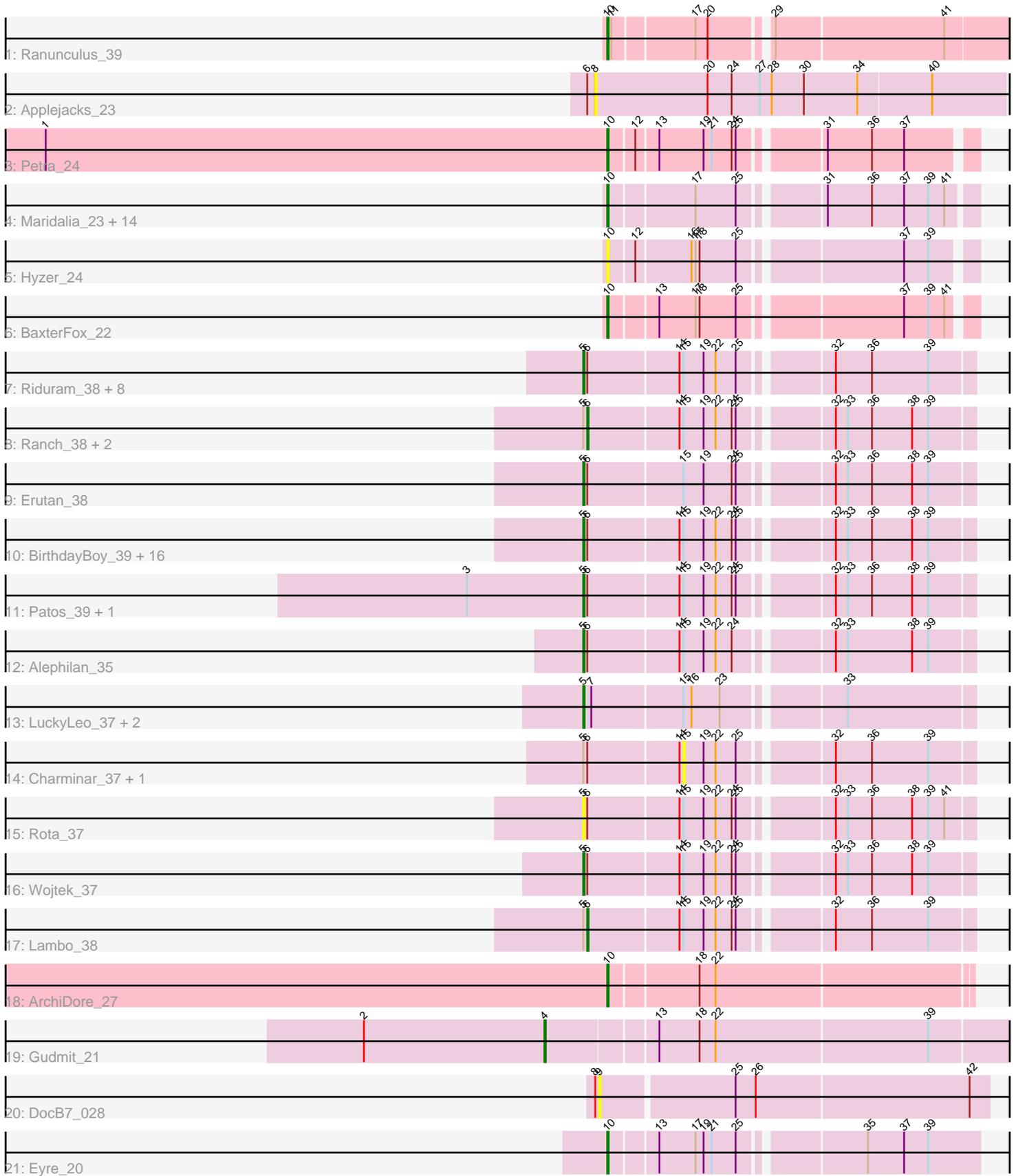


Pham 291152



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 291152 Report

This analysis was run 03/28/26 on database version 641.

