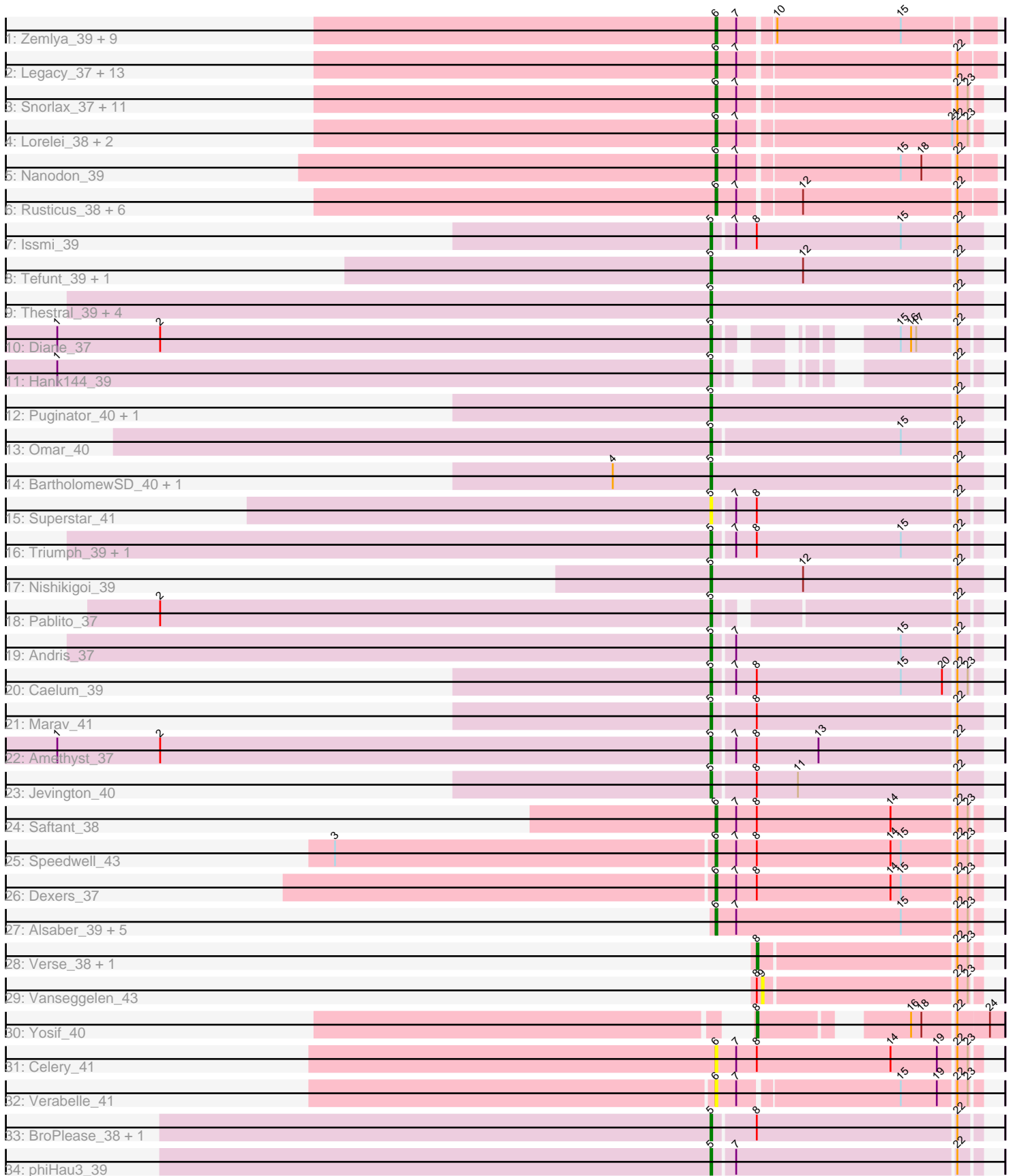


Pham 216065



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 216065 Report

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

Pham number 216065 has 90 members, 6 are drafts.

