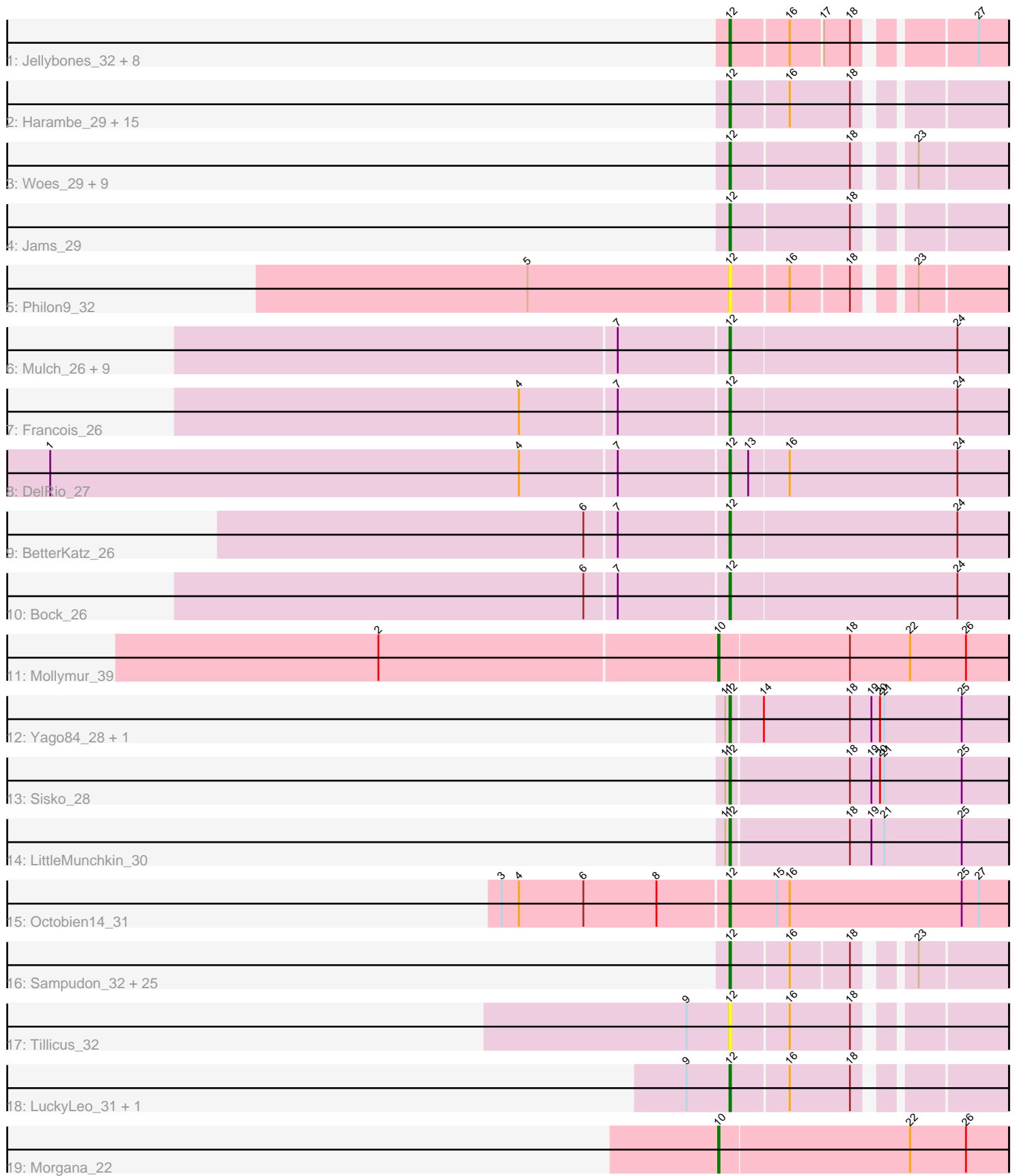


# Pham 163525



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 163525 Report

This analysis was run 05/04/24 on database version 560.

Pham number 163525 has 87 members, 14 are drafts.

