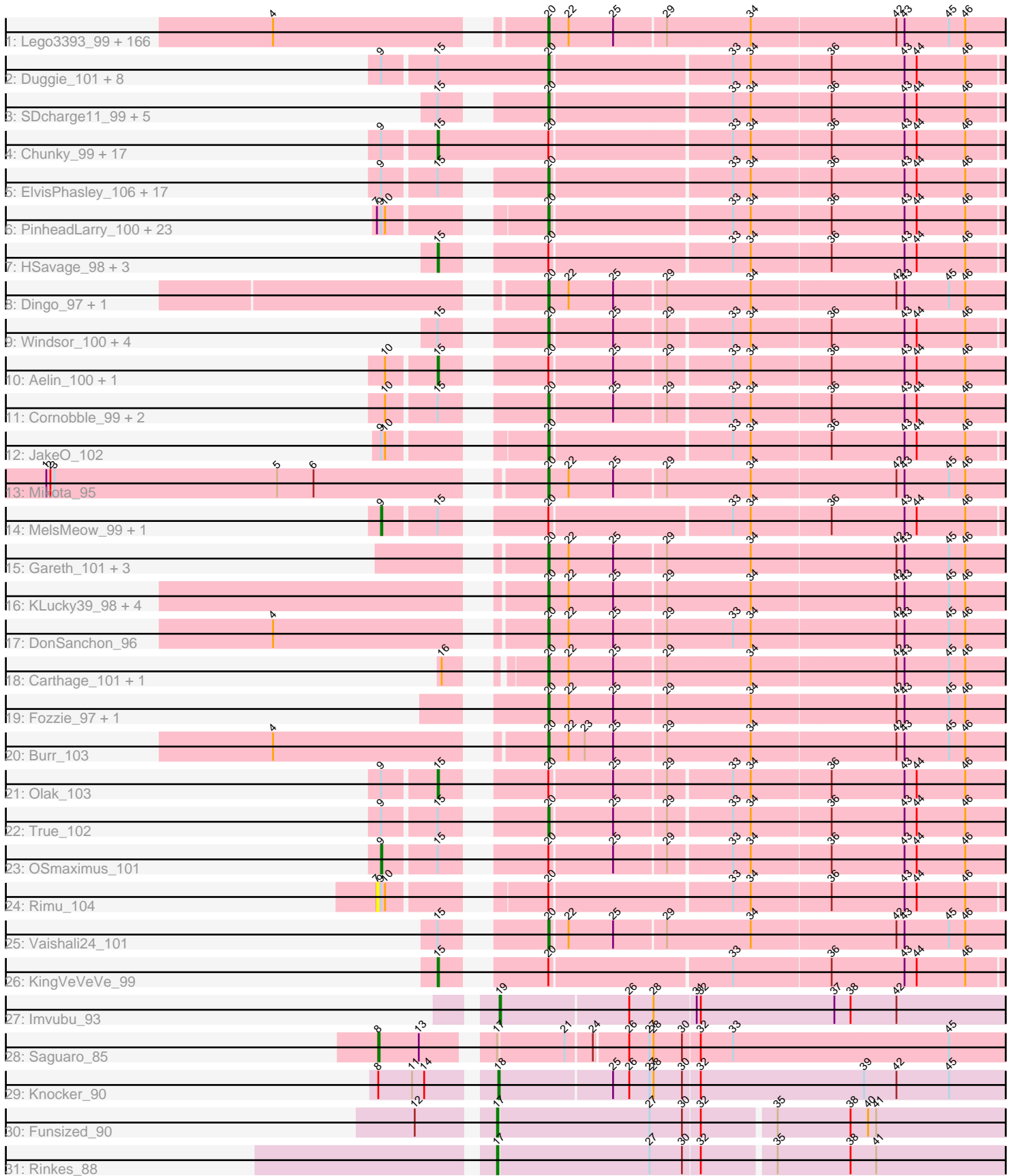


# Pham 199928



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 199928 Report

This analysis was run 01/18/25 on database version 583.

Pham number 199928 has 288 members, 21 are drafts.

Phages represented in each track:

- Track 1 : Lego3393\_99, Harvey\_98, Chah\_103, Placalicious\_98, Kikipoo\_103, Pherdinand\_102, Craff\_102, Matalotodo\_99, Xavier\_100, Kimbrough\_102, Giraffe\_102, Puhltonio\_96, Held\_99, Olive\_97, TomBombadil\_101, Quisquillae\_103, FugateOSU\_101, Jillium\_101, Boehler\_98, Selr12\_105, Mecca\_101, Hetaeria\_100, Zelda\_101, Orfeu\_101, Mulan\_100, Anderson\_102, Cobra\_101, Chorkpop\_102, Megatron\_102, Inverness\_98, Slatt\_103, Adriana\_101, MitKao\_101, Phareon\_98, Squiggle\_100, Hertubise\_100, Phamished\_100, Emiris\_103, Simielle\_101, Waterdiva\_102, Jesabah\_101, UAch1\_101, Lasso\_100, EmpTee\_100, ABU\_99, Newman\_96, Podrick\_99, Kahve\_101, LemonSlice\_101, PhatCats2014\_100, Scoot17C\_101, Buckeye\_99, Iridoclysis\_100, Spartan300\_100, Beaglebox\_97, Legolas\_102, Bluephacebaby\_100, Prickles\_101, Dione\_99, Lumine\_102, Pacifista\_103, Haleema\_100, Numberten\_101, Oosterbaan\_101, Fang\_101, Haimas\_98, Roscoe\_99, Pipsqueak\_98, Freya\_97, Cosmolli16\_102, Morty\_101, SilverBell\_102, Childish\_101, Katniss\_103, Phipps\_98, Frankicide\_98, UncleHowie\_97, Toni\_100, Charles1\_104, Dice\_101, Serpentine\_00103, Virapocalypse\_102, Fringe\_105, Bishoperium\_101, LostAndPhound\_100, Potter\_95, Altwerkus\_98, Mutante\_102, IsaacEli\_103, Vista\_100, LuckyMarjie\_98, Scrick\_102, Serendipity\_100, Plmatters\_98, Nacho\_00103, MRabcd\_101, Thora\_99, Cannibal\_101, Andre\_105, Banjo\_97, JangoPhett\_99, YouGoGlencoco\_101, Mana\_98, Hamish\_98, Grand2040\_98, HenryJackson\_101, Badfish\_101, Morgushi\_98, ProfessorX\_98, ShiVal\_100, HighStump\_103, Orion\_99, CheetO\_97, Timmi\_99, FluffyNinja\_102, Gophee\_100, Surely\_101, Valjean\_99, Lulumae\_96, Roy17\_98, Sophia\_99, Megamind20\_103, Squid\_100, JacAttac\_101, Piglet\_00100, Swish\_102, Lulwa\_98, Colbert\_99, Skippy\_101, Mesh1\_101, Samaymay\_101, FriarPreacher\_98, Vaticameos\_98, Daffy\_100, Mesmerelda\_102, OliverWalter\_100, Mosaic\_98, BlackStallion\_100, Nicole21\_102, Sigman\_100, PG1\_99, DoesntMatter\_98, SassyCat97\_99, PhrodoBaggins\_103, Nyala\_101, Usavi\_101, Phunky\_98, Kwadwo\_100, DirtJuice\_102, KingTut\_91, Kloppinator\_101, QueenBeane\_101, Maru\_100, LeeLot\_99, AbsoluteMadLad\_99, CamL\_101, Gyarad\_0099, Omniscient\_102, Riggan\_102, ThreeOh3D2\_102, Yoshand\_102, Telesworld\_99, Zaider\_102, Murdoc\_97, Eugenia\_103, Tomlarah\_101, RedMaple\_99
- Track 2 : Duggie\_101, Struggle\_101, Longacauda\_101, Ricotta\_102, Jiminy\_101, Thunderbird\_101, Jiraiya\_106, KlimbOn\_100, DelRivs\_100
- Track 3 : SDcharge11\_99, BlueHusk\_101, Horchata\_95, Sheila\_95, Roliet\_98, Daka\_102
- Track 4 : Chunky\_99, PhenghisKhan\_101, PhrankReynolds\_99, CharlieGBrown\_99, Mcshane\_103, TyrionL\_101, Gwilliam\_101, Schueller\_100, Labeouficaum\_101,

BatteryCK\_99, AngelCake\_97, Lopsy\_97, Derpp\_100, Apizium\_99, Soile\_102, Phergie\_101, Zonia\_101, MichaelPhcott\_99

- Track 5 : ElvisPhasley\_106, ImtiyazSitla\_102, LasagnaCat\_102, Ashraf\_102, DuchessDung\_98, Veritas\_100, Phleuron\_98, Inchworm\_102, Mag7\_99, Kwksand96\_102, Hartsy\_99, Pinkman\_100, Nathan\_100, Maskar\_102, CampRoach\_101, Caspiroi\_102, Kailash\_99, Wallhey\_102
- Track 6 : PinheadLarry\_100, Durga\_103, Weher20\_98, GeneCoco\_100, LeiMonet\_103, Etaye\_100, Gwennie1\_98, Doddsville\_98, Iridessa\_103, Dati\_98, Hocus\_100, Swiphy\_105, DaddyDaniels\_104, PhatLouie\_103, Trypo\_101, JDog\_100, MrPhizzler\_100, Virgeve\_99, Brilliant\_104, TallGrassMM\_100, Vortex\_99, Melc17\_98, Khan1\_101, Solosis\_99
- Track 7 : HSavage\_98, Eremos\_98, MiniBoss\_96, AltPhacts\_98
- Track 8 : Dingo\_97, Soto\_97
- Track 9 : Windsor\_100, Keitherie\_104, Chaelin\_101, Coletti\_103, Chute\_101
- Track 10 : Aelin\_100, Antonia\_100
- Track 11 : Cornobble\_99, Vivaldi\_101, Manad\_100
- Track 12 : JakeO\_102
- Track 13 : Mikota\_95
- Track 14 : MelsMeow\_99, Oline\_100
- Track 15 : Gareth\_101, Orwigg\_103, Tooj\_98, Cher\_101
- Track 16 : KLucky39\_98, Crownjwl\_98, Pops\_98, Basato\_99, Suffolk\_96
- Track 17 : DonSanchon\_96
- Track 18 : Carthage\_101, Robyn\_102
- Track 19 : Fozzie\_97, Schadenfreude\_101
- Track 20 : Burr\_103
- Track 21 : Olak\_103
- Track 22 : True\_102
- Track 23 : OSmaximus\_101
- Track 24 : Rimu\_104
- Track 25 : Vaishali24\_101
- Track 26 : KingVeVeVe\_99
- Track 27 : Imvubu\_93
- Track 28 : Saguario\_85
- Track 29 : Knocker\_90
- Track 30 : Funsized\_90
- Track 31 : Rinkes\_88

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

The start number called the most often in the published annotations is 20, it was called in 236 of the 267 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ABU\_99, AbsoluteMadLad\_99, Adriana\_101, Altwerkus\_98, Anderson\_102, Andre\_105, Ashraf\_102, Badfish\_101, Banjo\_97, Basato\_99, Beaglebox\_97, Bishoperium\_101, BlackStallion\_100, BlueHusk\_101, Bluephacebaby\_100, Boehler\_98, Brilliant\_104, Buckeye\_99, Burr\_103, CamL\_101, CampRoach\_101, Cannibal\_101, Carthage\_101, Caspiroi\_102, Chaelin\_101, Chah\_103, Charles1\_104, CheetO\_97, Cher\_101, Childish\_101, Chorkpop\_102, Chute\_101, Cobra\_101, Colbert\_99, Coletti\_103, Cornobble\_99, Cosmolli16\_102, Craff\_102,

Crownjwl\_98, DaddyDaniels\_104, Daffy\_100, Daka\_102, Dati\_98, DelRivs\_100, Dice\_101, Dingo\_97, Dione\_99, DirtJuice\_102, Doddsville\_98, DoesntMatter\_98, DonSanchon\_96, DuchessDung\_98, Duggie\_101, Durga\_103, ElvisPhasley\_106, Emiris\_103, EmpTee\_100, Etaye\_100, Eugenia\_103, Fang\_101, FluffyNinja\_102, Fozzie\_97, Frankicide\_98, Freya\_97, FriarPreacher\_98, Fringe\_105, FugateOSU\_101, Gareth\_101, GeneCoco\_100, Giraffe\_102, Gophee\_100, Grand2040\_98, Gwennie1\_98, Gyarad\_0099, Haimas\_98, Haleema\_100, Hamish\_98, Hartsy\_99, Harvey\_98, Held\_99, HenryJackson\_101, Hertubise\_100, Hetaeria\_100, HighStump\_103, Hocus\_100, Horchata\_95, ImtiyazSitla\_102, Inchworm\_102, Inverness\_98, Iridessa\_103, Iridoclysis\_100, IsaacEli\_103, JDog\_100, JacAttac\_101, JakeO\_102, JangoPhett\_99, Jesabah\_101, Jillium\_101, Jiminy\_101, Jiraiya\_106, KLucky39\_98, Kahve\_101, Kailash\_99, Katniss\_103, Keitherie\_104, Khan1\_101, Kikipoo\_103, Kimbrough\_102, KingTut\_91, KlimbOn\_100, Kloppinator\_101, Kwadwo\_100, Kwksand96\_102, LasagnaCat\_102, Lasso\_100, LeeLot\_99, Lego3393\_99, Legolas\_102, LeiMonet\_103, LemonSlice\_101, Longacauda\_101, LostAndPhound\_100, LuckyMarjie\_98, Lulumae\_96, Lulwa\_98, Lumine\_102, MRabcd\_101, Mag7\_99, Mana\_98, Manad\_100, Maru\_100, Maskar\_102, Matalotodo\_99, Mecca\_101, Megamind20\_103, Megatron\_102, Melc17\_98, Mesh1\_101, Mesmerelda\_102, Mikota\_95, MitKao\_101, Morgushi\_98, Morty\_101, Mosaic\_98, MrPhizzler\_100, Mulan\_100, Murdoc\_97, Mutante\_102, Nacho\_00103, Nathan\_100, Newman\_96, Nicole21\_102, Numberten\_101, Nyala\_101, Olive\_97, OliverWalter\_100, Omniscient\_102, Oosterbaan\_101, Orfeu\_101, Orion\_99, Orwigg\_103, PG1\_99, Pacifista\_103, Phamished\_100, Phareon\_98, PhatCats2014\_100, PhatLouie\_103, Pherdinand\_102, Phipps\_98, Phleuron\_98, PhrodoBaggins\_103, Phunky\_98, Piglet\_00100, PinheadLarry\_100, Pinkman\_100, Pipsqueak\_98, Placalicious\_98, Plmatters\_98, Podrick\_99, Pops\_98, Potter\_95, Prickles\_101, ProfessorX\_98, Puhltonio\_96, QueenBeane\_101, Quisquilliae\_103, RedMaple\_99, Ricotta\_102, Riggan\_102, Robyn\_102, Roliet\_98, Roscoe\_99, Roy17\_98, SDcharge11\_99, Samaymay\_101, SassyCat97\_99, Schadenfreude\_101, Scoot17C\_101, Scrick\_102, Selr12\_105, Serendipity\_100, Serpentine\_00103, Sheila\_95, ShiVal\_100, Sigman\_100, SilverBell\_102, Simielle\_101, Skippy\_101, Slatt\_103, Solosis\_99, Sophia\_99, Soto\_97, Spartan300\_100, Squid\_100, Squiggle\_100, Struggle\_101, Suffolk\_96, Surely\_101, Swiphy\_105, Swish\_102, TallGrassMM\_100, Telesworld\_99, Thora\_99, ThreeOh3D2\_102, Thunderbird\_101, Timmi\_99, TomBombadil\_101, Tomlarah\_101, Toni\_100, Tooj\_98, True\_102, Trypo\_101, UAch1\_101, UncleHowie\_97, Usavi\_101, Vaishali24\_101, Valjean\_99, Vaticameos\_98, Veritas\_100, Virapocalypse\_102, Virgeve\_99, Vista\_100, Vivaldi\_101, Vortex\_99, Wallhey\_102, Waterdiva\_102, Weher20\_98, Windsor\_100, Xavier\_100, Yoshand\_102, YouGoGlencoco\_101, Zaider\_102, Zelda\_101,