Phages represented in each track:

- Track 1 : Zemlya\_39, Toma\_37, Danzina\_39, Celeste\_38, Dattran\_39, Goby\_37, Sujidade\_38, Brataylor\_40, Godpower\_38, Lika\_37
- Track 2 : Legacy\_37, BeardedLady\_38, Nerdos\_36, Caliburn\_37, Unstoppable\_37, SunsetPointe\_37, Leviticus\_37, Aaronocolus\_37, Esperer\_37, Hydra\_39, Phettuccine\_37, Bovely\_37, Ozzie\_37, Indigo\_36
- Track 3 : Snorlax\_37, Werner\_37, Chucky\_37, Emaanora\_40, Dwayne\_37, TagePhighter\_39, Triste\_37, SarahRose\_37, BarryBee\_40, Whatever\_37, Asten\_37, OzzyJ\_38
- Track 4 : Lorelei\_38, Rana\_38, Nabi\_38
- Track 5 : Nanodon\_39
- Track 6 : Rusticus\_38, EnochSoames\_40, Izzy\_38, Jash\_38, BryanRecycles\_38, Eddasa\_38, Oliynyk\_38
- Track 7 : Issmi\_39
- Track 8 : Tefunt\_39, Haizum\_39
- Track 9 : Thestral\_39, Bowden\_38, TrvxScott\_37, Zainub\_40, TinaBelcher\_38
- Track 10 : Diane\_37
- Track 11 : Hank144\_39
- Track 12 : Puginator\_40, Paolo\_40
- Track 13 : Omar\_40
- Track 14 : BartholomewSD\_40, Alvy\_40
- Track 15 : Superstar\_41
- Track 16 : Triumph\_39, Axiom\_40
- Track 17 : Nishikigoi\_39
- Track 18 : Pablito\_37
- Track 19 : Andris\_37
- Track 20 : Caelum\_39
- Track 21 : Marav\_41
- Track 22 : Amethyst\_37
- Track 23 : Jevington\_40
- Track 24 : Saftant\_38
- Track 25 : Speedwell\_43
- Track 26 : Dexers\_37
- Track 27 : Alsaber\_39, Pavo\_39, Conan\_39, ElGato\_39, Kaine\_38, Provolone\_39
- Track 28 : Verse\_38, Amela\_38
- Track 29 : Vanseggelen\_43
- Track 30 : Yosif\_40
- Track 31 : Celery\_41

- Track 32 : Verabelle\_41
- Track 33 : BroPlease\_38, GreenWeasel\_39
- Track 34 : phiHau3\_39

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

The start number called the most often in the published annotations is 6, it was called in 55 of the 84 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aaronocolus\_37, Alsaber\_39, Asten\_37, BarryBee\_40, BeardedLady\_38, Bovely\_37, Brataylor\_40, BryanRecycles\_38, Caliburn\_37, Celery\_41, Celeste\_38, Chucky\_37, Conan\_39, Danzina\_39, Dattran\_39, Dexers\_37, Dwayne\_37, Eddasa\_38, ElGato\_39, Emaanora\_40, EnochSoames\_40, Esperer\_37, Goby\_37, Godpower\_38, Hydra\_39, Indigo\_36, Izzy\_38, Jash\_38, Kaine\_38, Legacy\_37, Leviticus\_37, Lika\_37, Lorelei\_38, Nabi\_38, Nanodon\_39, Nerdos\_36, Oliynyk\_38, Ozzie\_37, OzzyJ\_38, Pavo\_39, Phettuccine\_37, Provolone\_39, Rana\_38, Rusticus\_38, Saftant\_38, SarahRose\_37, Snorlax\_37, Speedwell\_43, Sujidade\_38, SunsetPointe\_37, TagePhighter\_39, Toma\_37, Triste\_37, Unstoppable\_37, Verabelle\_41, Werner\_37, Whatever\_37, Zemlya\_39,

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

- 

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

- Alvy\_40, Amela\_38, Amethyst\_37, Andris\_37, Axiom\_40, BartholomewSD\_40, Bowden\_38, BroPlease\_38, Caelum\_39, Diane\_37, GreenWeasel\_39, Haizum\_39, Hank144\_39, Issmi\_39, Jevington\_40, Marav\_41, Nishikigoi\_39, Omar\_40, Pablito\_37, Paolo\_40, Puginator\_40, Superstar\_41, Tefunt\_39, Thestral\_39, TinaBelcher\_38, Triumph\_39, TrvxScott\_37, Vanseggelen\_43, Verse\_38, Yosif\_40, Zainub\_40, phiHau3\_39,

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

Start 5:

- Found in 28 of 90 ( 31.1% ) of genes in pham
- Manual Annotations of this start: 26 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alvy\_40 (BD2), Amethyst\_37 (BD2), Andris\_37 (BD2), Axiom\_40 (BD2), BartholomewSD\_40 (BD2), Bowden\_38 (BD2), BroPlease\_38 (BD4), Caelum\_39 (BD2), Diane\_37 (BD2), GreenWeasel\_39 (BD4), Haizum\_39 (BD2), Hank144\_39 (BD2), Issmi\_39 (BD2), Jevington\_40 (BD2), Marav\_41 (BD2), Nishikigoi\_39 (BD2), Omar\_40 (BD2), Pablito\_37 (BD2), Paolo\_40 (BD2), Puginator\_40 (BD2), Superstar\_41 (BD2), Tefunt\_39 (BD2), Thestral\_39 (BD2), TinaBelcher\_38 (BD2), Triumph\_39 (BD2), TrvxScott\_37 (BD2), Zainub\_40 (BD2), phiHau3\_39 (BD4),

Start 6:

- Found in 58 of 90 ( 64.4% ) of genes in pham
- Manual Annotations of this start: 55 of 84

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aaronocolus\_37 (BD1), Alsaber\_39 (BD3), Asten\_37 (BD1), BarryBee\_40 (BD1), BeardedLady\_38 (BD1), Bovely\_37 (BD1), Brataylor\_40 (BD1), BryanRecycles\_38 (BD1), Caliburn\_37 (BD1), Celery\_41 (BD3), Celeste\_38 (BD1), Chucky\_37 (BD1), Conan\_39 (BD3), Danzina\_39 (BD1), Dattran\_39 (BD1), Dexers\_37 (BD3), Dwayne\_37 (BD1), Eddasa\_38 (BD1), ElGato\_39 (BD3), Emaanora\_40 (BD1), EnochSoames\_40 (BD1), Esperer\_37 (BD1), Goby\_37 (BD1), Godpower\_38 (BD1), Hydra\_39 (BD1), Indigo\_36 (BD1), Izzy\_38 (BD1), Jash\_38 (BD1), Kaine\_38 (BD3), Legacy\_37 (BD1), Leviticus\_37 (BD1), Lika\_37 (BD1), Lorelei\_38 (BD1), Nabi\_38 (BD1), Nanodon\_39 (BD1), Nerdos\_36 (BD1), Oliynyk\_38 (BD1), Ozzie\_37 (BD1), OzzyJ\_38 (BD1), Pavo\_39 (BD3), Phettuccine\_37 (BD1), Provolone\_39 (BD3), Rana\_38 (BD1), Rusticus\_38 (BD1), Saftant\_38 (BD3), SarahRose\_37 (BD1), Snorlax\_37 (BD1), Speedwell\_43 (BD3), Sujidade\_38 (BD1), SunsetPointe\_37 (BD1), TagePhighter\_39 (BD1), Toma\_37 (BD1), Triste\_37 (BD1), Unstoppable\_37 (BD1), Verabelle\_41 (BD3), Werner\_37 (BD1), Whatever\_37 (BD1), Zemlya\_39 (BD1),

#### Start 8:

- Found in 18 of 90 ( 20.0% ) of genes in pham
- Manual Annotations of this start: 3 of 84
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Amela\_38 (BD3), Verse\_38 (BD3), Yosif\_40 (BD3),

#### Start 9:

- Found in 1 of 90 ( 1.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Vanseggelen\_43 (BD3),

### **Summary by clusters:**

There are 4 clusters represented in this pham: BD4, BD1, BD3, BD2,

Info for manual annotations of cluster BD1:

- Start number 6 was manually annotated 46 times for cluster BD1.

Info for manual annotations of cluster BD2:

- Start number 5 was manually annotated 23 times for cluster BD2.

Info for manual annotations of cluster BD3:

- Start number 6 was manually annotated 9 times for cluster BD3.
- Start number 8 was manually annotated 3 times for cluster BD3.

Info for manual annotations of cluster BD4:

- Start number 5 was manually annotated 3 times for cluster BD4.