Phages represented in each track:

- Track 1 : Jellybones\_32, John316\_32, Beaver\_32, Boneham\_32, FelixAlejandro\_33, Msay19\_33, BirksAndSocks\_32, Butterball\_32, Poland\_35
- Track 2 : Harambe\_29, Jormungandr\_29, ParvusTarda\_32, Luker\_30, Anamika\_29, Nimi13\_29, Sticker17\_29, Diabla\_31, Hello\_29, Lahirium\_29, Neoevie\_29, Hail2Pitt\_29, Guillaume\_29, GalacticEye\_29, Newt\_30, Teal\_29
- Track 3 : Woes\_29, Minos\_30, Lidong\_29, Shelley\_29, Berries\_30, Charianelly\_29, Bianmat\_29, Damp\_29, MrWormie\_29, Kaseim\_30
- Track 4 : Jams\_29
- Track 5 : Philon9\_32
- Track 6 : Mulch\_26, Chop\_26, Parada\_26, WheatThin\_26, Nadeem\_26, Ayotoya\_26, Brylie\_26, NancyRae\_26, GrandSlam\_26, Hamood\_26
- Track 7 : Francois\_26
- Track 8 : DelRio\_27
- Track 9 : BetterKatz\_26
- Track 10 : Bock\_26
- Track 11 : Mollymur\_39
- Track 12 : Yago84\_28, AnClar\_29
- Track 13 : Sisko\_28
- Track 14 : LittleMunchkin\_30
- Track 15 : Octobien14\_31
- Track 16 : Sampudon\_32, NovaSharks\_31, NorManre\_33, Lambo\_32, Yikes\_33, Avian\_30, Sadboi\_32, MoiGyank\_35, Rumi\_31, OtterstedtS21\_32, Fulcrum\_33, Gibbin\_33, Alyssamiracle\_32, Lila22\_33, Benjamin420\_34, BirthdayBoy\_33, Patos\_33, GOATification\_33, Erutan\_32, GretelLyn\_32, Genamy16\_32, Jalebi\_31, DoobyDoo\_31, Ranch\_32, Zany\_31, Wojtek\_31
- Track 17 : Tillicus\_32
- Track 18 : LuckyLeo\_31, Apeppi\_29
- Track 19 : Morgana\_22

### ***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 71 of the 73 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alyssamiracle\_32, AnClar\_29, Anamika\_29, Apeppi\_29, Avian\_30, Ayotoya\_26, Beaver\_32, Berries\_30, BetterKatz\_26, Bianmat\_29, BirksAndSocks\_32, BirthdayBoy\_33, Bock\_26, Boneham\_32, Brylie\_26, Butterball\_32, Charianelly\_29, Chop\_26, Damp\_29, DelRio\_27, Diabla\_31, DoobyDoo\_31, Erutan\_32, FelixAlejandro\_33, Francois\_26, Fulcrum\_33, GOATification\_33, GalacticEye\_29, Genamy16\_32, Gibbin\_33, GrandSlam\_26, Gretellyn\_32, Guillaume\_29, Hail2Pitt\_29, Hamood\_26, Harambe\_29, Hello\_29, Jalebi\_31, Jams\_29, Jellybones\_32, John316\_32, Jormungandr\_29, Kaseim\_30, Lahirium\_29, Lambo\_32, Lidong\_29, Lila22\_33, LittleMunchkin\_30, LuckyLeo\_31, Luker\_30, Minos\_30, MoiGyank\_35, MrWormie\_29, Msay19\_33, Mulch\_26, Nadeem\_26, NancyRae\_26, Neoevie\_29, Newt\_30, Nimi13\_29, NorManre\_33, NovaSharks\_31, Octobien14\_31, OtterstedtS21\_32, Parada\_26, ParvusTarda\_32, Patos\_33, Penjamin420\_34, Philon9\_32, Poland\_35, Ranch\_32, Rumi\_31, Sadboi\_32, Sampudon\_32, Shelley\_29, Sisko\_28, Sticker17\_29, Teal\_29, Tillicus\_32, WheatThin\_26, Woes\_29, Wojtek\_31, Yago84\_28, Yikes\_33, Zany\_31,

