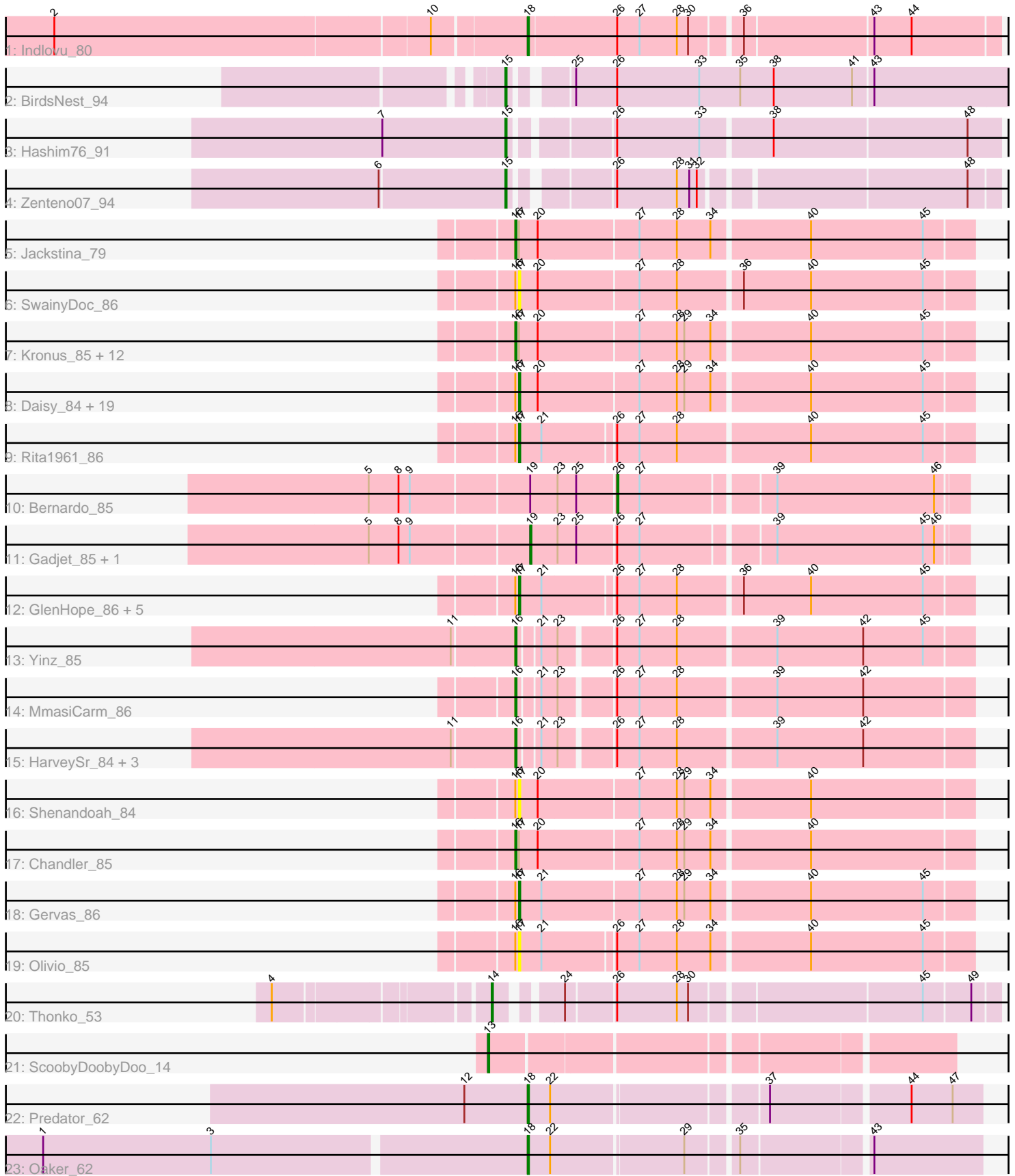


Pham 216168



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 216168 Report

This analysis was run 02/22/25 on database version 588.

Pham number 216168 has 63 members, 10 are drafts.