### **Gene Information:**

Gene: Aaronocolus\_37 Start: 27413, Stop: 27565, Start Num: 6

Candidate Starts for Aaronocolus\_37:

(Start: 6 @27413 has 55 MA's), (7, 27425), (22, 27545),

Gene: Alsaber\_39 Start: 29286, Stop: 29435, Start Num: 6

Candidate Starts for Alsaber\_39:

(Start: 6 @29286 has 55 MA's), (7, 29298), (15, 29394), (22, 29424), (23, 29430),

Gene: Alvy\_40 Start: 28764, Stop: 28919, Start Num: 5

Candidate Starts for Alvy\_40:

(4, 28707), (Start: 5 @28764 has 26 MA's), (22, 28905),

Gene: Amela\_38 Start: 30120, Stop: 30242, Start Num: 8

Candidate Starts for Amela\_38:

(Start: 8 @30120 has 3 MA's), (22, 30231), (23, 30237),

Gene: Amethyst\_37 Start: 28135, Stop: 28287, Start Num: 5

Candidate Starts for Amethyst\_37:

(1, 27754), (2, 27814), (Start: 5 @28135 has 26 MA's), (7, 28147), (Start: 8 @28159 has 3 MA's), (13, 28195), (22, 28273),

Gene: Andris\_37 Start: 28193, Stop: 28342, Start Num: 5

Candidate Starts for Andris\_37:

(Start: 5 @28193 has 26 MA's), (7, 28205), (15, 28301), (22, 28331),

Gene: Asten\_37 Start: 27771, Stop: 27914, Start Num: 6

Candidate Starts for Asten\_37:

(Start: 6 @27771 has 55 MA's), (7, 27783), (22, 27903), (23, 27909),

Gene: Axiom\_40 Start: 28356, Stop: 28505, Start Num: 5

Candidate Starts for Axiom\_40:

(Start: 5 @28356 has 26 MA's), (7, 28368), (Start: 8 @28380 has 3 MA's), (15, 28464), (22, 28494),

Gene: BarryBee\_40 Start: 27781, Stop: 27924, Start Num: 6

Candidate Starts for BarryBee\_40:

(Start: 6 @27781 has 55 MA's), (7, 27793), (22, 27913), (23, 27919),

Gene: BartholomewSD\_40 Start: 28763, Stop: 28918, Start Num: 5

Candidate Starts for BartholomewSD\_40:

(4, 28706), (Start: 5 @28763 has 26 MA's), (22, 28904),

Gene: BeardedLady\_38 Start: 27666, Stop: 27818, Start Num: 6

Candidate Starts for BeardedLady\_38:

(Start: 6 @27666 has 55 MA's), (7, 27678), (22, 27798),

Gene: Bovely\_37 Start: 27419, Stop: 27571, Start Num: 6

Candidate Starts for Bovely\_37:

(Start: 6 @27419 has 55 MA's), (7, 27431), (22, 27551),

Gene: Bowden\_38 Start: 28679, Stop: 28834, Start Num: 5

Candidate Starts for Bowden\_38:

(Start: 5 @28679 has 26 MA's), (22, 28820),

Gene: Brataylor\_40 Start: 28755, Stop: 28907, Start Num: 6

Candidate Starts for Brataylor\_40:

(Start: 6 @28755 has 55 MA's), (7, 28767), (10, 28785), (15, 28857),

Gene: BroPlease\_38 Start: 27905, Stop: 28054, Start Num: 5

Candidate Starts for BroPlease\_38:

(Start: 5 @27905 has 26 MA's), (Start: 8 @27929 has 3 MA's), (22, 28043),

Gene: BryanRecycles\_38 Start: 27770, Stop: 27922, Start Num: 6

Candidate Starts for BryanRecycles\_38:

(Start: 6 @27770 has 55 MA's), (7, 27782), (12, 27815), (22, 27902),

Gene: Caelum\_39 Start: 28385, Stop: 28534, Start Num: 5

Candidate Starts for Caelum\_39:

(Start: 5 @28385 has 26 MA's), (7, 28397), (Start: 8 @28409 has 3 MA's), (15, 28493), (20, 28517), (22, 28523), (23, 28529),

Gene: Caliburn\_37 Start: 27396, Stop: 27548, Start Num: 6

Candidate Starts for Caliburn\_37:

(Start: 6 @27396 has 55 MA's), (7, 27408), (22, 27528),

Gene: Celery\_41 Start: 29219, Stop: 29368, Start Num: 6

Candidate Starts for Celery\_41:

(Start: 6 @29219 has 55 MA's), (7, 29231), (Start: 8 @29243 has 3 MA's), (14, 29321), (19, 29348), (22, 29357), (23, 29363),

Gene: Celeste\_38 Start: 28224, Stop: 28376, Start Num: 6

Candidate Starts for Celeste\_38:

(Start: 6 @28224 has 55 MA's), (7, 28236), (10, 28254), (15, 28326),

Gene: Chucky\_37 Start: 27785, Stop: 27928, Start Num: 6

Candidate Starts for Chucky\_37:

(Start: 6 @27785 has 55 MA's), (7, 27797), (22, 27917), (23, 27923),

Gene: Conan\_39 Start: 29180, Stop: 29329, Start Num: 6

Candidate Starts for Conan\_39:

(Start: 6 @29180 has 55 MA's), (7, 29192), (15, 29288), (22, 29318), (23, 29324),

Gene: Danzina\_39 Start: 28525, Stop: 28677, Start Num: 6

Candidate Starts for Danzina\_39:

(Start: 6 @28525 has 55 MA's), (7, 28537), (10, 28555), (15, 28627),

Gene: Dattran\_39 Start: 28331, Stop: 28483, Start Num: 6

Candidate Starts for Dattran\_39:

(Start: 6 @28331 has 55 MA's), (7, 28343), (10, 28361), (15, 28433),

Gene: Dexers\_37 Start: 29205, Stop: 29354, Start Num: 6

Candidate Starts for Dexers\_37:

(Start: 6 @29205 has 55 MA's), (7, 29217), (Start: 8 @29229 has 3 MA's), (14, 29307), (15, 29313), (22, 29343), (23, 29349),

Gene: Diane\_37 Start: 28409, Stop: 28516, Start Num: 5

Candidate Starts for Diane\_37:

(1, 28028), (2, 28088), (Start: 5 @28409 has 26 MA's), (15, 28475), (16, 28481), (17, 28484), (22, 28505),

Gene: Dwayne\_37 Start: 27772, Stop: 27915, Start Num: 6  
Candidate Starts for Dwayne\_37:  
(Start: 6 @27772 has 55 MA's), (7, 27784), (22, 27904), (23, 27910),

Gene: Eddasa\_38 Start: 27770, Stop: 27922, Start Num: 6  
Candidate Starts for Eddasa\_38:  
(Start: 6 @27770 has 55 MA's), (7, 27782), (12, 27815), (22, 27902),

Gene: ElGato\_39 Start: 28844, Stop: 28993, Start Num: 6  
Candidate Starts for ElGato\_39:  
(Start: 6 @28844 has 55 MA's), (7, 28856), (15, 28952), (22, 28982), (23, 28988),

Gene: Emaanora\_40 Start: 27730, Stop: 27873, Start Num: 6  
Candidate Starts for Emaanora\_40:  
(Start: 6 @27730 has 55 MA's), (7, 27742), (22, 27862), (23, 27868),

Gene: EnochSoames\_40 Start: 27765, Stop: 27917, Start Num: 6  
Candidate Starts for EnochSoames\_40:  
(Start: 6 @27765 has 55 MA's), (7, 27777), (12, 27810), (22, 27897),

Gene: Esperer\_37 Start: 27232, Stop: 27384, Start Num: 6  
Candidate Starts for Esperer\_37:  
(Start: 6 @27232 has 55 MA's), (7, 27244), (22, 27364),

Gene: Goby\_37 Start: 28230, Stop: 28382, Start Num: 6  
Candidate Starts for Goby\_37:  
(Start: 6 @28230 has 55 MA's), (7, 28242), (10, 28260), (15, 28332),

Gene: Godpower\_38 Start: 28225, Stop: 28377, Start Num: 6  
Candidate Starts for Godpower\_38:  
(Start: 6 @28225 has 55 MA's), (7, 28237), (10, 28255), (15, 28327),

Gene: GreenWeasel\_39 Start: 27912, Stop: 28061, Start Num: 5  
Candidate Starts for GreenWeasel\_39:  
(Start: 5 @27912 has 26 MA's), (Start: 8 @27936 has 3 MA's), (22, 28050),

Gene: Haizum\_39 Start: 28476, Stop: 28631, Start Num: 5  
Candidate Starts for Haizum\_39:  
(Start: 5 @28476 has 26 MA's), (12, 28530), (22, 28617),

