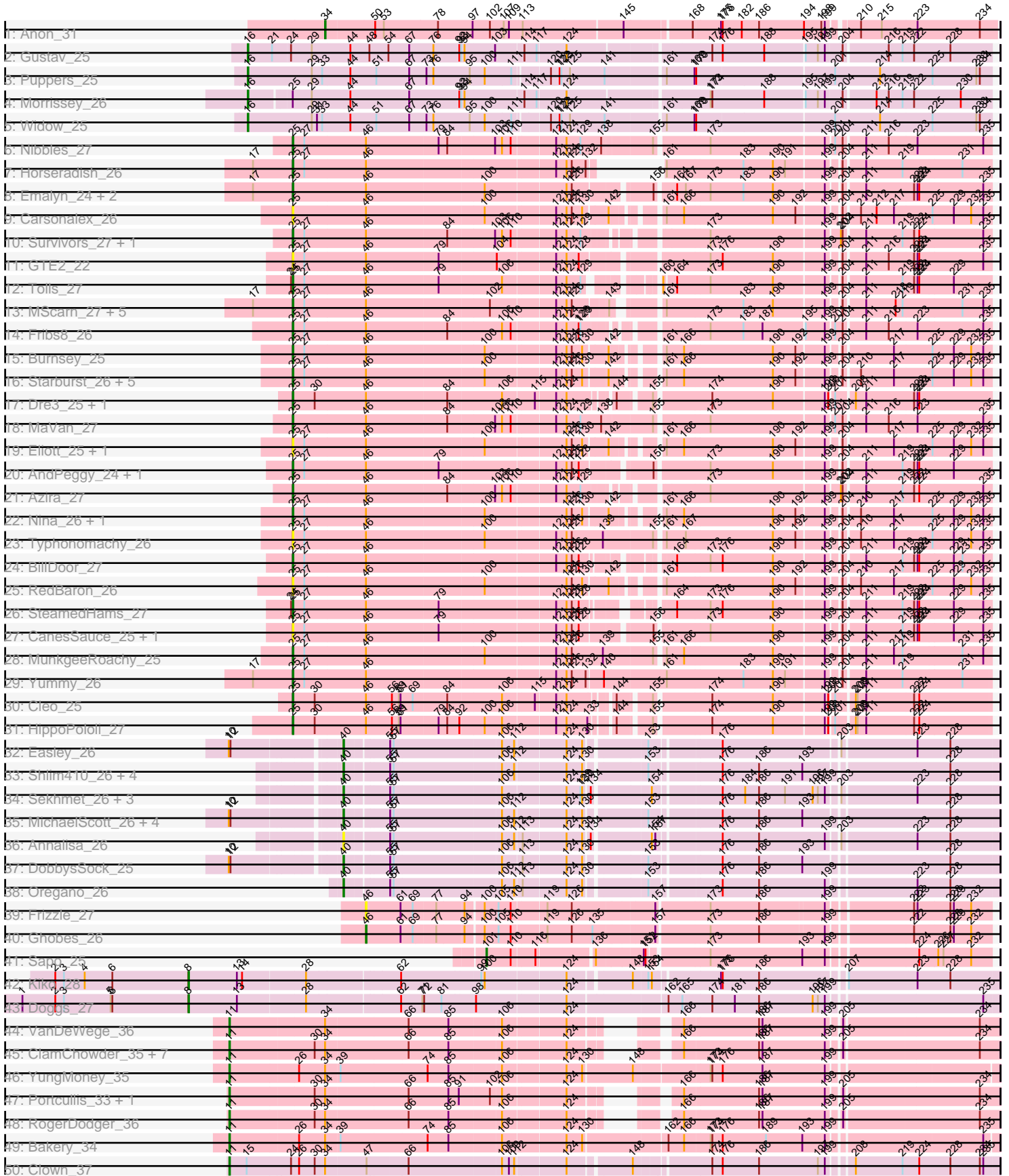
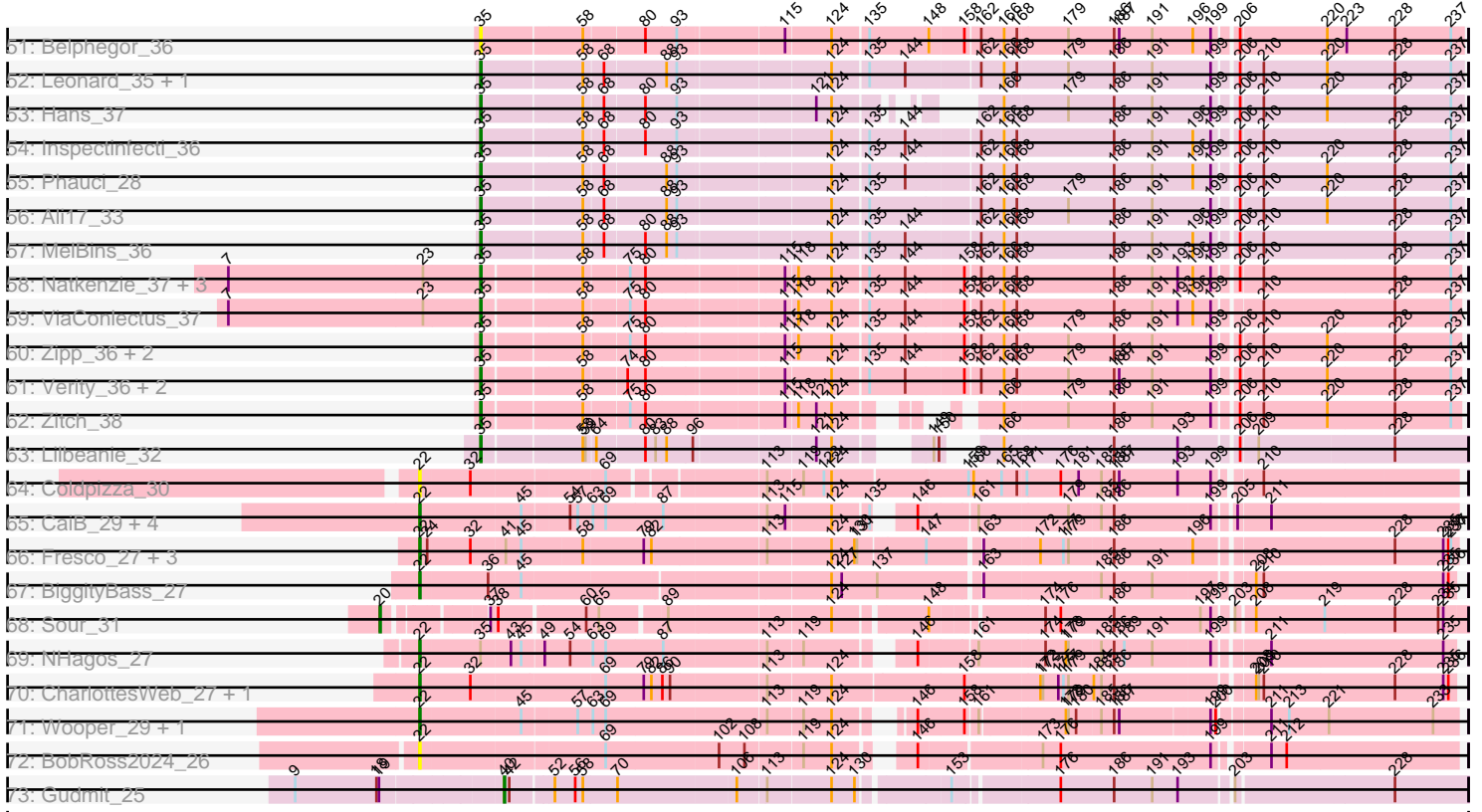


Pham 202780



Pham 202780



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 202780 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202780 has 127 members, 26 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 : Horseradish\_26
- Track 8 : Emalyn\_24, Amok\_24, AikoCarson\_24
- Track 9 : Carsonalex\_26
- Track 10 : Survivors\_27, Zareef\_29
- Track 11 : GTE2\_22
- Track 12 : Tolls\_27
- Track 13 : MScarn\_27, Blondies\_25, Biskit\_26, Buttrmlkdreams\_25, SketchMex\_24, Troje\_25
- Track 14 : Fribs8\_26
- Track 15 : Burnsey\_25
- Track 16 : Starburst\_26, Axym\_25, Agatha\_25, GoldHunter\_26, Cozz\_25, Quasar\_25
- Track 17 : Dre3\_25, Gibbous\_25
- Track 18 : MaVan\_27
- Track 19 : Elliott\_25, PsychoKiller\_25
- Track 20 : AndPeggy\_24, Yarn\_24
- Track 21 : Azira\_27
- Track 22 : Nina\_26, Sopespian\_25
- Track 23 : Typhonomachy\_26
- Track 24 : BillDoor\_27
- Track 25 : RedBaron\_26
- Track 26 : SteamedHams\_27
- Track 27 : CanesSauce\_25, ChocoMunchkin\_25
- Track 28 : MunkgeeRoachy\_25
- Track 29 : Yummy\_26
- Track 30 : Cleo\_25
- Track 31 : HippoPololi\_27
- Track 32 : Easley\_26
- Track 33 : Shlim410\_26, Adora\_26, Howe\_26, Twinkle\_26, Hortense\_26
- Track 34 : Sekhmet\_26, Dorito\_25, Samman98\_26, PhriskyACE\_25
- Track 35 : MichaelScott\_26, Dolores\_26, WinkNick\_26, Mcklovin\_26, Clark\_26

