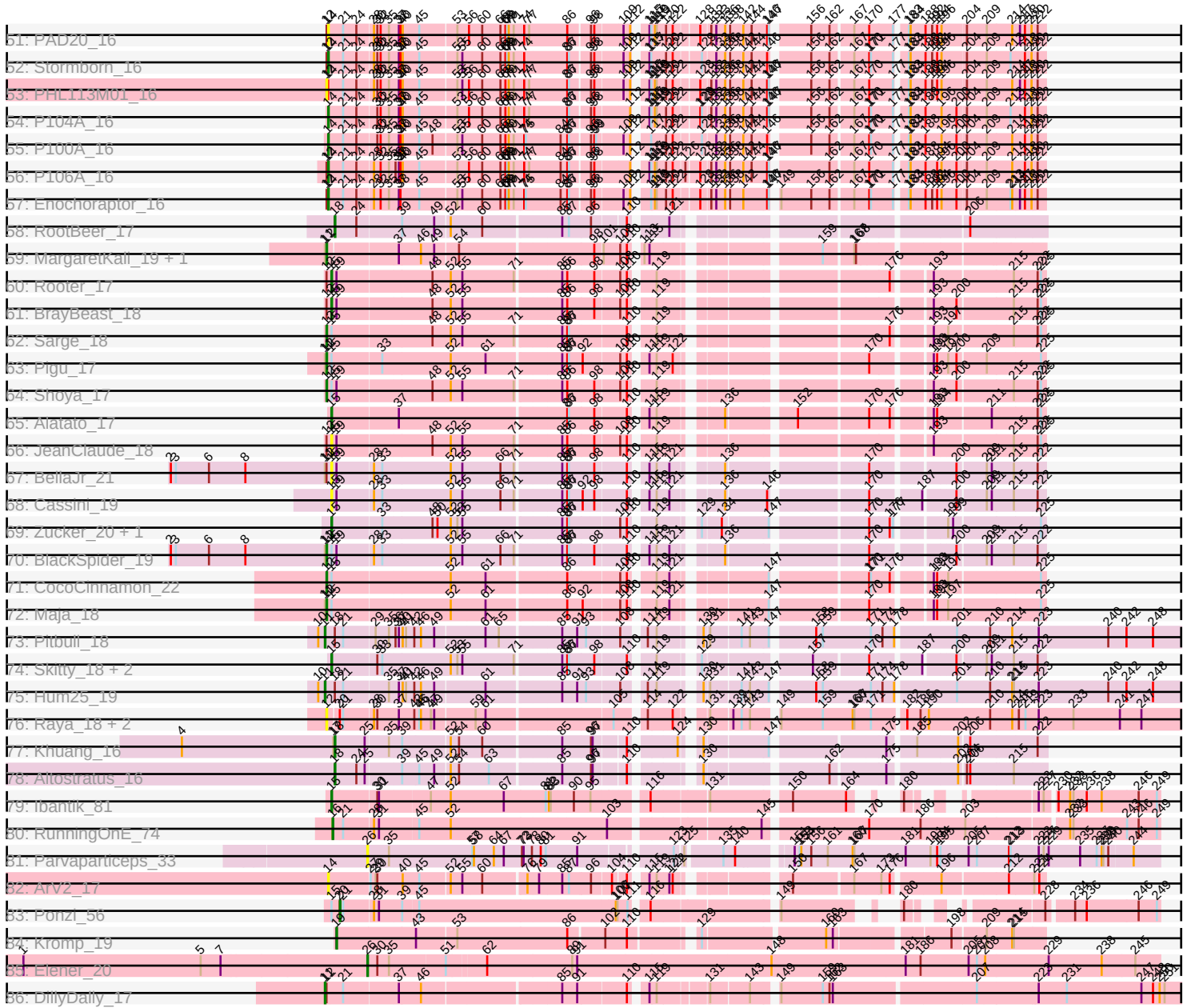


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| 1: AbbyDaisy_19 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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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 330695 Report

This analysis was run 09/05/26 on database version 662.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 330695 has 97 members, 22 are drafts.

Phages represented in each track:

- Track 1 : AbbyDaisy\_19
- Track 2 : Raqqa\_19
- Track 3 : Success\_63
- Track 4 : Spooks\_62
- Track 5 : Bimmel\_61
- Track 6 : Keiki\_16, Pirate\_16
- Track 7 : Kubed\_16
- Track 8 : Attacne\_16
- Track 9 : P106M\_16, P106I\_16, P106C\_16, P106L\_16
- Track 10 : P9.1\_16
- Track 11 : MEAK\_16
- Track 12 : LilBandit\_16
- Track 13 : PHL067M10\_16
- Track 14 : Solid\_16
- Track 15 : Ouroboros\_16
- Track 16 : Cota\_16
- Track 17 : P14.4\_16
- Track 18 : MrAK\_16
- Track 19 : Procrass1\_16
- Track 20 : PAS50\_16
- Track 21 : SKKY\_16
- Track 22 : PHL114L00\_16
- Track 23 : ATCC29399BT\_16
- Track 24 : PA6\_16
- Track 25 : Rileysaurus\_16
- Track 26 : PHL037M02\_16
- Track 27 : Leviosa\_16
- Track 28 : ATCC29399BC\_16, P107C\_16
- Track 29 : P104B\_16
- Track 30 : Enoki\_16
- Track 31 : BruceLethal\_16
- Track 32 : PHL060L00\_16
- Track 33 : PHL111M01\_16

- Track 34 : P100.1\_16
- Track 35 : Wizzo\_16
- Track 36 : Moyashi\_16
- Track 37 : P108C\_16
- Track 38 : Supernova\_16
- Track 39 : QueenBey\_16
- Track 40 : Aquarius\_16
- Track 41 : PHL010M04\_16
- Track 42 : PHL112N00\_16
- Track 43 : P105\_16
- Track 44 : PHL071N05\_16
- Track 45 : DrParker\_16
- Track 46 : P107A\_16
- Track 47 : Lauchelly\_16
- Track 48 : P100D\_16
- Track 49 : P101A\_16
- Track 50 : P1.1\_16
- Track 51 : PAD20\_16
- Track 52 : Stormborn\_16
- Track 53 : PHL113M01\_16
- Track 54 : P104A\_16
- Track 55 : P100A\_16
- Track 56 : P106A\_16
- Track 57 : Enochoraptor\_16
- Track 58 : RootBeer\_17
- Track 59 : MargaretKali\_19, Kumotta\_19
- Track 60 : Rooter\_17
- Track 61 : BrayBeast\_18
- Track 62 : Sarge\_18
- Track 63 : Pigu\_17
- Track 64 : Shoya\_17
- Track 65 : Alatato\_17
- Track 66 : JeanClaude\_18
- Track 67 : BellaJr\_21
- Track 68 : Cassini\_19
- Track 69 : Zucker\_20, Bauer\_21
- Track 70 : BlackSpider\_19
- Track 71 : CocoCinnamon\_22
- Track 72 : Maja\_18
- Track 73 : Pitbull\_18
- Track 74 : Skitty\_18, MrSmee\_18, Merpity\_20
- Track 75 : Hum25\_19
- Track 76 : Raya\_18, Skyerus\_18, Neroxid\_18
- Track 77 : Khuang\_16
- Track 78 : Altostratus\_16
- Track 79 : Ibantik\_81
- Track 80 : RunningOnE\_74
- Track 81 : Parvaparticeps\_33
- Track 82 : ArV2\_17
- Track 83 : Ponzi\_56
- Track 84 : Kromp\_19
- Track 85 : Elener\_20
- Track 86 : DillyDally\_17

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

The start number called the most often in the published annotations is 14, it was called in 42 of the 75 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ATCC29399BC\_16, ATCC29399BT\_16, AbbyDaisy\_19, Aquarius\_16, ArV2\_17, Attacne\_16, BruceLethal\_16, Cota\_16, DrParker\_16, Enochoraptor\_16, Enoki\_16, Keiki\_16, Kubed\_16, Lauchelly\_16, Leviosa\_16, MEAK\_16, Moyashi\_16, MrAK\_16, Ouroboros\_16, P100.1\_16, P100A\_16, P100D\_16, P101A\_16, P104A\_16, P104B\_16, P105\_16, P106A\_16, P106C\_16, P106I\_16, P106L\_16, P106M\_16, P107A\_16, P107C\_16, P108C\_16, PA6\_16, PAD20\_16, PAS50\_16, PHL037M02\_16, Pirate\_16, Procrass1\_16, QueenBey\_16, Raqqa\_19, Rileysaurus\_16, SKKY\_16, Solid\_16, Stormborn\_16, Supernova\_16, Wizzo\_16,

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

- LilBandit\_16, P1.1\_16, P14.4\_16, P9.1\_16, PHL010M04\_16, PHL060L00\_16, PHL067M10\_16, PHL071N05\_16, PHL112N00\_16, PHL113M01\_16, PHL114L00\_16,

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

- Alatato\_17, Altostratus\_16, Bauer\_21, BellaJr\_21, Bimmel\_61, BlackSpider\_19, BrayBeast\_18, Cassini\_19, CocoCinnamon\_22, DillyDally\_17, Elener\_20, Hum25\_19, Ibantik\_81, JeanClaude\_18, Khuang\_16, Kromp\_19, Kumotta\_19, Maja\_18, MargaretKali\_19, Merpity\_20, MrSmee\_18, Neroxid\_18, PHL111M01\_16, Parvaparticeps\_33, Pigu\_17, Pitbull\_18, Ponzi\_56, Raya\_18, RootBeer\_17, Rooter\_17, RunningOnE\_74, Sarge\_18, Shoya\_17, Skitty\_18, Skyerus\_18, Spooks\_62, Success\_63, Zucker\_20,

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

Start 11:

- Found in 11 of 97 ( 11.3% ) of genes in pham
- Manual Annotations of this start: 3 of 75
- Called 27.3% of time when present
- Phage (with cluster) where this start called: DillyDally\_17 (singleton), Hum25\_19 (FQ1), Pitbull\_18 (FQ1),

Start 12:

- Found in 59 of 97 ( 60.8% ) of genes in pham
- Manual Annotations of this start: 12 of 75
- Called 37.3% of time when present
- Phage (with cluster) where this start called: BlackSpider\_19 (FN), CocoCinnamon\_22 (FO), Kumotta\_19 (FB), LilBandit\_16 (BU), Maja\_18 (FO), MargaretKali\_19 (FB), Neroxid\_18 (FQ2), P1.1\_16 (BU), P14.4\_16 (BU), P9.1\_16 (BU), PHL010M04\_16 (BU), PHL060L00\_16 (BU), PHL067M10\_16 (BU), PHL071N05\_16 (BU), PHL112N00\_16 (BU), PHL113M01\_16 (BU), PHL114L00\_16 (BU), Pigu\_17 (FB), Raya\_18 (FQ2), Sarge\_18 (FB), Shoya\_17 (FB), Skyerus\_18 (FQ2),

Start 13:

- Found in 1 of 97 ( 1.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PHL111M01\_16 (BU),

Start 14:

- Found in 59 of 97 ( 60.8% ) of genes in pham
- Manual Annotations of this start: 42 of 75
- Called 81.4% of time when present
- Phage (with cluster) where this start called: ATCC29399BC\_16 (BU), ATCC29399BT\_16 (BU), AbbyDaisy\_19 (AY), Aquarius\_16 (BU), ArV2\_17 (singleton), Attacne\_16 (BU), BruceLethal\_16 (BU), Cota\_16 (BU), DrParker\_16 (BU), Enochoraptor\_16 (BU), Enoki\_16 (BU), Keiki\_16 (BU), Kubed\_16 (BU), Lauchelly\_16 (BU), Leviosa\_16 (BU), MEAK\_16 (BU), Moyashi\_16 (BU), MrAK\_16 (BU), Ouroboros\_16 (BU), P100.1\_16 (BU), P100A\_16 (BU), P100D\_16 (BU), P101A\_16 (BU), P104A\_16 (BU), P104B\_16 (BU), P105\_16 (BU), P106A\_16 (BU), P106C\_16 (BU), P106I\_16 (BU), P106L\_16 (BU), P106M\_16 (BU), P107A\_16 (BU), P107C\_16 (BU), P108C\_16 (BU), PA6\_16 (BU), PAD20\_16 (BU), PAS50\_16 (BU), PHL037M02\_16 (BU), Pirate\_16 (BU), Procrass1\_16 (BU), QueenBey\_16 (BU), Raqqa\_19 (AY), Rileysaurus\_16 (BU), SKKY\_16 (BU), Solid\_16 (BU), Stormborn\_16 (BU), Supernova\_16 (BU), Wizzo\_16 (BU),

Start 15:

- Found in 22 of 97 ( 22.7% ) of genes in pham
- Manual Annotations of this start: 11 of 75
- Called 68.2% of time when present
- Phage (with cluster) where this start called: Alatato\_17 (FB), Bauer\_21 (FN), BellaJr\_21 (FN), Bimmel\_61 (BT), BrayBeast\_18 (FB), Cassini\_19 (FN), Ibantik\_81 (JN), JeanClaude\_18 (FB), Merpity\_20 (FQ1), MrSmee\_18 (FQ1), Rooter\_17 (FB), Skitty\_18 (FQ1), Spooks\_62 (BT), Success\_63 (BT), Zucker\_20 (FN),

Start 16:

- Found in 1 of 97 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 1 of 75
- Called 100.0% of time when present
- Phage (with cluster) where this start called: RunningOnE\_74 (JN),

Start 18:

- Found in 5 of 97 ( 5.2% ) of genes in pham
- Manual Annotations of this start: 3 of 75
- Called 60.0% of time when present
- Phage (with cluster) where this start called: Altostratus\_16 (FS), Khuang\_16 (FS), RootBeer\_17 (FA),

Start 19:

- Found in 8 of 97 ( 8.2% ) of genes in pham
- Manual Annotations of this start: 1 of 75
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Kromp\_19 (singleton),

Start 20:

- Found in 4 of 97 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 1 of 75
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Ponzi\_56 (singleton),

Start 26:

- Found in 2 of 97 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 1 of 75
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Elener\_20 (singleton), Parvarticeps\_33 (UNK),

### **Summary by clusters:**

There are 13 clusters represented in this pham: singleton, FS, FQ2, FA, UNK, JN, BT, BU, FB, AY, FQ1, FN, FO,

Info for manual annotations of cluster AY:

- Start number 14 was manually annotated 1 time for cluster AY.

