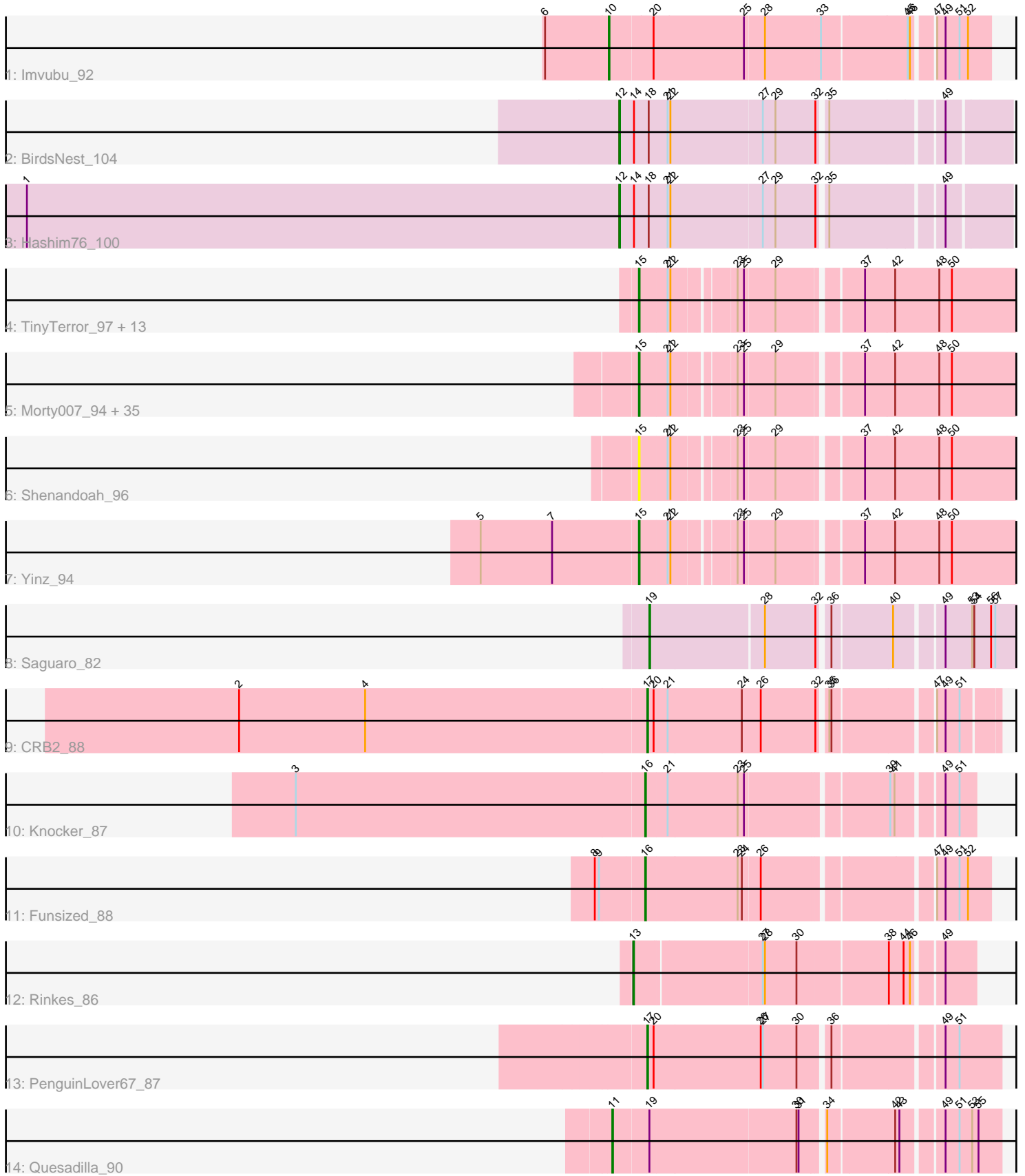


# Pham 224582



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 224582 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224582 has 62 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Imvubu\_92
- Track 2 : BirdsNest\_104
- Track 3 : Hashim76\_100
- Track 4 : TinyTerror\_97, Ben11\_96, Chandler\_96, Devonte\_94, Marley1013\_94, Yahalom\_94, Casbah\_96, Glubnar\_95, Kronus\_96, Bernardo\_93, Mortcellus\_96, Compostia\_95, SwainyDoc\_96, LestyG\_94
- Track 5 : Morty007\_94, Tydolla\_92, Phayeta\_98, Deenasa\_97, RomaT\_96, Athena\_98, RagingRooster\_96, Daisy\_95, Phaedrus\_91, Kamiyu\_96, Corofin\_96, Neos5\_95, Gervas\_97, Phlyer\_96, Halfpint\_95, Abinghost\_96, Pipefish\_95, SlippinJimmy\_99, Audrey\_96, OrangeOswald\_95, GlenHope\_97, Jackstina\_89, Marlia\_96, Heathcliff\_96, ChaChing\_96, Rita1961\_97, SynergyX\_97, Baloo\_95, Chalmers\_96, Obutu\_98, Nozo\_96, Akoma\_97, Philly\_95, Briakila\_97, MmasiCarm\_97, HarveySr\_93
- Track 6 : Shenandoah\_96
- Track 7 : Yinz\_94
- Track 8 : Saguaro\_82
- Track 9 : CRB2\_88
- Track 10 : Knocker\_87
- Track 11 : Funsized\_88
- Track 12 : Rinkes\_86
- Track 13 : PenguinLover67\_87
- Track 14 : Quesadilla\_90

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