- Track 36 : Annalisa\_26
- Track 37 : DobbysSock\_25
- Track 38 : Oregano\_26
- Track 39 : Frizzle\_27
- Track 40 : Ghobes\_26
- Track 41 : Sapo\_25
- Track 42 : Kiko\_28
- Track 43 : Doggs\_27
- Track 44 : VanDeWege\_36
- Track 45 : ClamChowder\_35, Fugax\_35, PinkCoffee\_35, Barb\_35, CoveyB\_36, Twister6\_35, Arri\_36, Danyall\_35
- Track 46 : YungMoney\_35
- Track 47 : Portcullis\_33, Shinji\_33
- Track 48 : RogerDodger\_36
- Track 49 : Bakery\_34
- Track 50 : Clown\_37
- Track 51 : Belphegor\_36
- Track 52 : Leonard\_35, Phinally\_35
- Track 53 : Hans\_37
- Track 54 : Inspectinfecti\_36
- Track 55 : Phauci\_28
- Track 56 : Ali17\_33
- Track 57 : MelBins\_36
- Track 58 : Natkenzie\_37, Abblin\_37, Sampson\_37, Scioto\_37
- Track 59 : ViaConlectus\_37
- Track 60 : Zipp\_36, APunk\_38, Tardus\_38
- Track 61 : Verity\_36, Delrey21\_36, DoctorFroggo\_36
- Track 62 : Zitch\_38
- Track 63 : Lilbeanie\_32
- Track 64 : Coldpizza\_30
- Track 65 : CaiB\_29, MakoManhole\_29, CloverMinnie\_29, MossRose\_29, AnarQue\_29
- Track 66 : Fresco\_27, Axumite\_27, Shatter\_27, Ligma\_27
- Track 67 : BiggityBass\_27
- Track 68 : Sour\_31
- Track 69 : NHagos\_27
- Track 70 : CharlottesWeb\_27, Mariokart\_27
- Track 71 : Wooper\_29, Yeshua\_29
- Track 72 : BobRoss2024\_26
- Track 73 : 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 25, it was called in 31 of the 101 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agatha\_25, AikoCarson\_24, Amok\_24, AndPeggy\_24, Axym\_25, Azira\_27, BillDoor\_27, Biskit\_26, Blondies\_25, Burnsey\_25, Buttrmlkdreams\_25, CanesSauce\_25, Carsonalex\_26, ChocoMunchkin\_25, Cleo\_25, Cozz\_25, Dre3\_25,

Elliott\_25, Emalyn\_24, Fribs8\_26, GTE2\_22, Gibbous\_25, GoldHunter\_26, HippoPololi\_27, Horseradish\_26, MScarn\_27, MaVan\_27, MunkgeeRoachy\_25, Nibbles\_27, Nina\_26, PsychoKiller\_25, Quasar\_25, RedBaron\_26, SketchMex\_24, Sopespian\_25, Starburst\_26, SteamedHams\_27, Survivors\_27, Tolls\_27, Troje\_25, Typhonomachy\_26, Yarn\_24, Yummy\_26, Zareef\_29,

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

- Morrissey\_26,

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

- APunk\_38, Abblin\_37, Adora\_26, Ali17\_33, AnarQue\_29, Annalisa\_26, Anon\_31, Arri\_36, Axumite\_27, Bakery\_34, Barb\_35, Belphegor\_36, BiggityBass\_27, BobRoss2024\_26, CaiB\_29, CharlottesWeb\_27, ClamChowder\_35, Clark\_26, CloverMinnie\_29, Clown\_37, Coldpizza\_30, CoveyB\_36, Danyall\_35, Delrey21\_36, DobbysSock\_25, DoctorFroggo\_36, Doggs\_27, Dolores\_26, Dorito\_25, Easley\_26, Fresco\_27, Frizzle\_27, Fugax\_35, Ghobes\_26, Gudmit\_25, Gustav\_25, Hans\_37, Hortense\_26, Howe\_26, Inspectinfecti\_36, Kiko\_28, Leonard\_35, Ligma\_27, Lilbeanie\_32, MakoManhole\_29, Mariokart\_27, Mcklovin\_26, MelBins\_36, MichaelScott\_26, MossRose\_29, NHagos\_27, Natkenzie\_37, Oregano\_26, Phauci\_28, Phinally\_35, PhriskyACE\_25, PinkCoffee\_35, Portcullis\_33, Puppies\_25, RogerDodger\_36, Samman98\_26, Sampson\_37, Sapo\_25, Scioto\_37, Sekhmet\_26, Shatter\_27, Shinji\_33, Shlim410\_26, Sour\_31, Tardus\_38, Twinkle\_26, Twister6\_35, VanDeWege\_36, Verity\_36, ViaConlectus\_37, Widow\_25, WinkNick\_26, Wooper\_29, Yeshua\_29, YungMoney\_35, Zipp\_36, Zitch\_38,

### Summary by start number:

Start 8:

- Found in 2 of 127 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Doggs\_27 (DB), Kiko\_28 (DB),

Start 11:

- Found in 15 of 127 ( 11.8% ) of genes in pham
- Manual Annotations of this start: 13 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arri\_36 (DC1), Bakery\_34 (DC1), Barb\_35 (DC1), ClamChowder\_35 (DC1), Clown\_37 (DC2), CoveyB\_36 (DC1), Danyall\_35 (DC1), Fugax\_35 (DC1), PinkCoffee\_35 (DC1), Portcullis\_33 (DC1), RogerDodger\_36 (DC1), Shinji\_33 (DC1), Twister6\_35 (DC1), VanDeWege\_36 (DC1), YungMoney\_35 (DC1),

Start 16:

- Found in 4 of 127 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 4 of 101
- 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 20:

- Found in 1 of 127 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 101

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sour\_31 (DR),

#### Start 22:

- Found in 17 of 127 ( 13.4% ) of genes in pham
- Manual Annotations of this start: 13 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AnarQue\_29 (DR), Axumite\_27 (DR), BiggityBass\_27 (DR), BobRoss2024\_26 (DR), CaiB\_29 (DR), CharlottesWeb\_27 (DR), CloverMinnie\_29 (DR), Coldpizza\_30 (DR), Fresco\_27 (DR), Ligma\_27 (DR), MakoManhole\_29 (DR), Mariokart\_27 (DR), MossRose\_29 (DR), NHagos\_27 (DR), Shatter\_27 (DR), Wooper\_29 (DR), Yeshua\_29 (DR),

#### Start 25:

- Found in 45 of 127 ( 35.4% ) of genes in pham
- Manual Annotations of this start: 31 of 101
- Called 97.8% of time when present
- Phage (with cluster) where this start called: Agatha\_25 (CT), AikoCarson\_24 (CT), Amok\_24 (CT), AndPeggy\_24 (CT), Axym\_25 (CT), Azira\_27 (CT), BillDoor\_27 (CT), Biskit\_26 (CT), Blondies\_25 (CT), Burnsey\_25 (CT), Buttrmlkdreams\_25 (CT), CanesSauce\_25 (CT), Carsonalex\_26 (CT), ChocoMunchkin\_25 (CT), Cleo\_25 (CT), Cozz\_25 (CT), Dre3\_25 (CT), Elliott\_25 (CT), Emalyn\_24 (CT), Fribs8\_26 (CT), GTE2\_22 (CT), Gibbous\_25 (CT), GoldHunter\_26 (CT), HippoPololi\_27 (CT), Horseradish\_26 (CT), MScarn\_27 (CT), MaVan\_27 (CT), MunkgeeRoachy\_25 (CT), Nibbles\_27 (CT), Nina\_26 (CT), PsychoKiller\_25 (CT), Quasar\_25 (CT), RedBaron\_26 (CT), SketchMex\_24 (CT), Sopesian\_25 (CT), Starburst\_26 (CT), SteamedHams\_27 (CT), Survivors\_27 (CT), Tolls\_27 (CT), Troje\_25 (CT), Typhonomachy\_26 (CT), Yarn\_24 (CT), Yummy\_26 (CT), Zareef\_29 (CT),

#### Start 34:

- Found in 16 of 127 ( 12.6% ) of genes in pham
- Manual Annotations of this start: 1 of 101
- Called 6.2% of time when present
- Phage (with cluster) where this start called: Anon\_31 (A15),

#### Start 35:

- Found in 22 of 127 ( 17.3% ) of genes in pham
- Manual Annotations of this start: 17 of 101
- Called 95.5% of time when present
- Phage (with cluster) where this start called: APunk\_38 (DE4), Abblin\_37 (DE4), Ali17\_33 (DE2), Belphegor\_36 (DE), 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), Sampson\_37 (DE4), Scioto\_37 (DE4), Tardus\_38 (DE4), Verity\_36 (DE4), ViaConlectus\_37 (DE4), Zipp\_36 (DE4), Zitch\_38 (DE4),

#### Start 40:

- Found in 19 of 127 ( 15.0% ) of genes in pham
- Manual Annotations of this start: 17 of 101
- 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), Samman98\_26 (CZ4), Sekhmet\_26 (CZ4), Shlim410\_26 (CZ4), Twinkle\_26 (CZ4), WinkNick\_26 (CZ4),

Start 46:

- Found in 46 of 127 ( 36.2% ) of genes in pham
- Manual Annotations of this start: 1 of 101
- Called 4.3% of time when present
- Phage (with cluster) where this start called: Frizzle\_27 (DA), Ghobes\_26 (DA),

Start 101:

- Found in 1 of 127 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sapo\_25 (DA),

### **Summary by clusters:**

There are 14 clusters represented in this pham: A15, singleton, DA, DB, DE2, DE, DE4, DE5, CZ4, CD, DC2, CT, DR, DC1,

Info for manual annotations of cluster A15:

- Start number 34 was manually annotated 1 time for cluster A15.

Info for manual annotations of cluster CD:

- Start number 16 was manually annotated 4 times for cluster CD.

Info for manual annotations of cluster CT:

- Start number 25 was manually annotated 31 times for cluster CT.

Info for manual annotations of cluster CZ4:

- Start number 40 was manually annotated 16 times for cluster CZ4.

Info for manual annotations of cluster DA:

- Start number 46 was manually annotated 1 time for cluster DA.
- Start number 101 was manually annotated 1 time for cluster DA.

Info for manual annotations of cluster DB:

- Start number 8 was manually annotated 2 times for cluster DB.

Info for manual annotations of cluster DC1:

- Start number 11 was manually annotated 12 times for cluster DC1.

Info for manual annotations of cluster DC2:

- Start number 11 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DE2:

- Start number 35 was manually annotated 7 times for cluster DE2.

Info for manual annotations of cluster DE4:

- Start number 35 was manually annotated 9 times for cluster DE4.

Info for manual annotations of cluster DE5:

- Start number 35 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster DR:

- Start number 20 was manually annotated 1 time for cluster DR.
- Start number 22 was manually annotated 13 times for cluster DR.

