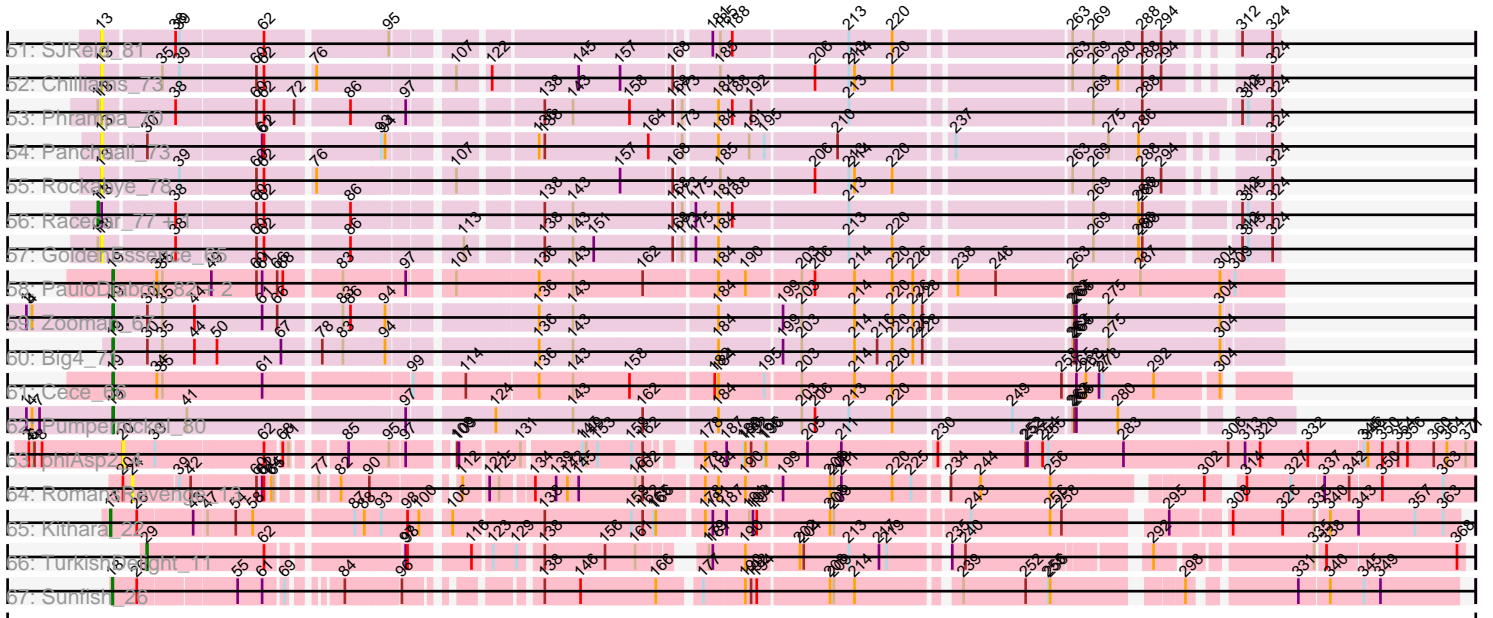


Pham 215976



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 215976 Report

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

Pham number 215976 has 120 members, 38 are drafts.

Phages represented in each track:

- Track 1 : Ranunculus\_17
- Track 2 : Wilde\_17, Tank\_17
- Track 3 : Rizwana\_16
- Track 4 : Ollypop\_18
- Track 5 : NyleyClemson\_19
- Track 6 : Forrestell\_19, RazzB\_18
- Track 7 : Beagle\_23
- Track 8 : Pointis\_22, DogYard\_21, MellowYellow\_19, Kubulix\_22
- Track 9 : Odyssey395\_24, Pureglobe5\_24
- Track 10 : BruhMoment\_18
- Track 11 : AWGoat\_17
- Track 12 : SilentRX\_18
- Track 13 : BayC\_10, Salete\_10, Maih\_10
- Track 14 : TP1604\_10
- Track 15 : YDN12\_11
- Track 16 : Xkcd426\_11
- Track 17 : RainyPolka\_10
- Track 18 : Abt2graduatex2\_10
- Track 19 : BabyGotBac\_10
- Track 20 : Asis\_10
- Track 21 : Mischief19\_11
- Track 22 : Phendrix\_65
- Track 23 : GodonK\_66
- Track 24 : BlueNGold\_76, Boopy\_77, Forza\_77, Mareelih\_76
- Track 25 : Sixama\_72
- Track 26 : GMA2\_9
- Track 27 : Sillytadpoles\_22, Viceroy\_21, Phabia\_22, Quammi\_20, Zagie\_22, Llemily\_22, StrawberryJamm\_24, Teehee\_23, Casend\_23, Wheelie\_21, Jehoshaphat\_24, DonaldDuck\_22, Tissue\_22, Judebell\_24, FrankDeliGuy\_20, Rudy\_20, Lonelysoil\_21, Wayne3\_23
- Track 28 : Gazebo\_21, Blab\_20
- Track 29 : Statler\_24, BabyDotz\_21, Rowlf\_18
- Track 30 : MorillMayhem\_21
- Track 31 : Fizzles\_22
- Track 32 : Mashley\_20, Hyperion\_21, Grassboy\_23, Kyva\_24, Mentos\_26
- Track 33 : RobinRose\_23, Tempo\_21, Kelcole\_20, Romm\_23, Fregley\_22
- Track 34 : Zhafia\_25, Namago\_22

- Track 35 : BirdInFrench\_21, Wilca\_21
- Track 36 : OneinaGillian\_21, CandC\_20
- Track 37 : Pepe25\_20
- Track 38 : RubyRalph\_24, Fransoyer\_24
- Track 39 : Nike\_22, Squash\_24
- Track 40 : Marcie\_26
- Track 41 : AluminumJesus\_20
- Track 42 : Altheas\_24
- Track 43 : Phinky\_28
- Track 44 : SadLad\_25
- Track 45 : EverythinBagel\_22
- Track 46 : SallyK\_23
- Track 47 : KSunshine22\_70, DunneganBoMo\_69, Ellewin\_67, WaddleDee\_69
- Track 48 : Talia1610\_76
- Track 49 : ReginaGlobina\_75, Atuin\_70, LeoJr\_75
- Track 50 : Bloom\_80, Patbob\_76
- Track 51 : SJReid\_81
- Track 52 : Chilliams\_73
- Track 53 : Phrampa\_70
- Track 54 : Panchaali\_73
- Track 55 : Rockabye\_78
- Track 56 : Racecar\_77, Mimi\_76
- Track 57 : GoldenEssence\_65
- Track 58 : PauloDiaboli\_82, Dodo\_82, A3Wally\_82
- Track 59 : Zooman\_67
- Track 60 : Big4\_71
- Track 61 : Cece\_66
- Track 62 : Pumpernickel\_80
- Track 63 : phiAsp2\_4
- Track 64 : RomansRevenge\_13
- Track 65 : Kithara\_22
- Track 66 : TurkishDelight\_11
- Track 67 : Sunfish\_26

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

The start number called the most often in the published annotations is 26, it was called in 39 of the 82 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Altheas\_24, AluminumJesus\_20, BabyDotz\_21, BirdInFrench\_21, Blab\_20, CandC\_20, Casend\_23, DonaldDuck\_22, EverythinBagel\_22, Fizzles\_22, FrankDeliGuy\_20, Fransoyer\_24, Fregley\_22, Gazebo\_21, Grassboy\_23, Hyperion\_21, Jehoshaphat\_24, Judebell\_24, Kelcole\_20, Kyva\_24, Llemily\_22, Lonelysoil\_21, Marcie\_26, Mashley\_20, Mentos\_26, MorillMayhem\_21, Namago\_22, Nike\_22, OneinaGillian\_21, Pepe25\_20, Phabia\_22, Phinky\_28, Quammi\_20, RobinRose\_23, Romm\_23, Rowlf\_18, RubyRalph\_24, Rudy\_20, SallyK\_23, Sillytadpoles\_22, Squash\_24, Statler\_24, StrawberryJamm\_24, Teehee\_23, Tempo\_21, Tissue\_22, Viceroy\_21, Wayne3\_23, Wheelie\_21, Wilca\_21, Zagie\_22, Zhafia\_25,

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

- Kithara\_22, SadLad\_25, Sunfish\_26,

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

- A3Wally\_82, AWGoat\_17, Abt2graduatex2\_10, Asis\_10, Atuin\_70, BabyGotBac\_10, BayC\_10, Beagle\_23, Big4\_71, Bloom\_80, BlueNGold\_76, Boopy\_77, BruhMoment\_18, Cece\_66, Chilliams\_73, Dodo\_82, DogYard\_21, DunneganBoMo\_69, Ellewin\_67, Forrestell\_19, Forza\_77, GMA2\_9, GodonK\_66, GoldenEssence\_65, KSunshine22\_70, Kubulix\_22, LeoJr\_75, Maih\_10, Mareelih\_76, MellowYellow\_19, Mimi\_76, Mischief19\_11, NyleyClemson\_19, Odyssey395\_24, Ollypop\_18, Panchaali\_73, Patbob\_76, PauloDiaboli\_82, Phendrix\_65, Phrampa\_70, Pointis\_22, Pumpernickel\_80, Pureglobe5\_24, Racecar\_77, RainyPolka\_10, Ranunculus\_17, RazzB\_18, ReginaGlobina\_75, Rizwana\_16, Rockabye\_78, RomansRevenge\_13, SJReid\_81, Salete\_10, SilentRX\_18, Sixama\_72, TP1604\_10, Talia1610\_76, Tank\_17, TurkishDelight\_11, WaddleDee\_69, Wilde\_17, Xkcd426\_11, YDN12\_11, Zooman\_67, phiAsp2\_4,

### Summary by start number:

Start 9:

- Found in 1 of 120 ( 0.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA2\_9 (DS),

Start 10:

- Found in 2 of 120 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Phendrix\_65 (DK),

Start 11:

- Found in 7 of 120 ( 5.8% ) of genes in pham
- Manual Annotations of this start: 2 of 82
- Called 28.6% of time when present
- Phage (with cluster) where this start called: Mimi\_76 (FC), Racecar\_77 (FC),

Start 12:

- Found in 2 of 120 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 50.0% of time when present
- Phage (with cluster) where this start called: GodonK\_66 (DK),

Start 13:

- Found in 18 of 120 ( 15.0% ) of genes in pham
- Manual Annotations of this start: 2 of 82
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Atuin\_70 (FC), Bloom\_80 (FC), Chilliams\_73 (FC), GoldenEssence\_65 (FC), LeoJr\_75 (FC), Panchaali\_73 (FC), Patbob\_76 (FC), Phrampa\_70 (FC), ReginaGlobina\_75 (FC), Rockabye\_78 (FC), SJReid\_81 (FC), Talia1610\_76 (FC),

Start 14:

- Found in 5 of 120 ( 4.2% ) of genes in pham
- Manual Annotations of this start: 5 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlueNGold\_76 (DS), Boopy\_77 (DS), Forza\_77 (DS), Mareelih\_76 (DS), Sixama\_72 (DS),

Start 17:

- Found in 1 of 120 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kithara\_22 (singleton),

Start 18:

- Found in 1 of 120 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sunfish\_26 (singleton),

Start 19:

- Found in 7 of 120 ( 5.8% ) of genes in pham
- Manual Annotations of this start: 6 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A3Wally\_82 (GD1), Big4\_71 (GD2), Cece\_66 (GD3), Dodo\_82 (GD1), PauloDiaboli\_82 (GD1), Pumpernickel\_80 (GD4), Zooman\_67 (GD2),

