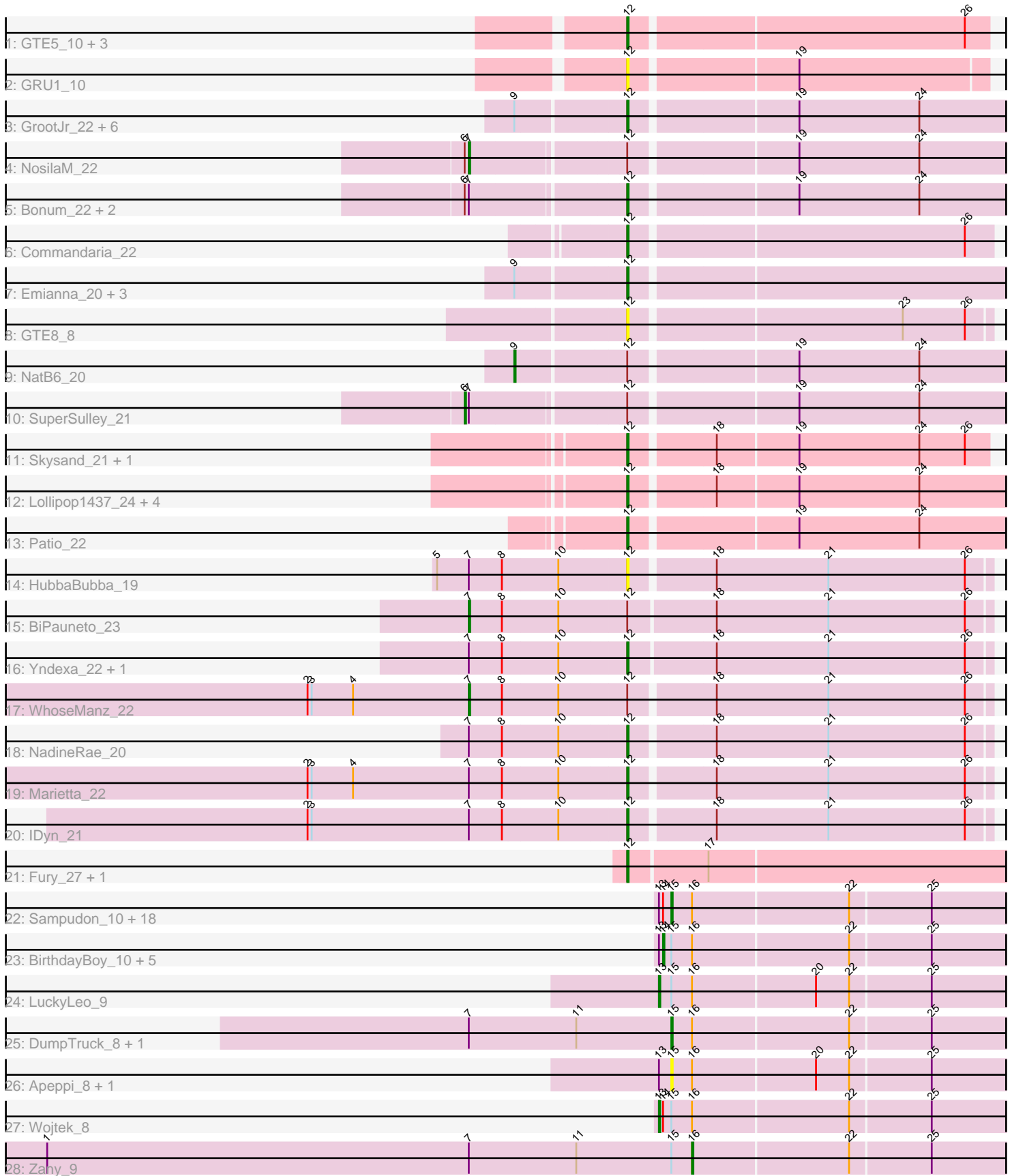


# Pham 85476



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 85476 Report

This analysis was run 04/28/24 on database version 559.

Pham number 85476 has 74 members, 12 are drafts.