Info for manual annotations of cluster BT:

- Start number 15 was manually annotated 3 times for cluster BT.

Info for manual annotations of cluster BU:

- Start number 12 was manually annotated 4 times for cluster BU.
- Start number 14 was manually annotated 41 times for cluster BU.

Info for manual annotations of cluster FA:

- Start number 18 was manually annotated 1 time for cluster FA.

Info for manual annotations of cluster FB:

- Start number 12 was manually annotated 5 times for cluster FB.
- Start number 15 was manually annotated 3 times for cluster FB.

Info for manual annotations of cluster FN:

- Start number 12 was manually annotated 1 time for cluster FN.
- Start number 15 was manually annotated 2 times for cluster FN.

Info for manual annotations of cluster FO:

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

Info for manual annotations of cluster FQ1:

- Start number 11 was manually annotated 2 times for cluster FQ1.
- Start number 15 was manually annotated 2 times for cluster FQ1.

Info for manual annotations of cluster FS:

- Start number 18 was manually annotated 2 times for cluster FS.

Info for manual annotations of cluster JN:

- Start number 15 was manually annotated 1 time for cluster JN.
- Start number 16 was manually annotated 1 time for cluster JN.

### **Gene Information:**

Gene: ATCC29399BC\_16 Start: 12232, Stop: 13389, Start Num: 14

Candidate Starts for ATCC29399BC\_16:

(Start: 12 @12229 has 12 MA's), (Start: 14 @12232 has 42 MA's), (21, 12259), (24, 12283), (28, 12310), (30, 12316), (32, 12322), (35, 12337), (37, 12352), (38, 12355), (40, 12358), (45, 12388), (53, 12451), (60, 12493), (66, 12526), (68, 12535), (70, 12541), (71, 12550), (74, 12568), (75, 12571), (86, 12643), (87, 12646), (96, 12679), (98, 12685), (109, 12730), (112, 12742), (115, 12757), (118, 12766), (119, 12769), (120, 12784), (122, 12796), (129, 12838), (132, 12850), (133, 12859), (136, 12874), (138, 12877), (142, 12901), (144, 12916), (146, 12943), (147, 12946), (156, 13003), (162, 13036), (167, 13072), (170, 13099), (177, 13141), (183, 13156), (184, 13159), (188, 13183), (192, 13195), (194, 13204), (196, 13210), (204, 13252), (209, 13288), (214, 13333), (217, 13345), (218, 13354), (220, 13366), (222, 13375),

Gene: ATCC29399BT\_16 Start: 12235, Stop: 13392, Start Num: 14

Candidate Starts for ATCC29399BT\_16:

(Start: 14 @12235 has 42 MA's), (21, 12262), (24, 12286), (32, 12325), (35, 12340), (37, 12355), (38, 12358), (40, 12361), (45, 12391), (53, 12454), (60, 12496), (66, 12529), (68, 12538), (69, 12541), (70, 12544), (71, 12553), (74, 12571), (75, 12574), (84, 12634), (86, 12646), (87, 12649), (96, 12682), (98, 12688), (112, 12745), (115, 12760), (117, 12763), (118, 12769), (119, 12772), (120, 12787), (122, 12799), (127, 12820), (128, 12838), (129, 12841), (132, 12853), (133, 12862), (138, 12880), (142, 12904), (144, 12919), (146, 12946), (156, 13006), (162, 13039), (167, 13075), (170, 13102), (177, 13144), (183, 13159), (184, 13162), (188, 13186), (192, 13198), (196, 13213), (200, 13240), (204, 13255), (209, 13291), (214, 13336), (218, 13357), (220, 13369), (222, 13378),

Gene: AbbyDaisy\_19 Start: 15422, Stop: 16528, Start Num: 14

Candidate Starts for AbbyDaisy\_19:

(Start: 11 @15416 has 3 MA's), (Start: 14 @15422 has 42 MA's), (22, 15452), (28, 15500), (32, 15512), (34, 15524), (52, 15629), (60, 15680), (85, 15806), (87, 15818), (105, 15887), (121, 15959), (189, 16334), (204, 16394), (218, 16493),

Gene: Alatato\_17 Start: 13394, Stop: 14512, Start Num: 15

Candidate Starts for Alatato\_17:

(Start: 15 @13394 has 11 MA's), (37, 13508), (86, 13793), (87, 13796), (98, 13838), (110, 13892), (115, 13913), (119, 13925), (136, 14012), (152, 14117), (170, 14234), (176, 14270), (193, 14327), (194, 14333), (211, 14420), (222, 14498), (225, 14504),

Gene: Altostratus\_16 Start: 13849, Stop: 14961, Start Num: 18

Candidate Starts for Altostratus\_16:

(Start: 18 @13849 has 3 MA's), (24, 13888), (25, 13903), (39, 13963), (45, 13993), (49, 14020), (52, 14044), (54, 14059), (63, 14110), (85, 14227), (96, 14275), (97, 14278), (110, 14329), (130, 14416), (162, 14611), (175, 14701), (202, 14815), (204, 14824), (206, 14830), (215, 14905),

Gene: Aquarius\_16 Start: 12255, Stop: 13412, Start Num: 14

Candidate Starts for Aquarius\_16:

(Start: 12 @12252 has 12 MA's), (Start: 14 @12255 has 42 MA's), (21, 12282), (24, 12306), (28, 12333), (30, 12339), (32, 12345), (35, 12360), (37, 12375), (38, 12378), (40, 12381), (45, 12411), (53, 12474), (55, 12483), (56, 12492), (60, 12516), (66, 12549), (68, 12558), (69, 12561), (70, 12564), (71, 12573), (74, 12591), (77, 12600), (84, 12654), (86, 12666), (87, 12669), (96, 12702), (98, 12708), (109, 12753), (112, 12765), (115, 12780), (117, 12783), (118, 12789), (119, 12792), (120, 12807), (122,



12819), (128, 12858), (129, 12861), (132, 12873), (133, 12882), (136, 12897), (138, 12900), (142, 12924), (144, 12939), (146, 12966), (147, 12969), (156, 13026), (162, 13059), (167, 13095), (170, 13122), (177, 13164), (183, 13179), (184, 13182), (188, 13206), (192, 13218), (194, 13227), (196, 13233), (200, 13260), (204, 13275), (209, 13311), (213, 13353), (214, 13356), (217, 13368), (218, 13377), (220, 13389), (222, 13398),

Gene: ArV2\_17 Start: 13763, Stop: 14869, Start Num: 14

Candidate Starts for ArV2\_17:

(Start: 14 @13763 has 42 MA's), (27, 13835), (29, 13844), (30, 13847), (40, 13889), (45, 13919), (52, 13970), (55, 13991), (60, 14021), (76, 14093), (79, 14108), (85, 14147), (87, 14159), (96, 14192), (104, 14225), (110, 14246), (115, 14267), (119, 14279), (121, 14300), (122, 14306), (150, 14462), (167, 14564), (173, 14609), (176, 14624), (196, 14699), (212, 14807), (221, 14849), (224, 14858),

Gene: Attacne\_16 Start: 12235, Stop: 13392, Start Num: 14

Candidate Starts for Attacne\_16:

(Start: 14 @12235 has 42 MA's), (21, 12262), (24, 12286), (28, 12313), (30, 12319), (32, 12325), (35, 12340), (36, 12349), (37, 12355), (38, 12358), (40, 12361), (45, 12391), (53, 12454), (56, 12472), (60, 12496), (66, 12529), (68, 12538), (69, 12541), (70, 12544), (71, 12553), (74, 12571), (84, 12634), (86, 12646), (87, 12649), (96, 12682), (98, 12688), (112, 12745), (115, 12760), (117, 12763), (118, 12769), (119, 12772), (120, 12787), (122, 12799), (129, 12841), (132, 12853), (133, 12862), (136, 12877), (138, 12880), (142, 12904), (144, 12919), (146, 12946), (149, 12952), (156, 13006), (162, 13039), (167, 13075), (170, 13102), (177, 13144), (183, 13159), (184, 13162), (188, 13186), (192, 13198), (194, 13207), (196, 13213), (200, 13240), (204, 13255), (209, 13291), (213, 13333), (214, 13336), (218, 13357), (220, 13369), (222, 13378),

Gene: Bauer\_21 Start: 16040, Stop: 17158, Start Num: 15

Candidate Starts for Bauer\_21:

(Start: 15 @16040 has 11 MA's), (33, 16127), (48, 16214), (50, 16223), (52, 16247), (53, 16259), (55, 16268), (85, 16430), (86, 16439), (87, 16442), (108, 16526), (110, 16538), (119, 16571), (129, 16622), (134, 16652), (147, 16730), (170, 16880), (176, 16916), (177, 16922), (197, 16994), (199, 17003), (225, 17150),

Gene: BellaJr\_21 Start: 16838, Stop: 17956, Start Num: 15

Candidate Starts for BellaJr\_21:

(2, 16550), (3, 16559), (6, 16619), (8, 16685), (Start: 11 @16829 has 3 MA's), (Start: 12 @16832 has 12 MA's), (Start: 15 @16838 has 11 MA's), (Start: 19 @16847 has 1 MA's), (28, 16910), (33, 16925), (52, 17045), (55, 17066), (66, 17132), (71, 17156), (85, 17228), (86, 17237), (87, 17240), (98, 17282), (110, 17336), (115, 17357), (119, 17369), (121, 17390), (136, 17456), (170, 17678), (200, 17807), (209, 17855), (211, 17864), (215, 17903), (222, 17942),

Gene: Bimmel\_61 Start: 38728, Stop: 39987, Start Num: 15

Candidate Starts for Bimmel\_61:

(Start: 15 @38728 has 11 MA's), (21, 38746), (23, 38761), (24, 38770), (53, 38941), (100, 39187), (101, 39196), (137, 39403), (159, 39556), (179, 39622), (185, 39643), (207, 39679), (223, 39784), (230, 39808), (234, 39835), (237, 39874), (246, 39949), (249, 39982),

Gene: BlackSpider\_19 Start: 15678, Stop: 16802, Start Num: 12

Candidate Starts for BlackSpider\_19:

(2, 15396), (3, 15405), (6, 15465), (8, 15531), (Start: 11 @15675 has 3 MA's), (Start: 12 @15678 has 12 MA's), (Start: 15 @15684 has 11 MA's), (Start: 19 @15693 has 1 MA's), (28, 15756), (33, 15771), (52, 15891), (55, 15912), (66, 15978), (71, 16002), (85, 16074), (86, 16083), (87, 16086), (98, 16128), (110, 16182), (115, 16203), (119, 16215), (121, 16236), (136, 16302), (170, 16524), (200, 16653), (209, 16701), (211, 16710), (215, 16749), (222, 16788),

Gene: BrayBeast\_18 Start: 14080, Stop: 15198, Start Num: 15

Candidate Starts for BrayBeast\_18:

(Start: 12 @14074 has 12 MA's), (Start: 15 @14080 has 11 MA's), (Start: 19 @14089 has 1 MA's), (48, 14254), (52, 14287), (55, 14308), (85, 14470), (86, 14479), (98, 14524), (108, 14566), (110, 14578), (119, 14611), (193, 15013), (200, 15049), (215, 15145), (222, 15184), (225, 15190),