Phages represented in each track:

- Track 1 : Indlovu_80
- Track 2 : BirdsNest_94
- Track 3 : Hashim76_91
- Track 4 : Zenteno07_94
- Track 5 : Jackstina_79
- Track 6 : SwainyDoc_86
- Track 7 : Kronus_85, Chentzyk_87, Audrey_85, Mortcellus_85, OrangeOswald_84, Baloo_84, LestyG_83, Phayeta_88, Ben11_85, TinyTerror_86, RomaT_85, Corofin_85, Glubnar_85
- Track 8 : Daisy_84, Nozo_85, Heathcliff_85, SynergyX_85, Obutu_87, Briakila_85, Athena_87, Akoma_85, Abinghost_85, Tydolla_81, Devonte_83, Deenasa_85, RagingRooster_84, Phaedrus_80, Kamiyu_85, Chalmers_84, Phlyer_85, Casbah_85, Yahalom_83, SlippinJimmy_88
- Track 9 : Rita1961_86
- Track 10 : Bernardo_85
- Track 11 : Gadget_85, Pipefish_86
- Track 12 : GlenHope_86, Compostia_84, Halfpint_84, ChaChing_85, Marlia_86, Philly_84
- Track 13 : Yinz_85
- Track 14 : MmasiCarm_86
- Track 15 : HarveySr_84, Morty007_84, Neos5_85, Marley1013_86
- Track 16 : Shenandoah_84
- Track 17 : Chandler_85
- Track 18 : Gervas_86
- Track 19 : Olivio_85
- Track 20 : Thonko_53
- Track 21 : ScoobyDoobyDoo_14
- Track 22 : Predator_62
- Track 23 : Oaker_62

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

The start number called the most often in the published annotations is 17, it was called in 25 of the 53 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abinghost_85, Akoma_85, Athena_87, Briakila_85, Casbah_85, ChaChing_85, Chalmers_84, Compostia_84, Daisy_84, Deenasa_85, Devonte_83, Gervas_86, GlenHope_86, Halfpint_84, Heathcliff_85, Kamiyu_85, Marlia_86, Nozo_85, Obutu_87, Olivio_85, Phaedrus_80, Philly_84, Phlyer_85, RagingRooster_84, Rita1961_86, Shenandoah_84, SlippinJimmy_88, SwainyDoc_86, SynergyX_85, Tydolla_81, Yahalom_83,

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

- Audrey_85, Baloo_84, Ben11_85, Chandler_85, Chentzyk_87, Corofin_85, Glubnar_85, Jackstina_79, Kronus_85, LestyG_83, Mortcellus_85, OrangeOswald_84, Phayeta_88, RomaT_85, TinyTerror_86,

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

- Bernardo_85, BirdsNest_94, Gadget_85, HarveySr_84, Hashim76_91, Indlovu_80, Marley1013_86, MmasiCarm_86, Morty007_84, Neos5_85, Oaker_62, Pipefish_86, Predator_62, ScoobyDoobyDoo_14, Thonko_53, Yinz_85, Zenteno07_94,

Summary by start number:

Start 13:

- Found in 1 of 63 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 53
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ScoobyDoobyDoo_14 (C2),

Start 14:

- Found in 1 of 63 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 53
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Thonko_53 (B8),

Start 15:

- Found in 3 of 63 (4.8%) of genes in pham
- Manual Annotations of this start: 3 of 53
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BirdsNest_94 (B13), Hashim76_91 (B13), Zenteno07_94 (B13),

Start 16:

- Found in 52 of 63 (82.5%) of genes in pham
- Manual Annotations of this start: 17 of 53
- Called 40.4% of time when present
- Phage (with cluster) where this start called: Audrey_85 (B3), Baloo_84 (B3), Ben11_85 (B3), Chandler_85 (B3), Chentzyk_87 (B3), Corofin_85 (B3), Glubnar_85 (B3), HarveySr_84 (B3), Jackstina_79 (B3), Kronus_85 (B3), LestyG_83 (B3), Marley1013_86 (B3), MmasiCarm_86 (B3), Mortcellus_85 (B3), Morty007_84 (B3), Neos5_85 (B3), OrangeOswald_84 (B3), Phayeta_88 (B3), RomaT_85 (B3), TinyTerror_86 (B3), Yinz_85 (B3),