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

- Aelin\_100, AltPhacts\_98, AngelCake\_97, Antonia\_100, Apizium\_99, BatteryCK\_99, CharlieGBrown\_99, Chunky\_99, Derpp\_100, Eremos\_98, Gwilliam\_101, HSavage\_98, KingVeVeVe\_99, Labeouficaum\_101, Lopsy\_97, Mcshane\_103, MelsMeow\_99, MichaelPhcott\_99, MiniBoss\_96, OSmaximus\_101, Olak\_103, Oline\_100, PhenghisKhan\_101, Phergie\_101, PhrankReynolds\_99, Rimu\_104, Schueller\_100, Soile\_102, TyrionL\_101, Zonia\_101,

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

- Funsized\_90, Imvubu\_93, Knocker\_90, Rinkes\_88, Saguaro\_85,

**Summary by start number:**

Start 7:

- Found in 25 of 288 ( 8.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 4.0% of time when present
- Phage (with cluster) where this start called: Rimu\_104 (B1),

Start 8:

- Found in 2 of 288 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 267
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Saguaro\_85 (B7),

Start 9:

- Found in 76 of 288 ( 26.4% ) of genes in pham
- Manual Annotations of this start: 3 of 267
- Called 3.9% of time when present
- Phage (with cluster) where this start called: MelsMeow\_99 (B1), OSmaximus\_101 (B1), Oline\_100 (B1),

Start 15:

- Found in 72 of 288 ( 25.0% ) of genes in pham
- Manual Annotations of this start: 23 of 267
- Called 36.1% of time when present
- Phage (with cluster) where this start called: Aelin\_100 (B1), AltPhacts\_98 (B1), AngelCake\_97 (B1), Antonia\_100 (B1), Apizium\_99 (B1), BatteryCK\_99 (B1), CharlieGBrown\_99 (B1), Chunky\_99 (B1), Derpp\_100 (B1), Eremos\_98 (B1), Gwilliam\_101 (B1), HSavage\_98 (B1), KingVeVeVe\_99 (B1), Labeouficaum\_101 (B1), Lopsy\_97 (B1), Mcshane\_103 (B1), MichaelPhcott\_99 (B1), MiniBoss\_96 (B1), Olak\_103 (B1), PhenghisKhan\_101 (B1), Phergie\_101 (B1), PhrankReynolds\_99 (B1), Schueller\_100 (B1), Soile\_102 (B1), TyrionL\_101 (B1), Zonia\_101 (B1),

Start 17:

- Found in 3 of 288 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 2 of 267
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Funsized\_90 (B9), Rinkes\_88 (B9),

Start 18:

- Found in 1 of 288 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 267
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Knocker\_90 (B9),

Start 19:

- Found in 1 of 288 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 267
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Imvubu\_93 (B10),

Start 20:

- Found in 283 of 288 ( 98.3% ) of genes in pham
- Manual Annotations of this start: 236 of 267

- Called 89.4% of time when present
- Phage (with cluster) where this start called: ABU\_99 (B1), AbsoluteMadLad\_99 (B1), Adriana\_101 (B1), Altwerkus\_98 (B1), Anderson\_102 (B1), Andre\_105 (B1), Ashraf\_102 (B1), Badfish\_101 (B1), Banjo\_97 (B1), Basato\_99 (B1), Beaglebox\_97 (B1), Bishoperium\_101 (B1), BlackStallion\_100 (B1), BlueHusk\_101 (B1), Bluephacebaby\_100 (B1), Boehler\_98 (B1), Brilliant\_104 (B1), Buckeye\_99 (B1), Burr\_103 (B1), CamL\_101 (B1), CampRoach\_101 (B1), Cannibal\_101 (B1), Carthage\_101 (B1), Caspiboi\_102 (B1), Chaelin\_101 (B1), Chah\_103 (B1), Charles1\_104 (B1), CheetO\_97 (B1), Cher\_101 (B1), Childish\_101 (B1), Chorkpop\_102 (B1), Chute\_101 (B1), Cobra\_101 (B1), Colbert\_99 (B1), Coletti\_103 (B1), Cornobble\_99 (B1), Cosmolli16\_102 (B1), Craff\_102 (B1), Crownjwl\_98 (B1), DaddyDaniels\_104 (B1), Daffy\_100 (B1), Daka\_102 (B1), Dati\_98 (B1), DelRivs\_100 (B1), Dice\_101 (B1), Dingo\_97 (B1), Dione\_99 (B1), DirtJuice\_102 (B1), Doddsville\_98 (B1), DoesntMatter\_98 (B1), DonSanchon\_96 (B1), DuchessDung\_98 (B1), Duggie\_101 (B1), Durga\_103 (B1), ElvisPhasley\_106 (B1), Emiris\_103 (B1), EmpTee\_100 (B1), Etaye\_100 (B1), Eugenia\_103 (B1), Fang\_101 (B1), FluffyNinja\_102 (B1), Fozzie\_97 (B1), Frankicide\_98 (B1), Freya\_97 (B1), FriarPreacher\_98 (B1), Fringe\_105 (B1), FugateOSU\_101 (B1), Gareth\_101 (B1), GeneCoco\_100 (B1), Giraffe\_102 (B1), Gophee\_100 (B1), Grand2040\_98 (B1), Gwennie1\_98 (B1), Gyarad\_0099 (B1), Haimas\_98 (B1), Haleema\_100 (B1), Hamish\_98 (B1), Hartsy\_99 (B1), Harvey\_98 (B1), Held\_99 (B1), HenryJackson\_101 (B1), Hertubise\_100 (B1), Hetaeria\_100 (B1), HighStump\_103 (B1), Hocus\_100 (B1), Horchata\_95 (B1), ImtiyazSitla\_102 (B1), Inchworm\_102 (B1), Inverness\_98 (B1), Iridessa\_103 (B1), Iridoclysis\_100 (B1), IsaacEli\_103 (B1), JDog\_100 (B1), JacAttac\_101 (B1), JakeO\_102 (B1), JangoPhett\_99 (B1), Jesabah\_101 (B1), Jillium\_101 (B1), Jiminy\_101 (B1), Jiraiya\_106 (B1), KLucky39\_98 (B1), Kahve\_101 (B1), Kailash\_99 (B1), Katniss\_103 (B1), Keitherie\_104 (B1), Khan1\_101 (B1), Kikipoo\_103 (B1), Kimbrough\_102 (B1), KingTut\_91 (B1), KlimbOn\_100 (B1), Kloppinator\_101 (B1), Kwadwo\_100 (B1), Kwksand96\_102 (B1), LasagnaCat\_102 (B1), Lasso\_100 (B1), LeeLot\_99 (B1), Lego3393\_99 (B1), Legolas\_102 (B1), LeiMonet\_103 (B1), LemonSlice\_101 (B1), Longacauda\_101 (B1), LostAndPhound\_100 (B1), LuckyMarjie\_98 (B1), Lulumae\_96 (B1), Lulwa\_98 (B1), Lumine\_102 (B1), MRabcd\_101 (B1), Mag7\_99 (B1), Mana\_98 (B1), Manad\_100 (B1), Maru\_100 (B1), Maskar\_102 (B1), Matalotodo\_99 (B1), Mecca\_101 (B1), Megamind20\_103 (B1), Megatron\_102 (B1), Melc17\_98 (B1), Mesh1\_101 (B1), Mesmerelda\_102 (B1), Mikota\_95 (B1), MitKao\_101 (B1), Morgushi\_98 (B1), Morty\_101 (B1), Mosaic\_98 (B1), MrPhizzler\_100 (B1), Mulan\_100 (B1), Murdoc\_97 (B1), Mutante\_102 (B1), Nacho\_00103 (B1), Nathan\_100 (B1), Newman\_96 (B1), Nicole21\_102 (B1), Numberten\_101 (B1), Nyala\_101 (B1), Olive\_97 (B1), OliverWalter\_100 (B1), Omniscient\_102 (B1), Oosterbaan\_101 (B1), Orfeu\_101 (B1), Orion\_99 (B1), Orwigg\_103 (B1), PG1\_99 (B1), Pacifista\_103 (B1), Phamished\_100 (B1), Phareon\_98 (B1), PhatCats2014\_100 (B1), PhatLouie\_103 (B1), Pherdinand\_102 (B1), Phipps\_98 (B1), Phleuron\_98 (B1), PhrodoBaggins\_103 (B1), Phunky\_98 (B1), Piglet\_00100 (B1), PinheadLarry\_100 (B1), Pinkman\_100 (B1), Pipsqueak\_98 (B1), Placalicious\_98 (B1), Plmatters\_98 (B1), Podrick\_99 (B1), Pops\_98 (B1), Potter\_95 (B1), Prickles\_101 (B1), ProfessorX\_98 (B1), Puhltonio\_96 (B1), QueenBeane\_101 (B1), Quisquiliae\_103 (B1), RedMaple\_99 (B1), Ricotta\_102 (B1), Riggan\_102 (B1), Robyn\_102 (B1), Roliet\_98 (B1), Roscoe\_99 (B1), Roy17\_98 (B1), SDcharge11\_99 (B1), Samaymay\_101 (B1), SassyCat97\_99 (B1), Schadenfreude\_101 (B1), Scoot17C\_101 (B1), Scrick\_102 (B1), Selr12\_105 (B1), Serendipity\_100 (B1), Serpentine\_00103 (B1), Sheila\_95 (B1), ShiVal\_100 (B1), Sigman\_100 (B1), SilverBell\_102 (B1), Simielle\_101 (B1), Skippy\_101 (B1), Slatt\_103 (B1), Solosis\_99 (B1), Sophia\_99 (B1), Soto\_97 (B1), Spartan300\_100 (B1),

Squid\_100 (B1), Squiggle\_100 (B1), Struggle\_101 (B1), Suffolk\_96 (B1), Surely\_101 (B1), Swiphy\_105 (B1), Swish\_102 (B1), TallGrassMM\_100 (B1), Telesworld\_99 (B1), Thora\_99 (B1), ThreeOh3D2\_102 (B1), Thunderbird\_101 (B1), Timmi\_99 (B1), TomBombadil\_101 (B1), Tomlarah\_101 (B1), Toni\_100 (B1), Tooj\_98 (B1), True\_102 (B1), Trypo\_101 (B1), UAch1\_101 (B1), UncleHowie\_97 (B1), Usavi\_101 (B1), Vaishali24\_101 (B1), Valjean\_99 (B1), Vaticameos\_98 (B1), Veritas\_100 (B1), Virapocalypse\_102 (B1), Virgeve\_99 (B1), Vista\_100 (B1), Vivaldi\_101 (B1), Vortex\_99 (B1), Wallhey\_102 (B1), Waterdiva\_102 (B1), Weher20\_98 (B1), Windsor\_100 (B1), Xavier\_100 (B1), Yoshand\_102 (B1), YouGoGlencoco\_101 (B1), Zaider\_102 (B1), Zelda\_101 (B1),

### **Summary by clusters:**

There are 4 clusters represented in this pham: B7, B1, B10, B9,

Info for manual annotations of cluster B1:

- Start number 9 was manually annotated 3 times for cluster B1.
- Start number 15 was manually annotated 23 times for cluster B1.
- Start number 20 was manually annotated 236 times for cluster B1.

Info for manual annotations of cluster B10:

- Start number 19 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B7:

- Start number 8 was manually annotated 1 time for cluster B7.

Info for manual annotations of cluster B9:

- Start number 17 was manually annotated 2 times for cluster B9.
- Start number 18 was manually annotated 1 time for cluster B9.

### **Gene Information:**

Gene: ABU\_99 Start: 68479, Stop: 68141, Start Num: 20

Candidate Starts for ABU\_99:

(4, 68653), (Start: 20 @68479 has 236 MA's), (22, 68464), (25, 68431), (29, 68395), (34, 68335), (42, 68230), (43, 68224), (45, 68191), (46, 68179),

Gene: AbsoluteMadLad\_99 Start: 68432, Stop: 68094, Start Num: 20

Candidate Starts for AbsoluteMadLad\_99:

(4, 68606), (Start: 20 @68432 has 236 MA's), (22, 68417), (25, 68384), (29, 68348), (34, 68288), (42, 68183), (43, 68177), (45, 68144), (46, 68132),

Gene: Adriana\_101 Start: 68751, Stop: 68413, Start Num: 20

Candidate Starts for Adriana\_101:

(4, 68925), (Start: 20 @68751 has 236 MA's), (22, 68736), (25, 68703), (29, 68667), (34, 68607), (42, 68502), (43, 68496), (45, 68463), (46, 68451),

Gene: Aelin\_100 Start: 68163, Stop: 67771, Start Num: 15

Candidate Starts for Aelin\_100:

(10, 68196), (Start: 15 @68163 has 23 MA's), (Start: 20 @68106 has 236 MA's), (25, 68061), (29, 68025), (33, 67980), (34, 67968), (36, 67911), (43, 67857), (44, 67848), (46, 67812),

Gene: AltPhacts\_98 Start: 67737, Stop: 67345, Start Num: 15

Candidate Starts for AltPhacts\_98:

(Start: 15 @67737 has 23 MA's), (Start: 20 @67680 has 236 MA's), (33, 67551), (34, 67539), (36, 67482), (43, 67428), (44, 67419), (46, 67383),

Gene: Altwerkus\_98 Start: 67808, Stop: 67470, Start Num: 20

Candidate Starts for Altwerkus\_98:

(4, 67982), (Start: 20 @67808 has 236 MA's), (22, 67793), (25, 67760), (29, 67724), (34, 67664), (42, 67559), (43, 67553), (45, 67520), (46, 67508),

Gene: Anderson\_102 Start: 68355, Stop: 68017, Start Num: 20

Candidate Starts for Anderson\_102:

(4, 68529), (Start: 20 @68355 has 236 MA's), (22, 68340), (25, 68307), (29, 68271), (34, 68211), (42, 68106), (43, 68100), (45, 68067), (46, 68055),

Gene: Andre\_105 Start: 68746, Stop: 68408, Start Num: 20

Candidate Starts for Andre\_105:

(4, 68920), (Start: 20 @68746 has 236 MA's), (22, 68731), (25, 68698), (29, 68662), (34, 68602), (42, 68497), (43, 68491), (45, 68458), (46, 68446),

Gene: AngelCake\_97 Start: 68156, Stop: 67764, Start Num: 15

Candidate Starts for AngelCake\_97:

(Start: 9 @68192 has 3 MA's), (Start: 15 @68156 has 23 MA's), (Start: 20 @68099 has 236 MA's), (33, 67970), (34, 67958), (36, 67901), (43, 67847), (44, 67838), (46, 67802),

Gene: Antonia\_100 Start: 68034, Stop: 67642, Start Num: 15

Candidate Starts for Antonia\_100:

(10, 68067), (Start: 15 @68034 has 23 MA's), (Start: 20 @67977 has 236 MA's), (25, 67932), (29, 67896), (33, 67851), (34, 67839), (36, 67782), (43, 67728), (44, 67719), (46, 67683),

Gene: Apizium\_99 Start: 67685, Stop: 67293, Start Num: 15

Candidate Starts for Apizium\_99:

(Start: 9 @67721 has 3 MA's), (Start: 15 @67685 has 23 MA's), (Start: 20 @67628 has 236 MA's), (33, 67499), (34, 67487), (36, 67430), (43, 67376), (44, 67367), (46, 67331),

Gene: Ashraf\_102 Start: 68483, Stop: 68148, Start Num: 20

Candidate Starts for Ashraf\_102:

(Start: 9 @68576 has 3 MA's), (Start: 15 @68540 has 23 MA's), (Start: 20 @68483 has 236 MA's), (33, 68354), (34, 68342), (36, 68285), (43, 68231), (44, 68222), (46, 68186),

Gene: Badfish\_101 Start: 68659, Stop: 68321, Start Num: 20

Candidate Starts for Badfish\_101:

(4, 68833), (Start: 20 @68659 has 236 MA's), (22, 68644), (25, 68611), (29, 68575), (34, 68515), (42, 68410), (43, 68404), (45, 68371), (46, 68359),

Gene: Banjo\_97 Start: 67925, Stop: 67587, Start Num: 20

Candidate Starts for Banjo\_97:

(4, 68099), (Start: 20 @67925 has 236 MA's), (22, 67910), (25, 67877), (29, 67841), (34, 67781), (42, 67676), (43, 67670), (45, 67637), (46, 67625),

Gene: Basato\_99 Start: 68145, Stop: 67807, Start Num: 20

Candidate Starts for Basato\_99:



(Start: 20 @68145 has 236 MA's), (22, 68130), (25, 68097), (29, 68061), (34, 68001), (42, 67896), (43, 67890), (45, 67857), (46, 67845),

Gene: BatteryCK\_99 Start: 67967, Stop: 67575, Start Num: 15

Candidate Starts for BatteryCK\_99:

(Start: 9 @68003 has 3 MA's), (Start: 15 @67967 has 23 MA's), (Start: 20 @67910 has 236 MA's), (33, 67781), (34, 67769), (36, 67712), (43, 67658), (44, 67649), (46, 67613),

Gene: Beaglebox\_97 Start: 68047, Stop: 67709, Start Num: 20

Candidate Starts for Beaglebox\_97:

(4, 68221), (Start: 20 @68047 has 236 MA's), (22, 68032), (25, 67999), (29, 67963), (34, 67903), (42, 67798), (43, 67792), (45, 67759), (46, 67747),

Gene: Bishoperium\_101 Start: 68494, Stop: 68156, Start Num: 20

Candidate Starts for Bishoperium\_101:

(4, 68668), (Start: 20 @68494 has 236 MA's), (22, 68479), (25, 68446), (29, 68410), (34, 68350), (42, 68245), (43, 68239), (45, 68206), (46, 68194),

Gene: BlackStallion\_100 Start: 68343, Stop: 68005, Start Num: 20

Candidate Starts for BlackStallion\_100:

(4, 68517), (Start: 20 @68343 has 236 MA's), (22, 68328), (25, 68295), (29, 68259), (34, 68199), (42, 68094), (43, 68088), (45, 68055), (46, 68043),

Gene: BlueHusk\_101 Start: 67823, Stop: 67488, Start Num: 20

Candidate Starts for BlueHusk\_101:

(Start: 15 @67880 has 23 MA's), (Start: 20 @67823 has 236 MA's), (33, 67694), (34, 67682), (36, 67625), (43, 67571), (44, 67562), (46, 67526),

Gene: Bluephacebaby\_100 Start: 68528, Stop: 68190, Start Num: 20

Candidate Starts for Bluephacebaby\_100:

(4, 68702), (Start: 20 @68528 has 236 MA's), (22, 68513), (25, 68480), (29, 68444), (34, 68384), (42, 68279), (43, 68273), (45, 68240), (46, 68228),

Gene: Boehler\_98 Start: 67970, Stop: 67632, Start Num: 20

Candidate Starts for Boehler\_98:

(4, 68144), (Start: 20 @67970 has 236 MA's), (22, 67955), (25, 67922), (29, 67886), (34, 67826), (42, 67721), (43, 67715), (45, 67682), (46, 67670),

Gene: Brilliant\_104 Start: 68501, Stop: 68166, Start Num: 20

Candidate Starts for Brilliant\_104:

(7, 68594), (Start: 9 @68591 has 3 MA's), (10, 68588), (Start: 20 @68501 has 236 MA's), (33, 68372), (34, 68360), (36, 68303), (43, 68249), (44, 68240), (46, 68204),

Gene: Buckeye\_99 Start: 68803, Stop: 68465, Start Num: 20

Candidate Starts for Buckeye\_99:

(4, 68977), (Start: 20 @68803 has 236 MA's), (22, 68788), (25, 68755), (29, 68719), (34, 68659), (42, 68554), (43, 68548), (45, 68515), (46, 68503),

Gene: Burr\_103 Start: 68349, Stop: 68011, Start Num: 20

Candidate Starts for Burr\_103:

(4, 68523), (Start: 20 @68349 has 236 MA's), (22, 68334), (23, 68322), (25, 68301), (29, 68265), (34, 68205), (42, 68100), (43, 68094), (45, 68061), (46, 68049),

Gene: CamL\_101 Start: 68279, Stop: 67941, Start Num: 20

Candidate Starts for CamL\_101:

(4, 68453), (Start: 20 @68279 has 236 MA's), (22, 68264), (25, 68231), (29, 68195), (34, 68135), (42, 68030), (43, 68024), (45, 67991), (46, 67979),

Gene: CampRoach\_101 Start: 68369, Stop: 68034, Start Num: 20

Candidate Starts for CampRoach\_101:

(Start: 9 @68462 has 3 MA's), (Start: 15 @68426 has 23 MA's), (Start: 20 @68369 has 236 MA's), (33, 68240), (34, 68228), (36, 68171), (43, 68117), (44, 68108), (46, 68072),

Gene: Cannibal\_101 Start: 68382, Stop: 68044, Start Num: 20

Candidate Starts for Cannibal\_101:

(4, 68556), (Start: 20 @68382 has 236 MA's), (22, 68367), (25, 68334), (29, 68298), (34, 68238), (42, 68133), (43, 68127), (45, 68094), (46, 68082),

Gene: Carthage\_101 Start: 67837, Stop: 67499, Start Num: 20

Candidate Starts for Carthage\_101:

(16, 67882), (Start: 20 @67837 has 236 MA's), (22, 67822), (25, 67789), (29, 67753), (34, 67693), (42, 67588), (43, 67582), (45, 67549), (46, 67537),

Gene: Caspiboi\_102 Start: 68207, Stop: 67872, Start Num: 20

Candidate Starts for Caspiboi\_102:

(Start: 9 @68300 has 3 MA's), (Start: 15 @68264 has 23 MA's), (Start: 20 @68207 has 236 MA's), (33, 68078), (34, 68066), (36, 68009), (43, 67955), (44, 67946), (46, 67910),

Gene: Chaelin\_101 Start: 68242, Stop: 67910, Start Num: 20

Candidate Starts for Chaelin\_101:

(Start: 15 @68299 has 23 MA's), (Start: 20 @68242 has 236 MA's), (25, 68197), (29, 68161), (33, 68116), (34, 68104), (36, 68047), (43, 67993), (44, 67984), (46, 67948),

Gene: Chah\_103 Start: 68079, Stop: 67741, Start Num: 20

Candidate Starts for Chah\_103:

(4, 68253), (Start: 20 @68079 has 236 MA's), (22, 68064), (25, 68031), (29, 67995), (34, 67935), (42, 67830), (43, 67824), (45, 67791), (46, 67779),

Gene: Charles1\_104 Start: 68657, Stop: 68319, Start Num: 20

Candidate Starts for Charles1\_104:

(4, 68831), (Start: 20 @68657 has 236 MA's), (22, 68642), (25, 68609), (29, 68573), (34, 68513), (42, 68408), (43, 68402), (45, 68369), (46, 68357),

Gene: CharlieGBrown\_99 Start: 68062, Stop: 67670, Start Num: 15

Candidate Starts for CharlieGBrown\_99:

(Start: 9 @68098 has 3 MA's), (Start: 15 @68062 has 23 MA's), (Start: 20 @68005 has 236 MA's), (33, 67876), (34, 67864), (36, 67807), (43, 67753), (44, 67744), (46, 67708),

Gene: CheetO\_97 Start: 68132, Stop: 67794, Start Num: 20

Candidate Starts for CheetO\_97:

(4, 68306), (Start: 20 @68132 has 236 MA's), (22, 68117), (25, 68084), (29, 68048), (34, 67988), (42, 67883), (43, 67877), (45, 67844), (46, 67832),

Gene: Cher\_101 Start: 68483, Stop: 68145, Start Num: 20

Candidate Starts for Cher\_101:

(Start: 20 @68483 has 236 MA's), (22, 68468), (25, 68435), (29, 68399), (34, 68339), (42, 68234), (43, 68228), (45, 68195), (46, 68183),

Gene: Childish\_101 Start: 68673, Stop: 68335, Start Num: 20

Candidate Starts for Childish\_101:

(4, 68847), (Start: 20 @68673 has 236 MA's), (22, 68658), (25, 68625), (29, 68589), (34, 68529), (42, 68424), (43, 68418), (45, 68385), (46, 68373),

Gene: Chorkpop\_102 Start: 68135, Stop: 67797, Start Num: 20

Candidate Starts for Chorkpop\_102:

(4, 68309), (Start: 20 @68135 has 236 MA's), (22, 68120), (25, 68087), (29, 68051), (34, 67991), (42, 67886), (43, 67880), (45, 67847), (46, 67835),

Gene: Chunky\_99 Start: 67707, Stop: 67291, Start Num: 15

Candidate Starts for Chunky\_99:

(Start: 9 @67743 has 3 MA's), (Start: 15 @67707 has 23 MA's), (Start: 20 @67626 has 236 MA's), (33, 67497), (34, 67485), (36, 67428), (43, 67374), (44, 67365), (46, 67329),

Gene: Chute\_101 Start: 68665, Stop: 68333, Start Num: 20

Candidate Starts for Chute\_101:

(Start: 15 @68722 has 23 MA's), (Start: 20 @68665 has 236 MA's), (25, 68620), (29, 68584), (33, 68539), (34, 68527), (36, 68470), (43, 68416), (44, 68407), (46, 68371),

Gene: Cobra\_101 Start: 68504, Stop: 68166, Start Num: 20

Candidate Starts for Cobra\_101:

(4, 68678), (Start: 20 @68504 has 236 MA's), (22, 68489), (25, 68456), (29, 68420), (34, 68360), (42, 68255), (43, 68249), (45, 68216), (46, 68204),

Gene: Colbert\_99 Start: 67403, Stop: 67065, Start Num: 20

Candidate Starts for Colbert\_99:

(4, 67577), (Start: 20 @67403 has 236 MA's), (22, 67388), (25, 67355), (29, 67319), (34, 67259), (42, 67154), (43, 67148), (45, 67115), (46, 67103),

Gene: Coletti\_103 Start: 69021, Stop: 68689, Start Num: 20

Candidate Starts for Coletti\_103:

(Start: 15 @69078 has 23 MA's), (Start: 20 @69021 has 236 MA's), (25, 68976), (29, 68940), (33, 68895), (34, 68883), (36, 68826), (43, 68772), (44, 68763), (46, 68727),

Gene: Cornobble\_99 Start: 68126, Stop: 67791, Start Num: 20

Candidate Starts for Cornobble\_99:

(10, 68216), (Start: 15 @68183 has 23 MA's), (Start: 20 @68126 has 236 MA's), (25, 68081), (29, 68045), (33, 68000), (34, 67988), (36, 67931), (43, 67877), (44, 67868), (46, 67832),

Gene: Cosmolli16\_102 Start: 68607, Stop: 68269, Start Num: 20

Candidate Starts for Cosmolli16\_102:

(4, 68781), (Start: 20 @68607 has 236 MA's), (22, 68592), (25, 68559), (29, 68523), (34, 68463), (42, 68358), (43, 68352), (45, 68319), (46, 68307),

Gene: Craff\_102 Start: 68892, Stop: 68554, Start Num: 20

Candidate Starts for Craff\_102:

(4, 69066), (Start: 20 @68892 has 236 MA's), (22, 68877), (25, 68844), (29, 68808), (34, 68748), (42, 68643), (43, 68637), (45, 68604), (46, 68592),

Gene: Crownjwl\_98 Start: 68148, Stop: 67810, Start Num: 20

Candidate Starts for Crownjwl\_98:

(Start: 20 @68148 has 236 MA's), (22, 68133), (25, 68100), (29, 68064), (34, 68004), (42, 67899), (43, 67893), (45, 67860), (46, 67848),

Gene: DaddyDaniels\_104 Start: 68620, Stop: 68285, Start Num: 20

Candidate Starts for DaddyDaniels\_104:

(7, 68713), (Start: 9 @68710 has 3 MA's), (10, 68707), (Start: 20 @68620 has 236 MA's), (33, 68491), (34, 68479), (36, 68422), (43, 68368), (44, 68359), (46, 68323),

Gene: Daffy\_100 Start: 68120, Stop: 67782, Start Num: 20

Candidate Starts for Daffy\_100:

(4, 68294), (Start: 20 @68120 has 236 MA's), (22, 68105), (25, 68072), (29, 68036), (34, 67976), (42, 67871), (43, 67865), (45, 67832), (46, 67820),

Gene: Daka\_102 Start: 68077, Stop: 67742, Start Num: 20

Candidate Starts for Daka\_102:

(Start: 15 @68134 has 23 MA's), (Start: 20 @68077 has 236 MA's), (33, 67948), (34, 67936), (36, 67879), (43, 67825), (44, 67816), (46, 67780),

Gene: Dati\_98 Start: 68299, Stop: 67964, Start Num: 20

Candidate Starts for Dati\_98:

(7, 68392), (Start: 9 @68389 has 3 MA's), (10, 68386), (Start: 20 @68299 has 236 MA's), (33, 68170), (34, 68158), (36, 68101), (43, 68047), (44, 68038), (46, 68002),

Gene: DelRivs\_100 Start: 67928, Stop: 67593, Start Num: 20

Candidate Starts for DelRivs\_100:

(Start: 9 @68045 has 3 MA's), (Start: 15 @68009 has 23 MA's), (Start: 20 @67928 has 236 MA's), (33, 67799), (34, 67787), (36, 67730), (43, 67676), (44, 67667), (46, 67631),

Gene: Derpp\_100 Start: 68095, Stop: 67703, Start Num: 15

Candidate Starts for Derpp\_100:

(Start: 9 @68131 has 3 MA's), (Start: 15 @68095 has 23 MA's), (Start: 20 @68038 has 236 MA's), (33, 67909), (34, 67897), (36, 67840), (43, 67786), (44, 67777), (46, 67741),

Gene: Dice\_101 Start: 67966, Stop: 67628, Start Num: 20

Candidate Starts for Dice\_101:

(4, 68140), (Start: 20 @67966 has 236 MA's), (22, 67951), (25, 67918), (29, 67882), (34, 67822), (42, 67717), (43, 67711), (45, 67678), (46, 67666),

Gene: Dingo\_97 Start: 67408, Stop: 67070, Start Num: 20

Candidate Starts for Dingo\_97:

(Start: 20 @67408 has 236 MA's), (22, 67393), (25, 67360), (29, 67324), (34, 67264), (42, 67159), (43, 67153), (45, 67120), (46, 67108),

Gene: Dione\_99 Start: 67686, Stop: 67348, Start Num: 20

Candidate Starts for Dione\_99:

(4, 67860), (Start: 20 @67686 has 236 MA's), (22, 67671), (25, 67638), (29, 67602), (34, 67542), (42, 67437), (43, 67431), (45, 67398), (46, 67386),

Gene: DirtJuice\_102 Start: 68795, Stop: 68457, Start Num: 20

Candidate Starts for DirtJuice\_102:

(4, 68969), (Start: 20 @68795 has 236 MA's), (22, 68780), (25, 68747), (29, 68711), (34, 68651), (42, 68546), (43, 68540), (45, 68507), (46, 68495),

Gene: Doddsville\_98 Start: 68120, Stop: 67785, Start Num: 20

Candidate Starts for Doddsville\_98:

(7, 68213), (Start: 9 @68210 has 3 MA's), (10, 68207), (Start: 20 @68120 has 236 MA's), (33, 67991), (34, 67979), (36, 67922), (43, 67868), (44, 67859), (46, 67823),