### **Gene Information:**

Gene: APunk\_38 Start: 32541, Stop: 33617, Start Num: 35

Candidate Starts for APunk\_38:

(Start: 35 @32541 has 17 MA's), (58, 32649), (75, 32697), (80, 32715), (115, 32862), (118, 32874), (124, 32913), (135, 32952), (144, 32994), (158, 33060), (162, 33075), (166, 33102), (168, 33117), (179, 33174), (186, 33228), (191, 33273), (199, 33342), (206, 33363), (210, 33387), (220, 33462), (228, 33540), (237, 33606),

Gene: Abblin\_37 Start: 33084, Stop: 34160, Start Num: 35

Candidate Starts for Abblin\_37:

(7, 32790), (23, 33018), (Start: 35 @33084 has 17 MA's), (58, 33192), (75, 33240), (80, 33258), (115, 33405), (118, 33417), (124, 33456), (135, 33495), (144, 33537), (158, 33603), (162, 33618), (166, 33645), (168, 33660), (186, 33771), (191, 33816), (193, 33846), (196, 33864), (199, 33885), (206, 33906), (210, 33930), (228, 34083), (237, 34149),

Gene: Adora\_26 Start: 22572, Stop: 23609, Start Num: 40

Candidate Starts for Adora\_26:

(Start: 40 @22572 has 17 MA's), (55, 22641), (57, 22647), (106, 22827), (112, 22848), (124, 22929), (130, 22956), (153, 23049), (176, 23157), (186, 23220), (193, 23295), (228, 23526),

Gene: Agatha\_25 Start: 20517, Stop: 21614, Start Num: 25

Candidate Starts for Agatha\_25:

(Start: 25 @20517 has 31 MA's), (27, 20535), (Start: 46 @20640 has 1 MA's), (100, 20838), (121, 20952), (124, 20970), (126, 20979), (130, 20997), (142, 21033), (161, 21093), (166, 21123), (190, 21273), (192, 21312), (199, 21357), (204, 21375), (210, 21399), (217, 21456), (225, 21516), (229, 21552), (232, 21582), (235, 21603),

Gene: AikoCarson\_24 Start: 19778, Stop: 20890, Start Num: 25

Candidate Starts for AikoCarson\_24:

(17, 19709), (Start: 25 @19778 has 31 MA's), (Start: 46 @19901 has 1 MA's), (100, 20099), (124, 20231), (126, 20240), (156, 20357), (164, 20387), (167, 20402), (173, 20441), (183, 20498), (190, 20549), (199, 20633), (204, 20651), (211, 20684), (222, 20765), (223, 20768), (224, 20771), (235, 20879),

Gene: Ali17\_33 Start: 30788, Stop: 31876, Start Num: 35

Candidate Starts for Ali17\_33:

(Start: 35 @30788 has 17 MA's), (58, 30902), (68, 30923), (88, 30992), (93, 31004), (124, 31169), (135, 31208), (162, 31331), (166, 31358), (168, 31373), (179, 31430), (186, 31484), (191, 31529), (199, 31598), (206, 31619), (210, 31643), (220, 31718), (228, 31796), (237, 31862),

Gene: Amok\_24 Start: 19775, Stop: 20848, Start Num: 25

Candidate Starts for Amok\_24:



(17, 19706), (Start: 25 @19775 has 31 MA's), (Start: 46 @19898 has 1 MA's), (100, 20096), (124, 20228), (126, 20237), (156, 20315), (164, 20345), (167, 20360), (173, 20399), (183, 20456), (190, 20507), (199, 20591), (204, 20609), (211, 20642), (222, 20723), (223, 20726), (224, 20729), (235, 20837),

Gene: AnarQue\_29 Start: 28071, Stop: 29183, Start Num: 22

Candidate Starts for AnarQue\_29:

(Start: 22 @28071 has 13 MA's), (45, 28185), (54, 28236), (57, 28245), (63, 28260), (69, 28275), (87, 28341), (113, 28455), (115, 28476), (124, 28527), (135, 28566), (146, 28590), (161, 28650), (179, 28752), (185, 28788), (186, 28803), (199, 28914), (205, 28932), (211, 28968),

Gene: AndPeggy\_24 Start: 20180, Stop: 21292, Start Num: 25

Candidate Starts for AndPeggy\_24:

(Start: 25 @20180 has 31 MA's), (27, 20198), (Start: 46 @20303 has 1 MA's), (79, 20426), (121, 20615), (124, 20633), (126, 20642), (128, 20654), (156, 20759), (173, 20843), (190, 20951), (199, 21035), (204, 21053), (211, 21086), (219, 21149), (222, 21167), (223, 21170), (224, 21173), (229, 21230),

Gene: Annalisa\_26 Start: 22034, Stop: 23074, Start Num: 40

Candidate Starts for Annalisa\_26:

(Start: 40 @22034 has 17 MA's), (55, 22103), (57, 22109), (106, 22289), (112, 22310), (113, 22319), (124, 22391), (130, 22418), (134, 22427), (154, 22514), (157, 22520), (176, 22619), (186, 22682), (199, 22796), (203, 22811), (223, 22934), (228, 22991),

Gene: Anon\_31 Start: 22310, Stop: 23416, Start Num: 34

Candidate Starts for Anon\_31:

(Start: 34 @22310 has 1 MA's), (50, 22391), (53, 22406), (78, 22499), (97, 22559), (102, 22589), (107, 22613), (109, 22622), (113, 22646), (145, 22814), (168, 22919), (175, 22964), (176, 22967), (182, 23000), (186, 23030), (194, 23108), (198, 23138), (199, 23144), (210, 23186), (215, 23222), (223, 23279), (234, 23387),

Gene: Arri\_36 Start: 28916, Stop: 30088, Start Num: 11

Candidate Starts for Arri\_36:

(Start: 11 @28916 has 13 MA's), (30, 29057), (Start: 34 @29075 has 1 MA's), (66, 29210), (85, 29276), (106, 29363), (124, 29465), (166, 29570), (186, 29696), (187, 29702), (199, 29810), (205, 29828), (234, 30053),

Gene: Axumite\_27 Start: 26078, Stop: 27217, Start Num: 22

Candidate Starts for Axumite\_27:

(Start: 22 @26078 has 13 MA's), (24, 26087), (32, 26135), (41, 26174), (45, 26192), (58, 26261), (79, 26330), (82, 26339), (113, 26465), (124, 26537), (130, 26564), (131, 26567), (147, 26639), (163, 26693), (172, 26756), (177, 26783), (179, 26789), (186, 26840), (196, 26930), (228, 27143), (235, 27200), (236, 27206), (237, 27209),

Gene: Axym\_25 Start: 20517, Stop: 21614, Start Num: 25

Candidate Starts for Axym\_25:

(Start: 25 @20517 has 31 MA's), (27, 20535), (Start: 46 @20640 has 1 MA's), (100, 20838), (121, 20952), (124, 20970), (126, 20979), (130, 20997), (142, 21033), (161, 21093), (166, 21123), (190, 21273), (192, 21312), (199, 21357), (204, 21375), (210, 21399), (217, 21456), (225, 21516), (229, 21552), (232, 21582), (235, 21603),

Gene: Azira\_27 Start: 21488, Stop: 22588, Start Num: 25

Candidate Starts for Azira\_27:

(Start: 25 @21488 has 31 MA's), (Start: 46 @21611 has 1 MA's), (84, 21749), (103, 21827), (106, 21839), (110, 21854), (121, 21923), (124, 21941), (129, 21965), (173, 22133), (199, 22325), (202, 22346), (204, 22349), (211, 22382), (219, 22445), (222, 22463), (224, 22469), (235, 22577),

Gene: Bakery\_34 Start: 28127, Stop: 29377, Start Num: 11

Candidate Starts for Bakery\_34:

(Start: 11 @28127 has 13 MA's), (26, 28241), (Start: 34 @28286 has 1 MA's), (39, 28307), (74, 28451), (85, 28487), (106, 28574), (124, 28676), (130, 28703), (162, 28838), (166, 28865), (173, 28907), (174, 28910), (176, 28928), (189, 29003), (193, 29066), (199, 29105), (235, 29354),

Gene: Barb\_35 Start: 28934, Stop: 30106, Start Num: 11

Candidate Starts for Barb\_35:

(Start: 11 @28934 has 13 MA's), (30, 29075), (Start: 34 @29093 has 1 MA's), (66, 29228), (85, 29294), (106, 29381), (124, 29483), (166, 29588), (186, 29714), (187, 29720), (199, 29828), (205, 29846), (234, 30071),

Gene: Belphegor\_36 Start: 32996, Stop: 34081, Start Num: 35

Candidate Starts for Belphegor\_36:

(Start: 35 @32996 has 17 MA's), (58, 33110), (80, 33176), (93, 33212), (115, 33326), (124, 33377), (135, 33416), (148, 33485), (158, 33524), (162, 33539), (166, 33566), (168, 33581), (179, 33638), (186, 33692), (187, 33698), (191, 33737), (196, 33785), (199, 33806), (206, 33824), (220, 33923), (223, 33944), (228, 34001), (237, 34067),

Gene: BiggityBass\_27 Start: 28347, Stop: 29480, Start Num: 22

Candidate Starts for BiggityBass\_27:

(Start: 22 @28347 has 13 MA's), (36, 28425), (45, 28461), (124, 28797), (127, 28809), (137, 28851), (163, 28959), (185, 29091), (186, 29106), (191, 29151), (208, 29250), (210, 29259), (235, 29466), (236, 29472),

Gene: BillDoor\_27 Start: 20148, Stop: 21239, Start Num: 25

Candidate Starts for BillDoor\_27:

(Start: 25 @20148 has 31 MA's), (27, 20166), (Start: 46 @20271 has 1 MA's), (121, 20583), (124, 20601), (126, 20610), (128, 20622), (164, 20736), (173, 20790), (176, 20811), (190, 20898), (199, 20982), (204, 21000), (211, 21033), (219, 21096), (222, 21114), (223, 21117), (224, 21120), (229, 21177), (231, 21192), (235, 21228),

Gene: Biskit\_26 Start: 20168, Stop: 21265, Start Num: 25

Candidate Starts for Biskit\_26:

(17, 20099), (Start: 25 @20168 has 31 MA's), (27, 20186), (Start: 46 @20291 has 1 MA's), (102, 20498), (121, 20603), (124, 20621), (126, 20630), (143, 20684), (161, 20744), (183, 20873), (190, 20924), (199, 21008), (204, 21026), (211, 21059), (218, 21110), (219, 21122), (231, 21218), (235, 21254),

Gene: Blondies\_25 Start: 20151, Stop: 21248, Start Num: 25

Candidate Starts for Blondies\_25:

(17, 20082), (Start: 25 @20151 has 31 MA's), (27, 20169), (Start: 46 @20274 has 1 MA's), (102, 20481), (121, 20586), (124, 20604), (126, 20613), (143, 20667), (161, 20727), (183, 20856), (190, 20907), (199, 20991), (204, 21009), (211, 21042), (218, 21093), (219, 21105), (231, 21201), (235, 21237),

Gene: BobRoss2024\_26 Start: 26114, Stop: 27235, Start Num: 22

Candidate Starts for BobRoss2024\_26:

(Start: 22 @26114 has 13 MA's), (69, 26321), (102, 26450), (108, 26480), (119, 26540), (124, 26573), (146, 26636), (173, 26768), (176, 26789), (199, 26966), (211, 27017), (212, 27035),