Gene: BruceLethal\_16 Start: 12244, Stop: 13401, Start Num: 14

Candidate Starts for BruceLethal\_16:

(Start: 14 @12244 has 42 MA's), (21, 12271), (24, 12295), (30, 12328), (32, 12334), (35, 12349), (37, 12364), (38, 12367), (40, 12370), (45, 12400), (53, 12463), (55, 12472), (60, 12505), (66, 12538), (68, 12547), (69, 12550), (70, 12553), (74, 12580), (84, 12643), (86, 12655), (87, 12658), (96, 12691), (98, 12697), (109, 12742), (112, 12754), (115, 12769), (117, 12772), (118, 12778), (119, 12781), (120, 12796), (122, 12808), (127, 12829), (129, 12850), (132, 12862), (133, 12871), (136, 12886), (138, 12889), (142, 12913), (144, 12928), (146, 12955), (156, 13015), (162, 13048), (167, 13084), (170, 13111), (172, 13123), (177, 13153), (183, 13168), (184, 13171), (188, 13195), (192, 13207), (194, 13216), (196, 13222), (204, 13264), (209, 13300), (218, 13366), (220, 13378), (222, 13387),

Gene: Cassini\_19 Start: 15921, Stop: 17039, Start Num: 15

Candidate Starts for Cassini\_19:

(Start: 15 @15921 has 11 MA's), (Start: 19 @15930 has 1 MA's), (28, 15993), (33, 16008), (52, 16128), (55, 16149), (66, 16215), (71, 16239), (85, 16311), (86, 16320), (87, 16323), (92, 16347), (98, 16365), (110, 16419), (115, 16440), (119, 16452), (121, 16473), (136, 16539), (146, 16608), (170, 16761), (187, 16842), (200, 16890), (209, 16938), (211, 16947), (215, 16986), (222, 17025),

Gene: CocoCinnamon\_22 Start: 15713, Stop: 16837, Start Num: 12

Candidate Starts for CocoCinnamon\_22:

(Start: 12 @15713 has 12 MA's), (Start: 15 @15719 has 11 MA's), (52, 15926), (61, 15986), (86, 16118), (108, 16205), (110, 16217), (119, 16250), (121, 16271), (147, 16409), (170, 16559), (171, 16562), (176, 16595), (193, 16652), (194, 16658), (197, 16673), (225, 16829),

Gene: Cota\_16 Start: 12250, Stop: 13407, Start Num: 14

Candidate Starts for Cota\_16:

(Start: 12 @12247 has 12 MA's), (Start: 14 @12250 has 42 MA's), (21, 12277), (24, 12301), (28, 12328), (30, 12334), (32, 12340), (35, 12355), (37, 12370), (38, 12373), (40, 12376), (45, 12406), (53, 12469), (56, 12487), (60, 12511), (66, 12544), (68, 12553), (70, 12559), (71, 12568), (74, 12586), (77, 12595), (84, 12649), (87, 12664), (98, 12703), (99, 12706), (109, 12748), (112, 12760), (115, 12775), (117, 12778), (118, 12784), (119, 12787), (120, 12802), (122, 12814), (126, 12832), (132, 12868), (133, 12877), (136, 12892), (138, 12895), (142, 12919), (144, 12934), (146, 12961), (147, 12964), (156, 13021), (162, 13054), (167, 13090), (170, 13117), (177, 13159), (183, 13174), (184, 13177), (188, 13201), (194, 13222), (196, 13228), (204, 13270), (209, 13306), (213, 13348), (218, 13372), (220, 13384), (222, 13393),

Gene: DillyDally\_17 Start: 14366, Stop: 15832, Start Num: 11

Candidate Starts for DillyDally\_17:

(Start: 11 @14366 has 3 MA's), (Start: 12 @14369 has 12 MA's), (21, 14396), (37, 14489), (46, 14528), (85, 14759), (91, 14786), (110, 14870), (115, 14891), (119, 14903), (131, 14981), (143, 15047), (149, 15083), (159, 15158), (162, 15170), (163, 15176), (207, 15419), (223, 15524), (231, 15575), (247, 15710), (248, 15731), (250, 15743), (251, 15752),

Gene: DrParker\_16 Start: 12276, Stop: 13433, Start Num: 14

Candidate Starts for DrParker\_16:

(Start: 12 @12273 has 12 MA's), (Start: 14 @12276 has 42 MA's), (21, 12303), (24, 12327), (28, 12354), (32, 12366), (35, 12381), (36, 12390), (37, 12396), (38, 12399), (40, 12402), (45, 12432), (53, 12495), (56, 12513), (60, 12537), (66, 12570), (68, 12579), (69, 12582), (70, 12585), (71, 12594), (74, 12612), (77, 12621), (84, 12675), (86, 12687), (87, 12690), (96, 12723), (98, 12729), (112, 12786), (115, 12801), (117, 12804), (118, 12810), (119, 12813), (120, 12828), (122, 12840), (126, 12858), (128, 12879), (133, 12903), (136, 12918), (138, 12921), (142, 12945), (144, 12960), (146, 12987), (147, 12990), (162, 13080), (167, 13116), (170, 13143), (177, 13185), (183, 13200), (184, 13203), (188, 13227), (192, 13239), (194, 13248), (196, 13254), (204, 13296), (209, 13332), (213, 13374), (214, 13377), (217, 13389), (218, 13398), (220, 13410), (222, 13419),

Gene: Elener\_20 Start: 16464, Stop: 17870, Start Num: 26

Candidate Starts for Elener\_20:

(1, 15846), (5, 16167), (7, 16203), (Start: 26 @16464 has 1 MA's), (30, 16482), (35, 16503), (51, 16602), (62, 16668), (89, 16821), (91, 16830), (148, 17175), (181, 17415), (186, 17442), (205, 17529), (207, 17544), (208, 17559), (229, 17673), (238, 17766), (245, 17826),

Gene: Enochoraptor\_16 Start: 12247, Stop: 13404, Start Num: 14

Candidate Starts for Enochoraptor\_16:

(Start: 12 @12244 has 12 MA's), (Start: 14 @12247 has 42 MA's), (21, 12274), (24, 12298), (28, 12325), (32, 12337), (35, 12352), (37, 12367), (38, 12370), (45, 12403), (53, 12466), (55, 12475), (60, 12508), (66, 12541), (68, 12550), (69, 12553), (70, 12556), (71, 12565), (74, 12583), (75, 12586), (84, 12646), (86, 12658), (87, 12661), (96, 12694), (98, 12700), (109, 12745), (112, 12757), (117, 12775), (118, 12781), (119, 12784), (120, 12799), (122, 12811), (128, 12850), (132, 12865), (133, 12874), (136, 12889), (138, 12892), (142, 12916), (146, 12958), (147, 12961), (149, 12964), (156, 13018), (162, 13051), (167, 13087), (170, 13114), (171, 13117), (177, 13156), (183, 13171), (184, 13174), (188, 13198), (192, 13210), (194, 13219), (196, 13225), (200, 13252), (204, 13267), (209, 13303), (213, 13345), (214, 13348), (217, 13360), (218, 13369), (220, 13381), (222, 13390),

Gene: Enoki\_16 Start: 12229, Stop: 13386, Start Num: 14

Candidate Starts for Enoki\_16:

(Start: 12 @12226 has 12 MA's), (Start: 14 @12229 has 42 MA's), (21, 12256), (24, 12280), (28, 12307), (30, 12313), (32, 12319), (35, 12334), (37, 12349), (38, 12352), (40, 12355), (45, 12385), (53, 12448), (56, 12466), (60, 12490), (66, 12523), (68, 12532), (70, 12538), (71, 12547), (74, 12565), (77, 12574), (87, 12643), (96, 12676), (98, 12682), (112, 12739), (115, 12754), (117, 12757), (118, 12763), (119, 12766), (120, 12781), (122, 12793), (128, 12832), (129, 12835), (132, 12847), (133, 12856), (136, 12871), (138, 12874), (142, 12898), (144, 12913), (146, 12940), (147, 12943), (156, 13000), (162, 13033), (167, 13069), (170, 13096), (171, 13099), (177, 13138), (183, 13153), (184, 13156), (188, 13180), (192, 13192), (194, 13201), (196, 13207), (209, 13285), (213, 13327), (217, 13342), (218, 13351), (220, 13363), (222, 13372),

Gene: Hum25\_19 Start: 13554, Stop: 15002, Start Num: 11

Candidate Starts for Hum25\_19:

(10, 13542), (Start: 11 @13554 has 3 MA's), (Start: 18 @13569 has 3 MA's), (21, 13584), (35, 13662), (37, 13677), (40, 13683), (41, 13689), (42, 13704), (46, 13716), (49, 13740), (61, 13824), (85, 13947), (91, 13974), (93, 13989), (108, 14046), (114, 14076), (119, 14091), (130, 14145), (131, 14151), (141, 14202), (143, 14217), (147, 14250), (158, 14316), (159, 14328), (171, 14415), (174, 14436), (178, 14457), (201, 14556), (210, 14610), (214, 14649), (215, 14652), (223, 14694), (240, 14820), (242, 14853), (248, 14901),

Gene: Ibantik\_81 Start: 42960, Stop: 44192, Start Num: 15

Candidate Starts for Ibantik\_81:

(Start: 15 @42960 has 11 MA's), (30, 43035), (31, 43038), (47, 43125), (52, 43161), (67, 43257), (81, 43329), (82, 43335), (83, 43338), (90, 43374), (95, 43404), (116, 43485), (131, 43578), (150, 43707),

(164, 43803), (180, 43830), (223, 43989), (227, 43998), (230, 44013), (232, 44031), (233, 44037), (236, 44061), (238, 44088), (246, 44154), (249, 44187),

Gene: JeanClaude\_18 Start: 13987, Stop: 15105, Start Num: 15

Candidate Starts for JeanClaude\_18:

(Start: 12 @13981 has 12 MA's), (Start: 15 @13987 has 11 MA's), (Start: 19 @13996 has 1 MA's), (48, 14161), (52, 14194), (55, 14215), (71, 14305), (85, 14377), (86, 14386), (98, 14431), (108, 14473), (110, 14485), (119, 14518), (193, 14920), (215, 15052), (222, 15091), (225, 15097),

Gene: Keiki\_16 Start: 12250, Stop: 13407, Start Num: 14

Candidate Starts for Keiki\_16:

(Start: 14 @12250 has 42 MA's), (21, 12277), (24, 12301), (30, 12334), (32, 12340), (35, 12355), (37, 12370), (38, 12373), (40, 12376), (45, 12406), (53, 12469), (55, 12478), (60, 12511), (66, 12544), (68, 12553), (69, 12556), (70, 12559), (71, 12568), (74, 12586), (75, 12589), (84, 12649), (86, 12661), (87, 12664), (98, 12703), (99, 12706), (109, 12748), (112, 12760), (115, 12775), (117, 12778), (118, 12784), (119, 12787), (120, 12802), (122, 12814), (127, 12835), (129, 12856), (132, 12868), (133, 12877), (136, 12892), (138, 12895), (142, 12919), (144, 12934), (146, 12961), (156, 13021), (162, 13054), (167, 13090), (170, 13117), (177, 13159), (183, 13174), (184, 13177), (188, 13201), (192, 13213), (196, 13228), (204, 13270), (209, 13306), (213, 13348), (214, 13351), (218, 13372), (220, 13384), (222, 13393),

Gene: Khuang\_16 Start: 13963, Stop: 15075, Start Num: 18

Candidate Starts for Khuang\_16:

(4, 13687), (17, 13960), (Start: 18 @13963 has 3 MA's), (25, 14017), (35, 14056), (39, 14077), (52, 14158), (54, 14173), (60, 14212), (85, 14341), (96, 14389), (97, 14392), (110, 14443), (124, 14512), (130, 14530), (147, 14635), (175, 14815), (185, 14857), (202, 14929), (206, 14944), (222, 15058),

Gene: Kromp\_19 Start: 17084, Stop: 18241, Start Num: 19

Candidate Starts for Kromp\_19:

(Start: 19 @17084 has 1 MA's), (43, 17225), (53, 17294), (86, 17492), (102, 17549), (110, 17588), (129, 17687), (160, 17888), (163, 17900), (198, 18083), (209, 18140), (214, 18185), (215, 18188),

Gene: Kubed\_16 Start: 12239, Stop: 13396, Start Num: 14

Candidate Starts for Kubed\_16:

(Start: 14 @12239 has 42 MA's), (21, 12266), (24, 12290), (28, 12317), (32, 12329), (35, 12344), (37, 12359), (38, 12362), (40, 12365), (45, 12395), (49, 12422), (53, 12458), (55, 12467), (60, 12500), (66, 12533), (68, 12542), (69, 12545), (70, 12548), (71, 12557), (84, 12638), (86, 12650), (87, 12653), (96, 12686), (98, 12692), (112, 12749), (115, 12764), (117, 12767), (118, 12773), (119, 12776), (120, 12791), (128, 12842), (129, 12845), (132, 12857), (133, 12866), (136, 12881), (138, 12884), (142, 12908), (144, 12923), (146, 12950), (149, 12956), (155, 13001), (162, 13043), (167, 13079), (169, 13085), (170, 13106), (171, 13109), (177, 13148), (183, 13163), (184, 13166), (187, 13187), (188, 13190), (192, 13202), (196, 13217), (200, 13244), (204, 13259), (209, 13295), (213, 13337), (214, 13340), (218, 13361), (220, 13373), (222, 13382),

Gene: Kumotta\_19 Start: 15048, Stop: 16172, Start Num: 12

Candidate Starts for Kumotta\_19:

(Start: 11 @15045 has 3 MA's), (Start: 12 @15048 has 12 MA's), (37, 15162), (46, 15201), (49, 15225), (54, 15264), (98, 15489), (101, 15501), (108, 15531), (110, 15543), (113, 15555), (115, 15564), (159, 15813), (167, 15861), (168, 15864),

Gene: Lauchelly\_16 Start: 12253, Stop: 13410, Start Num: 14

Candidate Starts for Lauchelly\_16:

(Start: 12 @12250 has 12 MA's), (Start: 14 @12253 has 42 MA's), (21, 12280), (24, 12304), (30, 12337), (32, 12343), (35, 12358), (37, 12373), (38, 12376), (40, 12379), (45, 12409), (53, 12472), (55, 12481), (56, 12490), (60, 12514), (66, 12547), (68, 12556), (69, 12559), (70, 12562), (71, 12571), (74, 12589), (75, 12592), (86, 12664), (87, 12667), (96, 12700), (98, 12706), (117, 12781), (118, 12787), (119, 12790), (120, 12805), (122, 12817), (128, 12856), (129, 12859), (132, 12871), (133, 12880), (136, 12895), (138, 12898), (142, 12922), (144, 12937), (146, 12964), (156, 13024), (162, 13057), (167, 13093), (170, 13120), (171, 13123), (177, 13162), (183, 13177), (184, 13180), (188, 13204), (192, 13216), (196, 13231), (204, 13273), (209, 13309), (213, 13351), (214, 13354), (217, 13366), (218, 13375), (220, 13387), (222, 13396),

Gene: Leviosa\_16 Start: 12267, Stop: 13424, Start Num: 14

Candidate Starts for Leviosa\_16:

(Start: 14 @12267 has 42 MA's), (21, 12294), (24, 12318), (30, 12351), (32, 12357), (35, 12372), (37, 12387), (38, 12390), (40, 12393), (45, 12423), (53, 12486), (60, 12528), (66, 12561), (68, 12570), (69, 12573), (70, 12576), (74, 12603), (75, 12606), (86, 12678), (87, 12681), (96, 12714), (98, 12720), (109, 12765), (112, 12777), (117, 12795), (118, 12801), (119, 12804), (120, 12819), (122, 12831), (128, 12870), (129, 12873), (132, 12885), (133, 12894), (136, 12909), (138, 12912), (142, 12936), (144, 12951), (146, 12978), (147, 12981), (156, 13038), (162, 13071), (167, 13107), (170, 13134), (171, 13137), (177, 13176), (183, 13191), (184, 13194), (188, 13218), (192, 13230), (196, 13245), (200, 13272), (204, 13287), (209, 13323), (213, 13365), (214, 13368), (218, 13389), (220, 13401),

Gene: LilBandit\_16 Start: 12248, Stop: 13408, Start Num: 12

Candidate Starts for LilBandit\_16:

(Start: 12 @12248 has 12 MA's), (Start: 14 @12251 has 42 MA's), (21, 12278), (24, 12302), (28, 12329), (30, 12335), (32, 12341), (37, 12371), (38, 12374), (40, 12377), (45, 12407), (53, 12470), (55, 12479), (56, 12488), (60, 12512), (66, 12545), (68, 12554), (69, 12557), (70, 12560), (71, 12569), (74, 12587), (77, 12596), (84, 12650), (86, 12662), (87, 12665), (96, 12698), (98, 12704), (109, 12749), (112, 12761), (115, 12776), (117, 12779), (118, 12785), (119, 12788), (120, 12803), (122, 12815), (128, 12854), (129, 12857), (132, 12869), (133, 12878), (136, 12893), (138, 12896), (142, 12920), (144, 12935), (146, 12962), (147, 12965), (162, 13055), (167, 13091), (170, 13118), (177, 13160), (183, 13175), (184, 13178), (188, 13202), (192, 13214), (194, 13223), (196, 13229), (204, 13271), (213, 13349), (217, 13364), (218, 13373), (220, 13385), (222, 13394),

Gene: MEAK\_16 Start: 12237, Stop: 13394, Start Num: 14

Candidate Starts for MEAK\_16:

(Start: 12 @12234 has 12 MA's), (Start: 14 @12237 has 42 MA's), (21, 12264), (24, 12288), (28, 12315), (30, 12321), (32, 12327), (35, 12342), (37, 12357), (38, 12360), (40, 12363), (45, 12393), (53, 12456), (55, 12465), (60, 12498), (66, 12531), (68, 12540), (70, 12546), (71, 12555), (74, 12573), (75, 12576), (77, 12582), (84, 12636), (86, 12648), (87, 12651), (96, 12684), (98, 12690), (112, 12747), (115, 12762), (117, 12765), (118, 12771), (119, 12774), (120, 12789), (122, 12801), (127, 12822), (128, 12840), (129, 12843), (132, 12855), (133, 12864), (136, 12879), (138, 12882), (142, 12906), (144, 12921), (146, 12948), (147, 12951), (156, 13008), (162, 13041), (167, 13077), (170, 13104), (177, 13146), (183, 13161), (184, 13164), (188, 13188), (192, 13200), (194, 13209), (196, 13215), (204, 13257), (209, 13293), (214, 13338), (218, 13359), (222, 13380),

Gene: Maja\_18 Start: 14689, Stop: 15813, Start Num: 12

Candidate Starts for Maja\_18:

(Start: 11 @14686 has 3 MA's), (Start: 12 @14689 has 12 MA's), (Start: 15 @14695 has 11 MA's), (52, 14902), (61, 14962), (86, 15094), (92, 15121), (108, 15181), (110, 15193), (119, 15226), (121, 15247), (147, 15385), (170, 15535), (193, 15628), (194, 15634), (197, 15649), (225, 15805),

Gene: MargaretKali\_19 Start: 14683, Stop: 15807, Start Num: 12

Candidate Starts for MargaretKali\_19:

(Start: 11 @14680 has 3 MA's), (Start: 12 @14683 has 12 MA's), (37, 14797), (46, 14836), (49, 14860), (54, 14899), (98, 15124), (101, 15136), (108, 15166), (110, 15178), (113, 15190), (115, 15199), (159, 15448), (167, 15496), (168, 15499),

Gene: Merpity\_20 Start: 13774, Stop: 14892, Start Num: 15

Candidate Starts for Merpity\_20:

(Start: 15 @13774 has 11 MA's), (30, 13852), (33, 13861), (52, 13981), (53, 13993), (55, 14002), (71, 14092), (85, 14164), (86, 14173), (87, 14176), (98, 14218), (110, 14272), (119, 14305), (129, 14356), (157, 14524), (170, 14614), (187, 14695), (200, 14743), (209, 14791), (211, 14800), (215, 14839), (222, 14878),

Gene: Moyashi\_16 Start: 12273, Stop: 13430, Start Num: 14

Candidate Starts for Moyashi\_16:

(Start: 12 @12270 has 12 MA's), (Start: 14 @12273 has 42 MA's), (21, 12300), (24, 12324), (28, 12351), (32, 12363), (35, 12378), (36, 12387), (37, 12393), (38, 12396), (40, 12399), (45, 12429), (53, 12492), (56, 12510), (60, 12534), (66, 12567), (68, 12576), (70, 12582), (71, 12591), (77, 12618), (87, 12687), (98, 12726), (99, 12729), (112, 12783), (115, 12798), (117, 12801), (118, 12807), (119, 12810), (120, 12825), (122, 12837), (126, 12855), (132, 12891), (133, 12900), (136, 12915), (138, 12918), (142, 12942), (144, 12957), (146, 12984), (149, 12990), (156, 13044), (162, 13077), (167, 13113), (170, 13140), (171, 13143), (177, 13182), (183, 13197), (184, 13200), (188, 13224), (192, 13236), (194, 13245), (196, 13251), (204, 13293), (209, 13329), (214, 13374), (217, 13386), (218, 13395), (220, 13407), (222, 13416), (226, 13425),

Gene: MrAK\_16 Start: 12284, Stop: 13441, Start Num: 14

Candidate Starts for MrAK\_16:

(Start: 12 @12281 has 12 MA's), (Start: 14 @12284 has 42 MA's), (21, 12311), (24, 12335), (28, 12362), (30, 12368), (32, 12374), (35, 12389), (36, 12398), (37, 12404), (38, 12407), (40, 12410), (45, 12440), (53, 12503), (56, 12521), (60, 12545), (66, 12578), (68, 12587), (70, 12593), (71, 12602), (77, 12629), (87, 12698), (98, 12737), (99, 12740), (112, 12794), (115, 12809), (117, 12812), (118, 12818), (119, 12821), (120, 12836), (122, 12848), (126, 12866), (132, 12902), (133, 12911), (136, 12926), (138, 12929), (142, 12953), (144, 12968), (146, 12995), (149, 13001), (156, 13055), (162, 13088), (167, 13124), (170, 13151), (171, 13154), (177, 13193), (183, 13208), (184, 13211), (188, 13235), (192, 13247), (194, 13256), (196, 13262), (204, 13304), (209, 13340), (214, 13385), (217, 13397), (218, 13406), (220, 13418), (222, 13427),

Gene: MrSmee\_18 Start: 13774, Stop: 14892, Start Num: 15

Candidate Starts for MrSmee\_18:

(Start: 15 @13774 has 11 MA's), (30, 13852), (33, 13861), (52, 13981), (53, 13993), (55, 14002), (71, 14092), (85, 14164), (86, 14173), (87, 14176), (98, 14218), (110, 14272), (119, 14305), (129, 14356), (157, 14524), (170, 14614), (187, 14695), (200, 14743), (209, 14791), (211, 14800), (215, 14839), (222, 14878),

Gene: Neroxid\_18 Start: 13041, Stop: 14480, Start Num: 12

Candidate Starts for Neroxid\_18:

(Start: 12 @13041 has 12 MA's), (Start: 20 @13056 has 1 MA's), (21, 13062), (28, 13113), (30, 13119), (37, 13155), (42, 13182), (45, 13191), (46, 13194), (47, 13212), (49, 13218), (59, 13284), (61, 13302), (105, 13512), (114, 13554), (122, 13596), (131, 13629), (139, 13665), (141, 13680), (143, 13695), (149, 13731), (159, 13806), (166, 13860), (167, 13863), (171, 13893), (182, 13947), (186, 13971), (190, 13983), (210, 14088), (214, 14127), (216, 14139), (219, 14151), (223, 14172), (233, 14235), (241, 14319), (247, 14358),

Gene: Ouroboros\_16 Start: 12239, Stop: 13396, Start Num: 14

Candidate Starts for Ouroboros\_16:

(Start: 14 @12239 has 42 MA's), (21, 12266), (24, 12290), (28, 12317), (30, 12323), (32, 12329), (35, 12344), (37, 12359), (38, 12362), (40, 12365), (45, 12395), (53, 12458), (55, 12467), (60, 12500), (66, 12533), (68, 12542), (69, 12545), (70, 12548), (71, 12557), (74, 12575), (75, 12578), (84, 12638), (86, 12650), (87, 12653), (96, 12686), (98, 12692), (99, 12695), (109, 12737), (112, 12749), (115, 12764), (117, 12767), (118, 12773), (119, 12776), (120, 12791), (122, 12803), (127, 12824), (129, 12845), (132, 12857), (133, 12866), (136, 12881), (138, 12884), (142, 12908), (144, 12923), (146, 12950), (156, 13010), (162, 13043), (167, 13079), (170, 13106), (177, 13148), (183, 13163), (188, 13190), (192, 13202), (196, 13217), (200, 13244), (204, 13259), (209, 13295), (213, 13337), (218, 13361), (220, 13373),

Gene: P1.1\_16 Start: 12239, Stop: 13399, Start Num: 12

Candidate Starts for P1.1\_16:

(Start: 12 @12239 has 12 MA's), (Start: 14 @12242 has 42 MA's), (21, 12269), (24, 12293), (28, 12320), (30, 12326), (32, 12332), (35, 12347), (37, 12362), (38, 12365), (40, 12368), (45, 12398), (53, 12461), (56, 12479), (60, 12503), (66, 12536), (68, 12545), (70, 12551), (71, 12560), (74, 12578), (77, 12587), (84, 12641), (86, 12653), (87, 12656), (96, 12689), (98, 12695), (109, 12740), (112, 12752), (115, 12767), (117, 12770), (118, 12776), (119, 12779), (120, 12794), (122, 12806), (128, 12845), (129, 12848), (132, 12860), (133, 12869), (136, 12884), (138, 12887), (142, 12911), (144, 12926), (146, 12953), (147, 12956), (156, 13013), (162, 13046), (167, 13082), (170, 13109), (171, 13112), (177, 13151), (183, 13166), (184, 13169), (188, 13193), (194, 13214), (196, 13220), (204, 13262), (209, 13298), (214, 13343), (217, 13355), (218, 13364), (222, 13385),

Gene: P100.1\_16 Start: 12249, Stop: 13406, Start Num: 14

Candidate Starts for P100.1\_16:

(Start: 12 @12246 has 12 MA's), (Start: 14 @12249 has 42 MA's), (21, 12276), (24, 12300), (28, 12327), (32, 12339), (35, 12354), (36, 12363), (37, 12369), (38, 12372), (40, 12375), (44, 12402), (45, 12405), (53, 12468), (56, 12486), (60, 12510), (66, 12543), (68, 12552), (69, 12555), (70, 12558), (71, 12567), (74, 12585), (77, 12594), (86, 12660), (87, 12663), (96, 12696), (98, 12702), (112, 12759), (117, 12777), (118, 12783), (119, 12786), (120, 12801), (122, 12813), (126, 12831), (128, 12852), (133, 12876), (136, 12891), (138, 12894), (142, 12918), (144, 12933), (146, 12960), (147, 12963), (156, 13020), (162, 13053), (167, 13089), (170, 13116), (177, 13158), (183, 13173), (184, 13176), (188, 13200), (192, 13212), (194, 13221), (196, 13227), (204, 13269), (209, 13305), (213, 13347), (214, 13350), (217, 13362), (218, 13371), (220, 13383), (222, 13392),

Gene: P100A\_16 Start: 12249, Stop: 13406, Start Num: 14

Candidate Starts for P100A\_16:

(Start: 14 @12249 has 42 MA's), (21, 12276), (24, 12300), (30, 12333), (32, 12339), (35, 12354), (37, 12369), (38, 12372), (40, 12375), (45, 12405), (48, 12429), (53, 12468), (55, 12477), (60, 12510), (66, 12543), (68, 12552), (70, 12558), (71, 12567), (74, 12585), (75, 12588), (84, 12648), (86, 12660), (87, 12663), (96, 12696), (98, 12702), (99, 12705), (109, 12747), (112, 12759), (117, 12777), (120, 12801), (122, 12813), (129, 12855), (133, 12876), (136, 12891), (138, 12894), (142, 12918), (144, 12933), (146, 12960), (156, 13020), (162, 13053), (167, 13089), (170, 13116), (171, 13119), (177, 13158), (183, 13173), (184, 13176), (188, 13200), (196, 13227), (200, 13254), (204, 13269), (209, 13305), (214, 13350), (218, 13371), (220, 13383), (222, 13392),

Gene: P100D\_16 Start: 12245, Stop: 13402, Start Num: 14

Candidate Starts for P100D\_16:

(Start: 12 @12242 has 12 MA's), (Start: 14 @12245 has 42 MA's), (21, 12272), (24, 12296), (28, 12323), (30, 12329), (32, 12335), (35, 12350), (37, 12365), (38, 12368), (40, 12371), (45, 12401), (53, 12464), (56, 12482), (60, 12506), (66, 12539), (68, 12548), (70, 12554), (71, 12563), (74, 12581), (77, 12590), (84, 12644), (86, 12656), (87, 12659), (96, 12692), (98, 12698), (109, 12743), (112, 12755), (117, 12773), (118, 12779), (119, 12782), (120, 12797), (122, 12809), (127, 12830), (128, 12848), (129, 12851), (132, 12863), (133, 12872), (136, 12887), (138, 12890), (142, 12914), (144, 12929),

(146, 12956), (147, 12959), (156, 13016), (162, 13049), (167, 13085), (170, 13112), (177, 13154), (183, 13169), (184, 13172), (188, 13196), (192, 13208), (194, 13217), (196, 13223), (204, 13265), (209, 13301), (213, 13343), (218, 13367), (220, 13379), (222, 13388),

Gene: P101A\_16 Start: 12257, Stop: 13414, Start Num: 14

Candidate Starts for P101A\_16:

(Start: 12 @12254 has 12 MA's), (Start: 14 @12257 has 42 MA's), (21, 12284), (24, 12308), (28, 12335), (30, 12341), (32, 12347), (35, 12362), (37, 12377), (38, 12380), (40, 12383), (45, 12413), (53, 12476), (56, 12494), (60, 12518), (66, 12551), (68, 12560), (69, 12563), (70, 12566), (71, 12575), (74, 12593), (77, 12602), (86, 12668), (87, 12671), (96, 12704), (98, 12710), (112, 12767), (115, 12782), (117, 12785), (118, 12791), (119, 12794), (120, 12809), (122, 12821), (126, 12839), (128, 12860), (133, 12884), (136, 12899), (138, 12902), (142, 12926), (144, 12941), (146, 12968), (147, 12971), (162, 13061), (167, 13097), (170, 13124), (177, 13166), (183, 13181), (184, 13184), (188, 13208), (192, 13220), (194, 13229), (196, 13235), (204, 13277), (209, 13313), (213, 13355), (214, 13358), (217, 13370), (218, 13379), (220, 13391), (222, 13400),

Gene: P104A\_16 Start: 12234, Stop: 13391, Start Num: 14

Candidate Starts for P104A\_16:

(Start: 14 @12234 has 42 MA's), (21, 12261), (24, 12285), (30, 12318), (32, 12324), (35, 12339), (37, 12354), (38, 12357), (40, 12360), (45, 12390), (53, 12453), (56, 12471), (60, 12495), (66, 12528), (68, 12537), (70, 12543), (71, 12552), (74, 12570), (77, 12579), (86, 12645), (87, 12648), (96, 12681), (98, 12687), (112, 12744), (115, 12759), (117, 12762), (118, 12768), (119, 12771), (120, 12786), (122, 12798), (128, 12837), (129, 12840), (132, 12852), (133, 12861), (136, 12876), (138, 12879), (142, 12903), (144, 12918), (146, 12945), (147, 12948), (156, 13005), (162, 13038), (167, 13074), (170, 13101), (171, 13104), (177, 13143), (183, 13158), (184, 13161), (188, 13185), (196, 13212), (200, 13239), (204, 13254), (209, 13290), (213, 13332), (218, 13356), (220, 13368), (222, 13377),

Gene: P104B\_16 Start: 12251, Stop: 13408, Start Num: 14

Candidate Starts for P104B\_16:

(Start: 12 @12248 has 12 MA's), (Start: 14 @12251 has 42 MA's), (21, 12278), (24, 12302), (28, 12329), (30, 12335), (32, 12341), (35, 12356), (37, 12371), (38, 12374), (40, 12377), (45, 12407), (53, 12470), (55, 12479), (56, 12488), (60, 12512), (66, 12545), (68, 12554), (70, 12560), (71, 12569), (74, 12587), (77, 12596), (86, 12662), (87, 12665), (96, 12698), (98, 12704), (109, 12749), (115, 12776), (117, 12779), (118, 12785), (119, 12788), (120, 12803), (122, 12815), (128, 12854), (132, 12869), (133, 12878), (136, 12893), (138, 12896), (142, 12920), (144, 12935), (146, 12962), (147, 12965), (156, 13022), (162, 13055), (170, 13118), (177, 13160), (183, 13175), (184, 13178), (188, 13202), (192, 13214), (194, 13223), (196, 13229), (200, 13256), (204, 13271), (209, 13307), (214, 13352), (218, 13373), (220, 13385), (222, 13394),

Gene: P105\_16 Start: 12154, Stop: 13311, Start Num: 14

Candidate Starts for P105\_16:

(Start: 12 @12151 has 12 MA's), (Start: 14 @12154 has 42 MA's), (21, 12181), (24, 12205), (28, 12232), (30, 12238), (32, 12244), (35, 12259), (37, 12274), (38, 12277), (40, 12280), (45, 12310), (53, 12373), (56, 12391), (60, 12415), (66, 12448), (68, 12457), (70, 12463), (71, 12472), (77, 12499), (87, 12568), (98, 12607), (99, 12610), (112, 12664), (115, 12679), (117, 12682), (118, 12688), (119, 12691), (120, 12706), (122, 12718), (126, 12736), (132, 12772), (133, 12781), (136, 12796), (138, 12799), (142, 12823), (144, 12838), (146, 12865), (149, 12871), (156, 12925), (162, 12958), (167, 12994), (170, 13021), (171, 13024), (177, 13063), (183, 13078), (184, 13081), (188, 13105), (192, 13117), (194, 13126), (196, 13132), (209, 13210), (214, 13255), (217, 13267), (218, 13276), (220, 13288), (222, 13297),

Gene: P106A\_16 Start: 12279, Stop: 13436, Start Num: 14

Candidate Starts for P106A\_16:





(128, 12882), (132, 12897), (133, 12906), (136, 12921), (138, 12924), (142, 12948), (144, 12963), (146, 12990), (147, 12993), (162, 13083), (167, 13119), (170, 13146), (177, 13188), (183, 13203), (184, 13206), (188, 13230), (194, 13251), (196, 13257), (200, 13284), (204, 13299), (209, 13335), (214, 13380), (217, 13392), (218, 13401), (220, 13413), (222, 13422),

Gene: P107A\_16 Start: 12255, Stop: 13412, Start Num: 14

Candidate Starts for P107A\_16:

(Start: 14 @12255 has 42 MA's), (21, 12282), (24, 12306), (28, 12333), (30, 12339), (32, 12345), (35, 12360), (37, 12375), (38, 12378), (40, 12381), (45, 12411), (53, 12474), (55, 12483), (56, 12492), (60, 12516), (66, 12549), (68, 12558), (69, 12561), (70, 12564), (71, 12573), (74, 12591), (75, 12594), (86, 12666), (87, 12669), (96, 12702), (98, 12708), (112, 12765), (117, 12783), (118, 12789), (119, 12792), (120, 12807), (122, 12819), (127, 12840), (129, 12861), (132, 12873), (133, 12882), (136, 12897), (138, 12900), (142, 12924), (144, 12939), (146, 12966), (147, 12969), (156, 13026), (162, 13059), (167, 13095), (170, 13122), (171, 13125), (177, 13164), (183, 13179), (184, 13182), (188, 13206), (192, 13218), (196, 13233), (200, 13260), (204, 13275), (209, 13311), (214, 13356), (218, 13377), (220, 13389), (222, 13398),

Gene: P107C\_16 Start: 12232, Stop: 13389, Start Num: 14

Candidate Starts for P107C\_16:

(Start: 12 @12229 has 12 MA's), (Start: 14 @12232 has 42 MA's), (21, 12259), (24, 12283), (28, 12310), (30, 12316), (32, 12322), (35, 12337), (37, 12352), (38, 12355), (40, 12358), (45, 12388), (53, 12451), (60, 12493), (66, 12526), (68, 12535), (70, 12541), (71, 12550), (74, 12568), (75, 12571), (86, 12643), (87, 12646), (96, 12679), (98, 12685), (109, 12730), (112, 12742), (115, 12757), (118, 12766), (119, 12769), (120, 12784), (122, 12796), (129, 12838), (132, 12850), (133, 12859), (136, 12874), (138, 12877), (142, 12901), (144, 12916), (146, 12943), (147, 12946), (156, 13003), (162, 13036), (167, 13072), (170, 13099), (177, 13141), (183, 13156), (184, 13159), (188, 13183), (192, 13195), (194, 13204), (196, 13210), (204, 13252), (209, 13288), (214, 13333), (217, 13345), (218, 13354), (220, 13366), (222, 13375),

Gene: P108C\_16 Start: 12240, Stop: 13397, Start Num: 14

Candidate Starts for P108C\_16:

(Start: 12 @12237 has 12 MA's), (Start: 14 @12240 has 42 MA's), (21, 12267), (24, 12291), (30, 12324), (32, 12330), (35, 12345), (37, 12360), (38, 12363), (40, 12366), (45, 12396), (53, 12459), (56, 12477), (60, 12501), (66, 12534), (68, 12543), (69, 12546), (70, 12549), (71, 12558), (74, 12576), (77, 12585), (84, 12639), (86, 12651), (87, 12654), (96, 12687), (98, 12693), (112, 12750), (115, 12765), (117, 12768), (118, 12774), (120, 12792), (122, 12804), (126, 12822), (128, 12843), (132, 12858), (133, 12867), (136, 12882), (138, 12885), (142, 12909), (144, 12924), (146, 12951), (147, 12954), (162, 13044), (167, 13080), (170, 13107), (177, 13149), (183, 13164), (184, 13167), (188, 13191), (192, 13203), (196, 13218), (204, 13260), (209, 13296), (213, 13338), (214, 13341), (217, 13353), (218, 13362), (220, 13374), (222, 13383),

Gene: P14.4\_16 Start: 12243, Stop: 13403, Start Num: 12

Candidate Starts for P14.4\_16:

(Start: 12 @12243 has 12 MA's), (Start: 14 @12246 has 42 MA's), (21, 12273), (24, 12297), (28, 12324), (30, 12330), (32, 12336), (35, 12351), (37, 12366), (38, 12369), (40, 12372), (45, 12402), (53, 12465), (56, 12483), (60, 12507), (66, 12540), (68, 12549), (69, 12552), (70, 12555), (71, 12564), (74, 12582), (77, 12591), (84, 12645), (86, 12657), (87, 12660), (96, 12693), (98, 12699), (109, 12744), (112, 12756), (115, 12771), (117, 12774), (118, 12780), (119, 12783), (120, 12798), (122, 12810), (128, 12849), (129, 12852), (132, 12864), (133, 12873), (136, 12888), (138, 12891), (142, 12915), (144, 12930), (146, 12957), (147, 12960), (156, 13017), (167, 13086), (170, 13113), (171, 13116), (177, 13155), (183, 13170), (184, 13173), (188, 13197), (194, 13218), (196, 13224), (204, 13266), (209, 13302), (213, 13344), (217, 13359), (218, 13368), (220, 13380), (222, 13389),

Gene: P9.1\_16 Start: 12238, Stop: 13398, Start Num: 12

Candidate Starts for P9.1\_16:

(Start: 12 @12238 has 12 MA's), (Start: 14 @12241 has 42 MA's), (21, 12268), (24, 12292), (28, 12319), (32, 12331), (35, 12346), (36, 12355), (37, 12361), (38, 12364), (40, 12367), (45, 12397), (53, 12460), (56, 12478), (60, 12502), (66, 12535), (68, 12544), (70, 12550), (71, 12559), (74, 12577), (77, 12586), (86, 12652), (87, 12655), (88, 12658), (96, 12688), (98, 12694), (109, 12739), (112, 12751), (115, 12766), (117, 12769), (118, 12775), (119, 12778), (120, 12793), (122, 12805), (128, 12844), (132, 12859), (133, 12868), (136, 12883), (138, 12886), (142, 12910), (144, 12925), (146, 12952), (147, 12955), (162, 13045), (167, 13081), (170, 13108), (171, 13111), (177, 13150), (183, 13165), (184, 13168), (188, 13192), (196, 13219), (204, 13261), (209, 13297), (213, 13339), (217, 13354), (218, 13363), (220, 13375), (222, 13384),

Gene: PA6\_16 Start: 12270, Stop: 13427, Start Num: 14

Candidate Starts for PA6\_16:

(Start: 12 @12267 has 12 MA's), (Start: 14 @12270 has 42 MA's), (21, 12297), (24, 12321), (28, 12348), (30, 12354), (32, 12360), (35, 12375), (36, 12384), (37, 12390), (38, 12393), (40, 12396), (45, 12426), (53, 12489), (55, 12498), (56, 12507), (60, 12531), (66, 12564), (68, 12573), (69, 12576), (70, 12579), (71, 12588), (74, 12606), (77, 12615), (86, 12681), (87, 12684), (96, 12717), (98, 12723), (109, 12768), (112, 12780), (115, 12795), (117, 12798), (118, 12804), (119, 12807), (120, 12822), (122, 12834), (128, 12873), (129, 12876), (132, 12888), (133, 12897), (136, 12912), (138, 12915), (142, 12939), (144, 12954), (146, 12981), (147, 12984), (156, 13041), (162, 13074), (167, 13110), (170, 13137), (171, 13140), (177, 13179), (183, 13194), (184, 13197), (188, 13221), (194, 13242), (196, 13248), (200, 13275), (204, 13290), (209, 13326), (214, 13371), (217, 13383), (218, 13392), (220, 13404), (222, 13413),

Gene: PAD20\_16 Start: 12238, Stop: 13395, Start Num: 14

Candidate Starts for PAD20\_16:

(Start: 12 @12235 has 12 MA's), (Start: 14 @12238 has 42 MA's), (21, 12265), (24, 12289), (28, 12316), (30, 12322), (32, 12328), (35, 12343), (37, 12358), (38, 12361), (40, 12364), (45, 12394), (53, 12457), (56, 12475), (60, 12499), (66, 12532), (68, 12541), (69, 12544), (70, 12547), (71, 12556), (74, 12574), (77, 12583), (86, 12649), (96, 12685), (98, 12691), (109, 12736), (112, 12748), (115, 12763), (117, 12766), (118, 12772), (119, 12775), (120, 12790), (122, 12802), (128, 12841), (132, 12856), (133, 12865), (136, 12880), (138, 12883), (142, 12907), (144, 12922), (146, 12949), (147, 12952), (156, 13009), (162, 13042), (167, 13078), (170, 13105), (177, 13147), (183, 13162), (184, 13165), (188, 13189), (192, 13201), (194, 13210), (196, 13216), (204, 13258), (209, 13294), (214, 13339), (217, 13351), (218, 13360), (220, 13372), (222, 13381),

Gene: PAS50\_16 Start: 12247, Stop: 13404, Start Num: 14

Candidate Starts for PAS50\_16:

(Start: 12 @12244 has 12 MA's), (Start: 14 @12247 has 42 MA's), (21, 12274), (24, 12298), (28, 12325), (30, 12331), (32, 12337), (35, 12352), (37, 12367), (38, 12370), (40, 12373), (45, 12403), (53, 12466), (56, 12484), (60, 12508), (66, 12541), (68, 12550), (69, 12553), (70, 12556), (71, 12565), (74, 12583), (77, 12592), (86, 12658), (87, 12661), (98, 12700), (112, 12757), (115, 12772), (117, 12775), (118, 12781), (119, 12784), (120, 12799), (122, 12811), (126, 12829), (128, 12850), (133, 12874), (136, 12889), (138, 12892), (142, 12916), (144, 12931), (146, 12958), (147, 12961), (162, 13051), (167, 13087), (170, 13114), (177, 13156), (183, 13171), (184, 13174), (188, 13198), (192, 13210), (194, 13219), (196, 13225), (204, 13267), (209, 13303), (213, 13345), (214, 13348), (218, 13369), (220, 13381), (222, 13390),

Gene: PHL010M04\_16 Start: 12238, Stop: 13398, Start Num: 12

Candidate Starts for PHL010M04\_16:

(Start: 12 @12238 has 12 MA's), (Start: 14 @12241 has 42 MA's), (21, 12268), (24, 12292), (30, 12325), (32, 12331), (35, 12346), (37, 12361), (38, 12364), (40, 12367), (45, 12397), (53, 12460), (55,

12469), (56, 12478), (60, 12502), (66, 12535), (68, 12544), (69, 12547), (70, 12550), (71, 12559), (74, 12577), (75, 12580), (86, 12652), (87, 12655), (98, 12694), (109, 12739), (112, 12751), (115, 12766), (117, 12769), (118, 12775), (119, 12778), (120, 12793), (122, 12805), (127, 12826), (129, 12847), (132, 12859), (133, 12868), (136, 12883), (138, 12886), (142, 12910), (144, 12925), (146, 12952), (156, 13012), (162, 13045), (167, 13081), (170, 13108), (171, 13111), (177, 13150), (183, 13165), (184, 13168), (188, 13192), (192, 13204), (194, 13213), (196, 13219), (204, 13261), (209, 13297), (214, 13342), (217, 13354), (218, 13363), (220, 13375), (222, 13384),

Gene: PHL037M02\_16 Start: 12249, Stop: 13406, Start Num: 14

Candidate Starts for PHL037M02\_16:

(Start: 14 @12249 has 42 MA's), (21, 12276), (24, 12300), (30, 12333), (32, 12339), (35, 12354), (37, 12369), (38, 12372), (40, 12375), (45, 12405), (53, 12468), (55, 12477), (60, 12510), (66, 12543), (68, 12552), (69, 12555), (70, 12558), (74, 12585), (75, 12588), (86, 12660), (87, 12663), (96, 12696), (98, 12702), (109, 12747), (112, 12759), (115, 12774), (117, 12777), (120, 12801), (122, 12813), (129, 12855), (133, 12876), (136, 12891), (138, 12894), (142, 12918), (144, 12933), (146, 12960), (156, 13020), (162, 13053), (167, 13089), (170, 13116), (171, 13119), (177, 13158), (183, 13173), (184, 13176), (188, 13200), (192, 13212), (194, 13221), (196, 13227), (204, 13269), (209, 13305), (213, 13347), (214, 13350), (217, 13362), (218, 13371), (220, 13383), (222, 13392),

Gene: PHL060L00\_16 Start: 12254, Stop: 13414, Start Num: 12

Candidate Starts for PHL060L00\_16:

(Start: 12 @12254 has 12 MA's), (Start: 14 @12257 has 42 MA's), (21, 12284), (24, 12308), (28, 12335), (30, 12341), (32, 12347), (35, 12362), (36, 12371), (37, 12377), (38, 12380), (40, 12383), (44, 12410), (45, 12413), (53, 12476), (56, 12494), (60, 12518), (66, 12551), (68, 12560), (69, 12563), (70, 12566), (71, 12575), (74, 12593), (77, 12602), (86, 12668), (87, 12671), (96, 12704), (98, 12710), (109, 12755), (112, 12767), (117, 12785), (118, 12791), (119, 12794), (120, 12809), (122, 12821), (128, 12860), (129, 12863), (132, 12875), (133, 12884), (136, 12899), (138, 12902), (142, 12926), (144, 12941), (146, 12968), (147, 12971), (156, 13028), (162, 13061), (167, 13097), (170, 13124), (171, 13127), (172, 13136), (177, 13166), (183, 13181), (184, 13184), (188, 13208), (192, 13220), (194, 13229), (204, 13277), (209, 13313), (213, 13355), (214, 13358), (217, 13370), (218, 13379), (220, 13391), (222, 13400),

Gene: PHL067M10\_16 Start: 12215, Stop: 13375, Start Num: 12

Candidate Starts for PHL067M10\_16:

(Start: 12 @12215 has 12 MA's), (Start: 14 @12218 has 42 MA's), (21, 12245), (24, 12269), (28, 12296), (32, 12308), (35, 12323), (37, 12338), (38, 12341), (40, 12344), (45, 12374), (53, 12437), (56, 12455), (60, 12479), (66, 12512), (68, 12521), (69, 12524), (70, 12527), (71, 12536), (74, 12554), (75, 12557), (77, 12563), (86, 12629), (87, 12632), (96, 12665), (98, 12671), (112, 12728), (115, 12743), (117, 12746), (118, 12752), (119, 12755), (120, 12770), (122, 12782), (128, 12821), (132, 12836), (133, 12845), (136, 12860), (138, 12863), (142, 12887), (144, 12902), (146, 12929), (147, 12932), (162, 13022), (167, 13058), (170, 13085), (171, 13088), (177, 13127), (183, 13142), (184, 13145), (188, 13169), (192, 13181), (194, 13190), (196, 13196), (204, 13238), (209, 13274), (213, 13316), (214, 13319), (217, 13331), (218, 13340), (220, 13352), (222, 13361),

Gene: PHL071N05\_16 Start: 12243, Stop: 13403, Start Num: 12

Candidate Starts for PHL071N05\_16:

(Start: 12 @12243 has 12 MA's), (Start: 14 @12246 has 42 MA's), (21, 12273), (24, 12297), (28, 12324), (30, 12330), (32, 12336), (35, 12351), (37, 12366), (38, 12369), (40, 12372), (45, 12402), (53, 12465), (56, 12483), (60, 12507), (66, 12540), (68, 12549), (69, 12552), (70, 12555), (71, 12564), (74, 12582), (75, 12585), (84, 12645), (86, 12657), (87, 12660), (96, 12693), (98, 12699), (109, 12744), (112, 12756), (117, 12774), (118, 12780), (119, 12783), (120, 12798), (122, 12810), (126, 12828), (127, 12831), (128, 12849), (129, 12852), (132, 12864), (133, 12873), (136, 12888), (138, 12891), (142, 12915), (144, 12930), (146, 12957), (147, 12960), (156, 13017), (162, 13050), (167, 13086),