Gene: DoesntMatter\_98 Start: 67960, Stop: 67622, Start Num: 20

Candidate Starts for DoesntMatter\_98:

(4, 68134), (Start: 20 @67960 has 236 MA's), (22, 67945), (25, 67912), (29, 67876), (34, 67816), (42, 67711), (43, 67705), (45, 67672), (46, 67660),

Gene: DonSanchon\_96 Start: 67644, Stop: 67306, Start Num: 20

Candidate Starts for DonSanchon\_96:

(4, 67818), (Start: 20 @67644 has 236 MA's), (22, 67629), (25, 67596), (29, 67560), (33, 67512), (34, 67500), (42, 67395), (43, 67389), (45, 67356), (46, 67344),

Gene: DuchessDung\_98 Start: 67636, Stop: 67301, Start Num: 20

Candidate Starts for DuchessDung\_98:

(Start: 9 @67729 has 3 MA's), (Start: 15 @67693 has 23 MA's), (Start: 20 @67636 has 236 MA's), (33, 67507), (34, 67495), (36, 67438), (43, 67384), (44, 67375), (46, 67339),

Gene: Duggie\_101 Start: 68262, Stop: 67927, Start Num: 20

Candidate Starts for Duggie\_101:

(Start: 9 @68379 has 3 MA's), (Start: 15 @68343 has 23 MA's), (Start: 20 @68262 has 236 MA's), (33, 68133), (34, 68121), (36, 68064), (43, 68010), (44, 68001), (46, 67965),

Gene: Durga\_103 Start: 68743, Stop: 68408, Start Num: 20

Candidate Starts for Durga\_103:

(7, 68836), (Start: 9 @68833 has 3 MA's), (10, 68830), (Start: 20 @68743 has 236 MA's), (33, 68614), (34, 68602), (36, 68545), (43, 68491), (44, 68482), (46, 68446),

Gene: ElvisPhasley\_106 Start: 68901, Stop: 68566, Start Num: 20

Candidate Starts for ElvisPhasley\_106:

(Start: 9 @68994 has 3 MA's), (Start: 15 @68958 has 23 MA's), (Start: 20 @68901 has 236 MA's), (33, 68772), (34, 68760), (36, 68703), (43, 68649), (44, 68640), (46, 68604),

Gene: Emiris\_103 Start: 68656, Stop: 68318, Start Num: 20

Candidate Starts for Emiris\_103:

(4, 68830), (Start: 20 @68656 has 236 MA's), (22, 68641), (25, 68608), (29, 68572), (34, 68512), (42, 68407), (43, 68401), (45, 68368), (46, 68356),

Gene: EmpTee\_100 Start: 68057, Stop: 67719, Start Num: 20

Candidate Starts for EmpTee\_100:

(4, 68231), (Start: 20 @68057 has 236 MA's), (22, 68042), (25, 68009), (29, 67973), (34, 67913), (42, 67808), (43, 67802), (45, 67769), (46, 67757),

Gene: Eremos\_98 Start: 68156, Stop: 67764, Start Num: 15

Candidate Starts for Eremos\_98:

(Start: 15 @68156 has 23 MA's), (Start: 20 @68099 has 236 MA's), (33, 67970), (34, 67958), (36, 67901), (43, 67847), (44, 67838), (46, 67802),

Gene: Etaye\_100 Start: 68827, Stop: 68492, Start Num: 20

Candidate Starts for Etaye\_100:

(7, 68920), (Start: 9 @68917 has 3 MA's), (10, 68914), (Start: 20 @68827 has 236 MA's), (33, 68698), (34, 68686), (36, 68629), (43, 68575), (44, 68566), (46, 68530),

Gene: Eugenia\_103 Start: 68768, Stop: 68430, Start Num: 20

Candidate Starts for Eugenia\_103:

(4, 68942), (Start: 20 @68768 has 236 MA's), (22, 68753), (25, 68720), (29, 68684), (34, 68624), (42, 68519), (43, 68513), (45, 68480), (46, 68468),

Gene: Fang\_101 Start: 68198, Stop: 67860, Start Num: 20

Candidate Starts for Fang\_101:

(4, 68372), (Start: 20 @68198 has 236 MA's), (22, 68183), (25, 68150), (29, 68114), (34, 68054), (42, 67949), (43, 67943), (45, 67910), (46, 67898),

Gene: FluffyNinja\_102 Start: 68345, Stop: 68007, Start Num: 20

Candidate Starts for FluffyNinja\_102:

(4, 68519), (Start: 20 @68345 has 236 MA's), (22, 68330), (25, 68297), (29, 68261), (34, 68201), (42, 68096), (43, 68090), (45, 68057), (46, 68045),

Gene: Fozzie\_97 Start: 68394, Stop: 68056, Start Num: 20

Candidate Starts for Fozzie\_97:

(Start: 20 @68394 has 236 MA's), (22, 68379), (25, 68346), (29, 68310), (34, 68250), (42, 68145), (43, 68139), (45, 68106), (46, 68094),

Gene: Frankicide\_98 Start: 67894, Stop: 67556, Start Num: 20

Candidate Starts for Frankicide\_98:

(4, 68068), (Start: 20 @67894 has 236 MA's), (22, 67879), (25, 67846), (29, 67810), (34, 67750), (42, 67645), (43, 67639), (45, 67606), (46, 67594),

Gene: Freya\_97 Start: 67664, Stop: 67326, Start Num: 20

Candidate Starts for Freya\_97:

(4, 67838), (Start: 20 @67664 has 236 MA's), (22, 67649), (25, 67616), (29, 67580), (34, 67520), (42, 67415), (43, 67409), (45, 67376), (46, 67364),

Gene: FriarPreacher\_98 Start: 68043, Stop: 67705, Start Num: 20

Candidate Starts for FriarPreacher\_98:

(4, 68217), (Start: 20 @68043 has 236 MA's), (22, 68028), (25, 67995), (29, 67959), (34, 67899), (42, 67794), (43, 67788), (45, 67755), (46, 67743),

Gene: Fringe\_105 Start: 68820, Stop: 68482, Start Num: 20

Candidate Starts for Fringe\_105:

(4, 68994), (Start: 20 @68820 has 236 MA's), (22, 68805), (25, 68772), (29, 68736), (34, 68676), (42, 68571), (43, 68565), (45, 68532), (46, 68520),

Gene: FugateOSU\_101 Start: 69105, Stop: 68767, Start Num: 20

Candidate Starts for FugateOSU\_101:

(4, 69279), (Start: 20 @69105 has 236 MA's), (22, 69090), (25, 69057), (29, 69021), (34, 68961), (42, 68856), (43, 68850), (45, 68817), (46, 68805),

Gene: Funsized\_90 Start: 69980, Stop: 69603, Start Num: 17

Candidate Starts for Funsized\_90:

(12, 70028), (Start: 17 @69980 has 2 MA's), (27, 69869), (30, 69845), (32, 69833), (35, 69782), (38, 69728), (40, 69716), (41, 69710),

Gene: Gareth\_101 Start: 68494, Stop: 68156, Start Num: 20

Candidate Starts for Gareth\_101:

(Start: 20 @68494 has 236 MA's), (22, 68479), (25, 68446), (29, 68410), (34, 68350), (42, 68245), (43, 68239), (45, 68206), (46, 68194),

Gene: GeneCoco\_100 Start: 68424, Stop: 68089, Start Num: 20

Candidate Starts for GeneCoco\_100:

(7, 68517), (Start: 9 @68514 has 3 MA's), (10, 68511), (Start: 20 @68424 has 236 MA's), (33, 68295), (34, 68283), (36, 68226), (43, 68172), (44, 68163), (46, 68127),

Gene: Giraffe\_102 Start: 68498, Stop: 68160, Start Num: 20

Candidate Starts for Giraffe\_102:

(4, 68672), (Start: 20 @68498 has 236 MA's), (22, 68483), (25, 68450), (29, 68414), (34, 68354), (42, 68249), (43, 68243), (45, 68210), (46, 68198),

Gene: Gophee\_100 Start: 68485, Stop: 68147, Start Num: 20

Candidate Starts for Gophee\_100:

(4, 68659), (Start: 20 @68485 has 236 MA's), (22, 68470), (25, 68437), (29, 68401), (34, 68341), (42, 68236), (43, 68230), (45, 68197), (46, 68185),

Gene: Grand2040\_98 Start: 68220, Stop: 67882, Start Num: 20

Candidate Starts for Grand2040\_98:

(4, 68394), (Start: 20 @68220 has 236 MA's), (22, 68205), (25, 68172), (29, 68136), (34, 68076), (42, 67971), (43, 67965), (45, 67932), (46, 67920),

Gene: Gwennie1\_98 Start: 68303, Stop: 67968, Start Num: 20

Candidate Starts for Gwennie1\_98:

(7, 68396), (Start: 9 @68393 has 3 MA's), (10, 68390), (Start: 20 @68303 has 236 MA's), (33, 68174), (34, 68162), (36, 68105), (43, 68051), (44, 68042), (46, 68006),

Gene: Gwilliam\_101 Start: 69104, Stop: 68688, Start Num: 15

Candidate Starts for Gwilliam\_101:

(Start: 9 @69140 has 3 MA's), (Start: 15 @69104 has 23 MA's), (Start: 20 @69023 has 236 MA's), (33, 68894), (34, 68882), (36, 68825), (43, 68771), (44, 68762), (46, 68726),

Gene: Gyarad\_0099 Start: 67633, Stop: 67295, Start Num: 20

Candidate Starts for Gyarad\_0099:

(4, 67807), (Start: 20 @67633 has 236 MA's), (22, 67618), (25, 67585), (29, 67549), (34, 67489), (42, 67384), (43, 67378), (45, 67345), (46, 67333),

Gene: HSavage\_98 Start: 67667, Stop: 67275, Start Num: 15

Candidate Starts for HSavage\_98:

(Start: 15 @67667 has 23 MA's), (Start: 20 @67610 has 236 MA's), (33, 67481), (34, 67469), (36, 67412), (43, 67358), (44, 67349), (46, 67313),

Gene: Haimas\_98 Start: 67925, Stop: 67587, Start Num: 20

Candidate Starts for Haimas\_98:

(4, 68099), (Start: 20 @67925 has 236 MA's), (22, 67910), (25, 67877), (29, 67841), (34, 67781), (42, 67676), (43, 67670), (45, 67637), (46, 67625),

Gene: Haleema\_100 Start: 68044, Stop: 67706, Start Num: 20

Candidate Starts for Haleema\_100:

(4, 68218), (Start: 20 @68044 has 236 MA's), (22, 68029), (25, 67996), (29, 67960), (34, 67900), (42, 67795), (43, 67789), (45, 67756), (46, 67744),

Gene: Hamish\_98 Start: 68213, Stop: 67875, Start Num: 20

Candidate Starts for Hamish\_98:

(4, 68387), (Start: 20 @68213 has 236 MA's), (22, 68198), (25, 68165), (29, 68129), (34, 68069), (42, 67964), (43, 67958), (45, 67925), (46, 67913),

Gene: Hartsy\_99 Start: 68156, Stop: 67821, Start Num: 20

Candidate Starts for Hartsy\_99:

(Start: 9 @68249 has 3 MA's), (Start: 15 @68213 has 23 MA's), (Start: 20 @68156 has 236 MA's), (33, 68027), (34, 68015), (36, 67958), (43, 67904), (44, 67895), (46, 67859),

Gene: Harvey\_98 Start: 67821, Stop: 67483, Start Num: 20

Candidate Starts for Harvey\_98:

(4, 67995), (Start: 20 @67821 has 236 MA's), (22, 67806), (25, 67773), (29, 67737), (34, 67677), (42, 67572), (43, 67566), (45, 67533), (46, 67521),

Gene: Held\_99 Start: 67942, Stop: 67604, Start Num: 20

Candidate Starts for Held\_99:

(4, 68116), (Start: 20 @67942 has 236 MA's), (22, 67927), (25, 67894), (29, 67858), (34, 67798), (42, 67693), (43, 67687), (45, 67654), (46, 67642),

Gene: HenryJackson\_101 Start: 68662, Stop: 68324, Start Num: 20

Candidate Starts for HenryJackson\_101:

(4, 68836), (Start: 20 @68662 has 236 MA's), (22, 68647), (25, 68614), (29, 68578), (34, 68518), (42, 68413), (43, 68407), (45, 68374), (46, 68362),

Gene: Hertubise\_100 Start: 68304, Stop: 67966, Start Num: 20

Candidate Starts for Hertubise\_100:

(4, 68478), (Start: 20 @68304 has 236 MA's), (22, 68289), (25, 68256), (29, 68220), (34, 68160), (42, 68055), (43, 68049), (45, 68016), (46, 68004),

Gene: Hetaeria\_100 Start: 68034, Stop: 67696, Start Num: 20

Candidate Starts for Hetaeria\_100:

(4, 68208), (Start: 20 @68034 has 236 MA's), (22, 68019), (25, 67986), (29, 67950), (34, 67890), (42, 67785), (43, 67779), (45, 67746), (46, 67734),

Gene: HighStump\_103 Start: 68450, Stop: 68112, Start Num: 20

Candidate Starts for HighStump\_103:

(4, 68624), (Start: 20 @68450 has 236 MA's), (22, 68435), (25, 68402), (29, 68366), (34, 68306), (42, 68201), (43, 68195), (45, 68162), (46, 68150),

Gene: Hocus\_100 Start: 67960, Stop: 67625, Start Num: 20

Candidate Starts for Hocus\_100:

(7, 68053), (Start: 9 @68050 has 3 MA's), (10, 68047), (Start: 20 @67960 has 236 MA's), (33, 67831), (34, 67819), (36, 67762), (43, 67708), (44, 67699), (46, 67663),

Gene: Horchata\_95 Start: 67795, Stop: 67460, Start Num: 20

Candidate Starts for Horchata\_95:



(Start: 15 @67852 has 23 MA's), (Start: 20 @67795 has 236 MA's), (33, 67666), (34, 67654), (36, 67597), (43, 67543), (44, 67534), (46, 67498),

Gene: ImtiyazSitla\_102 Start: 68483, Stop: 68148, Start Num: 20

Candidate Starts for ImtiyazSitla\_102:

(Start: 9 @68576 has 3 MA's), (Start: 15 @68540 has 23 MA's), (Start: 20 @68483 has 236 MA's), (33, 68354), (34, 68342), (36, 68285), (43, 68231), (44, 68222), (46, 68186),

Gene: Imvubu\_93 Start: 66861, Stop: 66478, Start Num: 19

Candidate Starts for Imvubu\_93:

(Start: 19 @66861 has 1 MA's), (26, 66768), (28, 66750), (31, 66720), (32, 66717), (37, 66618), (38, 66606), (42, 66573),

Gene: Inchworm\_102 Start: 68330, Stop: 67995, Start Num: 20

Candidate Starts for Inchworm\_102:

(Start: 9 @68423 has 3 MA's), (Start: 15 @68387 has 23 MA's), (Start: 20 @68330 has 236 MA's), (33, 68201), (34, 68189), (36, 68132), (43, 68078), (44, 68069), (46, 68033),

Gene: Inverness\_98 Start: 67893, Stop: 67555, Start Num: 20

Candidate Starts for Inverness\_98:

(4, 68067), (Start: 20 @67893 has 236 MA's), (22, 67878), (25, 67845), (29, 67809), (34, 67749), (42, 67644), (43, 67638), (45, 67605), (46, 67593),

Gene: Iridessa\_103 Start: 68055, Stop: 67720, Start Num: 20

Candidate Starts for Iridessa\_103:

(7, 68148), (Start: 9 @68145 has 3 MA's), (10, 68142), (Start: 20 @68055 has 236 MA's), (33, 67926), (34, 67914), (36, 67857), (43, 67803), (44, 67794), (46, 67758),