Phages represented in each track:

- Track 1 : GTE5\_10, Dalilpop\_24, Flapper\_23, Turuncu\_23
- Track 2 : GRU1\_10
- Track 3 : GrootJr\_22, Arti\_20, Foxboro\_21, Tracker\_20, Jifall16\_19, Wheezy\_20, NovumRegina\_20
- Track 4 : NosilaM\_22
- Track 5 : Bonum\_22, Kabluna\_22, Buggaboo\_21
- Track 6 : Commandaria\_22
- Track 7 : Emianna\_20, Kurt\_20, KidneyBean\_20, Phomeo\_19
- Track 8 : GTE8\_8
- Track 9 : NatB6\_20
- Track 10 : SuperSulley\_21
- Track 11 : Skysand\_21, Float294\_21
- Track 12 : Lollipop1437\_24, StarStruck\_20, Outis\_20, MerCougar\_20, Ennea\_25
- Track 13 : Patio\_22
- Track 14 : HubbaBubba\_19
- Track 15 : BiPauneto\_23
- Track 16 : Yndexa\_22, Sukkupi\_22
- Track 17 : WhoseManz\_22
- Track 18 : NadineRae\_20
- Track 19 : Marietta\_22
- Track 20 : lDyn\_21
- Track 21 : Fury\_27, Pleakley\_27
- Track 22 : Sampudon\_10, Sadboi\_9, MoiGyank\_10, Yikes\_10, Patos\_10, NorManre\_10, Alyssamiracle\_8, Genamy16\_8, Jalebi\_10, Lambo\_9, NovaSharks\_8, Lila22\_10, DoobyDoo\_8, Gibbin\_10, OtterstedtS21\_9, GretelLyn\_9, Penjamin420\_9, Avian\_8, ParvusTarda\_9
- Track 23 : BirthdayBoy\_10, Rumi\_8, Ranch\_9, Erutan\_9, GOATification\_10, Fulcrum\_10
- Track 24 : LuckyLeo\_9
- Track 25 : DumpTruck\_8, Xenia2\_9
- Track 26 : Apeppi\_8, Tillicus\_10
- Track 27 : Wojtek\_8
- Track 28 : Zany\_9

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

The start number called the most often in the published annotations is 12, it was called in 32 of the 62 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Arti\_20, Bonum\_22, Buggaboo\_21, Commandaria\_22, Dalilpop\_24, Emianna\_20, Ennea\_25, Flapper\_23, Float294\_21, Foxboro\_21, Fury\_27, GRU1\_10, GTE5\_10, GTE8\_8, GrootJr\_22, HubbaBubba\_19, IDyn\_21, Jifall16\_19, Kabluna\_22, KidneyBean\_20, Kurt\_20, Lollipop1437\_24, Marietta\_22, MerCougar\_20, NadineRae\_20, NovumRegina\_20, Outis\_20, Patio\_22, Phomeo\_19, Pleakley\_27, Skysand\_21, StarStruck\_20, Sukkupi\_22, Tracker\_20, Turuncu\_23, Wheezy\_20, Yndexa\_22,

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

- BiPauneto\_23, NatB6\_20, NosilaM\_22, SuperSulley\_21, WhoseManz\_22,

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

- Alyssmiracle\_8, Apeppi\_8, Avian\_8, BirthdayBoy\_10, DoobyDoo\_8, DumpTruck\_8, Erutan\_9, Fulcrum\_10, GOATification\_10, Genamy16\_8, Gibbin\_10, GretelLyn\_9, Jalebi\_10, Lambo\_9, Lila22\_10, LuckyLeo\_9, MoiGyank\_10, NorManre\_10, NovaSharks\_8, OtterstedtS21\_9, ParvusTarda\_9, Patos\_10, Penjamin420\_9, Ranch\_9, Rumi\_8, Sadboi\_9, Sampudon\_10, Tillicus\_10, Wojtek\_8, Xenia2\_9, Yikes\_10, Zany\_9,

### Summary by start number:

Start 6:

- Found in 5 of 74 ( 6.8% ) of genes in pham
- Manual Annotations of this start: 1 of 62
- Called 20.0% of time when present
- Phage (with cluster) where this start called: SuperSulley\_21 (CR2),

Start 7:

- Found in 16 of 74 ( 21.6% ) of genes in pham
- Manual Annotations of this start: 3 of 62
- Called 18.8% of time when present
- Phage (with cluster) where this start called: BiPauneto\_23 (CR4), NosilaM\_22 (CR2), WhoseManz\_22 (CR4),

Start 9:

- Found in 12 of 74 ( 16.2% ) of genes in pham
- Manual Annotations of this start: 1 of 62
- Called 8.3% of time when present
- Phage (with cluster) where this start called: NatB6\_20 (CR2),

Start 12:

- Found in 42 of 74 ( 56.8% ) of genes in pham
- Manual Annotations of this start: 32 of 62
- Called 88.1% of time when present
- Phage (with cluster) where this start called: Arti\_20 (CR2), Bonum\_22 (CR2), Buggaboo\_21 (CR2), Commandaria\_22 (CR2), Dalilpop\_24 (CR1), Emianna\_20 (CR2), Ennea\_25 (CR3), Flapper\_23 (CR1), Float294\_21 (CR3), Foxboro\_21 (CR2), Fury\_27 (CR5), GRU1\_10 (CR1), GTE5\_10 (CR1), GTE8\_8 (CR2), GrootJr\_22

(CR2), HubbaBubba\_19 (CR4), IDyn\_21 (CR4), Jifall16\_19 (CR2), Kabluna\_22 (CR2), KidneyBean\_20 (CR2), Kurt\_20 (CR2), Lollipop1437\_24 (CR3), Marietta\_22 (CR4), MerCougar\_20 (CR2), NadineRae\_20 (CR4), NovumRegina\_20 (CR2), Outis\_20 (CR2), Patio\_22 (CR3), Phomeo\_19 (CR2), Pleakley\_27 (CR5), Skysand\_21 (CR3), StarStruck\_20 (CR2), Sukkupi\_22 (CR4), Tracker\_20 (CR2), Turuncu\_23 (CR1), Wheezy\_20 (CR2), Yndexa\_22 (CR4),

#### Start 13:

- Found in 29 of 74 ( 39.2% ) of genes in pham
- Manual Annotations of this start: 2 of 62
- Called 6.9% of time when present
- Phage (with cluster) where this start called: LuckyLeo\_9 (DV), Wojtek\_8 (DV),

#### Start 14:

- Found in 26 of 74 ( 35.1% ) of genes in pham
- Manual Annotations of this start: 6 of 62
- Called 23.1% of time when present
- Phage (with cluster) where this start called: BirthdayBoy\_10 (DV), Erutan\_9 (DV), Fulcrum\_10 (DV), GOATification\_10 (DV), Ranch\_9 (DV), Rumi\_8 (DV),

#### Start 15:

- Found in 32 of 74 ( 43.2% ) of genes in pham
- Manual Annotations of this start: 16 of 62
- Called 71.9% of time when present
- Phage (with cluster) where this start called: Alyssamiracle\_8 (DV), Apeppi\_8 (DV), Avian\_8 (DV), DoobyDoo\_8 (DV), DumpTruck\_8 (DV), Genamy16\_8 (DV), Gibbin\_10 (DV), Gretellyn\_9 (DV), Jalebi\_10 (DV), Lambo\_9 (DV), Lila22\_10 (DV), MoiGyank\_10 (DV), NorManre\_10 (DV), NovaSharks\_8 (DV), OtterstedtS21\_9 (DV), ParvusTarda\_9 (DV), Patos\_10 (DV), Penjamin420\_9 (DV), Sadboi\_9 (DV), Sampudon\_10 (DV), Tillicus\_10 (DV), Xenia2\_9 (DV), Yikes\_10 (DV),

#### Start 16:

- Found in 32 of 74 ( 43.2% ) of genes in pham
- Manual Annotations of this start: 1 of 62
- Called 3.1% of time when present
- Phage (with cluster) where this start called: Zany\_9 (DV),

### Summary by clusters:

There are 6 clusters represented in this pham: CR2, CR3, CR1, CR4, CR5, DV,

#### Info for manual annotations of cluster CR1:

- Start number 12 was manually annotated 3 times for cluster CR1.

#### Info for manual annotations of cluster CR2:

- Start number 6 was manually annotated 1 time for cluster CR2.
- Start number 7 was manually annotated 1 time for cluster CR2.
- Start number 9 was manually annotated 1 time for cluster CR2.
- Start number 12 was manually annotated 17 times for cluster CR2.

#### Info for manual annotations of cluster CR3:

- Start number 12 was manually annotated 5 times for cluster CR3.

Info for manual annotations of cluster CR4:

- Start number 7 was manually annotated 2 times for cluster CR4.
- Start number 12 was manually annotated 5 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 12 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster DV:

- Start number 13 was manually annotated 2 times for cluster DV.
- Start number 14 was manually annotated 6 times for cluster DV.
- Start number 15 was manually annotated 16 times for cluster DV.
- Start number 16 was manually annotated 1 time for cluster DV.

