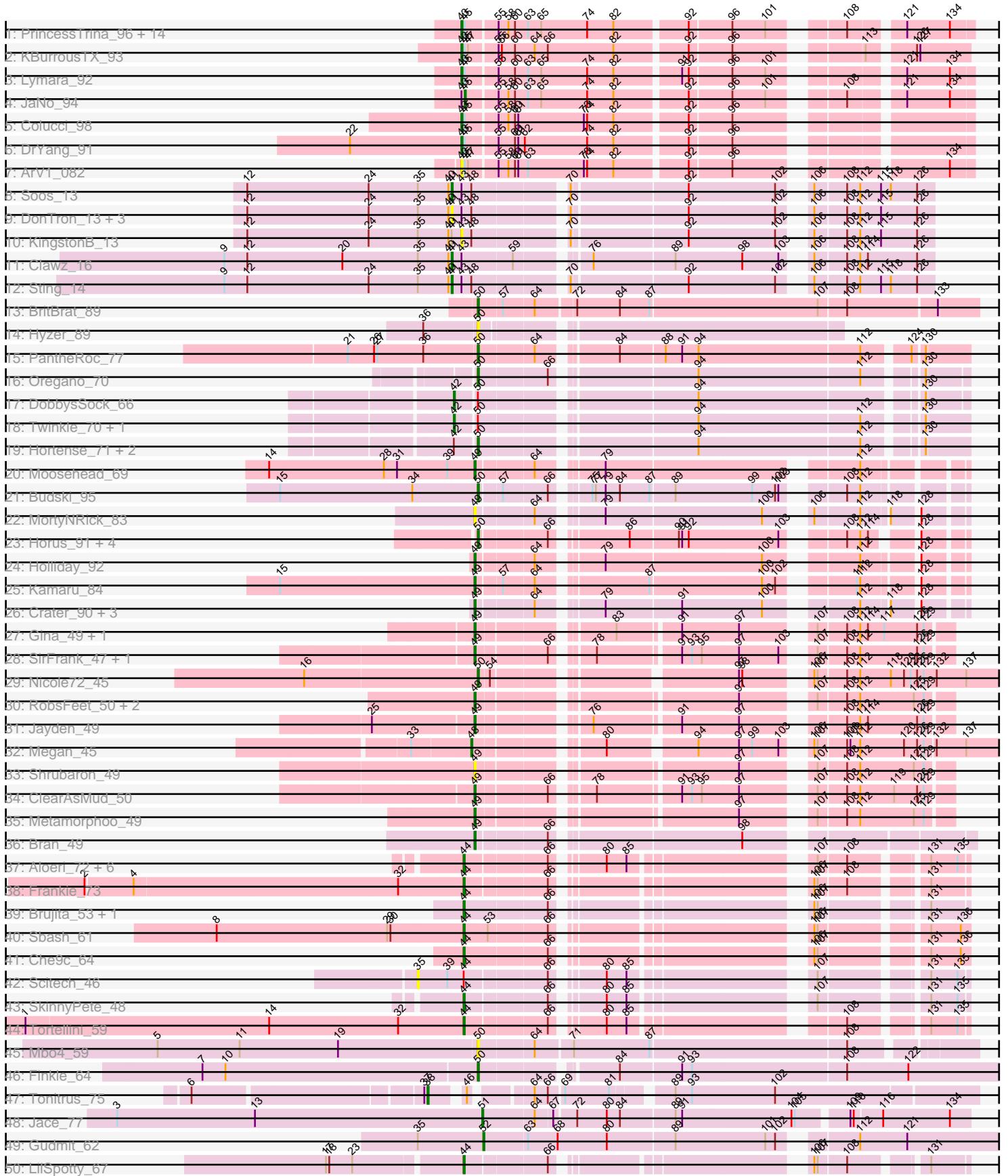


Pham 216071



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 216071 Report

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

Pham number 216071 has 88 members, 17 are drafts.

Phages represented in each track:

- Track 1 : PrincessTrina_96, JayCookie_95, MoyaNatalis_94, HumptyDumpty_95, Chocolat_95, Mordred_95, RosiePosie_95, Linus_95, Kabreeze_95, Tophat_96, Chubster_95, EdgarPoe_94, Conboy_93, Scavito_96, Chipper1996_960
- Track 2 : KBurroustX_93
- Track 3 : Lymara_92
- Track 4 : JaNo_94
- Track 5 : Colucci_98
- Track 6 : DrYang_91
- Track 7 : ArV1_082
- Track 8 : Soos_13
- Track 9 : DonTron_13, ColdSoup_15, Jollymon_15, Amo99_15
- Track 10 : KingstonB_13
- Track 11 : Clawz_16
- Track 12 : Sting_14
- Track 13 : BritBrat_89
- Track 14 : Hyzer_89
- Track 15 : PantheRoc_77
- Track 16 : Oregano_70
- Track 17 : DobbysSock_66
- Track 18 : Twinkle_70, Shlim410_69
- Track 19 : Hortense_71, Howe_71, Adora_68
- Track 20 : Moosehead_69
- Track 21 : Budski_95
- Track 22 : MortyNRick_83
- Track 23 : Horus_91, Periwinkle_99, Leroy_90, ShawBrad_95, Frickyeah_97
- Track 24 : Holliday_92
- Track 25 : Kamaru_84
- Track 26 : Crater_90, Ecliptus_97, Apricot_90, Phistory_88
- Track 27 : Gina_49, Teamocil_49
- Track 28 : SirFrank_47, NoodlelyBoi_48
- Track 29 : Nicole72_45
- Track 30 : RobsFeet_50, Tyumbra_47, Fireman_49
- Track 31 : Jayden_49
- Track 32 : Megan_45
- Track 33 : Shrubaron_49
- Track 34 : ClearAsMud_50
- Track 35 : Metamorphoo_49

