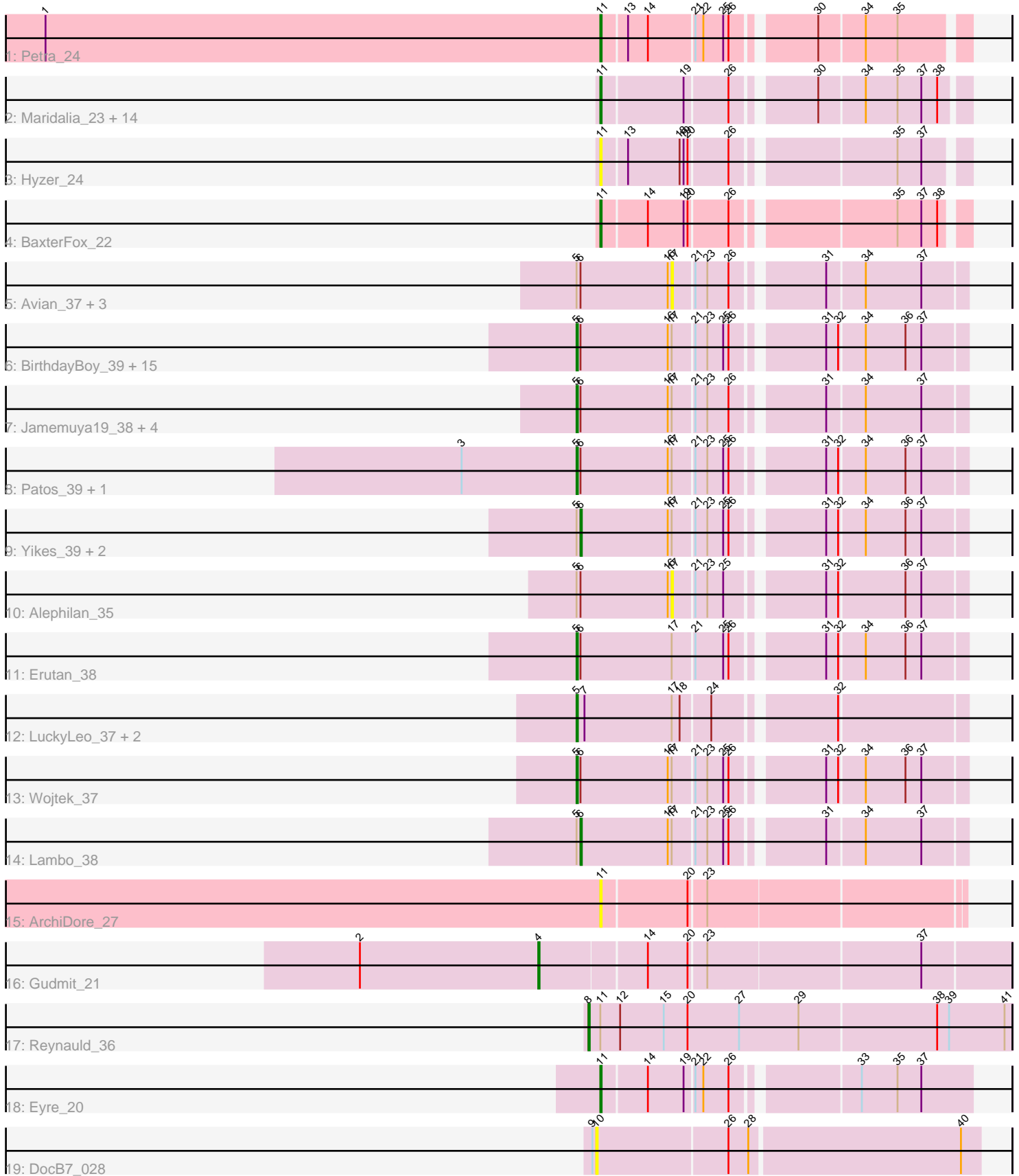


Pham 217961



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 217961 Report

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

Pham number 217961 has 60 members, 12 are drafts.