The start number called the most often in the published annotations is 15, it was called in 44 of the 54 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abinghost\_96, Akoma\_97, Athena\_98, Audrey\_96, Baloo\_95, Ben11\_96, Bernardo\_93, Briakila\_97, Casbah\_96, ChaChing\_96, Chalmers\_96, Chandler\_96, Compostia\_95, Corofin\_96, Daisy\_95, Deenasa\_97, Devonte\_94, Gervas\_97, GlenHope\_97, Glubnar\_95, Halfpint\_95, HarveySr\_93, Heathcliff\_96, Jackstina\_89, Kamiyu\_96, Kronus\_96, LestyG\_94, Marley1013\_94, Marlia\_96, MmasiCarm\_97,

Mortcellus\_96, Morty007\_94, Neos5\_95, Nozo\_96, Obutu\_98, OrangeOswald\_95, Phaedrus\_91, Phayeta\_98, Philly\_95, Phlyer\_96, Pipefish\_95, RagingRooster\_96, Rita1961\_97, RomaT\_96, Shenandoah\_96, SlippinJimmy\_99, SwainyDoc\_96, SynergyX\_97, TinyTerror\_97, Tydolla\_92, Yahalom\_94, Yinz\_94,

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

- 

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

- BirdsNest\_104, CRB2\_88, Funsized\_88, Hashim76\_100, Imvubu\_92, Knocker\_87, PenguinLover67\_87, Quesadilla\_90, Rinkes\_86, Saguaro\_82,

### Summary by start number:

Start 10:

- Found in 1 of 62 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Imvubu\_92 (B10),

Start 11:

- Found in 1 of 62 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Quesadilla\_90 (B9),

Start 12:

- Found in 2 of 62 ( 3.2% ) of genes in pham
- Manual Annotations of this start: 2 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BirdsNest\_104 (B13), Hashim76\_100 (B13),

Start 13:

- Found in 1 of 62 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rinkes\_86 (B9),

Start 15:

- Found in 52 of 62 ( 83.9% ) of genes in pham
- Manual Annotations of this start: 44 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abinghost\_96 (B3), Akoma\_97 (B3), Athena\_98 (B3), Audrey\_96 (B3), Baloo\_95 (B3), Ben11\_96 (B3), Bernardo\_93 (B3), Briakila\_97 (B3), Casbah\_96 (B3), ChaChing\_96 (B3), Chalmers\_96 (B3), Chandler\_96 (B3), Compostia\_95 (B3), Corofin\_96 (B3), Daisy\_95 (B3), Deenasa\_97 (B3), Devonte\_94 (B3), Gervas\_97 (B3), GlenHope\_97 (B3), Glubnar\_95 (B3), Halfpint\_95 (B3), HarveySr\_93 (B3), Heathcliff\_96 (B3), Jackstina\_89 (B3), Kamiyu\_96 (B3), Kronus\_96 (B3), LestyG\_94 (B3), Marley1013\_94 (B3), Marlia\_96 (B3), MmasiCarm\_97 (B3), Mortcellus\_96 (B3), Morty007\_94 (B3), Neos5\_95 (B3), Nozo\_96 (B3), Obutu\_98 (B3), OrangeOswald\_95 (B3), Phaedrus\_91 (B3), Phayeta\_98 (B3), Philly\_95 (B3), Phlyer\_96 (B3), Pipefish\_95 (B3),

RagingRooster\_96 (B3), Rita1961\_97 (B3), RomaT\_96 (B3), Shenandoah\_96 (B3), SlippinJimmy\_99 (B3), SwainyDoc\_96 (B3), SynergyX\_97 (B3), TinyTerror\_97 (B3), Tydolla\_92 (B3), Yahalom\_94 (B3), Yinz\_94 (B3),

Start 16:

- Found in 2 of 62 ( 3.2% ) of genes in pham
- Manual Annotations of this start: 2 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Funsized\_88 (B9), Knocker\_87 (B9),

Start 17:

- Found in 2 of 62 ( 3.2% ) of genes in pham
- Manual Annotations of this start: 2 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CRB2\_88 (B9), PenguinLover67\_87 (B9),

Start 19:

- Found in 2 of 62 ( 3.2% ) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Saguaro\_82 (B7),

### **Summary by clusters:**

There are 5 clusters represented in this pham: B7, B13, B9, B10, B3,

Info for manual annotations of cluster B10:

- Start number 10 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B13:

- Start number 12 was manually annotated 2 times for cluster B13.

Info for manual annotations of cluster B3:

- Start number 15 was manually annotated 44 times for cluster B3.

Info for manual annotations of cluster B7:

- Start number 19 was manually annotated 1 time for cluster B7.

Info for manual annotations of cluster B9:

- Start number 11 was manually annotated 1 time for cluster B9.
- Start number 13 was manually annotated 1 time for cluster B9.
- Start number 16 was manually annotated 2 times for cluster B9.
- Start number 17 was manually annotated 2 times for cluster B9.

### **Gene Information:**

Gene: Abinghost\_96 Start: 65736, Stop: 65248, Start Num: 15

Candidate Starts for Abinghost\_96:

(Start: 15 @65736 has 44 MA's), (21, 65697), (22, 65694), (23, 65619), (25, 65610), (29, 65568), (37, 65460), (42, 65418), (48, 65355), (50, 65337),

Gene: Akoma\_97 Start: 65813, Stop: 65325, Start Num: 15

Candidate Starts for Akoma\_97:

(Start: 15 @65813 has 44 MA's), (21, 65774), (22, 65771), (23, 65696), (25, 65687), (29, 65645), (37, 65537), (42, 65495), (48, 65432), (50, 65414),

Gene: Athena\_98 Start: 66509, Stop: 66021, Start Num: 15

Candidate Starts for Athena\_98:

(Start: 15 @66509 has 44 MA's), (21, 66470), (22, 66467), (23, 66392), (25, 66383), (29, 66341), (37, 66233), (42, 66191), (48, 66128), (50, 66110),

Gene: Audrey\_96 Start: 65763, Stop: 65275, Start Num: 15

Candidate Starts for Audrey\_96:

(Start: 15 @65763 has 44 MA's), (21, 65724), (22, 65721), (23, 65646), (25, 65637), (29, 65595), (37, 65487), (42, 65445), (48, 65382), (50, 65364),