- Track 36 : Bran_49
- Track 37 : Aloeri_72, ChickenDinner_72, Misha28_68, TootsiePop_68, DocMcStuffins_70, Awesomesauce_70, Piper2020_71
- Track 38 : Frankie_73
- Track 39 : Brujita_53, Island3_53
- Track 40 : Sbash_61
- Track 41 : Che9c_64
- Track 42 : Scitech_46
- Track 43 : SkinnyPete_48
- Track 44 : Tortellini_59
- Track 45 : Mbo4_59
- Track 46 : Finkle_64
- Track 47 : Tonitrus_75
- Track 48 : Jace_77
- Track 49 : Gudmit_62
- Track 50 : LilSpotty_67

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

The start number called the most often in the published annotations is 43, it was called in 18 of the 71 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ArV1_082, Chipper1996_960, Chocolat_95, Chubster_95, Colucci_98, Conboy_93, DrYang_91, EdgarPoe_94, HumptyDumpty_95, JayCookie_95, KBurrousTX_93, Kabreeze_95, KingstonB_13, Linus_95, Lymara_92, Mordred_95, MoyaNatalis_94, PrincessTrina_96, RosiePosie_95, Scavito_96, Tophat_96,

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

- Amo99_15, Clawz_16, ColdSoup_15, DonTron_13, JaNo_94, Jollymon_15, Soos_13, Sting_14,

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

- Adora_68, Aloeri_72, Apricot_90, Awesomesauce_70, Bran_49, BritBrat_89, Brujita_53, Budski_95, Che9c_64, ChickenDinner_72, ClearAsMud_50, Crater_90, DobbysSock_66, DocMcStuffins_70, Ecliptus_97, Finkle_64, Fireman_49, Frankie_73, Frickyeah_97, Gina_49, Gudmit_62, Holliday_92, Hortense_71, Horus_91, Howe_71, Hyzer_89, Island3_53, Jace_77, Jayden_49, Kamaru_84, Leroy_90, LilSpotty_67, Mbo4_59, Megan_45, Metamorphoo_49, Misha28_68, Moosehead_69, MortyNRick_83, Nicole72_45, NoodlelyBoi_48, Oregano_70, PantheRoc_77, Periwinkle_99, Phistory_88, Piper2020_71, RobsFeet_50, Sbash_61, Scitech_46, ShawBrad_95, Shlim410_69, Shrubaron_49, SirFrank_47, SkinnyPete_48, Teamocil_49, Tonitrus_75, TootsiePop_68, Tortellini_59, Twinkle_70, Tyrumbra_47,

Summary by start number:

Start 35:

- Found in 10 of 88 (11.4%) of genes in pham
- No Manual Annotations of this start.

- Called 10.0% of time when present
- Phage (with cluster) where this start called: Scitech_46 (N),

Start 38:

- Found in 1 of 88 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Tonitrus_75 (singleton),

Start 41:

- Found in 8 of 88 (9.1%) of genes in pham
- Manual Annotations of this start: 3 of 71
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Amo99_15 (CP), Clawz_16 (CP), ColdSoup_15 (CP), DonTron_13 (CP), Jollymon_15 (CP), Soos_13 (CP), Sting_14 (CP),

Start 42:

- Found in 6 of 88 (6.8%) of genes in pham
- Manual Annotations of this start: 3 of 71
- Called 50.0% of time when present
- Phage (with cluster) where this start called: DobbysSock_66 (CZ4), Shlim410_69 (CZ4), Twinkle_70 (CZ4),

Start 43:

- Found in 29 of 88 (33.0%) of genes in pham
- Manual Annotations of this start: 18 of 71
- Called 72.4% of time when present
- Phage (with cluster) where this start called: ArV1_082 (AR), Chipper1996_960 (AR), Chocolat_95 (AR), Chubster_95 (AR), Colucci_98 (AR), Conboy_93 (AR), DrYang_91 (AR), EdgarPoe_94 (AR), HumptyDumpty_95 (AR), JayCookie_95 (AR), KBurrousTX_93 (AR), Kabreeze_95 (AR), KingstonB_13 (CP), Linus_95 (AR), Lymara_92 (AR), Mordred_95 (AR), MoyaNatalis_94 (AR), PrincessTrina_96 (AR), RosiePosie_95 (AR), Scavito_96 (AR), Tophat_96 (AR),