Start 17:

- Found in 46 of 63 (73.0%) of genes in pham

- Manual Annotations of this start: 25 of 53
- Called 67.4% of time when present
- Phage (with cluster) where this start called: Abinghost_85 (B3), Akoma_85 (B3), Athena_87 (B3), Briakila_85 (B3), Casbah_85 (B3), ChaChing_85 (B3), Chalmers_84 (B3), Compostia_84 (B3), Daisy_84 (B3), Deenasa_85 (B3), Devonte_83 (B3), Gervas_86 (B3), GlenHope_86 (B3), Halfpint_84 (B3), Heathcliff_85 (B3), Kamiyu_85 (B3), Marlia_86 (B3), Nozo_85 (B3), Obutu_87 (B3), Olivio_85 (B3), Phaedrus_80 (B3), Philly_84 (B3), Phlyer_85 (B3), RagingRooster_84 (B3), Rita1961_86 (B3), Shenandoah_84 (B3), SlippinJimmy_88 (B3), SwainyDoc_86 (B3), SynergyX_85 (B3), Tydolla_81 (B3), Yahalom_83 (B3),

Start 18:

- Found in 3 of 63 (4.8%) of genes in pham
- Manual Annotations of this start: 3 of 53
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Indlovu_80 (B11), Oaker_62 (H1), Predator_62 (H1),

Start 19:

- Found in 3 of 63 (4.8%) of genes in pham
- Manual Annotations of this start: 2 of 53
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Gadget_85 (B3), Pipefish_86 (B3),

Start 26:

- Found in 22 of 63 (34.9%) of genes in pham
- Manual Annotations of this start: 1 of 53
- Called 4.5% of time when present
- Phage (with cluster) where this start called: Bernardo_85 (B3),

Summary by clusters:

There are 6 clusters represented in this pham: B3, H1, B13, B11, C2, B8,

Info for manual annotations of cluster B11:

- Start number 18 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B13:

- Start number 15 was manually annotated 3 times for cluster B13.

Info for manual annotations of cluster B3:

- Start number 16 was manually annotated 17 times for cluster B3.
- Start number 17 was manually annotated 25 times for cluster B3.
- Start number 19 was manually annotated 2 times for cluster B3.
- Start number 26 was manually annotated 1 time for cluster B3.

Info for manual annotations of cluster B8:

- Start number 14 was manually annotated 1 time for cluster B8.

Info for manual annotations of cluster C2:

- Start number 13 was manually annotated 1 time for cluster C2.

Info for manual annotations of cluster H1:

- Start number 18 was manually annotated 2 times for cluster H1.

Gene Information:

Gene: Abinghost_85 Start: 62155, Stop: 61802, Start Num: 17

Candidate Starts for Abinghost_85:

(Start: 16 @62158 has 17 MA's), (Start: 17 @62155 has 25 MA's), (20, 62140), (27, 62062), (28, 62032), (29, 62026), (34, 62005), (40, 61930), (45, 61840),

Gene: Akoma_85 Start: 62195, Stop: 61842, Start Num: 17

Candidate Starts for Akoma_85:

(Start: 16 @62198 has 17 MA's), (Start: 17 @62195 has 25 MA's), (20, 62180), (27, 62102), (28, 62072), (29, 62066), (34, 62045), (40, 61970), (45, 61880),

Gene: Athena_87 Start: 62930, Stop: 62577, Start Num: 17

Candidate Starts for Athena_87:

(Start: 16 @62933 has 17 MA's), (Start: 17 @62930 has 25 MA's), (20, 62915), (27, 62837), (28, 62807), (29, 62801), (34, 62780), (40, 62705), (45, 62615),

Gene: Audrey_85 Start: 62187, Stop: 61831, Start Num: 16

Candidate Starts for Audrey_85:

(Start: 16 @62187 has 17 MA's), (Start: 17 @62184 has 25 MA's), (20, 62169), (27, 62091), (28, 62061), (29, 62055), (34, 62034), (40, 61959), (45, 61869),