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

- 

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

- Mollymur\_39, Morgana\_22,

### Summary by start number:

Start 10:

- Found in 2 of 87 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 2 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mollymur\_39 (DL), Morgana\_22 (DZ),

Start 12:

- Found in 85 of 87 ( 97.7% ) of genes in pham
- Manual Annotations of this start: 71 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alyssamiracle\_32 (DV), AnClar\_29 (DR), Anamika\_29 (CS3), Apeppi\_29 (DV), Avian\_30 (DV), Ayotoya\_26 (DI), Beaver\_32 (CS2), Berries\_30 (CS3), BetterKatz\_26 (DI), Bianmat\_29 (CS3), BirksAndSocks\_32 (CS2), BirthdayBoy\_33 (DV), Bock\_26 (DI), Boneham\_32 (CS2), Brylie\_26 (DI), Butterball\_32 (CS2), Charianelly\_29 (CS3), Chop\_26 (DI), Damp\_29 (CS3), DelRio\_27 (DI), Diabla\_31 (CS2), DoobyDoo\_31 (DV), Erutan\_32 (DV), FelixAlejandro\_33 (CS2), Francois\_26 (DI), Fulcrum\_33 (DV), GOATification\_33 (DV), GalacticEye\_29 (CS3), Genamy16\_32 (DV), Gibbin\_33 (DV), GrandSlam\_26 (DI), Gretellyn\_32 (DV), Guillaume\_29 (CS3), Hail2Pitt\_29 (CS3), Hamood\_26 (DI), Harambe\_29 (CS3), Hello\_29 (CS3), Jalebi\_31 (DV), Jams\_29 (CS3), Jellybones\_32 (CS2), John316\_32 (CS2), Jormungandr\_29 (CS3), Kaseim\_30 (CS3), Lahirium\_29 (CS3), Lambo\_32 (DV), Lidong\_29 (CS3), Lila22\_33 (DV), LittleMunchkin\_30 (DR), LuckyLeo\_31 (DV), Luker\_30 (CS3), Minos\_30 (CS3), MoiGyank\_35 (DV), MrWormie\_29 (CS3), Msay19\_33 (CS2), Mulch\_26 (DI), Nadeem\_26 (DI), NancyRae\_26 (DI), Neoevie\_29 (CS3), Newt\_30 (CS3), Nimi13\_29 (CS3), NorManre\_33 (DV), NovaSharks\_31 (DV), Octobien14\_31 (DU1), OtterstedtS21\_32 (DV), Parada\_26 (DI), ParvusTarda\_32 (DV), Patos\_33 (DV), Penjamin420\_34 (DV), Philon9\_32 (CS4), Poland\_35 (CS2), Ranch\_32 (DV), Rumi\_31 (DV), Sadboi\_32

(DV), Sampudon\_32 (DV), Shelley\_29 (CS3), Sisko\_28 (DR), Sticker17\_29 (CS3), Teal\_29 (CS3), Tillicus\_32 (DV), WheatThin\_26 (DI), Woes\_29 (CS3), Wojtek\_31 (DV), Yago84\_28 (DR), Yikes\_33 (DV), Zany\_31 (DV),

### **Summary by clusters:**

There are 9 clusters represented in this pham: DL, DI, DZ, DU1, DV, CS4, DR, CS3, CS2,

Info for manual annotations of cluster CS2:

- Start number 12 was manually annotated 9 times for cluster CS2.

Info for manual annotations of cluster CS3:

- Start number 12 was manually annotated 21 times for cluster CS3.

Info for manual annotations of cluster DI:

- Start number 12 was manually annotated 13 times for cluster DI.

Info for manual annotations of cluster DL:

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

Info for manual annotations of cluster DR:

- Start number 12 was manually annotated 4 times for cluster DR.

Info for manual annotations of cluster DU1:

- Start number 12 was manually annotated 1 time for cluster DU1.

Info for manual annotations of cluster DV:

- Start number 12 was manually annotated 23 times for cluster DV.