Start 44:

- Found in 16 of 88 (18.2%) of genes in pham
- Manual Annotations of this start: 13 of 71
- Called 93.8% of time when present
- Phage (with cluster) where this start called: Aloeri_72 (F1), Awesomesauce_70 (F1), Brujita_53 (I1), Che9c_64 (I2), ChickenDinner_72 (F1), DocMcStuffins_70 (F1), Frankie_73 (F1), Island3_53 (I1), LilSpotty_67 (singleton), Misha28_68 (F1), Piper2020_71 (F1), Sbash_61 (I2), SkinnyPete_48 (N), TootsiePop_68 (F1), Tortellini_59 (P2),

Start 45:

- Found in 21 of 88 (23.9%) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 4.8% of time when present
- Phage (with cluster) where this start called: JaNo_94 (AR),

Start 48:

- Found in 8 of 88 (9.1%) of genes in pham

- Manual Annotations of this start: 1 of 71
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Megan_45 (EC),

Start 49:

- Found in 20 of 88 (22.7%) of genes in pham
- Manual Annotations of this start: 17 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apricot_90 (DN3), Bran_49 (EP), ClearAsMud_50 (EC), Crater_90 (DN3), Ecliptus_97 (DN), Fireman_49 (EC), Gina_49 (EC), Holliday_92 (DN1), Jayden_49 (EC), Kamaru_84 (DN1), Metamorphoo_49 (EC), Moosehead_69 (CZ6), MortyNRick_83 (DN), NoodlelyBoi_48 (EC), Phistory_88 (DN1), RobsFeet_50 (EC), Shrubaron_49 (EC), SirFrank_47 (EC), Teamocil_49 (EC), Tyrumbra_47 (EC),

Start 50:

- Found in 19 of 88 (21.6%) of genes in pham
- Manual Annotations of this start: 12 of 71
- Called 84.2% of time when present
- Phage (with cluster) where this start called: Adora_68 (CZ4), BritBrat_89 (CY2), Budski_95 (DN), Finkle_64 (singleton), Frickyeah_97 (DN1), Hortense_71 (CZ4), Horus_91 (DN1), Howe_71 (CZ4), Hyzer_89 (CZ1), Leroy_90 (DN1), Mbo4_59 (singleton), Nicole72_45 (EC), Oregano_70 (CZ4), PantheRoc_77 (CZ3), Periwinkle_99 (DN1), ShawBrad_95 (DN1),

Start 51:

- Found in 1 of 88 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jace_77 (singleton),

Start 52:

- Found in 1 of 88 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gudmit_62 (singleton),

Summary by clusters:

There are 18 clusters represented in this pham: DN, F1, singleton, CZ1, P2, CY2, I1, CZ3, I2, CZ6, CZ4, N, AR, DN1, EC, DN3, CP, EP,

Info for manual annotations of cluster AR:

- Start number 43 was manually annotated 18 times for cluster AR.
- Start number 45 was manually annotated 1 time for cluster AR.

Info for manual annotations of cluster CP:

- Start number 41 was manually annotated 3 times for cluster CP.

Info for manual annotations of cluster CY2:

- Start number 50 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster CZ3:

- Start number 50 was manually annotated 1 time for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 42 was manually annotated 3 times for cluster CZ4.
- Start number 50 was manually annotated 4 times for cluster CZ4.

Info for manual annotations of cluster CZ6:

- Start number 49 was manually annotated 1 time for cluster CZ6.

Info for manual annotations of cluster DN:

- Start number 49 was manually annotated 1 time for cluster DN.
- Start number 50 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 49 was manually annotated 3 times for cluster DN1.
- Start number 50 was manually annotated 3 times for cluster DN1.

Info for manual annotations of cluster DN3:

- Start number 49 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster EC:

- Start number 48 was manually annotated 1 time for cluster EC.
- Start number 49 was manually annotated 9 times for cluster EC.
- Start number 50 was manually annotated 1 time for cluster EC.

Info for manual annotations of cluster EP:

- Start number 49 was manually annotated 1 time for cluster EP.

Info for manual annotations of cluster F1:

- Start number 44 was manually annotated 6 times for cluster F1.

Info for manual annotations of cluster I1:

- Start number 44 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster I2:

- Start number 44 was manually annotated 2 times for cluster I2.

Info for manual annotations of cluster N:

- Start number 44 was manually annotated 1 time for cluster N.

Info for manual annotations of cluster P2:

- Start number 44 was manually annotated 1 time for cluster P2.