Phages represented in each track:

- Track 1 : Petra\_24
- Track 2 : Maridalia\_23, Tayonia\_24, Suscepit\_24, Eudoria\_24, AlumE\_23, BoyNamedSue\_23, Neobush\_24, Antonio\_24, PantheRoc\_23, Agueybana\_23, Yeezy\_24, Manasvini\_24, Zameen\_24, Trumpet\_24, Kita\_24
- Track 3 : Hyzer\_24
- Track 4 : BaxterFox\_22
- Track 5 : Avian\_37, Astralis\_38, RazorC\_37, Stormer\_38
- Track 6 : BirthdayBoy\_39, ParvusTarda\_38, Jalebi\_37, LavAbarElk\_36, DoobyDoo\_37, GOATification\_39, Fulcrum\_39, Mima20\_39, Zany\_37, Gibbin\_39, Sampudon\_38, GretelLyn\_38, OtterstedtS21\_38, MoiGyank\_40, Lila22\_37, Sadboi\_39
- Track 7 : Jamemuya19\_38, NovaSharks\_38, Genamy16\_39, Alyssamiracle\_39, Rumi\_38
- Track 8 : Patos\_39, NorManre\_39
- Track 9 : Yikes\_39, DaviePasture\_38, Ranch\_38
- Track 10 : Alephilan\_35
- Track 11 : Erutan\_38
- Track 12 : LuckyLeo\_37, Apeppi\_35, Tillicus\_38
- Track 13 : Wojtek\_37
- Track 14 : Lambo\_38
- Track 15 : ArchiDore\_27
- Track 16 : Gudmit\_21
- Track 17 : Reynauld\_36
- Track 18 : Eyre\_20
- Track 19 : DocB7\_028

### ***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 24 of the 48 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alyssamiracle\_39, Apeppi\_35, BirthdayBoy\_39, DoobyDoo\_37, Erutan\_38, Fulcrum\_39, GOATification\_39, Genamy16\_39, Gibbin\_39, GretelLyn\_38, Jalebi\_37,

Jamemuya19\_38, LavAbarElk\_36, Lila22\_37, LuckyLeo\_37, Mima20\_39, MoiGyank\_40, NorManre\_39, NovaSharks\_38, OtterstedtS21\_38, ParvusTarda\_38, Patos\_39, Rumi\_38, Sadboi\_39, Sampudon\_38, Tillicus\_38, Wojtek\_37, Zany\_37,

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

- Alephilan\_35, Astralis\_38, Avian\_37, DaviePasture\_38, Lambo\_38, Ranch\_38, RazorC\_37, Stormer\_38, Yikes\_39,

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

- Agueybana\_23, AlumE\_23, Antonio\_24, 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, Reynauld\_36, Suscepit\_24, Tayonia\_24, Trumpet\_24, Yeezy\_24, Zameen\_24,

### Summary by start number:

Start 4:

- Found in 1 of 60 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gudmit\_21 (singleton),

Start 5:

- Found in 37 of 60 ( 61.7% ) of genes in pham
- Manual Annotations of this start: 24 of 48
- Called 75.7% of time when present
- Phage (with cluster) where this start called: Alyssamiracle\_39 (DV), Apeppi\_35 (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\_38 (DV), LavAbarElk\_36 (DV), Lila22\_37 (DV), LuckyLeo\_37 (DV), Mima20\_39 (DV), MoiGyank\_40 (DV), NorManre\_39 (DV), NovaSharks\_38 (DV), OtterstedtS21\_38 (DV), ParvusTarda\_38 (DV), Patos\_39 (DV), Rumi\_38 (DV), Sadboi\_39 (DV), Sampudon\_38 (DV), Tillicus\_38 (DV), Wojtek\_37 (DV), Zany\_37 (DV),