### ***Gene Information:***

Gene: Alyssamiracle\_8 Start: 5919, Stop: 6167, Start Num: 15

Candidate Starts for Alyssamiracle\_8:

(Start: 13 @5910 has 2 MA's), (Start: 14 @5913 has 6 MA's), (Start: 15 @5919 has 16 MA's), (Start: 16 @5934 has 1 MA's), (22, 6045), (25, 6102),

Gene: Apeppi\_8 Start: 7626, Stop: 7874, Start Num: 15

Candidate Starts for Apeppi\_8:

(Start: 13 @7617 has 2 MA's), (Start: 15 @7626 has 16 MA's), (Start: 16 @7641 has 1 MA's), (20, 7728), (22, 7752), (25, 7809),

Gene: Arti\_20 Start: 10234, Stop: 10497, Start Num: 12

Candidate Starts for Arti\_20:

(Start: 9 @10159 has 1 MA's), (Start: 12 @10234 has 32 MA's), (19, 10348), (24, 10435),

Gene: Avian\_8 Start: 5919, Stop: 6167, Start Num: 15

Candidate Starts for Avian\_8:

(Start: 13 @5910 has 2 MA's), (Start: 14 @5913 has 6 MA's), (Start: 15 @5919 has 16 MA's), (Start: 16 @5934 has 1 MA's), (22, 6045), (25, 6102),

Gene: BiPauneto\_23 Start: 9225, Stop: 9593, Start Num: 7

Candidate Starts for BiPauneto\_23:

(Start: 7 @9225 has 3 MA's), (8, 9249), (10, 9288), (Start: 12 @9336 has 32 MA's), (18, 9396), (21, 9477), (26, 9576),

Gene: BirthdayBoy\_10 Start: 8359, Stop: 8613, Start Num: 14

Candidate Starts for BirthdayBoy\_10:

(Start: 13 @8356 has 2 MA's), (Start: 14 @8359 has 6 MA's), (Start: 15 @8365 has 16 MA's), (Start: 16 @8380 has 1 MA's), (22, 8491), (25, 8548),

Gene: Bonum\_22 Start: 10379, Stop: 10642, Start Num: 12

Candidate Starts for Bonum\_22:

(Start: 6 @10271 has 1 MA's), (Start: 7 @10274 has 3 MA's), (Start: 12 @10379 has 32 MA's), (19, 10493), (24, 10580),

Gene: Buggaboo\_21 Start: 9895, Stop: 10158, Start Num: 12

Candidate Starts for Buggaboo\_21:

(Start: 6 @9787 has 1 MA's), (Start: 7 @9790 has 3 MA's), (Start: 12 @9895 has 32 MA's), (19, 10009), (24, 10096),

Gene: Commandaria\_22 Start: 10367, Stop: 10621, Start Num: 12

Candidate Starts for Commandaria\_22:

(Start: 12 @10367 has 32 MA's), (26, 10601),

Gene: Dalilpop\_24 Start: 11039, Stop: 11290, Start Num: 12

Candidate Starts for Dalilpop\_24:

(Start: 12 @11039 has 32 MA's), (26, 11273),

Gene: DoobyDoo\_8 Start: 7299, Stop: 7547, Start Num: 15

Candidate Starts for DoobyDoo\_8:

(Start: 13 @7290 has 2 MA's), (Start: 14 @7293 has 6 MA's), (Start: 15 @7299 has 16 MA's), (Start: 16 @7314 has 1 MA's), (22, 7425), (25, 7482),

Gene: DumpTruck\_8 Start: 7572, Stop: 7820, Start Num: 15

Candidate Starts for DumpTruck\_8:

(Start: 7 @7425 has 3 MA's), (11, 7503), (Start: 15 @7572 has 16 MA's), (Start: 16 @7587 has 1 MA's), (22, 7698), (25, 7755),

Gene: Emianna\_20 Start: 10206, Stop: 10469, Start Num: 12

Candidate Starts for Emianna\_20:

(Start: 9 @10131 has 1 MA's), (Start: 12 @10206 has 32 MA's),

Gene: Ennea\_25 Start: 11411, Stop: 11674, Start Num: 12

Candidate Starts for Ennea\_25:

(Start: 12 @11411 has 32 MA's), (18, 11468), (19, 11525), (24, 11612),

Gene: Erutan\_9 Start: 7806, Stop: 8060, Start Num: 14

Candidate Starts for Erutan\_9:

(Start: 13 @7803 has 2 MA's), (Start: 14 @7806 has 6 MA's), (Start: 15 @7812 has 16 MA's), (Start: 16 @7827 has 1 MA's), (22, 7938), (25, 7995),

Gene: Flapper\_23 Start: 10112, Stop: 10363, Start Num: 12

Candidate Starts for Flapper\_23:

(Start: 12 @10112 has 32 MA's), (26, 10346),

Gene: Float294\_21 Start: 9960, Stop: 10211, Start Num: 12

Candidate Starts for Float294\_21:

(Start: 12 @9960 has 32 MA's), (18, 10017), (19, 10074), (24, 10161), (26, 10194),

Gene: Foxboro\_21 Start: 10566, Stop: 10829, Start Num: 12

Candidate Starts for Foxboro\_21:

(Start: 9 @10491 has 1 MA's), (Start: 12 @10566 has 32 MA's), (19, 10680), (24, 10767),

Gene: Fulcrum\_10 Start: 8339, Stop: 8593, Start Num: 14

Candidate Starts for Fulcrum\_10:

(Start: 13 @8336 has 2 MA's), (Start: 14 @8339 has 6 MA's), (Start: 15 @8345 has 16 MA's), (Start: 16 @8360 has 1 MA's), (22, 8471), (25, 8528),

Gene: Fury\_27 Start: 11091, Stop: 11366, Start Num: 12

Candidate Starts for Fury\_27:

(Start: 12 @11091 has 32 MA's), (17, 11145),

Gene: GOATification\_10 Start: 8339, Stop: 8593, Start Num: 14

Candidate Starts for GOATification\_10:

(Start: 13 @8336 has 2 MA's), (Start: 14 @8339 has 6 MA's), (Start: 15 @8345 has 16 MA's), (Start: 16 @8360 has 1 MA's), (22, 8471), (25, 8528),

Gene: GRU1\_10 Start: 3205, Stop: 3453, Start Num: 12

Candidate Starts for GRU1\_10:

(Start: 12 @3205 has 32 MA's), (19, 3319),

Gene: GTE5\_10 Start: 3209, Stop: 3460, Start Num: 12

Candidate Starts for GTE5\_10:

(Start: 12 @3209 has 32 MA's), (26, 3443),

Gene: GTE8\_8 Start: 3094, Stop: 3345, Start Num: 12

Candidate Starts for GTE8\_8:

(Start: 12 @3094 has 32 MA's), (23, 3283), (26, 3328),

Gene: Genamy16\_8 Start: 5919, Stop: 6167, Start Num: 15

Candidate Starts for Genamy16\_8:

(Start: 13 @5910 has 2 MA's), (Start: 14 @5913 has 6 MA's), (Start: 15 @5919 has 16 MA's), (Start: 16 @5934 has 1 MA's), (22, 6045), (25, 6102),

Gene: Gibbin\_10 Start: 8405, Stop: 8653, Start Num: 15

Candidate Starts for Gibbin\_10:

(Start: 13 @8396 has 2 MA's), (Start: 14 @8399 has 6 MA's), (Start: 15 @8405 has 16 MA's), (Start: 16 @8420 has 1 MA's), (22, 8531), (25, 8588),

Gene: Gretellyn\_9 Start: 8679, Stop: 8927, Start Num: 15

Candidate Starts for Gretellyn\_9:

(Start: 13 @8670 has 2 MA's), (Start: 14 @8673 has 6 MA's), (Start: 15 @8679 has 16 MA's), (Start: 16 @8694 has 1 MA's), (22, 8805), (25, 8862),

Gene: GrootJr\_22 Start: 10629, Stop: 10892, Start Num: 12

Candidate Starts for GrootJr\_22:

(Start: 9 @10554 has 1 MA's), (Start: 12 @10629 has 32 MA's), (19, 10743), (24, 10830),

Gene: HubbaBubba\_19 Start: 7861, Stop: 8115, Start Num: 12

Candidate Starts for HubbaBubba\_19:

(5, 7729), (Start: 7 @7750 has 3 MA's), (8, 7774), (10, 7813), (Start: 12 @7861 has 32 MA's), (18, 7918), (21, 7999), (26, 8098),

Gene: IDyn\_21 Start: 9254, Stop: 9508, Start Num: 12

Candidate Starts for IDyn\_21:

(2, 9026), (3, 9029), (Start: 7 @9143 has 3 MA's), (8, 9167), (10, 9206), (Start: 12 @9254 has 32 MA's), (18, 9311), (21, 9392), (26, 9491),

Gene: Jalebi\_10 Start: 8855, Stop: 9103, Start Num: 15

Candidate Starts for Jalebi\_10:

(Start: 13 @8846 has 2 MA's), (Start: 14 @8849 has 6 MA's), (Start: 15 @8855 has 16 MA's), (Start: 16 @8870 has 1 MA's), (22, 8981), (25, 9038),