Gene: Burnsey\_25 Start: 20518, Stop: 21615, Start Num: 25

Candidate Starts for Burnsey\_25:

(Start: 25 @20518 has 31 MA's), (27, 20536), (Start: 46 @20641 has 1 MA's), (100, 20839), (121, 20953), (124, 20971), (126, 20980), (130, 20998), (142, 21034), (161, 21094), (166, 21124), (190, 21274), (192, 21313), (199, 21358), (204, 21376), (217, 21457), (225, 21517), (229, 21553), (232, 21583), (235, 21604),

Gene: Buttrmlkdreams\_25 Start: 20150, Stop: 21247, Start Num: 25

Candidate Starts for Buttrmlkdreams\_25:

(17, 20081), (Start: 25 @20150 has 31 MA's), (27, 20168), (Start: 46 @20273 has 1 MA's), (102, 20480), (121, 20585), (124, 20603), (126, 20612), (143, 20666), (161, 20726), (183, 20855), (190, 20906), (199, 20990), (204, 21008), (211, 21041), (218, 21092), (219, 21104), (231, 21200), (235, 21236),

Gene: CaiB\_29 Start: 28057, Stop: 29169, Start Num: 22

Candidate Starts for CaiB\_29:

(Start: 22 @28057 has 13 MA's), (45, 28171), (54, 28222), (57, 28231), (63, 28246), (69, 28261), (87, 28327), (113, 28441), (115, 28462), (124, 28513), (135, 28552), (146, 28576), (161, 28636), (179, 28738), (185, 28774), (186, 28789), (199, 28900), (205, 28918), (211, 28954),

Gene: CanesSauce\_25 Start: 20181, Stop: 21293, Start Num: 25

Candidate Starts for CanesSauce\_25:

(Start: 25 @20181 has 31 MA's), (27, 20199), (Start: 46 @20304 has 1 MA's), (79, 20427), (121, 20616), (124, 20634), (126, 20643), (128, 20655), (156, 20760), (173, 20844), (190, 20952), (199, 21036), (204, 21054), (211, 21087), (219, 21150), (222, 21168), (223, 21171), (224, 21174), (229, 21231), (235, 21282),

Gene: Carsonalex\_26 Start: 20575, Stop: 21672, Start Num: 25

Candidate Starts for Carsonalex\_26:

(Start: 25 @20575 has 31 MA's), (Start: 46 @20698 has 1 MA's), (100, 20896), (121, 21010), (124, 21028), (126, 21037), (130, 21055), (142, 21091), (161, 21151), (166, 21181), (190, 21331), (192, 21370), (199, 21415), (204, 21433), (210, 21457), (212, 21484), (217, 21514), (225, 21574), (229, 21610), (232, 21640), (235, 21661),

Gene: CharlottesWeb\_27 Start: 26001, Stop: 27152, Start Num: 22

Candidate Starts for CharlottesWeb\_27:

(Start: 22 @26001 has 13 MA's), (32, 26061), (69, 26211), (79, 26256), (82, 26265), (86, 26277), (90, 26286), (113, 26391), (124, 26463), (158, 26610), (172, 26694), (173, 26697), (175, 26715), (177, 26721), (179, 26727), (184, 26754), (185, 26763), (186, 26778), (208, 26922), (209, 26925), (210, 26931), (228, 27081), (235, 27138), (236, 27144),

Gene: ChocoMunchkin\_25 Start: 20181, Stop: 21293, Start Num: 25

Candidate Starts for ChocoMunchkin\_25:

(Start: 25 @20181 has 31 MA's), (27, 20199), (Start: 46 @20304 has 1 MA's), (79, 20427), (121, 20616), (124, 20634), (126, 20643), (128, 20655), (156, 20760), (173, 20844), (190, 20952), (199, 21036), (204, 21054), (211, 21087), (219, 21150), (222, 21168), (223, 21171), (224, 21174), (229, 21231), (235, 21282),

Gene: ClamChowder\_35 Start: 28934, Stop: 30106, Start Num: 11

Candidate Starts for ClamChowder\_35:

(Start: 11 @28934 has 13 MA's), (30, 29075), (Start: 34 @29093 has 1 MA's), (66, 29228), (85, 29294), (106, 29381), (124, 29483), (166, 29588), (186, 29714), (187, 29720), (199, 29828), (205, 29846), (234, 30071),

Gene: Clark\_26 Start: 22034, Stop: 23071, Start Num: 40

Candidate Starts for Clark\_26:

(10, 21863), (12, 21866), (Start: 40 @22034 has 17 MA's), (55, 22103), (57, 22109), (106, 22289), (112, 22310), (124, 22391), (130, 22418), (153, 22511), (176, 22619), (186, 22682), (193, 22757), (228, 22988),

Gene: Cleo\_25 Start: 20832, Stop: 21935, Start Num: 25

Candidate Starts for Cleo\_25:

(Start: 25 @20832 has 31 MA's), (30, 20868), (Start: 46 @20955 has 1 MA's), (56, 21000), (59, 21012), (61, 21015), (69, 21036), (84, 21093), (106, 21183), (115, 21234), (121, 21267), (124, 21285), (144, 21348), (155, 21396), (174, 21483), (190, 21588), (199, 21672), (200, 21678), (201, 21684), (208, 21711), (209, 21714), (211, 21729), (222, 21810), (224, 21816),

Gene: CloverMinnie\_29 Start: 27997, Stop: 29109, Start Num: 22

Candidate Starts for CloverMinnie\_29:

(Start: 22 @27997 has 13 MA's), (45, 28111), (54, 28162), (57, 28171), (63, 28186), (69, 28201), (87, 28267), (113, 28381), (115, 28402), (124, 28453), (135, 28492), (146, 28516), (161, 28576), (179, 28678), (185, 28714), (186, 28729), (199, 28840), (205, 28858), (211, 28894),

Gene: Clown\_37 Start: 30957, Stop: 32189, Start Num: 11

Candidate Starts for Clown\_37:

(Start: 11 @30957 has 13 MA's), (15, 30987), (24, 31059), (26, 31071), (30, 31098), (Start: 34 @31116 has 1 MA's), (47, 31185), (66, 31251), (106, 31404), (109, 31416), (112, 31425), (124, 31506), (148, 31602), (174, 31719), (176, 31737), (186, 31800), (197, 31902), (199, 31914), (208, 31947), (219, 32028), (224, 32052), (228, 32106), (234, 32157), (235, 32163),

Gene: Coldpizza\_30 Start: 30502, Stop: 31638, Start Num: 22

Candidate Starts for Coldpizza\_30:

(Start: 22 @30502 has 13 MA's), (32, 30559), (69, 30706), (113, 30868), (119, 30907), (123, 30931), (124, 30940), (159, 31090), (160, 31096), (165, 31129), (168, 31147), (171, 31156), (176, 31195), (181, 31216), (185, 31243), (186, 31258), (187, 31264), (193, 31333), (199, 31372), (210, 31414),

Gene: CoveyB\_36 Start: 28734, Stop: 29906, Start Num: 11

Candidate Starts for CoveyB\_36:

(Start: 11 @28734 has 13 MA's), (30, 28875), (Start: 34 @28893 has 1 MA's), (66, 29028), (85, 29094), (106, 29181), (124, 29283), (166, 29388), (186, 29514), (187, 29520), (199, 29628), (205, 29646), (234, 29871),

Gene: Cozz\_25 Start: 20518, Stop: 21615, Start Num: 25

Candidate Starts for Cozz\_25:

(Start: 25 @20518 has 31 MA's), (27, 20536), (Start: 46 @20641 has 1 MA's), (100, 20839), (121, 20953), (124, 20971), (126, 20980), (130, 20998), (142, 21034), (161, 21094), (166, 21124), (190, 21274), (192, 21313), (199, 21358), (204, 21376), (210, 21400), (217, 21457), (225, 21517), (229, 21553), (232, 21583), (235, 21604),

Gene: Danyall\_35 Start: 28734, Stop: 29906, Start Num: 11

Candidate Starts for Danyall\_35:

(Start: 11 @28734 has 13 MA's), (30, 28875), (Start: 34 @28893 has 1 MA's), (66, 29028), (85, 29094), (106, 29181), (124, 29283), (166, 29388), (186, 29514), (187, 29520), (199, 29628), (205, 29646),

(234, 29871),

Gene: Delrey21\_36 Start: 33271, Stop: 34347, Start Num: 35

Candidate Starts for Delrey21\_36:

(Start: 35 @33271 has 17 MA's), (58, 33379), (74, 33424), (80, 33445), (115, 33592), (124, 33643), (135, 33682), (144, 33724), (158, 33790), (162, 33805), (166, 33832), (168, 33847), (179, 33904), (186, 33958), (187, 33964), (191, 34003), (199, 34072), (206, 34093), (210, 34117), (220, 34192), (228, 34270), (237, 34336),

Gene: DobbysSock\_25 Start: 21508, Stop: 22545, Start Num: 40

Candidate Starts for DobbysSock\_25:

(10, 21337), (12, 21340), (Start: 40 @21508 has 17 MA's), (55, 21577), (57, 21583), (106, 21763), (113, 21793), (124, 21865), (130, 21892), (153, 21985), (176, 22093), (186, 22156), (193, 22231), (228, 22462),

Gene: DoctorFroggo\_36 Start: 33271, Stop: 34347, Start Num: 35

Candidate Starts for DoctorFroggo\_36:

(Start: 35 @33271 has 17 MA's), (58, 33379), (74, 33424), (80, 33445), (115, 33592), (124, 33643), (135, 33682), (144, 33724), (158, 33790), (162, 33805), (166, 33832), (168, 33847), (179, 33904), (186, 33958), (187, 33964), (191, 34003), (199, 34072), (206, 34093), (210, 34117), (220, 34192), (228, 34270), (237, 34336),

Gene: Doggs\_27 Start: 22931, Stop: 24244, Start Num: 8

Candidate Starts for Doggs\_27:

(1, 22643), (2, 22700), (3, 22715), (5, 22796), (6, 22799), (Start: 8 @22931 has 2 MA's), (13, 23015), (28, 23129), (62, 23282), (71, 23318), (72, 23321), (81, 23351), (98, 23405), (124, 23549), (162, 23705), (165, 23729), (174, 23777), (181, 23816), (186, 23858), (196, 23951), (197, 23960), (199, 23972), (235, 24221),

Gene: Dolores\_26 Start: 22010, Stop: 23047, Start Num: 40

Candidate Starts for Dolores\_26:

(10, 21839), (12, 21842), (Start: 40 @22010 has 17 MA's), (55, 22079), (57, 22085), (106, 22265), (112, 22286), (124, 22367), (130, 22394), (153, 22487), (176, 22595), (186, 22658), (193, 22733), (228, 22964),

Gene: Dorito\_25 Start: 21473, Stop: 22513, Start Num: 40

Candidate Starts for Dorito\_25:

(Start: 40 @21473 has 17 MA's), (55, 21542), (57, 21548), (106, 21728), (124, 21830), (129, 21854), (130, 21857), (134, 21866), (154, 21953), (176, 22058), (184, 22097), (186, 22121), (191, 22166), (196, 22214), (197, 22223), (199, 22235), (203, 22250), (223, 22373), (228, 22430),

Gene: Dre3\_25 Start: 20758, Stop: 21861, Start Num: 25

Candidate Starts for Dre3\_25:

(Start: 25 @20758 has 31 MA's), (30, 20794), (Start: 46 @20881 has 1 MA's), (84, 21019), (106, 21109), (115, 21160), (121, 21193), (124, 21211), (144, 21274), (155, 21322), (174, 21409), (190, 21514), (199, 21598), (200, 21604), (201, 21610), (208, 21637), (211, 21655), (222, 21736), (223, 21739), (224, 21742),

Gene: Easley\_26 Start: 22020, Stop: 23057, Start Num: 40

Candidate Starts for Easley\_26:

(10, 21849), (12, 21852), (Start: 40 @22020 has 17 MA's), (55, 22089), (57, 22095), (106, 22275), (112, 22296), (124, 22377), (130, 22404), (153, 22497), (176, 22605), (203, 22797), (223, 22917), (228, 22974),

Gene: Elliott\_25 Start: 20517, Stop: 21614, Start Num: 25

Candidate Starts for Elliott\_25:

(Start: 25 @20517 has 31 MA's), (27, 20535), (Start: 46 @20640 has 1 MA's), (100, 20838), (124, 20970), (126, 20979), (130, 20997), (142, 21033), (161, 21093), (166, 21123), (190, 21273), (192, 21312), (199, 21357), (204, 21375), (217, 21456), (225, 21516), (229, 21552), (232, 21582), (235, 21603),

Gene: Emalyn\_24 Start: 19777, Stop: 20889, Start Num: 25

Candidate Starts for Emalyn\_24:

(17, 19708), (Start: 25 @19777 has 31 MA's), (Start: 46 @19900 has 1 MA's), (100, 20098), (124, 20230), (126, 20239), (156, 20356), (164, 20386), (167, 20401), (173, 20440), (183, 20497), (190, 20548), (199, 20632), (204, 20650), (211, 20683), (222, 20764), (223, 20767), (224, 20770), (235, 20878),

Gene: Fresco\_27 Start: 26078, Stop: 27217, Start Num: 22

Candidate Starts for Fresco\_27:

(Start: 22 @26078 has 13 MA's), (24, 26087), (32, 26135), (41, 26174), (45, 26192), (58, 26261), (79, 26330), (82, 26339), (113, 26465), (124, 26537), (130, 26564), (131, 26567), (147, 26639), (163, 26693), (172, 26756), (177, 26783), (179, 26789), (186, 26840), (196, 26930), (228, 27143), (235, 27200), (236, 27206), (237, 27209),

Gene: Fribs8\_26 Start: 21343, Stop: 22440, Start Num: 25

Candidate Starts for Fribs8\_26:

(Start: 25 @21343 has 31 MA's), (27, 21361), (Start: 46 @21466 has 1 MA's), (84, 21604), (106, 21694), (110, 21709), (121, 21778), (124, 21796), (128, 21817), (129, 21820), (173, 21985), (183, 22042), (187, 22075), (195, 22144), (199, 22177), (201, 22189), (204, 22201), (211, 22234), (216, 22273), (223, 22318), (235, 22429),

Gene: Frizzle\_27 Start: 21406, Stop: 22404, Start Num: 46

Candidate Starts for Frizzle\_27:

(Start: 46 @21406 has 1 MA's), (61, 21466), (69, 21487), (77, 21523), (94, 21568), (100, 21595), (105, 21619), (110, 21640), (119, 21694), (126, 21736), (157, 21868), (173, 21952), (186, 22036), (199, 22144), (222, 22276), (223, 22279), (228, 22333), (229, 22339), (232, 22369),

Gene: Fugax\_35 Start: 28934, Stop: 30106, Start Num: 11

Candidate Starts for Fugax\_35:

(Start: 11 @28934 has 13 MA's), (30, 29075), (Start: 34 @29093 has 1 MA's), (66, 29228), (85, 29294), (106, 29381), (124, 29483), (166, 29588), (186, 29714), (187, 29720), (199, 29828), (205, 29846), (234, 30071),

Gene: GTE2\_22 Start: 19853, Stop: 20965, Start Num: 25

Candidate Starts for GTE2\_22:

(Start: 25 @19853 has 31 MA's), (27, 19871), (Start: 46 @19976 has 1 MA's), (79, 20099), (104, 20195), (121, 20288), (124, 20306), (128, 20327), (173, 20516), (176, 20537), (190, 20624), (199, 20708), (204, 20726), (211, 20759), (216, 20798), (222, 20840), (223, 20843), (224, 20846), (235, 20954),

Gene: Ghobes\_26 Start: 21406, Stop: 22404, Start Num: 46

Candidate Starts for Ghobes\_26:

(Start: 46 @21406 has 1 MA's), (61, 21466), (69, 21487), (77, 21523), (94, 21568), (100, 21595), (105, 21619), (110, 21640), (119, 21694), (126, 21736), (135, 21772), (157, 21868), (173, 21952), (186, 22036), (199, 22144), (222, 22276), (228, 22333), (229, 22339), (232, 22369),

Gene: Gibbous\_25 Start: 20758, Stop: 21861, Start Num: 25

Candidate Starts for Gibbous\_25:

(Start: 25 @20758 has 31 MA's), (30, 20794), (Start: 46 @20881 has 1 MA's), (84, 21019), (106, 21109), (115, 21160), (121, 21193), (124, 21211), (144, 21274), (155, 21322), (174, 21409), (190, 21514), (199, 21598), (200, 21604), (201, 21610), (208, 21637), (211, 21655), (222, 21736), (223, 21739), (224, 21742),

Gene: GoldHunter\_26 Start: 20518, Stop: 21615, Start Num: 25

Candidate Starts for GoldHunter\_26:

(Start: 25 @20518 has 31 MA's), (27, 20536), (Start: 46 @20641 has 1 MA's), (100, 20839), (121, 20953), (124, 20971), (126, 20980), (130, 20998), (142, 21034), (161, 21094), (166, 21124), (190, 21274), (192, 21313), (199, 21358), (204, 21376), (210, 21400), (217, 21457), (225, 21517), (229, 21553), (232, 21583), (235, 21604),

Gene: Gudmit\_25 Start: 20321, Stop: 21364, Start Num: 40

Candidate Starts for Gudmit\_25:

(9, 20090), (18, 20186), (19, 20189), (Start: 40 @20321 has 17 MA's), (42, 20327), (52, 20372), (56, 20396), (58, 20405), (70, 20444), (106, 20579), (113, 20609), (124, 20681), (130, 20708), (153, 20801), (176, 20909), (186, 20972), (191, 21017), (193, 21047), (203, 21101), (228, 21278),

Gene: Gustav\_25 Start: 19979, Stop: 21202, Start Num: 16

Candidate Starts for Gustav\_25:

(Start: 16 @19979 has 4 MA's), (21, 20021), (24, 20051), (29, 20087), (44, 20150), (48, 20183), (54, 20216), (67, 20252), (76, 20294), (92, 20339), (93, 20342), (94, 20348), (103, 20399), (114, 20444), (117, 20465), (124, 20513), (174, 20741), (176, 20759), (188, 20831), (195, 20897), (197, 20918), (199, 20930), (204, 20957), (216, 21029), (219, 21053), (222, 21071), (228, 21131),

Gene: Hans\_37 Start: 31512, Stop: 32516, Start Num: 35

Candidate Starts for Hans\_37:

(Start: 35 @31512 has 17 MA's), (58, 31626), (68, 31647), (80, 31692), (93, 31728), (121, 31875), (124, 31893), (166, 31998), (179, 32070), (186, 32124), (191, 32169), (199, 32238), (206, 32259), (210, 32283), (220, 32358), (228, 32436), (237, 32502),

Gene: HippoPololi\_27 Start: 21407, Stop: 22510, Start Num: 25

Candidate Starts for HippoPololi\_27:

(Start: 25 @21407 has 31 MA's), (30, 21443), (Start: 46 @21530 has 1 MA's), (56, 21575), (59, 21587), (61, 21590), (79, 21653), (84, 21668), (92, 21689), (100, 21728), (106, 21758), (121, 21842), (124, 21860), (133, 21896), (144, 21923), (155, 21971), (174, 22058), (190, 22163), (199, 22247), (200, 22253), (201, 22259), (208, 22286), (209, 22289), (211, 22304), (222, 22385), (224, 22391),

Gene: Horseradish\_26 Start: 20064, Stop: 21086, Start Num: 25

Candidate Starts for Horseradish\_26:

(17, 19995), (Start: 25 @20064 has 31 MA's), (27, 20082), (Start: 46 @20187 has 1 MA's), (121, 20499), (124, 20517), (126, 20526), (132, 20550), (161, 20565), (183, 20694), (190, 20745), (191, 20766), (199, 20829), (204, 20847), (211, 20880), (219, 20943), (231, 21039),

Gene: Hortense\_26 Start: 22619, Stop: 23656, Start Num: 40

Candidate Starts for Hortense\_26:

(Start: 40 @22619 has 17 MA's), (55, 22688), (57, 22694), (106, 22874), (112, 22895), (124, 22976), (130, 23003), (153, 23096), (176, 23204), (186, 23267), (193, 23342), (228, 23573),

Gene: Howe\_26 Start: 22619, Stop: 23656, Start Num: 40

Candidate Starts for Howe\_26:

(Start: 40 @22619 has 17 MA's), (55, 22688), (57, 22694), (106, 22874), (112, 22895), (124, 22976), (130, 23003), (153, 23096), (176, 23204), (186, 23267), (193, 23342), (228, 23573),

Gene: Inspectinfecti\_36 Start: 31874, Stop: 32962, Start Num: 35

Candidate Starts for Inspectinfecti\_36:

(Start: 35 @31874 has 17 MA's), (58, 31988), (68, 32009), (80, 32054), (93, 32090), (124, 32255), (135, 32294), (144, 32336), (162, 32417), (166, 32444), (168, 32459), (186, 32570), (191, 32615), (196, 32663), (199, 32684), (206, 32705), (210, 32729), (228, 32882), (237, 32948),

Gene: Kiko\_28 Start: 22114, Stop: 23412, Start Num: 8

Candidate Starts for Kiko\_28:

(2, 21883), (3, 21898), (4, 21934), (6, 21982), (Start: 8 @22114 has 2 MA's), (13, 22198), (14, 22207), (28, 22309), (62, 22462), (99, 22594), (100, 22600), (124, 22729), (148, 22825), (153, 22849), (154, 22852), (175, 22957), (176, 22960), (186, 23023), (207, 23158), (223, 23272), (228, 23329),

Gene: Leonard\_35 Start: 31510, Stop: 32598, Start Num: 35

Candidate Starts for Leonard\_35:

(Start: 35 @31510 has 17 MA's), (58, 31624), (68, 31645), (88, 31714), (93, 31726), (124, 31891), (135, 31930), (144, 31972), (162, 32053), (166, 32080), (168, 32095), (179, 32152), (186, 32206), (191, 32251), (199, 32320), (206, 32341), (210, 32365), (220, 32440), (228, 32518), (237, 32584),

Gene: Ligma\_27 Start: 26078, Stop: 27217, Start Num: 22

Candidate Starts for Ligma\_27:

(Start: 22 @26078 has 13 MA's), (24, 26087), (32, 26135), (41, 26174), (45, 26192), (58, 26261), (79, 26330), (82, 26339), (113, 26465), (124, 26537), (130, 26564), (131, 26567), (147, 26639), (163, 26693), (172, 26756), (177, 26783), (179, 26789), (186, 26840), (196, 26930), (228, 27143), (235, 27200), (236, 27206), (237, 27209),

Gene: Lilbeanie\_32 Start: 26757, Stop: 27755, Start Num: 35

Candidate Starts for Lilbeanie\_32:

(Start: 35 @26757 has 17 MA's), (58, 26865), (59, 26868), (64, 26877), (80, 26931), (83, 26943), (88, 26955), (96, 26985), (121, 27114), (124, 27132), (149, 27198), (150, 27204), (166, 27234), (186, 27360), (193, 27435), (206, 27495), (209, 27513), (228, 27669),

Gene: MScarn\_27 Start: 20153, Stop: 21250, Start Num: 25

Candidate Starts for MScarn\_27:

(17, 20084), (Start: 25 @20153 has 31 MA's), (27, 20171), (Start: 46 @20276 has 1 MA's), (102, 20483), (121, 20588), (124, 20606), (126, 20615), (143, 20669), (161, 20729), (183, 20858), (190, 20909), (199, 20993), (204, 21011), (211, 21044), (218, 21095), (219, 21107), (231, 21203), (235, 21239),

Gene: MaVan\_27 Start: 21488, Stop: 22621, Start Num: 25

Candidate Starts for MaVan\_27:

(Start: 25 @21488 has 31 MA's), (Start: 46 @21611 has 1 MA's), (84, 21749), (103, 21827), (106, 21839), (110, 21854), (121, 21923), (124, 21941), (129, 21965), (138, 22001), (155, 22082), (173, 22166), (199, 22358), (201, 22370), (204, 22382), (211, 22415), (216, 22454), (223, 22499), (235, 22610),

Gene: MakoManhole\_29 Start: 28075, Stop: 29187, Start Num: 22

Candidate Starts for MakoManhole\_29:

(Start: 22 @28075 has 13 MA's), (45, 28189), (54, 28240), (57, 28249), (63, 28264), (69, 28279), (87, 28345), (113, 28459), (115, 28480), (124, 28531), (135, 28570), (146, 28594), (161, 28654), (179,



28756), (185, 28792), (186, 28807), (199, 28918), (205, 28936), (211, 28972),

Gene: Mariokart\_27 Start: 26000, Stop: 27151, Start Num: 22

Candidate Starts for Mariokart\_27:

(Start: 22 @26000 has 13 MA's), (32, 26060), (69, 26210), (79, 26255), (82, 26264), (86, 26276), (90, 26285), (113, 26390), (124, 26462), (158, 26609), (172, 26693), (173, 26696), (175, 26714), (177, 26720), (179, 26726), (184, 26753), (185, 26762), (186, 26777), (208, 26921), (209, 26924), (210, 26930), (228, 27080), (235, 27137), (236, 27143),

Gene: Mcklovin\_26 Start: 24788, Stop: 25825, Start Num: 40

Candidate Starts for Mcklovin\_26:

(10, 24617), (12, 24620), (Start: 40 @24788 has 17 MA's), (55, 24857), (57, 24863), (106, 25043), (112, 25064), (124, 25145), (130, 25172), (153, 25265), (176, 25373), (186, 25436), (193, 25511), (228, 25742),

Gene: MelBins\_36 Start: 31659, Stop: 32747, Start Num: 35

Candidate Starts for MelBins\_36:

(Start: 35 @31659 has 17 MA's), (58, 31773), (68, 31794), (80, 31839), (88, 31863), (93, 31875), (124, 32040), (135, 32079), (144, 32121), (162, 32202), (166, 32229), (168, 32244), (186, 32355), (191, 32400), (196, 32448), (199, 32469), (206, 32490), (210, 32514), (228, 32667), (237, 32733),

Gene: MichaelScott\_26 Start: 22391, Stop: 23428, Start Num: 40

Candidate Starts for MichaelScott\_26:

(10, 22220), (12, 22223), (Start: 40 @22391 has 17 MA's), (55, 22460), (57, 22466), (106, 22646), (112, 22667), (124, 22748), (130, 22775), (153, 22868), (176, 22976), (186, 23039), (193, 23114), (228, 23345),

Gene: Morrissey\_26 Start: 20856, Stop: 22073, Start Num: 16

Candidate Starts for Morrissey\_26:

(Start: 16 @20856 has 4 MA's), (Start: 25 @20922 has 31 MA's), (29, 20955), (44, 21018), (67, 21120), (92, 21207), (93, 21210), (94, 21216), (114, 21312), (117, 21333), (124, 21381), (173, 21609), (174, 21612), (188, 21702), (195, 21768), (197, 21789), (199, 21801), (204, 21828), (212, 21879), (216, 21900), (219, 21924), (222, 21942), (230, 22020),

Gene: MossRose\_29 Start: 28054, Stop: 29166, Start Num: 22

Candidate Starts for MossRose\_29:

(Start: 22 @28054 has 13 MA's), (45, 28168), (54, 28219), (57, 28228), (63, 28243), (69, 28258), (87, 28324), (113, 28438), (115, 28459), (124, 28510), (135, 28549), (146, 28573), (161, 28633), (179, 28735), (185, 28771), (186, 28786), (199, 28897), (205, 28915), (211, 28951),

Gene: MunkgeeRoachy\_25 Start: 20565, Stop: 21695, Start Num: 25

Candidate Starts for MunkgeeRoachy\_25:

(Start: 25 @20565 has 31 MA's), (27, 20583), (Start: 46 @20688 has 1 MA's), (100, 20886), (121, 21000), (124, 21018), (126, 21027), (139, 21081), (155, 21162), (161, 21174), (166, 21204), (190, 21354), (199, 21438), (204, 21456), (211, 21489), (217, 21537), (219, 21552), (231, 21648), (235, 21684),

Gene: NHagos\_27 Start: 26589, Stop: 27701, Start Num: 22

Candidate Starts for NHagos\_27:

(Start: 22 @26589 has 13 MA's), (Start: 35 @26658 has 17 MA's), (43, 26691), (45, 26703), (49, 26727), (54, 26754), (63, 26778), (69, 26793), (87, 26859), (113, 26973), (119, 27012), (146, 27111), (161, 27171), (174, 27246), (178, 27270), (179, 27273), (185, 27309), (186, 27324), (189, 27336), (191, 27369), (199, 27435), (211, 27489), (235, 27687),

Gene: Natkenzie\_37 Start: 33084, Stop: 34160, Start Num: 35

Candidate Starts for Natkenzie\_37:

(7, 32790), (23, 33018), (Start: 35 @33084 has 17 MA's), (58, 33192), (75, 33240), (80, 33258), (115, 33405), (118, 33417), (124, 33456), (135, 33495), (144, 33537), (158, 33603), (162, 33618), (166, 33645), (168, 33660), (186, 33771), (191, 33816), (193, 33846), (196, 33864), (199, 33885), (206, 33906), (210, 33930), (228, 34083), (237, 34149),

Gene: Nibbles\_27 Start: 21488, Stop: 22621, Start Num: 25

Candidate Starts for Nibbles\_27:

(Start: 25 @21488 has 31 MA's), (27, 21506), (Start: 46 @21611 has 1 MA's), (79, 21734), (84, 21749), (103, 21827), (106, 21839), (110, 21854), (121, 21923), (124, 21941), (129, 21965), (138, 22001), (155, 22082), (173, 22166), (199, 22358), (201, 22370), (204, 22382), (211, 22415), (216, 22454), (223, 22499), (235, 22610),

Gene: Nina\_26 Start: 21560, Stop: 22657, Start Num: 25

Candidate Starts for Nina\_26:

(Start: 25 @21560 has 31 MA's), (27, 21578), (Start: 46 @21683 has 1 MA's), (100, 21881), (124, 22013), (126, 22022), (130, 22040), (142, 22076), (161, 22136), (166, 22166), (190, 22316), (192, 22355), (199, 22400), (204, 22418), (210, 22442), (217, 22499), (225, 22559), (229, 22595), (232, 22625), (235, 22646),

Gene: Oregano\_26 Start: 22056, Stop: 23096, Start Num: 40

Candidate Starts for Oregano\_26:

(Start: 40 @22056 has 17 MA's), (55, 22125), (57, 22131), (106, 22311), (112, 22332), (113, 22341), (124, 22413), (130, 22440), (153, 22533), (176, 22641), (186, 22704), (199, 22818), (223, 22956), (228, 23013),

Gene: Phauci\_28 Start: 28099, Stop: 29187, Start Num: 35

Candidate Starts for Phauci\_28:

(Start: 35 @28099 has 17 MA's), (58, 28213), (68, 28234), (88, 28303), (93, 28315), (124, 28480), (135, 28519), (144, 28561), (162, 28642), (166, 28669), (168, 28684), (186, 28795), (191, 28840), (196, 28888), (199, 28909), (206, 28930), (210, 28954), (220, 29029), (228, 29107), (237, 29173),