Gene: Hank144\_39 Start: 28520, Stop: 28624, Start Num: 5  
Candidate Starts for Hank144\_39:  
(1, 28139), (Start: 5 @28520 has 26 MA's), (22, 28613),

Gene: Hydra\_39 Start: 27944, Stop: 28096, Start Num: 6  
Candidate Starts for Hydra\_39:  
(Start: 6 @27944 has 55 MA's), (7, 27956), (22, 28076),

Gene: Indigo\_36 Start: 27412, Stop: 27564, Start Num: 6  
Candidate Starts for Indigo\_36:  
(Start: 6 @27412 has 55 MA's), (7, 27424), (22, 27544),

Gene: Issmi\_39 Start: 29076, Stop: 29228, Start Num: 5  
Candidate Starts for Issmi\_39:  
(Start: 5 @29076 has 26 MA's), (7, 29088), (Start: 8 @29100 has 3 MA's), (15, 29184), (22, 29214),

Gene: Izzy\_38 Start: 27817, Stop: 27969, Start Num: 6  
Candidate Starts for Izzy\_38:  
(Start: 6 @27817 has 55 MA's), (7, 27829), (12, 27862), (22, 27949),

Gene: Jash\_38 Start: 27770, Stop: 27922, Start Num: 6  
Candidate Starts for Jash\_38:  
(Start: 6 @27770 has 55 MA's), (7, 27782), (12, 27815), (22, 27902),

Gene: Jevington\_40 Start: 28867, Stop: 29019, Start Num: 5  
Candidate Starts for Jevington\_40:  
(Start: 5 @28867 has 26 MA's), (Start: 8 @28891 has 3 MA's), (11, 28915), (22, 29005),

Gene: Kaine\_38 Start: 28995, Stop: 29144, Start Num: 6  
Candidate Starts for Kaine\_38:  
(Start: 6 @28995 has 55 MA's), (7, 29007), (15, 29103), (22, 29133), (23, 29139),

Gene: Legacy\_37 Start: 27387, Stop: 27539, Start Num: 6  
Candidate Starts for Legacy\_37:  
(Start: 6 @27387 has 55 MA's), (7, 27399), (22, 27519),

Gene: Leviticus\_37 Start: 27416, Stop: 27568, Start Num: 6  
Candidate Starts for Leviticus\_37:  
(Start: 6 @27416 has 55 MA's), (7, 27428), (22, 27548),

Gene: Lika\_37 Start: 28228, Stop: 28380, Start Num: 6  
Candidate Starts for Lika\_37:  
(Start: 6 @28228 has 55 MA's), (7, 28240), (10, 28258), (15, 28330),

Gene: Lorelei\_38 Start: 28287, Stop: 28433, Start Num: 6  
Candidate Starts for Lorelei\_38:  
(Start: 6 @28287 has 55 MA's), (7, 28299), (21, 28419), (22, 28422), (23, 28428),

Gene: Marav\_41 Start: 29192, Stop: 29344, Start Num: 5  
Candidate Starts for Marav\_41:  
(Start: 5 @29192 has 26 MA's), (Start: 8 @29216 has 3 MA's), (22, 29330),

Gene: Nabi\_38 Start: 28287, Stop: 28433, Start Num: 6  
Candidate Starts for Nabi\_38:  
(Start: 6 @28287 has 55 MA's), (7, 28299), (21, 28419), (22, 28422), (23, 28428),

Gene: Nanodon\_39 Start: 28056, Stop: 28208, Start Num: 6  
Candidate Starts for Nanodon\_39:  
(Start: 6 @28056 has 55 MA's), (7, 28068), (15, 28158), (18, 28170), (22, 28188),

Gene: Nerdos\_36 Start: 27411, Stop: 27563, Start Num: 6  
Candidate Starts for Nerdos\_36:  
(Start: 6 @27411 has 55 MA's), (7, 27423), (22, 27543),

Gene: Nishikigoi\_39 Start: 28476, Stop: 28631, Start Num: 5



Candidate Starts for Nishikigoi\_39:

(Start: 5 @28476 has 26 MA's), (12, 28530), (22, 28617),

Gene: Oliynyk\_38 Start: 27770, Stop: 27922, Start Num: 6

Candidate Starts for Oliynyk\_38:

(Start: 6 @27770 has 55 MA's), (7, 27782), (12, 27815), (22, 27902),

Gene: Omar\_40 Start: 28704, Stop: 28856, Start Num: 5

Candidate Starts for Omar\_40:

(Start: 5 @28704 has 26 MA's), (15, 28812), (22, 28842),

Gene: Ozzie\_37 Start: 27396, Stop: 27548, Start Num: 6

Candidate Starts for Ozzie\_37:

(Start: 6 @27396 has 55 MA's), (7, 27408), (22, 27528),

Gene: OzzyJ\_38 Start: 27772, Stop: 27915, Start Num: 6

Candidate Starts for OzzyJ\_38:

(Start: 6 @27772 has 55 MA's), (7, 27784), (22, 27904), (23, 27910),

Gene: Pablito\_37 Start: 28027, Stop: 28164, Start Num: 5

Candidate Starts for Pablito\_37:

(2, 27706), (Start: 5 @28027 has 26 MA's), (22, 28153),

Gene: Paolo\_40 Start: 29046, Stop: 29201, Start Num: 5

Candidate Starts for Paolo\_40:

(Start: 5 @29046 has 26 MA's), (22, 29187),

Gene: Pavo\_39 Start: 29453, Stop: 29602, Start Num: 6

Candidate Starts for Pavo\_39:

(Start: 6 @29453 has 55 MA's), (7, 29465), (15, 29561), (22, 29591), (23, 29597),

Gene: Phettuccine\_37 Start: 27412, Stop: 27564, Start Num: 6

Candidate Starts for Phettuccine\_37:

(Start: 6 @27412 has 55 MA's), (7, 27424), (22, 27544),

Gene: Provolone\_39 Start: 28835, Stop: 28984, Start Num: 6

Candidate Starts for Provolone\_39:

(Start: 6 @28835 has 55 MA's), (7, 28847), (15, 28943), (22, 28973), (23, 28979),

Gene: Puginator\_40 Start: 29067, Stop: 29222, Start Num: 5

Candidate Starts for Puginator\_40:

(Start: 5 @29067 has 26 MA's), (22, 29208),

Gene: Rana\_38 Start: 28287, Stop: 28433, Start Num: 6

Candidate Starts for Rana\_38:

(Start: 6 @28287 has 55 MA's), (7, 28299), (21, 28419), (22, 28422), (23, 28428),

Gene: Rusticus\_38 Start: 27770, Stop: 27922, Start Num: 6

Candidate Starts for Rusticus\_38:

(Start: 6 @27770 has 55 MA's), (7, 27782), (12, 27815), (22, 27902),

Gene: Saftant\_38 Start: 29408, Stop: 29557, Start Num: 6

Candidate Starts for Saftant\_38:

(Start: 6 @29408 has 55 MA's), (7, 29420), (Start: 8 @29432 has 3 MA's), (14, 29510), (22, 29546), (23, 29552),

Gene: SarahRose\_37 Start: 27780, Stop: 27923, Start Num: 6  
Candidate Starts for SarahRose\_37:  
(Start: 6 @27780 has 55 MA's), (7, 27792), (22, 27912), (23, 27918),

Gene: Snorlax\_37 Start: 27784, Stop: 27927, Start Num: 6  
Candidate Starts for Snorlax\_37:  
(Start: 6 @27784 has 55 MA's), (7, 27796), (22, 27916), (23, 27922),

Gene: Speedwell\_43 Start: 30704, Stop: 30853, Start Num: 6  
Candidate Starts for Speedwell\_43:  
(3, 30485), (Start: 6 @30704 has 55 MA's), (7, 30716), (Start: 8 @30728 has 3 MA's), (14, 30806), (15, 30812), (22, 30842), (23, 30848),

Gene: Sujidade\_38 Start: 28513, Stop: 28665, Start Num: 6  
Candidate Starts for Sujidade\_38:  
(Start: 6 @28513 has 55 MA's), (7, 28525), (10, 28543), (15, 28615),

Gene: SunsetPointe\_37 Start: 27403, Stop: 27555, Start Num: 6  
Candidate Starts for SunsetPointe\_37:  
(Start: 6 @27403 has 55 MA's), (7, 27415), (22, 27535),

Gene: Superstar\_41 Start: 29591, Stop: 29740, Start Num: 5  
Candidate Starts for Superstar\_41:  
(Start: 5 @29591 has 26 MA's), (7, 29603), (Start: 8 @29615 has 3 MA's), (22, 29729),

