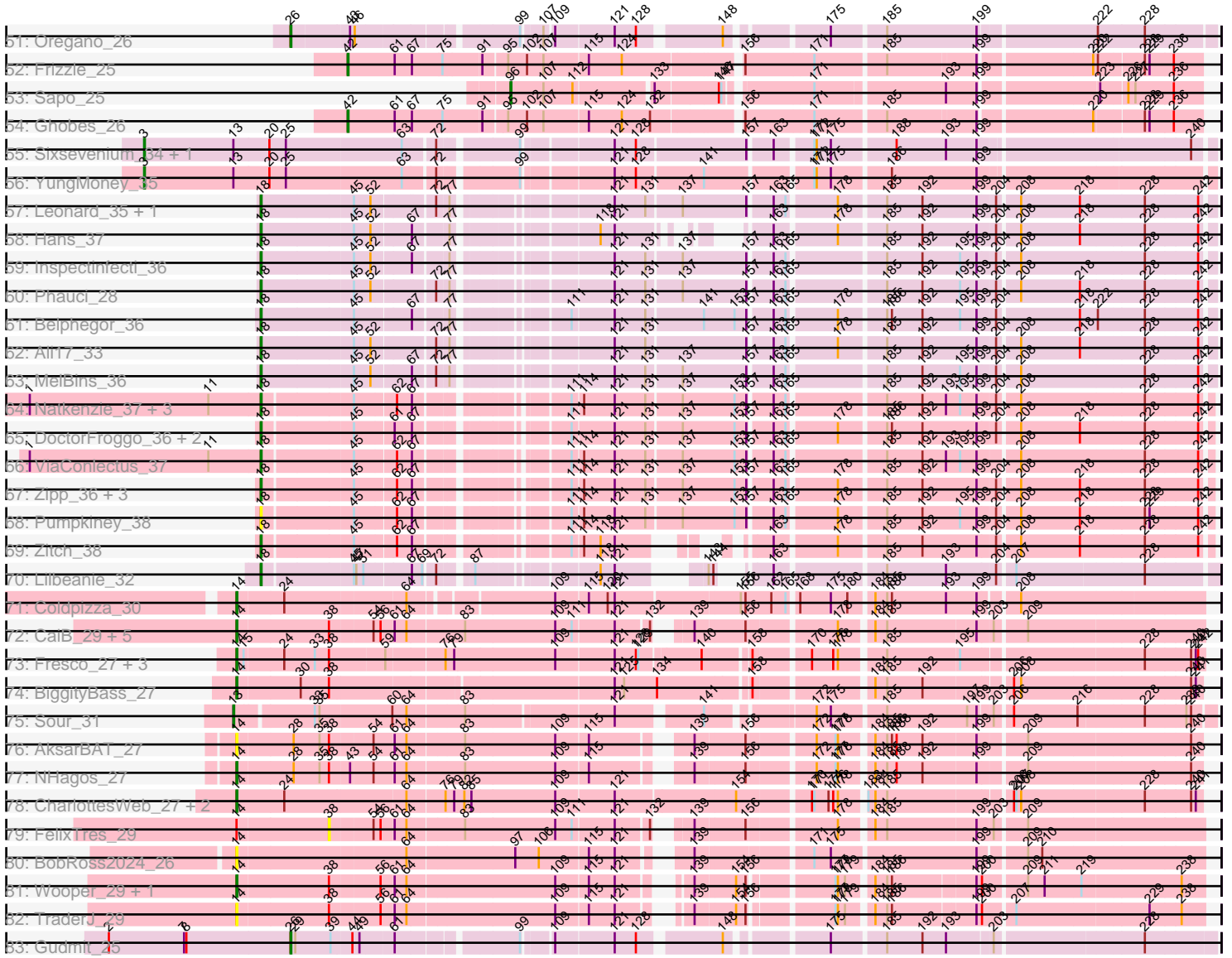




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Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. 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 296347 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296347 has 130 members, 28 are drafts.

Phages represented in each track:

- Track 1 : Anon\_31
- Track 2 : Gustav\_25
- Track 3 : Puppies\_25
- Track 4 : Morrissey\_26
- Track 5 : Widow\_25
- Track 6 : Nibbles\_27
- Track 7 : Emalyn\_24, AikoCarson\_24
- Track 8 : Survivors\_27, Zareef\_27
- Track 9 : GTE2\_22
- Track 10 : Fribs8\_26
- Track 11 : Feastonyeet\_24, Balloona\_24, PotPie\_25, BigChungus\_24
- Track 12 : McDazzle\_24, ElJefes\_24
- Track 13 : Wallaby\_29, Wolfwood\_29
- Track 14 : Dre3\_25, Gibbous\_25
- Track 15 : CaramelLatte\_25, CanesSauce\_25, ChocoMunchkin\_25
- Track 16 : MaVan\_27
- Track 17 : AndPeggy\_24, Yarn\_24
- Track 18 : CocoaPuff\_24
- Track 19 : SheckWes\_25
- Track 20 : Vine\_26
- Track 21 : Azira\_27
- Track 22 : Yucky\_25
- Track 23 : Malvina\_27
- Track 24 : Cleo\_25
- Track 25 : HippoPololi\_27
- Track 26 : Bavidard\_25
- Track 27 : SummitAcademy\_25
- Track 28 : TZGordon\_31, Huff\_31
- Track 29 : TinaLin\_31
- Track 30 : Banquo\_32
- Track 31 : DinoDaryn\_31
- Track 32 : Goib\_30, Splinter\_29
- Track 33 : Vendetta\_29
- Track 34 : Dardanus\_31
- Track 35 : Catfish\_29
- Track 36 : KappaFarmDelta\_30
- Track 37 : Murp\_29

- Track 38 : William\_29
- Track 39 : PCoral7\_29, Toast\_29
- Track 40 : Fairfaxidum\_28
- Track 41 : Petra\_30
- Track 42 : CheeseSpider\_32
- Track 43 : Wocket\_30
- Track 44 : PrincePatrick\_28
- Track 45 : Easley\_26
- Track 46 : Shlim410\_26, Adora\_26, Howe\_26, Twinkle\_26, Hortense\_26
- Track 47 : MichaelScott\_26, Dolores\_26, Rizz\_29, Clark\_26, WinkNick\_26, Mcklovin\_26
- Track 48 : Annalisa\_26
- Track 49 : Dorito\_25, Sekhmet\_26, Samman98\_26, PhriskyACE\_25
- Track 50 : DobbysSock\_25
- Track 51 : Oregano\_26
- Track 52 : Frizzle\_25
- Track 53 : Sapo\_25
- Track 54 : Ghobes\_26
- Track 55 : Sixsevenium\_34, Bakery\_34
- Track 56 : YungMoney\_35
- Track 57 : Leonard\_35, Phinally\_35
- Track 58 : Hans\_37
- Track 59 : Inspectinfecti\_36
- Track 60 : Phauci\_28
- Track 61 : Belphegor\_36
- Track 62 : Ali17\_33
- Track 63 : MelBins\_36
- Track 64 : Natkenzie\_37, Abblin\_37, Sampson\_37, Scioto\_37
- Track 65 : DoctorFroggo\_36, Verity\_36, Delrey21\_36
- Track 66 : ViaConlectus\_37
- Track 67 : Zipp\_36, APunk\_38, Tardus\_38, BigHunkinEater\_39
- Track 68 : Pumpkiney\_38
- Track 69 : Zitch\_38
- Track 70 : Lilbeanie\_32
- Track 71 : Coldpizza\_30
- Track 72 : CaiB\_29, Blackpen\_29, CloverMinnie\_29, MossRose\_29, MakoManhole\_29, AnarQue\_29
- Track 73 : Fresco\_27, Axumite\_27, Shatter\_27, Ligma\_27
- Track 74 : BiggityBass\_27
- Track 75 : Sour\_31
- Track 76 : AksarBAT\_27
- Track 77 : NHagos\_27
- Track 78 : CharlottesWeb\_27, Mariokart\_27, JellyBelly\_27
- Track 79 : FelixTres\_29
- Track 80 : BobRoss2024\_26
- Track 81 : Wooper\_29, Yeshua\_29
- Track 82 : TraderJ\_29
- Track 83 : Gudmit\_25

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

The start number called the most often in the published annotations is 18, it was called in 18 of the 102 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- APunk\_38, Abblin\_37, Ali17\_33, Belphegor\_36, BigHunkinEater\_39, Delrey21\_36, DoctorFroggo\_36, Hans\_37, Inspectinfecti\_36, Leonard\_35, Lilbeanie\_32, MelBins\_36, Natkenzie\_37, Phauci\_28, Phinally\_35, Pumpkiney\_38, Sampson\_37, Scioto\_37, Tardus\_38, Verity\_36, ViaConlectus\_37, Zipp\_36, Zitch\_38,

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

- 

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

- Adora\_26, AikoCarson\_24, AksarBAT\_27, AnarQue\_29, AndPeggy\_24, Annalisa\_26, Anon\_31, Axumite\_27, Azira\_27, Bakery\_34, Balloona\_24, Banquo\_32, Bavailard\_25, BigChungus\_24, BiggityBass\_27, Blackpen\_29, BobRoss2024\_26, CaiB\_29, CanesSauce\_25, CaramelLatte\_25, Catfish\_29, CharlottesWeb\_27, CheeseSpider\_32, ChocoMunchkin\_25, Clark\_26, Cleo\_25, CloverMinnie\_29, CocoaPuff\_24, Coldpizza\_30, Dardanus\_31, DinoDaryn\_31, DobbysSock\_25, Dolores\_26, Dorito\_25, Dre3\_25, Easley\_26, ElJefes\_24, Emalyn\_24, Fairfaxidum\_28, Feastonyeet\_24, FelixTres\_29, Fresco\_27, Fribs8\_26, Frizzle\_25, GTE2\_22, Ghobes\_26, Gibbous\_25, Goib\_30, Gudmit\_25, Gustav\_25, HippoPololi\_27, Hortense\_26, Howe\_26, Huffy\_31, JellyBelly\_27, KappaFarmDelta\_30, Ligma\_27, MaVan\_27, MakoManhole\_29, Malvina\_27, Mariokart\_27, McDazzle\_24, Mcklovin\_26, MichaelScott\_26, Morrissey\_26, MossRose\_29, Murp\_29, NHagos\_27, Nibbles\_27, Oregano\_26, PCoral7\_29, Petra\_30, PhriskyACE\_25, PotPie\_25, PrincePatrick\_28, Puppies\_25, Rizz\_29, Samman98\_26, Sapo\_25, Sekhmet\_26, Shatter\_27, SheckWes\_25, Shlim410\_26, Sixsevenium\_34, Sour\_31, Splinter\_29, SummitAcademy\_25, Survivors\_27, TZGordon\_31, TinaLin\_31, Toast\_29, TraderJ\_29, Twinkle\_26, Vendetta\_29, Vine\_26, Wallaby\_29, Widow\_25, William\_29, WinkNick\_26, Wocket\_30, Wolfwood\_29, Wooper\_29, Yarn\_24, Yeshua\_29, Yucky\_25, YungMoney\_35, Zareef\_27,