Info for manual annotations of cluster DZ:

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

### **Gene Information:**

Gene: Alyssamiracle\_32 Start: 27357, Stop: 27524, Start Num: 12

Candidate Starts for Alyssamiracle\_32:

(Start: 12 @27357 has 71 MA's), (16, 27396), (18, 27435), (23, 27465),

Gene: AnClar\_29 Start: 30143, Stop: 30334, Start Num: 12

Candidate Starts for AnClar\_29:

(11, 30140), (Start: 12 @30143 has 71 MA's), (14, 30164), (18, 30224), (19, 30239), (20, 30245), (21, 30248), (25, 30302),

Gene: Anamika\_29 Start: 38219, Stop: 38389, Start Num: 12

Candidate Starts for Anamika\_29:

(Start: 12 @38219 has 71 MA's), (16, 38258), (18, 38300),

Gene: Apeppi\_29 Start: 28695, Stop: 28865, Start Num: 12

Candidate Starts for Apeppi\_29:

(9, 28665), (Start: 12 @28695 has 71 MA's), (16, 28734), (18, 28776),

Gene: Avian\_30 Start: 27339, Stop: 27506, Start Num: 12

Candidate Starts for Avian\_30:

(Start: 12 @27339 has 71 MA's), (16, 27378), (18, 27417), (23, 27447),

Gene: Ayotoya\_26 Start: 23908, Stop: 24099, Start Num: 12

Candidate Starts for Ayotoya\_26:

(7, 23833), (Start: 12 @23908 has 71 MA's), (24, 24064),

Gene: Beaver\_32 Start: 37702, Stop: 37869, Start Num: 12

Candidate Starts for Beaver\_32:

(Start: 12 @37702 has 71 MA's), (16, 37741), (17, 37762), (18, 37780), (27, 37849),

Gene: Berries\_30 Start: 38189, Stop: 38359, Start Num: 12

Candidate Starts for Berries\_30:

(Start: 12 @38189 has 71 MA's), (18, 38270), (23, 38300),

Gene: BetterKatz\_26 Start: 23381, Stop: 23572, Start Num: 12

Candidate Starts for BetterKatz\_26:

(6, 23285), (7, 23306), (Start: 12 @23381 has 71 MA's), (24, 23537),

Gene: Bianmat\_29 Start: 38229, Stop: 38399, Start Num: 12

Candidate Starts for Bianmat\_29:

(Start: 12 @38229 has 71 MA's), (18, 38310), (23, 38340),

Gene: BirksAndSocks\_32 Start: 37676, Stop: 37843, Start Num: 12

Candidate Starts for BirksAndSocks\_32:

(Start: 12 @37676 has 71 MA's), (16, 37715), (17, 37736), (18, 37754), (27, 37823),

Gene: BirthdayBoy\_33 Start: 29379, Stop: 29546, Start Num: 12

Candidate Starts for BirthdayBoy\_33:

(Start: 12 @29379 has 71 MA's), (16, 29418), (18, 29457), (23, 29487),

Gene: Bock\_26 Start: 23131, Stop: 23322, Start Num: 12

Candidate Starts for Bock\_26:

(6, 23035), (7, 23056), (Start: 12 @23131 has 71 MA's), (24, 23287),

Gene: Boneham\_32 Start: 37675, Stop: 37842, Start Num: 12

Candidate Starts for Boneham\_32:

(Start: 12 @37675 has 71 MA's), (16, 37714), (17, 37735), (18, 37753), (27, 37822),

Gene: Brylie\_26 Start: 23122, Stop: 23313, Start Num: 12

Candidate Starts for Brylie\_26:

(7, 23047), (Start: 12 @23122 has 71 MA's), (24, 23278),

Gene: Butterball\_32 Start: 37675, Stop: 37842, Start Num: 12

Candidate Starts for Butterball\_32:

(Start: 12 @37675 has 71 MA's), (16, 37714), (17, 37735), (18, 37753), (27, 37822),

Gene: Charianelly\_29 Start: 37939, Stop: 38109, Start Num: 12

Candidate Starts for Charianelly\_29:

(Start: 12 @37939 has 71 MA's), (18, 38020), (23, 38050),

Gene: Chop\_26 Start: 23656, Stop: 23847, Start Num: 12

Candidate Starts for Chop\_26:

(7, 23581), (Start: 12 @23656 has 71 MA's), (24, 23812),

Gene: Damp\_29 Start: 37103, Stop: 37273, Start Num: 12

Candidate Starts for Damp\_29:

(Start: 12 @37103 has 71 MA's), (18, 37184), (23, 37214),

Gene: DelRio\_27 Start: 24130, Stop: 24321, Start Num: 12

Candidate Starts for DelRio\_27:

(1, 23662), (4, 23989), (7, 24055), (Start: 12 @24130 has 71 MA's), (13, 24142), (16, 24169), (24, 24286),

Gene: Diabla\_31 Start: 37526, Stop: 37693, Start Num: 12

Candidate Starts for Diabla\_31:

(Start: 12 @37526 has 71 MA's), (16, 37565), (18, 37604),

Gene: DoobyDoo\_31 Start: 28328, Stop: 28495, Start Num: 12

Candidate Starts for DoobyDoo\_31:

(Start: 12 @28328 has 71 MA's), (16, 28367), (18, 28406), (23, 28436),

Gene: Erutan\_32 Start: 28838, Stop: 29005, Start Num: 12

Candidate Starts for Erutan\_32:

(Start: 12 @28838 has 71 MA's), (16, 28877), (18, 28916), (23, 28946),

Gene: FelixAlejandro\_33 Start: 37873, Stop: 38040, Start Num: 12

Candidate Starts for FelixAlejandro\_33:

(Start: 12 @37873 has 71 MA's), (16, 37912), (17, 37933), (18, 37951), (27, 38020),

Gene: Francois\_26 Start: 23145, Stop: 23336, Start Num: 12

Candidate Starts for Francois\_26:

(4, 23004), (7, 23070), (Start: 12 @23145 has 71 MA's), (24, 23301),

Gene: Fulcrum\_33 Start: 29356, Stop: 29523, Start Num: 12

Candidate Starts for Fulcrum\_33:

(Start: 12 @29356 has 71 MA's), (16, 29395), (18, 29434), (23, 29464),

Gene: GOATification\_33 Start: 29356, Stop: 29523, Start Num: 12

Candidate Starts for GOATification\_33:

(Start: 12 @29356 has 71 MA's), (16, 29395), (18, 29434), (23, 29464),

Gene: GalacticEye\_29 Start: 37901, Stop: 38071, Start Num: 12

Candidate Starts for GalacticEye\_29:

(Start: 12 @37901 has 71 MA's), (16, 37940), (18, 37982),

Gene: Genamy16\_32 Start: 27357, Stop: 27524, Start Num: 12

Candidate Starts for Genamy16\_32:

(Start: 12 @27357 has 71 MA's), (16, 27396), (18, 27435), (23, 27465),

Gene: Gibbin\_33 Start: 29455, Stop: 29622, Start Num: 12

Candidate Starts for Gibbin\_33:

(Start: 12 @29455 has 71 MA's), (16, 29494), (18, 29533), (23, 29563),

Gene: GrandSlam\_26 Start: 23656, Stop: 23847, Start Num: 12  
Candidate Starts for GrandSlam\_26:  
(7, 23581), (Start: 12 @23656 has 71 MA's), (24, 23812),

Gene: Gretellyn\_32 Start: 29714, Stop: 29881, Start Num: 12  
Candidate Starts for Gretellyn\_32:  
(Start: 12 @29714 has 71 MA's), (16, 29753), (18, 29792), (23, 29822),

Gene: Guillaume\_29 Start: 37951, Stop: 38121, Start Num: 12  
Candidate Starts for Guillaume\_29:  
(Start: 12 @37951 has 71 MA's), (16, 37990), (18, 38032),

Gene: Hail2Pitt\_29 Start: 38428, Stop: 38598, Start Num: 12  
Candidate Starts for Hail2Pitt\_29:  
(Start: 12 @38428 has 71 MA's), (16, 38467), (18, 38509),

Gene: Hamood\_26 Start: 23656, Stop: 23847, Start Num: 12  
Candidate Starts for Hamood\_26:  
(7, 23581), (Start: 12 @23656 has 71 MA's), (24, 23812),