Gene: Baloo\_95 Start: 65616, Stop: 65128, Start Num: 15

Candidate Starts for Baloo\_95:

(Start: 15 @65616 has 44 MA's), (21, 65577), (22, 65574), (23, 65499), (25, 65490), (29, 65448), (37, 65340), (42, 65298), (48, 65235), (50, 65217),

Gene: Ben11\_96 Start: 65993, Stop: 65505, Start Num: 15

Candidate Starts for Ben11\_96:

(Start: 15 @65993 has 44 MA's), (21, 65954), (22, 65951), (23, 65876), (25, 65867), (29, 65825), (37, 65717), (42, 65675), (48, 65612), (50, 65594),

Gene: Bernardo\_93 Start: 65287, Stop: 64799, Start Num: 15

Candidate Starts for Bernardo\_93:

(Start: 15 @65287 has 44 MA's), (21, 65248), (22, 65245), (23, 65170), (25, 65161), (29, 65119), (37, 65011), (42, 64969), (48, 64906), (50, 64888),

Gene: BirdsNest\_104 Start: 70091, Stop: 69573, Start Num: 12

Candidate Starts for BirdsNest\_104:

(Start: 12 @70091 has 2 MA's), (14, 70070), (18, 70049), (21, 70022), (22, 70019), (27, 69890), (29, 69872), (32, 69815), (35, 69806), (49, 69656),

Gene: Briakila\_97 Start: 66267, Stop: 65779, Start Num: 15

Candidate Starts for Briakila\_97:

(Start: 15 @66267 has 44 MA's), (21, 66228), (22, 66225), (23, 66150), (25, 66141), (29, 66099), (37, 65991), (42, 65949), (48, 65886), (50, 65868),

Gene: CRB2\_88 Start: 67867, Stop: 67412, Start Num: 17

Candidate Starts for CRB2\_88:

(2, 68446), (4, 68266), (Start: 17 @67867 has 2 MA's), (20, 67858), (21, 67840), (24, 67735), (26, 67708), (32, 67633), (35, 67624), (36, 67621), (47, 67492), (49, 67480), (51, 67462),

Gene: Casbah\_96 Start: 66078, Stop: 65590, Start Num: 15

Candidate Starts for Casbah\_96:

(Start: 15 @66078 has 44 MA's), (21, 66039), (22, 66036), (23, 65961), (25, 65952), (29, 65910), (37, 65802), (42, 65760), (48, 65697), (50, 65679),

Gene: ChaChing\_96 Start: 65776, Stop: 65288, Start Num: 15

Candidate Starts for ChaChing\_96:

(Start: 15 @65776 has 44 MA's), (21, 65737), (22, 65734), (23, 65659), (25, 65650), (29, 65608), (37, 65500), (42, 65458), (48, 65395), (50, 65377),

Gene: Chalmers\_96 Start: 66514, Stop: 66026, Start Num: 15

Candidate Starts for Chalmers\_96:

(Start: 15 @66514 has 44 MA's), (21, 66475), (22, 66472), (23, 66397), (25, 66388), (29, 66346), (37, 66238), (42, 66196), (48, 66133), (50, 66115),

Gene: Chandler\_96 Start: 66552, Stop: 66064, Start Num: 15

Candidate Starts for Chandler\_96:

(Start: 15 @66552 has 44 MA's), (21, 66513), (22, 66510), (23, 66435), (25, 66426), (29, 66384), (37, 66276), (42, 66234), (48, 66171), (50, 66153),

Gene: Compostia\_95 Start: 66230, Stop: 65742, Start Num: 15

Candidate Starts for Compostia\_95:

(Start: 15 @66230 has 44 MA's), (21, 66191), (22, 66188), (23, 66113), (25, 66104), (29, 66062), (37, 65954), (42, 65912), (48, 65849), (50, 65831),

Gene: Corofin\_96 Start: 65787, Stop: 65299, Start Num: 15

Candidate Starts for Corofin\_96:

(Start: 15 @65787 has 44 MA's), (21, 65748), (22, 65745), (23, 65670), (25, 65661), (29, 65619), (37, 65511), (42, 65469), (48, 65406), (50, 65388),

