, 29333), (111, 29372), (114, 29384), (118, 29402), (124, 29420), (128, 29432),

Gene: YungMoney\_46 Start: 38304, Stop: 38738, Start Num: 23

Candidate Starts for YungMoney\_46:

(14, 38244), (15, 38268), (Start: 23 @38304 has 14 MA's), (28, 38325), (40, 38349), (42, 38352), (Start: 47 @38364 has 1 MA's), (55, 38379), (59, 38388), (Start: 67 @38409 has 50 MA's), (79, 38457), (80, 38460), (82, 38466), (97, 38547), (103, 38568), (107, 38583), (112, 38616), (124, 38661), (126, 38667), (129, 38676), (135, 38715),

Gene: ZAYM\_26 Start: 21872, Stop: 22258, Start Num: 67

Candidate Starts for ZAYM\_26:

(Start: 67 @21872 has 50 MA's), (Start: 69 @21881 has 1 MA's), (71, 21887), (79, 21920), (82, 21929), (89, 21977), (97, 22010), (100, 22019), (106, 22043), (120, 22112), (121, 22115), (126, 22130), (127, 22133), (130, 22142), (131, 22145), (142, 22241),

Gene: Zameen\_26 Start: 21932, Stop: 22306, Start Num: 24

Candidate Starts for Zameen\_26:

(13, 21848), (Start: 24 @21932 has 46 MA's), (48, 21980), (63, 22004), (65, 22010), (72, 22034), (75, 22043), (78, 22055), (119, 22247), (121, 22253), (122, 22256),

Gene: Zany\_39 Start: 33212, Stop: 33607, Start Num: 24

Candidate Starts for Zany\_39:

(Start: 24 @33212 has 46 MA's), (59, 33278), (77, 33332), (93, 33413), (95, 33425), (104, 33455), (117, 33524), (124, 33545), (125, 33548), (129, 33560),

Gene: Zapner\_42 Start: 30180, Stop: 30569, Start Num: 34

Candidate Starts for Zapner\_42:

(Start: 26 @30165 has 2 MA's), (32, 30177), (Start: 34 @30180 has 9 MA's), (43, 30195), (49, 30207), (53, 30216), (56, 30222), (63, 30237), (70, 30261), (76, 30285), (77, 30288), (78, 30294), (80, 30300), (82, 30306), (84, 30315), (85, 30318), (91, 30363), (95, 30381), (99, 30393), (100, 30396), (101, 30399), (105, 30414), (114, 30465), (118, 30483), (119, 30486), (124, 30501), (128, 30513),

Gene: ZiggyZoo\_24 Start: 20727, Stop: 21077, Start Num: 67

Candidate Starts for ZiggyZoo\_24:

(Start: 67 @20727 has 50 MA's), (77, 20760), (95, 20853), (97, 20859), (98, 20862), (104, 20883), (106, 20892), (112, 20925), (126, 20976), (131, 20991), (138, 21042),