Gene: Baloo_84 Start: 62039, Stop: 61683, Start Num: 16

Candidate Starts for Baloo_84:

(Start: 16 @62039 has 17 MA's), (Start: 17 @62036 has 25 MA's), (20, 62021), (27, 61943), (28, 61913), (29, 61907), (34, 61886), (40, 61811), (45, 61721),

Gene: Ben11_85 Start: 62414, Stop: 62058, Start Num: 16

Candidate Starts for Ben11_85:

(Start: 16 @62414 has 17 MA's), (Start: 17 @62411 has 25 MA's), (20, 62396), (27, 62318), (28, 62288), (29, 62282), (34, 62261), (40, 62186), (45, 62096),

Gene: Bernardo_85 Start: 62136, Stop: 61870, Start Num: 26

Candidate Starts for Bernardo_85:

(5, 62325), (8, 62301), (9, 62292), (Start: 19 @62202 has 2 MA's), (23, 62181), (25, 62166), (Start: 26 @62136 has 1 MA's), (27, 62118), (39, 62019), (46, 61893),

Gene: BirdsNest_94 Start: 66955, Stop: 66563, Start Num: 15

Candidate Starts for BirdsNest_94:

(Start: 15 @66955 has 3 MA's), (25, 66919), (Start: 26 @66886 has 1 MA's), (33, 66820), (35, 66787), (38, 66760), (41, 66697), (43, 66682),

Gene: Briakila_85 Start: 62382, Stop: 62029, Start Num: 17

Candidate Starts for Briakila_85:

(Start: 16 @62385 has 17 MA's), (Start: 17 @62382 has 25 MA's), (20, 62367), (27, 62289), (28, 62259), (29, 62253), (34, 62232), (40, 62157), (45, 62067),

Gene: Casbah_85 Start: 62495, Stop: 62142, Start Num: 17

Candidate Starts for Casbah_85:

(Start: 16 @62498 has 17 MA's), (Start: 17 @62495 has 25 MA's), (20, 62480), (27, 62402), (28, 62372), (29, 62366), (34, 62345), (40, 62270), (45, 62180),

Gene: ChaChing_85 Start: 62197, Stop: 61847, Start Num: 17

Candidate Starts for ChaChing_85:

(Start: 16 @62200 has 17 MA's), (Start: 17 @62197 has 25 MA's), (21, 62179), (Start: 26 @62125 has 1 MA's), (27, 62107), (28, 62077), (36, 62029), (40, 61975), (45, 61885),

Gene: Chalmers_84 Start: 62630, Stop: 62277, Start Num: 17

Candidate Starts for Chalmers_84:

(Start: 16 @62633 has 17 MA's), (Start: 17 @62630 has 25 MA's), (20, 62615), (27, 62537), (28, 62507), (29, 62501), (34, 62480), (40, 62405), (45, 62315),

Gene: Chandler_85 Start: 62974, Stop: 62618, Start Num: 16

Candidate Starts for Chandler_85:

(Start: 16 @62974 has 17 MA's), (Start: 17 @62971 has 25 MA's), (20, 62956), (27, 62878), (28, 62848), (29, 62842), (34, 62821), (40, 62746),

Gene: Chentzyk_87 Start: 63132, Stop: 62776, Start Num: 16

Candidate Starts for Chentzyk_87:

(Start: 16 @63132 has 17 MA's), (Start: 17 @63129 has 25 MA's), (20, 63114), (27, 63036), (28, 63006), (29, 63000), (34, 62979), (40, 62904), (45, 62814),

Gene: Compostia_84 Start: 62637, Stop: 62287, Start Num: 17

Candidate Starts for Compostia_84:

(Start: 16 @62640 has 17 MA's), (Start: 17 @62637 has 25 MA's), (21, 62619), (Start: 26 @62565 has 1 MA's), (27, 62547), (28, 62517), (36, 62469), (40, 62415), (45, 62325),

Gene: Corofin_85 Start: 62209, Stop: 61853, Start Num: 16

Candidate Starts for Corofin_85:

(Start: 16 @62209 has 17 MA's), (Start: 17 @62206 has 25 MA's), (20, 62191), (27, 62113), (28, 62083), (29, 62077), (34, 62056), (40, 61981), (45, 61891),

Gene: Daisy_84 Start: 61757, Stop: 61404, Start Num: 17

Candidate Starts for Daisy_84:

(Start: 16 @61760 has 17 MA's), (Start: 17 @61757 has 25 MA's), (20, 61742), (27, 61664), (28, 61634), (29, 61628), (34, 61607), (40, 61532), (45, 61442),

Gene: Deenasa_85 Start: 63106, Stop: 62753, Start Num: 17

Candidate Starts for Deenasa_85:

(Start: 16 @63109 has 17 MA's), (Start: 17 @63106 has 25 MA's), (20, 63091), (27, 63013), (28, 62983), (29, 62977), (34, 62956), (40, 62881), (45, 62791),

Gene: Devonte_83 Start: 61823, Stop: 61470, Start Num: 17

Candidate Starts for Devonte_83:

(Start: 16 @61826 has 17 MA's), (Start: 17 @61823 has 25 MA's), (20, 61808), (27, 61730), (28, 61700), (29, 61694), (34, 61673), (40, 61598), (45, 61508),

Gene: Gadget_85 Start: 62385, Stop: 62053, Start Num: 19

Candidate Starts for Gadget_85:

(5, 62508), (8, 62484), (9, 62475), (Start: 19 @62385 has 2 MA's), (23, 62364), (25, 62349), (Start: 26 @62319 has 1 MA's), (27, 62301), (39, 62202), (45, 62085), (46, 62076),

Gene: Gervas_86 Start: 62651, Stop: 62298, Start Num: 17

Candidate Starts for Gervas_86:

(Start: 16 @62654 has 17 MA's), (Start: 17 @62651 has 25 MA's), (21, 62633), (27, 62558), (28, 62528), (29, 62522), (34, 62501), (40, 62426), (45, 62336),

Gene: GlenHope_86 Start: 62227, Stop: 61877, Start Num: 17

Candidate Starts for GlenHope_86:

(Start: 16 @62230 has 17 MA's), (Start: 17 @62227 has 25 MA's), (21, 62209), (Start: 26 @62155 has 1 MA's), (27, 62137), (28, 62107), (36, 62059), (40, 62005), (45, 61915),

Gene: Glubnar_85 Start: 62092, Stop: 61736, Start Num: 16

Candidate Starts for Glubnar_85:

(Start: 16 @62092 has 17 MA's), (Start: 17 @62089 has 25 MA's), (20, 62074), (27, 61996), (28, 61966), (29, 61960), (34, 61939), (40, 61864), (45, 61774),

Gene: Halfpint_84 Start: 61969, Stop: 61619, Start Num: 17

Candidate Starts for Halfpint_84:

(Start: 16 @61972 has 17 MA's), (Start: 17 @61969 has 25 MA's), (21, 61951), (Start: 26 @61897 has 1 MA's), (27, 61879), (28, 61849), (36, 61801), (40, 61747), (45, 61657),

Gene: HarveySr_84 Start: 61732, Stop: 61388, Start Num: 16

Candidate Starts for HarveySr_84:

(11, 61780), (Start: 16 @61732 has 17 MA's), (21, 61717), (23, 61705), (Start: 26 @61666 has 1 MA's), (27, 61648), (28, 61618), (39, 61543), (42, 61474),

Gene: Hashim76_91 Start: 66420, Stop: 66052, Start Num: 15

Candidate Starts for Hashim76_91:

(7, 66519), (Start: 15 @66420 has 3 MA's), (Start: 26 @66351 has 1 MA's), (33, 66285), (38, 66231), (48, 66078),

Gene: Heathcliff_85 Start: 62151, Stop: 61798, Start Num: 17

Candidate Starts for Heathcliff_85:

(Start: 16 @62154 has 17 MA's), (Start: 17 @62151 has 25 MA's), (20, 62136), (27, 62058), (28, 62028), (29, 62022), (34, 62001), (40, 61926), (45, 61836),

Gene: Indlovu_80 Start: 64701, Stop: 64342, Start Num: 18

Candidate Starts for Indlovu_80:

(2, 65067), (10, 64773), (Start: 18 @64701 has 3 MA's), (Start: 26 @64632 has 1 MA's), (27, 64614), (28, 64584), (30, 64575), (36, 64539), (43, 64440), (44, 64410),

Gene: Jackstina_79 Start: 62068, Stop: 61712, Start Num: 16

Candidate Starts for Jackstina_79:

(Start: 16 @62068 has 17 MA's), (Start: 17 @62065 has 25 MA's), (20, 62050), (27, 61972), (28, 61942), (34, 61915), (40, 61840), (45, 61750),

Gene: Kamiyu_85 Start: 62154, Stop: 61801, Start Num: 17

Candidate Starts for Kamiyu_85:

(Start: 16 @62157 has 17 MA's), (Start: 17 @62154 has 25 MA's), (20, 62139), (27, 62061), (28, 62031), (29, 62025), (34, 62004), (40, 61929), (45, 61839),

Gene: Kronus_85 Start: 63241, Stop: 62885, Start Num: 16

Candidate Starts for Kronus_85:

(Start: 16 @63241 has 17 MA's), (Start: 17 @63238 has 25 MA's), (20, 63223), (27, 63145), (28, 63115), (29, 63109), (34, 63088), (40, 63013), (45, 62923),

Gene: LestyG_83 Start: 61727, Stop: 61371, Start Num: 16

Candidate Starts for LestyG_83:

(Start: 16 @61727 has 17 MA's), (Start: 17 @61724 has 25 MA's), (20, 61709), (27, 61631), (28, 61601), (29, 61595), (34, 61574), (40, 61499), (45, 61409),

Gene: Marley1013_86 Start: 63081, Stop: 62737, Start Num: 16

Candidate Starts for Marley1013_86:

(11, 63129), (Start: 16 @63081 has 17 MA's), (21, 63066), (23, 63054), (Start: 26 @63015 has 1 MA's), (27, 62997), (28, 62967), (39, 62892), (42, 62823),

Gene: Marlia_86 Start: 62620, Stop: 62270, Start Num: 17

Candidate Starts for Marlia_86:

(Start: 16 @62623 has 17 MA's), (Start: 17 @62620 has 25 MA's), (21, 62602), (Start: 26 @62548 has 1 MA's), (27, 62530), (28, 62500), (36, 62452), (40, 62398), (45, 62308),

Gene: MmasiCarm_86 Start: 62584, Stop: 62240, Start Num: 16

Candidate Starts for MmasiCarm_86:

(Start: 16 @62584 has 17 MA's), (21, 62569), (23, 62557), (Start: 26 @62518 has 1 MA's), (27, 62500), (28, 62470), (39, 62395), (42, 62326),

Gene: Mortcellus_85 Start: 63322, Stop: 62966, Start Num: 16

Candidate Starts for Mortcellus_85:

(Start: 16 @63322 has 17 MA's), (Start: 17 @63319 has 25 MA's), (20, 63304), (27, 63226), (28, 63196), (29, 63190), (34, 63169), (40, 63094), (45, 63004),

Gene: Morty007_84 Start: 63081, Stop: 62737, Start Num: 16

Candidate Starts for Morty007_84:

(11, 63129), (Start: 16 @63081 has 17 MA's), (21, 63066), (23, 63054), (Start: 26 @63015 has 1 MA's), (27, 62997), (28, 62967), (39, 62892), (42, 62823),

Gene: Neos5_85 Start: 62543, Stop: 62199, Start Num: 16

Candidate Starts for Neos5_85:

(11, 62591), (Start: 16 @62543 has 17 MA's), (21, 62528), (23, 62516), (Start: 26 @62477 has 1 MA's), (27, 62459), (28, 62429), (39, 62354), (42, 62285),

Gene: Nozo_85 Start: 62961, Stop: 62608, Start Num: 17

Candidate Starts for Nozo_85:

(Start: 16 @62964 has 17 MA's), (Start: 17 @62961 has 25 MA's), (20, 62946), (27, 62868), (28, 62838), (29, 62832), (34, 62811), (40, 62736), (45, 62646),