Gene: Iridoclysis\_100 Start: 68226, Stop: 67888, Start Num: 20

Candidate Starts for Iridoclysis\_100:

(4, 68400), (Start: 20 @68226 has 236 MA's), (22, 68211), (25, 68178), (29, 68142), (34, 68082), (42, 67977), (43, 67971), (45, 67938), (46, 67926),

Gene: IsaacEli\_103 Start: 68467, Stop: 68129, Start Num: 20

Candidate Starts for IsaacEli\_103:

(4, 68641), (Start: 20 @68467 has 236 MA's), (22, 68452), (25, 68419), (29, 68383), (34, 68323), (42, 68218), (43, 68212), (45, 68179), (46, 68167),

Gene: JDog\_100 Start: 68490, Stop: 68155, Start Num: 20

Candidate Starts for JDog\_100:

(7, 68583), (Start: 9 @68580 has 3 MA's), (10, 68577), (Start: 20 @68490 has 236 MA's), (33, 68361), (34, 68349), (36, 68292), (43, 68238), (44, 68229), (46, 68193),

Gene: JacAttac\_101 Start: 67940, Stop: 67602, Start Num: 20

Candidate Starts for JacAttac\_101:

(4, 68114), (Start: 20 @67940 has 236 MA's), (22, 67925), (25, 67892), (29, 67856), (34, 67796), (42, 67691), (43, 67685), (45, 67652), (46, 67640),

Gene: JakeO\_102 Start: 68218, Stop: 67883, Start Num: 20

Candidate Starts for JakeO\_102:

(Start: 9 @68308 has 3 MA's), (10, 68305), (Start: 20 @68218 has 236 MA's), (33, 68089), (34, 68077), (36, 68020), (43, 67966), (44, 67957), (46, 67921),

Gene: JangoPhett\_99 Start: 68302, Stop: 67964, Start Num: 20

Candidate Starts for JangoPhett\_99:

(4, 68476), (Start: 20 @68302 has 236 MA's), (22, 68287), (25, 68254), (29, 68218), (34, 68158), (42, 68053), (43, 68047), (45, 68014), (46, 68002),

Gene: Jesabah\_101 Start: 69065, Stop: 68727, Start Num: 20

Candidate Starts for Jesabah\_101:

(4, 69239), (Start: 20 @69065 has 236 MA's), (22, 69050), (25, 69017), (29, 68981), (34, 68921), (42, 68816), (43, 68810), (45, 68777), (46, 68765),

Gene: Jillium\_101 Start: 68379, Stop: 68041, Start Num: 20

Candidate Starts for Jillium\_101:

(4, 68553), (Start: 20 @68379 has 236 MA's), (22, 68364), (25, 68331), (29, 68295), (34, 68235), (42, 68130), (43, 68124), (45, 68091), (46, 68079),

Gene: Jiminy\_101 Start: 68154, Stop: 67819, Start Num: 20

Candidate Starts for Jiminy\_101:

(Start: 9 @68271 has 3 MA's), (Start: 15 @68235 has 23 MA's), (Start: 20 @68154 has 236 MA's), (33, 68025), (34, 68013), (36, 67956), (43, 67902), (44, 67893), (46, 67857),

Gene: Jiraiya\_106 Start: 68238, Stop: 67903, Start Num: 20

Candidate Starts for Jiraiya\_106:

(Start: 9 @68355 has 3 MA's), (Start: 15 @68319 has 23 MA's), (Start: 20 @68238 has 236 MA's), (33, 68109), (34, 68097), (36, 68040), (43, 67986), (44, 67977), (46, 67941),

Gene: KLucky39\_98 Start: 67765, Stop: 67427, Start Num: 20

Candidate Starts for KLucky39\_98:

(Start: 20 @67765 has 236 MA's), (22, 67750), (25, 67717), (29, 67681), (34, 67621), (42, 67516), (43, 67510), (45, 67477), (46, 67465),

Gene: Kahve\_101 Start: 68660, Stop: 68322, Start Num: 20

Candidate Starts for Kahve\_101:

(4, 68834), (Start: 20 @68660 has 236 MA's), (22, 68645), (25, 68612), (29, 68576), (34, 68516), (42, 68411), (43, 68405), (45, 68372), (46, 68360),

Gene: Kailash\_99 Start: 68354, Stop: 68019, Start Num: 20

Candidate Starts for Kailash\_99:

(Start: 9 @68447 has 3 MA's), (Start: 15 @68411 has 23 MA's), (Start: 20 @68354 has 236 MA's), (33, 68225), (34, 68213), (36, 68156), (43, 68102), (44, 68093), (46, 68057),

Gene: Katniss\_103 Start: 68076, Stop: 67738, Start Num: 20

Candidate Starts for Katniss\_103:

(4, 68250), (Start: 20 @68076 has 236 MA's), (22, 68061), (25, 68028), (29, 67992), (34, 67932), (42, 67827), (43, 67821), (45, 67788), (46, 67776),

Gene: Keitherie\_104 Start: 68709, Stop: 68377, Start Num: 20

Candidate Starts for Keitherie\_104:

(Start: 15 @68766 has 23 MA's), (Start: 20 @68709 has 236 MA's), (25, 68664), (29, 68628), (33, 68583), (34, 68571), (36, 68514), (43, 68460), (44, 68451), (46, 68415),

Gene: Khan1\_101 Start: 68433, Stop: 68098, Start Num: 20

Candidate Starts for Khan1\_101:

(7, 68526), (Start: 9 @68523 has 3 MA's), (10, 68520), (Start: 20 @68433 has 236 MA's), (33, 68304), (34, 68292), (36, 68235), (43, 68181), (44, 68172), (46, 68136),

Gene: Kikipoo\_103 Start: 68467, Stop: 68129, Start Num: 20

Candidate Starts for Kikipoo\_103:

(4, 68641), (Start: 20 @68467 has 236 MA's), (22, 68452), (25, 68419), (29, 68383), (34, 68323), (42, 68218), (43, 68212), (45, 68179), (46, 68167),

Gene: Kimbrough\_102 Start: 68539, Stop: 68201, Start Num: 20

Candidate Starts for Kimbrough\_102:

(4, 68713), (Start: 20 @68539 has 236 MA's), (22, 68524), (25, 68491), (29, 68455), (34, 68395), (42, 68290), (43, 68284), (45, 68251), (46, 68239),

Gene: KingTut\_91 Start: 64456, Stop: 64118, Start Num: 20

Candidate Starts for KingTut\_91:

(4, 64630), (Start: 20 @64456 has 236 MA's), (22, 64441), (25, 64408), (29, 64372), (34, 64312), (42, 64207), (43, 64201), (45, 64168), (46, 64156),

Gene: KingVeVeVe\_99 Start: 67723, Stop: 67331, Start Num: 15

Candidate Starts for KingVeVeVe\_99:

(Start: 15 @67723 has 23 MA's), (Start: 20 @67666 has 236 MA's), (33, 67537), (36, 67468), (43, 67414), (44, 67405), (46, 67369),

Gene: KlimbOn\_100 Start: 67973, Stop: 67638, Start Num: 20

Candidate Starts for KlimbOn\_100:

(Start: 9 @68090 has 3 MA's), (Start: 15 @68054 has 23 MA's), (Start: 20 @67973 has 236 MA's), (33, 67844), (34, 67832), (36, 67775), (43, 67721), (44, 67712), (46, 67676),

Gene: Kloppinator\_101 Start: 68109, Stop: 67771, Start Num: 20

Candidate Starts for Kloppinator\_101:

(4, 68283), (Start: 20 @68109 has 236 MA's), (22, 68094), (25, 68061), (29, 68025), (34, 67965), (42, 67860), (43, 67854), (45, 67821), (46, 67809),

Gene: Knocker\_90 Start: 68842, Stop: 68459, Start Num: 18

Candidate Starts for Knocker\_90:

(Start: 8 @68917 has 1 MA's), (11, 68893), (14, 68884), (Start: 18 @68842 has 1 MA's), (25, 68761), (26, 68749), (27, 68734), (28, 68731), (30, 68710), (32, 68698), (39, 68578), (42, 68554), (45, 68515),

Gene: Kwadwo\_100 Start: 67963, Stop: 67625, Start Num: 20

Candidate Starts for Kwadwo\_100:

(4, 68137), (Start: 20 @67963 has 236 MA's), (22, 67948), (25, 67915), (29, 67879), (34, 67819), (42, 67714), (43, 67708), (45, 67675), (46, 67663),

Gene: Kwksand96\_102 Start: 68223, Stop: 67888, Start Num: 20

Candidate Starts for Kwksand96\_102:

(Start: 9 @68316 has 3 MA's), (Start: 15 @68280 has 23 MA's), (Start: 20 @68223 has 236 MA's), (33, 68094), (34, 68082), (36, 68025), (43, 67971), (44, 67962), (46, 67926),

Gene: Labeouficaum\_101 Start: 68095, Stop: 67703, Start Num: 15

Candidate Starts for Labeouficaum\_101:

(Start: 9 @68131 has 3 MA's), (Start: 15 @68095 has 23 MA's), (Start: 20 @68038 has 236 MA's), (33, 67909), (34, 67897), (36, 67840), (43, 67786), (44, 67777), (46, 67741),

Gene: LasagnaCat\_102 Start: 68339, Stop: 68004, Start Num: 20

Candidate Starts for LasagnaCat\_102:

(Start: 9 @68432 has 3 MA's), (Start: 15 @68396 has 23 MA's), (Start: 20 @68339 has 236 MA's), (33, 68210), (34, 68198), (36, 68141), (43, 68087), (44, 68078), (46, 68042),

Gene: Lasso\_100 Start: 68205, Stop: 67867, Start Num: 20

Candidate Starts for Lasso\_100:

(4, 68379), (Start: 20 @68205 has 236 MA's), (22, 68190), (25, 68157), (29, 68121), (34, 68061), (42, 67956), (43, 67950), (45, 67917), (46, 67905),

Gene: LeeLot\_99 Start: 68550, Stop: 68212, Start Num: 20

Candidate Starts for LeeLot\_99:

(4, 68724), (Start: 20 @68550 has 236 MA's), (22, 68535), (25, 68502), (29, 68466), (34, 68406), (42, 68301), (43, 68295), (45, 68262), (46, 68250),

Gene: Lego3393\_99 Start: 68666, Stop: 68328, Start Num: 20

Candidate Starts for Lego3393\_99:

(4, 68840), (Start: 20 @68666 has 236 MA's), (22, 68651), (25, 68618), (29, 68582), (34, 68522), (42, 68417), (43, 68411), (45, 68378), (46, 68366),

Gene: Legolas\_102 Start: 68293, Stop: 67955, Start Num: 20

Candidate Starts for Legolas\_102:

(4, 68467), (Start: 20 @68293 has 236 MA's), (22, 68278), (25, 68245), (29, 68209), (34, 68149), (42, 68044), (43, 68038), (45, 68005), (46, 67993),

Gene: LeiMonet\_103 Start: 68420, Stop: 68085, Start Num: 20

Candidate Starts for LeiMonet\_103:

(7, 68513), (Start: 9 @68510 has 3 MA's), (10, 68507), (Start: 20 @68420 has 236 MA's), (33, 68291), (34, 68279), (36, 68222), (43, 68168), (44, 68159), (46, 68123),

Gene: LemonSlice\_101 Start: 67952, Stop: 67614, Start Num: 20

Candidate Starts for LemonSlice\_101:

(4, 68126), (Start: 20 @67952 has 236 MA's), (22, 67937), (25, 67904), (29, 67868), (34, 67808), (42, 67703), (43, 67697), (45, 67664), (46, 67652),

Gene: Longacauda\_101 Start: 68181, Stop: 67846, Start Num: 20

Candidate Starts for Longacauda\_101:

(Start: 9 @68298 has 3 MA's), (Start: 15 @68262 has 23 MA's), (Start: 20 @68181 has 236 MA's), (33, 68052), (34, 68040), (36, 67983), (43, 67929), (44, 67920), (46, 67884),

Gene: Lopsy\_97 Start: 67909, Stop: 67517, Start Num: 15

Candidate Starts for Lopsy\_97:

(Start: 9 @67945 has 3 MA's), (Start: 15 @67909 has 23 MA's), (Start: 20 @67852 has 236 MA's), (33, 67723), (34, 67711), (36, 67654), (43, 67600), (44, 67591), (46, 67555),

Gene: LostAndPhound\_100 Start: 68494, Stop: 68156, Start Num: 20

Candidate Starts for LostAndPhound\_100:

(4, 68668), (Start: 20 @68494 has 236 MA's), (22, 68479), (25, 68446), (29, 68410), (34, 68350), (42, 68245), (43, 68239), (45, 68206), (46, 68194),

Gene: LuckyMarjie\_98 Start: 67704, Stop: 67366, Start Num: 20

Candidate Starts for LuckyMarjie\_98:

(4, 67878), (Start: 20 @67704 has 236 MA's), (22, 67689), (25, 67656), (29, 67620), (34, 67560), (42, 67455), (43, 67449), (45, 67416), (46, 67404),

Gene: Lulumae\_96 Start: 67685, Stop: 67347, Start Num: 20

Candidate Starts for Lulumae\_96:

(4, 67859), (Start: 20 @67685 has 236 MA's), (22, 67670), (25, 67637), (29, 67601), (34, 67541), (42, 67436), (43, 67430), (45, 67397), (46, 67385),

Gene: Lulwa\_98 Start: 67318, Stop: 66980, Start Num: 20

Candidate Starts for Lulwa\_98:

(4, 67492), (Start: 20 @67318 has 236 MA's), (22, 67303), (25, 67270), (29, 67234), (34, 67174), (42, 67069), (43, 67063), (45, 67030), (46, 67018),

Gene: Lumine\_102 Start: 68142, Stop: 67804, Start Num: 20

Candidate Starts for Lumine\_102:

(4, 68316), (Start: 20 @68142 has 236 MA's), (22, 68127), (25, 68094), (29, 68058), (34, 67998), (42, 67893), (43, 67887), (45, 67854), (46, 67842),

Gene: MRabcd\_101 Start: 68420, Stop: 68082, Start Num: 20

Candidate Starts for MRabcd\_101:

(4, 68594), (Start: 20 @68420 has 236 MA's), (22, 68405), (25, 68372), (29, 68336), (34, 68276), (42, 68171), (43, 68165), (45, 68132), (46, 68120),

Gene: Mag7\_99 Start: 67898, Stop: 67563, Start Num: 20

Candidate Starts for Mag7\_99:

(Start: 9 @67991 has 3 MA's), (Start: 15 @67955 has 23 MA's), (Start: 20 @67898 has 236 MA's), (33, 67769), (34, 67757), (36, 67700), (43, 67646), (44, 67637), (46, 67601),

Gene: Mana\_98 Start: 68108, Stop: 67770, Start Num: 20

Candidate Starts for Mana\_98:

(4, 68282), (Start: 20 @68108 has 236 MA's), (22, 68093), (25, 68060), (29, 68024), (34, 67964), (42, 67859), (43, 67853), (45, 67820), (46, 67808),

Gene: Manad\_100 Start: 68211, Stop: 67876, Start Num: 20

Candidate Starts for Manad\_100:

(10, 68301), (Start: 15 @68268 has 23 MA's), (Start: 20 @68211 has 236 MA's), (25, 68166), (29, 68130), (33, 68085), (34, 68073), (36, 68016), (43, 67962), (44, 67953), (46, 67917),

Gene: Maru\_100 Start: 68313, Stop: 67975, Start Num: 20

Candidate Starts for Maru\_100:

(4, 68487), (Start: 20 @68313 has 236 MA's), (22, 68298), (25, 68265), (29, 68229), (34, 68169), (42, 68064), (43, 68058), (45, 68025), (46, 68013),

Gene: Maskar\_102 Start: 68483, Stop: 68148, Start Num: 20

Candidate Starts for Maskar\_102:

(Start: 9 @68576 has 3 MA's), (Start: 15 @68540 has 23 MA's), (Start: 20 @68483 has 236 MA's), (33, 68354), (34, 68342), (36, 68285), (43, 68231), (44, 68222), (46, 68186),

Gene: Matalotodo\_99 Start: 68952, Stop: 68614, Start Num: 20

Candidate Starts for Matalotodo\_99:

(4, 69126), (Start: 20 @68952 has 236 MA's), (22, 68937), (25, 68904), (29, 68868), (34, 68808), (42, 68703), (43, 68697), (45, 68664), (46, 68652),

Gene: Mcshane\_103 Start: 68387, Stop: 67995, Start Num: 15

Candidate Starts for Mcshane\_103:

(Start: 9 @68423 has 3 MA's), (Start: 15 @68387 has 23 MA's), (Start: 20 @68330 has 236 MA's), (33, 68201), (34, 68189), (36, 68132), (43, 68078), (44, 68069), (46, 68033),

Gene: Mecca\_101 Start: 68519, Stop: 68181, Start Num: 20

Candidate Starts for Mecca\_101:

(4, 68693), (Start: 20 @68519 has 236 MA's), (22, 68504), (25, 68471), (29, 68435), (34, 68375), (42, 68270), (43, 68264), (45, 68231), (46, 68219),

Gene: Megamind20\_103 Start: 68299, Stop: 67961, Start Num: 20

Candidate Starts for Megamind20\_103:

(4, 68473), (Start: 20 @68299 has 236 MA's), (22, 68284), (25, 68251), (29, 68215), (34, 68155), (42, 68050), (43, 68044), (45, 68011), (46, 67999),

Gene: Megatron\_102 Start: 68638, Stop: 68300, Start Num: 20

Candidate Starts for Megatron\_102:

(4, 68812), (Start: 20 @68638 has 236 MA's), (22, 68623), (25, 68590), (29, 68554), (34, 68494), (42, 68389), (43, 68383), (45, 68350), (46, 68338),

Gene: Melc17\_98 Start: 68582, Stop: 68247, Start Num: 20

Candidate Starts for Melc17\_98:

(7, 68675), (Start: 9 @68672 has 3 MA's), (10, 68669), (Start: 20 @68582 has 236 MA's), (33, 68453), (34, 68441), (36, 68384), (43, 68330), (44, 68321), (46, 68285),

Gene: MelsMeow\_99 Start: 68057, Stop: 67629, Start Num: 9

Candidate Starts for MelsMeow\_99:

(Start: 9 @68057 has 3 MA's), (Start: 15 @68021 has 23 MA's), (Start: 20 @67964 has 236 MA's), (33, 67835), (34, 67823), (36, 67766), (43, 67712), (44, 67703), (46, 67667),

Gene: Mesh1\_101 Start: 68403, Stop: 68065, Start Num: 20

Candidate Starts for Mesh1\_101:

(4, 68577), (Start: 20 @68403 has 236 MA's), (22, 68388), (25, 68355), (29, 68319), (34, 68259), (42, 68154), (43, 68148), (45, 68115), (46, 68103),

Gene: Mesmerelda\_102 Start: 68519, Stop: 68181, Start Num: 20

Candidate Starts for Mesmerelda\_102:

(4, 68693), (Start: 20 @68519 has 236 MA's), (22, 68504), (25, 68471), (29, 68435), (34, 68375), (42, 68270), (43, 68264), (45, 68231), (46, 68219),

Gene: MichaelPhcott\_99 Start: 67952, Stop: 67560, Start Num: 15

Candidate Starts for MichaelPhcott\_99:

(Start: 9 @67988 has 3 MA's), (Start: 15 @67952 has 23 MA's), (Start: 20 @67895 has 236 MA's), (33, 67766), (34, 67754), (36, 67697), (43, 67643), (44, 67634), (46, 67598),

Gene: Mikota\_95 Start: 67396, Stop: 67058, Start Num: 20

Candidate Starts for Mikota\_95:

(1, 67738), (2, 67735), (3, 67732), (5, 67567), (6, 67540), (Start: 20 @67396 has 236 MA's), (22, 67381), (25, 67348), (29, 67312), (34, 67252), (42, 67147), (43, 67141), (45, 67108), (46, 67096),

Gene: MiniBoss\_96 Start: 67067, Stop: 66675, Start Num: 15

Candidate Starts for MiniBoss\_96:

(Start: 15 @67067 has 23 MA's), (Start: 20 @67010 has 236 MA's), (33, 66881), (34, 66869), (36, 66812), (43, 66758), (44, 66749), (46, 66713),

Gene: MitKao\_101 Start: 68121, Stop: 67783, Start Num: 20

Candidate Starts for MitKao\_101:

(4, 68295), (Start: 20 @68121 has 236 MA's), (22, 68106), (25, 68073), (29, 68037), (34, 67977), (42, 67872), (43, 67866), (45, 67833), (46, 67821),

Gene: Morgushi\_98 Start: 67936, Stop: 67598, Start Num: 20

Candidate Starts for Morgushi\_98:

(4, 68110), (Start: 20 @67936 has 236 MA's), (22, 67921), (25, 67888), (29, 67852), (34, 67792), (42, 67687), (43, 67681), (45, 67648), (46, 67636),

Gene: Morty\_101 Start: 68506, Stop: 68168, Start Num: 20

Candidate Starts for Morty\_101:

(4, 68680), (Start: 20 @68506 has 236 MA's), (22, 68491), (25, 68458), (29, 68422), (34, 68362), (42, 68257), (43, 68251), (45, 68218), (46, 68206),

Gene: Mosaic\_98 Start: 68117, Stop: 67779, Start Num: 20

Candidate Starts for Mosaic\_98:

(4, 68291), (Start: 20 @68117 has 236 MA's), (22, 68102), (25, 68069), (29, 68033), (34, 67973), (42, 67868), (43, 67862), (45, 67829), (46, 67817),

Gene: MrPhizzler\_100 Start: 68410, Stop: 68075, Start Num: 20

Candidate Starts for MrPhizzler\_100:

(7, 68503), (Start: 9 @68500 has 3 MA's), (10, 68497), (Start: 20 @68410 has 236 MA's), (33, 68281), (34, 68269), (36, 68212), (43, 68158), (44, 68149), (46, 68113),

Gene: Mulan\_100 Start: 68150, Stop: 67812, Start Num: 20

Candidate Starts for Mulan\_100:

(4, 68324), (Start: 20 @68150 has 236 MA's), (22, 68135), (25, 68102), (29, 68066), (34, 68006), (42, 67901), (43, 67895), (45, 67862), (46, 67850),

Gene: Murdoc\_97 Start: 68229, Stop: 67891, Start Num: 20

Candidate Starts for Murdoc\_97:

(4, 68403), (Start: 20 @68229 has 236 MA's), (22, 68214), (25, 68181), (29, 68145), (34, 68085), (42, 67980), (43, 67974), (45, 67941), (46, 67929),

Gene: Mutante\_102 Start: 68123, Stop: 67785, Start Num: 20

Candidate Starts for Mutante\_102:

(4, 68297), (Start: 20 @68123 has 236 MA's), (22, 68108), (25, 68075), (29, 68039), (34, 67979), (42, 67874), (43, 67868), (45, 67835), (46, 67823),

Gene: Nacho\_00103 Start: 68950, Stop: 68612, Start Num: 20

Candidate Starts for Nacho\_00103:

(4, 69124), (Start: 20 @68950 has 236 MA's), (22, 68935), (25, 68902), (29, 68866), (34, 68806), (42, 68701), (43, 68695), (45, 68662), (46, 68650),

Gene: Nathan\_100 Start: 68365, Stop: 68030, Start Num: 20

Candidate Starts for Nathan\_100:

(Start: 9 @68458 has 3 MA's), (Start: 15 @68422 has 23 MA's), (Start: 20 @68365 has 236 MA's), (33, 68236), (34, 68224), (36, 68167), (43, 68113), (44, 68104), (46, 68068),

Gene: Newman\_96 Start: 68227, Stop: 67889, Start Num: 20

Candidate Starts for Newman\_96:

(4, 68401), (Start: 20 @68227 has 236 MA's), (22, 68212), (25, 68179), (29, 68143), (34, 68083), (42, 67978), (43, 67972), (45, 67939), (46, 67927),

Gene: Nicole21\_102 Start: 68257, Stop: 67919, Start Num: 20

Candidate Starts for Nicole21\_102:

(4, 68431), (Start: 20 @68257 has 236 MA's), (22, 68242), (25, 68209), (29, 68173), (34, 68113), (42, 68008), (43, 68002), (45, 67969), (46, 67957),

Gene: Numberten\_101 Start: 68236, Stop: 67898, Start Num: 20

Candidate Starts for Numberten\_101:

(4, 68410), (Start: 20 @68236 has 236 MA's), (22, 68221), (25, 68188), (29, 68152), (34, 68092), (42, 67987), (43, 67981), (45, 67948), (46, 67936),

Gene: Nyala\_101 Start: 67972, Stop: 67634, Start Num: 20

Candidate Starts for Nyala\_101:

(4, 68146), (Start: 20 @67972 has 236 MA's), (22, 67957), (25, 67924), (29, 67888), (34, 67828), (42, 67723), (43, 67717), (45, 67684), (46, 67672),

Gene: OSmaximus\_101 Start: 68612, Stop: 68184, Start Num: 9

Candidate Starts for OSmaximus\_101:

(Start: 9 @68612 has 3 MA's), (Start: 15 @68576 has 23 MA's), (Start: 20 @68519 has 236 MA's), (25, 68474), (29, 68438), (33, 68393), (34, 68381), (36, 68324), (43, 68270), (44, 68261), (46, 68225),

Gene: Olak\_103 Start: 68558, Stop: 68166, Start Num: 15

Candidate Starts for Olak\_103:

(Start: 9 @68594 has 3 MA's), (Start: 15 @68558 has 23 MA's), (Start: 20 @68501 has 236 MA's), (25, 68456), (29, 68420), (33, 68375), (34, 68363), (36, 68306), (43, 68252), (44, 68243), (46, 68207),

Gene: Oline\_100 Start: 68214, Stop: 67786, Start Num: 9

Candidate Starts for Oline\_100:

(Start: 9 @68214 has 3 MA's), (Start: 15 @68178 has 23 MA's), (Start: 20 @68121 has 236 MA's), (33, 67992), (34, 67980), (36, 67923), (43, 67869), (44, 67860), (46, 67824),

Gene: Olive\_97 Start: 68369, Stop: 68031, Start Num: 20

Candidate Starts for Olive\_97:

(4, 68543), (Start: 20 @68369 has 236 MA's), (22, 68354), (25, 68321), (29, 68285), (34, 68225), (42, 68120), (43, 68114), (45, 68081), (46, 68069),

Gene: OliverWalter\_100 Start: 68421, Stop: 68083, Start Num: 20

Candidate Starts for OliverWalter\_100:

(4, 68595), (Start: 20 @68421 has 236 MA's), (22, 68406), (25, 68373), (29, 68337), (34, 68277), (42, 68172), (43, 68166), (45, 68133), (46, 68121),

Gene: Omniscient\_102 Start: 68826, Stop: 68488, Start Num: 20

Candidate Starts for Omniscient\_102:

(4, 69000), (Start: 20 @68826 has 236 MA's), (22, 68811), (25, 68778), (29, 68742), (34, 68682), (42, 68577), (43, 68571), (45, 68538), (46, 68526),

Gene: Oosterbaan\_101 Start: 68364, Stop: 68026, Start Num: 20

Candidate Starts for Oosterbaan\_101:



(4, 68538), (Start: 20 @68364 has 236 MA's), (22, 68349), (25, 68316), (29, 68280), (34, 68220), (42, 68115), (43, 68109), (45, 68076), (46, 68064),

Gene: Orfeu\_101 Start: 68485, Stop: 68147, Start Num: 20

Candidate Starts for Orfeu\_101:

(4, 68659), (Start: 20 @68485 has 236 MA's), (22, 68470), (25, 68437), (29, 68401), (34, 68341), (42, 68236), (43, 68230), (45, 68197), (46, 68185),

Gene: Orion\_99 Start: 68056, Stop: 67718, Start Num: 20

Candidate Starts for Orion\_99:

(4, 68230), (Start: 20 @68056 has 236 MA's), (22, 68041), (25, 68008), (29, 67972), (34, 67912), (42, 67807), (43, 67801), (45, 67768), (46, 67756),

Gene: Orwigg\_103 Start: 68261, Stop: 67923, Start Num: 20

Candidate Starts for Orwigg\_103:

(Start: 20 @68261 has 236 MA's), (22, 68246), (25, 68213), (29, 68177), (34, 68117), (42, 68012), (43, 68006), (45, 67973), (46, 67961),

Gene: PG1\_99 Start: 68628, Stop: 68290, Start Num: 20

Candidate Starts for PG1\_99:

(4, 68802), (Start: 20 @68628 has 236 MA's), (22, 68613), (25, 68580), (29, 68544), (34, 68484), (42, 68379), (43, 68373), (45, 68340), (46, 68328),

Gene: Pacifista\_103 Start: 68348, Stop: 68010, Start Num: 20

Candidate Starts for Pacifista\_103:

(4, 68522), (Start: 20 @68348 has 236 MA's), (22, 68333), (25, 68300), (29, 68264), (34, 68204), (42, 68099), (43, 68093), (45, 68060), (46, 68048),

Gene: Phamished\_100 Start: 68144, Stop: 67806, Start Num: 20

Candidate Starts for Phamished\_100:

(4, 68318), (Start: 20 @68144 has 236 MA's), (22, 68129), (25, 68096), (29, 68060), (34, 68000), (42, 67895), (43, 67889), (45, 67856), (46, 67844),

Gene: Phareon\_98 Start: 67669, Stop: 67331, Start Num: 20

Candidate Starts for Phareon\_98:

(4, 67843), (Start: 20 @67669 has 236 MA's), (22, 67654), (25, 67621), (29, 67585), (34, 67525), (42, 67420), (43, 67414), (45, 67381), (46, 67369),

Gene: PhatCats2014\_100 Start: 68629, Stop: 68291, Start Num: 20

Candidate Starts for PhatCats2014\_100:

(4, 68803), (Start: 20 @68629 has 236 MA's), (22, 68614), (25, 68581), (29, 68545), (34, 68485), (42, 68380), (43, 68374), (45, 68341), (46, 68329),

Gene: PhatLouie\_103 Start: 68496, Stop: 68161, Start Num: 20

Candidate Starts for PhatLouie\_103:

(7, 68589), (Start: 9 @68586 has 3 MA's), (10, 68583), (Start: 20 @68496 has 236 MA's), (33, 68367), (34, 68355), (36, 68298), (43, 68244), (44, 68235), (46, 68199),

Gene: PhenghisKhan\_101 Start: 68185, Stop: 67793, Start Num: 15

Candidate Starts for PhenghisKhan\_101:

(Start: 9 @68221 has 3 MA's), (Start: 15 @68185 has 23 MA's), (Start: 20 @68128 has 236 MA's), (33, 67999), (34, 67987), (36, 67930), (43, 67876), (44, 67867), (46, 67831),

Gene: Pherdinand\_102 Start: 68348, Stop: 68010, Start Num: 20

Candidate Starts for Pherdinand\_102:

(4, 68522), (Start: 20 @68348 has 236 MA's), (22, 68333), (25, 68300), (29, 68264), (34, 68204), (42, 68099), (43, 68093), (45, 68060), (46, 68048),

Gene: Phergie\_101 Start: 68174, Stop: 67782, Start Num: 15

Candidate Starts for Phergie\_101:

(Start: 9 @68210 has 3 MA's), (Start: 15 @68174 has 23 MA's), (Start: 20 @68117 has 236 MA's), (33, 67988), (34, 67976), (36, 67919), (43, 67865), (44, 67856), (46, 67820),

Gene: Phipps\_98 Start: 67922, Stop: 67584, Start Num: 20

Candidate Starts for Phipps\_98:

(4, 68096), (Start: 20 @67922 has 236 MA's), (22, 67907), (25, 67874), (29, 67838), (34, 67778), (42, 67673), (43, 67667), (45, 67634), (46, 67622),

Gene: Phleuron\_98 Start: 67928, Stop: 67593, Start Num: 20

Candidate Starts for Phleuron\_98:

(Start: 9 @68021 has 3 MA's), (Start: 15 @67985 has 23 MA's), (Start: 20 @67928 has 236 MA's), (33, 67799), (34, 67787), (36, 67730), (43, 67676), (44, 67667), (46, 67631),

Gene: PhrankReynolds\_99 Start: 68179, Stop: 67787, Start Num: 15

Candidate Starts for PhrankReynolds\_99:

(Start: 9 @68215 has 3 MA's), (Start: 15 @68179 has 23 MA's), (Start: 20 @68122 has 236 MA's), (33, 67993), (34, 67981), (36, 67924), (43, 67870), (44, 67861), (46, 67825),

Gene: PhrodoBaggins\_103 Start: 68502, Stop: 68164, Start Num: 20

Candidate Starts for PhrodoBaggins\_103:

(4, 68676), (Start: 20 @68502 has 236 MA's), (22, 68487), (25, 68454), (29, 68418), (34, 68358), (42, 68253), (43, 68247), (45, 68214), (46, 68202),

Gene: Phunky\_98 Start: 68004, Stop: 67666, Start Num: 20

Candidate Starts for Phunky\_98:

(4, 68178), (Start: 20 @68004 has 236 MA's), (22, 67989), (25, 67956), (29, 67920), (34, 67860), (42, 67755), (43, 67749), (45, 67716), (46, 67704),

Gene: Piglet\_00100 Start: 68621, Stop: 68283, Start Num: 20

Candidate Starts for Piglet\_00100:

(4, 68795), (Start: 20 @68621 has 236 MA's), (22, 68606), (25, 68573), (29, 68537), (34, 68477), (42, 68372), (43, 68366), (45, 68333), (46, 68321),

Gene: PinheadLarry\_100 Start: 68267, Stop: 67932, Start Num: 20

Candidate Starts for PinheadLarry\_100:

(7, 68360), (Start: 9 @68357 has 3 MA's), (10, 68354), (Start: 20 @68267 has 236 MA's), (33, 68138), (34, 68126), (36, 68069), (43, 68015), (44, 68006), (46, 67970),

Gene: Pinkman\_100 Start: 68339, Stop: 68004, Start Num: 20

Candidate Starts for Pinkman\_100:

(Start: 9 @68432 has 3 MA's), (Start: 15 @68396 has 23 MA's), (Start: 20 @68339 has 236 MA's), (33, 68210), (34, 68198), (36, 68141), (43, 68087), (44, 68078), (46, 68042),

Gene: Pipsqueak\_98 Start: 67956, Stop: 67618, Start Num: 20

Candidate Starts for Pipsqueak\_98:

(4, 68130), (Start: 20 @67956 has 236 MA's), (22, 67941), (25, 67908), (29, 67872), (34, 67812), (42, 67707), (43, 67701), (45, 67668), (46, 67656),

Gene: Placalicious\_98 Start: 68714, Stop: 68376, Start Num: 20

Candidate Starts for Placalicious\_98:

(4, 68888), (Start: 20 @68714 has 236 MA's), (22, 68699), (25, 68666), (29, 68630), (34, 68570), (42, 68465), (43, 68459), (45, 68426), (46, 68414),

Gene: Plmatters\_98 Start: 67947, Stop: 67609, Start Num: 20

Candidate Starts for Plmatters\_98:

(4, 68121), (Start: 20 @67947 has 236 MA's), (22, 67932), (25, 67899), (29, 67863), (34, 67803), (42, 67698), (43, 67692), (45, 67659), (46, 67647),

Gene: Podrick\_99 Start: 68035, Stop: 67697, Start Num: 20

Candidate Starts for Podrick\_99:

(4, 68209), (Start: 20 @68035 has 236 MA's), (22, 68020), (25, 67987), (29, 67951), (34, 67891), (42, 67786), (43, 67780), (45, 67747), (46, 67735),

Gene: Pops\_98 Start: 67995, Stop: 67657, Start Num: 20

Candidate Starts for Pops\_98:

(Start: 20 @67995 has 236 MA's), (22, 67980), (25, 67947), (29, 67911), (34, 67851), (42, 67746), (43, 67740), (45, 67707), (46, 67695),

Gene: Potter\_95 Start: 67956, Stop: 67618, Start Num: 20

Candidate Starts for Potter\_95:

(4, 68130), (Start: 20 @67956 has 236 MA's), (22, 67941), (25, 67908), (29, 67872), (34, 67812), (42, 67707), (43, 67701), (45, 67668), (46, 67656),

Gene: Prickles\_101 Start: 68082, Stop: 67744, Start Num: 20

Candidate Starts for Prickles\_101:

(4, 68256), (Start: 20 @68082 has 236 MA's), (22, 68067), (25, 68034), (29, 67998), (34, 67938), (42, 67833), (43, 67827), (45, 67794), (46, 67782),

Gene: ProfessorX\_98 Start: 67715, Stop: 67377, Start Num: 20

Candidate Starts for ProfessorX\_98:

(4, 67889), (Start: 20 @67715 has 236 MA's), (22, 67700), (25, 67667), (29, 67631), (34, 67571), (42, 67466), (43, 67460), (45, 67427), (46, 67415),

Gene: Puhltonio\_96 Start: 67952, Stop: 67614, Start Num: 20

Candidate Starts for Puhltonio\_96:

(4, 68126), (Start: 20 @67952 has 236 MA's), (22, 67937), (25, 67904), (29, 67868), (34, 67808), (42, 67703), (43, 67697), (45, 67664), (46, 67652),

Gene: QueenBeane\_101 Start: 68279, Stop: 67941, Start Num: 20

Candidate Starts for QueenBeane\_101:

(4, 68453), (Start: 20 @68279 has 236 MA's), (22, 68264), (25, 68231), (29, 68195), (34, 68135), (42, 68030), (43, 68024), (45, 67991), (46, 67979),

Gene: Quisquilliae\_103 Start: 68290, Stop: 67952, Start Num: 20

Candidate Starts for Quisquilliae\_103:

(4, 68464), (Start: 20 @68290 has 236 MA's), (22, 68275), (25, 68242), (29, 68206), (34, 68146), (42, 68041), (43, 68035), (45, 68002), (46, 67990),

Gene: RedMaple\_99 Start: 68613, Stop: 68275, Start Num: 20

Candidate Starts for RedMaple\_99:

(4, 68787), (Start: 20 @68613 has 236 MA's), (22, 68598), (25, 68565), (29, 68529), (34, 68469), (42, 68364), (43, 68358), (45, 68325), (46, 68313),

Gene: Ricotta\_102 Start: 67969, Stop: 67634, Start Num: 20

Candidate Starts for Ricotta\_102:

(Start: 9 @68086 has 3 MA's), (Start: 15 @68050 has 23 MA's), (Start: 20 @67969 has 236 MA's), (33, 67840), (34, 67828), (36, 67771), (43, 67717), (44, 67708), (46, 67672),

Gene: Riggan\_102 Start: 68460, Stop: 68122, Start Num: 20

Candidate Starts for Riggan\_102:

(4, 68634), (Start: 20 @68460 has 236 MA's), (22, 68445), (25, 68412), (29, 68376), (34, 68316), (42, 68211), (43, 68205), (45, 68172), (46, 68160),

Gene: Rimu\_104 Start: 68526, Stop: 68098, Start Num: 7

Candidate Starts for Rimu\_104:

(7, 68526), (Start: 9 @68523 has 3 MA's), (10, 68520), (Start: 20 @68433 has 236 MA's), (33, 68304), (34, 68292), (36, 68235), (43, 68181), (44, 68172), (46, 68136),

Gene: Rinkes\_88 Start: 68809, Stop: 68432, Start Num: 17

Candidate Starts for Rinkes\_88:

(Start: 17 @68809 has 2 MA's), (27, 68698), (30, 68674), (32, 68662), (35, 68611), (38, 68557), (41, 68539),

Gene: Robyn\_102 Start: 68352, Stop: 68014, Start Num: 20

Candidate Starts for Robyn\_102:

(16, 68397), (Start: 20 @68352 has 236 MA's), (22, 68337), (25, 68304), (29, 68268), (34, 68208), (42, 68103), (43, 68097), (45, 68064), (46, 68052),

Gene: Roliet\_98 Start: 67314, Stop: 66979, Start Num: 20

Candidate Starts for Roliet\_98:

(Start: 15 @67371 has 23 MA's), (Start: 20 @67314 has 236 MA's), (33, 67185), (34, 67173), (36, 67116), (43, 67062), (44, 67053), (46, 67017),

Gene: Roscoe\_99 Start: 68232, Stop: 67894, Start Num: 20

Candidate Starts for Roscoe\_99:

(4, 68406), (Start: 20 @68232 has 236 MA's), (22, 68217), (25, 68184), (29, 68148), (34, 68088), (42, 67983), (43, 67977), (45, 67944), (46, 67932),

Gene: Roy17\_98 Start: 67685, Stop: 67347, Start Num: 20

Candidate Starts for Roy17\_98:

(4, 67859), (Start: 20 @67685 has 236 MA's), (22, 67670), (25, 67637), (29, 67601), (34, 67541), (42, 67436), (43, 67430), (45, 67397), (46, 67385),

Gene: SDcharge11\_99 Start: 67329, Stop: 66994, Start Num: 20

Candidate Starts for SDcharge11\_99:

(Start: 15 @67386 has 23 MA's), (Start: 20 @67329 has 236 MA's), (33, 67200), (34, 67188), (36, 67131), (43, 67077), (44, 67068), (46, 67032),

Gene: Saguaro\_85 Start: 66656, Stop: 66207, Start Num: 8

Candidate Starts for Saguaro\_85:

(Start: 8 @66656 has 1 MA's), (13, 66626), (Start: 17 @66587 has 2 MA's), (21, 66539), (24, 66521), (26, 66497), (27, 66482), (28, 66479), (30, 66458), (32, 66446), (33, 66422), (45, 66263),

Gene: Samaymay\_101 Start: 68279, Stop: 67941, Start Num: 20

Candidate Starts for Samaymay\_101:

(4, 68453), (Start: 20 @68279 has 236 MA's), (22, 68264), (25, 68231), (29, 68195), (34, 68135), (42, 68030), (43, 68024), (45, 67991), (46, 67979),

Gene: SassyCat97\_99 Start: 67947, Stop: 67609, Start Num: 20

Candidate Starts for SassyCat97\_99:

(4, 68121), (Start: 20 @67947 has 236 MA's), (22, 67932), (25, 67899), (29, 67863), (34, 67803), (42, 67698), (43, 67692), (45, 67659), (46, 67647),

Gene: Schadenfreude\_101 Start: 67996, Stop: 67658, Start Num: 20

Candidate Starts for Schadenfreude\_101:

(Start: 20 @67996 has 236 MA's), (22, 67981), (25, 67948), (29, 67912), (34, 67852), (42, 67747), (43, 67741), (45, 67708), (46, 67696),

Gene: Schueller\_100 Start: 68272, Stop: 67880, Start Num: 15

Candidate Starts for Schueller\_100:

(Start: 9 @68308 has 3 MA's), (Start: 15 @68272 has 23 MA's), (Start: 20 @68215 has 236 MA's), (33, 68086), (34, 68074), (36, 68017), (43, 67963), (44, 67954), (46, 67918),

Gene: Scoot17C\_101 Start: 68061, Stop: 67723, Start Num: 20

Candidate Starts for Scoot17C\_101:

(4, 68235), (Start: 20 @68061 has 236 MA's), (22, 68046), (25, 68013), (29, 67977), (34, 67917), (42, 67812), (43, 67806), (45, 67773), (46, 67761),

Gene: Scrick\_102 Start: 68330, Stop: 67992, Start Num: 20

Candidate Starts for Scrick\_102:

(4, 68504), (Start: 20 @68330 has 236 MA's), (22, 68315), (25, 68282), (29, 68246), (34, 68186), (42, 68081), (43, 68075), (45, 68042), (46, 68030),

Gene: Selr12\_105 Start: 68371, Stop: 68033, Start Num: 20

Candidate Starts for Selr12\_105:

(4, 68545), (Start: 20 @68371 has 236 MA's), (22, 68356), (25, 68323), (29, 68287), (34, 68227), (42, 68122), (43, 68116), (45, 68083), (46, 68071),

Gene: Serendipity\_100 Start: 68433, Stop: 68095, Start Num: 20

Candidate Starts for Serendipity\_100:

(4, 68607), (Start: 20 @68433 has 236 MA's), (22, 68418), (25, 68385), (29, 68349), (34, 68289), (42, 68184), (43, 68178), (45, 68145), (46, 68133),

Gene: Serpentine\_00103 Start: 68513, Stop: 68175, Start Num: 20

Candidate Starts for Serpentine\_00103:

(4, 68687), (Start: 20 @68513 has 236 MA's), (22, 68498), (25, 68465), (29, 68429), (34, 68369), (42, 68264), (43, 68258), (45, 68225), (46, 68213),

Gene: Sheila\_95 Start: 67507, Stop: 67172, Start Num: 20

Candidate Starts for Sheila\_95:

(Start: 15 @67564 has 23 MA's), (Start: 20 @67507 has 236 MA's), (33, 67378), (34, 67366), (36, 67309), (43, 67255), (44, 67246), (46, 67210),

Gene: ShiVal\_100 Start: 67984, Stop: 67646, Start Num: 20

Candidate Starts for ShiVal\_100:

(4, 68158), (Start: 20 @67984 has 236 MA's), (22, 67969), (25, 67936), (29, 67900), (34, 67840), (42, 67735), (43, 67729), (45, 67696), (46, 67684),

Gene: Sigman\_100 Start: 67940, Stop: 67602, Start Num: 20

Candidate Starts for Sigman\_100:

(4, 68114), (Start: 20 @67940 has 236 MA's), (22, 67925), (25, 67892), (29, 67856), (34, 67796), (42, 67691), (43, 67685), (45, 67652), (46, 67640),

Gene: SilverBell\_102 Start: 68394, Stop: 68056, Start Num: 20

Candidate Starts for SilverBell\_102:

(4, 68568), (Start: 20 @68394 has 236 MA's), (22, 68379), (25, 68346), (29, 68310), (34, 68250), (42, 68145), (43, 68139), (45, 68106), (46, 68094),

Gene: Simielle\_101 Start: 67926, Stop: 67588, Start Num: 20

Candidate Starts for Simielle\_101:

(4, 68100), (Start: 20 @67926 has 236 MA's), (22, 67911), (25, 67878), (29, 67842), (34, 67782), (42, 67677), (43, 67671), (45, 67638), (46, 67626),

Gene: Skippy\_101 Start: 68355, Stop: 68017, Start Num: 20

Candidate Starts for Skippy\_101:

(4, 68529), (Start: 20 @68355 has 236 MA's), (22, 68340), (25, 68307), (29, 68271), (34, 68211), (42, 68106), (43, 68100), (45, 68067), (46, 68055),

Gene: Slatt\_103 Start: 68611, Stop: 68273, Start Num: 20

Candidate Starts for Slatt\_103:

(4, 68785), (Start: 20 @68611 has 236 MA's), (22, 68596), (25, 68563), (29, 68527), (34, 68467), (42, 68362), (43, 68356), (45, 68323), (46, 68311),

Gene: Soile\_102 Start: 68555, Stop: 68139, Start Num: 15

Candidate Starts for Soile\_102:

(Start: 9 @68591 has 3 MA's), (Start: 15 @68555 has 23 MA's), (Start: 20 @68474 has 236 MA's), (33, 68345), (34, 68333), (36, 68276), (43, 68222), (44, 68213), (46, 68177),