Start 20:

- Found in 2 of 120 ( 1.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: phiAsp2\_4 (singleton),

Start 21:

- Found in 3 of 120 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 33.3% of time when present
- Phage (with cluster) where this start called: SadLad\_25 (EG),

Start 23:

- Found in 1 of 120 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BruhMoment\_18 (AP3),

Start 24:

- Found in 18 of 120 ( 15.0% ) of genes in pham
- Manual Annotations of this start: 11 of 82
- Called 88.9% of time when present
- Phage (with cluster) where this start called: AWGoat\_17 (AP4), Beagle\_23 (AP2), DogYard\_21 (AP2), Kubulix\_22 (AP2), MellowYellow\_19 (AP2), NyleyClemson\_19 (AP2), Odyssey395\_24 (AP2), Ollypop\_18 (AP2), Pointis\_22 (AP2), Pureglobe5\_24 (AP2), Ranunculus\_17 (AP), Rizwana\_16 (AP1), RomansRevenge\_13 (singleton),

SilentRX\_18 (AP4), Tank\_17 (AP1), Wilde\_17 (AP1),

Start 26:

- Found in 55 of 120 ( 45.8% ) of genes in pham
- Manual Annotations of this start: 39 of 82
- Called 94.5% of time when present
- Phage (with cluster) where this start called: Altheas\_24 (EG), AluminumJesus\_20 (EG), BabyDotz\_21 (EG), BirdInFrench\_21 (EG), Blab\_20 (EG), CandC\_20 (EG), Casend\_23 (EG), DonaldDuck\_22 (EG), EverythinBagel\_22 (EG), Fizzles\_22 (EG), FrankDeliGuy\_20 (EG), Fransoyer\_24 (EG), Fregley\_22 (EG), Gazebo\_21 (EG), Grassboy\_23 (EG), Hyperion\_21 (EG), Jehoshaphat\_24 (EG), Judebell\_24 (EG), Kelcole\_20 (EG), Kyva\_24 (EG), Llemily\_22 (EG), Lonelysoil\_21 (EG), Marcie\_26 (EG), Mashley\_20 (EG), Mentos\_26 (EG), MorillMayhem\_21 (EG), Namago\_22 (EG), Nike\_22 (EG), OneinaGillian\_21 (EG), Pepe25\_20 (EG), Phabia\_22 (EG), Phinky\_28 (EG), Quammi\_20 (EG), RobinRose\_23 (EG), Romm\_23 (EG), Rowlf\_18 (EG), RubyRalph\_24 (EG), Rudy\_20 (EG), SallyK\_23 (EG), Sillytadpoles\_22 (EG), Squash\_24 (EG), Statler\_24 (EG), StrawberryJamm\_24 (EG), Teehee\_23 (EG), Tempo\_21 (EG), Tissue\_22 (EG), Viceroy\_21 (EG), Wayne3\_23 (EG), Wheelie\_21 (EG), Wilca\_21 (EG), Zagie\_22 (EG), Zhafia\_25 (EG),

Start 29:

- Found in 1 of 120 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TurkishDelight\_11 (singleton),

Start 30:

- Found in 7 of 120 ( 5.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 57.1% of time when present
- Phage (with cluster) where this start called: DunneganBoMo\_69 (FC), Ellewin\_67 (FC), KSunshine22\_70 (FC), WaddleDee\_69 (FC),

Start 32:

- Found in 11 of 120 ( 9.2% ) of genes in pham
- Manual Annotations of this start: 10 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abt2graduatex2\_10 (BG), Asis\_10 (BG), BabyGotBac\_10 (BG), BayC\_10 (BG), Maih\_10 (BG), Mischief19\_11 (BG), RainyPolka\_10 (BG), Salete\_10 (BG), TP1604\_10 (BG), Xkcd426\_11 (BG), YDN12\_11 (BG),

Start 57:

- Found in 12 of 120 ( 10.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Forrestell\_19 (AP2), RazzB\_18 (AP2),

### Summary by clusters:

There are 15 clusters represented in this pham: GD1, singleton, BG, GD4, DK, AP2, AP3, EG, AP1, GD2, AP4, AP, FC, GD3, DS,

Info for manual annotations of cluster AP:

- Start number 24 was manually annotated 1 time for cluster AP.

Info for manual annotations of cluster AP1:

- Start number 24 was manually annotated 3 times for cluster AP1.

Info for manual annotations of cluster AP2:

- Start number 24 was manually annotated 5 times for cluster AP2.

Info for manual annotations of cluster AP3:

- Start number 23 was manually annotated 1 time for cluster AP3.

Info for manual annotations of cluster AP4:

- Start number 24 was manually annotated 2 times for cluster AP4.

Info for manual annotations of cluster BG:

- Start number 32 was manually annotated 10 times for cluster BG.

Info for manual annotations of cluster DK:

- Start number 10 was manually annotated 1 time for cluster DK.
- Start number 12 was manually annotated 1 time for cluster DK.

Info for manual annotations of cluster DS:

- Start number 14 was manually annotated 5 times for cluster DS.

Info for manual annotations of cluster EG:

- Start number 21 was manually annotated 1 time for cluster EG.
- Start number 26 was manually annotated 39 times for cluster EG.

Info for manual annotations of cluster FC:

- Start number 11 was manually annotated 2 times for cluster FC.
- Start number 13 was manually annotated 2 times for cluster FC.

Info for manual annotations of cluster GD1:

- Start number 19 was manually annotated 2 times for cluster GD1.

Info for manual annotations of cluster GD2:

- Start number 19 was manually annotated 2 times for cluster GD2.

Info for manual annotations of cluster GD3:

- Start number 19 was manually annotated 1 time for cluster GD3.

Info for manual annotations of cluster GD4:

- Start number 19 was manually annotated 1 time for cluster GD4.

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

Gene: A3Wally\_82 Start: 29832, Stop: 31568, Start Num: 19

Candidate Starts for A3Wally\_82:

(Start: 19 @29832 has 6 MA's), (34, 29895), (35, 29904), (49, 29982), (60, 30054), (61, 30063), (66, 30087), (68, 30096), (83, 30177), (97, 30270), (107, 30327), (136, 30450), (143, 30504), (162, 30612),



(184, 30723), (190, 30765), (203, 30846), (206, 30867), (214, 30930), (220, 30990), (226, 31023), (238, 31071), (246, 31131), (263, 31242), (287, 31350), (304, 31470), (309, 31494),

Gene: AWGoat\_17 Start: 8723, Stop: 10624, Start Num: 24

Candidate Starts for AWGoat\_17:

(Start: 24 @8723 has 11 MA's), (42, 8810), (45, 8819), (51, 8852), (70, 8948), (81, 8993), (90, 9041), (94, 9065), (134, 9236), (135, 9239), (146, 9308), (158, 9386), (161, 9395), (162, 9407), (178, 9479), (181, 9491), (184, 9500), (190, 9542), (199, 9593), (204, 9626), (208, 9668), (209, 9674), (211, 9686), (244, 9908), (251, 9974), (256, 10016), (305, 10277), (319, 10328), (321, 10334), (363, 10595),

Gene: Abt2graduatex2\_10 Start: 8030, Stop: 9832, Start Num: 32

Candidate Starts for Abt2graduatex2\_10:

(Start: 32 @8030 has 10 MA's), (56, 8156), (62, 8189), (77, 8237), (84, 8276), (95, 8345), (104, 8414), (107, 8435), (137, 8543), (138, 8549), (156, 8645), (183, 8771), (190, 8816), (192, 8825), (197, 8858), (199, 8867), (202, 8894), (218, 9026), (272, 9320), (289, 9359), (293, 9383), (299, 9431), (307, 9479), (311, 9491), (325, 9542), (338, 9611), (351, 9701), (367, 9803), (370, 9821),

Gene: Altheas\_24 Start: 9157, Stop: 10980, Start Num: 26

Candidate Starts for Altheas\_24:

(Start: 26 @9157 has 39 MA's), (73, 9388), (77, 9409), (81, 9433), (84, 9442), (90, 9481), (102, 9559), (109, 9577), (158, 9799), (169, 9868), (178, 9916), (203, 10060), (208, 10105), (209, 10111), (211, 10123), (217, 10183), (244, 10312), (245, 10318), (260, 10444), (270, 10489), (298, 10594), (320, 10684), (326, 10720), (329, 10738), (339, 10783), (364, 10957),

Gene: AluminumJesus\_20 Start: 8498, Stop: 10324, Start Num: 26

Candidate Starts for AluminumJesus\_20:

(Start: 26 @8498 has 39 MA's), (84, 8783), (90, 8822), (92, 8834), (102, 8900), (109, 8918), (148, 9068), (151, 9083), (158, 9140), (178, 9257), (180, 9266), (203, 9401), (208, 9446), (209, 9452), (211, 9464), (217, 9524), (244, 9653), (245, 9659), (247, 9686), (260, 9785), (270, 9830), (320, 10025), (326, 10061), (329, 10079), (339, 10124),

Gene: Asis\_10 Start: 8087, Stop: 9889, Start Num: 32

Candidate Starts for Asis\_10:

(Start: 32 @8087 has 10 MA's), (56, 8213), (60, 8234), (62, 8246), (77, 8294), (84, 8333), (91, 8375), (95, 8402), (104, 8471), (107, 8492), (115, 8513), (135, 8591), (137, 8597), (138, 8603), (156, 8699), (161, 8747), (183, 8825), (190, 8870), (192, 8879), (197, 8912), (202, 8948), (218, 9080), (272, 9377), (284, 9413), (297, 9458), (301, 9503), (307, 9536), (311, 9548), (325, 9599), (333, 9650), (338, 9668), (344, 9716), (345, 9722), (358, 9803), (361, 9833), (367, 9860), (370, 9878),

Gene: Atuin\_70 Start: 31058, Stop: 32686, Start Num: 13

Candidate Starts for Atuin\_70:

(Start: 13 @31058 has 2 MA's), (62, 31298), (94, 31475), (138, 31673), (164, 31835), (173, 31877), (175, 31889), (184, 31925), (210, 32105), (220, 32192), (237, 32270), (275, 32501), (296, 32588), (312, 32636), (324, 32675),

Gene: BabyDotz\_21 Start: 8763, Stop: 10589, Start Num: 26

Candidate Starts for BabyDotz\_21:

(Start: 26 @8763 has 39 MA's), (84, 9048), (90, 9087), (102, 9165), (109, 9183), (148, 9333), (151, 9348), (158, 9405), (169, 9474), (178, 9522), (180, 9531), (203, 9666), (208, 9711), (209, 9717), (211, 9729), (217, 9789), (244, 9918), (245, 9924), (247, 9951), (260, 10050), (270, 10095), (320, 10290), (326, 10326), (329, 10344), (339, 10389),

Gene: BabyGotBac\_10 Start: 8087, Stop: 9889, Start Num: 32

Candidate Starts for BabyGotBac\_10:

(Start: 32 @8087 has 10 MA's), (56, 8213), (60, 8234), (62, 8246), (77, 8294), (84, 8333), (91, 8375), (95, 8402), (104, 8471), (107, 8492), (115, 8513), (135, 8591), (137, 8597), (138, 8603), (156, 8699), (161, 8747), (183, 8825), (190, 8870), (192, 8879), (197, 8912), (202, 8948), (218, 9080), (272, 9377), (284, 9413), (297, 9458), (301, 9503), (311, 9548), (325, 9599), (333, 9650), (338, 9668), (344, 9716), (358, 9803), (361, 9833), (367, 9860), (370, 9878),