Pham number 291152 has 65 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Ranunculus_39
- Track 2 : Applejacks_23
- Track 3 : Petra_24
- Track 4 : Maridalia_23, Suscepit_24, Eudoria_24, AlumE_23, BoyNamedSue_23, Neobush_24, Tayonia_24, Antonio_24, PantheRoc_23, Agueybana_23, Yeezy_24, Manasvini_24, Zameen_24, Trumpet_24, Kita_24
- Track 5 : Hyzer_24
- Track 6 : BaxterFox_22
- Track 7 : Riduram_38, NovaSharks_38, Jamemuya19_36, Astralis_36, RazorC_37, Genamy16_39, Alyssamiracle_39, Rumi_38, Avian_36
- Track 8 : Ranch_38, Yikes_39, DaviePasture_38
- Track 9 : Erutan_38
- Track 10 : BirthdayBoy_39, ParvusTarda_38, Gibbin_39, OtterstedtS21_38, Jalebi_37, LavAbarElk_36, DoobyDoo_37, GOATification_39, Fulcrum_39, Zany_37, Mima20_36, Rukungu_38, Sampudon_38, GretelLyn_38, MoiGyank_40, Lila22_37, Sadboi_39
- Track 11 : Patos_39, NorManre_39
- Track 12 : Alephilan_35
- Track 13 : LuckyLeo_37, Apeppi_35, Tillicus_37
- Track 14 : Charminar_37, Stormer_38
- Track 15 : Rota_37
- Track 16 : Wojtek_37
- Track 17 : Lambo_38
- Track 18 : ArchiDore_27
- Track 19 : Gudmit_21
- Track 20 : DocB7_028
- Track 21 : Eyre_20

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

The start number called the most often in the published annotations is 5, it was called in 31 of the 56 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alephilan_35, Alyssamiracle_39, Apeppi_35, Astralis_36, Avian_36, BirthdayBoy_39, DoobyDoo_37, Erutan_38, Fulcrum_39, GOATification_39, Genamy16_39, Gibbin_39, GretelLyn_38, Jalebi_37, Jamemuya19_36, LavAbarElk_36, Lila22_37, LuckyLeo_37, Mima20_36, MoiGyank_40, NorManre_39, NovaSharks_38, OtterstedtS21_38, ParvusTarda_38, Patos_39, RazorC_37, Riduram_38, Rota_37, Rukungu_38, Rumi_38, Sadboi_39, Sampudon_38, Tillicus_37, Wojtek_37, Zany_37,

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

- Charminar_37, DaviePasture_38, Lambo_38, Ranch_38, Stormer_38, Yikes_39,

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

- Agueybana_23, AlumE_23, Antonio_24, Applejacks_23, ArchiDore_27, BaxterFox_22, BoyNamedSue_23, DocB7_028, Eudoria_24, Eyre_20, Gudmit_21, Hyzer_24, Kita_24, Manasvini_24, Maridalia_23, Neobush_24, PantheRoc_23, Petra_24, Ranunculus_39, Suscepit_24, Tayonia_24, Trumpet_24, Yeezy_24, Zameen_24,

Summary by start number:

Start 4:

- Found in 1 of 65 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 56
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gudmit_21 (singleton),

Start 5:

- Found in 41 of 65 (63.1%) of genes in pham
- Manual Annotations of this start: 31 of 56
- Called 85.4% of time when present
- Phage (with cluster) where this start called: Alephilan_35 (DV), Alyssamiracle_39 (DV), Apeppi_35 (DV), Astralis_36 (DV), Avian_36 (DV), BirthdayBoy_39 (DV), DoobyDoo_37 (DV), Erutan_38 (DV), Fulcrum_39 (DV), GOATification_39 (DV), Genamy16_39 (DV), Gibbin_39 (DV), GretelLyn_38 (DV), Jalebi_37 (DV), Jamemuya19_36 (DV), LavAbarElk_36 (DV), Lila22_37 (DV), LuckyLeo_37 (DV), Mima20_36 (DV), MoiGyank_40 (DV), NorManre_39 (DV), NovaSharks_38 (DV), OtterstedtS21_38 (DV), ParvusTarda_38 (DV), Patos_39 (DV), RazorC_37 (DV), Riduram_38 (DV), Rota_37 (DV), Rukungu_38 (DV), Rumi_38 (DV), Sadboi_39 (DV), Sampudon_38 (DV), Tillicus_37 (DV), Wojtek_37 (DV), Zany_37 (DV),

Start 6:

- Found in 39 of 65 (60.0%) of genes in pham
- Manual Annotations of this start: 4 of 56
- Called 10.3% of time when present
- Phage (with cluster) where this start called: DaviePasture_38 (DV), Lambo_38 (DV), Ranch_38 (DV), Yikes_39 (DV),

Start 8:

- Found in 2 of 65 (3.1%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Applejacks_23 (CD),

Start 9:

- Found in 1 of 65 (1.5%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DocB7_028 (singleton),

Start 10:

- Found in 21 of 65 (32.3%) of genes in pham
- Manual Annotations of this start: 20 of 56
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agueybana_23 (CZ1), AlumE_23 (CZ1), Antonio_24 (CZ1), ArchiDore_27 (DW), BaxterFox_22 (CZ3), BoyNamedSue_23 (CZ1), Eudoria_24 (CZ1), Eyre_20 (singleton), Hyzer_24 (CZ1), Kita_24 (CZ1), Manasvini_24 (CZ1), Maridalia_23 (CZ1), Neobush_24 (CZ1), PantheRoc_23 (CZ3), Petra_24 (CV), Ranunculus_39 (AP), Suscepit_24 (CZ1), Tayonia_24 (CZ1), Trumpet_24 (CZ1), Yeezy_24 (CZ3), Zameen_24 (CZ1),

Start 15:

- Found in 41 of 65 (63.1%) of genes in pham
- No Manual Annotations of this start.
- Called 4.9% of time when present
- Phage (with cluster) where this start called: Charminar_37 (DV), Stormer_38 (DV),

Summary by clusters:

There are 8 clusters represented in this pham: singleton, CZ3, CZ1, CD, AP, DV, DW, CV,

Info for manual annotations of cluster AP:

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

Info for manual annotations of cluster CV:

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

Info for manual annotations of cluster CZ1:

- Start number 10 was manually annotated 13 times for cluster CZ1.

Info for manual annotations of cluster CZ3:

- Start number 10 was manually annotated 3 times for cluster CZ3.

Info for manual annotations of cluster DV:

- Start number 5 was manually annotated 31 times for cluster DV.
- Start number 6 was manually annotated 4 times for cluster DV.

Info for manual annotations of cluster DW:

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

Gene Information:

Gene: Agueybana_23 Start: 21382, Stop: 21633, Start Num: 10

Candidate Starts for Agueybana_23:

(Start: 10 @21382 has 20 MA's), (17, 21442), (25, 21472), (31, 21526), (36, 21559), (37, 21583), (39, 21601), (41, 21613),

Gene: Alephilan_35 Start: 31809, Stop: 32081, Start Num: 5

Candidate Starts for Alephilan_35:

(Start: 5 @31809 has 31 MA's), (Start: 6 @31812 has 4 MA's), (14, 31878), (15, 31881), (19, 31896), (22, 31905), (24, 31917), (32, 31980), (33, 31989), (38, 32037), (39, 32049),

Gene: AlumE_23 Start: 21381, Stop: 21632, Start Num: 10

Candidate Starts for AlumE_23:

(Start: 10 @21381 has 20 MA's), (17, 21441), (25, 21471), (31, 21525), (36, 21558), (37, 21582), (39, 21600), (41, 21612),

Gene: Alyssamiracle_39 Start: 30903, Stop: 31175, Start Num: 5

Candidate Starts for Alyssamiracle_39:

(Start: 5 @30903 has 31 MA's), (Start: 6 @30906 has 4 MA's), (14, 30972), (15, 30975), (19, 30990), (22, 30999), (25, 31014), (32, 31074), (36, 31101), (39, 31143),

Gene: Antonio_24 Start: 21502, Stop: 21753, Start Num: 10

Candidate Starts for Antonio_24:

(Start: 10 @21502 has 20 MA's), (17, 21562), (25, 21592), (31, 21646), (36, 21679), (37, 21703), (39, 21721), (41, 21733),

Gene: Apeppi_35 Start: 31991, Stop: 32263, Start Num: 5

Candidate Starts for Apeppi_35:

(Start: 5 @31991 has 31 MA's), (7, 31997), (15, 32063), (16, 32069), (23, 32090), (33, 32171),

Gene: Applejacks_23 Start: 18683, Stop: 18985, Start Num: 8

Candidate Starts for Applejacks_23:

(Start: 6 @18677 has 4 MA's), (8, 18683), (20, 18767), (24, 18785), (27, 18806), (28, 18815), (30, 18839), (34, 18878), (40, 18932),

Gene: ArchiDore_27 Start: 23687, Stop: 23947, Start Num: 10

Candidate Starts for ArchiDore_27:

(Start: 10 @23687 has 20 MA's), (18, 23750), (22, 23762),

Gene: Astralis_36 Start: 30493, Stop: 30765, Start Num: 5

Candidate Starts for Astralis_36:

(Start: 5 @30493 has 31 MA's), (Start: 6 @30496 has 4 MA's), (14, 30562), (15, 30565), (19, 30580), (22, 30589), (25, 30604), (32, 30664), (36, 30691), (39, 30733),

Gene: Avian_36 Start: 30885, Stop: 31157, Start Num: 5

Candidate Starts for Avian_36:

(Start: 5 @30885 has 31 MA's), (Start: 6 @30888 has 4 MA's), (14, 30954), (15, 30957), (19, 30972), (22, 30981), (25, 30996), (32, 31056), (36, 31083), (39, 31125),

Gene: BaxterFox_22 Start: 20708, Stop: 20956, Start Num: 10

Candidate Starts for BaxterFox_22:

(Start: 10 @20708 has 20 MA's), (13, 20741), (17, 20768), (18, 20771), (25, 20798), (37, 20909), (39, 20927), (41, 20939),

Gene: BirthdayBoy_39 Start: 32632, Stop: 32904, Start Num: 5

Candidate Starts for BirthdayBoy_39:

(Start: 5 @32632 has 31 MA's), (Start: 6 @32635 has 4 MA's), (14, 32701), (15, 32704), (19, 32719), (22, 32728), (24, 32740), (25, 32743), (32, 32803), (33, 32812), (36, 32830), (38, 32860), (39, 32872),

Gene: BoyNamedSue_23 Start: 21381, Stop: 21632, Start Num: 10

Candidate Starts for BoyNamedSue_23:

(Start: 10 @21381 has 20 MA's), (17, 21441), (25, 21471), (31, 21525), (36, 21558), (37, 21582), (39, 21600), (41, 21612),

Gene: Charminar_37 Start: 30568, Stop: 30768, Start Num: 15

Candidate Starts for Charminar_37:

(Start: 5 @30496 has 31 MA's), (Start: 6 @30499 has 4 MA's), (14, 30565), (15, 30568), (19, 30583), (22, 30592), (25, 30607), (32, 30667), (36, 30694), (39, 30736),

Gene: DaviePasture_38 Start: 32439, Stop: 32708, Start Num: 6

Candidate Starts for DaviePasture_38:

(Start: 5 @32436 has 31 MA's), (Start: 6 @32439 has 4 MA's), (14, 32505), (15, 32508), (19, 32523), (22, 32532), (24, 32544), (25, 32547), (32, 32607), (33, 32616), (36, 32634), (38, 32664), (39, 32676),

Gene: DocB7_028 Start: 33620, Stop: 33901, Start Num: 9

Candidate Starts for DocB7_028:

(8, 33617), (9, 33620), (25, 33716), (26, 33731), (42, 33887),

Gene: DoobyDoo_37 Start: 31583, Stop: 31855, Start Num: 5

Candidate Starts for DoobyDoo_37:

(Start: 5 @31583 has 31 MA's), (Start: 6 @31586 has 4 MA's), (14, 31652), (15, 31655), (19, 31670), (22, 31679), (24, 31691), (25, 31694), (32, 31754), (33, 31763), (36, 31781), (38, 31811), (39, 31823),

Gene: Erutan_38 Start: 32091, Stop: 32363, Start Num: 5

Candidate Starts for Erutan_38:

(Start: 5 @32091 has 31 MA's), (Start: 6 @32094 has 4 MA's), (15, 32163), (19, 32178), (24, 32199), (25, 32202), (32, 32262), (33, 32271), (36, 32289), (38, 32319), (39, 32331),

Gene: Eudoria_24 Start: 21502, Stop: 21753, Start Num: 10

Candidate Starts for Eudoria_24:

(Start: 10 @21502 has 20 MA's), (17, 21562), (25, 21592), (31, 21646), (36, 21679), (37, 21703), (39, 21721), (41, 21733),