### Summary by start number:

Start 3:

- Found in 3 of 130 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 2 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bakery\_34 (DC1), Sixsevenium\_34 (DC), YungMoney\_35 (DC1),

Start 9:

- Found in 4 of 130 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 4 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gustav\_25 (CD), Morrissey\_26 (CD), Puppies\_25 (CD), Widow\_25 (CD),

Start 13:

- Found in 4 of 130 ( 3.1% ) of genes in pham

- Manual Annotations of this start: 1 of 102
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Sour\_31 (DR),

#### Start 14:

- Found in 22 of 130 ( 16.9% ) of genes in pham
- Manual Annotations of this start: 15 of 102
- Called 95.5% of time when present
- Phage (with cluster) where this start called: AksarBAT\_27 (DR), AnarQue\_29 (DR), Axumite\_27 (DR), BiggityBass\_27 (DR), Blackpen\_29 (DR), BobRoss2024\_26 (DR), CaiB\_29 (DR), CharlottesWeb\_27 (DR), CloverMinnie\_29 (DR), Coldpizza\_30 (DR), Fresco\_27 (DR), JellyBelly\_27 (DR), Ligma\_27 (DR), MakoManhole\_29 (DR), Mariokart\_27 (DR), MossRose\_29 (DR), NHagos\_27 (DR), Shatter\_27 (DR), TraderJ\_29 (DR), Wooper\_29 (DR), Yeshua\_29 (DR),

#### Start 16:

- Found in 22 of 130 ( 16.9% ) of genes in pham
- Manual Annotations of this start: 14 of 102
- Called 90.9% of time when present
- Phage (with cluster) where this start called: AikoCarson\_24 (CT), AndPeggy\_24 (CT), Azira\_27 (CT), CanesSauce\_25 (CT), CaramellLatte\_25 (CT), ChocoMunchkin\_25 (CT), Cleo\_25 (CT), Dre3\_25 (CT), Emalyn\_24 (CT), Fribs8\_26 (CT), GTE2\_22 (CT), Gibbous\_25 (CT), HippoPololi\_27 (CT), MaVan\_27 (CT), Nibbles\_27 (CT), Survivors\_27 (CT), Wallaby\_29 (CT), Wolfwood\_29 (CT), Yarn\_24 (CT), Zareef\_27 (CT),

#### Start 18:

- Found in 23 of 130 ( 17.7% ) of genes in pham
- Manual Annotations of this start: 18 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: APunk\_38 (DE4), Abblin\_37 (DE4), Ali17\_33 (DE2), Belphegor\_36 (DE2), BigHunkinEater\_39 (DE4), Delrey21\_36 (DE4), DoctorFroggo\_36 (DE4), Hans\_37 (DE2), Inspectinfecti\_36 (DE2), Leonard\_35 (DE2), Lilbeanie\_32 (DE5), MelBins\_36 (DE2), Natkenzie\_37 (DE4), Phauci\_28 (DE2), Phinally\_35 (DE2), Pumpkiney\_38 (DE4), Sampson\_37 (DE4), Scioto\_37 (DE4), Tardus\_38 (DE4), Verity\_36 (DE4), ViaConlectus\_37 (DE4), Zipp\_36 (DE4), Zitch\_38 (DE4),

#### Start 21:

- Found in 9 of 130 ( 6.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 11.1% of time when present
- Phage (with cluster) where this start called: Malvina\_27 (CT),

#### Start 22:

- Found in 1 of 130 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anon\_31 (A15),

#### Start 26:

- Found in 20 of 130 ( 15.4% ) of genes in pham
- Manual Annotations of this start: 18 of 102

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adora\_26 (CZ4), Annalisa\_26 (CZ4), Clark\_26 (CZ4), DobbysSock\_25 (CZ4), Dolores\_26 (CZ4), Dorito\_25 (CZ4), Easley\_26 (CZ4), Gudmit\_25 (singleton), Hortense\_26 (CZ4), Howe\_26 (CZ4), Mcklovin\_26 (CZ4), MichaelScott\_26 (CZ4), Oregano\_26 (CZ4), PhriskyACE\_25 (CZ4), Rizz\_29 (CZ4), Samman98\_26 (CZ4), Sekhmet\_26 (CZ4), Shlim410\_26 (CZ4), Twinkle\_26 (CZ4), WinkNick\_26 (CZ4),

#### Start 31:

- Found in 3 of 130 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 3 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Goib\_30 (CU1), Splinter\_29 (CU1), Vendetta\_29 (CU1),

#### Start 35:

- Found in 12 of 130 ( 9.2% ) of genes in pham
- Manual Annotations of this start: 6 of 102
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Banquo\_32 (CU1), Catfish\_29 (CU5), DinoDaryn\_31 (CU1), Huffy\_31 (CU1), TZGordon\_31 (CU1), TinaLin\_31 (CU1),

#### Start 38:

- Found in 17 of 130 ( 13.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 5.9% of time when present
- Phage (with cluster) where this start called: FelixTres\_29 (DR),

#### Start 42:

- Found in 23 of 130 ( 17.7% ) of genes in pham
- Manual Annotations of this start: 2 of 102
- Called 8.7% of time when present
- Phage (with cluster) where this start called: Frizzle\_25 (DA), Ghobes\_26 (DA),

#### Start 43:

- Found in 32 of 130 ( 24.6% ) of genes in pham
- Manual Annotations of this start: 7 of 102
- Called 37.5% of time when present
- Phage (with cluster) where this start called: Balloona\_24 (CT), Bavidard\_25 (CT), BigChungus\_24 (CT), CocoaPuff\_24 (CT), ElJefes\_24 (CT), Feastonyeet\_24 (CT), McDazzle\_24 (CT), PotPie\_25 (CT), SheckWes\_25 (CT), SummitAcademy\_25 (CT), Vine\_26 (CT), Yucky\_25 (CT),

#### Start 44:

- Found in 12 of 130 ( 9.2% ) of genes in pham
- Manual Annotations of this start: 8 of 102
- Called 75.0% of time when present
- Phage (with cluster) where this start called: CheeseSpider\_32 (CV), Fairfaxidum\_28 (CV), KappaFarmDelta\_30 (CV), Murp\_29 (CV), PCoral7\_29 (CV), PrincePatrick\_28 (CV), Toast\_29 (CV), William\_29 (CV), Wocket\_30 (CV),

#### Start 58:

- Found in 2 of 130 ( 1.5% ) of genes in pham

- Manual Annotations of this start: 1 of 102
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Dardanus\_31 (CU3),

Start 78:

- Found in 9 of 130 ( 6.9% ) of genes in pham
- Manual Annotations of this start: 1 of 102
- Called 11.1% of time when present
- Phage (with cluster) where this start called: Petra\_30 (CV),

Start 96:

- Found in 12 of 130 ( 9.2% ) of genes in pham
- Manual Annotations of this start: 1 of 102
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Sapo\_25 (DA),

### **Summary by clusters:**

There are 16 clusters represented in this pham: A15, singleton, DE5, CU3, DC1, CU1, DE2, DE4, DC, CZ4, CD, CU5, DA, DR, CV, CT,

Info for manual annotations of cluster A15:

- Start number 22 was manually annotated 1 time for cluster A15.

Info for manual annotations of cluster CD:

- Start number 9 was manually annotated 4 times for cluster CD.

Info for manual annotations of cluster CT:

- Start number 16 was manually annotated 14 times for cluster CT.
- Start number 43 was manually annotated 7 times for cluster CT.

Info for manual annotations of cluster CU1:

- Start number 31 was manually annotated 3 times for cluster CU1.
- Start number 35 was manually annotated 5 times for cluster CU1.

Info for manual annotations of cluster CU3:

- Start number 58 was manually annotated 1 time for cluster CU3.

Info for manual annotations of cluster CU5:

- Start number 35 was manually annotated 1 time for cluster CU5.

Info for manual annotations of cluster CV:

- Start number 44 was manually annotated 8 times for cluster CV.
- Start number 78 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster CZ4:

- Start number 26 was manually annotated 17 times for cluster CZ4.

Info for manual annotations of cluster DA:

- Start number 42 was manually annotated 2 times for cluster DA.
- Start number 96 was manually annotated 1 time for cluster DA.

Info for manual annotations of cluster DC1:

- Start number 3 was manually annotated 2 times for cluster DC1.

Info for manual annotations of cluster DE2:

- Start number 18 was manually annotated 8 times for cluster DE2.

Info for manual annotations of cluster DE4:

- Start number 18 was manually annotated 9 times for cluster DE4.

Info for manual annotations of cluster DE5:

- Start number 18 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster DR:

- Start number 13 was manually annotated 1 time for cluster DR.
- Start number 14 was manually annotated 15 times for cluster DR.

### **Gene Information:**

Gene: APunk\_38 Start: 32541, Stop: 33617, Start Num: 18

Candidate Starts for APunk\_38:

(Start: 18 @32541 has 18 MA's), (45, 32649), (62, 32697), (67, 32715), (111, 32862), (114, 32874), (121, 32913), (131, 32952), (137, 32994), (153, 33060), (157, 33075), (163, 33102), (165, 33117), (178, 33174), (185, 33228), (192, 33273), (199, 33342), (204, 33363), (208, 33387), (218, 33462), (228, 33540), (242, 33606),

Gene: Abblin\_37 Start: 33084, Stop: 34160, Start Num: 18

Candidate Starts for Abblin\_37:

(1, 32790), (11, 33018), (Start: 18 @33084 has 18 MA's), (45, 33192), (62, 33240), (67, 33258), (111, 33405), (114, 33417), (121, 33456), (131, 33495), (137, 33537), (153, 33603), (157, 33618), (163, 33645), (165, 33660), (185, 33771), (192, 33816), (193, 33846), (195, 33864), (199, 33885), (204, 33906), (208, 33930), (228, 34083), (242, 34149),

Gene: Adora\_26 Start: 22572, Stop: 23609, Start Num: 26

Candidate Starts for Adora\_26:

(Start: 26 @22572 has 18 MA's), (Start: 43 @22641 has 7 MA's), (46, 22647), (99, 22827), (107, 22848), (121, 22929), (128, 22956), (148, 23049), (175, 23157), (185, 23220), (193, 23295), (228, 23526),

Gene: AikoCarson\_24 Start: 19778, Stop: 20890, Start Num: 16

Candidate Starts for AikoCarson\_24:

(10, 19709), (Start: 16 @19778 has 14 MA's), (Start: 42 @19901 has 2 MA's), (95, 20099), (121, 20231), (124, 20240), (156, 20357), (161, 20387), (164, 20402), (171, 20441), (182, 20498), (190, 20549), (198, 20633), (204, 20651), (209, 20684), (220, 20765), (222, 20768), (223, 20771), (240, 20879),

Gene: AksarBAT\_27 Start: 26586, Stop: 27698, Start Num: 14

Candidate Starts for AksarBAT\_27:

(Start: 14 @26586 has 15 MA's), (28, 26655), (Start: 35 @26688 has 6 MA's), (38, 26700), (54, 26751), (61, 26775), (64, 26790), (83, 26856), (109, 26970), (115, 27009), (139, 27108), (156, 27168), (172, 27243), (177, 27267), (178, 27270), (184, 27306), (185, 27321), (186, 27327), (188, 27333), (192, 27366), (199, 27432), (209, 27486), (240, 27684),

Gene: Ali17\_33 Start: 30788, Stop: 31876, Start Num: 18

Candidate Starts for Ali17\_33:

(Start: 18 @30788 has 18 MA's), (45, 30902), (52, 30923), (72, 30992), (77, 31004), (121, 31169), (131, 31208), (157, 31331), (163, 31358), (165, 31373), (178, 31430), (185, 31484), (192, 31529), (199, 31598), (204, 31619), (208, 31643), (218, 31718), (228, 31796), (242, 31862),

Gene: AnarQue\_29 Start: 28071, Stop: 29183, Start Num: 14

Candidate Starts for AnarQue\_29:

(Start: 14 @28071 has 15 MA's), (38, 28185), (54, 28236), (56, 28245), (61, 28260), (64, 28275), (83, 28341), (109, 28455), (111, 28476), (121, 28527), (132, 28566), (139, 28590), (156, 28650), (178, 28752), (184, 28788), (185, 28803), (199, 28914), (203, 28932), (209, 28968),

Gene: AndPeggy\_24 Start: 20180, Stop: 21292, Start Num: 16

Candidate Starts for AndPeggy\_24:

(Start: 16 @20180 has 14 MA's), (19, 20198), (Start: 42 @20303 has 2 MA's), (76, 20426), (118, 20615), (121, 20633), (124, 20642), (126, 20654), (156, 20759), (171, 20843), (190, 20951), (198, 21035), (204, 21053), (209, 21086), (217, 21149), (220, 21167), (222, 21170), (223, 21173), (229, 21230),

Gene: Annalisa\_26 Start: 22034, Stop: 23074, Start Num: 26

Candidate Starts for Annalisa\_26:

(Start: 26 @22034 has 18 MA's), (Start: 43 @22103 has 7 MA's), (46, 22109), (99, 22289), (107, 22310), (109, 22319), (121, 22391), (128, 22418), (130, 22427), (149, 22514), (151, 22520), (175, 22619), (185, 22682), (199, 22796), (203, 22811), (222, 22934), (228, 22991),

Gene: Anon\_31 Start: 22310, Stop: 23416, Start Num: 22

Candidate Starts for Anon\_31:

(Start: 22 @22310 has 1 MA's), (41, 22391), (48, 22406), (71, 22499), (91, 22559), (94, 22589), (101, 22613), (104, 22622), (109, 22646), (138, 22814), (166, 22919), (174, 22964), (175, 22967), (181, 23000), (185, 23030), (194, 23108), (198, 23138), (199, 23144), (208, 23186), (213, 23222), (222, 23279), (239, 23387),

Gene: Axumite\_27 Start: 26078, Stop: 27217, Start Num: 14

Candidate Starts for Axumite\_27:

(Start: 14 @26078 has 15 MA's), (15, 26087), (24, 26135), (33, 26174), (38, 26192), (59, 26261), (76, 26330), (79, 26339), (109, 26465), (121, 26537), (128, 26564), (129, 26567), (140, 26639), (158, 26693), (170, 26756), (176, 26783), (178, 26789), (185, 26840), (195, 26930), (228, 27143), (240, 27200), (241, 27206), (242, 27209),

Gene: Azira\_27 Start: 21488, Stop: 22588, Start Num: 16

Candidate Starts for Azira\_27:

(Start: 16 @21488 has 14 MA's), (Start: 42 @21611 has 2 MA's), (81, 21749), (100, 21827), (103, 21839), (107, 21854), (118, 21923), (121, 21941), (127, 21965), (171, 22133), (198, 22325), (203, 22346), (204, 22349), (209, 22382), (217, 22445), (220, 22463), (223, 22469), (240, 22577),

Gene: Bakery\_34 Start: 28127, Stop: 29377, Start Num: 3

Candidate Starts for Bakery\_34:

(Start: 3 @28127 has 2 MA's), (Start: 13 @28241 has 1 MA's), (20, 28286), (25, 28307), (63, 28451), (72, 28487), (99, 28574), (121, 28676), (128, 28703), (157, 28838), (163, 28865), (171, 28907), (172, 28910), (175, 28928), (188, 29003), (193, 29066), (199, 29105), (240, 29354),

Gene: Balloona\_24 Start: 20277, Stop: 21269, Start Num: 43

Candidate Starts for Balloona\_24:

(Start: 43 @20277 has 7 MA's), (88, 20424), (Start: 96 @20466 has 1 MA's), (97, 20472), (98, 20475), (105, 20493), (115, 20550), (121, 20583), (151, 20712), (157, 20721), (171, 20790), (176, 20814), (185, 20874), (193, 20949), (204, 21009), (205, 21012), (222, 21129), (226, 21162), (231, 21198), (239, 21234), (240, 21240), (243, 21252),

Gene: Banquo\_32 Start: 23108, Stop: 24055, Start Num: 35

Candidate Starts for Banquo\_32:

(34, 23105), (Start: 35 @23108 has 6 MA's), (73, 23255), (80, 23276), (95, 23333), (98, 23345), (118, 23438), (121, 23456), (124, 23465), (130, 23492), (146, 23525), (147, 23528), (168, 23576), (172, 23597), (179, 23633), (185, 23684), (186, 23690), (188, 23696), (192, 23729), (194, 23762), (198, 23786), (207, 23834), (215, 23891), (217, 23912), (226, 23969), (233, 24008), (239, 24041), (240, 24047),

Gene: Bavilard\_25 Start: 21062, Stop: 22054, Start Num: 43

Candidate Starts for Bavilard\_25:

(Start: 43 @21062 has 7 MA's), (88, 21209), (Start: 96 @21251 has 1 MA's), (97, 21257), (98, 21260), (105, 21278), (115, 21335), (121, 21368), (151, 21497), (157, 21506), (171, 21575), (176, 21599), (185, 21659), (193, 21734), (204, 21794), (205, 21797), (222, 21914), (231, 21983), (239, 22019), (240, 22025), (243, 22037),

Gene: Belphegor\_36 Start: 32996, Stop: 34081, Start Num: 18

Candidate Starts for Belphegor\_36:

(Start: 18 @32996 has 18 MA's), (45, 33110), (67, 33176), (77, 33212), (111, 33326), (121, 33377), (131, 33416), (141, 33485), (153, 33524), (157, 33539), (163, 33566), (165, 33581), (178, 33638), (185, 33692), (186, 33698), (192, 33737), (195, 33785), (199, 33806), (204, 33824), (218, 33923), (222, 33944), (228, 34001), (242, 34067),

Gene: BigChungus\_24 Start: 20320, Stop: 21312, Start Num: 43

Candidate Starts for BigChungus\_24:

(Start: 43 @20320 has 7 MA's), (88, 20467), (Start: 96 @20509 has 1 MA's), (97, 20515), (98, 20518), (105, 20536), (115, 20593), (121, 20626), (151, 20755), (157, 20764), (171, 20833), (176, 20857), (185, 20917), (193, 20992), (204, 21052), (205, 21055), (222, 21172), (226, 21205), (231, 21241), (239, 21277), (240, 21283), (243, 21295),

Gene: BigHunkinEater\_39 Start: 32322, Stop: 33398, Start Num: 18

Candidate Starts for BigHunkinEater\_39:

(Start: 18 @32322 has 18 MA's), (45, 32430), (62, 32478), (67, 32496), (111, 32643), (114, 32655), (121, 32694), (131, 32733), (137, 32775), (153, 32841), (157, 32856), (163, 32883), (165, 32898), (178, 32955), (185, 33009), (192, 33054), (199, 33123), (204, 33144), (208, 33168), (218, 33243), (228, 33321), (242, 33387),

Gene: BiggityBass\_27 Start: 28347, Stop: 29480, Start Num: 14

Candidate Starts for BiggityBass\_27:

(Start: 14 @28347 has 15 MA's), (30, 28425), (38, 28461), (121, 28797), (125, 28809), (134, 28851), (158, 28959), (184, 29091), (185, 29106), (192, 29151), (206, 29250), (208, 29259), (240, 29466), (241, 29472),

Gene: Blackpen\_29 Start: 27489, Stop: 28601, Start Num: 14

Candidate Starts for Blackpen\_29:

(Start: 14 @27489 has 15 MA's), (38, 27603), (54, 27654), (56, 27663), (61, 27678), (64, 27693), (83, 27759), (109, 27873), (111, 27894), (121, 27945), (132, 27984), (139, 28008), (156, 28068), (178, 28170), (184, 28206), (185, 28221), (199, 28332), (203, 28350), (209, 28386),

Gene: BobRoss2024\_26 Start: 26114, Stop: 27235, Start Num: 14

Candidate Starts for BobRoss2024\_26:

(Start: 14 @26114 has 15 MA's), (64, 26321), (97, 26450), (106, 26480), (115, 26540), (121, 26573), (139, 26636), (171, 26768), (175, 26789), (199, 26966), (209, 27017), (210, 27035),

Gene: CaiB\_29 Start: 28057, Stop: 29169, Start Num: 14

Candidate Starts for CaiB\_29:

(Start: 14 @28057 has 15 MA's), (38, 28171), (54, 28222), (56, 28231), (61, 28246), (64, 28261), (83, 28327), (109, 28441), (111, 28462), (121, 28513), (132, 28552), (139, 28576), (156, 28636), (178, 28738), (184, 28774), (185, 28789), (199, 28900), (203, 28918), (209, 28954),

Gene: CanesSauce\_25 Start: 20181, Stop: 21293, Start Num: 16

Candidate Starts for CanesSauce\_25:

(Start: 16 @20181 has 14 MA's), (19, 20199), (Start: 42 @20304 has 2 MA's), (76, 20427), (118, 20616), (121, 20634), (124, 20643), (126, 20655), (156, 20760), (171, 20844), (190, 20952), (198, 21036), (204, 21054), (209, 21087), (217, 21150), (220, 21168), (222, 21171), (223, 21174), (229, 21231), (240, 21282),

Gene: CaramellLatte\_25 Start: 20181, Stop: 21293, Start Num: 16

Candidate Starts for CaramellLatte\_25:

(Start: 16 @20181 has 14 MA's), (19, 20199), (Start: 42 @20304 has 2 MA's), (76, 20427), (118, 20616), (121, 20634), (124, 20643), (126, 20655), (156, 20760), (171, 20844), (190, 20952), (198, 21036), (204, 21054), (209, 21087), (217, 21150), (220, 21168), (222, 21171), (223, 21174), (229, 21231), (240, 21282),

Gene: Catfish\_29 Start: 24416, Stop: 25366, Start Num: 35

Candidate Starts for Catfish\_29:

(Start: 35 @24416 has 6 MA's), (40, 24446), (53, 24482), (Start: 58 @24497 has 1 MA's), (66, 24527), (73, 24566), (86, 24599), (94, 24641), (118, 24749), (121, 24767), (130, 24803), (145, 24830), (160, 24854), (169, 24896), (179, 24944), (183, 24971), (188, 25007), (189, 25010), (192, 25040), (204, 25127), (206, 25142), (215, 25202), (224, 25259), (226, 25280), (237, 25340), (240, 25358),

Gene: CharlottesWeb\_27 Start: 26001, Stop: 27152, Start Num: 14

Candidate Starts for CharlottesWeb\_27:

(Start: 14 @26001 has 15 MA's), (24, 26061), (64, 26211), (76, 26256), (79, 26265), (82, 26277), (85, 26286), (109, 26391), (121, 26463), (154, 26610), (170, 26694), (171, 26697), (174, 26715), (176, 26721), (178, 26727), (183, 26754), (184, 26763), (185, 26778), (206, 26922), (207, 26925), (208, 26931), (228, 27081), (240, 27138), (241, 27144),

Gene: CheeseSpider\_32 Start: 23943, Stop: 24920, Start Num: 44

Candidate Starts for CheeseSpider\_32:

(30, 23883), (Start: 44 @23943 has 8 MA's), (68, 24024), (Start: 78 @24057 has 1 MA's), (92, 24084), (97, 24123), (107, 24150), (117, 24207), (121, 24231), (157, 24369), (171, 24444), (174, 24462), (175, 24465), (185, 24528), (192, 24573), (199, 24642), (228, 24834), (239, 24885),

Gene: ChocoMunchkin\_25 Start: 20181, Stop: 21293, Start Num: 16

Candidate Starts for ChocoMunchkin\_25:

(Start: 16 @20181 has 14 MA's), (19, 20199), (Start: 42 @20304 has 2 MA's), (76, 20427), (118, 20616), (121, 20634), (124, 20643), (126, 20655), (156, 20760), (171, 20844), (190, 20952), (198, 21036), (204, 21054), (209, 21087), (217, 21150), (220, 21168), (222, 21171), (223, 21174), (229, 21231), (240, 21282),

Gene: Clark\_26 Start: 22034, Stop: 23071, Start Num: 26

Candidate Starts for Clark\_26:

(4, 21863), (5, 21866), (Start: 26 @22034 has 18 MA's), (Start: 43 @22103 has 7 MA's), (46, 22109), (99, 22289), (107, 22310), (121, 22391), (128, 22418), (148, 22511), (175, 22619), (185, 22682), (193, 22757), (228, 22988),

Gene: Cleo\_25 Start: 20832, Stop: 21935, Start Num: 16

Candidate Starts for Cleo\_25:

(Start: 16 @20832 has 14 MA's), (21, 20868), (Start: 42 @20955 has 2 MA's), (57, 21000), (60, 21012), (61, 21015), (67, 21036), (81, 21093), (103, 21183), (111, 21234), (118, 21267), (121, 21285), (137, 21348), (156, 21396), (172, 21483), (190, 21588), (198, 21672), (199, 21678), (202, 21684), (206, 21711), (207, 21714), (209, 21729), (220, 21810), (223, 21816),

Gene: CloverMinnie\_29 Start: 27997, Stop: 29109, Start Num: 14

Candidate Starts for CloverMinnie\_29:

(Start: 14 @27997 has 15 MA's), (38, 28111), (54, 28162), (56, 28171), (61, 28186), (64, 28201), (83, 28267), (109, 28381), (111, 28402), (121, 28453), (132, 28492), (139, 28516), (156, 28576), (178, 28678), (184, 28714), (185, 28729), (199, 28840), (203, 28858), (209, 28894),

Gene: CocoaPuff\_24 Start: 20274, Stop: 21266, Start Num: 43

Candidate Starts for CocoaPuff\_24:

(Start: 43 @20274 has 7 MA's), (Start: 96 @20463 has 1 MA's), (97, 20469), (98, 20472), (105, 20490), (115, 20547), (121, 20580), (151, 20709), (157, 20718), (171, 20787), (176, 20811), (185, 20871), (193, 20946), (204, 21006), (205, 21009), (222, 21126), (226, 21159), (231, 21195), (239, 21231), (240, 21237), (243, 21249),

Gene: Coldpizza\_30 Start: 30502, Stop: 31638, Start Num: 14

Candidate Starts for Coldpizza\_30:

(Start: 14 @30502 has 15 MA's), (24, 30559), (64, 30706), (109, 30868), (115, 30907), (120, 30931), (121, 30940), (155, 31090), (156, 31096), (162, 31129), (165, 31147), (168, 31156), (175, 31195), (180, 31216), (184, 31243), (185, 31258), (186, 31264), (193, 31333), (199, 31372), (208, 31414),

Gene: Dardanus\_31 Start: 23524, Stop: 24384, Start Num: 58

Candidate Starts for Dardanus\_31:

(23, 23410), (30, 23434), (32, 23443), (36, 23455), (Start: 58 @23524 has 1 MA's), (84, 23611), (90, 23626), (118, 23764), (121, 23782), (130, 23818), (142, 23836), (179, 23959), (183, 23986), (192, 24055), (207, 24160), (214, 24214), (215, 24217), (221, 24256), (224, 24274), (226, 24295), (234, 24340), (237, 24355), (240, 24373),

Gene: Delrey21\_36 Start: 33271, Stop: 34347, Start Num: 18

Candidate Starts for Delrey21\_36:

(Start: 18 @33271 has 18 MA's), (45, 33379), (61, 33424), (67, 33445), (111, 33592), (121, 33643), (131, 33682), (137, 33724), (153, 33790), (157, 33805), (163, 33832), (165, 33847), (178, 33904), (185, 33958), (186, 33964), (192, 34003), (199, 34072), (204, 34093), (208, 34117), (218, 34192), (228, 34270), (242, 34336),

Gene: DinoDaryn\_31 Start: 22562, Stop: 23509, Start Num: 35

Candidate Starts for DinoDaryn\_31:

(Start: 35 @22562 has 6 MA's), (80, 22733), (98, 22802), (118, 22895), (121, 22913), (170, 23045), (173, 23060), (179, 23087), (188, 23150), (192, 23183), (194, 23216), (215, 23345), (223, 23390), (226, 23420), (230, 23447), (232, 23456), (240, 23498),

Gene: DobbysSock\_25 Start: 21508, Stop: 22545, Start Num: 26

Candidate Starts for DobbysSock\_25:

(4, 21337), (5, 21340), (Start: 26 @21508 has 18 MA's), (Start: 43 @21577 has 7 MA's), (46, 21583), (99, 21763), (109, 21793), (121, 21865), (128, 21892), (148, 21985), (175, 22093), (185, 22156), (193, 22231), (228, 22462),

Gene: DoctorFroggo\_36 Start: 33271, Stop: 34347, Start Num: 18

Candidate Starts for DoctorFroggo\_36:

(Start: 18 @33271 has 18 MA's), (45, 33379), (61, 33424), (67, 33445), (111, 33592), (121, 33643), (131, 33682), (137, 33724), (153, 33790), (157, 33805), (163, 33832), (165, 33847), (178, 33904), (185, 33958), (186, 33964), (192, 34003), (199, 34072), (204, 34093), (208, 34117), (218, 34192), (228, 34270), (242, 34336),

Gene: Dolores\_26 Start: 22010, Stop: 23047, Start Num: 26

Candidate Starts for Dolores\_26:

(4, 21839), (5, 21842), (Start: 26 @22010 has 18 MA's), (Start: 43 @22079 has 7 MA's), (46, 22085), (99, 22265), (107, 22286), (121, 22367), (128, 22394), (148, 22487), (175, 22595), (185, 22658), (193, 22733), (228, 22964),

Gene: Dorito\_25 Start: 21473, Stop: 22513, Start Num: 26

Candidate Starts for Dorito\_25:

(Start: 26 @21473 has 18 MA's), (Start: 43 @21542 has 7 MA's), (46, 21548), (99, 21728), (121, 21830), (127, 21854), (128, 21857), (130, 21866), (149, 21953), (175, 22058), (183, 22097), (185, 22121), (192, 22166), (195, 22214), (197, 22223), (199, 22235), (203, 22250), (222, 22373), (228, 22430),

Gene: Dre3\_25 Start: 20758, Stop: 21861, Start Num: 16

Candidate Starts for Dre3\_25:

(Start: 16 @20758 has 14 MA's), (21, 20794), (Start: 42 @20881 has 2 MA's), (81, 21019), (103, 21109), (111, 21160), (118, 21193), (121, 21211), (137, 21274), (156, 21322), (172, 21409), (190, 21514), (198, 21598), (199, 21604), (202, 21610), (206, 21637), (209, 21655), (220, 21736), (222, 21739), (223, 21742),

Gene: Easley\_26 Start: 22020, Stop: 23057, Start Num: 26

Candidate Starts for Easley\_26:

(4, 21849), (5, 21852), (Start: 26 @22020 has 18 MA's), (Start: 43 @22089 has 7 MA's), (46, 22095), (99, 22275), (107, 22296), (121, 22377), (128, 22404), (148, 22497), (175, 22605), (203, 22797), (222, 22917), (228, 22974),

Gene: ElJefes\_24 Start: 20753, Stop: 21745, Start Num: 43

Candidate Starts for ElJefes\_24:

(Start: 43 @20753 has 7 MA's), (88, 20900), (Start: 96 @20942 has 1 MA's), (97, 20948), (98, 20951), (105, 20969), (115, 21026), (121, 21059), (131, 21098), (151, 21188), (157, 21197), (171, 21266), (176, 21290), (185, 21350), (193, 21425), (199, 21464), (204, 21485), (205, 21488), (222, 21605), (226, 21638), (231, 21674), (239, 21710), (240, 21716), (243, 21728),

Gene: Emalyn\_24 Start: 19777, Stop: 20889, Start Num: 16

Candidate Starts for Emalyn\_24:

(10, 19708), (Start: 16 @19777 has 14 MA's), (Start: 42 @19900 has 2 MA's), (95, 20098), (121, 20230), (124, 20239), (156, 20356), (161, 20386), (164, 20401), (171, 20440), (182, 20497), (190, 20548), (198, 20632), (204, 20650), (209, 20683), (220, 20764), (222, 20767), (223, 20770), (240, 20878),

Gene: Fairfaxidum\_28 Start: 23698, Stop: 24678, Start Num: 44

Candidate Starts for Fairfaxidum\_28:

(30, 23638), (Start: 44 @23698 has 8 MA's), (107, 23905), (121, 23986), (122, 23989), (128, 24013), (141, 24082), (149, 24109), (174, 24217), (175, 24220), (178, 24229), (185, 24283), (188, 24295), (193, 24358), (208, 24439), (211, 24469), (228, 24589), (244, 24661), (245, 24670),