Gene: Solosis\_99 Start: 67945, Stop: 67610, Start Num: 20

Candidate Starts for Solosis\_99:

(7, 68038), (Start: 9 @68035 has 3 MA's), (10, 68032), (Start: 20 @67945 has 236 MA's), (33, 67816), (34, 67804), (36, 67747), (43, 67693), (44, 67684), (46, 67648),

Gene: Sophia\_99 Start: 67935, Stop: 67597, Start Num: 20

Candidate Starts for Sophia\_99:

(4, 68109), (Start: 20 @67935 has 236 MA's), (22, 67920), (25, 67887), (29, 67851), (34, 67791), (42, 67686), (43, 67680), (45, 67647), (46, 67635),

Gene: Soto\_97 Start: 67376, Stop: 67038, Start Num: 20

Candidate Starts for Soto\_97:

(Start: 20 @67376 has 236 MA's), (22, 67361), (25, 67328), (29, 67292), (34, 67232), (42, 67127), (43, 67121), (45, 67088), (46, 67076),

Gene: Spartan300\_100 Start: 68197, Stop: 67859, Start Num: 20

Candidate Starts for Spartan300\_100:

(4, 68371), (Start: 20 @68197 has 236 MA's), (22, 68182), (25, 68149), (29, 68113), (34, 68053), (42, 67948), (43, 67942), (45, 67909), (46, 67897),

Gene: Squid\_100 Start: 68225, Stop: 67887, Start Num: 20

Candidate Starts for Squid\_100:

(4, 68399), (Start: 20 @68225 has 236 MA's), (22, 68210), (25, 68177), (29, 68141), (34, 68081), (42, 67976), (43, 67970), (45, 67937), (46, 67925),

Gene: Squiggle\_100 Start: 67954, Stop: 67616, Start Num: 20

Candidate Starts for Squiggle\_100:

(4, 68128), (Start: 20 @67954 has 236 MA's), (22, 67939), (25, 67906), (29, 67870), (34, 67810), (42, 67705), (43, 67699), (45, 67666), (46, 67654),

Gene: Struggle\_101 Start: 68046, Stop: 67711, Start Num: 20

Candidate Starts for Struggle\_101:

(Start: 9 @68163 has 3 MA's), (Start: 15 @68127 has 23 MA's), (Start: 20 @68046 has 236 MA's), (33, 67917), (34, 67905), (36, 67848), (43, 67794), (44, 67785), (46, 67749),

Gene: Suffolk\_96 Start: 67882, Stop: 67544, Start Num: 20

Candidate Starts for Suffolk\_96:

(Start: 20 @67882 has 236 MA's), (22, 67867), (25, 67834), (29, 67798), (34, 67738), (42, 67633), (43, 67627), (45, 67594), (46, 67582),

Gene: Surely\_101 Start: 68517, Stop: 68179, Start Num: 20

Candidate Starts for Surely\_101:

(4, 68691), (Start: 20 @68517 has 236 MA's), (22, 68502), (25, 68469), (29, 68433), (34, 68373), (42, 68268), (43, 68262), (45, 68229), (46, 68217),

Gene: Swiphy\_105 Start: 68496, Stop: 68161, Start Num: 20

Candidate Starts for Swiphy\_105:

(7, 68589), (Start: 9 @68586 has 3 MA's), (10, 68583), (Start: 20 @68496 has 236 MA's), (33, 68367), (34, 68355), (36, 68298), (43, 68244), (44, 68235), (46, 68199),

Gene: Swish\_102 Start: 68364, Stop: 68026, Start Num: 20

Candidate Starts for Swish\_102:

(4, 68538), (Start: 20 @68364 has 236 MA's), (22, 68349), (25, 68316), (29, 68280), (34, 68220), (42, 68115), (43, 68109), (45, 68076), (46, 68064),

Gene: TallGrassMM\_100 Start: 68010, Stop: 67675, Start Num: 20

Candidate Starts for TallGrassMM\_100:

(7, 68103), (Start: 9 @68100 has 3 MA's), (10, 68097), (Start: 20 @68010 has 236 MA's), (33, 67881), (34, 67869), (36, 67812), (43, 67758), (44, 67749), (46, 67713),

Gene: Telesworld\_99 Start: 68087, Stop: 67749, Start Num: 20

Candidate Starts for Telesworld\_99:

(4, 68261), (Start: 20 @68087 has 236 MA's), (22, 68072), (25, 68039), (29, 68003), (34, 67943), (42, 67838), (43, 67832), (45, 67799), (46, 67787),

Gene: Thora\_99 Start: 68468, Stop: 68130, Start Num: 20

Candidate Starts for Thora\_99:

(4, 68642), (Start: 20 @68468 has 236 MA's), (22, 68453), (25, 68420), (29, 68384), (34, 68324), (42, 68219), (43, 68213), (45, 68180), (46, 68168),

Gene: ThreeOh3D2\_102 Start: 68621, Stop: 68283, Start Num: 20

Candidate Starts for ThreeOh3D2\_102:

(4, 68795), (Start: 20 @68621 has 236 MA's), (22, 68606), (25, 68573), (29, 68537), (34, 68477), (42, 68372), (43, 68366), (45, 68333), (46, 68321),

Gene: Thunderbird\_101 Start: 68203, Stop: 67868, Start Num: 20

Candidate Starts for Thunderbird\_101:

(Start: 9 @68320 has 3 MA's), (Start: 15 @68284 has 23 MA's), (Start: 20 @68203 has 236 MA's), (33, 68074), (34, 68062), (36, 68005), (43, 67951), (44, 67942), (46, 67906),

Gene: Timmi\_99 Start: 67984, Stop: 67646, Start Num: 20

Candidate Starts for Timmi\_99:

(4, 68158), (Start: 20 @67984 has 236 MA's), (22, 67969), (25, 67936), (29, 67900), (34, 67840), (42, 67735), (43, 67729), (45, 67696), (46, 67684),

Gene: TomBombadil\_101 Start: 68509, Stop: 68171, Start Num: 20

Candidate Starts for TomBombadil\_101:

(4, 68683), (Start: 20 @68509 has 236 MA's), (22, 68494), (25, 68461), (29, 68425), (34, 68365), (42, 68260), (43, 68254), (45, 68221), (46, 68209),

Gene: Tomlarah\_101 Start: 68817, Stop: 68479, Start Num: 20

Candidate Starts for Tomlarah\_101:

(4, 68991), (Start: 20 @68817 has 236 MA's), (22, 68802), (25, 68769), (29, 68733), (34, 68673), (42, 68568), (43, 68562), (45, 68529), (46, 68517),

Gene: Toni\_100 Start: 68413, Stop: 68075, Start Num: 20

Candidate Starts for Toni\_100:

(4, 68587), (Start: 20 @68413 has 236 MA's), (22, 68398), (25, 68365), (29, 68329), (34, 68269), (42, 68164), (43, 68158), (45, 68125), (46, 68113),

Gene: Tooj\_98 Start: 67628, Stop: 67290, Start Num: 20

Candidate Starts for Tooj\_98:

(Start: 20 @67628 has 236 MA's), (22, 67613), (25, 67580), (29, 67544), (34, 67484), (42, 67379), (43, 67373), (45, 67340), (46, 67328),

Gene: True\_102 Start: 68323, Stop: 67988, Start Num: 20

Candidate Starts for True\_102:

(Start: 9 @68416 has 3 MA's), (Start: 15 @68380 has 23 MA's), (Start: 20 @68323 has 236 MA's), (25, 68278), (29, 68242), (33, 68197), (34, 68185), (36, 68128), (43, 68074), (44, 68065), (46, 68029),

Gene: Trypo\_101 Start: 68675, Stop: 68340, Start Num: 20

Candidate Starts for Trypo\_101:

(7, 68768), (Start: 9 @68765 has 3 MA's), (10, 68762), (Start: 20 @68675 has 236 MA's), (33, 68546), (34, 68534), (36, 68477), (43, 68423), (44, 68414), (46, 68378),

Gene: TyrionL\_101 Start: 68095, Stop: 67703, Start Num: 15

Candidate Starts for TyrionL\_101:

(Start: 9 @68131 has 3 MA's), (Start: 15 @68095 has 23 MA's), (Start: 20 @68038 has 236 MA's), (33, 67909), (34, 67897), (36, 67840), (43, 67786), (44, 67777), (46, 67741),

Gene: UAch1\_101 Start: 68034, Stop: 67696, Start Num: 20

Candidate Starts for UAch1\_101:



(4, 68208), (Start: 20 @68034 has 236 MA's), (22, 68019), (25, 67986), (29, 67950), (34, 67890), (42, 67785), (43, 67779), (45, 67746), (46, 67734),

Gene: UncleHowie\_97 Start: 67645, Stop: 67307, Start Num: 20

Candidate Starts for UncleHowie\_97:

(4, 67819), (Start: 20 @67645 has 236 MA's), (22, 67630), (25, 67597), (29, 67561), (34, 67501), (42, 67396), (43, 67390), (45, 67357), (46, 67345),

Gene: Usavi\_101 Start: 68807, Stop: 68469, Start Num: 20

Candidate Starts for Usavi\_101:

(4, 68981), (Start: 20 @68807 has 236 MA's), (22, 68792), (25, 68759), (29, 68723), (34, 68663), (42, 68558), (43, 68552), (45, 68519), (46, 68507),

Gene: Vaishali24\_101 Start: 68022, Stop: 67687, Start Num: 20

Candidate Starts for Vaishali24\_101:

(Start: 15 @68079 has 23 MA's), (Start: 20 @68022 has 236 MA's), (22, 68010), (25, 67977), (29, 67941), (34, 67881), (42, 67776), (43, 67770), (45, 67737), (46, 67725),

Gene: Valjean\_99 Start: 68189, Stop: 67851, Start Num: 20

Candidate Starts for Valjean\_99:

(4, 68363), (Start: 20 @68189 has 236 MA's), (22, 68174), (25, 68141), (29, 68105), (34, 68045), (42, 67940), (43, 67934), (45, 67901), (46, 67889),

Gene: Vaticameos\_98 Start: 66516, Stop: 66178, Start Num: 20

Candidate Starts for Vaticameos\_98:

(4, 66690), (Start: 20 @66516 has 236 MA's), (22, 66501), (25, 66468), (29, 66432), (34, 66372), (42, 66267), (43, 66261), (45, 66228), (46, 66216),

Gene: Veritas\_100 Start: 68119, Stop: 67784, Start Num: 20

Candidate Starts for Veritas\_100:

(Start: 9 @68212 has 3 MA's), (Start: 15 @68176 has 23 MA's), (Start: 20 @68119 has 236 MA's), (33, 67990), (34, 67978), (36, 67921), (43, 67867), (44, 67858), (46, 67822),

Gene: Virapocalypse\_102 Start: 68311, Stop: 67973, Start Num: 20

Candidate Starts for Virapocalypse\_102:

(4, 68485), (Start: 20 @68311 has 236 MA's), (22, 68296), (25, 68263), (29, 68227), (34, 68167), (42, 68062), (43, 68056), (45, 68023), (46, 68011),

Gene: Virgeve\_99 Start: 67923, Stop: 67588, Start Num: 20

Candidate Starts for Virgeve\_99:

(7, 68016), (Start: 9 @68013 has 3 MA's), (10, 68010), (Start: 20 @67923 has 236 MA's), (33, 67794), (34, 67782), (36, 67725), (43, 67671), (44, 67662), (46, 67626),

Gene: Vista\_100 Start: 68123, Stop: 67785, Start Num: 20

Candidate Starts for Vista\_100:

(4, 68297), (Start: 20 @68123 has 236 MA's), (22, 68108), (25, 68075), (29, 68039), (34, 67979), (42, 67874), (43, 67868), (45, 67835), (46, 67823),

Gene: Vivaldi\_101 Start: 68277, Stop: 67942, Start Num: 20

Candidate Starts for Vivaldi\_101:

(10, 68367), (Start: 15 @68334 has 23 MA's), (Start: 20 @68277 has 236 MA's), (25, 68232), (29, 68196), (33, 68151), (34, 68139), (36, 68082), (43, 68028), (44, 68019), (46, 67983),

Gene: Vortex\_99 Start: 68223, Stop: 67888, Start Num: 20

Candidate Starts for Vortex\_99:

(7, 68316), (Start: 9 @68313 has 3 MA's), (10, 68310), (Start: 20 @68223 has 236 MA's), (33, 68094), (34, 68082), (36, 68025), (43, 67971), (44, 67962), (46, 67926),

Gene: Wallhey\_102 Start: 68222, Stop: 67887, Start Num: 20

Candidate Starts for Wallhey\_102:

(Start: 9 @68315 has 3 MA's), (Start: 15 @68279 has 23 MA's), (Start: 20 @68222 has 236 MA's), (33, 68093), (34, 68081), (36, 68024), (43, 67970), (44, 67961), (46, 67925),

Gene: Waterdiva\_102 Start: 68495, Stop: 68157, Start Num: 20

Candidate Starts for Waterdiva\_102:

(4, 68669), (Start: 20 @68495 has 236 MA's), (22, 68480), (25, 68447), (29, 68411), (34, 68351), (42, 68246), (43, 68240), (45, 68207), (46, 68195),

Gene: Weher20\_98 Start: 68561, Stop: 68226, Start Num: 20

Candidate Starts for Weher20\_98:

(7, 68654), (Start: 9 @68651 has 3 MA's), (10, 68648), (Start: 20 @68561 has 236 MA's), (33, 68432), (34, 68420), (36, 68363), (43, 68309), (44, 68300), (46, 68264),

Gene: Windsor\_100 Start: 68245, Stop: 67913, Start Num: 20

Candidate Starts for Windsor\_100:

(Start: 15 @68302 has 23 MA's), (Start: 20 @68245 has 236 MA's), (25, 68200), (29, 68164), (33, 68119), (34, 68107), (36, 68050), (43, 67996), (44, 67987), (46, 67951),

Gene: Xavier\_100 Start: 68122, Stop: 67784, Start Num: 20

Candidate Starts for Xavier\_100:

(4, 68296), (Start: 20 @68122 has 236 MA's), (22, 68107), (25, 68074), (29, 68038), (34, 67978), (42, 67873), (43, 67867), (45, 67834), (46, 67822),

Gene: Yoshand\_102 Start: 68347, Stop: 68009, Start Num: 20

Candidate Starts for Yoshand\_102:

(4, 68521), (Start: 20 @68347 has 236 MA's), (22, 68332), (25, 68299), (29, 68263), (34, 68203), (42, 68098), (43, 68092), (45, 68059), (46, 68047),

Gene: YouGoGlencoco\_101 Start: 68237, Stop: 67899, Start Num: 20

Candidate Starts for YouGoGlencoco\_101:

(4, 68411), (Start: 20 @68237 has 236 MA's), (22, 68222), (25, 68189), (29, 68153), (34, 68093), (42, 67988), (43, 67982), (45, 67949), (46, 67937),

Gene: Zaider\_102 Start: 68612, Stop: 68274, Start Num: 20

Candidate Starts for Zaider\_102:

(4, 68786), (Start: 20 @68612 has 236 MA's), (22, 68597), (25, 68564), (29, 68528), (34, 68468), (42, 68363), (43, 68357), (45, 68324), (46, 68312),

Gene: Zelda\_101 Start: 68568, Stop: 68230, Start Num: 20

Candidate Starts for Zelda\_101:

(4, 68742), (Start: 20 @68568 has 236 MA's), (22, 68553), (25, 68520), (29, 68484), (34, 68424), (42, 68319), (43, 68313), (45, 68280), (46, 68268),

Gene: Zonia\_101 Start: 68729, Stop: 68337, Start Num: 15

Candidate Starts for Zonia\_101:

(Start: 9 @68765 has 3 MA's), (Start: 15 @68729 has 23 MA's), (Start: 20 @68672 has 236 MA's), (33, 68543), (34, 68531), (36, 68474), (43, 68420), (44, 68411), (46, 68375),