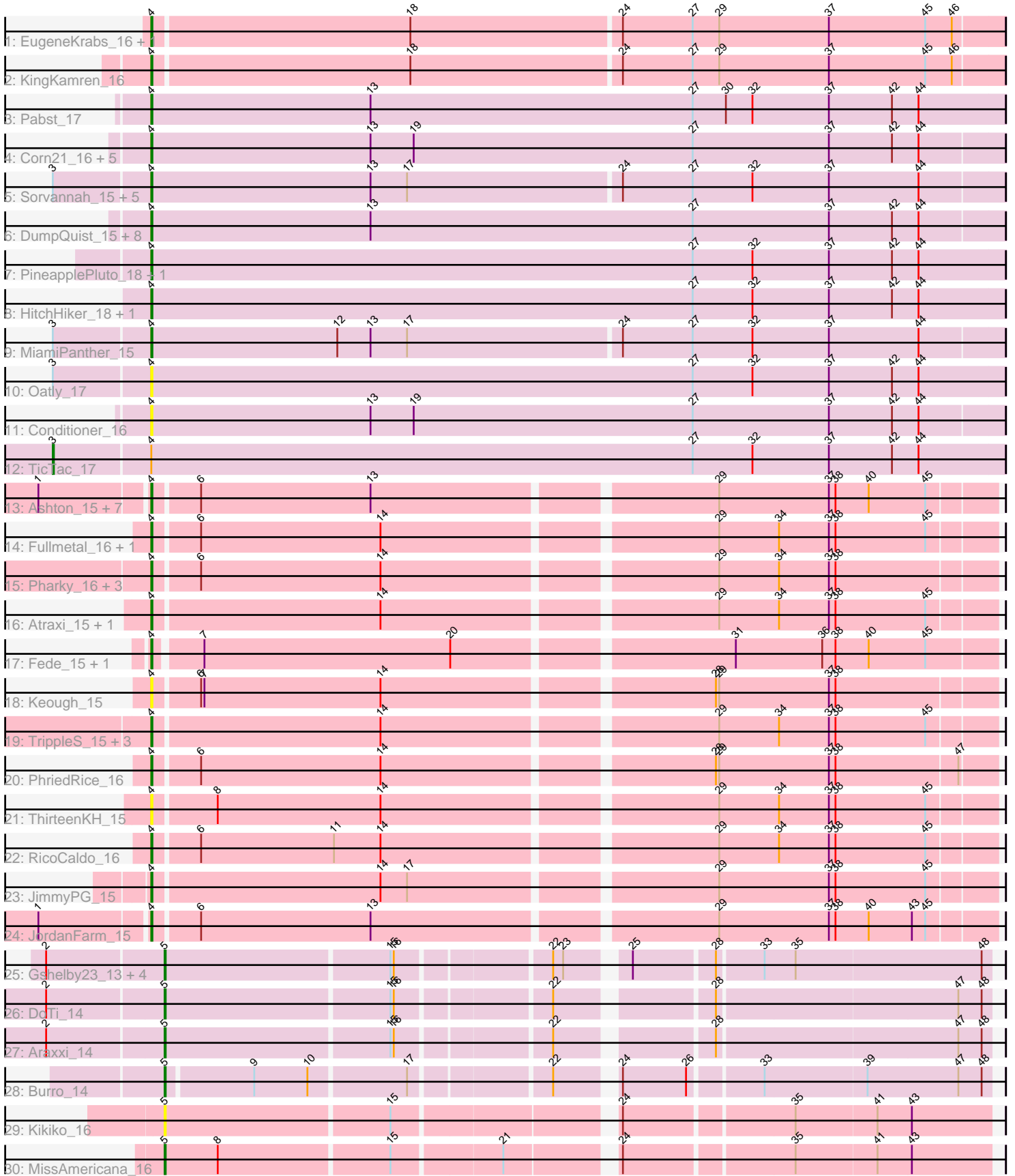


Pham 308542



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 308542 Report

This analysis was run 06/27/26 on database version 652.

Pham number 308542 has 71 members, 12 are drafts.