Gene Information:

Gene: Adora_68 Start: 47407, Stop: 47808, Start Num: 50

Candidate Starts for Adora_68:

(Start: 42 @47389 has 3 MA's), (Start: 50 @47407 has 12 MA's), (94, 47584), (112, 47728), (130, 47770),

Gene: Aloeri_72 Start: 43637, Stop: 44014, Start Num: 44

Candidate Starts for Aloeri_72:

(Start: 44 @43637 has 13 MA's), (66, 43706), (80, 43742), (85, 43760), (107, 43901), (108, 43925), (131, 43982), (135, 44006),

Gene: Amo99_15 Start: 7379, Stop: 7768, Start Num: 41

Candidate Starts for Amo99_15:

(12, 7193), (24, 7304), (35, 7349), (40, 7376), (Start: 41 @7379 has 3 MA's), (Start: 43 @7388 has 18 MA's), (Start: 48 @7397 has 1 MA's), (70, 7472), (92, 7571), (102, 7649), (106, 7664), (108, 7691), (112, 7703), (115, 7721), (126, 7754),

Gene: Apricot_90 Start: 48459, Stop: 48836, Start Num: 49

Candidate Starts for Apricot_90:

(Start: 49 @48459 has 17 MA's), (64, 48507), (79, 48555), (91, 48621), (100, 48693), (112, 48759), (118, 48780), (128, 48801),

Gene: ArV1_082 Start: 60520, Stop: 60933, Start Num: 43

Candidate Starts for ArV1_082:

(Start: 43 @60520 has 18 MA's), (Start: 45 @60523 has 1 MA's), (47, 60526), (55, 60550), (58, 60559), (60, 60565), (61, 60568), (63, 60577), (73, 60628), (74, 60631), (82, 60655), (92, 60715), (96, 60751), (134, 60913),

Gene: Awesomesauce_70 Start: 42720, Stop: 43097, Start Num: 44

Candidate Starts for Awesomesauce_70:

(Start: 44 @42720 has 13 MA's), (66, 42789), (80, 42825), (85, 42843), (107, 42984), (108, 43008), (131, 43065), (135, 43089),

Gene: Bran_49 Start: 35390, Stop: 35785, Start Num: 49

Candidate Starts for Bran_49:

(Start: 49 @35390 has 17 MA's), (66, 35450), (98, 35606),

Gene: BritBrat_89 Start: 51800, Stop: 52234, Start Num: 50

Candidate Starts for BritBrat_89:

(Start: 50 @51800 has 12 MA's), (57, 51821), (64, 51848), (72, 51881), (84, 51920), (87, 51947), (107, 52097), (108, 52121), (133, 52199),

Gene: Brujita_53 Start: 36853, Stop: 37233, Start Num: 44

Candidate Starts for Brujita_53:

(Start: 44 @36853 has 13 MA's), (66, 36925), (106, 37117), (107, 37120), (131, 37201),

Gene: Budski_95 Start: 51613, Stop: 51987, Start Num: 50

Candidate Starts for Budski_95:

(15, 51436), (34, 51556), (Start: 50 @51613 has 12 MA's), (57, 51631), (66, 51670), (75, 51694), (77, 51697), (79, 51706), (84, 51718), (87, 51745), (89, 51766), (99, 51835), (102, 51856), (103, 51859), (108, 51898), (112, 51910),

Gene: Che9c_64 Start: 45395, Stop: 45778, Start Num: 44

Candidate Starts for Che9c_64:

(Start: 44 @45395 has 13 MA's), (66, 45467), (106, 45659), (107, 45662), (131, 45743), (136, 45770),

Gene: ChickenDinner_72 Start: 43637, Stop: 44014, Start Num: 44

Candidate Starts for ChickenDinner_72:

(Start: 44 @43637 has 13 MA's), (66, 43706), (80, 43742), (85, 43760), (107, 43901), (108, 43925), (131, 43982), (135, 44006),

Gene: Chipper1996_960 Start: 62228, Stop: 62641, Start Num: 43

Candidate Starts for Chipper1996_960:

(Start: 43 @62228 has 18 MA's), (Start: 45 @62231 has 1 MA's), (55, 62258), (58, 62267), (60, 62273), (63, 62285), (65, 62297), (74, 62339), (82, 62363), (92, 62423), (96, 62459), (101, 62489), (108, 62540), (121, 62582), (134, 62621),

Gene: Chocolat_95 Start: 61935, Stop: 62348, Start Num: 43

Candidate Starts for Chocolat_95:

(Start: 43 @61935 has 18 MA's), (Start: 45 @61938 has 1 MA's), (55, 61965), (58, 61974), (60, 61980), (63, 61992), (65, 62004), (74, 62046), (82, 62070), (92, 62130), (96, 62166), (101, 62196), (108, 62247), (121, 62289), (134, 62328),

Gene: Chubster_95 Start: 62175, Stop: 62588, Start Num: 43

Candidate Starts for Chubster_95:

(Start: 43 @62175 has 18 MA's), (Start: 45 @62178 has 1 MA's), (55, 62205), (58, 62214), (60, 62220), (63, 62232), (65, 62244), (74, 62286), (82, 62310), (92, 62370), (96, 62406), (101, 62436), (108, 62487), (121, 62529), (134, 62568),