(170, 13113), (171, 13116), (177, 13155), (183, 13170), (184, 13173), (188, 13197), (192, 13209), (194, 13218), (196, 13224), (204, 13266), (209, 13302), (213, 13344), (214, 13347), (217, 13359), (218, 13368), (220, 13380), (222, 13389),

Gene: PHL111M01\_16 Start: 12241, Stop: 13398, Start Num: 13

Candidate Starts for PHL111M01\_16:

(13, 12241), (21, 12268), (24, 12292), (28, 12319), (30, 12325), (32, 12331), (35, 12346), (36, 12355), (37, 12361), (38, 12364), (40, 12367), (45, 12397), (53, 12460), (56, 12478), (60, 12502), (66, 12535), (68, 12544), (69, 12547), (70, 12550), (71, 12559), (74, 12577), (77, 12586), (86, 12652), (87, 12655), (96, 12688), (98, 12694), (109, 12739), (112, 12751), (115, 12766), (117, 12769), (118, 12775), (119, 12778), (120, 12793), (122, 12805), (126, 12823), (128, 12844), (132, 12859), (133, 12868), (136, 12883), (138, 12886), (142, 12910), (144, 12925), (146, 12952), (149, 12958), (156, 13012), (162, 13045), (167, 13081), (170, 13108), (171, 13111), (177, 13150), (183, 13165), (184, 13168), (188, 13192), (192, 13204), (194, 13213), (196, 13219), (200, 13246), (204, 13261), (209, 13297), (214, 13342), (217, 13354), (218, 13363), (220, 13375), (222, 13384),

Gene: PHL112N00\_16 Start: 12236, Stop: 13396, Start Num: 12

Candidate Starts for PHL112N00\_16:

(Start: 12 @12236 has 12 MA's), (Start: 14 @12239 has 42 MA's), (21, 12266), (24, 12290), (28, 12317), (30, 12323), (32, 12329), (35, 12344), (37, 12359), (38, 12362), (40, 12365), (42, 12386), (45, 12395), (53, 12458), (56, 12476), (60, 12500), (66, 12533), (68, 12542), (69, 12545), (70, 12548), (71, 12557), (74, 12575), (75, 12578), (77, 12584), (84, 12638), (86, 12650), (87, 12653), (96, 12686), (98, 12692), (109, 12737), (112, 12749), (115, 12764), (117, 12767), (118, 12773), (119, 12776), (120, 12791), (122, 12803), (127, 12824), (128, 12842), (129, 12845), (132, 12857), (133, 12866), (136, 12881), (138, 12884), (142, 12908), (144, 12923), (146, 12950), (147, 12953), (156, 13010), (162, 13043), (167, 13079), (170, 13106), (177, 13148), (183, 13163), (184, 13166), (188, 13190), (192, 13202), (194, 13211), (196, 13217), (200, 13244), (204, 13259), (209, 13295), (214, 13340), (217, 13352), (218, 13361), (220, 13373), (222, 13382),

Gene: PHL113M01\_16 Start: 12257, Stop: 13417, Start Num: 12

Candidate Starts for PHL113M01\_16:

(Start: 12 @12257 has 12 MA's), (Start: 14 @12260 has 42 MA's), (21, 12287), (24, 12311), (28, 12338), (30, 12344), (32, 12350), (35, 12365), (37, 12380), (38, 12383), (40, 12386), (45, 12416), (53, 12479), (55, 12488), (56, 12497), (60, 12521), (66, 12554), (68, 12563), (70, 12569), (71, 12578), (74, 12596), (77, 12605), (86, 12671), (87, 12674), (96, 12707), (98, 12713), (109, 12758), (112, 12770), (115, 12785), (117, 12788), (118, 12794), (119, 12797), (120, 12812), (122, 12824), (128, 12863), (132, 12878), (133, 12887), (136, 12902), (138, 12905), (142, 12929), (144, 12944), (146, 12971), (147, 12974), (156, 13031), (162, 13064), (167, 13100), (170, 13127), (177, 13169), (183, 13184), (184, 13187), (188, 13211), (192, 13223), (194, 13232), (196, 13238), (204, 13280), (209, 13316), (214, 13361), (217, 13373), (218, 13382), (220, 13394), (222, 13403),

Gene: PHL114L00\_16 Start: 12241, Stop: 13401, Start Num: 12

Candidate Starts for PHL114L00\_16:

(Start: 12 @12241 has 12 MA's), (Start: 14 @12244 has 42 MA's), (21, 12271), (24, 12295), (28, 12322), (30, 12328), (32, 12334), (35, 12349), (38, 12367), (45, 12400), (53, 12463), (55, 12472), (60, 12505), (66, 12538), (68, 12547), (70, 12553), (71, 12562), (75, 12583), (86, 12655), (87, 12658), (96, 12691), (98, 12697), (99, 12700), (109, 12742), (112, 12754), (115, 12769), (117, 12772), (118, 12778), (119, 12781), (120, 12796), (122, 12808), (129, 12850), (132, 12862), (136, 12886), (138, 12889), (142, 12913), (144, 12928), (146, 12955), (149, 12961), (156, 13015), (162, 13048), (167, 13084), (170, 13111), (171, 13114), (177, 13153), (183, 13168), (184, 13171), (188, 13195), (194, 13216), (196, 13222), (204, 13264), (209, 13300), (213, 13342), (218, 13366), (220, 13378), (222, 13387),

Gene: Parvaparticeps\_33 Start: 23477, Stop: 22143, Start Num: 26

Candidate Starts for Parvaparticeps\_33:

(Start: 26 @23477 has 1 MA's), (35, 23438), (57, 23294), (58, 23291), (64, 23255), (67, 23237), (72, 23204), (73, 23201), (78, 23186), (80, 23171), (81, 23162), (91, 23105), (123, 22967), (125, 22955), (135, 22895), (140, 22874), (151, 22793), (153, 22784), (154, 22781), (156, 22763), (161, 22733), (166, 22688), (167, 22685), (181, 22592), (191, 22547), (194, 22535), (195, 22529), (205, 22478), (207, 22463), (212, 22406), (213, 22403), (223, 22352), (227, 22343), (229, 22334), (235, 22280), (237, 22250), (238, 22244), (239, 22241), (240, 22232), (244, 22190),

Gene: Pigu\_17 Start: 13778, Stop: 14902, Start Num: 12

Candidate Starts for Pigu\_17:

(Start: 11 @13775 has 3 MA's), (Start: 12 @13778 has 12 MA's), (Start: 15 @13784 has 11 MA's), (33, 13871), (52, 13991), (61, 14051), (85, 14174), (86, 14183), (87, 14186), (92, 14210), (108, 14270), (110, 14282), (115, 14303), (119, 14315), (122, 14342), (170, 14624), (193, 14717), (194, 14723), (197, 14738), (200, 14753), (209, 14801), (225, 14894),

Gene: Pirate\_16 Start: 12235, Stop: 13392, Start Num: 14

Candidate Starts for Pirate\_16:

(Start: 14 @12235 has 42 MA's), (21, 12262), (24, 12286), (30, 12319), (32, 12325), (35, 12340), (37, 12355), (38, 12358), (40, 12361), (45, 12391), (53, 12454), (55, 12463), (60, 12496), (66, 12529), (68, 12538), (69, 12541), (70, 12544), (71, 12553), (74, 12571), (75, 12574), (84, 12634), (86, 12646), (87, 12649), (98, 12688), (99, 12691), (109, 12733), (112, 12745), (115, 12760), (117, 12763), (118, 12769), (119, 12772), (120, 12787), (122, 12799), (127, 12820), (129, 12841), (132, 12853), (133, 12862), (136, 12877), (138, 12880), (142, 12904), (144, 12919), (146, 12946), (156, 13006), (162, 13039), (167, 13075), (170, 13102), (177, 13144), (183, 13159), (184, 13162), (188, 13186), (192, 13198), (196, 13213), (204, 13255), (209, 13291), (213, 13333), (214, 13336), (218, 13357), (220, 13369), (222, 13378),

Gene: Pitbull\_18 Start: 13184, Stop: 14632, Start Num: 11

Candidate Starts for Pitbull\_18:

(10, 13172), (Start: 11 @13184 has 3 MA's), (Start: 18 @13199 has 3 MA's), (21, 13214), (29, 13268), (35, 13292), (36, 13301), (37, 13307), (40, 13313), (41, 13319), (42, 13334), (46, 13346), (49, 13370), (61, 13454), (65, 13478), (85, 13577), (91, 13604), (93, 13619), (108, 13676), (114, 13706), (119, 13721), (130, 13775), (131, 13781), (141, 13832), (143, 13847), (147, 13880), (158, 13946), (159, 13958), (171, 14045), (174, 14066), (178, 14087), (201, 14186), (210, 14240), (214, 14279), (223, 14324), (240, 14450), (242, 14483), (248, 14531),

Gene: Ponzi\_56 Start: 37563, Stop: 38783, Start Num: 20

Candidate Starts for Ponzi\_56:

(Start: 15 @37551 has 11 MA's), (Start: 20 @37563 has 1 MA's), (21, 37569), (28, 37620), (31, 37629), (39, 37668), (45, 37695), (106, 38034), (107, 38037), (111, 38052), (116, 38076), (149, 38277), (180, 38421), (228, 38592), (234, 38631), (236, 38652), (246, 38745), (249, 38778),

Gene: Procrass1\_16 Start: 12243, Stop: 13400, Start Num: 14

Candidate Starts for Procrass1\_16:

(Start: 12 @12240 has 12 MA's), (Start: 14 @12243 has 42 MA's), (21, 12270), (24, 12294), (28, 12321), (30, 12327), (32, 12333), (35, 12348), (36, 12357), (37, 12363), (38, 12366), (40, 12369), (45, 12399), (53, 12462), (55, 12471), (60, 12504), (66, 12537), (68, 12546), (70, 12552), (71, 12561), (74, 12579), (75, 12582), (77, 12588), (84, 12642), (86, 12654), (87, 12657), (96, 12690), (98, 12696), (112, 12753), (115, 12768), (117, 12771), (118, 12777), (119, 12780), (120, 12795), (122, 12807), (128, 12846), (132, 12861), (133, 12870), (136, 12885), (138, 12888), (142, 12912), (144, 12927), (146, 12954), (147, 12957), (156, 13014), (162, 13047), (167, 13083), (170, 13110), (171, 13113), (172, 13122), (177, 13152), (183, 13167), (184, 13170), (188, 13194), (194, 13215), (196, 13221), (204,

13263), (209, 13299), (213, 13341), (217, 13356), (218, 13365), (220, 13377), (222, 13386),

Gene: QueenBey\_16 Start: 12243, Stop: 13400, Start Num: 14

Candidate Starts for QueenBey\_16:

(Start: 12 @12240 has 12 MA's), (Start: 14 @12243 has 42 MA's), (21, 12270), (24, 12294), (30, 12327), (32, 12333), (35, 12348), (37, 12363), (38, 12366), (40, 12369), (45, 12399), (53, 12462), (55, 12471), (56, 12480), (60, 12504), (66, 12537), (68, 12546), (69, 12549), (70, 12552), (71, 12561), (74, 12579), (75, 12582), (84, 12642), (86, 12654), (87, 12657), (98, 12696), (99, 12699), (109, 12741), (112, 12753), (117, 12771), (118, 12777), (119, 12780), (120, 12795), (122, 12807), (127, 12828), (129, 12849), (132, 12861), (133, 12870), (136, 12885), (138, 12888), (142, 12912), (144, 12927), (146, 12954), (156, 13014), (162, 13047), (167, 13083), (170, 13110), (171, 13113), (177, 13152), (183, 13167), (184, 13170), (188, 13194), (194, 13215), (196, 13221), (204, 13263), (209, 13299), (213, 13341), (214, 13344), (217, 13356), (218, 13365), (220, 13377), (222, 13386),

Gene: Raqqa\_19 Start: 15720, Stop: 16826, Start Num: 14

Candidate Starts for Raqqa\_19:

(Start: 11 @15714 has 3 MA's), (Start: 14 @15720 has 42 MA's), (22, 15750), (28, 15798), (32, 15810), (34, 15822), (52, 15927), (60, 15978), (66, 16011), (85, 16104), (87, 16116), (105, 16185), (121, 16257), (167, 16521), (189, 16632), (218, 16791),

Gene: Raya\_18 Start: 13041, Stop: 14480, Start Num: 12

Candidate Starts for Raya\_18:

(Start: 12 @13041 has 12 MA's), (Start: 20 @13056 has 1 MA's), (21, 13062), (28, 13113), (30, 13119), (37, 13155), (42, 13182), (45, 13191), (46, 13194), (47, 13212), (49, 13218), (59, 13284), (61, 13302), (105, 13512), (114, 13554), (122, 13596), (131, 13629), (139, 13665), (141, 13680), (143, 13695), (149, 13731), (159, 13806), (166, 13860), (167, 13863), (171, 13893), (182, 13947), (186, 13971), (190, 13983), (210, 14088), (214, 14127), (216, 14139), (219, 14151), (223, 14172), (233, 14235), (241, 14319), (247, 14358),

Gene: Rileysaurus\_16 Start: 12238, Stop: 13395, Start Num: 14

Candidate Starts for Rileysaurus\_16:

(Start: 14 @12238 has 42 MA's), (21, 12265), (24, 12289), (30, 12322), (32, 12328), (35, 12343), (37, 12358), (38, 12361), (40, 12364), (45, 12394), (53, 12457), (55, 12466), (60, 12499), (66, 12532), (68, 12541), (69, 12544), (70, 12547), (71, 12556), (74, 12574), (75, 12577), (84, 12637), (86, 12649), (87, 12652), (96, 12685), (98, 12691), (99, 12694), (109, 12736), (112, 12748), (117, 12766), (118, 12772), (119, 12775), (120, 12790), (122, 12802), (128, 12841), (129, 12844), (132, 12856), (133, 12865), (136, 12880), (138, 12883), (142, 12907), (144, 12922), (146, 12949), (156, 13009), (162, 13042), (167, 13078), (170, 13105), (171, 13108), (177, 13147), (183, 13162), (184, 13165), (188, 13189), (192, 13201), (196, 13216), (200, 13243), (204, 13258), (209, 13294), (214, 13339), (218, 13360), (220, 13372), (222, 13381),

Gene: RootBeer\_17 Start: 14184, Stop: 15296, Start Num: 18

Candidate Starts for RootBeer\_17:

(Start: 18 @14184 has 3 MA's), (24, 14223), (39, 14298), (49, 14355), (52, 14379), (60, 14433), (85, 14562), (87, 14574), (96, 14610), (110, 14664), (121, 14718), (206, 15165),

Gene: Rooter\_17 Start: 13624, Stop: 14742, Start Num: 15

Candidate Starts for Rooter\_17:

(Start: 12 @13618 has 12 MA's), (Start: 15 @13624 has 11 MA's), (Start: 19 @13633 has 1 MA's), (48, 13798), (52, 13831), (55, 13852), (71, 13942), (85, 14014), (86, 14023), (98, 14068), (108, 14110), (110, 14122), (119, 14155), (176, 14500), (193, 14557), (215, 14689), (222, 14728), (225, 14734),

Gene: RunningOnE\_74 Start: 41644, Stop: 43035, Start Num: 16

Candidate Starts for RunningOnE\_74:

(Start: 16 @41644 has 1 MA's), (21, 41662), (28, 41713), (31, 41722), (45, 41788), (52, 41845), (103, 42115), (145, 42358), (170, 42532), (186, 42625), (203, 42706), (232, 42874), (233, 42880), (243, 42976), (246, 42997), (249, 43030),

Gene: SKKY\_16 Start: 12278, Stop: 13435, Start Num: 14

Candidate Starts for SKKY\_16:

(Start: 12 @12275 has 12 MA's), (Start: 14 @12278 has 42 MA's), (21, 12305), (24, 12329), (28, 12356), (32, 12368), (35, 12383), (36, 12392), (37, 12398), (38, 12401), (40, 12404), (45, 12434), (53, 12497), (56, 12515), (60, 12539), (66, 12572), (68, 12581), (70, 12587), (71, 12596), (77, 12623), (87, 12692), (98, 12731), (99, 12734), (112, 12788), (115, 12803), (117, 12806), (118, 12812), (119, 12815), (120, 12830), (122, 12842), (126, 12860), (132, 12896), (133, 12905), (136, 12920), (138, 12923), (142, 12947), (144, 12962), (146, 12989), (149, 12995), (156, 13049), (162, 13082), (167, 13118), (170, 13145), (171, 13148), (177, 13187), (183, 13202), (184, 13205), (188, 13229), (194, 13250), (196, 13256), (204, 13298), (209, 13334), (214, 13379), (217, 13391), (218, 13400), (220, 13412), (222, 13421),

Gene: Sarge\_18 Start: 13985, Stop: 15109, Start Num: 12

Candidate Starts for Sarge\_18:

(Start: 12 @13985 has 12 MA's), (Start: 15 @13991 has 11 MA's), (48, 14165), (52, 14198), (55, 14219), (71, 14309), (85, 14381), (86, 14390), (87, 14393), (110, 14489), (119, 14522), (176, 14867), (193, 14924), (197, 14945), (215, 15056), (222, 15095), (225, 15101),

Gene: Shoya\_17 Start: 13621, Stop: 14745, Start Num: 12

Candidate Starts for Shoya\_17:

(Start: 12 @13621 has 12 MA's), (Start: 15 @13627 has 11 MA's), (Start: 19 @13636 has 1 MA's), (48, 13801), (52, 13834), (55, 13855), (71, 13945), (85, 14017), (86, 14026), (98, 14071), (108, 14113), (110, 14125), (119, 14158), (193, 14560), (200, 14596), (215, 14692), (222, 14731), (225, 14737),

Gene: Skitty\_18 Start: 13774, Stop: 14892, Start Num: 15

Candidate Starts for Skitty\_18:

(Start: 15 @13774 has 11 MA's), (30, 13852), (33, 13861), (52, 13981), (53, 13993), (55, 14002), (71, 14092), (85, 14164), (86, 14173), (87, 14176), (98, 14218), (110, 14272), (119, 14305), (129, 14356), (157, 14524), (170, 14614), (187, 14695), (200, 14743), (209, 14791), (211, 14800), (215, 14839), (222, 14878),

Gene: Skyerus\_18 Start: 13041, Stop: 14480, Start Num: 12

Candidate Starts for Skyerus\_18:

(Start: 12 @13041 has 12 MA's), (Start: 20 @13056 has 1 MA's), (21, 13062), (28, 13113), (30, 13119), (37, 13155), (42, 13182), (45, 13191), (46, 13194), (47, 13212), (49, 13218), (59, 13284), (61, 13302), (105, 13512), (114, 13554), (122, 13596), (131, 13629), (139, 13665), (141, 13680), (143, 13695), (149, 13731), (159, 13806), (166, 13860), (167, 13863), (171, 13893), (182, 13947), (186, 13971), (190, 13983), (210, 14088), (214, 14127), (216, 14139), (219, 14151), (223, 14172), (233, 14235), (241, 14319), (247, 14358),

Gene: Solid\_16 Start: 12232, Stop: 13389, Start Num: 14

Candidate Starts for Solid\_16:

(Start: 12 @12229 has 12 MA's), (Start: 14 @12232 has 42 MA's), (21, 12259), (24, 12283), (28, 12310), (30, 12316), (32, 12322), (35, 12337), (37, 12352), (38, 12355), (40, 12358), (45, 12388), (53, 12451), (60, 12493), (66, 12526), (68, 12535), (69, 12538), (70, 12541), (71, 12550), (74, 12568), (77, 12577), (84, 12631), (86, 12643), (87, 12646), (96, 12679), (98, 12685), (109, 12730), (112, 12742), (115, 12757), (117, 12760), (118, 12766), (119, 12769), (120, 12784), (122, 12796), (128, 12835), (129, 12838), (132, 12850), (133, 12859), (136, 12874), (138, 12877), (142, 12901), (144, 12916),



(146, 12943), (147, 12946), (156, 13003), (162, 13036), (167, 13072), (170, 13099), (183, 13156), (184, 13159), (188, 13183), (194, 13204), (196, 13210), (200, 13237), (204, 13252), (209, 13288), (214, 13333), (217, 13345), (218, 13354), (220, 13366), (222, 13375),

Gene: Spooks\_62 Start: 40032, Stop: 41291, Start Num: 15

Candidate Starts for Spooks\_62:

(9, 39885), (Start: 15 @40032 has 11 MA's), (21, 40050), (24, 40074), (76, 40371), (100, 40491), (101, 40500), (145, 40770), (159, 40860), (180, 40929), (185, 40947), (203, 40974), (228, 41100), (230, 41112), (238, 41187), (246, 41253), (249, 41286),

Gene: Stormborn\_16 Start: 12254, Stop: 13411, Start Num: 14

Candidate Starts for Stormborn\_16:

(Start: 12 @12251 has 12 MA's), (Start: 14 @12254 has 42 MA's), (21, 12281), (24, 12305), (28, 12332), (30, 12338), (32, 12344), (35, 12359), (37, 12374), (38, 12377), (40, 12380), (45, 12410), (53, 12473), (55, 12482), (60, 12515), (66, 12548), (68, 12557), (69, 12560), (70, 12563), (71, 12572), (74, 12590), (86, 12665), (87, 12668), (96, 12701), (98, 12707), (109, 12752), (112, 12764), (115, 12779), (117, 12782), (120, 12806), (122, 12818), (129, 12860), (133, 12881), (136, 12896), (138, 12899), (142, 12923), (144, 12938), (146, 12965), (156, 13025), (162, 13058), (167, 13094), (170, 13121), (171, 13124), (177, 13163), (183, 13178), (184, 13181), (188, 13205), (192, 13217), (194, 13226), (196, 13232), (204, 13274), (209, 13310), (213, 13352), (218, 13376), (220, 13388), (222, 13397),

Gene: Success\_63 Start: 39166, Stop: 40425, Start Num: 15

Candidate Starts for Success\_63:

(Start: 15 @39166 has 11 MA's), (21, 39184), (23, 39199), (24, 39208), (53, 39379), (94, 39610), (100, 39625), (101, 39634), (137, 39841), (145, 39904), (159, 39994), (165, 40045), (185, 40081), (207, 40117), (228, 40234), (230, 40246), (234, 40273), (236, 40294), (237, 40312), (246, 40387), (249, 40420),

Gene: Supernova\_16 Start: 12250, Stop: 13407, Start Num: 14

Candidate Starts for Supernova\_16:

(Start: 12 @12247 has 12 MA's), (Start: 14 @12250 has 42 MA's), (21, 12277), (24, 12301), (28, 12328), (30, 12334), (32, 12340), (35, 12355), (36, 12364), (37, 12370), (38, 12373), (40, 12376), (45, 12406), (53, 12469), (60, 12511), (66, 12544), (68, 12553), (70, 12559), (71, 12568), (77, 12595), (87, 12664), (98, 12703), (99, 12706), (112, 12760), (115, 12775), (117, 12778), (118, 12784), (119, 12787), (120, 12802), (122, 12814), (126, 12832), (132, 12868), (133, 12877), (136, 12892), (138, 12895), (142, 12919), (144, 12934), (146, 12961), (149, 12967), (156, 13021), (162, 13054), (167, 13090), (170, 13117), (171, 13120), (177, 13159), (183, 13174), (188, 13201), (192, 13213), (194, 13222), (196, 13228), (200, 13255), (204, 13270), (209, 13306), (214, 13351), (217, 13363), (218, 13372), (220, 13384), (222, 13393),

Gene: Wizzo\_16 Start: 12265, Stop: 13422, Start Num: 14

Candidate Starts for Wizzo\_16:

(Start: 12 @12262 has 12 MA's), (Start: 14 @12265 has 42 MA's), (21, 12292), (24, 12316), (28, 12343), (30, 12349), (32, 12355), (35, 12370), (37, 12385), (38, 12388), (40, 12391), (45, 12421), (53, 12484), (56, 12502), (60, 12526), (62, 12535), (66, 12559), (68, 12568), (69, 12571), (70, 12574), (71, 12583), (74, 12601), (77, 12610), (84, 12664), (86, 12676), (87, 12679), (96, 12712), (98, 12718), (112, 12775), (115, 12790), (117, 12793), (118, 12799), (119, 12802), (120, 12817), (122, 12829), (128, 12868), (132, 12883), (133, 12892), (136, 12907), (138, 12910), (142, 12934), (144, 12949), (146, 12976), (147, 12979), (156, 13036), (162, 13069), (167, 13105), (170, 13132), (177, 13174), (183, 13189), (184, 13192), (188, 13216), (194, 13237), (196, 13243), (204, 13285), (209, 13321), (213, 13363), (217, 13378), (218, 13387), (220, 13399), (222, 13408),

Gene: Zucker\_20 Start: 15353, Stop: 16471, Start Num: 15

Candidate Starts for Zucker\_20:

(Start: 15 @15353 has 11 MA's), (33, 15440), (48, 15527), (50, 15536), (52, 15560), (53, 15572), (55, 15581), (85, 15743), (86, 15752), (87, 15755), (108, 15839), (110, 15851), (119, 15884), (129, 15935), (134, 15965), (147, 16043), (170, 16193), (176, 16229), (177, 16235), (197, 16307), (199, 16316), (225, 16463),