Gene: Feastonyeet\_24 Start: 20320, Stop: 21312, Start Num: 43

Candidate Starts for Feastonyeet\_24:

(Start: 43 @20320 has 7 MA's), (88, 20467), (Start: 96 @20509 has 1 MA's), (97, 20515), (98, 20518), (105, 20536), (115, 20593), (121, 20626), (151, 20755), (157, 20764), (171, 20833), (176, 20857), (185, 20917), (193, 20992), (204, 21052), (205, 21055), (222, 21172), (226, 21205), (231, 21241), (239, 21277), (240, 21283), (243, 21295),

Gene: FelixTres\_29 Start: 28174, Stop: 29172, Start Num: 38

Candidate Starts for FelixTres\_29:

(Start: 14 @28060 has 15 MA's), (38, 28174), (54, 28225), (56, 28234), (61, 28249), (64, 28264), (83, 28330), (109, 28444), (111, 28465), (121, 28516), (132, 28555), (139, 28579), (156, 28639), (178, 28741), (184, 28777), (185, 28792), (199, 28903), (203, 28921), (209, 28957),

Gene: Fresco\_27 Start: 26078, Stop: 27217, Start Num: 14

Candidate Starts for Fresco\_27:

(Start: 14 @26078 has 15 MA's), (15, 26087), (24, 26135), (33, 26174), (38, 26192), (59, 26261), (76, 26330), (79, 26339), (109, 26465), (121, 26537), (128, 26564), (129, 26567), (140, 26639), (158, 26693), (170, 26756), (176, 26783), (178, 26789), (185, 26840), (195, 26930), (228, 27143), (240, 27200), (241, 27206), (242, 27209),

Gene: Fribs8\_26 Start: 21343, Stop: 22440, Start Num: 16

Candidate Starts for Fribs8\_26:

(Start: 16 @21343 has 14 MA's), (19, 21361), (Start: 42 @21466 has 2 MA's), (81, 21604), (103, 21694), (107, 21709), (118, 21778), (121, 21796), (126, 21817), (127, 21820), (171, 21985), (182, 22042), (186, 22075), (193, 22144), (198, 22177), (202, 22189), (204, 22201), (209, 22234), (214, 22273), (222, 22318), (240, 22429),

Gene: Frizzle\_25 Start: 21406, Stop: 22404, Start Num: 42

Candidate Starts for Frizzle\_25:

(Start: 42 @21406 has 2 MA's), (61, 21466), (67, 21487), (75, 21523), (91, 21568), (95, 21595), (102, 21619), (107, 21640), (115, 21694), (124, 21736), (156, 21868), (171, 21952), (185, 22036), (199, 22144), (220, 22276), (222, 22279), (228, 22333), (229, 22339), (236, 22369),

Gene: GTE2\_22 Start: 19853, Stop: 20965, Start Num: 16

Candidate Starts for GTE2\_22:

(Start: 16 @19853 has 14 MA's), (19, 19871), (Start: 42 @19976 has 2 MA's), (76, 20099), (101, 20195), (118, 20288), (121, 20306), (126, 20327), (171, 20516), (175, 20537), (190, 20624), (198, 20708), (204, 20726), (209, 20759), (214, 20798), (220, 20840), (222, 20843), (223, 20846), (240, 20954),

Gene: Ghobes\_26 Start: 21406, Stop: 22404, Start Num: 42

Candidate Starts for Ghobes\_26:

(Start: 42 @21406 has 2 MA's), (61, 21466), (67, 21487), (75, 21523), (91, 21568), (95, 21595), (102, 21619), (107, 21640), (115, 21694), (124, 21736), (132, 21772), (156, 21868), (171, 21952), (185, 22036), (199, 22144), (220, 22276), (228, 22333), (229, 22339), (236, 22369),

Gene: Gibbous\_25 Start: 20758, Stop: 21861, Start Num: 16

Candidate Starts for Gibbous\_25:

(Start: 16 @20758 has 14 MA's), (21, 20794), (Start: 42 @20881 has 2 MA's), (81, 21019), (103, 21109), (111, 21160), (118, 21193), (121, 21211), (137, 21274), (156, 21322), (172, 21409), (190, 21514), (198, 21598), (199, 21604), (202, 21610), (206, 21637), (209, 21655), (220, 21736), (222, 21739), (223, 21742),

Gene: Goib\_30 Start: 22610, Stop: 23578, Start Num: 31

Candidate Starts for Goib\_30:

(6, 22433), (23, 22577), (30, 22601), (Start: 31 @22610 has 3 MA's), (Start: 35 @22625 has 6 MA's), (80, 22796), (84, 22805), (98, 22865), (118, 22958), (121, 22976), (130, 23012), (131, 23015), (142, 23030), (177, 23138), (179, 23150), (188, 23216), (192, 23249), (199, 23312), (207, 23354), (208, 23360), (210, 23387), (211, 23390), (214, 23408), (215, 23411), (221, 23450), (223, 23456), (226, 23489), (240, 23567),

Gene: Gudmit\_25 Start: 20321, Stop: 21364, Start Num: 26

Candidate Starts for Gudmit\_25:

(2, 20090), (7, 20186), (8, 20189), (Start: 26 @20321 has 18 MA's), (29, 20327), (39, 20372), (Start: 44 @20396 has 8 MA's), (49, 20405), (61, 20444), (99, 20579), (109, 20609), (121, 20681), (128, 20708), (148, 20801), (175, 20909), (185, 20972), (192, 21017), (193, 21047), (203, 21101), (228, 21278),

Gene: Gustav\_25 Start: 19979, Stop: 21202, Start Num: 9

Candidate Starts for Gustav\_25:

(Start: 9 @19979 has 4 MA's), (12, 20021), (Start: 16 @20051 has 14 MA's), (21, 20087), (37, 20150), (Start: 44 @20183 has 8 MA's), (55, 20216), (64, 20252), (74, 20294), (87, 20339), (89, 20342), (91, 20348), (100, 20399), (110, 20444), (113, 20465), (121, 20513), (172, 20741), (175, 20759), (187, 20831), (193, 20897), (196, 20918), (198, 20930), (204, 20957), (214, 21029), (217, 21053), (220, 21071), (228, 21131),

Gene: Hans\_37 Start: 31512, Stop: 32516, Start Num: 18

Candidate Starts for Hans\_37:

(Start: 18 @31512 has 18 MA's), (45, 31626), (52, 31647), (67, 31692), (77, 31728), (118, 31875), (121, 31893), (163, 31998), (178, 32070), (185, 32124), (192, 32169), (199, 32238), (204, 32259), (208, 32283), (218, 32358), (228, 32436), (242, 32502),

Gene: HippoPololi\_27 Start: 21407, Stop: 22510, Start Num: 16

Candidate Starts for HippoPololi\_27:

(Start: 16 @21407 has 14 MA's), (21, 21443), (Start: 42 @21530 has 2 MA's), (57, 21575), (60, 21587), (61, 21590), (76, 21653), (81, 21668), (87, 21689), (95, 21728), (103, 21758), (118, 21842), (121, 21860), (130, 21896), (137, 21923), (156, 21971), (172, 22058), (190, 22163), (198, 22247), (199, 22253), (202, 22259), (206, 22286), (207, 22289), (209, 22304), (220, 22385), (223, 22391),

Gene: Hortense\_26 Start: 22619, Stop: 23656, Start Num: 26

Candidate Starts for Hortense\_26:

(Start: 26 @22619 has 18 MA's), (Start: 43 @22688 has 7 MA's), (46, 22694), (99, 22874), (107, 22895), (121, 22976), (128, 23003), (148, 23096), (175, 23204), (185, 23267), (193, 23342), (228, 23573),

Gene: Howe\_26 Start: 22619, Stop: 23656, Start Num: 26

Candidate Starts for Howe\_26:

(Start: 26 @22619 has 18 MA's), (Start: 43 @22688 has 7 MA's), (46, 22694), (99, 22874), (107, 22895), (121, 22976), (128, 23003), (148, 23096), (175, 23204), (185, 23267), (193, 23342), (228, 23573),

Gene: Huffy\_31 Start: 22562, Stop: 23509, Start Num: 35

Candidate Starts for Huffy\_31:

(Start: 35 @22562 has 6 MA's), (80, 22733), (98, 22802), (118, 22895), (121, 22913), (170, 23045), (173, 23060), (179, 23087), (188, 23150), (192, 23183), (194, 23216), (198, 23240), (215, 23345), (223, 23390), (226, 23420), (230, 23447), (232, 23456), (240, 23498),

Gene: Inspectinfecti\_36 Start: 31874, Stop: 32962, Start Num: 18

Candidate Starts for Inspectinfecti\_36:

(Start: 18 @31874 has 18 MA's), (45, 31988), (52, 32009), (67, 32054), (77, 32090), (121, 32255), (131, 32294), (137, 32336), (157, 32417), (163, 32444), (165, 32459), (185, 32570), (192, 32615), (195, 32663), (199, 32684), (204, 32705), (208, 32729), (228, 32882), (242, 32948),

Gene: JellyBelly\_27 Start: 26004, Stop: 27155, Start Num: 14

Candidate Starts for JellyBelly\_27:

(Start: 14 @26004 has 15 MA's), (24, 26064), (64, 26214), (76, 26259), (79, 26268), (82, 26280), (85, 26289), (109, 26394), (121, 26466), (154, 26613), (170, 26697), (171, 26700), (174, 26718), (176, 26724), (178, 26730), (183, 26757), (184, 26766), (185, 26781), (206, 26925), (207, 26928), (208, 26934), (228, 27084), (240, 27141), (241, 27147),

Gene: KappaFarmDelta\_30 Start: 23868, Stop: 24845, Start Num: 44

Candidate Starts for KappaFarmDelta\_30:

(30, 23808), (Start: 44 @23868 has 8 MA's), (68, 23949), (Start: 78 @23982 has 1 MA's), (92, 24009), (107, 24075), (117, 24132), (121, 24156), (141, 24252), (174, 24387), (175, 24390), (185, 24453), (192, 24498), (199, 24567), (205, 24588), (228, 24759), (239, 24810),

Gene: Leonard\_35 Start: 31510, Stop: 32598, Start Num: 18

Candidate Starts for Leonard\_35:

(Start: 18 @31510 has 18 MA's), (45, 31624), (52, 31645), (72, 31714), (77, 31726), (121, 31891), (131, 31930), (137, 31972), (157, 32053), (163, 32080), (165, 32095), (178, 32152), (185, 32206), (192, 32251), (199, 32320), (204, 32341), (208, 32365), (218, 32440), (228, 32518), (242, 32584),

Gene: Ligma\_27 Start: 26078, Stop: 27217, Start Num: 14

Candidate Starts for Ligma\_27:

(Start: 14 @26078 has 15 MA's), (15, 26087), (24, 26135), (33, 26174), (38, 26192), (59, 26261), (76, 26330), (79, 26339), (109, 26465), (121, 26537), (128, 26564), (129, 26567), (140, 26639), (158, 26693), (170, 26756), (176, 26783), (178, 26789), (185, 26840), (195, 26930), (228, 27143), (240, 27200), (241, 27206), (242, 27209),