Gene: Clawz_16 Start: 7752, Stop: 8141, Start Num: 41

Candidate Starts for Clawz_16:

(9, 7545), (12, 7566), (20, 7653), (35, 7722), (40, 7749), (Start: 41 @7752 has 3 MA's), (Start: 43 @7761 has 18 MA's), (59, 7806), (76, 7860), (89, 7932), (98, 7992), (103, 8025), (106, 8037), (108, 8064), (112, 8076), (114, 8082), (126, 8127),

Gene: ClearAsMud_50 Start: 32507, Stop: 32881, Start Num: 49

Candidate Starts for ClearAsMud_50:

(Start: 49 @32507 has 17 MA's), (66, 32567), (78, 32594), (91, 32663), (93, 32672), (95, 32681), (97, 32714), (107, 32765), (108, 32789), (112, 32801), (119, 32831), (126, 32852), (129, 32858),

Gene: ColdSoup_15 Start: 7379, Stop: 7768, Start Num: 41

Candidate Starts for ColdSoup_15:

(12, 7193), (24, 7304), (35, 7349), (40, 7376), (Start: 41 @7379 has 3 MA's), (Start: 43 @7388 has 18 MA's), (Start: 48 @7397 has 1 MA's), (70, 7472), (92, 7571), (102, 7649), (106, 7664), (108, 7691), (112, 7703), (115, 7721), (126, 7754),

Gene: Colucci_98 Start: 62563, Stop: 62976, Start Num: 43

Candidate Starts for Colucci_98:

(Start: 43 @62563 has 18 MA's), (Start: 45 @62566 has 1 MA's), (55, 62593), (58, 62602), (60, 62608), (61, 62611), (73, 62671), (74, 62674), (82, 62698), (92, 62758), (96, 62794),

Gene: Conboy_93 Start: 61684, Stop: 62097, Start Num: 43

Candidate Starts for Conboy_93:

(Start: 43 @61684 has 18 MA's), (Start: 45 @61687 has 1 MA's), (55, 61714), (58, 61723), (60, 61729), (63, 61741), (65, 61753), (74, 61795), (82, 61819), (92, 61879), (96, 61915), (101, 61945), (108, 61996), (121, 62038), (134, 62077),

Gene: Crater_90 Start: 48803, Stop: 49180, Start Num: 49

Candidate Starts for Crater_90:

(Start: 49 @48803 has 17 MA's), (64, 48851), (79, 48899), (91, 48965), (100, 49037), (112, 49103), (118, 49124), (128, 49145),

Gene: DobbysSock_66 Start: 44836, Stop: 45252, Start Num: 42
Candidate Starts for DobbysSock_66:
(Start: 42 @44836 has 3 MA's), (Start: 50 @44854 has 12 MA's), (94, 45031), (130, 45217),

Gene: DocMcStuffins_70 Start: 43637, Stop: 44014, Start Num: 44
Candidate Starts for DocMcStuffins_70:
(Start: 44 @43637 has 13 MA's), (66, 43706), (80, 43742), (85, 43760), (107, 43901), (108, 43925),
(131, 43982), (135, 44006),

Gene: DonTron_13 Start: 6968, Stop: 7357, Start Num: 41
Candidate Starts for DonTron_13:
(12, 6782), (24, 6893), (35, 6938), (40, 6965), (Start: 41 @6968 has 3 MA's), (Start: 43 @6977 has 18 MA's), (Start: 48 @6986 has 1 MA's), (70, 7061), (92, 7160), (102, 7238), (106, 7253), (108, 7280),
(112, 7292), (115, 7310), (126, 7343),

Gene: DrYang_91 Start: 61721, Stop: 62134, Start Num: 43
Candidate Starts for DrYang_91:
(22, 61619), (Start: 43 @61721 has 18 MA's), (Start: 45 @61724 has 1 MA's), (55, 61751), (60, 61766),
(61, 61769), (62, 61775), (74, 61832), (82, 61856), (92, 61916), (96, 61952),

Gene: Ecliptus_97 Start: 52002, Stop: 52379, Start Num: 49
Candidate Starts for Ecliptus_97:
(Start: 49 @52002 has 17 MA's), (64, 52050), (79, 52098), (91, 52164), (100, 52236), (112, 52302),
(118, 52323), (128, 52344),

Gene: EdgarPoe_94 Start: 62092, Stop: 62505, Start Num: 43
Candidate Starts for EdgarPoe_94:
(Start: 43 @62092 has 18 MA's), (Start: 45 @62095 has 1 MA's), (55, 62122), (58, 62131), (60, 62137),
(63, 62149), (65, 62161), (74, 62203), (82, 62227), (92, 62287), (96, 62323), (101, 62353), (108,
62404), (121, 62446), (134, 62485),

Gene: Finkle_64 Start: 40296, Stop: 40754, Start Num: 50
Candidate Starts for Finkle_64:
(7, 40047), (10, 40068), (Start: 50 @40296 has 12 MA's), (84, 40404), (91, 40458), (93, 40467), (108,
40605), (122, 40659),