Start 6:

- Found in 34 of 60 ( 56.7% ) of genes in pham
- Manual Annotations of this start: 4 of 48
- Called 11.8% 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 1 of 60 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Reynauld\_36 (singleton),

Start 10:

- Found in 1 of 60 ( 1.7% ) 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 11:

- Found in 21 of 60 ( 35.0% ) of genes in pham
- Manual Annotations of this start: 18 of 48
- Called 95.2% 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), Suscepit\_24 (CZ1), Tayonia\_24 (CZ1), Trumpet\_24 (CZ1), Yeezy\_24 (CZ3), Zameen\_24 (CZ1),

Start 17:

- Found in 37 of 60 ( 61.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 13.5% of time when present
- Phage (with cluster) where this start called: Alephilan\_35 (DV), Astralis\_38 (DV), Avian\_37 (DV), RazorC\_37 (DV), Stormer\_38 (DV),

**Summary by clusters:**

There are 6 clusters represented in this pham: singleton, CZ3, CZ1, DV, DW, CV,

Info for manual annotations of cluster CV:

- Start number 11 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster CZ1:

- Start number 11 was manually annotated 13 times for cluster CZ1.

Info for manual annotations of cluster CZ3:

- Start number 11 was manually annotated 3 times for cluster CZ3.

Info for manual annotations of cluster DV:

- Start number 5 was manually annotated 24 times for cluster DV.
- Start number 6 was manually annotated 4 times for cluster DV.

**Gene Information:**

Gene: Agueybana\_23 Start: 21382, Stop: 21633, Start Num: 11

Candidate Starts for Agueybana\_23:

(Start: 11 @21382 has 18 MA's), (19, 21442), (26, 21472), (30, 21526), (34, 21559), (35, 21583), (37, 21601), (38, 21613),

Gene: Alephilan\_35 Start: 31881, Stop: 32081, Start Num: 17

Candidate Starts for Alephilan\_35:

(Start: 5 @31809 has 24 MA's), (Start: 6 @31812 has 4 MA's), (16, 31878), (17, 31881), (21, 31896), (23, 31905), (25, 31917), (31, 31980), (32, 31989), (36, 32037), (37, 32049),

Gene: AlumE\_23 Start: 21381, Stop: 21632, Start Num: 11

Candidate Starts for AlumE\_23:

(Start: 11 @21381 has 18 MA's), (19, 21441), (26, 21471), (30, 21525), (34, 21558), (35, 21582), (37, 21600), (38, 21612),

Gene: Alyssamiracle\_39 Start: 30903, Stop: 31175, Start Num: 5

Candidate Starts for Alyssamiracle\_39:

(Start: 5 @30903 has 24 MA's), (Start: 6 @30906 has 4 MA's), (16, 30972), (17, 30975), (21, 30990), (23, 30999), (26, 31014), (31, 31074), (34, 31101), (37, 31143),

Gene: Antonio\_24 Start: 21502, Stop: 21753, Start Num: 11

Candidate Starts for Antonio\_24:

(Start: 11 @21502 has 18 MA's), (19, 21562), (26, 21592), (30, 21646), (34, 21679), (35, 21703), (37, 21721), (38, 21733),

Gene: Apeppi\_35 Start: 31991, Stop: 32263, Start Num: 5

Candidate Starts for Apeppi\_35:

(Start: 5 @31991 has 24 MA's), (7, 31997), (17, 32063), (18, 32069), (24, 32090), (32, 32171),

Gene: ArchiDore\_27 Start: 23687, Stop: 23947, Start Num: 11

Candidate Starts for ArchiDore\_27:

(Start: 11 @23687 has 18 MA's), (20, 23750), (23, 23762),

Gene: Astralis\_38 Start: 30565, Stop: 30765, Start Num: 17

Candidate Starts for Astralis\_38:

(Start: 5 @30493 has 24 MA's), (Start: 6 @30496 has 4 MA's), (16, 30562), (17, 30565), (21, 30580), (23, 30589), (26, 30604), (31, 30664), (34, 30691), (37, 30733),

Gene: Avian\_37 Start: 30957, Stop: 31157, Start Num: 17

Candidate Starts for Avian\_37:

(Start: 5 @30885 has 24 MA's), (Start: 6 @30888 has 4 MA's), (16, 30954), (17, 30957), (21, 30972), (23, 30981), (26, 30996), (31, 31056), (34, 31083), (37, 31125),

Gene: BaxterFox\_22 Start: 20708, Stop: 20956, Start Num: 11

Candidate Starts for BaxterFox\_22:

(Start: 11 @20708 has 18 MA's), (14, 20741), (19, 20768), (20, 20771), (26, 20798), (35, 20909), (37, 20927), (38, 20939),

Gene: BirthdayBoy\_39 Start: 32632, Stop: 32904, Start Num: 5

Candidate Starts for BirthdayBoy\_39:

(Start: 5 @32632 has 24 MA's), (Start: 6 @32635 has 4 MA's), (16, 32701), (17, 32704), (21, 32719), (23, 32728), (25, 32740), (26, 32743), (31, 32803), (32, 32812), (34, 32830), (36, 32860), (37, 32872),

Gene: BoyNamedSue\_23 Start: 21381, Stop: 21632, Start Num: 11

Candidate Starts for BoyNamedSue\_23:

(Start: 11 @21381 has 18 MA's), (19, 21441), (26, 21471), (30, 21525), (34, 21558), (35, 21582), (37, 21600), (38, 21612),

Gene: DaviePasture\_38 Start: 32439, Stop: 32708, Start Num: 6

Candidate Starts for DaviePasture\_38:

(Start: 5 @32436 has 24 MA's), (Start: 6 @32439 has 4 MA's), (16, 32505), (17, 32508), (21, 32523), (23, 32532), (25, 32544), (26, 32547), (31, 32607), (32, 32616), (34, 32634), (36, 32664), (37, 32676),

Gene: DocB7\_028 Start: 33620, Stop: 33901, Start Num: 10

Candidate Starts for DocB7\_028:

(9, 33617), (10, 33620), (26, 33716), (28, 33731), (40, 33887),

Gene: DoobyDoo\_37 Start: 31583, Stop: 31855, Start Num: 5

Candidate Starts for DoobyDoo\_37:

(Start: 5 @31583 has 24 MA's), (Start: 6 @31586 has 4 MA's), (16, 31652), (17, 31655), (21, 31670), (23, 31679), (25, 31691), (26, 31694), (31, 31754), (32, 31763), (34, 31781), (36, 31811), (37, 31823),

Gene: Erutan\_38 Start: 32091, Stop: 32363, Start Num: 5

Candidate Starts for Erutan\_38:

(Start: 5 @32091 has 24 MA's), (Start: 6 @32094 has 4 MA's), (17, 32163), (21, 32178), (25, 32199), (26, 32202), (31, 32262), (32, 32271), (34, 32289), (36, 32319), (37, 32331),

Gene: Eudoria\_24 Start: 21502, Stop: 21753, Start Num: 11

Candidate Starts for Eudoria\_24:

(Start: 11 @21502 has 18 MA's), (19, 21562), (26, 21592), (30, 21646), (34, 21679), (35, 21703), (37, 21721), (38, 21733),

Gene: Eyre\_20 Start: 18730, Stop: 18987, Start Num: 11

Candidate Starts for Eyre\_20:

(Start: 11 @18730 has 18 MA's), (14, 18763), (19, 18790), (21, 18796), (22, 18802), (26, 18820), (33, 18904), (35, 18931), (37, 18949),

Gene: Fulcrum\_39 Start: 32612, Stop: 32884, Start Num: 5

Candidate Starts for Fulcrum\_39:

(Start: 5 @32612 has 24 MA's), (Start: 6 @32615 has 4 MA's), (16, 32681), (17, 32684), (21, 32699), (23, 32708), (25, 32720), (26, 32723), (31, 32783), (32, 32792), (34, 32810), (36, 32840), (37, 32852),

Gene: GOATification\_39 Start: 32612, Stop: 32884, Start Num: 5

Candidate Starts for GOATification\_39:

(Start: 5 @32612 has 24 MA's), (Start: 6 @32615 has 4 MA's), (16, 32681), (17, 32684), (21, 32699), (23, 32708), (25, 32720), (26, 32723), (31, 32783), (32, 32792), (34, 32810), (36, 32840), (37, 32852),

Gene: Genamy16\_39 Start: 30903, Stop: 31175, Start Num: 5

Candidate Starts for Genamy16\_39:

(Start: 5 @30903 has 24 MA's), (Start: 6 @30906 has 4 MA's), (16, 30972), (17, 30975), (21, 30990), (23, 30999), (26, 31014), (31, 31074), (34, 31101), (37, 31143),

Gene: Gibbin\_39 Start: 32710, Stop: 32982, Start Num: 5

Candidate Starts for Gibbin\_39:

(Start: 5 @32710 has 24 MA's), (Start: 6 @32713 has 4 MA's), (16, 32779), (17, 32782), (21, 32797), (23, 32806), (25, 32818), (26, 32821), (31, 32881), (32, 32890), (34, 32908), (36, 32938), (37, 32950),

Gene: Gretellyn\_38 Start: 32976, Stop: 33248, Start Num: 5

Candidate Starts for Gretellyn\_38:

(Start: 5 @32976 has 24 MA's), (Start: 6 @32979 has 4 MA's), (16, 33045), (17, 33048), (21, 33063), (23, 33072), (25, 33084), (26, 33087), (31, 33147), (32, 33156), (34, 33174), (36, 33204), (37, 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), (14, 18769), (20, 18799), (23, 18811), (37, 18967),

Gene: Hyzer\_24 Start: 22048, Stop: 22296, Start Num: 11

Candidate Starts for Hyzer\_24:

(Start: 11 @22048 has 18 MA's), (13, 22066), (18, 22105), (19, 22108), (20, 22111), (26, 22138), (35, 22249), (37, 22267),

Gene: Jalebi\_37 Start: 33145, Stop: 33417, Start Num: 5

Candidate Starts for Jalebi\_37:

(Start: 5 @33145 has 24 MA's), (Start: 6 @33148 has 4 MA's), (16, 33214), (17, 33217), (21, 33232), (23, 33241), (25, 33253), (26, 33256), (31, 33316), (32, 33325), (34, 33343), (36, 33373), (37, 33385),

Gene: Jamemuya19\_38 Start: 30493, Stop: 30765, Start Num: 5

Candidate Starts for Jamemuya19\_38:

(Start: 5 @30493 has 24 MA's), (Start: 6 @30496 has 4 MA's), (16, 30562), (17, 30565), (21, 30580), (23, 30589), (26, 30604), (31, 30664), (34, 30691), (37, 30733),

Gene: Kita\_24 Start: 21502, Stop: 21753, Start Num: 11

Candidate Starts for Kita\_24:

(Start: 11 @21502 has 18 MA's), (19, 21562), (26, 21592), (30, 21646), (34, 21679), (35, 21703), (37, 21721), (38, 21733),

Gene: Lambo\_38 Start: 32633, Stop: 32902, Start Num: 6

Candidate Starts for Lambo\_38:

(Start: 5 @32630 has 24 MA's), (Start: 6 @32633 has 4 MA's), (16, 32699), (17, 32702), (21, 32717), (23, 32726), (25, 32738), (26, 32741), (31, 32801), (34, 32828), (37, 32870),