Gene: Eyre_20 Start: 18730, Stop: 18987, Start Num: 10

Candidate Starts for Eyre_20:

(Start: 10 @18730 has 20 MA's), (13, 18763), (17, 18790), (19, 18796), (21, 18802), (25, 18820), (35, 18904), (37, 18931), (39, 18949),

Gene: Fulcrum_39 Start: 32612, Stop: 32884, Start Num: 5

Candidate Starts for Fulcrum_39:

(Start: 5 @32612 has 31 MA's), (Start: 6 @32615 has 4 MA's), (14, 32681), (15, 32684), (19, 32699), (22, 32708), (24, 32720), (25, 32723), (32, 32783), (33, 32792), (36, 32810), (38, 32840), (39, 32852),

Gene: GOATification_39 Start: 32612, Stop: 32884, Start Num: 5

Candidate Starts for GOATification_39:

(Start: 5 @32612 has 31 MA's), (Start: 6 @32615 has 4 MA's), (14, 32681), (15, 32684), (19, 32699), (22, 32708), (24, 32720), (25, 32723), (32, 32783), (33, 32792), (36, 32810), (38, 32840), (39, 32852),

Gene: Genamy16_39 Start: 30903, Stop: 31175, Start Num: 5

Candidate Starts for Genamy16_39:

(Start: 5 @30903 has 31 MA's), (Start: 6 @30906 has 4 MA's), (14, 30972), (15, 30975), (19, 30990), (22, 30999), (25, 31014), (32, 31074), (36, 31101), (39, 31143),

Gene: Gibbin_39 Start: 32710, Stop: 32982, Start Num: 5

Candidate Starts for Gibbin_39:

(Start: 5 @32710 has 31 MA's), (Start: 6 @32713 has 4 MA's), (14, 32779), (15, 32782), (19, 32797), (22, 32806), (24, 32818), (25, 32821), (32, 32881), (33, 32890), (36, 32908), (38, 32938), (39, 32950),

Gene: Gretellyn_38 Start: 32976, Stop: 33248, Start Num: 5

Candidate Starts for Gretellyn_38:

(Start: 5 @32976 has 31 MA's), (Start: 6 @32979 has 4 MA's), (14, 33045), (15, 33048), (19, 33063), (22, 33072), (24, 33084), (25, 33087), (32, 33147), (33, 33156), (36, 33174), (38, 33204), (39, 33216),

Gene: Gudmit_21 Start: 18691, Stop: 19032, Start Num: 4

Candidate Starts for Gudmit_21:

(2, 18556), (Start: 4 @18691 has 1 MA's), (13, 18769), (18, 18799), (22, 18811), (39, 18967),

Gene: Hyzer_24 Start: 22048, Stop: 22296, Start Num: 10

Candidate Starts for Hyzer_24:

(Start: 10 @22048 has 20 MA's), (12, 22066), (16, 22105), (17, 22108), (18, 22111), (25, 22138), (37, 22249), (39, 22267),

Gene: Jalebi_37 Start: 33145, Stop: 33417, Start Num: 5

Candidate Starts for Jalebi_37:

(Start: 5 @33145 has 31 MA's), (Start: 6 @33148 has 4 MA's), (14, 33214), (15, 33217), (19, 33232), (22, 33241), (24, 33253), (25, 33256), (32, 33316), (33, 33325), (36, 33343), (38, 33373), (39, 33385),

Gene: Jamemuya19_36 Start: 30493, Stop: 30765, Start Num: 5

Candidate Starts for Jamemuya19_36:

(Start: 5 @30493 has 31 MA's), (Start: 6 @30496 has 4 MA's), (14, 30562), (15, 30565), (19, 30580), (22, 30589), (25, 30604), (32, 30664), (36, 30691), (39, 30733),

Gene: Kita_24 Start: 21502, Stop: 21753, Start Num: 10

Candidate Starts for Kita_24:

(Start: 10 @21502 has 20 MA's), (17, 21562), (25, 21592), (31, 21646), (36, 21679), (37, 21703), (39, 21721), (41, 21733),

Gene: Lambo_38 Start: 32633, Stop: 32902, Start Num: 6

Candidate Starts for Lambo_38:

(Start: 5 @32630 has 31 MA's), (Start: 6 @32633 has 4 MA's), (14, 32699), (15, 32702), (19, 32717), (22, 32726), (24, 32738), (25, 32741), (32, 32801), (36, 32828), (39, 32870),

Gene: LavAbarElk_36 Start: 31084, Stop: 31356, Start Num: 5

Candidate Starts for LavAbarElk_36:

(Start: 5 @31084 has 31 MA's), (Start: 6 @31087 has 4 MA's), (14, 31153), (15, 31156), (19, 31171), (22, 31180), (24, 31192), (25, 31195), (32, 31255), (33, 31264), (36, 31282), (38, 31312), (39, 31324),

Gene: Lila22_37 Start: 32585, Stop: 32857, Start Num: 5

Candidate Starts for Lila22_37:

(Start: 5 @32585 has 31 MA's), (Start: 6 @32588 has 4 MA's), (14, 32654), (15, 32657), (19, 32672), (22, 32681), (24, 32693), (25, 32696), (32, 32756), (33, 32765), (36, 32783), (38, 32813), (39, 32825),

Gene: LuckyLeo_37 Start: 31991, Stop: 32263, Start Num: 5

Candidate Starts for LuckyLeo_37:

(Start: 5 @31991 has 31 MA's), (7, 31997), (15, 32063), (16, 32069), (23, 32090), (33, 32171),

Gene: Manasvini_24 Start: 21502, Stop: 21753, Start Num: 10

Candidate Starts for Manasvini_24:

(Start: 10 @21502 has 20 MA's), (17, 21562), (25, 21592), (31, 21646), (36, 21679), (37, 21703), (39, 21721), (41, 21733),

Gene: Maridalia_23 Start: 21502, Stop: 21753, Start Num: 10

Candidate Starts for Maridalia_23:

(Start: 10 @21502 has 20 MA's), (17, 21562), (25, 21592), (31, 21646), (36, 21679), (37, 21703), (39, 21721), (41, 21733),

Gene: Mima20_36 Start: 32334, Stop: 32606, Start Num: 5

Candidate Starts for Mima20_36:

(Start: 5 @32334 has 31 MA's), (Start: 6 @32337 has 4 MA's), (14, 32403), (15, 32406), (19, 32421), (22, 32430), (24, 32442), (25, 32445), (32, 32505), (33, 32514), (36, 32532), (38, 32562), (39, 32574),

Gene: MoiGyank_40 Start: 33015, Stop: 33287, Start Num: 5

Candidate Starts for MoiGyank_40:

(Start: 5 @33015 has 31 MA's), (Start: 6 @33018 has 4 MA's), (14, 33084), (15, 33087), (19, 33102), (22, 33111), (24, 33123), (25, 33126), (32, 33186), (33, 33195), (36, 33213), (38, 33243), (39, 33255),

Gene: Neobush_24 Start: 21502, Stop: 21753, Start Num: 10

Candidate Starts for Neobush_24:

(Start: 10 @21502 has 20 MA's), (17, 21562), (25, 21592), (31, 21646), (36, 21679), (37, 21703), (39, 21721), (41, 21733),

Gene: NorManre_39 Start: 32221, Stop: 32493, Start Num: 5

Candidate Starts for NorManre_39:

(3, 32134), (Start: 5 @32221 has 31 MA's), (Start: 6 @32224 has 4 MA's), (14, 32290), (15, 32293), (19, 32308), (22, 32317), (24, 32329), (25, 32332), (32, 32392), (33, 32401), (36, 32419), (38, 32449), (39, 32461),

Gene: NovaSharks_38 Start: 30493, Stop: 30765, Start Num: 5

Candidate Starts for NovaSharks_38:

(Start: 5 @30493 has 31 MA's), (Start: 6 @30496 has 4 MA's), (14, 30562), (15, 30565), (19, 30580), (22, 30589), (25, 30604), (32, 30664), (36, 30691), (39, 30733),

Gene: OtterstedtS21_38 Start: 32292, Stop: 32564, Start Num: 5

Candidate Starts for OtterstedtS21_38:

(Start: 5 @32292 has 31 MA's), (Start: 6 @32295 has 4 MA's), (14, 32361), (15, 32364), (19, 32379), (22, 32388), (24, 32400), (25, 32403), (32, 32463), (33, 32472), (36, 32490), (38, 32520), (39, 32532),