Gene: Fireman_49 Start: 33919, Stop: 34293, Start Num: 49
Candidate Starts for Fireman_49:
(Start: 49 @33919 has 17 MA's), (97, 34126), (107, 34177), (108, 34201), (112, 34213), (125, 34261),
(129, 34270),

Gene: Frankie_73 Start: 45043, Stop: 45420, Start Num: 44
Candidate Starts for Frankie_73:
(2, 44707), (4, 44749), (32, 44986), (Start: 44 @45043 has 13 MA's), (66, 45112), (106, 45304), (107,
45307), (108, 45331), (131, 45388),

Gene: Frickyeah_97 Start: 50758, Stop: 51126, Start Num: 50
Candidate Starts for Frickyeah_97:
(Start: 50 @50758 has 12 MA's), (66, 50815), (86, 50872), (90, 50914), (91, 50917), (92, 50923), (103,
51004), (108, 51043), (112, 51055), (114, 51061), (128, 51091),

Gene: Gina_49 Start: 32061, Stop: 32435, Start Num: 49

Candidate Starts for Gina_49:

(Start: 49 @32061 has 17 MA's), (83, 32166), (91, 32217), (97, 32268), (107, 32319), (108, 32343), (112, 32355), (114, 32361), (117, 32376), (126, 32406), (129, 32412),

Gene: Gudmit_62 Start: 37386, Stop: 37871, Start Num: 52

Candidate Starts for Gudmit_62:

(35, 37326), (Start: 52 @37386 has 1 MA's), (63, 37425), (68, 37452), (80, 37497), (89, 37557), (101, 37638), (102, 37647), (112, 37701), (121, 37743),

Gene: Holliday_92 Start: 52368, Stop: 52745, Start Num: 49

Candidate Starts for Holliday_92:

(Start: 49 @52368 has 17 MA's), (64, 52416), (79, 52464), (100, 52602), (112, 52668), (128, 52710),

Gene: Hortense_71 Start: 48762, Stop: 49163, Start Num: 50

Candidate Starts for Hortense_71:

(Start: 42 @48744 has 3 MA's), (Start: 50 @48762 has 12 MA's), (94, 48939), (112, 49083), (130, 49125),

Gene: Horus_91 Start: 51033, Stop: 51401, Start Num: 50

Candidate Starts for Horus_91:

(Start: 50 @51033 has 12 MA's), (66, 51090), (86, 51147), (90, 51189), (91, 51192), (92, 51198), (103, 51279), (108, 51318), (112, 51330), (114, 51336), (128, 51366),

Gene: Howe_71 Start: 48762, Stop: 49163, Start Num: 50

Candidate Starts for Howe_71:

(Start: 42 @48744 has 3 MA's), (Start: 50 @48762 has 12 MA's), (94, 48939), (112, 49083), (130, 49125),

Gene: HumptyDumpty_95 Start: 61895, Stop: 62308, Start Num: 43

Candidate Starts for HumptyDumpty_95:

(Start: 43 @61895 has 18 MA's), (Start: 45 @61898 has 1 MA's), (55, 61925), (58, 61934), (60, 61940), (63, 61952), (65, 61964), (74, 62006), (82, 62030), (92, 62090), (96, 62126), (101, 62156), (108, 62207), (121, 62249), (134, 62288),

Gene: Hyzer_89 Start: 56367, Stop: 56672, Start Num: 50

Candidate Starts for Hyzer_89:

(36, 56319), (Start: 50 @56367 has 12 MA's),

Gene: Island3_53 Start: 36853, Stop: 37233, Start Num: 44

Candidate Starts for Island3_53:

(Start: 44 @36853 has 13 MA's), (66, 36925), (106, 37117), (107, 37120), (131, 37201),

Gene: JaNo_94 Start: 61869, Stop: 62279, Start Num: 45

Candidate Starts for JaNo_94:

(Start: 43 @61866 has 18 MA's), (Start: 45 @61869 has 1 MA's), (55, 61896), (58, 61905), (60, 61911), (63, 61923), (65, 61935), (74, 61977), (82, 62001), (92, 62061), (96, 62097), (101, 62127), (108, 62178), (121, 62220), (134, 62259),

Gene: Jace_77 Start: 44043, Stop: 44462, Start Num: 51

Candidate Starts for Jace_77:

(3, 43710), (13, 43836), (Start: 51 @44043 has 1 MA's), (64, 44088), (67, 44103), (72, 44121), (80, 44148), (84, 44160), (89, 44208), (91, 44214), (104, 44313), (105, 44316), (109, 44358), (110, 44361), (116, 44385), (134, 44445),

Gene: JayCookie_95 Start: 62428, Stop: 62841, Start Num: 43

Candidate Starts for JayCookie_95:

(Start: 43 @62428 has 18 MA's), (Start: 45 @62431 has 1 MA's), (55, 62458), (58, 62467), (60, 62473), (63, 62485), (65, 62497), (74, 62539), (82, 62563), (92, 62623), (96, 62659), (101, 62689), (108, 62740), (121, 62782), (134, 62821),