Gene: Daisy\_95 Start: 65336, Stop: 64848, Start Num: 15

Candidate Starts for Daisy\_95:

(Start: 15 @65336 has 44 MA's), (21, 65297), (22, 65294), (23, 65219), (25, 65210), (29, 65168), (37, 65060), (42, 65018), (48, 64955), (50, 64937),

Gene: Deenasa\_97 Start: 66990, Stop: 66502, Start Num: 15

Candidate Starts for Deenasa\_97:

(Start: 15 @66990 has 44 MA's), (21, 66951), (22, 66948), (23, 66873), (25, 66864), (29, 66822), (37, 66714), (42, 66672), (48, 66609), (50, 66591),

Gene: Devonte\_94 Start: 65402, Stop: 64914, Start Num: 15

Candidate Starts for Devonte\_94:

(Start: 15 @65402 has 44 MA's), (21, 65363), (22, 65360), (23, 65285), (25, 65276), (29, 65234), (37, 65126), (42, 65084), (48, 65021), (50, 65003),

Gene: Funsized\_88 Start: 68273, Stop: 67824, Start Num: 16

Candidate Starts for Funsized\_88:

(8, 68339), (9, 68333), (Start: 16 @68273 has 2 MA's), (23, 68144), (24, 68138), (26, 68114), (47, 67898), (49, 67886), (51, 67868), (52, 67856),

Gene: Gervas\_97 Start: 66231, Stop: 65743, Start Num: 15

Candidate Starts for Gervas\_97:

(Start: 15 @66231 has 44 MA's), (21, 66192), (22, 66189), (23, 66114), (25, 66105), (29, 66063), (37, 65955), (42, 65913), (48, 65850), (50, 65832),

Gene: GlenHope\_97 Start: 65806, Stop: 65318, Start Num: 15

Candidate Starts for GlenHope\_97:

(Start: 15 @65806 has 44 MA's), (21, 65767), (22, 65764), (23, 65689), (25, 65680), (29, 65638), (37, 65530), (42, 65488), (48, 65425), (50, 65407),

Gene: Glubnar\_95 Start: 65722, Stop: 65234, Start Num: 15

Candidate Starts for Glubnar\_95:

(Start: 15 @65722 has 44 MA's), (21, 65683), (22, 65680), (23, 65605), (25, 65596), (29, 65554), (37, 65446), (42, 65404), (48, 65341), (50, 65323),

Gene: Halfpint\_95 Start: 65551, Stop: 65063, Start Num: 15

Candidate Starts for Halfpint\_95:

(Start: 15 @65551 has 44 MA's), (21, 65512), (22, 65509), (23, 65434), (25, 65425), (29, 65383), (37, 65275), (42, 65233), (48, 65170), (50, 65152),

Gene: HarveySr\_93 Start: 64875, Stop: 64387, Start Num: 15

Candidate Starts for HarveySr\_93:

(Start: 15 @64875 has 44 MA's), (21, 64836), (22, 64833), (23, 64758), (25, 64749), (29, 64707), (37, 64599), (42, 64557), (48, 64494), (50, 64476),

Gene: Hashim76\_100 Start: 69243, Stop: 68725, Start Num: 12

Candidate Starts for Hashim76\_100:

(1, 70089), (Start: 12 @69243 has 2 MA's), (14, 69222), (18, 69201), (21, 69174), (22, 69171), (27, 69042), (29, 69024), (32, 68967), (35, 68958), (49, 68808),

Gene: Heathcliff\_96 Start: 65730, Stop: 65242, Start Num: 15

Candidate Starts for Heathcliff\_96:

(Start: 15 @65730 has 44 MA's), (21, 65691), (22, 65688), (23, 65613), (25, 65604), (29, 65562), (37, 65454), (42, 65412), (48, 65349), (50, 65331),

Gene: Imvubu\_92 Start: 66340, Stop: 65831, Start Num: 10

Candidate Starts for Imvubu\_92:

(6, 66430), (Start: 10 @66340 has 1 MA's), (20, 66280), (25, 66154), (28, 66127), (33, 66049), (45, 65932), (46, 65929), (47, 65905), (49, 65893), (51, 65875), (52, 65863),

Gene: Jackstina\_89 Start: 65647, Stop: 65159, Start Num: 15

Candidate Starts for Jackstina\_89:

(Start: 15 @65647 has 44 MA's), (21, 65608), (22, 65605), (23, 65530), (25, 65521), (29, 65479), (37, 65371), (42, 65329), (48, 65266), (50, 65248),

Gene: Kamiyu\_96 Start: 65734, Stop: 65246, Start Num: 15

Candidate Starts for Kamiyu\_96:

(Start: 15 @65734 has 44 MA's), (21, 65695), (22, 65692), (23, 65617), (25, 65608), (29, 65566), (37, 65458), (42, 65416), (48, 65353), (50, 65335),

Gene: Knocker\_87 Start: 67165, Stop: 66737, Start Num: 16

Candidate Starts for Knocker\_87:

(3, 67660), (Start: 16 @67165 has 2 MA's), (21, 67135), (23, 67036), (25, 67027), (39, 66841), (41, 66835), (49, 66778), (51, 66760),

Gene: Kronus\_96 Start: 66819, Stop: 66331, Start Num: 15

Candidate Starts for Kronus\_96:

(Start: 15 @66819 has 44 MA's), (21, 66780), (22, 66777), (23, 66702), (25, 66693), (29, 66651), (37, 66543), (42, 66501), (48, 66438), (50, 66420),

Gene: LestyG\_94 Start: 65305, Stop: 64817, Start Num: 15

Candidate Starts for LestyG\_94:

(Start: 15 @65305 has 44 MA's), (21, 65266), (22, 65263), (23, 65188), (25, 65179), (29, 65137), (37, 65029), (42, 64987), (48, 64924), (50, 64906),

Gene: Marley1013\_94 Start: 66265, Stop: 65777, Start Num: 15

Candidate Starts for Marley1013\_94:

(Start: 15 @66265 has 44 MA's), (21, 66226), (22, 66223), (23, 66148), (25, 66139), (29, 66097), (37, 65989), (42, 65947), (48, 65884), (50, 65866),

Gene: Marlia\_96 Start: 65827, Stop: 65339, Start Num: 15

Candidate Starts for Marlia\_96:

(Start: 15 @65827 has 44 MA's), (21, 65788), (22, 65785), (23, 65710), (25, 65701), (29, 65659), (37, 65551), (42, 65509), (48, 65446), (50, 65428),

Gene: MmasiCarm\_97 Start: 66162, Stop: 65674, Start Num: 15

Candidate Starts for MmasiCarm\_97:

(Start: 15 @66162 has 44 MA's), (21, 66123), (22, 66120), (23, 66045), (25, 66036), (29, 65994), (37, 65886), (42, 65844), (48, 65781), (50, 65763),

Gene: Mortcellus\_96 Start: 66900, Stop: 66412, Start Num: 15

Candidate Starts for Mortcellus\_96:

(Start: 15 @66900 has 44 MA's), (21, 66861), (22, 66858), (23, 66783), (25, 66774), (29, 66732), (37, 66624), (42, 66582), (48, 66519), (50, 66501),

Gene: Morty007\_94 Start: 66532, Stop: 66044, Start Num: 15

Candidate Starts for Morty007\_94:

(Start: 15 @66532 has 44 MA's), (21, 66493), (22, 66490), (23, 66415), (25, 66406), (29, 66364), (37, 66256), (42, 66214), (48, 66151), (50, 66133),

Gene: Neos5\_95 Start: 65988, Stop: 65500, Start Num: 15

Candidate Starts for Neos5\_95:

(Start: 15 @65988 has 44 MA's), (21, 65949), (22, 65946), (23, 65871), (25, 65862), (29, 65820), (37, 65712), (42, 65670), (48, 65607), (50, 65589),