Phages represented in each track:

- Track 1 : EugeneKrabs\_16, Zhengyi\_16
- Track 2 : KingKamren\_16
- Track 3 : Pabst\_17
- Track 4 : Corn21\_16, BlueRugrat\_15, LesNorah\_15, Stormbreaker\_15, TownLake\_15, Xitlalli\_15
- Track 5 : Sorvannah\_15, YellowPanda\_15, Salvatore2000\_15, JessellCookie\_15, Wesak\_15, TinyTimothy\_15
- Track 6 : DumpQuist\_15, Phogo\_16, Dashyla\_15, Birdfeeder\_15, SwissCheezer\_15, Unphazed\_16, ArMaWen\_15, LilyLou\_16, Alex44\_16
- Track 7 : PineapplePluto\_18, CrunchyBoi\_18
- Track 8 : HitchHiker\_18, Biozilla\_17
- Track 9 : MiamiPanther\_15
- Track 10 : Oatly\_17
- Track 11 : Conditioner\_16
- Track 12 : TicTac\_17
- Track 13 : Ashton\_15, Barroma\_15, SoilSleuth\_15, ShyRosie\_15, Akoni\_15, Truong\_15, AloeVera\_15, Waterlily\_15
- Track 14 : Fullmetal\_16, Mazun\_16
- Track 15 : Pharky\_16, Phedro\_16, StagePhright\_16, Phracted\_16
- Track 16 : Atraxi\_15, Yafa\_15
- Track 17 : Fede\_15, Kosier\_15
- Track 18 : Keough\_15
- Track 19 : TrippleS\_15, Moleficent\_16, Morrill\_15, Astartes\_16
- Track 20 : PhriedRice\_16
- Track 21 : ThirteenKH\_15
- Track 22 : RicoCaldo\_16
- Track 23 : JimmyPG\_15
- Track 24 : JordanFarm\_15
- Track 25 : Gshelby23\_13, Scruffy\_14, Arete\_15, Casino\_13, Hannabella\_14
- Track 26 : DoTi\_14
- Track 27 : Araxxi\_14
- Track 28 : Burro\_14
- Track 29 : Kikiko\_16
- Track 30 : MissAmericana\_16

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

The start number called the most often in the published annotations is 4, it was called in 50 of the 59 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Akoni\_15, Alex44\_16, AloeVera\_15, ArMaWen\_15, Ashton\_15, Astartes\_16, Atraxi\_15, Barroma\_15, Biozilla\_17, Birdfeeder\_15, BlueRugrat\_15, Conditioner\_16, Corn21\_16, CrunchyBoi\_18, Dashyla\_15, DumpQuist\_15, EugeneKrabs\_16, Fede\_15, Fullmetal\_16, HitchHiker\_18, JessellCookie\_15, JimmyPG\_15, JordanFarm\_15, Keough\_15, KingKamren\_16, Kosier\_15, LesNorah\_15, LilyLou\_16, Mazun\_16, MiamiPanther\_15, Moleficient\_16, Morrill\_15, Oatly\_17, Pabst\_17, Pharky\_16, Phedro\_16, Phogo\_16, Phracted\_16, PhriedRice\_16, PineapplePluto\_18, RicoCaldo\_16, Salvatore2000\_15, ShyRosie\_15, SoilSleuth\_15, Sorvannah\_15, StagePhright\_16, Stormbreaker\_15, SwissCheezer\_15, ThirteenKH\_15, TinyTimothy\_15, TownLake\_15, TrippleS\_15, Truong\_15, Unphazed\_16, Waterlily\_15, Wesak\_15, Xitlalli\_15, Yafa\_15, YellowPanda\_15, Zhengyi\_16,

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

- TicTac\_17,

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

- Araxxi\_14, Arete\_15, Burro\_14, Casino\_13, DoTi\_14, Gshelby23\_13, Hannabella\_14, Kikiko\_16, MissAmericana\_16, Scruffy\_14,

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

Start 3:

- Found in 9 of 71 ( 12.7% ) of genes in pham
- Manual Annotations of this start: 1 of 59
- Called 11.1% of time when present
- Phage (with cluster) where this start called: TicTac\_17 (EK1),

Start 4:

- Found in 61 of 71 ( 85.9% ) of genes in pham
- Manual Annotations of this start: 50 of 59
- Called 98.4% of time when present
- Phage (with cluster) where this start called: Akoni\_15 (EK2), Alex44\_16 (EK1), AloeVera\_15 (EK2), ArMaWen\_15 (EK1), Ashton\_15 (EK2), Astartes\_16 (EK2), Atraxi\_15 (EK2), Barroma\_15 (EK2), Biozilla\_17 (EK1), Birdfeeder\_15 (EK1), BlueRugrat\_15 (EK1), Conditioner\_16 (EK1), Corn21\_16 (EK1), CrunchyBoi\_18 (EK1), Dashyla\_15 (EK1), DumpQuist\_15 (EK1), EugeneKrabs\_16 (EK), Fede\_15 (EK2), Fullmetal\_16 (EK2), HitchHiker\_18 (EK1), JessellCookie\_15 (EK1), JimmyPG\_15 (EK2), JordanFarm\_15 (EK2), Keough\_15 (EK2), KingKamren\_16 (EK), Kosier\_15 (EK2), LesNorah\_15 (EK1), LilyLou\_16 (EK1), Mazun\_16 (EK2), MiamiPanther\_15 (EK1), Moleficient\_16 (EK2), Morrill\_15 (EK2), Oatly\_17 (EK1), Pabst\_17 (EK1), Pharky\_16 (EK2), Phedro\_16 (EK2), Phogo\_16 (EK1), Phracted\_16 (EK2), PhriedRice\_16 (EK2), PineapplePluto\_18 (EK1), RicoCaldo\_16 (EK2), Salvatore2000\_15 (EK1), ShyRosie\_15 (EK2), SoilSleuth\_15 (EK2), Sorvannah\_15 (EK1), StagePhright\_16 (EK2), Stormbreaker\_15 (EK1), SwissCheezer\_15 (EK1), ThirteenKH\_15 (EK2), TinyTimothy\_15 (EK1),

TownLake\_15 (EK1), TrippleS\_15 (EK2), Truong\_15 (EK2), Unphazed\_16 (EK1), Waterlily\_15 (EK2), Wesak\_15 (EK1), Xitlalli\_15 (EK1), Yafa\_15 (EK2), YellowPanda\_15 (EK1), Zhengyi\_16 (EK),

Start 5:

- Found in 10 of 71 ( 14.1% ) of genes in pham
- Manual Annotations of this start: 8 of 59
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Araxxi\_14 (EM1), Arete\_15 (EM1), Burro\_14 (EM1), Casino\_13 (EM1), DoTi\_14 (EM1), Gshelby23\_13 (EM1), Hannabella\_14 (EM1), Kikiko\_16 (EM2), MissAmericana\_16 (EM2), Scruffy\_14 (EM1),

### **Summary by clusters:**

There are 5 clusters represented in this pham: EM2, EM1, EK, EK1, EK2,

Info for manual annotations of cluster EK:

- Start number 4 was manually annotated 3 times for cluster EK.

Info for manual annotations of cluster EK1:

- Start number 3 was manually annotated 1 time for cluster EK1.
- Start number 4 was manually annotated 24 times for cluster EK1.

Info for manual annotations of cluster EK2:

- Start number 4 was manually annotated 23 times for cluster EK2.

Info for manual annotations of cluster EM1:

- Start number 5 was manually annotated 7 times for cluster EM1.

Info for manual annotations of cluster EM2:

- Start number 5 was manually annotated 1 time for cluster EM2.

### **Gene Information:**

Gene: Akoni\_15 Start: 10953, Stop: 10222, Start Num: 4

Candidate Starts for Akoni\_15:

(1, 11046), (Start: 4 @10953 has 50 MA's), (6, 10914), (13, 10761), (29, 10467), (37, 10368), (38, 10362), (40, 10332), (45, 10281),

Gene: Alex44\_16 Start: 11249, Stop: 10482, Start Num: 4

Candidate Starts for Alex44\_16:

(Start: 4 @11249 has 50 MA's), (13, 11051), (27, 10760), (37, 10637), (42, 10580), (44, 10556),

Gene: AloeVera\_15 Start: 10953, Stop: 10222, Start Num: 4

Candidate Starts for AloeVera\_15:

(1, 11046), (Start: 4 @10953 has 50 MA's), (6, 10914), (13, 10761), (29, 10467), (37, 10368), (38, 10362), (40, 10332), (45, 10281),