Gene: Oaker_62 Start: 48655, Stop: 48993, Start Num: 18

Candidate Starts for Oaker_62:

(1, 48274), (3, 48409), (Start: 18 @48655 has 3 MA's), (22, 48673), (29, 48775), (35, 48811), (43, 48907),

Gene: Obutu_87 Start: 62764, Stop: 62411, Start Num: 17

Candidate Starts for Obutu_87:

(Start: 16 @62767 has 17 MA's), (Start: 17 @62764 has 25 MA's), (20, 62749), (27, 62671), (28, 62641), (29, 62635), (34, 62614), (40, 62539), (45, 62449),

Gene: Olivio_85 Start: 62402, Stop: 62052, Start Num: 17

Candidate Starts for Olivio_85:

(Start: 16 @62405 has 17 MA's), (Start: 17 @62402 has 25 MA's), (21, 62384), (Start: 26 @62330 has 1 MA's), (27, 62312), (28, 62282), (34, 62255), (40, 62180), (45, 62090),

Gene: OrangeOswald_84 Start: 62199, Stop: 61843, Start Num: 16

Candidate Starts for OrangeOswald_84:

(Start: 16 @62199 has 17 MA's), (Start: 17 @62196 has 25 MA's), (20, 62181), (27, 62103), (28, 62073), (29, 62067), (34, 62046), (40, 61971), (45, 61881),

Gene: Phaedrus_80 Start: 61612, Stop: 61259, Start Num: 17

Candidate Starts for Phaedrus_80:

(Start: 16 @61615 has 17 MA's), (Start: 17 @61612 has 25 MA's), (20, 61597), (27, 61519), (28, 61489), (29, 61483), (34, 61462), (40, 61387), (45, 61297),

Gene: Phayeta_88 Start: 62684, Stop: 62328, Start Num: 16

Candidate Starts for Phayeta_88:

(Start: 16 @62684 has 17 MA's), (Start: 17 @62681 has 25 MA's), (20, 62666), (27, 62588), (28, 62558), (29, 62552), (34, 62531), (40, 62456), (45, 62366),

Gene: Philly_84 Start: 62041, Stop: 61691, Start Num: 17

Candidate Starts for Philly_84:

(Start: 16 @62044 has 17 MA's), (Start: 17 @62041 has 25 MA's), (21, 62023), (Start: 26 @61969 has 1 MA's), (27, 61951), (28, 61921), (36, 61873), (40, 61819), (45, 61729),

Gene: Phlyer_85 Start: 62907, Stop: 62554, Start Num: 17

Candidate Starts for Phlyer_85:

(Start: 16 @62910 has 17 MA's), (Start: 17 @62907 has 25 MA's), (20, 62892), (27, 62814), (28, 62784), (29, 62778), (34, 62757), (40, 62682), (45, 62592),

Gene: Pipefish_86 Start: 63131, Stop: 62799, Start Num: 19

Candidate Starts for Pipefish_86:

(5, 63254), (8, 63230), (9, 63221), (Start: 19 @63131 has 2 MA's), (23, 63110), (25, 63095), (Start: 26 @63065 has 1 MA's), (27, 63047), (39, 62948), (45, 62831), (46, 62822),

Gene: Predator_62 Start: 46573, Stop: 46911, Start Num: 18

Candidate Starts for Predator_62:

(12, 46528), (Start: 18 @46573 has 3 MA's), (22, 46591), (37, 46750), (44, 46855), (47, 46888),

Gene: RagingRooster_84 Start: 61887, Stop: 61534, Start Num: 17

Candidate Starts for RagingRooster_84:

(Start: 16 @61890 has 17 MA's), (Start: 17 @61887 has 25 MA's), (20, 61872), (27, 61794), (28, 61764), (29, 61758), (34, 61737), (40, 61662), (45, 61572),

Gene: Rita1961_86 Start: 62538, Stop: 62188, Start Num: 17

Candidate Starts for Rita1961_86:

(Start: 16 @62541 has 17 MA's), (Start: 17 @62538 has 25 MA's), (21, 62520), (Start: 26 @62466 has 1 MA's), (27, 62448), (28, 62418), (40, 62316), (45, 62226),