Gene: Lilbeanie\_32 Start: 26757, Stop: 27755, Start Num: 18

Candidate Starts for Lilbeanie\_32:

(Start: 18 @26757 has 18 MA's), (45, 26865), (47, 26868), (51, 26877), (67, 26931), (69, 26943), (72, 26955), (87, 26985), (118, 27114), (121, 27132), (143, 27198), (144, 27204), (163, 27234), (185, 27360), (193, 27435), (204, 27495), (207, 27513), (228, 27669),

Gene: MaVan\_27 Start: 21488, Stop: 22621, Start Num: 16

Candidate Starts for MaVan\_27:

(Start: 16 @21488 has 14 MA's), (Start: 42 @21611 has 2 MA's), (81, 21749), (100, 21827), (103, 21839), (107, 21854), (118, 21923), (121, 21941), (127, 21965), (135, 22001), (156, 22082), (171, 22166), (198, 22358), (202, 22370), (204, 22382), (209, 22415), (214, 22454), (222, 22499), (240, 22610),

Gene: MakoManhole\_29 Start: 28075, Stop: 29187, Start Num: 14

Candidate Starts for MakoManhole\_29:

(Start: 14 @28075 has 15 MA's), (38, 28189), (54, 28240), (56, 28249), (61, 28264), (64, 28279), (83, 28345), (109, 28459), (111, 28480), (121, 28531), (132, 28570), (139, 28594), (156, 28654), (178, 28756), (184, 28792), (185, 28807), (199, 28918), (203, 28936), (209, 28972),

Gene: Malvina\_27 Start: 21446, Stop: 22513, Start Num: 21

Candidate Starts for Malvina\_27:

(Start: 16 @21410 has 14 MA's), (21, 21446), (Start: 42 @21533 has 2 MA's), (57, 21578), (60, 21590), (61, 21593), (76, 21656), (81, 21671), (87, 21692), (95, 21731), (103, 21761), (118, 21845), (121, 21863), (130, 21899), (137, 21926), (156, 21974), (172, 22061), (190, 22166), (198, 22250), (199, 22256), (202, 22262), (206, 22289), (207, 22292), (209, 22307), (220, 22388), (223, 22394),

Gene: Mariokart\_27 Start: 26000, Stop: 27151, Start Num: 14

Candidate Starts for Mariokart\_27:

(Start: 14 @26000 has 15 MA's), (24, 26060), (64, 26210), (76, 26255), (79, 26264), (82, 26276), (85, 26285), (109, 26390), (121, 26462), (154, 26609), (170, 26693), (171, 26696), (174, 26714), (176, 26720), (178, 26726), (183, 26753), (184, 26762), (185, 26777), (206, 26921), (207, 26924), (208, 26930), (228, 27080), (240, 27137), (241, 27143),

Gene: McDazzle\_24 Start: 20747, Stop: 21739, Start Num: 43

Candidate Starts for McDazzle\_24:

(Start: 43 @20747 has 7 MA's), (88, 20894), (Start: 96 @20936 has 1 MA's), (97, 20942), (98, 20945), (105, 20963), (115, 21020), (121, 21053), (131, 21092), (151, 21182), (157, 21191), (171, 21260), (176, 21284), (185, 21344), (193, 21419), (199, 21458), (204, 21479), (205, 21482), (222, 21599), (226, 21632), (231, 21668), (239, 21704), (240, 21710), (243, 21722),

Gene: Mcklovin\_26 Start: 24788, Stop: 25825, Start Num: 26

Candidate Starts for Mcklovin\_26:

(4, 24617), (5, 24620), (Start: 26 @24788 has 18 MA's), (Start: 43 @24857 has 7 MA's), (46, 24863), (99, 25043), (107, 25064), (121, 25145), (128, 25172), (148, 25265), (175, 25373), (185, 25436), (193, 25511), (228, 25742),

Gene: MelBins\_36 Start: 31659, Stop: 32747, Start Num: 18

Candidate Starts for MelBins\_36:

(Start: 18 @31659 has 18 MA's), (45, 31773), (52, 31794), (67, 31839), (72, 31863), (77, 31875), (121, 32040), (131, 32079), (137, 32121), (157, 32202), (163, 32229), (165, 32244), (185, 32355), (192, 32400), (195, 32448), (199, 32469), (204, 32490), (208, 32514), (228, 32667), (242, 32733),

Gene: MichaelScott\_26 Start: 22391, Stop: 23428, Start Num: 26

Candidate Starts for MichaelScott\_26:

(4, 22220), (5, 22223), (Start: 26 @22391 has 18 MA's), (Start: 43 @22460 has 7 MA's), (46, 22466), (99, 22646), (107, 22667), (121, 22748), (128, 22775), (148, 22868), (175, 22976), (185, 23039), (193, 23114), (228, 23345),

Gene: Morrissey\_26 Start: 20856, Stop: 22073, Start Num: 9

Candidate Starts for Morrissey\_26:

(Start: 9 @20856 has 4 MA's), (17, 20922), (21, 20955), (37, 21018), (64, 21120), (87, 21207), (89, 21210), (91, 21216), (110, 21312), (113, 21333), (121, 21381), (171, 21609), (172, 21612), (187, 21702), (193, 21768), (196, 21789), (198, 21801), (204, 21828), (210, 21879), (214, 21900), (217, 21924), (220, 21942), (233, 22020),

Gene: MossRose\_29 Start: 28054, Stop: 29166, Start Num: 14

Candidate Starts for MossRose\_29:

(Start: 14 @28054 has 15 MA's), (38, 28168), (54, 28219), (56, 28228), (61, 28243), (64, 28258), (83, 28324), (109, 28438), (111, 28459), (121, 28510), (132, 28549), (139, 28573), (156, 28633), (178, 28735), (184, 28771), (185, 28786), (199, 28897), (203, 28915), (209, 28951),

Gene: Murp\_29 Start: 23645, Stop: 24622, Start Num: 44

Candidate Starts for Murp\_29:

(30, 23585), (Start: 44 @23645 has 8 MA's), (68, 23726), (Start: 78 @23759 has 1 MA's), (92, 23786), (97, 23825), (107, 23852), (117, 23909), (121, 23933), (171, 24146), (174, 24164), (175, 24167), (178, 24176), (185, 24230), (192, 24275), (199, 24344), (226, 24515), (228, 24536), (239, 24587),

Gene: NHagos\_27 Start: 26589, Stop: 27701, Start Num: 14

Candidate Starts for NHagos\_27:

(Start: 14 @26589 has 15 MA's), (28, 26658), (Start: 35 @26691 has 6 MA's), (38, 26703), (Start: 43 @26727 has 7 MA's), (54, 26754), (61, 26778), (64, 26793), (83, 26859), (109, 26973), (115, 27012), (139, 27111), (156, 27171), (172, 27246), (177, 27270), (178, 27273), (184, 27309), (185, 27324), (188, 27336), (192, 27369), (199, 27435), (209, 27489), (240, 27687),

Gene: Natkenzie\_37 Start: 33084, Stop: 34160, Start Num: 18

Candidate Starts for Natkenzie\_37:

(1, 32790), (11, 33018), (Start: 18 @33084 has 18 MA's), (45, 33192), (62, 33240), (67, 33258), (111, 33405), (114, 33417), (121, 33456), (131, 33495), (137, 33537), (153, 33603), (157, 33618), (163, 33645), (165, 33660), (185, 33771), (192, 33816), (193, 33846), (195, 33864), (199, 33885), (204, 33906), (208, 33930), (228, 34083), (242, 34149),

Gene: Nibbles\_27 Start: 21488, Stop: 22621, Start Num: 16

Candidate Starts for Nibbles\_27:

(Start: 16 @21488 has 14 MA's), (19, 21506), (Start: 42 @21611 has 2 MA's), (76, 21734), (81, 21749), (100, 21827), (103, 21839), (107, 21854), (118, 21923), (121, 21941), (127, 21965), (135, 22001), (156, 22082), (171, 22166), (198, 22358), (202, 22370), (204, 22382), (209, 22415), (214, 22454), (222, 22499), (240, 22610),

Gene: Oregano\_26 Start: 22056, Stop: 23096, Start Num: 26

Candidate Starts for Oregano\_26:

(Start: 26 @22056 has 18 MA's), (Start: 43 @22125 has 7 MA's), (46, 22131), (99, 22311), (107, 22332), (109, 22341), (121, 22413), (128, 22440), (148, 22533), (175, 22641), (185, 22704), (199, 22818), (222, 22956), (228, 23013),

Gene: PCoral7\_29 Start: 23615, Stop: 24595, Start Num: 44

Candidate Starts for PCoral7\_29:

(30, 23555), (Start: 44 @23615 has 8 MA's), (Start: 78 @23726 has 1 MA's), (107, 23822), (115, 23870), (121, 23903), (128, 23930), (141, 23999), (148, 24023), (149, 24026), (171, 24116), (174, 24134), (175, 24137), (185, 24200), (193, 24275), (218, 24431), (228, 24506), (244, 24578), (245, 24587),

Gene: Petra\_30 Start: 23485, Stop: 24351, Start Num: 78

Candidate Starts for Petra\_30:

(30, 23311), (Start: 44 @23371 has 8 MA's), (68, 23452), (Start: 78 @23485 has 1 MA's), (92, 23512), (97, 23551), (107, 23578), (121, 23659), (128, 23686), (130, 23695), (141, 23755), (148, 23779), (149, 23782), (172, 23875), (174, 23890), (175, 23893), (185, 23956), (188, 23968), (192, 24001), (193, 24031), (218, 24187), (226, 24241), (228, 24262),

Gene: Phauci\_28 Start: 28099, Stop: 29187, Start Num: 18

Candidate Starts for Phauci\_28:

(Start: 18 @28099 has 18 MA's), (45, 28213), (52, 28234), (72, 28303), (77, 28315), (121, 28480), (131, 28519), (137, 28561), (157, 28642), (163, 28669), (165, 28684), (185, 28795), (192, 28840), (195, 28888), (199, 28909), (204, 28930), (208, 28954), (218, 29029), (228, 29107), (242, 29173),

Gene: Phinally\_35 Start: 31507, Stop: 32595, Start Num: 18

Candidate Starts for Phinally\_35:

(Start: 18 @31507 has 18 MA's), (45, 31621), (52, 31642), (72, 31711), (77, 31723), (121, 31888), (131, 31927), (137, 31969), (157, 32050), (163, 32077), (165, 32092), (178, 32149), (185, 32203), (192, 32248), (199, 32317), (204, 32338), (208, 32362), (218, 32437), (228, 32515), (242, 32581),

Gene: PhriskyACE\_25 Start: 21473, Stop: 22513, Start Num: 26

Candidate Starts for PhriskyACE\_25:

(Start: 26 @21473 has 18 MA's), (Start: 43 @21542 has 7 MA's), (46, 21548), (99, 21728), (121, 21830), (127, 21854), (128, 21857), (130, 21866), (149, 21953), (175, 22058), (183, 22097), (185, 22121), (192, 22166), (195, 22214), (197, 22223), (199, 22235), (203, 22250), (222, 22373), (228, 22430),

Gene: PotPie\_25 Start: 21139, Stop: 22131, Start Num: 43

Candidate Starts for PotPie\_25:

(Start: 43 @21139 has 7 MA's), (88, 21286), (Start: 96 @21328 has 1 MA's), (97, 21334), (98, 21337), (105, 21355), (115, 21412), (121, 21445), (151, 21574), (157, 21583), (171, 21652), (176, 21676), (185, 21736), (193, 21811), (204, 21871), (205, 21874), (222, 21991), (226, 22024), (231, 22060), (239, 22096), (240, 22102), (243, 22114),

Gene: PrincePatrick\_28 Start: 23694, Stop: 24674, Start Num: 44

Candidate Starts for PrincePatrick\_28:

(30, 23634), (Start: 44 @23694 has 8 MA's), (Start: 78 @23805 has 1 MA's), (107, 23901), (115, 23949), (121, 23982), (128, 24009), (130, 24018), (141, 24078), (148, 24102), (149, 24105), (171, 24195), (174, 24213), (175, 24216), (185, 24279), (193, 24354), (218, 24510), (228, 24585), (239, 24636),

Gene: Pumpkiney\_38 Start: 30407, Stop: 31483, Start Num: 18

Candidate Starts for Pumpkiney\_38:

(Start: 18 @30407 has 18 MA's), (45, 30515), (62, 30563), (67, 30581), (111, 30728), (114, 30740), (121, 30779), (131, 30818), (137, 30860), (153, 30926), (157, 30941), (163, 30968), (165, 30983), (178, 31040), (185, 31094), (192, 31139), (195, 31187), (199, 31208), (204, 31229), (208, 31253), (218, 31328), (228, 31406), (229, 31412), (242, 31472),

Gene: Puppies\_25 Start: 19683, Stop: 20918, Start Num: 9

Candidate Starts for Puppies\_25:

(Start: 9 @19683 has 4 MA's), (21, 19794), (27, 19812), (37, 19857), (50, 19902), (64, 19959), (70, 19989), (74, 20001), (93, 20064), (95, 20088), (108, 20133), (116, 20187), (119, 20202), (120, 20205), (123, 20220), (136, 20280), (159, 20376), (166, 20424), (167, 20427), (201, 20658), (212, 20733), (225, 20817), (238, 20892), (239, 20898),

Gene: Rizz\_29 Start: 22391, Stop: 23428, Start Num: 26

Candidate Starts for Rizz\_29:

(4, 22220), (5, 22223), (Start: 26 @22391 has 18 MA's), (Start: 43 @22460 has 7 MA's), (46, 22466), (99, 22646), (107, 22667), (121, 22748), (128, 22775), (148, 22868), (175, 22976), (185, 23039), (193, 23114), (228, 23345),

Gene: Samman98\_26 Start: 22025, Stop: 23065, Start Num: 26

Candidate Starts for Samman98\_26:

(Start: 26 @22025 has 18 MA's), (Start: 43 @22094 has 7 MA's), (46, 22100), (99, 22280), (121, 22382), (127, 22406), (128, 22409), (130, 22418), (149, 22505), (175, 22610), (183, 22649), (185, 22673), (192, 22718), (195, 22766), (197, 22775), (199, 22787), (203, 22802), (222, 22925), (228, 22982),

Gene: Sampson\_37 Start: 33029, Stop: 34105, Start Num: 18

Candidate Starts for Sampson\_37:

(1, 32735), (11, 32963), (Start: 18 @33029 has 18 MA's), (45, 33137), (62, 33185), (67, 33203), (111, 33350), (114, 33362), (121, 33401), (131, 33440), (137, 33482), (153, 33548), (157, 33563), (163, 33590), (165, 33605), (185, 33716), (192, 33761), (193, 33791), (195, 33809), (199, 33830), (204, 33851), (208, 33875), (228, 34028), (242, 34094),

Gene: Sapo\_25 Start: 21383, Stop: 22177, Start Num: 96

Candidate Starts for Sapo\_25:

(Start: 96 @21383 has 1 MA's), (107, 21425), (112, 21461), (133, 21551), (146, 21626), (147, 21629), (171, 21722), (193, 21878), (199, 21917), (223, 22055), (226, 22085), (227, 22094), (236, 22142),

Gene: Scioto\_37 Start: 33084, Stop: 34160, Start Num: 18

Candidate Starts for Scioto\_37:

(1, 32790), (11, 33018), (Start: 18 @33084 has 18 MA's), (45, 33192), (62, 33240), (67, 33258), (111, 33405), (114, 33417), (121, 33456), (131, 33495), (137, 33537), (153, 33603), (157, 33618), (163, 33645), (165, 33660), (185, 33771), (192, 33816), (193, 33846), (195, 33864), (199, 33885), (204, 33906), (208, 33930), (228, 34083), (242, 34149),

Gene: Sekhmet\_26 Start: 22385, Stop: 23425, Start Num: 26

Candidate Starts for Sekhmet\_26:

(Start: 26 @22385 has 18 MA's), (Start: 43 @22454 has 7 MA's), (46, 22460), (99, 22640), (121, 22742), (127, 22766), (128, 22769), (130, 22778), (149, 22865), (175, 22970), (183, 23009), (185, 23033), (192, 23078), (195, 23126), (197, 23135), (199, 23147), (203, 23162), (222, 23285), (228, 23342),

Gene: Shatter\_27 Start: 26078, Stop: 27217, Start Num: 14

Candidate Starts for Shatter\_27:

(Start: 14 @26078 has 15 MA's), (15, 26087), (24, 26135), (33, 26174), (38, 26192), (59, 26261), (76, 26330), (79, 26339), (109, 26465), (121, 26537), (128, 26564), (129, 26567), (140, 26639), (158, 26693), (170, 26756), (176, 26783), (178, 26789), (185, 26840), (195, 26930), (228, 27143), (240, 27200), (241, 27206), (242, 27209),

Gene: SheckWes\_25 Start: 20283, Stop: 21275, Start Num: 43

Candidate Starts for SheckWes\_25:

(Start: 43 @20283 has 7 MA's), (88, 20430), (Start: 96 @20472 has 1 MA's), (98, 20481), (105, 20499), (115, 20556), (121, 20589), (131, 20628), (151, 20718), (157, 20727), (171, 20796), (176, 20820), (185, 20880), (193, 20955), (204, 21015), (205, 21018), (222, 21135), (226, 21168), (231, 21204), (239, 21240), (240, 21246), (243, 21258),

Gene: Shlim410\_26 Start: 22619, Stop: 23656, Start Num: 26

Candidate Starts for Shlim410\_26:

(Start: 26 @22619 has 18 MA's), (Start: 43 @22688 has 7 MA's), (46, 22694), (99, 22874), (107, 22895), (121, 22976), (128, 23003), (148, 23096), (175, 23204), (185, 23267), (193, 23342), (228, 23573),

Gene: Sixsevenium\_34 Start: 28127, Stop: 29377, Start Num: 3

Candidate Starts for Sixsevenium\_34:

(Start: 3 @28127 has 2 MA's), (Start: 13 @28241 has 1 MA's), (20, 28286), (25, 28307), (63, 28451), (72, 28487), (99, 28574), (121, 28676), (128, 28703), (157, 28838), (163, 28865), (171, 28907), (172, 28910), (175, 28928), (188, 29003), (193, 29066), (199, 29105), (240, 29354),

Gene: Sour\_31 Start: 30307, Stop: 31437, Start Num: 13

Candidate Starts for Sour\_31:

(Start: 13 @30307 has 1 MA's), (33, 30400), (Start: 35 @30406 has 6 MA's), (60, 30496), (64, 30511), (83, 30577), (121, 30754), (141, 30850), (172, 30967), (175, 30985), (185, 31048), (197, 31150), (199, 31162), (203, 31177), (206, 31195), (216, 31276), (228, 31354), (239, 31405), (240, 31411),

Gene: Splinter\_29 Start: 22610, Stop: 23578, Start Num: 31

Candidate Starts for Splinter\_29:

(6, 22433), (23, 22577), (30, 22601), (Start: 31 @22610 has 3 MA's), (Start: 35 @22625 has 6 MA's), (80, 22796), (84, 22805), (98, 22865), (118, 22958), (121, 22976), (130, 23012), (131, 23015), (142, 23030), (177, 23138), (179, 23150), (188, 23216), (192, 23249), (199, 23312), (207, 23354), (208, 23360), (210, 23387), (211, 23390), (214, 23408), (215, 23411), (221, 23450), (223, 23456), (226, 23489), (240, 23567),

Gene: SummitAcademy\_25 Start: 20359, Stop: 21351, Start Num: 43

Candidate Starts for SummitAcademy\_25:

(Start: 43 @20359 has 7 MA's), (88, 20506), (98, 20557), (105, 20575), (115, 20632), (121, 20665), (151, 20794), (157, 20803), (171, 20872), (176, 20896), (185, 20956), (193, 21031), (204, 21091), (205, 21094), (222, 21211), (226, 21244), (231, 21280), (239, 21316), (240, 21322), (243, 21334),

Gene: Survivors\_27 Start: 21337, Stop: 22437, Start Num: 16

Candidate Starts for Survivors\_27:

(Start: 16 @21337 has 14 MA's), (19, 21355), (Start: 42 @21460 has 2 MA's), (81, 21598), (100, 21676), (103, 21688), (107, 21703), (118, 21772), (121, 21790), (127, 21814), (171, 21982), (198, 22174), (203, 22195), (204, 22198), (209, 22231), (217, 22294), (220, 22312), (223, 22318), (240, 22426),

Gene: TZGordon\_31 Start: 22485, Stop: 23432, Start Num: 35

Candidate Starts for TZGordon\_31:

(Start: 35 @22485 has 6 MA's), (80, 22656), (98, 22725), (118, 22818), (121, 22836), (170, 22968), (173, 22983), (179, 23010), (188, 23073), (192, 23106), (194, 23139), (198, 23163), (215, 23268), (223, 23313), (226, 23343), (230, 23370), (232, 23379), (240, 23421),

Gene: Tardus\_38 Start: 32448, Stop: 33524, Start Num: 18

Candidate Starts for Tardus\_38:

(Start: 18 @32448 has 18 MA's), (45, 32556), (62, 32604), (67, 32622), (111, 32769), (114, 32781), (121, 32820), (131, 32859), (137, 32901), (153, 32967), (157, 32982), (163, 33009), (165, 33024), (178, 33081), (185, 33135), (192, 33180), (199, 33249), (204, 33270), (208, 33294), (218, 33369), (228, 33447), (242, 33513),

Gene: TinaLin\_31 Start: 22732, Stop: 23730, Start Num: 35

Candidate Starts for TinaLin\_31:

(34, 22729), (Start: 35 @22732 has 6 MA's), (73, 22879), (80, 22900), (95, 22957), (98, 22969), (121, 23080), (170, 23263), (185, 23356), (191, 23392), (192, 23401), (207, 23506), (208, 23512), (210, 23539), (211, 23542), (229, 23668), (234, 23686), (235, 23695), (240, 23719),

Gene: Toast\_29 Start: 23615, Stop: 24595, Start Num: 44

Candidate Starts for Toast\_29:

(30, 23555), (Start: 44 @23615 has 8 MA's), (Start: 78 @23726 has 1 MA's), (107, 23822), (115, 23870), (121, 23903), (128, 23930), (141, 23999), (148, 24023), (149, 24026), (171, 24116), (174, 24134), (175, 24137), (185, 24200), (193, 24275), (218, 24431), (228, 24506), (244, 24578), (245, 24587),

Gene: TraderJ\_29 Start: 28060, Stop: 29157, Start Num: 14

Candidate Starts for TraderJ\_29:

(Start: 14 @28060 has 15 MA's), (38, 28174), (56, 28234), (61, 28249), (64, 28264), (109, 28444), (115, 28483), (121, 28516), (139, 28573), (154, 28621), (156, 28633), (177, 28726), (178, 28729), (179, 28738), (184, 28765), (185, 28780), (186, 28786), (199, 28885), (200, 28891), (207, 28927), (229, 29089), (238, 29128),

Gene: Twinkle\_26 Start: 23678, Stop: 24715, Start Num: 26

Candidate Starts for Twinkle\_26:

(Start: 26 @23678 has 18 MA's), (Start: 43 @23747 has 7 MA's), (46, 23753), (99, 23933), (107, 23954), (121, 24035), (128, 24062), (148, 24155), (175, 24263), (185, 24326), (193, 24401), (228, 24632),

Gene: Vendetta\_29 Start: 22610, Stop: 23578, Start Num: 31

Candidate Starts for Vendetta\_29:

(6, 22433), (23, 22577), (30, 22601), (Start: 31 @22610 has 3 MA's), (Start: 35 @22625 has 6 MA's), (84, 22805), (98, 22865), (118, 22958), (121, 22976), (130, 23012), (131, 23015), (142, 23030), (177, 23138), (179, 23150), (188, 23216), (192, 23249), (199, 23312), (207, 23354), (208, 23360), (210, 23387), (211, 23390), (214, 23408), (215, 23411), (221, 23450), (223, 23456), (226, 23489), (240, 23567),

Gene: Verity\_36 Start: 33271, Stop: 34347, Start Num: 18

Candidate Starts for Verity\_36:

(Start: 18 @33271 has 18 MA's), (45, 33379), (61, 33424), (67, 33445), (111, 33592), (121, 33643), (131, 33682), (137, 33724), (153, 33790), (157, 33805), (163, 33832), (165, 33847), (178, 33904), (185, 33958), (186, 33964), (192, 34003), (199, 34072), (204, 34093), (208, 34117), (218, 34192), (228, 34270), (242, 34336),

Gene: ViaConlectus\_37 Start: 31720, Stop: 32796, Start Num: 18

Candidate Starts for ViaConlectus\_37:

(1, 31426), (11, 31654), (Start: 18 @31720 has 18 MA's), (45, 31828), (62, 31876), (67, 31894), (111, 32041), (114, 32053), (121, 32092), (131, 32131), (137, 32173), (153, 32239), (157, 32254), (163, 32281), (165, 32296), (185, 32407), (192, 32452), (193, 32482), (195, 32500), (199, 32521), (208, 32566), (228, 32719), (242, 32785),

Gene: Vine\_26 Start: 21286, Stop: 22272, Start Num: 43

Candidate Starts for Vine\_26:

(Start: 43 @21286 has 7 MA's), (Start: 96 @21475 has 1 MA's), (121, 21592), (151, 21721), (157, 21730), (171, 21799), (176, 21823), (185, 21883), (193, 21958), (204, 22018), (205, 22021), (226, 22168), (231, 22204), (239, 22240), (243, 22258),

Gene: Wallaby\_29 Start: 21481, Stop: 22581, Start Num: 16

Candidate Starts for Wallaby\_29:

(Start: 16 @21481 has 14 MA's), (19, 21499), (Start: 42 @21604 has 2 MA's), (81, 21742), (100, 21820), (103, 21832), (118, 21916), (121, 21934), (127, 21958), (171, 22126), (198, 22318), (203, 22339), (204, 22342), (209, 22375), (217, 22438), (220, 22456), (223, 22462), (240, 22570),

Gene: Widow\_25 Start: 19674, Stop: 20909, Start Num: 9

Candidate Starts for Widow\_25:

(Start: 9 @19674 has 4 MA's), (21, 19785), (24, 19794), (27, 19803), (37, 19848), (50, 19893), (64, 19950), (70, 19980), (74, 19992), (93, 20055), (95, 20079), (108, 20124), (116, 20178), (119, 20193), (120, 20196), (123, 20211), (136, 20271), (159, 20367), (166, 20415), (167, 20418), (201, 20649), (212, 20724), (225, 20808), (238, 20883), (239, 20889),

Gene: William\_29 Start: 23441, Stop: 24427, Start Num: 44

Candidate Starts for William\_29:

(30, 23381), (Start: 44 @23441 has 8 MA's), (65, 23504), (Start: 78 @23552 has 1 MA's), (107, 23648), (121, 23729), (122, 23732), (128, 23756), (141, 23825), (149, 23852), (174, 23960), (175, 23963), (185, 24026), (188, 24038), (193, 24101), (208, 24182), (211, 24212), (228, 24332),

Gene: WinkNick\_26 Start: 22010, Stop: 23047, Start Num: 26

Candidate Starts for WinkNick\_26:

(4, 21839), (5, 21842), (Start: 26 @22010 has 18 MA's), (Start: 43 @22079 has 7 MA's), (46, 22085), (99, 22265), (107, 22286), (121, 22367), (128, 22394), (148, 22487), (175, 22595), (185, 22658), (193, 22733), (228, 22964),

Gene: Wocket\_30 Start: 24063, Stop: 25040, Start Num: 44

Candidate Starts for Wocket\_30:

(30, 24003), (Start: 44 @24063 has 8 MA's), (68, 24144), (Start: 78 @24177 has 1 MA's), (92, 24204), (107, 24270), (117, 24327), (121, 24351), (174, 24582), (175, 24585), (185, 24648), (192, 24693), (199, 24762), (228, 24954), (239, 25005),

Gene: Wolfwood\_29 Start: 21481, Stop: 22581, Start Num: 16

Candidate Starts for Wolfwood\_29:

(Start: 16 @21481 has 14 MA's), (19, 21499), (Start: 42 @21604 has 2 MA's), (81, 21742), (100, 21820), (103, 21832), (118, 21916), (121, 21934), (127, 21958), (171, 22126), (198, 22318), (203, 22339), (204, 22342), (209, 22375), (217, 22438), (220, 22456), (223, 22462), (240, 22570),

Gene: Wooper\_29 Start: 28066, Stop: 29163, Start Num: 14

Candidate Starts for Wooper\_29:

(Start: 14 @28066 has 15 MA's), (38, 28180), (56, 28240), (61, 28255), (64, 28270), (109, 28450), (115, 28489), (121, 28522), (139, 28579), (154, 28627), (156, 28639), (177, 28732), (178, 28735), (179, 28744), (184, 28771), (185, 28786), (186, 28792), (199, 28891), (200, 28897), (209, 28948), (211, 28969), (219, 29014), (238, 29134),

Gene: Yarn\_24 Start: 20174, Stop: 21286, Start Num: 16

Candidate Starts for Yarn\_24:

(Start: 16 @20174 has 14 MA's), (19, 20192), (Start: 42 @20297 has 2 MA's), (76, 20420), (118, 20609), (121, 20627), (124, 20636), (126, 20648), (156, 20753), (171, 20837), (190, 20945), (198, 21029), (204, 21047), (209, 21080), (217, 21143), (220, 21161), (222, 21164), (223, 21167), (229, 21224),

Gene: Yeshua\_29 Start: 28043, Stop: 29140, Start Num: 14

Candidate Starts for Yeshua\_29:

(Start: 14 @28043 has 15 MA's), (38, 28157), (56, 28217), (61, 28232), (64, 28247), (109, 28427), (115, 28466), (121, 28499), (139, 28556), (154, 28604), (156, 28616), (177, 28709), (178, 28712), (179, 28721), (184, 28748), (185, 28763), (186, 28769), (199, 28868), (200, 28874), (209, 28925), (211, 28946), (219, 28991), (238, 29111),

Gene: Yucky\_25 Start: 21145, Stop: 22131, Start Num: 43

Candidate Starts for Yucky\_25:

(Start: 43 @21145 has 7 MA's), (Start: 96 @21334 has 1 MA's), (121, 21451), (127, 21475), (150, 21574), (152, 21580), (171, 21658), (172, 21661), (176, 21682), (185, 21742), (193, 21817), (198, 21850), (208, 21901), (222, 21994), (239, 22099), (243, 22117),

Gene: YungMoney\_35 Start: 29700, Stop: 30950, Start Num: 3

Candidate Starts for YungMoney\_35:

(Start: 3 @29700 has 2 MA's), (Start: 13 @29814 has 1 MA's), (20, 29859), (25, 29880), (63, 30024), (72, 30060), (99, 30147), (121, 30249), (128, 30276), (141, 30357), (171, 30480), (172, 30483), (175, 30501), (186, 30570), (199, 30678),

Gene: Zareef\_27 Start: 21489, Stop: 22589, Start Num: 16

Candidate Starts for Zareef\_27:

(Start: 16 @21489 has 14 MA's), (19, 21507), (Start: 42 @21612 has 2 MA's), (81, 21750), (100, 21828), (103, 21840), (107, 21855), (118, 21924), (121, 21942), (127, 21966), (171, 22134), (198, 22326), (203, 22347), (204, 22350), (209, 22383), (217, 22446), (220, 22464), (223, 22470), (240, 22578),

Gene: Zipp\_36 Start: 33174, Stop: 34250, Start Num: 18

Candidate Starts for Zipp\_36:

(Start: 18 @33174 has 18 MA's), (45, 33282), (62, 33330), (67, 33348), (111, 33495), (114, 33507), (121, 33546), (131, 33585), (137, 33627), (153, 33693), (157, 33708), (163, 33735), (165, 33750), (178, 33807), (185, 33861), (192, 33906), (199, 33975), (204, 33996), (208, 34020), (218, 34095), (228, 34173), (242, 34239),

Gene: Zitch\_38 Start: 31061, Stop: 32053, Start Num: 18

Candidate Starts for Zitch\_38:

(Start: 18 @31061 has 18 MA's), (45, 31169), (62, 31217), (67, 31235), (111, 31382), (114, 31394), (118, 31415), (121, 31433), (163, 31538), (178, 31610), (185, 31664), (192, 31709), (199, 31778), (204, 31799), (208, 31823), (218, 31898), (228, 31976), (242, 32042),