Gene: ArMaWen\_15 Start: 11049, Stop: 10282, Start Num: 4

Candidate Starts for ArMaWen\_15:

(Start: 4 @11049 has 50 MA's), (13, 10851), (27, 10560), (37, 10437), (42, 10380), (44, 10356),

Gene: Araxxi\_14 Start: 10738, Stop: 10049, Start Num: 5

Candidate Starts for Araxxi\_14:

(2, 10837), (Start: 5 @10738 has 8 MA's), (15, 10540), (16, 10537), (22, 10411), (28, 10288), (47, 10078), (48, 10057),

Gene: Arete\_15 Start: 10667, Stop: 9978, Start Num: 5

Candidate Starts for Arete\_15:

(2, 10766), (Start: 5 @10667 has 8 MA's), (15, 10469), (16, 10466), (22, 10340), (23, 10331), (25, 10286), (28, 10217), (33, 10178), (35, 10151), (48, 9986),

Gene: Ashton\_15 Start: 10957, Stop: 10226, Start Num: 4

Candidate Starts for Ashton\_15:

(1, 11050), (Start: 4 @10957 has 50 MA's), (6, 10918), (13, 10765), (29, 10471), (37, 10372), (38, 10366), (40, 10336), (45, 10285),

Gene: Astartes\_16 Start: 11221, Stop: 10490, Start Num: 4

Candidate Starts for Astartes\_16:

(Start: 4 @11221 has 50 MA's), (14, 11020), (29, 10735), (34, 10681), (37, 10636), (38, 10630), (45, 10549),

Gene: Atraxi\_15 Start: 10979, Stop: 10248, Start Num: 4

Candidate Starts for Atraxi\_15:

(Start: 4 @10979 has 50 MA's), (14, 10778), (29, 10493), (34, 10439), (37, 10394), (38, 10388), (45, 10307),

Gene: Barroma\_15 Start: 10953, Stop: 10222, Start Num: 4

Candidate Starts for Barroma\_15:

(1, 11046), (Start: 4 @10953 has 50 MA's), (6, 10914), (13, 10761), (29, 10467), (37, 10368), (38, 10362), (40, 10332), (45, 10281),

Gene: Biozilla\_17 Start: 11522, Stop: 10752, Start Num: 4

Candidate Starts for Biozilla\_17:

(Start: 4 @11522 has 50 MA's), (27, 11033), (32, 10979), (37, 10910), (42, 10853), (44, 10829),

Gene: Birdfeeder\_15 Start: 11409, Stop: 10642, Start Num: 4

Candidate Starts for Birdfeeder\_15:

(Start: 4 @11409 has 50 MA's), (13, 11211), (27, 10920), (37, 10797), (42, 10740), (44, 10716),

Gene: BlueRugrat\_15 Start: 11483, Stop: 10716, Start Num: 4

Candidate Starts for BlueRugrat\_15:

(Start: 4 @11483 has 50 MA's), (13, 11285), (19, 11246), (27, 10994), (37, 10871), (42, 10814), (44, 10790),

Gene: Burro\_14 Start: 9958, Stop: 9275, Start Num: 5

Candidate Starts for Burro\_14:

(Start: 5 @9958 has 8 MA's), (9, 9883), (10, 9835), (17, 9751), (22, 9637), (24, 9592), (26, 9535), (33, 9475), (39, 9385), (47, 9304), (48, 9283),

Gene: Casino\_13 Start: 10495, Stop: 9806, Start Num: 5

Candidate Starts for Casino\_13:

(2, 10594), (Start: 5 @10495 has 8 MA's), (15, 10297), (16, 10294), (22, 10168), (23, 10159), (25, 10114), (28, 10045), (33, 10006), (35, 9979), (48, 9814),

Gene: Conditioner\_16 Start: 11759, Stop: 10992, Start Num: 4

Candidate Starts for Conditioner\_16:

(Start: 4 @11759 has 50 MA's), (13, 11561), (19, 11522), (27, 11270), (37, 11147), (42, 11090), (44, 11066),

Gene: Corn21\_16 Start: 11788, Stop: 11021, Start Num: 4

Candidate Starts for Corn21\_16:

(Start: 4 @11788 has 50 MA's), (13, 11590), (19, 11551), (27, 11299), (37, 11176), (42, 11119), (44, 11095),

Gene: CrunchyBoi\_18 Start: 11657, Stop: 10887, Start Num: 4

Candidate Starts for CrunchyBoi\_18:

(Start: 4 @11657 has 50 MA's), (27, 11168), (32, 11114), (37, 11045), (42, 10988), (44, 10964),

Gene: Dashyla\_15 Start: 11062, Stop: 10295, Start Num: 4

Candidate Starts for Dashyla\_15:

(Start: 4 @11062 has 50 MA's), (13, 10864), (27, 10573), (37, 10450), (42, 10393), (44, 10369),

Gene: DoTi\_14 Start: 10732, Stop: 10043, Start Num: 5

Candidate Starts for DoTi\_14:

(2, 10831), (Start: 5 @10732 has 8 MA's), (15, 10534), (16, 10531), (22, 10405), (28, 10282), (47, 10072), (48, 10051),

Gene: DumpQuist\_15 Start: 11052, Stop: 10285, Start Num: 4

Candidate Starts for DumpQuist\_15:

(Start: 4 @11052 has 50 MA's), (13, 10854), (27, 10563), (37, 10440), (42, 10383), (44, 10359),

Gene: EugeneKrabs\_16 Start: 11398, Stop: 10643, Start Num: 4

Candidate Starts for EugeneKrabs\_16:

(Start: 4 @11398 has 50 MA's), (18, 11170), (24, 10984), (27, 10921), (29, 10897), (37, 10798), (45, 10711), (46, 10687),

Gene: Fede\_15 Start: 11220, Stop: 10489, Start Num: 4

Candidate Starts for Fede\_15:

(Start: 4 @11220 has 50 MA's), (7, 11181), (20, 10959), (31, 10722), (36, 10644), (38, 10632), (40, 10602), (45, 10551),

Gene: Fullmetal\_16 Start: 11218, Stop: 10487, Start Num: 4

Candidate Starts for Fullmetal\_16:

(Start: 4 @11218 has 50 MA's), (6, 11179), (14, 11017), (29, 10732), (34, 10678), (37, 10633), (38, 10627), (45, 10546),

Gene: Gshelby23\_13 Start: 10613, Stop: 9924, Start Num: 5

Candidate Starts for Gshelby23\_13:

(2, 10712), (Start: 5 @10613 has 8 MA's), (15, 10415), (16, 10412), (22, 10286), (23, 10277), (25, 10232), (28, 10163), (33, 10124), (35, 10097), (48, 9932),

Gene: Hannabella\_14 Start: 10493, Stop: 9804, Start Num: 5

Candidate Starts for Hannabella\_14:

(2, 10592), (Start: 5 @10493 has 8 MA's), (15, 10295), (16, 10292), (22, 10166), (23, 10157), (25, 10112), (28, 10043), (33, 10004), (35, 9977), (48, 9812),

Gene: HitchHiker\_18 Start: 11522, Stop: 10752, Start Num: 4

Candidate Starts for HitchHiker\_18:

(Start: 4 @11522 has 50 MA's), (27, 11033), (32, 10979), (37, 10910), (42, 10853), (44, 10829),

Gene: JessellCookie\_15 Start: 10862, Stop: 10101, Start Num: 4

Candidate Starts for JessellCookie\_15:

(Start: 3 @10946 has 1 MA's), (Start: 4 @10862 has 50 MA's), (13, 10664), (17, 10631), (24, 10442), (27, 10379), (32, 10325), (37, 10256), (44, 10175),

Gene: JimmyPG\_15 Start: 11173, Stop: 10442, Start Num: 4

Candidate Starts for JimmyPG\_15:

(Start: 4 @11173 has 50 MA's), (14, 10972), (17, 10948), (29, 10687), (37, 10588), (38, 10582), (45, 10501),

Gene: JordanFarm\_15 Start: 10953, Stop: 10222, Start Num: 4

Candidate Starts for JordanFarm\_15:

(1, 11046), (Start: 4 @10953 has 50 MA's), (6, 10914), (13, 10761), (29, 10467), (37, 10368), (38, 10362), (40, 10332), (43, 10293), (45, 10281),