Gene: TagePighter\_39 Start: 27784, Stop: 27927, Start Num: 6  
Candidate Starts for TagePighter\_39:  
(Start: 6 @27784 has 55 MA's), (7, 27796), (22, 27916), (23, 27922),

Gene: Tefunt\_39 Start: 28478, Stop: 28633, Start Num: 5  
Candidate Starts for Tefunt\_39:  
(Start: 5 @28478 has 26 MA's), (12, 28532), (22, 28619),

Gene: Thestral\_39 Start: 28671, Stop: 28826, Start Num: 5  
Candidate Starts for Thestral\_39:  
(Start: 5 @28671 has 26 MA's), (22, 28812),

Gene: TinaBelcher\_38 Start: 28618, Stop: 28773, Start Num: 5  
Candidate Starts for TinaBelcher\_38:  
(Start: 5 @28618 has 26 MA's), (22, 28759),

Gene: Toma\_37 Start: 28230, Stop: 28382, Start Num: 6  
Candidate Starts for Toma\_37:  
(Start: 6 @28230 has 55 MA's), (7, 28242), (10, 28260), (15, 28332),

Gene: Triste\_37 Start: 27772, Stop: 27915, Start Num: 6  
Candidate Starts for Triste\_37:  
(Start: 6 @27772 has 55 MA's), (7, 27784), (22, 27904), (23, 27910),

Gene: Triumph\_39 Start: 28373, Stop: 28522, Start Num: 5

Candidate Starts for Triumph\_39:  
(Start: 5 @28373 has 26 MA's), (7, 28385), (Start: 8 @28397 has 3 MA's), (15, 28481), (22, 28511),

Gene: TrvxScott\_37 Start: 28664, Stop: 28819, Start Num: 5  
Candidate Starts for TrvxScott\_37:  
(Start: 5 @28664 has 26 MA's), (22, 28805),

Gene: Unstoppable\_37 Start: 27407, Stop: 27559, Start Num: 6  
Candidate Starts for Unstoppable\_37:  
(Start: 6 @27407 has 55 MA's), (7, 27419), (22, 27539),

Gene: Vanseggelen\_43 Start: 28966, Stop: 29085, Start Num: 9  
Candidate Starts for Vanseggelen\_43:  
(Start: 8 @28963 has 3 MA's), (9, 28966), (22, 29074), (23, 29080),

Gene: Verabelle\_41 Start: 29352, Stop: 29495, Start Num: 6  
Candidate Starts for Verabelle\_41:  
(Start: 6 @29352 has 55 MA's), (7, 29364), (15, 29454), (19, 29475), (22, 29484), (23, 29490),

Gene: Verse\_38 Start: 30114, Stop: 30236, Start Num: 8  
Candidate Starts for Verse\_38:  
(Start: 8 @30114 has 3 MA's), (22, 30225), (23, 30231),

Gene: Werner\_37 Start: 27782, Stop: 27925, Start Num: 6  
Candidate Starts for Werner\_37:  
(Start: 6 @27782 has 55 MA's), (7, 27794), (22, 27914), (23, 27920),

Gene: Whatever\_37 Start: 27782, Stop: 27925, Start Num: 6  
Candidate Starts for Whatever\_37:  
(Start: 6 @27782 has 55 MA's), (7, 27794), (22, 27914), (23, 27920),

Gene: Yosif\_40 Start: 29930, Stop: 30049, Start Num: 8  
Candidate Starts for Yosif\_40:  
(Start: 8 @29930 has 3 MA's), (16, 29999), (18, 30005), (22, 30023), (24, 30041),

Gene: Zainub\_40 Start: 29007, Stop: 29162, Start Num: 5  
Candidate Starts for Zainub\_40:  
(Start: 5 @29007 has 26 MA's), (22, 29148),

Gene: Zemlya\_39 Start: 28331, Stop: 28483, Start Num: 6  
Candidate Starts for Zemlya\_39:  
(Start: 6 @28331 has 55 MA's), (7, 28343), (10, 28361), (15, 28433),

Gene: phiHau3\_39 Start: 27877, Stop: 28026, Start Num: 5  
Candidate Starts for phiHau3\_39:  
(Start: 5 @27877 has 26 MA's), (7, 27889), (22, 28015),