Gene: RomaT_85 Start: 62764, Stop: 62408, Start Num: 16

Candidate Starts for RomaT_85:

(Start: 16 @62764 has 17 MA's), (Start: 17 @62761 has 25 MA's), (20, 62746), (27, 62668), (28, 62638), (29, 62632), (34, 62611), (40, 62536), (45, 62446),

Gene: ScoobyDoobyDoo_14 Start: 4522, Stop: 4866, Start Num: 13
Candidate Starts for ScoobyDoobyDoo_14:
(Start: 13 @4522 has 1 MA's),

Gene: Shenandoah_84 Start: 61807, Stop: 61454, Start Num: 17
Candidate Starts for Shenandoah_84:
(Start: 16 @61810 has 17 MA's), (Start: 17 @61807 has 25 MA's), (20, 61792), (27, 61714), (28, 61684), (29, 61678), (34, 61657), (40, 61582),

Gene: SlippinJimmy_88 Start: 63571, Stop: 63218, Start Num: 17
Candidate Starts for SlippinJimmy_88:
(Start: 16 @63574 has 17 MA's), (Start: 17 @63571 has 25 MA's), (20, 63556), (27, 63478), (28, 63448), (29, 63442), (34, 63421), (40, 63346), (45, 63256),

Gene: SwainyDoc_86 Start: 62570, Stop: 62217, Start Num: 17
Candidate Starts for SwainyDoc_86:
(Start: 16 @62573 has 17 MA's), (Start: 17 @62570 has 25 MA's), (20, 62555), (27, 62477), (28, 62447), (36, 62399), (40, 62345), (45, 62255),

Gene: SynergyX_85 Start: 62198, Stop: 61845, Start Num: 17
Candidate Starts for SynergyX_85:
(Start: 16 @62201 has 17 MA's), (Start: 17 @62198 has 25 MA's), (20, 62183), (27, 62105), (28, 62075), (29, 62069), (34, 62048), (40, 61973), (45, 61883),

Gene: Thonko_53 Start: 44732, Stop: 44370, Start Num: 14
Candidate Starts for Thonko_53:
(4, 44885), (Start: 14 @44732 has 1 MA's), (24, 44693), (Start: 26 @44657 has 1 MA's), (28, 44609), (30, 44600), (45, 44426), (49, 44390),

Gene: TinyTerror_86 Start: 62624, Stop: 62268, Start Num: 16
Candidate Starts for TinyTerror_86:
(Start: 16 @62624 has 17 MA's), (Start: 17 @62621 has 25 MA's), (20, 62606), (27, 62528), (28, 62498), (29, 62492), (34, 62471), (40, 62396), (45, 62306),

Gene: Tydolla_81 Start: 62177, Stop: 61824, Start Num: 17
Candidate Starts for Tydolla_81:
(Start: 16 @62180 has 17 MA's), (Start: 17 @62177 has 25 MA's), (20, 62162), (27, 62084), (28, 62054), (29, 62048), (34, 62027), (40, 61952), (45, 61862),

Gene: Yahalom_83 Start: 62004, Stop: 61651, Start Num: 17
Candidate Starts for Yahalom_83:
(Start: 16 @62007 has 17 MA's), (Start: 17 @62004 has 25 MA's), (20, 61989), (27, 61911), (28, 61881), (29, 61875), (34, 61854), (40, 61779), (45, 61689),

Gene: Yinz_85 Start: 62060, Stop: 61716, Start Num: 16
Candidate Starts for Yinz_85:
(11, 62108), (Start: 16 @62060 has 17 MA's), (21, 62045), (23, 62033), (Start: 26 @61994 has 1 MA's), (27, 61976), (28, 61946), (39, 61871), (42, 61802), (45, 61754),

Gene: Zenteno07_94 Start: 66543, Stop: 66193, Start Num: 15
Candidate Starts for Zenteno07_94:

(6, 66642), (Start: 15 @66543 has 3 MA's), (Start: 26 @66477 has 1 MA's), (28, 66429), (31, 66420),
(32, 66414), (48, 66216),