Gene: PantheRoc_23 Start: 20700, Stop: 20951, Start Num: 10

Candidate Starts for PantheRoc_23:

(Start: 10 @20700 has 20 MA's), (17, 20760), (25, 20790), (31, 20844), (36, 20877), (37, 20901), (39, 20919), (41, 20931),

Gene: ParvusTarda_38 Start: 31760, Stop: 32032, Start Num: 5

Candidate Starts for ParvusTarda_38:

(Start: 5 @31760 has 31 MA's), (Start: 6 @31763 has 4 MA's), (14, 31829), (15, 31832), (19, 31847), (22, 31856), (24, 31868), (25, 31871), (32, 31931), (33, 31940), (36, 31958), (38, 31988), (39, 32000),

Gene: Patos_39 Start: 32221, Stop: 32493, Start Num: 5

Candidate Starts for Patos_39:

(3, 32134), (Start: 5 @32221 has 31 MA's), (Start: 6 @32224 has 4 MA's), (14, 32290), (15, 32293), (19, 32308), (22, 32317), (24, 32329), (25, 32332), (32, 32392), (33, 32401), (36, 32419), (38, 32449), (39, 32461),

Gene: Petra_24 Start: 20354, Stop: 20602, Start Num: 10

Candidate Starts for Petra_24:

(1, 19934), (Start: 10 @20354 has 20 MA's), (12, 20372), (13, 20387), (19, 20420), (21, 20426), (24, 20441), (25, 20444), (31, 20498), (36, 20531), (37, 20555),

Gene: Ranch_38 Start: 31121, Stop: 31390, Start Num: 6

Candidate Starts for Ranch_38:

(Start: 5 @31118 has 31 MA's), (Start: 6 @31121 has 4 MA's), (14, 31187), (15, 31190), (19, 31205), (22, 31214), (24, 31226), (25, 31229), (32, 31289), (33, 31298), (36, 31316), (38, 31346), (39, 31358),

Gene: Ranunculus_39 Start: 36875, Stop: 37153, Start Num: 10

Candidate Starts for Ranunculus_39:

(Start: 10 @36875 has 20 MA's), (11, 36878), (17, 36935), (20, 36944), (29, 36983), (41, 37106),

Gene: RazorC_37 Start: 30885, Stop: 31157, Start Num: 5

Candidate Starts for RazorC_37:

(Start: 5 @30885 has 31 MA's), (Start: 6 @30888 has 4 MA's), (14, 30954), (15, 30957), (19, 30972), (22, 30981), (25, 30996), (32, 31056), (36, 31083), (39, 31125),

Gene: Riduram_38 Start: 30463, Stop: 30735, Start Num: 5

Candidate Starts for Riduram_38:

(Start: 5 @30463 has 31 MA's), (Start: 6 @30466 has 4 MA's), (14, 30532), (15, 30535), (19, 30550), (22, 30559), (25, 30574), (32, 30634), (36, 30661), (39, 30703),

Gene: Rota_37 Start: 32501, Stop: 32773, Start Num: 5

Candidate Starts for Rota_37:

(Start: 5 @32501 has 31 MA's), (Start: 6 @32504 has 4 MA's), (14, 32570), (15, 32573), (19, 32588), (22, 32597), (24, 32609), (25, 32612), (32, 32672), (33, 32681), (36, 32699), (38, 32729), (39, 32741), (41, 32753),

Gene: Rukungu_38 Start: 32810, Stop: 33082, Start Num: 5

Candidate Starts for Rukungu_38:

(Start: 5 @32810 has 31 MA's), (Start: 6 @32813 has 4 MA's), (14, 32879), (15, 32882), (19, 32897), (22, 32906), (24, 32918), (25, 32921), (32, 32981), (33, 32990), (36, 33008), (38, 33038), (39, 33050),

Gene: Rumi_38 Start: 30496, Stop: 30768, Start Num: 5

Candidate Starts for Rumi_38:

(Start: 5 @30496 has 31 MA's), (Start: 6 @30499 has 4 MA's), (14, 30565), (15, 30568), (19, 30583), (22, 30592), (25, 30607), (32, 30667), (36, 30694), (39, 30736),