Gene: Keough\_15 Start: 10946, Stop: 10215, Start Num: 4

Candidate Starts for Keough\_15:

(Start: 4 @10946 has 50 MA's), (6, 10907), (7, 10904), (14, 10745), (28, 10463), (29, 10460), (37, 10361), (38, 10355),

Gene: Kikiko\_16 Start: 11336, Stop: 10641, Start Num: 5

Candidate Starts for Kikiko\_16:

(Start: 5 @11336 has 8 MA's), (15, 11138), (24, 10958), (35, 10814), (41, 10742), (43, 10712),

Gene: KingKamren\_16 Start: 11433, Stop: 10678, Start Num: 4

Candidate Starts for KingKamren\_16:

(Start: 4 @11433 has 50 MA's), (18, 11205), (24, 11019), (27, 10956), (29, 10932), (37, 10833), (45, 10746), (46, 10722),

Gene: Kosier\_15 Start: 11220, Stop: 10489, Start Num: 4

Candidate Starts for Kosier\_15:

(Start: 4 @11220 has 50 MA's), (7, 11181), (20, 10959), (31, 10722), (36, 10644), (38, 10632), (40, 10602), (45, 10551),

Gene: LesNorah\_15 Start: 11576, Stop: 10809, Start Num: 4

Candidate Starts for LesNorah\_15:

(Start: 4 @11576 has 50 MA's), (13, 11378), (19, 11339), (27, 11087), (37, 10964), (42, 10907), (44, 10883),

Gene: LilyLou\_16 Start: 11426, Stop: 10659, Start Num: 4

Candidate Starts for LilyLou\_16:

(Start: 4 @11426 has 50 MA's), (13, 11228), (27, 10937), (37, 10814), (42, 10757), (44, 10733),

Gene: Mazun\_16 Start: 11219, Stop: 10488, Start Num: 4

Candidate Starts for Mazun\_16:

(Start: 4 @11219 has 50 MA's), (6, 11180), (14, 11018), (29, 10733), (34, 10679), (37, 10634), (38, 10628), (45, 10547),

Gene: MiamiPanther\_15 Start: 10862, Stop: 10101, Start Num: 4

Candidate Starts for MiamiPanther\_15:

(Start: 3 @10946 has 1 MA's), (Start: 4 @10862 has 50 MA's), (12, 10694), (13, 10664), (17, 10631), (24, 10442), (27, 10379), (32, 10325), (37, 10256), (44, 10175),

Gene: MissAmericana\_16 Start: 11108, Stop: 10413, Start Num: 5

Candidate Starts for MissAmericana\_16:

(Start: 5 @11108 has 8 MA's), (8, 11060), (15, 10910), (21, 10817), (24, 10730), (35, 10586), (41, 10514), (43, 10484),

Gene: Moleficient\_16 Start: 11215, Stop: 10484, Start Num: 4

Candidate Starts for Moleficient\_16:

(Start: 4 @11215 has 50 MA's), (14, 11014), (29, 10729), (34, 10675), (37, 10630), (38, 10624), (45, 10543),

Gene: Morrill\_15 Start: 10957, Stop: 10226, Start Num: 4

Candidate Starts for Morrill\_15:

(Start: 4 @10957 has 50 MA's), (14, 10756), (29, 10471), (34, 10417), (37, 10372), (38, 10366), (45, 10285),

Gene: Oatly\_17 Start: 11522, Stop: 10752, Start Num: 4

Candidate Starts for Oatly\_17:

(Start: 3 @11606 has 1 MA's), (Start: 4 @11522 has 50 MA's), (27, 11033), (32, 10979), (37, 10910), (42, 10853), (44, 10829),

Gene: Pabst\_17 Start: 11392, Stop: 10622, Start Num: 4

Candidate Starts for Pabst\_17:

(Start: 4 @11392 has 50 MA's), (13, 11194), (27, 10903), (30, 10873), (32, 10849), (37, 10780), (42, 10723), (44, 10699),

Gene: Pharky\_16 Start: 11179, Stop: 10448, Start Num: 4

Candidate Starts for Pharky\_16:

(Start: 4 @11179 has 50 MA's), (6, 11140), (14, 10978), (29, 10693), (34, 10639), (37, 10594), (38, 10588),