Gene: LavAbarElk\_36 Start: 31084, Stop: 31356, Start Num: 5

Candidate Starts for LavAbarElk\_36:

(Start: 5 @31084 has 24 MA's), (Start: 6 @31087 has 4 MA's), (16, 31153), (17, 31156), (21, 31171), (23, 31180), (25, 31192), (26, 31195), (31, 31255), (32, 31264), (34, 31282), (36, 31312), (37, 31324),

Gene: Lila22\_37 Start: 32585, Stop: 32857, Start Num: 5

Candidate Starts for Lila22\_37:

(Start: 5 @32585 has 24 MA's), (Start: 6 @32588 has 4 MA's), (16, 32654), (17, 32657), (21, 32672), (23, 32681), (25, 32693), (26, 32696), (31, 32756), (32, 32765), (34, 32783), (36, 32813), (37, 32825),

Gene: LuckyLeo\_37 Start: 31991, Stop: 32263, Start Num: 5

Candidate Starts for LuckyLeo\_37:

(Start: 5 @31991 has 24 MA's), (7, 31997), (17, 32063), (18, 32069), (24, 32090), (32, 32171),

Gene: Manasvini\_24 Start: 21502, Stop: 21753, Start Num: 11

Candidate Starts for Manasvini\_24:

(Start: 11 @21502 has 18 MA's), (19, 21562), (26, 21592), (30, 21646), (34, 21679), (35, 21703), (37, 21721), (38, 21733),

Gene: Maridalia\_23 Start: 21502, Stop: 21753, Start Num: 11

Candidate Starts for Maridalia\_23:

(Start: 11 @21502 has 18 MA's), (19, 21562), (26, 21592), (30, 21646), (34, 21679), (35, 21703), (37, 21721), (38, 21733),

Gene: Mima20\_39 Start: 32334, Stop: 32606, Start Num: 5

Candidate Starts for Mima20\_39:

(Start: 5 @32334 has 24 MA's), (Start: 6 @32337 has 4 MA's), (16, 32403), (17, 32406), (21, 32421), (23, 32430), (25, 32442), (26, 32445), (31, 32505), (32, 32514), (34, 32532), (36, 32562), (37, 32574),

Gene: MoiGyank\_40 Start: 33015, Stop: 33287, Start Num: 5

Candidate Starts for MoiGyank\_40:

(Start: 5 @33015 has 24 MA's), (Start: 6 @33018 has 4 MA's), (16, 33084), (17, 33087), (21, 33102), (23, 33111), (25, 33123), (26, 33126), (31, 33186), (32, 33195), (34, 33213), (36, 33243), (37, 33255),

Gene: Neobush\_24 Start: 21502, Stop: 21753, Start Num: 11

Candidate Starts for Neobush\_24:

(Start: 11 @21502 has 18 MA's), (19, 21562), (26, 21592), (30, 21646), (34, 21679), (35, 21703), (37, 21721), (38, 21733),

Gene: NorManre\_39 Start: 32221, Stop: 32493, Start Num: 5

Candidate Starts for NorManre\_39:

(3, 32134), (Start: 5 @32221 has 24 MA's), (Start: 6 @32224 has 4 MA's), (16, 32290), (17, 32293), (21, 32308), (23, 32317), (25, 32329), (26, 32332), (31, 32392), (32, 32401), (34, 32419), (36, 32449), (37, 32461),

Gene: NovaSharks\_38 Start: 30493, Stop: 30765, Start Num: 5

Candidate Starts for NovaSharks\_38:

(Start: 5 @30493 has 24 MA's), (Start: 6 @30496 has 4 MA's), (16, 30562), (17, 30565), (21, 30580), (23, 30589), (26, 30604), (31, 30664), (34, 30691), (37, 30733),

Gene: OtterstedtS21\_38 Start: 32292, Stop: 32564, Start Num: 5

Candidate Starts for OtterstedtS21\_38:

(Start: 5 @32292 has 24 MA's), (Start: 6 @32295 has 4 MA's), (16, 32361), (17, 32364), (21, 32379), (23, 32388), (25, 32400), (26, 32403), (31, 32463), (32, 32472), (34, 32490), (36, 32520), (37, 32532),

Gene: PantheRoc\_23 Start: 20700, Stop: 20951, Start Num: 11

Candidate Starts for PantheRoc\_23:

(Start: 11 @20700 has 18 MA's), (19, 20760), (26, 20790), (30, 20844), (34, 20877), (35, 20901), (37, 20919), (38, 20931),

Gene: ParvusTarda\_38 Start: 31760, Stop: 32032, Start Num: 5

Candidate Starts for ParvusTarda\_38:

(Start: 5 @31760 has 24 MA's), (Start: 6 @31763 has 4 MA's), (16, 31829), (17, 31832), (21, 31847), (23, 31856), (25, 31868), (26, 31871), (31, 31931), (32, 31940), (34, 31958), (36, 31988), (37, 32000),

Gene: Patos\_39 Start: 32221, Stop: 32493, Start Num: 5

Candidate Starts for Patos\_39:

(3, 32134), (Start: 5 @32221 has 24 MA's), (Start: 6 @32224 has 4 MA's), (16, 32290), (17, 32293), (21, 32308), (23, 32317), (25, 32329), (26, 32332), (31, 32392), (32, 32401), (34, 32419), (36, 32449), (37, 32461),

Gene: Petra\_24 Start: 20354, Stop: 20602, Start Num: 11

Candidate Starts for Petra\_24:

(1, 19934), (Start: 11 @20354 has 18 MA's), (13, 20372), (14, 20387), (21, 20420), (22, 20426), (25, 20441), (26, 20444), (30, 20498), (34, 20531), (35, 20555),

Gene: Ranch\_38 Start: 31121, Stop: 31390, Start Num: 6

Candidate Starts for Ranch\_38:

(Start: 5 @31118 has 24 MA's), (Start: 6 @31121 has 4 MA's), (16, 31187), (17, 31190), (21, 31205), (23, 31214), (25, 31226), (26, 31229), (31, 31289), (32, 31298), (34, 31316), (36, 31346), (37, 31358),

Gene: RazorC\_37 Start: 30957, Stop: 31157, Start Num: 17

Candidate Starts for RazorC\_37:



(Start: 5 @30885 has 24 MA's), (Start: 6 @30888 has 4 MA's), (16, 30954), (17, 30957), (21, 30972), (23, 30981), (26, 30996), (31, 31056), (34, 31083), (37, 31125),

Gene: Reynauld\_36 Start: 37401, Stop: 37718, Start Num: 8

Candidate Starts for Reynauld\_36:

(Start: 8 @37401 has 1 MA's), (Start: 11 @37410 has 18 MA's), (12, 37425), (15, 37458), (20, 37476), (27, 37515), (29, 37560), (38, 37662), (39, 37671), (41, 37713),

Gene: Rumi\_38 Start: 30496, Stop: 30768, Start Num: 5

Candidate Starts for Rumi\_38:

(Start: 5 @30496 has 24 MA's), (Start: 6 @30499 has 4 MA's), (16, 30565), (17, 30568), (21, 30583), (23, 30592), (26, 30607), (31, 30667), (34, 30694), (37, 30736),

Gene: Sadboi\_39 Start: 32977, Stop: 33249, Start Num: 5

Candidate Starts for Sadboi\_39:

(Start: 5 @32977 has 24 MA's), (Start: 6 @32980 has 4 MA's), (16, 33046), (17, 33049), (21, 33064), (23, 33073), (25, 33085), (26, 33088), (31, 33148), (32, 33157), (34, 33175), (36, 33205), (37, 33217),