Gene: Phinally\_35 Start: 31507, Stop: 32595, Start Num: 35

Candidate Starts for Phinally\_35:

(Start: 35 @31507 has 17 MA's), (58, 31621), (68, 31642), (88, 31711), (93, 31723), (124, 31888), (135, 31927), (144, 31969), (162, 32050), (166, 32077), (168, 32092), (179, 32149), (186, 32203), (191, 32248), (199, 32317), (206, 32338), (210, 32362), (220, 32437), (228, 32515), (237, 32581),

Gene: PhriskyACE\_25 Start: 21473, Stop: 22513, Start Num: 40

Candidate Starts for PhriskyACE\_25:

(Start: 40 @21473 has 17 MA's), (55, 21542), (57, 21548), (106, 21728), (124, 21830), (129, 21854), (130, 21857), (134, 21866), (154, 21953), (176, 22058), (184, 22097), (186, 22121), (191, 22166), (196, 22214), (197, 22223), (199, 22235), (203, 22250), (223, 22373), (228, 22430),

Gene: PinkCoffee\_35 Start: 28943, Stop: 30115, Start Num: 11

Candidate Starts for PinkCoffee\_35:

(Start: 11 @28943 has 13 MA's), (30, 29084), (Start: 34 @29102 has 1 MA's), (66, 29237), (85, 29303), (106, 29390), (124, 29492), (166, 29597), (186, 29723), (187, 29729), (199, 29837), (205, 29855), (234, 30080),

Gene: Portcullis\_33 Start: 28253, Stop: 29425, Start Num: 11

Candidate Starts for Portcullis\_33:

(Start: 11 @28253 has 13 MA's), (30, 28394), (Start: 34 @28412 has 1 MA's), (66, 28547), (85, 28613), (91, 28631), (102, 28682), (106, 28700), (124, 28802), (166, 28907), (186, 29033), (187, 29039), (199, 29147), (205, 29165), (234, 29390),

Gene: PsychoKiller\_25 Start: 20517, Stop: 21614, Start Num: 25

Candidate Starts for PsychoKiller\_25:

(Start: 25 @20517 has 31 MA's), (27, 20535), (Start: 46 @20640 has 1 MA's), (100, 20838), (124, 20970), (126, 20979), (130, 20997), (142, 21033), (161, 21093), (166, 21123), (190, 21273), (192, 21312), (199, 21357), (204, 21375), (217, 21456), (225, 21516), (229, 21552), (232, 21582), (235, 21603),

Gene: Puppies\_25 Start: 19683, Stop: 20918, Start Num: 16

Candidate Starts for Puppies\_25:

(Start: 16 @19683 has 4 MA's), (29, 19794), (33, 19812), (44, 19857), (51, 19902), (67, 19959), (73, 19989), (76, 20001), (95, 20064), (100, 20088), (111, 20133), (120, 20187), (122, 20202), (123, 20205), (125, 20220), (141, 20280), (161, 20376), (169, 20424), (170, 20427), (201, 20658), (214, 20733), (225, 20817), (233, 20892), (234, 20898),

Gene: Quasar\_25 Start: 21126, Stop: 22223, Start Num: 25

Candidate Starts for Quasar\_25:

(Start: 25 @21126 has 31 MA's), (27, 21144), (Start: 46 @21249 has 1 MA's), (100, 21447), (121, 21561), (124, 21579), (126, 21588), (130, 21606), (142, 21642), (161, 21702), (166, 21732), (190, 21882), (192, 21921), (199, 21966), (204, 21984), (210, 22008), (217, 22065), (225, 22125), (229, 22161), (232, 22191), (235, 22212),

Gene: RedBaron\_26 Start: 20561, Stop: 21658, Start Num: 25

Candidate Starts for RedBaron\_26:

(Start: 25 @20561 has 31 MA's), (27, 20579), (Start: 46 @20684 has 1 MA's), (100, 20882), (124, 21014), (126, 21023), (130, 21041), (142, 21077), (161, 21137), (190, 21317), (192, 21356), (199, 21401), (204, 21419), (210, 21443), (217, 21500), (225, 21560), (229, 21596), (232, 21626), (235, 21647),

Gene: RogerDodger\_36 Start: 29082, Stop: 30254, Start Num: 11

Candidate Starts for RogerDodger\_36:

(Start: 11 @29082 has 13 MA's), (30, 29223), (Start: 34 @29241 has 1 MA's), (66, 29376), (85, 29442), (106, 29529), (124, 29631), (166, 29736), (186, 29862), (187, 29868), (199, 29976), (205, 29994), (234, 30219),

Gene: Samman98\_26 Start: 22025, Stop: 23065, Start Num: 40

Candidate Starts for Samman98\_26:

(Start: 40 @22025 has 17 MA's), (55, 22094), (57, 22100), (106, 22280), (124, 22382), (129, 22406), (130, 22409), (134, 22418), (154, 22505), (176, 22610), (184, 22649), (186, 22673), (191, 22718), (196, 22766), (197, 22775), (199, 22787), (203, 22802), (223, 22925), (228, 22982),

Gene: Sampson\_37 Start: 33029, Stop: 34105, Start Num: 35

Candidate Starts for Sampson\_37:

(7, 32735), (23, 32963), (Start: 35 @33029 has 17 MA's), (58, 33137), (75, 33185), (80, 33203), (115, 33350), (118, 33362), (124, 33401), (135, 33440), (144, 33482), (158, 33548), (162, 33563), (166, 33590), (168, 33605), (186, 33716), (191, 33761), (193, 33791), (196, 33809), (199, 33830), (206, 33851), (210, 33875), (228, 34028), (237, 34094),

Gene: Sapo\_25 Start: 21383, Stop: 22177, Start Num: 101

Candidate Starts for Sapo\_25:

(Start: 101 @21383 has 1 MA's), (110, 21425), (116, 21461), (136, 21551), (151, 21626), (152, 21629), (173, 21722), (193, 21878), (199, 21917), (224, 22055), (226, 22085), (227, 22094), (232, 22142),

Gene: Scioto\_37 Start: 33084, Stop: 34160, Start Num: 35

Candidate Starts for Scioto\_37:

(7, 32790), (23, 33018), (Start: 35 @33084 has 17 MA's), (58, 33192), (75, 33240), (80, 33258), (115, 33405), (118, 33417), (124, 33456), (135, 33495), (144, 33537), (158, 33603), (162, 33618), (166, 33645), (168, 33660), (186, 33771), (191, 33816), (193, 33846), (196, 33864), (199, 33885), (206, 33906), (210, 33930), (228, 34083), (237, 34149),

Gene: Sekhmet\_26 Start: 22385, Stop: 23425, Start Num: 40

Candidate Starts for Sekhmet\_26:

(Start: 40 @22385 has 17 MA's), (55, 22454), (57, 22460), (106, 22640), (124, 22742), (129, 22766), (130, 22769), (134, 22778), (154, 22865), (176, 22970), (184, 23009), (186, 23033), (191, 23078), (196, 23126), (197, 23135), (199, 23147), (203, 23162), (223, 23285), (228, 23342),

Gene: Shatter\_27 Start: 26078, Stop: 27217, Start Num: 22

Candidate Starts for Shatter\_27:

(Start: 22 @26078 has 13 MA's), (24, 26087), (32, 26135), (41, 26174), (45, 26192), (58, 26261), (79, 26330), (82, 26339), (113, 26465), (124, 26537), (130, 26564), (131, 26567), (147, 26639), (163, 26693), (172, 26756), (177, 26783), (179, 26789), (186, 26840), (196, 26930), (228, 27143), (235, 27200), (236, 27206), (237, 27209),

Gene: Shinji\_33 Start: 28194, Stop: 29366, Start Num: 11

Candidate Starts for Shinji\_33:

(Start: 11 @28194 has 13 MA's), (30, 28335), (Start: 34 @28353 has 1 MA's), (66, 28488), (85, 28554), (91, 28572), (102, 28623), (106, 28641), (124, 28743), (166, 28848), (186, 28974), (187, 28980), (199, 29088), (205, 29106), (234, 29331),

Gene: Shlim410\_26 Start: 22619, Stop: 23656, Start Num: 40

Candidate Starts for Shlim410\_26:

(Start: 40 @22619 has 17 MA's), (55, 22688), (57, 22694), (106, 22874), (112, 22895), (124, 22976), (130, 23003), (153, 23096), (176, 23204), (186, 23267), (193, 23342), (228, 23573),

Gene: SketchMex\_24 Start: 20168, Stop: 21265, Start Num: 25

Candidate Starts for SketchMex\_24:

(17, 20099), (Start: 25 @20168 has 31 MA's), (27, 20186), (Start: 46 @20291 has 1 MA's), (102, 20498), (121, 20603), (124, 20621), (126, 20630), (143, 20684), (161, 20744), (183, 20873), (190, 20924), (199, 21008), (204, 21026), (211, 21059), (218, 21110), (219, 21122), (231, 21218), (235, 21254),

Gene: Sopespian\_25 Start: 20518, Stop: 21615, Start Num: 25

Candidate Starts for Sopespian\_25:

(Start: 25 @20518 has 31 MA's), (27, 20536), (Start: 46 @20641 has 1 MA's), (100, 20839), (124, 20971), (126, 20980), (130, 20998), (142, 21034), (161, 21094), (166, 21124), (190, 21274), (192, 21313), (199, 21358), (204, 21376), (210, 21400), (217, 21457), (225, 21517), (229, 21553), (232, 21583), (235, 21604),

Gene: Sour\_31 Start: 30307, Stop: 31437, Start Num: 20

Candidate Starts for Sour\_31:

(Start: 20 @30307 has 1 MA's), (37, 30400), (38, 30406), (60, 30496), (65, 30511), (89, 30577), (124, 30754), (148, 30850), (174, 30967), (176, 30985), (186, 31048), (197, 31150), (199, 31162), (203,

31177), (208, 31195), (219, 31276), (228, 31354), (234, 31405), (235, 31411),

Gene: Starburst\_26 Start: 20518, Stop: 21615, Start Num: 25

Candidate Starts for Starburst\_26:

(Start: 25 @20518 has 31 MA's), (27, 20536), (Start: 46 @20641 has 1 MA's), (100, 20839), (121, 20953), (124, 20971), (126, 20980), (130, 20998), (142, 21034), (161, 21094), (166, 21124), (190, 21274), (192, 21313), (199, 21358), (204, 21376), (210, 21400), (217, 21457), (225, 21517), (229, 21553), (232, 21583), (235, 21604),

Gene: SteamedHams\_27 Start: 20181, Stop: 21269, Start Num: 25

Candidate Starts for SteamedHams\_27:

(24, 20178), (Start: 25 @20181 has 31 MA's), (27, 20199), (Start: 46 @20304 has 1 MA's), (79, 20427), (121, 20616), (124, 20634), (126, 20643), (128, 20655), (164, 20766), (173, 20820), (176, 20841), (190, 20928), (199, 21012), (204, 21030), (211, 21063), (219, 21126), (222, 21144), (223, 21147), (224, 21150), (229, 21207), (235, 21258),

Gene: Survivors\_27 Start: 21337, Stop: 22437, Start Num: 25

Candidate Starts for Survivors\_27:

(Start: 25 @21337 has 31 MA's), (27, 21355), (Start: 46 @21460 has 1 MA's), (84, 21598), (103, 21676), (106, 21688), (110, 21703), (121, 21772), (124, 21790), (129, 21814), (173, 21982), (199, 22174), (202, 22195), (204, 22198), (211, 22231), (219, 22294), (222, 22312), (224, 22318), (235, 22426),

Gene: Tardus\_38 Start: 32448, Stop: 33524, Start Num: 35

Candidate Starts for Tardus\_38:

(Start: 35 @32448 has 17 MA's), (58, 32556), (75, 32604), (80, 32622), (115, 32769), (118, 32781), (124, 32820), (135, 32859), (144, 32901), (158, 32967), (162, 32982), (166, 33009), (168, 33024), (179, 33081), (186, 33135), (191, 33180), (199, 33249), (206, 33270), (210, 33294), (220, 33369), (228, 33447), (237, 33513),

Gene: Tolls\_27 Start: 20184, Stop: 21263, Start Num: 25

Candidate Starts for Tolls\_27:

(24, 20181), (Start: 25 @20184 has 31 MA's), (27, 20202), (Start: 46 @20307 has 1 MA's), (79, 20430), (106, 20535), (121, 20619), (124, 20637), (129, 20661), (160, 20742), (164, 20760), (173, 20814), (190, 20922), (199, 21006), (204, 21024), (211, 21057), (219, 21120), (222, 21138), (223, 21141), (224, 21144), (229, 21201),

Gene: Troje\_25 Start: 20150, Stop: 21247, Start Num: 25

Candidate Starts for Troje\_25:

(17, 20081), (Start: 25 @20150 has 31 MA's), (27, 20168), (Start: 46 @20273 has 1 MA's), (102, 20480), (121, 20585), (124, 20603), (126, 20612), (143, 20666), (161, 20726), (183, 20855), (190, 20906), (199, 20990), (204, 21008), (211, 21041), (218, 21092), (219, 21104), (231, 21200), (235, 21236),

Gene: Twinkle\_26 Start: 23678, Stop: 24715, Start Num: 40

Candidate Starts for Twinkle\_26:

(Start: 40 @23678 has 17 MA's), (55, 23747), (57, 23753), (106, 23933), (112, 23954), (124, 24035), (130, 24062), (153, 24155), (176, 24263), (186, 24326), (193, 24401), (228, 24632),

Gene: Twister6\_35 Start: 28645, Stop: 29817, Start Num: 11

Candidate Starts for Twister6\_35:

(Start: 11 @28645 has 13 MA's), (30, 28786), (Start: 34 @28804 has 1 MA's), (66, 28939), (85, 29005), (106, 29092), (124, 29194), (166, 29299), (186, 29425), (187, 29431), (199, 29539), (205, 29557),

(234, 29782),

Gene: Typhonomachy\_26 Start: 20517, Stop: 21647, Start Num: 25

Candidate Starts for Typhonomachy\_26:

(Start: 25 @20517 has 31 MA's), (27, 20535), (Start: 46 @20640 has 1 MA's), (100, 20838), (121, 20952), (124, 20970), (126, 20979), (139, 21033), (155, 21114), (161, 21126), (167, 21159), (190, 21306), (192, 21345), (199, 21390), (204, 21408), (210, 21432), (217, 21489), (225, 21549), (229, 21585), (232, 21615), (235, 21636),

Gene: VanDeWege\_36 Start: 28981, Stop: 30153, Start Num: 11

Candidate Starts for VanDeWege\_36:

(Start: 11 @28981 has 13 MA's), (Start: 34 @29140 has 1 MA's), (66, 29275), (85, 29341), (106, 29428), (124, 29530), (166, 29635), (186, 29761), (187, 29767), (199, 29875), (205, 29893), (234, 30118),

Gene: Verity\_36 Start: 33271, Stop: 34347, Start Num: 35

Candidate Starts for Verity\_36:

(Start: 35 @33271 has 17 MA's), (58, 33379), (74, 33424), (80, 33445), (115, 33592), (124, 33643), (135, 33682), (144, 33724), (158, 33790), (162, 33805), (166, 33832), (168, 33847), (179, 33904), (186, 33958), (187, 33964), (191, 34003), (199, 34072), (206, 34093), (210, 34117), (220, 34192), (228, 34270), (237, 34336),

Gene: ViaConlectus\_37 Start: 31720, Stop: 32796, Start Num: 35

Candidate Starts for ViaConlectus\_37:

(7, 31426), (23, 31654), (Start: 35 @31720 has 17 MA's), (58, 31828), (75, 31876), (80, 31894), (115, 32041), (118, 32053), (124, 32092), (135, 32131), (144, 32173), (158, 32239), (162, 32254), (166, 32281), (168, 32296), (186, 32407), (191, 32452), (193, 32482), (196, 32500), (199, 32521), (210, 32566), (228, 32719), (237, 32785),

Gene: Widow\_25 Start: 19674, Stop: 20909, Start Num: 16

Candidate Starts for Widow\_25:

(Start: 16 @19674 has 4 MA's), (29, 19785), (31, 19794), (33, 19803), (44, 19848), (51, 19893), (67, 19950), (73, 19980), (76, 19992), (95, 20055), (100, 20079), (111, 20124), (120, 20178), (122, 20193), (123, 20196), (125, 20211), (141, 20271), (161, 20367), (169, 20415), (170, 20418), (201, 20649), (214, 20724), (225, 20808), (233, 20883), (234, 20889),

Gene: WinkNick\_26 Start: 22010, Stop: 23047, Start Num: 40

Candidate Starts for WinkNick\_26:

(10, 21839), (12, 21842), (Start: 40 @22010 has 17 MA's), (55, 22079), (57, 22085), (106, 22265), (112, 22286), (124, 22367), (130, 22394), (153, 22487), (176, 22595), (186, 22658), (193, 22733), (228, 22964),

Gene: Wooper\_29 Start: 28066, Stop: 29163, Start Num: 22

Candidate Starts for Wooper\_29:

(Start: 22 @28066 has 13 MA's), (45, 28180), (57, 28240), (63, 28255), (69, 28270), (113, 28450), (119, 28489), (124, 28522), (146, 28579), (158, 28627), (161, 28639), (178, 28732), (179, 28735), (180, 28744), (185, 28771), (186, 28786), (187, 28792), (199, 28891), (200, 28897), (211, 28948), (213, 28969), (221, 29014), (233, 29134),

Gene: Yarn\_24 Start: 20174, Stop: 21286, Start Num: 25

Candidate Starts for Yarn\_24:

(Start: 25 @20174 has 31 MA's), (27, 20192), (Start: 46 @20297 has 1 MA's), (79, 20420), (121, 20609), (124, 20627), (126, 20636), (128, 20648), (156, 20753), (173, 20837), (190, 20945), (199,

21029), (204, 21047), (211, 21080), (219, 21143), (222, 21161), (223, 21164), (224, 21167), (229, 21224),

Gene: Yeshua\_29 Start: 28043, Stop: 29140, Start Num: 22

Candidate Starts for Yeshua\_29:

(Start: 22 @28043 has 13 MA's), (45, 28157), (57, 28217), (63, 28232), (69, 28247), (113, 28427), (119, 28466), (124, 28499), (146, 28556), (158, 28604), (161, 28616), (178, 28709), (179, 28712), (180, 28721), (185, 28748), (186, 28763), (187, 28769), (199, 28868), (200, 28874), (211, 28925), (213, 28946), (221, 28991), (233, 29111),

Gene: Yummy\_26 Start: 20064, Stop: 21200, Start Num: 25

Candidate Starts for Yummy\_26:

(17, 19995), (Start: 25 @20064 has 31 MA's), (27, 20082), (Start: 46 @20187 has 1 MA's), (121, 20499), (124, 20517), (126, 20526), (132, 20550), (140, 20577), (161, 20679), (183, 20808), (190, 20859), (191, 20880), (199, 20943), (204, 20961), (211, 20994), (219, 21057), (231, 21153),

Gene: YungMoney\_35 Start: 29700, Stop: 30950, Start Num: 11

Candidate Starts for YungMoney\_35:

(Start: 11 @29700 has 13 MA's), (26, 29814), (Start: 34 @29859 has 1 MA's), (39, 29880), (74, 30024), (85, 30060), (106, 30147), (124, 30249), (130, 30276), (148, 30357), (173, 30480), (174, 30483), (176, 30501), (187, 30570), (199, 30678),

Gene: Zareef\_29 Start: 21489, Stop: 22589, Start Num: 25

Candidate Starts for Zareef\_29:

(Start: 25 @21489 has 31 MA's), (27, 21507), (Start: 46 @21612 has 1 MA's), (84, 21750), (103, 21828), (106, 21840), (110, 21855), (121, 21924), (124, 21942), (129, 21966), (173, 22134), (199, 22326), (202, 22347), (204, 22350), (211, 22383), (219, 22446), (222, 22464), (224, 22470), (235, 22578),

Gene: Zipp\_36 Start: 33174, Stop: 34250, Start Num: 35

Candidate Starts for Zipp\_36:

(Start: 35 @33174 has 17 MA's), (58, 33282), (75, 33330), (80, 33348), (115, 33495), (118, 33507), (124, 33546), (135, 33585), (144, 33627), (158, 33693), (162, 33708), (166, 33735), (168, 33750), (179, 33807), (186, 33861), (191, 33906), (199, 33975), (206, 33996), (210, 34020), (220, 34095), (228, 34173), (237, 34239),

Gene: Zitch\_38 Start: 31061, Stop: 32053, Start Num: 35

Candidate Starts for Zitch\_38:

(Start: 35 @31061 has 17 MA's), (58, 31169), (75, 31217), (80, 31235), (115, 31382), (118, 31394), (121, 31415), (124, 31433), (166, 31538), (179, 31610), (186, 31664), (191, 31709), (199, 31778), (206, 31799), (210, 31823), (220, 31898), (228, 31976), (237, 32042),