Gene: Phedro\_16 Start: 11179, Stop: 10448, Start Num: 4

Candidate Starts for Phedro\_16:

(Start: 4 @11179 has 50 MA's), (6, 11140), (14, 10978), (29, 10693), (34, 10639), (37, 10594), (38, 10588),

Gene: Phogo\_16 Start: 11258, Stop: 10491, Start Num: 4

Candidate Starts for Phogo\_16:

(Start: 4 @11258 has 50 MA's), (13, 11060), (27, 10769), (37, 10646), (42, 10589), (44, 10565),

Gene: Phractured\_16 Start: 11179, Stop: 10448, Start Num: 4

Candidate Starts for Phractured\_16:

(Start: 4 @11179 has 50 MA's), (6, 11140), (14, 10978), (29, 10693), (34, 10639), (37, 10594), (38, 10588),

Gene: PhriedRice\_16 Start: 11179, Stop: 10448, Start Num: 4

Candidate Starts for PhriedRice\_16:

(Start: 4 @11179 has 50 MA's), (6, 11140), (14, 10978), (28, 10696), (29, 10693), (37, 10594), (38, 10588), (47, 10480),

Gene: PineapplePluto\_18 Start: 11666, Stop: 10896, Start Num: 4

Candidate Starts for PineapplePluto\_18:

(Start: 4 @11666 has 50 MA's), (27, 11177), (32, 11123), (37, 11054), (42, 10997), (44, 10973),

Gene: RicoCaldo\_16 Start: 11210, Stop: 10479, Start Num: 4

Candidate Starts for RicoCaldo\_16:

(Start: 4 @11210 has 50 MA's), (6, 11171), (11, 11051), (14, 11009), (29, 10724), (34, 10670), (37, 10625), (38, 10619), (45, 10538),

Gene: Salvatore2000\_15 Start: 10862, Stop: 10101, Start Num: 4

Candidate Starts for Salvatore2000\_15:

(Start: 3 @10946 has 1 MA's), (Start: 4 @10862 has 50 MA's), (13, 10664), (17, 10631), (24, 10442), (27, 10379), (32, 10325), (37, 10256), (44, 10175),

Gene: Scruffy\_14 Start: 10892, Stop: 10203, Start Num: 5

Candidate Starts for Scruffy\_14:

(2, 10991), (Start: 5 @10892 has 8 MA's), (15, 10694), (16, 10691), (22, 10565), (23, 10556), (25, 10511), (28, 10442), (33, 10403), (35, 10376), (48, 10211),

Gene: ShyRosie\_15 Start: 10953, Stop: 10222, Start Num: 4

Candidate Starts for ShyRosie\_15:

(1, 11046), (Start: 4 @10953 has 50 MA's), (6, 10914), (13, 10761), (29, 10467), (37, 10368), (38, 10362), (40, 10332), (45, 10281),

Gene: SoilSleuth\_15 Start: 10953, Stop: 10222, Start Num: 4

Candidate Starts for SoilSleuth\_15:

(1, 11046), (Start: 4 @10953 has 50 MA's), (6, 10914), (13, 10761), (29, 10467), (37, 10368), (38, 10362), (40, 10332), (45, 10281),

Gene: Sorvannah\_15 Start: 10862, Stop: 10101, Start Num: 4

Candidate Starts for Sorvannah\_15:

(Start: 3 @10946 has 1 MA's), (Start: 4 @10862 has 50 MA's), (13, 10664), (17, 10631), (24, 10442), (27, 10379), (32, 10325), (37, 10256), (44, 10175),

Gene: StagePhright\_16 Start: 11179, Stop: 10448, Start Num: 4

Candidate Starts for StagePhright\_16:

(Start: 4 @11179 has 50 MA's), (6, 11140), (14, 10978), (29, 10693), (34, 10639), (37, 10594), (38, 10588),

Gene: Stormbreaker\_15 Start: 11388, Stop: 10621, Start Num: 4

Candidate Starts for Stormbreaker\_15:

(Start: 4 @11388 has 50 MA's), (13, 11190), (19, 11151), (27, 10899), (37, 10776), (42, 10719), (44, 10695),

Gene: SwissCheezer\_15 Start: 11025, Stop: 10258, Start Num: 4

Candidate Starts for SwissCheezer\_15:

(Start: 4 @11025 has 50 MA's), (13, 10827), (27, 10536), (37, 10413), (42, 10356), (44, 10332),

Gene: ThirteenKH\_15 Start: 10957, Stop: 10226, Start Num: 4

Candidate Starts for ThirteenKH\_15:

(Start: 4 @10957 has 50 MA's), (8, 10903), (14, 10756), (29, 10471), (34, 10417), (37, 10372), (38, 10366), (45, 10285),

Gene: TicTac\_17 Start: 11615, Stop: 10761, Start Num: 3

Candidate Starts for TicTac\_17:

(Start: 3 @11615 has 1 MA's), (Start: 4 @11531 has 50 MA's), (27, 11042), (32, 10988), (37, 10919), (42, 10862), (44, 10838),

Gene: TinyTimothy\_15 Start: 10862, Stop: 10101, Start Num: 4

Candidate Starts for TinyTimothy\_15:

(Start: 3 @10946 has 1 MA's), (Start: 4 @10862 has 50 MA's), (13, 10664), (17, 10631), (24, 10442), (27, 10379), (32, 10325), (37, 10256), (44, 10175),

Gene: TownLake\_15 Start: 11318, Stop: 10551, Start Num: 4

Candidate Starts for TownLake\_15:

(Start: 4 @11318 has 50 MA's), (13, 11120), (19, 11081), (27, 10829), (37, 10706), (42, 10649), (44, 10625),

Gene: TrippleS\_15 Start: 10963, Stop: 10232, Start Num: 4

Candidate Starts for TrippleS\_15:

(Start: 4 @10963 has 50 MA's), (14, 10762), (29, 10477), (34, 10423), (37, 10378), (38, 10372), (45, 10291),

Gene: Truong\_15 Start: 10953, Stop: 10222, Start Num: 4

Candidate Starts for Truong\_15:

(1, 11046), (Start: 4 @10953 has 50 MA's), (6, 10914), (13, 10761), (29, 10467), (37, 10368), (38, 10362), (40, 10332), (45, 10281),

Gene: Unphazed\_16 Start: 11285, Stop: 10518, Start Num: 4

Candidate Starts for Unphazed\_16:

(Start: 4 @11285 has 50 MA's), (13, 11087), (27, 10796), (37, 10673), (42, 10616), (44, 10592),

Gene: Waterlily\_15 Start: 10953, Stop: 10222, Start Num: 4

Candidate Starts for Waterlily\_15:

(1, 11046), (Start: 4 @10953 has 50 MA's), (6, 10914), (13, 10761), (29, 10467), (37, 10368), (38, 10362), (40, 10332), (45, 10281),

Gene: Wesak\_15 Start: 10862, Stop: 10101, Start Num: 4

Candidate Starts for Wesak\_15:

(Start: 3 @10946 has 1 MA's), (Start: 4 @10862 has 50 MA's), (13, 10664), (17, 10631), (24, 10442), (27, 10379), (32, 10325), (37, 10256), (44, 10175),

Gene: Xitlalli\_15 Start: 11391, Stop: 10624, Start Num: 4

Candidate Starts for Xitlalli\_15:

(Start: 4 @11391 has 50 MA's), (13, 11193), (19, 11154), (27, 10902), (37, 10779), (42, 10722), (44, 10698),

Gene: Yafa\_15 Start: 10980, Stop: 10249, Start Num: 4

Candidate Starts for Yafa\_15:

(Start: 4 @10980 has 50 MA's), (14, 10779), (29, 10494), (34, 10440), (37, 10395), (38, 10389), (45, 10308),

Gene: YellowPanda\_15 Start: 10862, Stop: 10101, Start Num: 4

Candidate Starts for YellowPanda\_15:

(Start: 3 @10946 has 1 MA's), (Start: 4 @10862 has 50 MA's), (13, 10664), (17, 10631), (24, 10442), (27, 10379), (32, 10325), (37, 10256), (44, 10175),

Gene: Zhengyi\_16 Start: 11417, Stop: 10662, Start Num: 4

Candidate Starts for Zhengyi\_16:

(Start: 4 @11417 has 50 MA's), (18, 11189), (24, 11003), (27, 10940), (29, 10916), (37, 10817), (45, 10730), (46, 10706),