Gene: Harambe\_29 Start: 38218, Stop: 38388, Start Num: 12  
Candidate Starts for Harambe\_29:  
(Start: 12 @38218 has 71 MA's), (16, 38257), (18, 38299),

Gene: Hello\_29 Start: 38180, Stop: 38350, Start Num: 12  
Candidate Starts for Hello\_29:  
(Start: 12 @38180 has 71 MA's), (16, 38219), (18, 38261),

Gene: Jalebi\_31 Start: 29890, Stop: 30057, Start Num: 12  
Candidate Starts for Jalebi\_31:  
(Start: 12 @29890 has 71 MA's), (16, 29929), (18, 29968), (23, 29998),

Gene: Jams\_29 Start: 37389, Stop: 37559, Start Num: 12  
Candidate Starts for Jams\_29:  
(Start: 12 @37389 has 71 MA's), (18, 37470),

Gene: Jellybones\_32 Start: 37734, Stop: 37901, Start Num: 12  
Candidate Starts for Jellybones\_32:  
(Start: 12 @37734 has 71 MA's), (16, 37773), (17, 37794), (18, 37812), (27, 37881),

Gene: John316\_32 Start: 37687, Stop: 37854, Start Num: 12  
Candidate Starts for John316\_32:  
(Start: 12 @37687 has 71 MA's), (16, 37726), (17, 37747), (18, 37765), (27, 37834),

Gene: Jormungandr\_29 Start: 37933, Stop: 38103, Start Num: 12  
Candidate Starts for Jormungandr\_29:  
(Start: 12 @37933 has 71 MA's), (16, 37972), (18, 38014),

Gene: Kaseim\_30 Start: 37374, Stop: 37544, Start Num: 12  
Candidate Starts for Kaseim\_30:  
(Start: 12 @37374 has 71 MA's), (18, 37455), (23, 37485),

Gene: Lahirium\_29 Start: 38455, Stop: 38625, Start Num: 12

Candidate Starts for Lahirium\_29:

(Start: 12 @38455 has 71 MA's), (16, 38494), (18, 38536),

Gene: Lambo\_32 Start: 29377, Stop: 29544, Start Num: 12

Candidate Starts for Lambo\_32:

(Start: 12 @29377 has 71 MA's), (16, 29416), (18, 29455), (23, 29485),

Gene: Lidong\_29 Start: 38189, Stop: 38359, Start Num: 12

Candidate Starts for Lidong\_29:

(Start: 12 @38189 has 71 MA's), (18, 38270), (23, 38300),

Gene: Lila22\_33 Start: 29332, Stop: 29499, Start Num: 12

Candidate Starts for Lila22\_33:

(Start: 12 @29332 has 71 MA's), (16, 29371), (18, 29410), (23, 29440),

Gene: LittleMunchkin\_30 Start: 30714, Stop: 30905, Start Num: 12

Candidate Starts for LittleMunchkin\_30:

(11, 30711), (Start: 12 @30714 has 71 MA's), (18, 30795), (19, 30810), (21, 30819), (25, 30873),

Gene: LuckyLeo\_31 Start: 28695, Stop: 28865, Start Num: 12

Candidate Starts for LuckyLeo\_31:

(9, 28665), (Start: 12 @28695 has 71 MA's), (16, 28734), (18, 28776),

Gene: Luker\_30 Start: 38408, Stop: 38578, Start Num: 12

Candidate Starts for Luker\_30:

(Start: 12 @38408 has 71 MA's), (16, 38447), (18, 38489),

Gene: Minos\_30 Start: 37931, Stop: 38101, Start Num: 12

Candidate Starts for Minos\_30:

(Start: 12 @37931 has 71 MA's), (18, 38012), (23, 38042),

Gene: MoiGyank\_35 Start: 29760, Stop: 29927, Start Num: 12

Candidate Starts for MoiGyank\_35:

(Start: 12 @29760 has 71 MA's), (16, 29799), (18, 29838), (23, 29868),

Gene: Mollymur\_39 Start: 35807, Stop: 36007, Start Num: 10

Candidate Starts for Mollymur\_39:

(2, 35573), (Start: 10 @35807 has 2 MA's), (18, 35897), (22, 35939), (26, 35978),

Gene: Morgana\_22 Start: 20847, Stop: 21047, Start Num: 10

Candidate Starts for Morgana\_22:

(Start: 10 @20847 has 2 MA's), (22, 20979), (26, 21018),

Gene: MrWormie\_29 Start: 37092, Stop: 37262, Start Num: 12

Candidate Starts for MrWormie\_29:

(Start: 12 @37092 has 71 MA's), (18, 37173), (23, 37203),

Gene: Msay19\_33 Start: 37868, Stop: 38035, Start Num: 12

Candidate Starts for Msay19\_33:

(Start: 12 @37868 has 71 MA's), (16, 37907), (17, 37928), (18, 37946), (27, 38015),

Gene: Mulch\_26 Start: 23122, Stop: 23313, Start Num: 12



Candidate Starts for Mulch\_26:

(7, 23047), (Start: 12 @23122 has 71 MA's), (24, 23278),

Gene: Nadeem\_26 Start: 23122, Stop: 23313, Start Num: 12

Candidate Starts for Nadeem\_26:

(7, 23047), (Start: 12 @23122 has 71 MA's), (24, 23278),

Gene: NancyRae\_26 Start: 23128, Stop: 23319, Start Num: 12

Candidate Starts for NancyRae\_26:

(7, 23053), (Start: 12 @23128 has 71 MA's), (24, 23284),

Gene: Neoevie\_29 Start: 38195, Stop: 38365, Start Num: 12

Candidate Starts for Neoevie\_29:

(Start: 12 @38195 has 71 MA's), (16, 38234), (18, 38276),

Gene: Newt\_30 Start: 38422, Stop: 38592, Start Num: 12

Candidate Starts for Newt\_30:

(Start: 12 @38422 has 71 MA's), (16, 38461), (18, 38503),

Gene: Nimi13\_29 Start: 37940, Stop: 38110, Start Num: 12

Candidate Starts for Nimi13\_29:

(Start: 12 @37940 has 71 MA's), (16, 37979), (18, 38021),

Gene: NorManre\_33 Start: 28961, Stop: 29128, Start Num: 12

Candidate Starts for NorManre\_33:

(Start: 12 @28961 has 71 MA's), (16, 29000), (18, 29039), (23, 29069),

Gene: NovaSharks\_31 Start: 26947, Stop: 27114, Start Num: 12

Candidate Starts for NovaSharks\_31:

(Start: 12 @26947 has 71 MA's), (16, 26986), (18, 27025), (23, 27055),

Gene: Octobien14\_31 Start: 26466, Stop: 26660, Start Num: 12

Candidate Starts for Octobien14\_31:

(3, 26310), (4, 26322), (6, 26367), (8, 26418), (Start: 12 @26466 has 71 MA's), (15, 26499), (16, 26508), (25, 26628), (27, 26640),

Gene: OtterstedtS21\_32 Start: 29036, Stop: 29203, Start Num: 12

Candidate Starts for OtterstedtS21\_32:

(Start: 12 @29036 has 71 MA's), (16, 29075), (18, 29114), (23, 29144),

Gene: Parada\_26 Start: 23122, Stop: 23313, Start Num: 12

Candidate Starts for Parada\_26:

(7, 23047), (Start: 12 @23122 has 71 MA's), (24, 23278),

Gene: ParvusTarda\_32 Start: 28506, Stop: 28673, Start Num: 12

Candidate Starts for ParvusTarda\_32:

(Start: 12 @28506 has 71 MA's), (16, 28545), (18, 28584),

Gene: Patos\_33 Start: 28961, Stop: 29128, Start Num: 12

Candidate Starts for Patos\_33:

(Start: 12 @28961 has 71 MA's), (16, 29000), (18, 29039), (23, 29069),

Gene: Penjamin420\_34 Start: 29178, Stop: 29345, Start Num: 12

Candidate Starts for Penjamin420\_34:

(Start: 12 @29178 has 71 MA's), (16, 29217), (18, 29256), (23, 29286),

Gene: Philon9\_32 Start: 40001, Stop: 40168, Start Num: 12

Candidate Starts for Philon9\_32:

(5, 39860), (Start: 12 @40001 has 71 MA's), (16, 40040), (18, 40079), (23, 40109),

Gene: Poland\_35 Start: 37847, Stop: 38014, Start Num: 12

Candidate Starts for Poland\_35:

(Start: 12 @37847 has 71 MA's), (16, 37886), (17, 37907), (18, 37925), (27, 37994),

Gene: Ranch\_32 Start: 27860, Stop: 28027, Start Num: 12

Candidate Starts for Ranch\_32:

(Start: 12 @27860 has 71 MA's), (16, 27899), (18, 27938), (23, 27968),

Gene: Rumi\_31 Start: 26950, Stop: 27117, Start Num: 12

Candidate Starts for Rumi\_31:

(Start: 12 @26950 has 71 MA's), (16, 26989), (18, 27028), (23, 27058),

Gene: Sadboi\_32 Start: 29714, Stop: 29881, Start Num: 12

Candidate Starts for Sadboi\_32:

(Start: 12 @29714 has 71 MA's), (16, 29753), (18, 29792), (23, 29822),

Gene: Sampudon\_32 Start: 29890, Stop: 30057, Start Num: 12

Candidate Starts for Sampudon\_32:

(Start: 12 @29890 has 71 MA's), (16, 29929), (18, 29968), (23, 29998),

Gene: Shelley\_29 Start: 37416, Stop: 37586, Start Num: 12

Candidate Starts for Shelley\_29:

(Start: 12 @37416 has 71 MA's), (18, 37497), (23, 37527),

Gene: Sisko\_28 Start: 28150, Stop: 28341, Start Num: 12

Candidate Starts for Sisko\_28:

(11, 28147), (Start: 12 @28150 has 71 MA's), (18, 28231), (19, 28246), (20, 28252), (21, 28255), (25, 28309),

Gene: Sticker17\_29 Start: 37931, Stop: 38101, Start Num: 12

Candidate Starts for Sticker17\_29:

(Start: 12 @37931 has 71 MA's), (16, 37970), (18, 38012),

Gene: Teal\_29 Start: 38399, Stop: 38569, Start Num: 12

Candidate Starts for Teal\_29:

(Start: 12 @38399 has 71 MA's), (16, 38438), (18, 38480),

Gene: Tillicus\_32 Start: 28289, Stop: 28459, Start Num: 12

Candidate Starts for Tillicus\_32:

(9, 28259), (Start: 12 @28289 has 71 MA's), (16, 28328), (18, 28370),

Gene: WheatThin\_26 Start: 23122, Stop: 23313, Start Num: 12

Candidate Starts for WheatThin\_26:

(7, 23047), (Start: 12 @23122 has 71 MA's), (24, 23278),

Gene: Woes\_29 Start: 38450, Stop: 38620, Start Num: 12

Candidate Starts for Woes\_29:

(Start: 12 @38450 has 71 MA's), (18, 38531), (23, 38561),

Gene: Wojtek\_31 Start: 28585, Stop: 28752, Start Num: 12

Candidate Starts for Wojtek\_31:

(Start: 12 @28585 has 71 MA's), (16, 28624), (18, 28663), (23, 28693),

Gene: Yago84\_28 Start: 28224, Stop: 28415, Start Num: 12

Candidate Starts for Yago84\_28:

(11, 28221), (Start: 12 @28224 has 71 MA's), (14, 28245), (18, 28305), (19, 28320), (20, 28326), (21, 28329), (25, 28383),

Gene: Yikes\_33 Start: 29969, Stop: 30136, Start Num: 12

Candidate Starts for Yikes\_33:

(Start: 12 @29969 has 71 MA's), (16, 30008), (18, 30047), (23, 30077),

Gene: Zany\_31 Start: 29496, Stop: 29663, Start Num: 12

Candidate Starts for Zany\_31:

(Start: 12 @29496 has 71 MA's), (16, 29535), (18, 29574), (23, 29604),