Gene: Jifall16\_19 Start: 9690, Stop: 9953, Start Num: 12

Candidate Starts for Jifall16\_19:

(Start: 9 @9615 has 1 MA's), (Start: 12 @9690 has 32 MA's), (19, 9804), (24, 9891),

Gene: Kabluna\_22 Start: 9770, Stop: 10033, Start Num: 12

Candidate Starts for Kabluna\_22:

(Start: 6 @9662 has 1 MA's), (Start: 7 @9665 has 3 MA's), (Start: 12 @9770 has 32 MA's), (19, 9884), (24, 9971),

Gene: KidneyBean\_20 Start: 9969, Stop: 10232, Start Num: 12

Candidate Starts for KidneyBean\_20:

(Start: 9 @9894 has 1 MA's), (Start: 12 @9969 has 32 MA's),

Gene: Kurt\_20 Start: 10206, Stop: 10469, Start Num: 12

Candidate Starts for Kurt\_20:

(Start: 9 @10131 has 1 MA's), (Start: 12 @10206 has 32 MA's),

Gene: Lambo\_9 Start: 8349, Stop: 8597, Start Num: 15

Candidate Starts for Lambo\_9:

(Start: 13 @8340 has 2 MA's), (Start: 14 @8343 has 6 MA's), (Start: 15 @8349 has 16 MA's), (Start: 16 @8364 has 1 MA's), (22, 8475), (25, 8532),

Gene: Lila22\_10 Start: 8300, Stop: 8548, Start Num: 15

Candidate Starts for Lila22\_10:

(Start: 13 @8291 has 2 MA's), (Start: 14 @8294 has 6 MA's), (Start: 15 @8300 has 16 MA's), (Start: 16 @8315 has 1 MA's), (22, 8426), (25, 8483),

Gene: Lollipop1437\_24 Start: 11399, Stop: 11662, Start Num: 12

Candidate Starts for Lollipop1437\_24:

(Start: 12 @11399 has 32 MA's), (18, 11456), (19, 11513), (24, 11600),

Gene: LuckyLeo\_9 Start: 7617, Stop: 7874, Start Num: 13

Candidate Starts for LuckyLeo\_9:

(Start: 13 @7617 has 2 MA's), (Start: 15 @7626 has 16 MA's), (Start: 16 @7641 has 1 MA's), (20, 7728), (22, 7752), (25, 7809),

Gene: Marietta\_22 Start: 9180, Stop: 9434, Start Num: 12

Candidate Starts for Marietta\_22:

(2, 8952), (3, 8955), (4, 8985), (Start: 7 @9069 has 3 MA's), (8, 9093), (10, 9132), (Start: 12 @9180 has 32 MA's), (18, 9237), (21, 9318), (26, 9417),

Gene: MerCougar\_20 Start: 9765, Stop: 10028, Start Num: 12

Candidate Starts for MerCougar\_20:

(Start: 12 @9765 has 32 MA's), (18, 9822), (19, 9879), (24, 9966),

Gene: MoiGyank\_10 Start: 8716, Stop: 8964, Start Num: 15

Candidate Starts for MoiGyank\_10:

(Start: 13 @8707 has 2 MA's), (Start: 14 @8710 has 6 MA's), (Start: 15 @8716 has 16 MA's), (Start: 16 @8731 has 1 MA's), (22, 8842), (25, 8899),

Gene: NadineRae\_20 Start: 8429, Stop: 8683, Start Num: 12

Candidate Starts for NadineRae\_20:



(Start: 7 @8318 has 3 MA's), (8, 8342), (10, 8381), (Start: 12 @8429 has 32 MA's), (18, 8486), (21, 8567), (26, 8666),

Gene: NatB6\_20 Start: 10222, Stop: 10560, Start Num: 9

Candidate Starts for NatB6\_20:

(Start: 9 @10222 has 1 MA's), (Start: 12 @10297 has 32 MA's), (19, 10411), (24, 10498),

Gene: NorManre\_10 Start: 7911, Stop: 8159, Start Num: 15

Candidate Starts for NorManre\_10:

(Start: 13 @7902 has 2 MA's), (Start: 14 @7905 has 6 MA's), (Start: 15 @7911 has 16 MA's), (Start: 16 @7926 has 1 MA's), (22, 8037), (25, 8094),

Gene: NosilaM\_22 Start: 10544, Stop: 10912, Start Num: 7

Candidate Starts for NosilaM\_22:

(Start: 6 @10541 has 1 MA's), (Start: 7 @10544 has 3 MA's), (Start: 12 @10649 has 32 MA's), (19, 10763), (24, 10850),

Gene: NovaSharks\_8 Start: 5919, Stop: 6167, Start Num: 15

Candidate Starts for NovaSharks\_8:

(Start: 13 @5910 has 2 MA's), (Start: 14 @5913 has 6 MA's), (Start: 15 @5919 has 16 MA's), (Start: 16 @5934 has 1 MA's), (22, 6045), (25, 6102),

Gene: NovumRegina\_20 Start: 10628, Stop: 10891, Start Num: 12

Candidate Starts for NovumRegina\_20:

(Start: 9 @10553 has 1 MA's), (Start: 12 @10628 has 32 MA's), (19, 10742), (24, 10829),

Gene: OtterstedtS21\_9 Start: 8001, Stop: 8249, Start Num: 15

Candidate Starts for OtterstedtS21\_9:

(Start: 13 @7992 has 2 MA's), (Start: 14 @7995 has 6 MA's), (Start: 15 @8001 has 16 MA's), (Start: 16 @8016 has 1 MA's), (22, 8127), (25, 8184),

Gene: Outis\_20 Start: 9459, Stop: 9722, Start Num: 12

Candidate Starts for Outis\_20:

(Start: 12 @9459 has 32 MA's), (18, 9516), (19, 9573), (24, 9660),

Gene: ParvusTarda\_9 Start: 7483, Stop: 7731, Start Num: 15

Candidate Starts for ParvusTarda\_9:

(Start: 13 @7474 has 2 MA's), (Start: 14 @7477 has 6 MA's), (Start: 15 @7483 has 16 MA's), (Start: 16 @7498 has 1 MA's), (22, 7609), (25, 7666),

Gene: Patio\_22 Start: 10635, Stop: 10898, Start Num: 12

Candidate Starts for Patio\_22:

(Start: 12 @10635 has 32 MA's), (19, 10749), (24, 10836),

Gene: Patos\_10 Start: 7911, Stop: 8159, Start Num: 15

Candidate Starts for Patos\_10:

(Start: 13 @7902 has 2 MA's), (Start: 14 @7905 has 6 MA's), (Start: 15 @7911 has 16 MA's), (Start: 16 @7926 has 1 MA's), (22, 8037), (25, 8094),

Gene: Penjamin420\_9 Start: 8122, Stop: 8370, Start Num: 15

Candidate Starts for Penjamin420\_9:

(Start: 13 @8113 has 2 MA's), (Start: 14 @8116 has 6 MA's), (Start: 15 @8122 has 16 MA's), (Start: 16 @8137 has 1 MA's), (22, 8248), (25, 8305),

Gene: Phomeo\_19 Start: 9856, Stop: 10119, Start Num: 12  
Candidate Starts for Phomeo\_19:  
(Start: 9 @9781 has 1 MA's), (Start: 12 @9856 has 32 MA's),

Gene: Pleakley\_27 Start: 11092, Stop: 11367, Start Num: 12  
Candidate Starts for Pleakley\_27:  
(Start: 12 @11092 has 32 MA's), (17, 11146),

Gene: Ranch\_9 Start: 6846, Stop: 7100, Start Num: 14  
Candidate Starts for Ranch\_9:  
(Start: 13 @6843 has 2 MA's), (Start: 14 @6846 has 6 MA's), (Start: 15 @6852 has 16 MA's), (Start: 16 @6867 has 1 MA's), (22, 6978), (25, 7035),

Gene: Rumi\_8 Start: 5913, Stop: 6167, Start Num: 14  
Candidate Starts for Rumi\_8:  
(Start: 13 @5910 has 2 MA's), (Start: 14 @5913 has 6 MA's), (Start: 15 @5919 has 16 MA's), (Start: 16 @5934 has 1 MA's), (22, 6045), (25, 6102),

Gene: Sadboi\_9 Start: 8679, Stop: 8927, Start Num: 15  
Candidate Starts for Sadboi\_9:  
(Start: 13 @8670 has 2 MA's), (Start: 14 @8673 has 6 MA's), (Start: 15 @8679 has 16 MA's), (Start: 16 @8694 has 1 MA's), (22, 8805), (25, 8862),

Gene: Sampudon\_10 Start: 8855, Stop: 9103, Start Num: 15  
Candidate Starts for Sampudon\_10:  
(Start: 13 @8846 has 2 MA's), (Start: 14 @8849 has 6 MA's), (Start: 15 @8855 has 16 MA's), (Start: 16 @8870 has 1 MA's), (22, 8981), (25, 9038),