Gene: Sadboi_39 Start: 32977, Stop: 33249, Start Num: 5

Candidate Starts for Sadboi_39:

(Start: 5 @32977 has 31 MA's), (Start: 6 @32980 has 4 MA's), (14, 33046), (15, 33049), (19, 33064), (22, 33073), (24, 33085), (25, 33088), (32, 33148), (33, 33157), (36, 33175), (38, 33205), (39, 33217),

Gene: Sampudon_38 Start: 33145, Stop: 33417, Start Num: 5

Candidate Starts for Sampudon_38:

(Start: 5 @33145 has 31 MA's), (Start: 6 @33148 has 4 MA's), (14, 33214), (15, 33217), (19, 33232), (22, 33241), (24, 33253), (25, 33256), (32, 33316), (33, 33325), (36, 33343), (38, 33373), (39, 33385),

Gene: Stormer_38 Start: 30571, Stop: 30771, Start Num: 15

Candidate Starts for Stormer_38:

(Start: 5 @30499 has 31 MA's), (Start: 6 @30502 has 4 MA's), (14, 30568), (15, 30571), (19, 30586), (22, 30595), (25, 30610), (32, 30670), (36, 30697), (39, 30739),

Gene: Suscepit_24 Start: 21502, Stop: 21753, Start Num: 10

Candidate Starts for Suscepit_24:

(Start: 10 @21502 has 20 MA's), (17, 21562), (25, 21592), (31, 21646), (36, 21679), (37, 21703), (39, 21721), (41, 21733),

Gene: Tayonia_24 Start: 21502, Stop: 21753, Start Num: 10

Candidate Starts for Tayonia_24:

(Start: 10 @21502 has 20 MA's), (17, 21562), (25, 21592), (31, 21646), (36, 21679), (37, 21703), (39, 21721), (41, 21733),

Gene: Tillicus_37 Start: 31585, Stop: 31857, Start Num: 5

Candidate Starts for Tillicus_37:

(Start: 5 @31585 has 31 MA's), (7, 31591), (15, 31657), (16, 31663), (23, 31684), (33, 31765),

Gene: Trumpet_24 Start: 21502, Stop: 21753, Start Num: 10

Candidate Starts for Trumpet_24:

(Start: 10 @21502 has 20 MA's), (17, 21562), (25, 21592), (31, 21646), (36, 21679), (37, 21703), (39, 21721), (41, 21733),

Gene: Wojtek_37 Start: 31844, Stop: 32116, Start Num: 5

Candidate Starts for Wojtek_37:

(Start: 5 @31844 has 31 MA's), (Start: 6 @31847 has 4 MA's), (14, 31913), (15, 31916), (19, 31931), (22, 31940), (24, 31952), (25, 31955), (32, 32015), (33, 32024), (36, 32042), (38, 32072), (39, 32084),

Gene: Yeezy_24 Start: 20724, Stop: 20975, Start Num: 10

Candidate Starts for Yeezy_24:

(Start: 10 @20724 has 20 MA's), (17, 20784), (25, 20814), (31, 20868), (36, 20901), (37, 20925), (39, 20943), (41, 20955),

Gene: Yikes_39 Start: 33227, Stop: 33496, Start Num: 6

Candidate Starts for Yikes_39:

(Start: 5 @33224 has 31 MA's), (Start: 6 @33227 has 4 MA's), (14, 33293), (15, 33296), (19, 33311), (22, 33320), (24, 33332), (25, 33335), (32, 33395), (33, 33404), (36, 33422), (38, 33452), (39, 33464),

Gene: Zameen_24 Start: 21502, Stop: 21753, Start Num: 10

Candidate Starts for Zameen_24:

(Start: 10 @21502 has 20 MA's), (17, 21562), (25, 21592), (31, 21646), (36, 21679), (37, 21703), (39, 21721), (41, 21733),

Gene: Zany_37 Start: 32749, Stop: 33021, Start Num: 5

Candidate Starts for Zany_37:

(Start: 5 @32749 has 31 MA's), (Start: 6 @32752 has 4 MA's), (14, 32818), (15, 32821), (19, 32836), (22, 32845), (24, 32857), (25, 32860), (32, 32920), (33, 32929), (36, 32947), (38, 32977), (39, 32989),