Gene: Nozo\_96 Start: 66541, Stop: 66053, Start Num: 15

Candidate Starts for Nozo\_96:

(Start: 15 @66541 has 44 MA's), (21, 66502), (22, 66499), (23, 66424), (25, 66415), (29, 66373), (37, 66265), (42, 66223), (48, 66160), (50, 66142),

Gene: Obutu\_98 Start: 66345, Stop: 65857, Start Num: 15

Candidate Starts for Obutu\_98:

(Start: 15 @66345 has 44 MA's), (21, 66306), (22, 66303), (23, 66228), (25, 66219), (29, 66177), (37, 66069), (42, 66027), (48, 65964), (50, 65946),

Gene: OrangeOswald\_95 Start: 65776, Stop: 65288, Start Num: 15

Candidate Starts for OrangeOswald\_95:

(Start: 15 @65776 has 44 MA's), (21, 65737), (22, 65734), (23, 65659), (25, 65650), (29, 65608), (37, 65500), (42, 65458), (48, 65395), (50, 65377),

Gene: PenguinLover67\_87 Start: 65234, Stop: 64770, Start Num: 17

Candidate Starts for PenguinLover67\_87:

(Start: 17 @65234 has 2 MA's), (20, 65225), (26, 65075), (27, 65072), (30, 65024), (36, 64988), (49, 64847), (51, 64829),



Gene: Phaedrus\_91 Start: 65191, Stop: 64703, Start Num: 15

Candidate Starts for Phaedrus\_91:

(Start: 15 @65191 has 44 MA's), (21, 65152), (22, 65149), (23, 65074), (25, 65065), (29, 65023), (37, 64915), (42, 64873), (48, 64810), (50, 64792),

Gene: Phayeta\_98 Start: 66026, Stop: 65538, Start Num: 15

Candidate Starts for Phayeta\_98:

(Start: 15 @66026 has 44 MA's), (21, 65987), (22, 65984), (23, 65909), (25, 65900), (29, 65858), (37, 65750), (42, 65708), (48, 65645), (50, 65627),

Gene: Philly\_95 Start: 65624, Stop: 65136, Start Num: 15

Candidate Starts for Philly\_95:

(Start: 15 @65624 has 44 MA's), (21, 65585), (22, 65582), (23, 65507), (25, 65498), (29, 65456), (37, 65348), (42, 65306), (48, 65243), (50, 65225),

Gene: Phlyer\_96 Start: 66486, Stop: 65998, Start Num: 15

Candidate Starts for Phlyer\_96:

(Start: 15 @66486 has 44 MA's), (21, 66447), (22, 66444), (23, 66369), (25, 66360), (29, 66318), (37, 66210), (42, 66168), (48, 66105), (50, 66087),

Gene: Pipefish\_95 Start: 66160, Stop: 65672, Start Num: 15

Candidate Starts for Pipefish\_95:

(Start: 15 @66160 has 44 MA's), (21, 66121), (22, 66118), (23, 66043), (25, 66034), (29, 65992), (37, 65884), (42, 65842), (48, 65779), (50, 65761),

Gene: Quesadilla\_90 Start: 66835, Stop: 66329, Start Num: 11

Candidate Starts for Quesadilla\_90:

(Start: 11 @66835 has 1 MA's), (Start: 19 @66787 has 1 MA's), (30, 66583), (31, 66580), (34, 66553), (42, 66463), (43, 66457), (49, 66406), (51, 66388), (53, 66370), (55, 66361),

Gene: RagingRooster\_96 Start: 65772, Stop: 65284, Start Num: 15

Candidate Starts for RagingRooster\_96:

(Start: 15 @65772 has 44 MA's), (21, 65733), (22, 65730), (23, 65655), (25, 65646), (29, 65604), (37, 65496), (42, 65454), (48, 65391), (50, 65373),

Gene: Rinkes\_86 Start: 67114, Stop: 66665, Start Num: 13

Candidate Starts for Rinkes\_86:

(Start: 13 @67114 has 1 MA's), (27, 66943), (28, 66940), (30, 66895), (38, 66772), (44, 66751), (46, 66742), (49, 66706),

Gene: Rita1961\_97 Start: 66117, Stop: 65629, Start Num: 15

Candidate Starts for Rita1961\_97:

(Start: 15 @66117 has 44 MA's), (21, 66078), (22, 66075), (23, 66000), (25, 65991), (29, 65949), (37, 65841), (42, 65799), (48, 65736), (50, 65718),

Gene: RomaT\_96 Start: 66340, Stop: 65852, Start Num: 15

Candidate Starts for RomaT\_96:

(Start: 15 @66340 has 44 MA's), (21, 66301), (22, 66298), (23, 66223), (25, 66214), (29, 66172), (37, 66064), (42, 66022), (48, 65959), (50, 65941),

Gene: Saguaro\_82 Start: 64421, Stop: 63921, Start Num: 19

Candidate Starts for Saguaro\_82:

(Start: 19 @64421 has 1 MA's), (28, 64265), (32, 64196), (36, 64184), (40, 64103), (49, 64043), (53, 64007), (54, 64004), (56, 63980), (57, 63974),

Gene: Shenandoah\_96 Start: 65692, Stop: 65204, Start Num: 15

Candidate Starts for Shenandoah\_96:

(Start: 15 @65692 has 44 MA's), (21, 65653), (22, 65650), (23, 65575), (25, 65566), (29, 65524), (37, 65416), (42, 65374), (48, 65311), (50, 65293),

Gene: SlippinJimmy\_99 Start: 67140, Stop: 66652, Start Num: 15

Candidate Starts for SlippinJimmy\_99:

(Start: 15 @67140 has 44 MA's), (21, 67101), (22, 67098), (23, 67023), (25, 67014), (29, 66972), (37, 66864), (42, 66822), (48, 66759), (50, 66741),

Gene: SwainyDoc\_96 Start: 66206, Stop: 65718, Start Num: 15

Candidate Starts for SwainyDoc\_96:

(Start: 15 @66206 has 44 MA's), (21, 66167), (22, 66164), (23, 66089), (25, 66080), (29, 66038), (37, 65930), (42, 65888), (48, 65825), (50, 65807),

Gene: SynergyX\_97 Start: 66082, Stop: 65594, Start Num: 15

Candidate Starts for SynergyX\_97:

(Start: 15 @66082 has 44 MA's), (21, 66043), (22, 66040), (23, 65965), (25, 65956), (29, 65914), (37, 65806), (42, 65764), (48, 65701), (50, 65683),

Gene: TinyTerror\_97 Start: 66203, Stop: 65715, Start Num: 15

Candidate Starts for TinyTerror\_97:

(Start: 15 @66203 has 44 MA's), (21, 66164), (22, 66161), (23, 66086), (25, 66077), (29, 66035), (37, 65927), (42, 65885), (48, 65822), (50, 65804),

Gene: Tydolla\_92 Start: 65758, Stop: 65270, Start Num: 15

Candidate Starts for Tydolla\_92:

(Start: 15 @65758 has 44 MA's), (21, 65719), (22, 65716), (23, 65641), (25, 65632), (29, 65590), (37, 65482), (42, 65440), (48, 65377), (50, 65359),

Gene: Yahalom\_94 Start: 65583, Stop: 65095, Start Num: 15

Candidate Starts for Yahalom\_94:

(Start: 15 @65583 has 44 MA's), (21, 65544), (22, 65541), (23, 65466), (25, 65457), (29, 65415), (37, 65307), (42, 65265), (48, 65202), (50, 65184),

Gene: Yinz\_94 Start: 65180, Stop: 64692, Start Num: 15

Candidate Starts for Yinz\_94:

(5, 65402), (7, 65300), (Start: 15 @65180 has 44 MA's), (21, 65141), (22, 65138), (23, 65063), (25, 65054), (29, 65012), (37, 64904), (42, 64862), (48, 64799), (50, 64781),