Gene: BayC\_10 Start: 8087, Stop: 9889, Start Num: 32

Candidate Starts for BayC\_10:

(Start: 32 @8087 has 10 MA's), (56, 8213), (60, 8234), (62, 8246), (77, 8294), (84, 8333), (91, 8375), (95, 8402), (104, 8471), (107, 8492), (115, 8513), (135, 8591), (137, 8597), (138, 8603), (156, 8699), (161, 8747), (183, 8825), (190, 8870), (192, 8879), (197, 8912), (202, 8948), (218, 9080), (272, 9377), (284, 9413), (301, 9503), (307, 9536), (311, 9548), (325, 9599), (333, 9650), (338, 9668), (344, 9716), (345, 9722), (358, 9803), (361, 9833), (367, 9860), (370, 9878),

Gene: Beagle\_23 Start: 9245, Stop: 11137, Start Num: 24

Candidate Starts for Beagle\_23:

(Start: 24 @9245 has 11 MA's), (27, 9254), (36, 9293), (57, 9416), (61, 9434), (80, 9509), (94, 9584), (145, 9827), (184, 10019), (209, 10193), (211, 10205), (231, 10355), (244, 10406), (247, 10439), (248, 10445), (252, 10478), (256, 10514), (261, 10541), (269, 10580), (274, 10601), (278, 10613), (280, 10619), (328, 10883), (350, 11000), (363, 11096),

Gene: Big4\_71 Start: 29132, Stop: 30859, Start Num: 19

Candidate Starts for Big4\_71:

(Start: 19 @29132 has 6 MA's), (30, 29186), (35, 29210), (44, 29261), (50, 29297), (67, 29399), (78, 29450), (83, 29483), (94, 29549), (136, 29756), (143, 29810), (184, 30026), (199, 30119), (203, 30149), (214, 30233), (216, 30269), (220, 30293), (226, 30326), (228, 30341), (263, 30545), (264, 30548), (265, 30551), (275, 30602), (304, 30773),

Gene: BirdInFrench\_21 Start: 7665, Stop: 9464, Start Num: 26

Candidate Starts for BirdInFrench\_21:

(Start: 26 @7665 has 39 MA's), (90, 7980), (95, 8010), (109, 8076), (166, 8343), (174, 8388), (189, 8475), (197, 8520), (202, 8556), (208, 8604), (209, 8610), (211, 8622), (215, 8658), (217, 8682), (244, 8817), (256, 8925), (259, 8946), (279, 9027), (320, 9165), (326, 9201), (340, 9267), (348, 9336), (355, 9369), (364, 9438),

Gene: Blab\_20 Start: 8374, Stop: 10200, Start Num: 26

Candidate Starts for Blab\_20:

(Start: 26 @8374 has 39 MA's), (84, 8659), (90, 8698), (102, 8776), (109, 8794), (148, 8944), (151, 8959), (158, 9016), (178, 9133), (180, 9142), (203, 9277), (208, 9322), (209, 9328), (211, 9340), (217, 9400), (244, 9529), (245, 9535), (247, 9562), (260, 9661), (270, 9706), (320, 9901), (326, 9937), (329, 9955), (339, 10000),

Gene: Bloom\_80 Start: 33695, Stop: 35374, Start Num: 13

Candidate Starts for Bloom\_80:

(Start: 11 @33689 has 2 MA's), (Start: 13 @33695 has 2 MA's), (38, 33800), (60, 33923), (62, 33935), (86, 34058), (138, 34310), (143, 34355), (168, 34511), (173, 34520), (175, 34532), (184, 34568), (188, 34589), (213, 34766), (269, 35120), (286, 35186), (288, 35192), (312, 35318), (315, 35327), (324, 35363),

Gene: BlueNGold\_76 Start: 31373, Stop: 33103, Start Num: 14

Candidate Starts for BlueNGold\_76:

(Start: 14 @31373 has 5 MA's), (35, 31451), (45, 31505), (48, 31517), (62, 31604), (65, 31619), (79, 31709), (92, 31784), (103, 31874), (140, 32069), (143, 32087), (144, 32090), (148, 32105), (151, 32120), (155, 32135), (157, 32162), (163, 32201), (198, 32372), (203, 32405), (209, 32456), (212, 32471), (213, 32480), (221, 32555), (222, 32558), (226, 32582), (264, 32807), (267, 32822), (273, 32852), (285, 32900), (288, 32915), (290, 32921),

Gene: Boopy\_77 Start: 31385, Stop: 33115, Start Num: 14

Candidate Starts for Boopy\_77:

(Start: 14 @31385 has 5 MA's), (35, 31463), (45, 31517), (48, 31529), (62, 31616), (65, 31631), (79, 31721), (92, 31796), (103, 31886), (140, 32081), (143, 32099), (144, 32102), (148, 32117), (151, 32132), (155, 32147), (157, 32174), (163, 32213), (198, 32384), (203, 32417), (209, 32468), (212, 32483), (213, 32492), (221, 32567), (222, 32570), (226, 32594), (264, 32819), (267, 32834), (273, 32864), (285, 32912), (288, 32927), (290, 32933),

Gene: BruhMoment\_18 Start: 8617, Stop: 10521, Start Num: 23

Candidate Starts for BruhMoment\_18:

(Start: 23 @8617 has 1 MA's), (25, 8626), (61, 8815), (81, 8890), (90, 8938), (94, 8962), (111, 9040), (127, 9103), (158, 9283), (161, 9292), (162, 9304), (178, 9379), (181, 9391), (184, 9400), (189, 9439), (199, 9493), (208, 9568), (211, 9586), (244, 9787), (256, 9895), (276, 9991), (310, 10177), (321, 10219), (327, 10264), (352, 10402), (363, 10483),

Gene: CandC\_20 Start: 7351, Stop: 9150, Start Num: 26

Candidate Starts for CandC\_20:

(Start: 26 @7351 has 39 MA's), (46, 7450), (80, 7615), (90, 7666), (95, 7696), (109, 7762), (166, 8029), (174, 8074), (189, 8161), (191, 8170), (197, 8206), (202, 8242), (208, 8290), (209, 8296), (211, 8308), (215, 8344), (217, 8368), (244, 8503), (256, 8611), (259, 8632), (279, 8713), (283, 8722), (316, 8833), (320, 8851), (326, 8887), (340, 8953), (348, 9022), (355, 9055), (366, 9130),

Gene: Casend\_23 Start: 9100, Stop: 10926, Start Num: 26

Candidate Starts for Casend\_23:

(Start: 26 @9100 has 39 MA's), (55, 9250), (84, 9385), (90, 9424), (102, 9502), (109, 9520), (148, 9670), (151, 9685), (158, 9742), (169, 9811), (178, 9859), (180, 9868), (203, 10003), (208, 10048), (209, 10054), (211, 10066), (217, 10126), (244, 10255), (245, 10261), (247, 10288), (260, 10387), (270, 10432), (320, 10627), (326, 10663), (329, 10681), (339, 10726),

Gene: Cece\_66 Start: 27502, Stop: 29211, Start Num: 19

Candidate Starts for Cece\_66:

(Start: 19 @27502 has 6 MA's), (34, 27565), (35, 27574), (61, 27733), (99, 27946), (114, 28012), (136, 28117), (143, 28171), (158, 28258), (182, 28384), (184, 28390), (195, 28462), (203, 28513), (214, 28597), (220, 28657), (258, 28900), (265, 28915), (268, 28930), (271, 28951), (273, 28957), (292, 29038), (304, 29125),

Gene: Chilliams\_73 Start: 34081, Stop: 35706, Start Num: 13

Candidate Starts for Chilliams\_73:

(Start: 13 @34081 has 2 MA's), (35, 34162), (39, 34189), (60, 34306), (62, 34318), (76, 34387), (107, 34579), (122, 34621), (145, 34747), (157, 34813), (168, 34888), (185, 34948), (206, 35089), (213, 35143), (214, 35152), (220, 35212), (263, 35464), (269, 35497), (280, 35536), (288, 35569), (294, 35596), (324, 35695),

Gene: Dodo\_82 Start: 30154, Stop: 31890, Start Num: 19

Candidate Starts for Dodo\_82:

(Start: 19 @30154 has 6 MA's), (34, 30217), (35, 30226), (49, 30304), (60, 30376), (61, 30385), (66, 30409), (68, 30418), (83, 30499), (97, 30592), (107, 30649), (136, 30772), (143, 30826), (162, 30934),

(184, 31045), (190, 31087), (203, 31168), (206, 31189), (214, 31252), (220, 31312), (226, 31345), (238, 31393), (246, 31453), (263, 31564), (287, 31672), (304, 31792), (309, 31816),

Gene: DogYard\_21 Start: 9315, Stop: 11207, Start Num: 24

Candidate Starts for DogYard\_21:

(Start: 24 @9315 has 11 MA's), (27, 9324), (36, 9363), (57, 9486), (61, 9504), (76, 9555), (80, 9579), (94, 9654), (145, 9897), (184, 10089), (209, 10263), (211, 10275), (231, 10425), (244, 10476), (247, 10509), (248, 10515), (252, 10548), (256, 10584), (261, 10611), (269, 10650), (274, 10671), (278, 10683), (328, 10953), (350, 11070), (363, 11166),

Gene: DonaldDuck\_22 Start: 8446, Stop: 10272, Start Num: 26

Candidate Starts for DonaldDuck\_22:

(Start: 26 @8446 has 39 MA's), (55, 8596), (84, 8731), (90, 8770), (102, 8848), (109, 8866), (148, 9016), (151, 9031), (158, 9088), (169, 9157), (178, 9205), (180, 9214), (203, 9349), (208, 9394), (209, 9400), (211, 9412), (217, 9472), (244, 9601), (245, 9607), (247, 9634), (260, 9733), (270, 9778), (320, 9973), (326, 10009), (329, 10027), (339, 10072),

Gene: DunneganBoMo\_69 Start: 27884, Stop: 29458, Start Num: 30

Candidate Starts for DunneganBoMo\_69:

(Start: 13 @27824 has 2 MA's), (30, 27884), (94, 28241), (136, 28430), (138, 28439), (173, 28643), (184, 28691), (210, 28871), (220, 28958), (232, 29024), (237, 29036), (275, 29267), (296, 29354), (324, 29447),

Gene: Ellewin\_67 Start: 27611, Stop: 29185, Start Num: 30

Candidate Starts for Ellewin\_67:

(Start: 13 @27551 has 2 MA's), (30, 27611), (94, 27968), (136, 28157), (138, 28166), (173, 28370), (184, 28418), (210, 28598), (220, 28685), (232, 28751), (237, 28763), (275, 28994), (296, 29081), (324, 29174),

Gene: EverythinBagel\_22 Start: 8840, Stop: 10666, Start Num: 26

Candidate Starts for EverythinBagel\_22:

(Start: 26 @8840 has 39 MA's), (46, 8939), (55, 8990), (84, 9125), (90, 9164), (102, 9242), (109, 9260), (148, 9410), (151, 9425), (158, 9482), (169, 9551), (178, 9599), (180, 9608), (203, 9743), (208, 9788), (209, 9794), (211, 9806), (217, 9866), (244, 9995), (245, 10001), (247, 10028), (260, 10127), (270, 10172), (320, 10367), (326, 10403), (329, 10421), (339, 10466),

Gene: Fizzles\_22 Start: 8440, Stop: 10269, Start Num: 26

Candidate Starts for Fizzles\_22:

(Start: 26 @8440 has 39 MA's), (74, 8683), (75, 8689), (90, 8767), (102, 8845), (109, 8863), (133, 8935), (148, 9013), (151, 9028), (158, 9085), (172, 9157), (176, 9181), (178, 9193), (180, 9202), (203, 9337), (206, 9358), (208, 9382), (209, 9388), (211, 9400), (217, 9460), (227, 9520), (244, 9589), (245, 9595), (252, 9661), (260, 9721), (275, 9787), (281, 9805), (298, 9871), (320, 9970), (326, 10006), (336, 10060), (358, 10195),

Gene: Forrestell\_19 Start: 8130, Stop: 9848, Start Num: 57

Candidate Starts for Forrestell\_19:

(Start: 24 @7959 has 11 MA's), (27, 7968), (36, 8007), (57, 8130), (61, 8148), (76, 8199), (80, 8223), (94, 8298), (145, 8541), (184, 8733), (209, 8907), (211, 8919), (231, 9069), (244, 9120), (247, 9153), (248, 9159), (252, 9192), (256, 9228), (261, 9255), (269, 9294), (278, 9327), (328, 9594), (350, 9711), (363, 9807),

Gene: Forza\_77 Start: 31301, Stop: 33031, Start Num: 14

Candidate Starts for Forza\_77:

(Start: 14 @31301 has 5 MA's), (35, 31379), (45, 31433), (48, 31445), (62, 31532), (65, 31547), (79, 31637), (92, 31712), (103, 31802), (140, 31997), (143, 32015), (144, 32018), (148, 32033), (151, 32048), (155, 32063), (157, 32090), (163, 32129), (198, 32300), (203, 32333), (209, 32384), (212, 32399), (213, 32408), (221, 32483), (222, 32486), (226, 32510), (264, 32735), (267, 32750), (273, 32780), (285, 32828), (288, 32843), (290, 32849),

Gene: FrankDeliGuy\_20 Start: 8306, Stop: 10132, Start Num: 26

Candidate Starts for FrankDeliGuy\_20:

(Start: 26 @8306 has 39 MA's), (55, 8456), (84, 8591), (90, 8630), (102, 8708), (109, 8726), (148, 8876), (151, 8891), (158, 8948), (169, 9017), (178, 9065), (180, 9074), (203, 9209), (208, 9254), (209, 9260), (211, 9272), (217, 9332), (244, 9461), (245, 9467), (247, 9494), (260, 9593), (270, 9638), (320, 9833), (326, 9869), (329, 9887), (339, 9932),

Gene: Fransoyer\_24 Start: 9057, Stop: 10871, Start Num: 26

Candidate Starts for Fransoyer\_24:

(Start: 21 @9036 has 1 MA's), (Start: 26 @9057 has 39 MA's), (90, 9384), (93, 9402), (95, 9414), (136, 9558), (148, 9630), (154, 9654), (159, 9705), (179, 9819), (187, 9846), (190, 9876), (203, 9957), (208, 10002), (209, 10008), (211, 10020), (217, 10080), (231, 10164), (244, 10209), (245, 10215), (252, 10281), (260, 10341), (283, 10431), (298, 10491), (320, 10572), (358, 10797),

Gene: Fregley\_22 Start: 7891, Stop: 9690, Start Num: 26

Candidate Starts for Fregley\_22:

(Start: 26 @7891 has 39 MA's), (46, 7990), (80, 8155), (90, 8206), (95, 8236), (109, 8302), (166, 8569), (174, 8614), (189, 8701), (197, 8746), (202, 8782), (208, 8830), (209, 8836), (211, 8848), (215, 8884), (217, 8908), (244, 9043), (256, 9151), (259, 9172), (279, 9253), (283, 9262), (316, 9373), (320, 9391), (326, 9427), (340, 9493), (348, 9562), (355, 9595), (366, 9670),

Gene: GMA2\_9 Start: 6225, Stop: 7979, Start Num: 9

Candidate Starts for GMA2\_9:

(9, 6225), (45, 6396), (62, 6495), (63, 6504), (72, 6543), (100, 6741), (118, 6834), (140, 6963), (143, 6981), (155, 7029), (157, 7056), (158, 7068), (176, 7143), (213, 7374), (222, 7452), (228, 7491), (266, 7707), (273, 7746), (288, 7809), (290, 7815), (296, 7851), (303, 7926),

Gene: Gazebo\_21 Start: 8940, Stop: 10766, Start Num: 26

Candidate Starts for Gazebo\_21:

(Start: 26 @8940 has 39 MA's), (84, 9225), (90, 9264), (102, 9342), (109, 9360), (148, 9510), (151, 9525), (158, 9582), (178, 9699), (180, 9708), (203, 9843), (208, 9888), (209, 9894), (211, 9906), (217, 9966), (244, 10095), (245, 10101), (247, 10128), (260, 10227), (270, 10272), (320, 10467), (326, 10503), (329, 10521), (339, 10566),

Gene: GodonK\_66 Start: 24698, Stop: 26512, Start Num: 12

Candidate Starts for GodonK\_66:

(Start: 10 @24686 has 1 MA's), (Start: 12 @24698 has 1 MA's), (22, 24743), (28, 24767), (45, 24854), (59, 24938), (60, 24941), (69, 24986), (100, 25199), (119, 25298), (124, 25322), (143, 25442), (150, 25472), (155, 25490), (157, 25517), (177, 25613), (184, 25637), (189, 25676), (193, 25691), (199, 25730), (200, 25733), (201, 25736), (207, 25784), (209, 25811), (213, 25835), (221, 25910), (222, 25913), (223, 25916), (224, 25928), (226, 25937), (228, 25952), (229, 25955), (257, 26150), (271, 26201), (290, 26276), (293, 26297), (318, 26414),

Gene: GoldenEssence\_65 Start: 27488, Stop: 29167, Start Num: 13

Candidate Starts for GoldenEssence\_65:

(Start: 11 @27482 has 2 MA's), (Start: 13 @27488 has 2 MA's), (38, 27593), (60, 27716), (62, 27728), (86, 27851), (113, 28001), (138, 28103), (143, 28148), (151, 28181), (168, 28304), (173, 28313), (175,

28325), (184, 28361), (213, 28559), (220, 28628), (269, 28913), (286, 28979), (288, 28985), (312, 29111), (315, 29120), (324, 29156),

Gene: Grassboy\_23 Start: 9122, Stop: 10948, Start Num: 26

Candidate Starts for Grassboy\_23:

(Start: 26 @9122 has 39 MA's), (55, 9272), (84, 9407), (90, 9446), (102, 9524), (109, 9542), (148, 9692), (151, 9707), (158, 9764), (178, 9881), (180, 9890), (203, 10025), (208, 10070), (209, 10076), (211, 10088), (217, 10148), (244, 10277), (245, 10283), (247, 10310), (260, 10409), (270, 10454), (320, 10649), (326, 10685), (329, 10703), (339, 10748),

Gene: Hyperion\_21 Start: 8813, Stop: 10639, Start Num: 26

Candidate Starts for Hyperion\_21:

(Start: 26 @8813 has 39 MA's), (55, 8963), (84, 9098), (90, 9137), (102, 9215), (109, 9233), (148, 9383), (151, 9398), (158, 9455), (178, 9572), (180, 9581), (203, 9716), (208, 9761), (209, 9767), (211, 9779), (217, 9839), (244, 9968), (245, 9974), (247, 10001), (260, 10100), (270, 10145), (320, 10340), (326, 10376), (329, 10394), (339, 10439),

Gene: Jehoshaphat\_24 Start: 9365, Stop: 11191, Start Num: 26

Candidate Starts for Jehoshaphat\_24:

(Start: 26 @9365 has 39 MA's), (55, 9515), (84, 9650), (90, 9689), (102, 9767), (109, 9785), (148, 9935), (151, 9950), (158, 10007), (169, 10076), (178, 10124), (180, 10133), (203, 10268), (208, 10313), (209, 10319), (211, 10331), (217, 10391), (244, 10520), (245, 10526), (247, 10553), (260, 10652), (270, 10697), (320, 10892), (326, 10928), (329, 10946), (339, 10991),

Gene: Judebell\_24 Start: 8906, Stop: 10732, Start Num: 26

Candidate Starts for Judebell\_24:

(Start: 26 @8906 has 39 MA's), (55, 9056), (84, 9191), (90, 9230), (102, 9308), (109, 9326), (148, 9476), (151, 9491), (158, 9548), (169, 9617), (178, 9665), (180, 9674), (203, 9809), (208, 9854), (209, 9860), (211, 9872), (217, 9932), (244, 10061), (245, 10067), (247, 10094), (260, 10193), (270, 10238), (320, 10433), (326, 10469), (329, 10487), (339, 10532),

Gene: KSunshine22\_70 Start: 29151, Stop: 30725, Start Num: 30

Candidate Starts for KSunshine22\_70:

(Start: 13 @29091 has 2 MA's), (30, 29151), (94, 29508), (136, 29697), (138, 29706), (173, 29910), (184, 29958), (210, 30138), (220, 30225), (232, 30291), (237, 30303), (275, 30534), (296, 30621), (324, 30714),

Gene: Kelcole\_20 Start: 7743, Stop: 9542, Start Num: 26

Candidate Starts for Kelcole\_20:

(Start: 26 @7743 has 39 MA's), (46, 7842), (80, 8007), (90, 8058), (95, 8088), (109, 8154), (166, 8421), (174, 8466), (189, 8553), (197, 8598), (202, 8634), (208, 8682), (209, 8688), (211, 8700), (215, 8736), (217, 8760), (244, 8895), (256, 9003), (259, 9024), (279, 9105), (283, 9114), (316, 9225), (320, 9243), (326, 9279), (340, 9345), (348, 9414), (355, 9447), (366, 9522),

Gene: Kithara\_22 Start: 9733, Stop: 11709, Start Num: 17

Candidate Starts for Kithara\_22:

(Start: 17 @9733 has 1 MA's), (Start: 26 @9775 has 39 MA's), (43, 9859), (47, 9877), (54, 9922), (58, 9949), (87, 10093), (88, 10108), (93, 10135), (98, 10177), (100, 10195), (106, 10231), (138, 10366), (159, 10504), (162, 10522), (165, 10540), (166, 10543), (178, 10606), (181, 10618), (187, 10639), (191, 10675), (193, 10681), (194, 10687), (208, 10795), (209, 10801), (243, 11002), (256, 11125), (258, 11143), (295, 11281), (308, 11359), (326, 11437), (335, 11485), (340, 11503), (343, 11548), (357, 11638), (363, 11683),

Gene: Kubulix\_22 Start: 9444, Stop: 11330, Start Num: 24

Candidate Starts for Kubulix\_22:

(Start: 24 @9444 has 11 MA's), (27, 9453), (36, 9492), (57, 9615), (61, 9633), (76, 9684), (80, 9708), (94, 9783), (145, 10026), (184, 10218), (209, 10392), (211, 10404), (231, 10554), (244, 10605), (247, 10638), (248, 10644), (252, 10677), (256, 10713), (261, 10740), (269, 10779), (274, 10800), (278, 10812), (328, 11076), (350, 11193), (363, 11289),

Gene: Kyva\_24 Start: 9157, Stop: 10983, Start Num: 26

Candidate Starts for Kyva\_24:

(Start: 26 @9157 has 39 MA's), (55, 9307), (84, 9442), (90, 9481), (102, 9559), (109, 9577), (148, 9727), (151, 9742), (158, 9799), (178, 9916), (180, 9925), (203, 10060), (208, 10105), (209, 10111), (211, 10123), (217, 10183), (244, 10312), (245, 10318), (247, 10345), (260, 10444), (270, 10489), (320, 10684), (326, 10720), (329, 10738), (339, 10783),

Gene: LeoJr\_75 Start: 31198, Stop: 32826, Start Num: 13

Candidate Starts for LeoJr\_75:

(Start: 13 @31198 has 2 MA's), (62, 31438), (94, 31615), (138, 31813), (164, 31975), (173, 32017), (175, 32029), (184, 32065), (210, 32245), (220, 32332), (237, 32410), (275, 32641), (296, 32728), (312, 32776), (324, 32815),

Gene: Llemily\_22 Start: 8141, Stop: 9967, Start Num: 26

Candidate Starts for Llemily\_22:

(Start: 26 @8141 has 39 MA's), (55, 8291), (84, 8426), (90, 8465), (102, 8543), (109, 8561), (148, 8711), (151, 8726), (158, 8783), (169, 8852), (178, 8900), (180, 8909), (203, 9044), (208, 9089), (209, 9095), (211, 9107), (217, 9167), (244, 9296), (245, 9302), (247, 9329), (260, 9428), (270, 9473), (320, 9668), (326, 9704), (329, 9722), (339, 9767),

Gene: Lonelysoil\_21 Start: 8386, Stop: 10212, Start Num: 26

Candidate Starts for Lonelysoil\_21:

(Start: 26 @8386 has 39 MA's), (55, 8536), (84, 8671), (90, 8710), (102, 8788), (109, 8806), (148, 8956), (151, 8971), (158, 9028), (169, 9097), (178, 9145), (180, 9154), (203, 9289), (208, 9334), (209, 9340), (211, 9352), (217, 9412), (244, 9541), (245, 9547), (247, 9574), (260, 9673), (270, 9718), (320, 9913), (326, 9949), (329, 9967), (339, 10012),

Gene: Maih\_10 Start: 8086, Stop: 9888, Start Num: 32

Candidate Starts for Maih\_10:

(Start: 32 @8086 has 10 MA's), (56, 8212), (60, 8233), (62, 8245), (77, 8293), (84, 8332), (91, 8374), (95, 8401), (104, 8470), (107, 8491), (115, 8512), (135, 8590), (137, 8596), (138, 8602), (156, 8698), (161, 8746), (183, 8824), (190, 8869), (192, 8878), (197, 8911), (202, 8947), (218, 9079), (272, 9376), (284, 9412), (301, 9502), (307, 9535), (311, 9547), (325, 9598), (333, 9649), (338, 9667), (344, 9715), (345, 9721), (358, 9802), (361, 9832), (367, 9859), (370, 9877),

Gene: Marcie\_26 Start: 8457, Stop: 10256, Start Num: 26

Candidate Starts for Marcie\_26:

(Start: 26 @8457 has 39 MA's), (68, 8670), (90, 8772), (95, 8802), (109, 8868), (166, 9135), (167, 9150), (170, 9168), (174, 9180), (189, 9267), (191, 9276), (197, 9312), (202, 9348), (208, 9396), (209, 9402), (211, 9414), (215, 9450), (217, 9474), (244, 9609), (256, 9717), (279, 9819), (283, 9828), (303, 9927), (316, 9939), (320, 9957), (326, 9993), (340, 10059), (348, 10128), (355, 10161), (364, 10230), (366, 10236),

Gene: Mareelih\_76 Start: 30803, Stop: 32533, Start Num: 14

Candidate Starts for Mareelih\_76:

(Start: 14 @30803 has 5 MA's), (35, 30881), (45, 30935), (48, 30947), (62, 31034), (65, 31049), (79, 31139), (92, 31214), (103, 31304), (140, 31499), (143, 31517), (144, 31520), (148, 31535), (151, 31550), (155, 31565), (157, 31592), (163, 31631), (198, 31802), (203, 31835), (209, 31886), (212, 31901), (213, 31910), (221, 31985), (222, 31988), (226, 32012), (264, 32237), (267, 32252), (273, 32282), (285, 32330), (288, 32345), (290, 32351),

Gene: Mashley\_20 Start: 8624, Stop: 10450, Start Num: 26

Candidate Starts for Mashley\_20:

(Start: 26 @8624 has 39 MA's), (55, 8774), (84, 8909), (90, 8948), (102, 9026), (109, 9044), (148, 9194), (151, 9209), (158, 9266), (178, 9383), (180, 9392), (203, 9527), (208, 9572), (209, 9578), (211, 9590), (217, 9650), (244, 9779), (245, 9785), (247, 9812), (260, 9911), (270, 9956), (320, 10151), (326, 10187), (329, 10205), (339, 10250),

Gene: MellowYellow\_19 Start: 7989, Stop: 9875, Start Num: 24

Candidate Starts for MellowYellow\_19:

(Start: 24 @7989 has 11 MA's), (27, 7998), (36, 8037), (57, 8160), (61, 8178), (76, 8229), (80, 8253), (94, 8328), (145, 8571), (184, 8763), (209, 8937), (211, 8949), (231, 9099), (244, 9150), (247, 9183), (248, 9189), (252, 9222), (256, 9258), (261, 9285), (269, 9324), (274, 9345), (278, 9357), (328, 9621), (350, 9738), (363, 9834),

Gene: Mentos\_26 Start: 9720, Stop: 11546, Start Num: 26

Candidate Starts for Mentos\_26:

(Start: 26 @9720 has 39 MA's), (55, 9870), (84, 10005), (90, 10044), (102, 10122), (109, 10140), (148, 10290), (151, 10305), (158, 10362), (178, 10479), (180, 10488), (203, 10623), (208, 10668), (209, 10674), (211, 10686), (217, 10746), (244, 10875), (245, 10881), (247, 10908), (260, 11007), (270, 11052), (320, 11247), (326, 11283), (329, 11301), (339, 11346),

Gene: Mimi\_76 Start: 33036, Stop: 34721, Start Num: 11

Candidate Starts for Mimi\_76:

(Start: 11 @33036 has 2 MA's), (Start: 13 @33042 has 2 MA's), (38, 33147), (60, 33270), (62, 33282), (86, 33405), (138, 33657), (143, 33702), (168, 33858), (173, 33867), (175, 33879), (184, 33915), (188, 33936), (213, 34113), (269, 34467), (286, 34533), (288, 34539), (312, 34665), (315, 34674), (324, 34710),

Gene: Mischief19\_11 Start: 9640, Stop: 11433, Start Num: 32

Candidate Starts for Mischief19\_11:

(Start: 32 @9640 has 10 MA's), (50, 9733), (60, 9796), (62, 9808), (65, 9823), (84, 9895), (89, 9931), (105, 10036), (110, 10060), (137, 10159), (143, 10210), (152, 10246), (161, 10309), (187, 10402), (190, 10432), (192, 10441), (195, 10462), (209, 10564), (211, 10576), (241, 10747), (272, 10948), (311, 11107), (325, 11158), (333, 11209), (335, 11218), (345, 11284), (361, 11395), (365, 11416),

Gene: MorillMayhem\_21 Start: 8632, Stop: 10458, Start Num: 26

Candidate Starts for MorillMayhem\_21:

(Start: 26 @8632 has 39 MA's), (84, 8917), (90, 8956), (92, 8968), (102, 9034), (109, 9052), (148, 9202), (151, 9217), (158, 9274), (169, 9343), (178, 9391), (180, 9400), (203, 9535), (208, 9580), (209, 9586), (211, 9598), (217, 9658), (244, 9787), (245, 9793), (247, 9820), (260, 9919), (270, 9964), (320, 10159), (326, 10195), (329, 10213), (339, 10258),

Gene: Namago\_22 Start: 8194, Stop: 10020, Start Num: 26

Candidate Starts for Namago\_22:

(Start: 26 @8194 has 39 MA's), (84, 8479), (90, 8518), (102, 8596), (109, 8614), (151, 8779), (158, 8836), (178, 8953), (180, 8962), (203, 9097), (208, 9142), (209, 9148), (211, 9160), (217, 9220), (244, 9349), (245, 9355), (247, 9382), (260, 9481), (270, 9526), (320, 9721), (326, 9757), (329, 9775), (339,



9820),

Gene: Nike\_22 Start: 9101, Stop: 10927, Start Num: 26

Candidate Starts for Nike\_22:

(Start: 26 @9101 has 39 MA's), (84, 9386), (90, 9425), (102, 9503), (109, 9521), (148, 9671), (151, 9686), (158, 9743), (169, 9812), (178, 9860), (180, 9869), (203, 10004), (208, 10049), (209, 10055), (211, 10067), (217, 10127), (244, 10256), (245, 10262), (247, 10289), (260, 10388), (270, 10433), (320, 10628), (326, 10664), (329, 10682), (339, 10727), (361, 10883),

Gene: NyleyClemson\_19 Start: 7931, Stop: 9820, Start Num: 24

Candidate Starts for NyleyClemson\_19:

(Start: 24 @7931 has 11 MA's), (27, 7940), (36, 7979), (57, 8102), (61, 8120), (80, 8195), (94, 8270), (145, 8513), (184, 8705), (209, 8879), (211, 8891), (231, 9041), (244, 9092), (247, 9125), (248, 9131), (252, 9164), (256, 9200), (261, 9227), (269, 9266), (278, 9299), (328, 9566), (350, 9683), (363, 9779),

Gene: Odyssey395\_24 Start: 9446, Stop: 11332, Start Num: 24

Candidate Starts for Odyssey395\_24:

(Start: 24 @9446 has 11 MA's), (27, 9455), (36, 9494), (57, 9617), (61, 9635), (76, 9686), (80, 9710), (94, 9785), (184, 10220), (209, 10394), (211, 10406), (231, 10556), (244, 10607), (247, 10640), (248, 10646), (252, 10679), (256, 10715), (261, 10742), (269, 10781), (274, 10802), (278, 10814), (328, 11078), (350, 11195), (363, 11291),

Gene: Ollypop\_18 Start: 8427, Stop: 10322, Start Num: 24

Candidate Starts for Ollypop\_18:

(Start: 24 @8427 has 11 MA's), (27, 8436), (35, 8472), (36, 8475), (57, 8598), (61, 8616), (70, 8646), (76, 8667), (80, 8691), (84, 8703), (90, 8742), (93, 8760), (94, 8766), (134, 8940), (145, 9009), (170, 9150), (184, 9201), (209, 9375), (211, 9387), (231, 9537), (244, 9588), (247, 9621), (248, 9627), (252, 9660), (256, 9696), (269, 9762), (278, 9795), (328, 10071), (334, 10092), (338, 10110), (363, 10284),

Gene: OneinaGillian\_21 Start: 7426, Stop: 9225, Start Num: 26

Candidate Starts for OneinaGillian\_21:

(Start: 26 @7426 has 39 MA's), (46, 7525), (80, 7690), (90, 7741), (95, 7771), (109, 7837), (166, 8104), (174, 8149), (189, 8236), (191, 8245), (197, 8281), (202, 8317), (208, 8365), (209, 8371), (211, 8383), (215, 8419), (217, 8443), (244, 8578), (256, 8686), (259, 8707), (279, 8788), (283, 8797), (316, 8908), (320, 8926), (326, 8962), (340, 9028), (348, 9097), (355, 9130), (366, 9205),

Gene: Panchaali\_73 Start: 28678, Stop: 30309, Start Num: 13

Candidate Starts for Panchaali\_73:

(Start: 13 @28678 has 2 MA's), (30, 28738), (61, 28915), (62, 28918), (93, 29089), (94, 29095), (136, 29284), (138, 29293), (164, 29455), (173, 29500), (184, 29548), (191, 29596), (195, 29620), (210, 29728), (237, 29893), (275, 30124), (286, 30166), (324, 30298),

Gene: Patbob\_76 Start: 33335, Stop: 35014, Start Num: 13

Candidate Starts for Patbob\_76:

(Start: 11 @33329 has 2 MA's), (Start: 13 @33335 has 2 MA's), (38, 33440), (60, 33563), (62, 33575), (86, 33698), (138, 33950), (143, 33995), (168, 34151), (173, 34160), (175, 34172), (184, 34208), (188, 34229), (213, 34406), (269, 34760), (286, 34826), (288, 34832), (312, 34958), (315, 34967), (324, 35003),

Gene: PauloDiaboli\_82 Start: 29189, Stop: 30925, Start Num: 19

Candidate Starts for PauloDiaboli\_82:

(Start: 19 @29189 has 6 MA's), (34, 29252), (35, 29261), (49, 29339), (60, 29411), (61, 29420), (66, 29444), (68, 29453), (83, 29534), (97, 29627), (107, 29684), (136, 29807), (143, 29861), (162, 29969),

(184, 30080), (190, 30122), (203, 30203), (206, 30224), (214, 30287), (220, 30347), (226, 30380), (238, 30428), (246, 30488), (263, 30599), (287, 30707), (304, 30827), (309, 30851),

Gene: Pepe25\_20 Start: 7682, Stop: 9481, Start Num: 26

Candidate Starts for Pepe25\_20:

(Start: 26 @7682 has 39 MA's), (90, 7997), (95, 8027), (109, 8093), (166, 8360), (189, 8492), (197, 8537), (202, 8573), (208, 8621), (209, 8627), (211, 8639), (215, 8675), (217, 8699), (244, 8834), (256, 8942), (259, 8963), (269, 9008), (279, 9044), (320, 9182), (326, 9218), (340, 9284), (348, 9353), (355, 9386), (364, 9455),

Gene: Phabia\_22 Start: 8559, Stop: 10385, Start Num: 26

Candidate Starts for Phabia\_22:

(Start: 26 @8559 has 39 MA's), (55, 8709), (84, 8844), (90, 8883), (102, 8961), (109, 8979), (148, 9129), (151, 9144), (158, 9201), (169, 9270), (178, 9318), (180, 9327), (203, 9462), (208, 9507), (209, 9513), (211, 9525), (217, 9585), (244, 9714), (245, 9720), (247, 9747), (260, 9846), (270, 9891), (320, 10086), (326, 10122), (329, 10140), (339, 10185),

Gene: Phendrix\_65 Start: 24534, Stop: 26360, Start Num: 10

Candidate Starts for Phendrix\_65:

(Start: 10 @24534 has 1 MA's), (Start: 12 @24546 has 1 MA's), (22, 24591), (28, 24615), (45, 24702), (59, 24786), (60, 24789), (69, 24834), (100, 25047), (119, 25146), (124, 25170), (143, 25290), (150, 25320), (155, 25338), (157, 25365), (177, 25461), (184, 25485), (189, 25524), (193, 25539), (199, 25578), (200, 25581), (201, 25584), (207, 25632), (209, 25659), (213, 25683), (221, 25758), (222, 25761), (223, 25764), (224, 25776), (226, 25785), (228, 25800), (257, 25998), (271, 26049), (290, 26124), (293, 26145), (318, 26262),

Gene: Phinky\_28 Start: 9498, Stop: 11324, Start Num: 26

Candidate Starts for Phinky\_28:

(Start: 26 @9498 has 39 MA's), (31, 9519), (55, 9648), (90, 9825), (100, 9897), (101, 9906), (102, 9909), (130, 9993), (160, 10158), (171, 10224), (203, 10401), (208, 10446), (209, 10452), (211, 10464), (217, 10524), (244, 10653), (245, 10659), (252, 10725), (260, 10785), (320, 11025), (340, 11127), (364, 11298), (369, 11316),

Gene: Phrampa\_70 Start: 30361, Stop: 32055, Start Num: 13

Candidate Starts for Phrampa\_70:

(Start: 11 @30355 has 2 MA's), (Start: 13 @30361 has 2 MA's), (38, 30463), (60, 30586), (62, 30598), (72, 30646), (86, 30721), (97, 30802), (138, 30973), (143, 31018), (158, 31105), (168, 31174), (173, 31183), (184, 31231), (188, 31252), (192, 31282), (213, 31429), (269, 31783), (288, 31855), (312, 31996), (315, 32005), (324, 32044),

Gene: Pointis\_22 Start: 9444, Stop: 11336, Start Num: 24

Candidate Starts for Pointis\_22:

(Start: 24 @9444 has 11 MA's), (27, 9453), (36, 9492), (57, 9615), (61, 9633), (76, 9684), (80, 9708), (94, 9783), (145, 10026), (184, 10218), (209, 10392), (211, 10404), (231, 10554), (244, 10605), (247, 10638), (248, 10644), (252, 10677), (256, 10713), (261, 10740), (269, 10779), (274, 10800), (278, 10812), (328, 11082), (350, 11199), (363, 11295),

Gene: Pumpernickel\_80 Start: 31376, Stop: 33094, Start Num: 19

Candidate Starts for Pumpernickel\_80:

(1, 31238), (4, 31247), (7, 31259), (Start: 19 @31376 has 6 MA's), (41, 31490), (97, 31817), (124, 31934), (143, 32051), (162, 32159), (184, 32267), (203, 32390), (206, 32411), (213, 32465), (220, 32534), (249, 32702), (263, 32786), (264, 32789), (265, 32792), (280, 32858),

Gene: Pureglobe5\_24 Start: 9460, Stop: 11346, Start Num: 24

Candidate Starts for Pureglobe5\_24:

(Start: 24 @9460 has 11 MA's), (27, 9469), (36, 9508), (57, 9631), (61, 9649), (76, 9700), (80, 9724), (94, 9799), (184, 10234), (209, 10408), (211, 10420), (231, 10570), (244, 10621), (247, 10654), (248, 10660), (252, 10693), (256, 10729), (261, 10756), (269, 10795), (274, 10816), (278, 10828), (328, 11092), (350, 11209), (363, 11305),

Gene: Quammi\_20 Start: 8130, Stop: 9956, Start Num: 26

Candidate Starts for Quammi\_20:

(Start: 26 @8130 has 39 MA's), (55, 8280), (84, 8415), (90, 8454), (102, 8532), (109, 8550), (148, 8700), (151, 8715), (158, 8772), (169, 8841), (178, 8889), (180, 8898), (203, 9033), (208, 9078), (209, 9084), (211, 9096), (217, 9156), (244, 9285), (245, 9291), (247, 9318), (260, 9417), (270, 9462), (320, 9657), (326, 9693), (329, 9711), (339, 9756),

Gene: Racecar\_77 Start: 33689, Stop: 35374, Start Num: 11

Candidate Starts for Racecar\_77:

(Start: 11 @33689 has 2 MA's), (Start: 13 @33695 has 2 MA's), (38, 33800), (60, 33923), (62, 33935), (86, 34058), (138, 34310), (143, 34355), (168, 34511), (173, 34520), (175, 34532), (184, 34568), (188, 34589), (213, 34766), (269, 35120), (286, 35186), (288, 35192), (312, 35318), (315, 35327), (324, 35363),

Gene: RainyPolka\_10 Start: 8039, Stop: 9838, Start Num: 32

Candidate Starts for RainyPolka\_10:

(Start: 32 @8039 has 10 MA's), (55, 8156), (56, 8165), (62, 8198), (77, 8246), (84, 8285), (95, 8354), (104, 8423), (105, 8426), (107, 8444), (115, 8465), (123, 8492), (135, 8546), (137, 8552), (138, 8558), (143, 8603), (156, 8654), (161, 8702), (183, 8780), (186, 8789), (192, 8834), (197, 8867), (199, 8876), (202, 8903), (218, 9035), (272, 9326), (284, 9362), (293, 9389), (299, 9437), (307, 9485), (311, 9497), (321, 9530), (325, 9548), (338, 9617), (367, 9809), (370, 9827),

Gene: Ranunculus\_17 Start: 8385, Stop: 10292, Start Num: 24

Candidate Starts for Ranunculus\_17:

(Start: 24 @8385 has 11 MA's), (36, 8433), (57, 8556), (61, 8574), (76, 8625), (80, 8649), (84, 8661), (93, 8718), (94, 8724), (184, 9159), (208, 9327), (209, 9333), (211, 9345), (244, 9546), (247, 9579), (248, 9585), (252, 9618), (256, 9654), (269, 9720), (278, 9753), (282, 9765), (305, 9921), (316, 9957), (321, 9978), (326, 10011), (350, 10155), (358, 10209), (361, 10239),

Gene: RazzB\_18 Start: 7930, Stop: 9648, Start Num: 57

Candidate Starts for RazzB\_18:

(Start: 24 @7759 has 11 MA's), (27, 7768), (36, 7807), (57, 7930), (61, 7948), (76, 7999), (80, 8023), (94, 8098), (145, 8341), (184, 8533), (209, 8707), (211, 8719), (231, 8869), (244, 8920), (247, 8953), (248, 8959), (252, 8992), (256, 9028), (261, 9055), (269, 9094), (278, 9127), (328, 9394), (350, 9511), (363, 9607),

Gene: ReginaGlobina\_75 Start: 31755, Stop: 33383, Start Num: 13

Candidate Starts for ReginaGlobina\_75:

(Start: 13 @31755 has 2 MA's), (62, 31995), (94, 32172), (138, 32370), (164, 32532), (173, 32574), (175, 32586), (184, 32622), (210, 32802), (220, 32889), (237, 32967), (275, 33198), (296, 33285), (312, 33333), (324, 33372),

Gene: Rizwana\_16 Start: 8365, Stop: 10227, Start Num: 24

Candidate Starts for Rizwana\_16:

(Start: 24 @8365 has 11 MA's), (27, 8374), (42, 8449), (52, 8497), (61, 8557), (70, 8587), (78, 8614), (90, 8680), (120, 8812), (134, 8872), (135, 8875), (161, 9031), (162, 9043), (178, 9118), (181, 9130),

(184, 9139), (189, 9178), (199, 9232), (208, 9307), (228, 9454), (233, 9478), (236, 9484), (242, 9508), (244, 9526), (252, 9598), (256, 9634), (262, 9664), (270, 9703), (273, 9715), (282, 9745), (300, 9841), (305, 9880), (323, 9949), (327, 9982), (361, 10186), (362, 10189), (363, 10198),

Gene: RobinRose\_23 Start: 7894, Stop: 9693, Start Num: 26

Candidate Starts for RobinRose\_23:

(Start: 26 @7894 has 39 MA's), (46, 7993), (80, 8158), (90, 8209), (95, 8239), (109, 8305), (166, 8572), (174, 8617), (189, 8704), (197, 8749), (202, 8785), (208, 8833), (209, 8839), (211, 8851), (215, 8887), (217, 8911), (244, 9046), (256, 9154), (259, 9175), (279, 9256), (283, 9265), (316, 9376), (320, 9394), (326, 9430), (340, 9496), (348, 9565), (355, 9598), (366, 9673),

Gene: Rockabye\_78 Start: 34436, Stop: 36061, Start Num: 13

Candidate Starts for Rockabye\_78:

(Start: 13 @34436 has 2 MA's), (39, 34544), (60, 34661), (62, 34673), (76, 34742), (107, 34934), (157, 35168), (168, 35243), (185, 35303), (206, 35444), (213, 35498), (214, 35507), (220, 35567), (263, 35819), (269, 35852), (288, 35924), (294, 35951), (324, 36050),

Gene: RomansRevenge\_13 Start: 6378, Stop: 8228, Start Num: 24

Candidate Starts for RomansRevenge\_13:

(20, 6363), (Start: 24 @6378 has 11 MA's), (39, 6444), (42, 6462), (60, 6561), (61, 6570), (62, 6573), (64, 6585), (65, 6588), (77, 6621), (82, 6648), (90, 6693), (112, 6795), (121, 6822), (125, 6837), (134, 6876), (139, 6909), (142, 6927), (145, 6945), (161, 7035), (162, 7047), (178, 7131), (184, 7152), (190, 7194), (199, 7245), (208, 7320), (209, 7326), (211, 7338), (220, 7419), (225, 7449), (234, 7485), (244, 7530), (256, 7638), (302, 7845), (314, 7881), (327, 7950), (337, 7998), (342, 8037), (350, 8082), (363, 8178),

Gene: Romm\_23 Start: 7894, Stop: 9693, Start Num: 26

Candidate Starts for Romm\_23:

(Start: 26 @7894 has 39 MA's), (46, 7993), (80, 8158), (90, 8209), (95, 8239), (109, 8305), (166, 8572), (174, 8617), (189, 8704), (197, 8749), (202, 8785), (208, 8833), (209, 8839), (211, 8851), (215, 8887), (217, 8911), (244, 9046), (256, 9154), (259, 9175), (279, 9256), (283, 9265), (316, 9376), (320, 9394), (326, 9430), (340, 9496), (348, 9565), (355, 9598), (366, 9673),

Gene: Rowlf\_18 Start: 7897, Stop: 9723, Start Num: 26

Candidate Starts for Rowlf\_18:

(Start: 26 @7897 has 39 MA's), (84, 8182), (90, 8221), (102, 8299), (109, 8317), (148, 8467), (151, 8482), (158, 8539), (169, 8608), (178, 8656), (180, 8665), (203, 8800), (208, 8845), (209, 8851), (211, 8863), (217, 8923), (244, 9052), (245, 9058), (247, 9085), (260, 9184), (270, 9229), (320, 9424), (326, 9460), (329, 9478), (339, 9523),

Gene: RubyRalph\_24 Start: 8991, Stop: 10805, Start Num: 26

Candidate Starts for RubyRalph\_24:

(Start: 21 @8970 has 1 MA's), (Start: 26 @8991 has 39 MA's), (90, 9318), (93, 9336), (95, 9348), (136, 9492), (148, 9564), (154, 9588), (159, 9639), (179, 9753), (187, 9780), (190, 9810), (203, 9891), (208, 9936), (209, 9942), (211, 9954), (217, 10014), (231, 10098), (244, 10143), (245, 10149), (252, 10215), (260, 10275), (283, 10365), (298, 10425), (320, 10506), (358, 10731),

Gene: Rudy\_20 Start: 8130, Stop: 9956, Start Num: 26

Candidate Starts for Rudy\_20:

(Start: 26 @8130 has 39 MA's), (55, 8280), (84, 8415), (90, 8454), (102, 8532), (109, 8550), (148, 8700), (151, 8715), (158, 8772), (169, 8841), (178, 8889), (180, 8898), (203, 9033), (208, 9078), (209, 9084), (211, 9096), (217, 9156), (244, 9285), (245, 9291), (247, 9318), (260, 9417), (270, 9462), (320, 9657), (326, 9693), (329, 9711), (339, 9756),

Gene: SJReid\_81 Start: 34914, Stop: 36533, Start Num: 13

Candidate Starts for SJReid\_81:

(Start: 13 @34914 has 2 MA's), (38, 35016), (39, 35022), (62, 35151), (95, 35334), (181, 35763), (185, 35775), (188, 35793), (213, 35970), (220, 36039), (263, 36291), (269, 36324), (288, 36396), (294, 36423), (312, 36480), (324, 36522),

Gene: SadLad\_25 Start: 9427, Stop: 11262, Start Num: 21

Candidate Starts for SadLad\_25:

(Start: 21 @9427 has 1 MA's), (Start: 26 @9448 has 39 MA's), (90, 9775), (93, 9793), (95, 9805), (136, 9949), (148, 10021), (154, 10045), (159, 10096), (179, 10210), (187, 10237), (190, 10267), (203, 10348), (208, 10393), (209, 10399), (211, 10411), (217, 10471), (231, 10555), (244, 10600), (245, 10606), (252, 10672), (260, 10732), (283, 10822), (298, 10882), (320, 10963), (358, 11188),

Gene: Salete\_10 Start: 8087, Stop: 9889, Start Num: 32

Candidate Starts for Salete\_10:

(Start: 32 @8087 has 10 MA's), (56, 8213), (60, 8234), (62, 8246), (77, 8294), (84, 8333), (91, 8375), (95, 8402), (104, 8471), (107, 8492), (115, 8513), (135, 8591), (137, 8597), (138, 8603), (156, 8699), (161, 8747), (183, 8825), (190, 8870), (192, 8879), (197, 8912), (202, 8948), (218, 9080), (272, 9377), (284, 9413), (301, 9503), (307, 9536), (311, 9548), (325, 9599), (333, 9650), (338, 9668), (344, 9716), (345, 9722), (358, 9803), (361, 9833), (367, 9860), (370, 9878),

Gene: SallyK\_23 Start: 9291, Stop: 11117, Start Num: 26

Candidate Starts for SallyK\_23:

(Start: 26 @9291 has 39 MA's), (55, 9441), (84, 9576), (90, 9615), (102, 9693), (109, 9711), (148, 9861), (151, 9876), (158, 9933), (169, 10002), (178, 10050), (180, 10059), (203, 10194), (208, 10239), (209, 10245), (217, 10317), (244, 10446), (245, 10452), (247, 10479), (260, 10578), (270, 10623), (320, 10818), (326, 10854), (329, 10872), (339, 10917),

Gene: SilentRX\_18 Start: 8516, Stop: 10414, Start Num: 24

Candidate Starts for SilentRX\_18:

(Start: 24 @8516 has 11 MA's), (42, 8603), (45, 8612), (51, 8645), (70, 8741), (81, 8786), (90, 8834), (94, 8858), (134, 9029), (135, 9032), (146, 9101), (158, 9179), (161, 9188), (162, 9200), (178, 9272), (181, 9284), (184, 9293), (190, 9335), (199, 9386), (204, 9419), (208, 9461), (209, 9467), (211, 9479), (244, 9701), (251, 9767), (256, 9809), (305, 10058), (321, 10115), (330, 10166), (353, 10301), (363, 10376), (366, 10388),

Gene: Sillytadpoles\_22 Start: 8128, Stop: 9954, Start Num: 26

Candidate Starts for Sillytadpoles\_22:

(Start: 26 @8128 has 39 MA's), (55, 8278), (84, 8413), (90, 8452), (102, 8530), (109, 8548), (148, 8698), (151, 8713), (158, 8770), (169, 8839), (178, 8887), (180, 8896), (203, 9031), (208, 9076), (209, 9082), (211, 9094), (217, 9154), (244, 9283), (245, 9289), (247, 9316), (260, 9415), (270, 9460), (320, 9655), (326, 9691), (329, 9709), (339, 9754),

Gene: Sixama\_72 Start: 30011, Stop: 31756, Start Num: 14

Candidate Starts for Sixama\_72:

(Start: 14 @30011 has 5 MA's), (15, 30017), (16, 30020), (35, 30098), (62, 30251), (72, 30299), (100, 30497), (143, 30740), (144, 30743), (148, 30758), (150, 30770), (155, 30788), (157, 30815), (161, 30836), (162, 30848), (197, 31019), (203, 31058), (209, 31109), (213, 31133), (221, 31208), (222, 31211), (226, 31235), (273, 31505), (290, 31574), (303, 31685), (322, 31733),

Gene: Squash\_24 Start: 9156, Stop: 10982, Start Num: 26

Candidate Starts for Squash\_24:

(Start: 26 @9156 has 39 MA's), (84, 9441), (90, 9480), (102, 9558), (109, 9576), (148, 9726), (151, 9741), (158, 9798), (169, 9867), (178, 9915), (180, 9924), (203, 10059), (208, 10104), (209, 10110), (211, 10122), (217, 10182), (244, 10311), (245, 10317), (247, 10344), (260, 10443), (270, 10488), (320, 10683), (326, 10719), (329, 10737), (339, 10782), (361, 10938),

Gene: Statler\_24 Start: 9110, Stop: 10936, Start Num: 26

Candidate Starts for Statler\_24:

(Start: 26 @9110 has 39 MA's), (84, 9395), (90, 9434), (102, 9512), (109, 9530), (148, 9680), (151, 9695), (158, 9752), (169, 9821), (178, 9869), (180, 9878), (203, 10013), (208, 10058), (209, 10064), (211, 10076), (217, 10136), (244, 10265), (245, 10271), (247, 10298), (260, 10397), (270, 10442), (320, 10637), (326, 10673), (329, 10691), (339, 10736),

Gene: StrawberryJamm\_24 Start: 8430, Stop: 10256, Start Num: 26

Candidate Starts for StrawberryJamm\_24:

(Start: 26 @8430 has 39 MA's), (55, 8580), (84, 8715), (90, 8754), (102, 8832), (109, 8850), (148, 9000), (151, 9015), (158, 9072), (169, 9141), (178, 9189), (180, 9198), (203, 9333), (208, 9378), (209, 9384), (211, 9396), (217, 9456), (244, 9585), (245, 9591), (247, 9618), (260, 9717), (270, 9762), (320, 9957), (326, 9993), (329, 10011), (339, 10056),

Gene: Sunfish\_26 Start: 9771, Stop: 11576, Start Num: 18

Candidate Starts for Sunfish\_26:

(Start: 18 @9771 has 1 MA's), (Start: 26 @9810 has 39 MA's), (55, 9951), (61, 9990), (69, 10017), (84, 10065), (96, 10149), (138, 10290), (146, 10347), (166, 10467), (177, 10518), (190, 10581), (192, 10590), (194, 10599), (208, 10707), (209, 10713), (214, 10746), (239, 10887), (252, 10986), (255, 11022), (256, 11025), (298, 11199), (331, 11334), (340, 11379), (345, 11433), (349, 11457),

Gene: TP1604\_10 Start: 8087, Stop: 9889, Start Num: 32

Candidate Starts for TP1604\_10:

(Start: 32 @8087 has 10 MA's), (56, 8213), (60, 8234), (62, 8246), (77, 8294), (84, 8333), (91, 8375), (95, 8402), (104, 8471), (107, 8492), (115, 8513), (135, 8591), (137, 8597), (138, 8603), (156, 8699), (161, 8747), (183, 8825), (190, 8870), (192, 8879), (197, 8912), (199, 8921), (202, 8948), (218, 9080), (272, 9377), (284, 9413), (297, 9458), (301, 9503), (311, 9548), (325, 9599), (333, 9650), (338, 9668), (344, 9716), (358, 9803), (361, 9833), (367, 9860), (370, 9878),

Gene: Talia1610\_76 Start: 33060, Stop: 34739, Start Num: 13

Candidate Starts for Talia1610\_76:

(Start: 11 @33054 has 2 MA's), (Start: 13 @33060 has 2 MA's), (38, 33165), (60, 33288), (62, 33300), (86, 33423), (138, 33675), (143, 33720), (151, 33753), (168, 33876), (173, 33885), (175, 33897), (184, 33933), (213, 34131), (220, 34200), (269, 34485), (286, 34551), (288, 34557), (312, 34683), (315, 34692), (324, 34728),

Gene: Tank\_17 Start: 8380, Stop: 10260, Start Num: 24

Candidate Starts for Tank\_17:

(Start: 24 @8380 has 11 MA's), (27, 8389), (42, 8464), (52, 8512), (61, 8572), (70, 8602), (90, 8695), (117, 8815), (132, 8872), (134, 8887), (141, 8932), (161, 9046), (162, 9058), (178, 9133), (181, 9145), (184, 9154), (185, 9157), (189, 9193), (199, 9247), (208, 9322), (211, 9340), (233, 9493), (236, 9499), (238, 9505), (241, 9520), (244, 9541), (256, 9649), (264, 9688), (270, 9718), (305, 9895), (327, 9997), (346, 10096), (353, 10138), (363, 10213), (366, 10225),

Gene: Teehee\_23 Start: 9365, Stop: 11191, Start Num: 26

Candidate Starts for Teehee\_23:

(Start: 26 @9365 has 39 MA's), (55, 9515), (84, 9650), (90, 9689), (102, 9767), (109, 9785), (148, 9935), (151, 9950), (158, 10007), (169, 10076), (178, 10124), (180, 10133), (203, 10268), (208,

10313), (209, 10319), (211, 10331), (217, 10391), (244, 10520), (245, 10526), (247, 10553), (260, 10652), (270, 10697), (320, 10892), (326, 10928), (329, 10946), (339, 10991),

Gene: Tempo\_21 Start: 7770, Stop: 9569, Start Num: 26

Candidate Starts for Tempo\_21:

(Start: 26 @7770 has 39 MA's), (46, 7869), (80, 8034), (90, 8085), (95, 8115), (109, 8181), (166, 8448), (174, 8493), (189, 8580), (197, 8625), (202, 8661), (208, 8709), (209, 8715), (211, 8727), (215, 8763), (217, 8787), (244, 8922), (256, 9030), (259, 9051), (279, 9132), (283, 9141), (316, 9252), (320, 9270), (326, 9306), (340, 9372), (348, 9441), (355, 9474), (366, 9549),

Gene: Tissue\_22 Start: 8939, Stop: 10765, Start Num: 26

Candidate Starts for Tissue\_22:

(Start: 26 @8939 has 39 MA's), (55, 9089), (84, 9224), (90, 9263), (102, 9341), (109, 9359), (148, 9509), (151, 9524), (158, 9581), (169, 9650), (178, 9698), (180, 9707), (203, 9842), (208, 9887), (209, 9893), (211, 9905), (217, 9965), (244, 10094), (245, 10100), (247, 10127), (260, 10226), (270, 10271), (320, 10466), (326, 10502), (329, 10520), (339, 10565),

Gene: TurkishDelight\_11 Start: 6388, Stop: 8154, Start Num: 29

Candidate Starts for TurkishDelight\_11:

(Start: 29 @6388 has 1 MA's), (62, 6565), (97, 6745), (98, 6748), (116, 6826), (123, 6850), (129, 6886), (138, 6916), (156, 7012), (161, 7060), (179, 7126), (181, 7132), (190, 7183), (202, 7261), (204, 7267), (213, 7339), (217, 7387), (219, 7399), (235, 7474), (240, 7495), (292, 7738), (335, 7936), (338, 7945), (368, 8143),

Gene: Viceroy\_21 Start: 8130, Stop: 9956, Start Num: 26

Candidate Starts for Viceroy\_21:

(Start: 26 @8130 has 39 MA's), (55, 8280), (84, 8415), (90, 8454), (102, 8532), (109, 8550), (148, 8700), (151, 8715), (158, 8772), (169, 8841), (178, 8889), (180, 8898), (203, 9033), (208, 9078), (209, 9084), (211, 9096), (217, 9156), (244, 9285), (245, 9291), (247, 9318), (260, 9417), (270, 9462), (320, 9657), (326, 9693), (329, 9711), (339, 9756),

Gene: WaddleDee\_69 Start: 27736, Stop: 29310, Start Num: 30

Candidate Starts for WaddleDee\_69:

(Start: 13 @27676 has 2 MA's), (30, 27736), (94, 28093), (136, 28282), (138, 28291), (173, 28495), (184, 28543), (210, 28723), (220, 28810), (232, 28876), (237, 28888), (275, 29119), (296, 29206), (324, 29299),

Gene: Wayne3\_23 Start: 9095, Stop: 10921, Start Num: 26

Candidate Starts for Wayne3\_23:

(Start: 26 @9095 has 39 MA's), (55, 9245), (84, 9380), (90, 9419), (102, 9497), (109, 9515), (148, 9665), (151, 9680), (158, 9737), (169, 9806), (178, 9854), (180, 9863), (203, 9998), (208, 10043), (209, 10049), (211, 10061), (217, 10121), (244, 10250), (245, 10256), (247, 10283), (260, 10382), (270, 10427), (320, 10622), (326, 10658), (329, 10676), (339, 10721),

Gene: Wheelie\_21 Start: 8446, Stop: 10272, Start Num: 26

Candidate Starts for Wheelie\_21:

(Start: 26 @8446 has 39 MA's), (55, 8596), (84, 8731), (90, 8770), (102, 8848), (109, 8866), (148, 9016), (151, 9031), (158, 9088), (169, 9157), (178, 9205), (180, 9214), (203, 9349), (208, 9394), (209, 9400), (211, 9412), (217, 9472), (244, 9601), (245, 9607), (247, 9634), (260, 9733), (270, 9778), (320, 9973), (326, 10009), (329, 10027), (339, 10072),

Gene: Wilca\_21 Start: 7665, Stop: 9464, Start Num: 26

Candidate Starts for Wilca\_21:

(Start: 26 @7665 has 39 MA's), (90, 7980), (95, 8010), (109, 8076), (166, 8343), (174, 8388), (189, 8475), (197, 8520), (202, 8556), (208, 8604), (209, 8610), (211, 8622), (215, 8658), (217, 8682), (244, 8817), (256, 8925), (259, 8946), (279, 9027), (320, 9165), (326, 9201), (340, 9267), (348, 9336), (355, 9369), (364, 9438),

Gene: Wilde\_17 Start: 8308, Stop: 10188, Start Num: 24

Candidate Starts for Wilde\_17:

(Start: 24 @8308 has 11 MA's), (27, 8317), (42, 8392), (52, 8440), (61, 8500), (70, 8530), (90, 8623), (117, 8743), (132, 8800), (134, 8815), (141, 8860), (161, 8974), (162, 8986), (178, 9061), (181, 9073), (184, 9082), (185, 9085), (189, 9121), (199, 9175), (208, 9250), (211, 9268), (233, 9421), (236, 9427), (238, 9433), (241, 9448), (244, 9469), (256, 9577), (264, 9616), (270, 9646), (305, 9823), (327, 9925), (346, 10024), (353, 10066), (363, 10141), (366, 10153),

Gene: Xkcd426\_11 Start: 9122, Stop: 10924, Start Num: 32

Candidate Starts for Xkcd426\_11:

(Start: 32 @9122 has 10 MA's), (37, 9143), (40, 9164), (53, 9227), (62, 9281), (84, 9368), (95, 9437), (104, 9506), (115, 9548), (126, 9593), (135, 9626), (137, 9632), (153, 9722), (156, 9734), (161, 9782), (183, 9860), (192, 9914), (197, 9947), (202, 9983), (211, 10049), (218, 10115), (250, 10295), (272, 10415), (277, 10433), (292, 10469), (307, 10571), (311, 10583), (341, 10718), (347, 10766), (358, 10838), (359, 10847), (361, 10868), (367, 10895), (370, 10913),

Gene: YDN12\_11 Start: 8033, Stop: 9832, Start Num: 32

Candidate Starts for YDN12\_11:

(Start: 32 @8033 has 10 MA's), (56, 8159), (60, 8180), (62, 8192), (77, 8240), (84, 8279), (91, 8321), (95, 8348), (104, 8417), (107, 8438), (115, 8459), (128, 8513), (135, 8537), (137, 8543), (138, 8549), (143, 8594), (156, 8645), (161, 8693), (190, 8816), (192, 8825), (197, 8858), (202, 8894), (204, 8900), (218, 9026), (240, 9128), (272, 9323), (284, 9359), (291, 9368), (301, 9449), (307, 9482), (311, 9494), (317, 9512), (325, 9545), (338, 9614), (344, 9662), (345, 9668), (358, 9749), (361, 9779), (367, 9806), (370, 9821),

Gene: Zagie\_22 Start: 8634, Stop: 10460, Start Num: 26

Candidate Starts for Zagie\_22:

(Start: 26 @8634 has 39 MA's), (55, 8784), (84, 8919), (90, 8958), (102, 9036), (109, 9054), (148, 9204), (151, 9219), (158, 9276), (169, 9345), (178, 9393), (180, 9402), (203, 9537), (208, 9582), (209, 9588), (211, 9600), (217, 9660), (244, 9789), (245, 9795), (247, 9822), (260, 9921), (270, 9966), (320, 10161), (326, 10197), (329, 10215), (339, 10260),

Gene: Zhafia\_25 Start: 8864, Stop: 10690, Start Num: 26

Candidate Starts for Zhafia\_25:

(Start: 26 @8864 has 39 MA's), (84, 9149), (90, 9188), (102, 9266), (109, 9284), (151, 9449), (158, 9506), (178, 9623), (180, 9632), (203, 9767), (208, 9812), (209, 9818), (211, 9830), (217, 9890), (244, 10019), (245, 10025), (247, 10052), (260, 10151), (270, 10196), (320, 10391), (326, 10427), (329, 10445), (339, 10490),

Gene: Zooman\_67 Start: 27800, Stop: 29527, Start Num: 19

Candidate Starts for Zooman\_67:

(1, 27662), (3, 27668), (4, 27671), (Start: 19 @27800 has 6 MA's), (30, 27854), (35, 27878), (44, 27929), (61, 28037), (66, 28061), (83, 28151), (86, 28163), (94, 28217), (136, 28424), (143, 28478), (184, 28694), (199, 28787), (203, 28817), (214, 28901), (220, 28961), (226, 28994), (228, 29009), (263, 29213), (264, 29216), (265, 29219), (275, 29270), (304, 29441),

Gene: phiAsp2\_4 Start: 1019, Stop: 2959, Start Num: 20

Candidate Starts for phiAsp2\_4:



(2, 869), (5, 875), (6, 878), (8, 890), (20, 1019), (33, 1070), (62, 1238), (68, 1259), (71, 1268), (85, 1331), (95, 1394), (97, 1415), (108, 1466), (109, 1469), (131, 1553), (147, 1640), (149, 1646), (153, 1664), (159, 1718), (162, 1736), (178, 1784), (187, 1817), (189, 1844), (190, 1847), (192, 1856), (195, 1877), (196, 1880), (205, 1946), (211, 2000), (230, 2138), (252, 2261), (253, 2264), (254, 2285), (255, 2294), (283, 2411), (306, 2576), (313, 2603), (320, 2627), (332, 2702), (345, 2786), (346, 2792), (350, 2813), (354, 2837), (356, 2852), (360, 2894), (364, 2915), (371, 2945),