Gene: Skysand\_21 Start: 9962, Stop: 10213, Start Num: 12  
Candidate Starts for Skysand\_21:  
(Start: 12 @9962 has 32 MA's), (18, 10019), (19, 10076), (24, 10163), (26, 10196),

Gene: StarStruck\_20 Start: 9459, Stop: 9722, Start Num: 12  
Candidate Starts for StarStruck\_20:  
(Start: 12 @9459 has 32 MA's), (18, 9516), (19, 9573), (24, 9660),

Gene: Sukkupi\_22 Start: 9227, Stop: 9484, Start Num: 12  
Candidate Starts for Sukkupi\_22:  
(Start: 7 @9116 has 3 MA's), (8, 9140), (10, 9179), (Start: 12 @9227 has 32 MA's), (18, 9287), (21, 9368), (26, 9467),

Gene: SuperSulley\_21 Start: 9787, Stop: 10158, Start Num: 6  
Candidate Starts for SuperSulley\_21:  
(Start: 6 @9787 has 1 MA's), (Start: 7 @9790 has 3 MA's), (Start: 12 @9895 has 32 MA's), (19, 10009), (24, 10096),

Gene: Tillicus\_10 Start: 7215, Stop: 7463, Start Num: 15  
Candidate Starts for Tillicus\_10:  
(Start: 13 @7206 has 2 MA's), (Start: 15 @7215 has 16 MA's), (Start: 16 @7230 has 1 MA's), (20, 7317), (22, 7341), (25, 7398),

Gene: Tracker\_20 Start: 10051, Stop: 10314, Start Num: 12

Candidate Starts for Tracker\_20:

(Start: 9 @9976 has 1 MA's), (Start: 12 @10051 has 32 MA's), (19, 10165), (24, 10252),

Gene: Turuncu\_23 Start: 9630, Stop: 9881, Start Num: 12

Candidate Starts for Turuncu\_23:

(Start: 12 @9630 has 32 MA's), (26, 9864),

Gene: Wheezy\_20 Start: 10254, Stop: 10517, Start Num: 12

Candidate Starts for Wheezy\_20:

(Start: 9 @10179 has 1 MA's), (Start: 12 @10254 has 32 MA's), (19, 10368), (24, 10455),

Gene: WhoseManz\_22 Start: 8680, Stop: 9045, Start Num: 7

Candidate Starts for WhoseManz\_22:

(2, 8563), (3, 8566), (4, 8596), (Start: 7 @8680 has 3 MA's), (8, 8704), (10, 8743), (Start: 12 @8791 has 32 MA's), (18, 8848), (21, 8929), (26, 9028),

Gene: Wojtek\_8 Start: 7536, Stop: 7793, Start Num: 13

Candidate Starts for Wojtek\_8:

(Start: 13 @7536 has 2 MA's), (Start: 14 @7539 has 6 MA's), (Start: 15 @7545 has 16 MA's), (Start: 16 @7560 has 1 MA's), (22, 7671), (25, 7728),

Gene: Xenia2\_9 Start: 7575, Stop: 7826, Start Num: 15

Candidate Starts for Xenia2\_9:

(Start: 7 @7428 has 3 MA's), (11, 7506), (Start: 15 @7575 has 16 MA's), (Start: 16 @7590 has 1 MA's), (22, 7701), (25, 7758),

Gene: Yikes\_10 Start: 8943, Stop: 9191, Start Num: 15

Candidate Starts for Yikes\_10:

(Start: 13 @8934 has 2 MA's), (Start: 14 @8937 has 6 MA's), (Start: 15 @8943 has 16 MA's), (Start: 16 @8958 has 1 MA's), (22, 9069), (25, 9126),

Gene: Yndexa\_22 Start: 9227, Stop: 9484, Start Num: 12

Candidate Starts for Yndexa\_22:

(Start: 7 @9116 has 3 MA's), (8, 9140), (10, 9179), (Start: 12 @9227 has 32 MA's), (18, 9287), (21, 9368), (26, 9467),

Gene: Zany\_9 Start: 8084, Stop: 8317, Start Num: 16

Candidate Starts for Zany\_9:

(1, 7616), (Start: 7 @7922 has 3 MA's), (11, 8000), (Start: 15 @8069 has 16 MA's), (Start: 16 @8084 has 1 MA's), (22, 8195), (25, 8252),