Gene: Sampudon\_38 Start: 33145, Stop: 33417, Start Num: 5

Candidate Starts for Sampudon\_38:

(Start: 5 @33145 has 24 MA's), (Start: 6 @33148 has 4 MA's), (16, 33214), (17, 33217), (21, 33232), (23, 33241), (25, 33253), (26, 33256), (31, 33316), (32, 33325), (34, 33343), (36, 33373), (37, 33385),

Gene: Stormer\_38 Start: 30571, Stop: 30771, Start Num: 17

Candidate Starts for Stormer\_38:

(Start: 5 @30499 has 24 MA's), (Start: 6 @30502 has 4 MA's), (16, 30568), (17, 30571), (21, 30586), (23, 30595), (26, 30610), (31, 30670), (34, 30697), (37, 30739),

Gene: Suscepit\_24 Start: 21502, Stop: 21753, Start Num: 11

Candidate Starts for Suscepit\_24:

(Start: 11 @21502 has 18 MA's), (19, 21562), (26, 21592), (30, 21646), (34, 21679), (35, 21703), (37, 21721), (38, 21733),

Gene: Tayonia\_24 Start: 21502, Stop: 21753, Start Num: 11

Candidate Starts for Tayonia\_24:

(Start: 11 @21502 has 18 MA's), (19, 21562), (26, 21592), (30, 21646), (34, 21679), (35, 21703), (37, 21721), (38, 21733),

Gene: Tillicus\_38 Start: 31585, Stop: 31857, Start Num: 5

Candidate Starts for Tillicus\_38:

(Start: 5 @31585 has 24 MA's), (7, 31591), (17, 31657), (18, 31663), (24, 31684), (32, 31765),

Gene: Trumpet\_24 Start: 21502, Stop: 21753, Start Num: 11

Candidate Starts for Trumpet\_24:

(Start: 11 @21502 has 18 MA's), (19, 21562), (26, 21592), (30, 21646), (34, 21679), (35, 21703), (37, 21721), (38, 21733),

Gene: Wojtek\_37 Start: 31844, Stop: 32116, Start Num: 5

Candidate Starts for Wojtek\_37:

(Start: 5 @31844 has 24 MA's), (Start: 6 @31847 has 4 MA's), (16, 31913), (17, 31916), (21, 31931), (23, 31940), (25, 31952), (26, 31955), (31, 32015), (32, 32024), (34, 32042), (36, 32072), (37, 32084),

Gene: Yeezy\_24 Start: 20724, Stop: 20975, Start Num: 11

Candidate Starts for Yeezy\_24:

(Start: 11 @20724 has 18 MA's), (19, 20784), (26, 20814), (30, 20868), (34, 20901), (35, 20925), (37, 20943), (38, 20955),

Gene: Yikes\_39 Start: 33227, Stop: 33496, Start Num: 6

Candidate Starts for Yikes\_39:

(Start: 5 @33224 has 24 MA's), (Start: 6 @33227 has 4 MA's), (16, 33293), (17, 33296), (21, 33311), (23, 33320), (25, 33332), (26, 33335), (31, 33395), (32, 33404), (34, 33422), (36, 33452), (37, 33464),

Gene: Zameen\_24 Start: 21502, Stop: 21753, Start Num: 11

Candidate Starts for Zameen\_24:

(Start: 11 @21502 has 18 MA's), (19, 21562), (26, 21592), (30, 21646), (34, 21679), (35, 21703), (37, 21721), (38, 21733),

Gene: Zany\_37 Start: 32749, Stop: 33021, Start Num: 5

Candidate Starts for Zany\_37:

(Start: 5 @32749 has 24 MA's), (Start: 6 @32752 has 4 MA's), (16, 32818), (17, 32821), (21, 32836), (23, 32845), (25, 32857), (26, 32860), (31, 32920), (32, 32929), (34, 32947), (36, 32977), (37, 32989),