Gene: Jayden_49 Start: 32758, Stop: 33132, Start Num: 49

Candidate Starts for Jayden_49:

(25, 32671), (Start: 49 @32758 has 17 MA's), (76, 32842), (91, 32914), (97, 32965), (108, 33040), (112, 33052), (114, 33058), (126, 33103), (129, 33109),

Gene: Jollymon_15 Start: 7379, Stop: 7768, Start Num: 41

Candidate Starts for Jollymon_15:

(12, 7193), (24, 7304), (35, 7349), (40, 7376), (Start: 41 @7379 has 3 MA's), (Start: 43 @7388 has 18 MA's), (Start: 48 @7397 has 1 MA's), (70, 7472), (92, 7571), (102, 7649), (106, 7664), (108, 7691), (112, 7703), (115, 7721), (126, 7754),

Gene: KBurrousTX_93 Start: 63304, Stop: 63714, Start Num: 43

Candidate Starts for KBurrousTX_93:

(Start: 43 @63304 has 18 MA's), (Start: 45 @63307 has 1 MA's), (47, 63310), (55, 63334), (56, 63337), (60, 63349), (64, 63367), (66, 63379), (82, 63439), (92, 63499), (96, 63535), (113, 63631), (126, 63667), (127, 63670),

Gene: Kabreeze_95 Start: 61952, Stop: 62365, Start Num: 43

Candidate Starts for Kabreeze_95:

(Start: 43 @61952 has 18 MA's), (Start: 45 @61955 has 1 MA's), (55, 61982), (58, 61991), (60, 61997), (63, 62009), (65, 62021), (74, 62063), (82, 62087), (92, 62147), (96, 62183), (101, 62213), (108, 62264), (121, 62306), (134, 62345),

Gene: Kamaru_84 Start: 48067, Stop: 48444, Start Num: 49

Candidate Starts for Kamaru_84:

(15, 47893), (Start: 49 @48067 has 17 MA's), (57, 48088), (64, 48115), (87, 48202), (100, 48301), (102, 48313), (111, 48364), (112, 48367), (128, 48409),

Gene: KingstonB_13 Start: 6977, Stop: 7357, Start Num: 43

Candidate Starts for KingstonB_13:

(12, 6782), (24, 6893), (35, 6938), (40, 6965), (Start: 41 @6968 has 3 MA's), (Start: 43 @6977 has 18 MA's), (Start: 48 @6986 has 1 MA's), (70, 7061), (92, 7160), (102, 7238), (106, 7253), (108, 7280), (112, 7292), (115, 7310), (126, 7343),

Gene: Leroy_90 Start: 49228, Stop: 49596, Start Num: 50

Candidate Starts for Leroy_90:

(Start: 50 @49228 has 12 MA's), (66, 49285), (86, 49342), (90, 49384), (91, 49387), (92, 49393), (103, 49474), (108, 49513), (112, 49525), (114, 49531), (128, 49561),

Gene: LilSpotty_67 Start: 41443, Stop: 41820, Start Num: 44

Candidate Starts for LilSpotty_67:

(17, 41326), (18, 41329), (23, 41350), (Start: 44 @41443 has 13 MA's), (66, 41512), (106, 41704), (107, 41707), (108, 41731), (131, 41788),

Gene: Linus_95 Start: 62400, Stop: 62813, Start Num: 43

Candidate Starts for Linus_95:

(Start: 43 @62400 has 18 MA's), (Start: 45 @62403 has 1 MA's), (55, 62430), (58, 62439), (60, 62445), (63, 62457), (65, 62469), (74, 62511), (82, 62535), (92, 62595), (96, 62631), (101, 62661), (108, 62712), (121, 62754), (134, 62793),

Gene: Lymara_92 Start: 60859, Stop: 61272, Start Num: 43

Candidate Starts for Lymara_92:

(Start: 43 @60859 has 18 MA's), (Start: 45 @60862 has 1 MA's), (55, 60889), (60, 60904), (63, 60916), (65, 60928), (74, 60970), (82, 60994), (91, 61048), (92, 61054), (96, 61090), (101, 61120), (121, 61213), (134, 61252),

Gene: Mbo4_59 Start: 42474, Stop: 42896, Start Num: 50

Candidate Starts for Mbo4_59:

(5, 42183), (11, 42258), (19, 42348), (Start: 50 @42474 has 12 MA's), (64, 42522), (71, 42552), (87, 42621), (108, 42795),

Gene: Megan_45 Start: 35422, Stop: 35853, Start Num: 48

Candidate Starts for Megan_45:

(33, 35371), (Start: 48 @35422 has 1 MA's), (80, 35521), (94, 35593), (97, 35629), (99, 35641), (103, 35665), (106, 35677), (107, 35680), (108, 35704), (109, 35707), (112, 35716), (120, 35755), (126, 35767), (129, 35773), (132, 35782), (137, 35809),

Gene: Metamorphoo_49 Start: 33181, Stop: 33555, Start Num: 49

Candidate Starts for Metamorphoo_49:

(Start: 49 @33181 has 17 MA's), (97, 33388), (107, 33439), (108, 33463), (112, 33475), (125, 33523), (129, 33532),

Gene: Misha28_68 Start: 42725, Stop: 43102, Start Num: 44

Candidate Starts for Misha28_68:

(Start: 44 @42725 has 13 MA's), (66, 42794), (80, 42830), (85, 42848), (107, 42989), (108, 43013), (131, 43070), (135, 43094),

Gene: Moosehead_69 Start: 39233, Stop: 39610, Start Num: 49

Candidate Starts for Moosehead_69:

(14, 39047), (28, 39152), (31, 39164), (39, 39209), (Start: 49 @39233 has 17 MA's), (64, 39281), (79, 39329), (112, 39533),

Gene: Mordred_95 Start: 61991, Stop: 62404, Start Num: 43

Candidate Starts for Mordred_95:

(Start: 43 @61991 has 18 MA's), (Start: 45 @61994 has 1 MA's), (55, 62021), (58, 62030), (60, 62036), (63, 62048), (65, 62060), (74, 62102), (82, 62126), (92, 62186), (96, 62222), (101, 62252), (108, 62303), (121, 62345), (134, 62384),

Gene: MortyNRick_83 Start: 48781, Stop: 49158, Start Num: 49

Candidate Starts for MortyNRick_83:

(Start: 49 @48781 has 17 MA's), (64, 48829), (79, 48877), (100, 49015), (106, 49042), (112, 49081), (118, 49102), (128, 49123),

Gene: MoyaNatalis_94 Start: 61874, Stop: 62287, Start Num: 43

Candidate Starts for MoyaNatalis_94:

(Start: 43 @61874 has 18 MA's), (Start: 45 @61877 has 1 MA's), (55, 61904), (58, 61913), (60, 61919), (63, 61931), (65, 61943), (74, 61985), (82, 62009), (92, 62069), (96, 62105), (101, 62135), (108, 62186), (121, 62228), (134, 62267),

Gene: Nicole72_45 Start: 35846, Stop: 36274, Start Num: 50

Candidate Starts for Nicole72_45:

(16, 35690), (Start: 50 @35846 has 12 MA's), (54, 35855), (97, 36047), (98, 36050), (106, 36095), (107, 36098), (108, 36122), (112, 36134), (118, 36161), (120, 36173), (123, 36179), (126, 36185), (129, 36191), (132, 36203), (137, 36230),

Gene: NoodlelyBoi_48 Start: 32719, Stop: 33093, Start Num: 49

Candidate Starts for NoodlelyBoi_48:

(Start: 49 @32719 has 17 MA's), (66, 32779), (78, 32806), (91, 32875), (93, 32884), (95, 32893), (97, 32926), (103, 32962), (107, 32977), (108, 33001), (112, 33013), (126, 33064), (129, 33070),

Gene: Oregano_70 Start: 43852, Stop: 44250, Start Num: 50

Candidate Starts for Oregano_70:

(Start: 50 @43852 has 12 MA's), (66, 43912), (94, 44029), (112, 44173), (130, 44215),

Gene: PantheRoc_77 Start: 49218, Stop: 49622, Start Num: 50

Candidate Starts for PantheRoc_77:

(21, 49101), (26, 49125), (27, 49128), (36, 49170), (Start: 50 @49218 has 12 MA's), (64, 49266), (84, 49326), (88, 49365), (91, 49380), (94, 49395), (112, 49539), (124, 49575), (130, 49584),

Gene: Periwinkle_99 Start: 52035, Stop: 52403, Start Num: 50

Candidate Starts for Periwinkle_99:

(Start: 50 @52035 has 12 MA's), (66, 52092), (86, 52149), (90, 52191), (91, 52194), (92, 52200), (103, 52281), (108, 52320), (112, 52332), (114, 52338), (128, 52368),

Gene: Phistory_88 Start: 48067, Stop: 48444, Start Num: 49

Candidate Starts for Phistory_88:

(Start: 49 @48067 has 17 MA's), (64, 48115), (79, 48163), (91, 48229), (100, 48301), (112, 48367), (118, 48388), (128, 48409),

Gene: Piper2020_71 Start: 43620, Stop: 43997, Start Num: 44

Candidate Starts for Piper2020_71:

(Start: 44 @43620 has 13 MA's), (66, 43689), (80, 43725), (85, 43743), (107, 43884), (108, 43908), (131, 43965), (135, 43989),

Gene: PrincessTrina_96 Start: 62182, Stop: 62595, Start Num: 43

Candidate Starts for PrincessTrina_96:

(Start: 43 @62182 has 18 MA's), (Start: 45 @62185 has 1 MA's), (55, 62212), (58, 62221), (60, 62227), (63, 62239), (65, 62251), (74, 62293), (82, 62317), (92, 62377), (96, 62413), (101, 62443), (108, 62494), (121, 62536), (134, 62575),

Gene: RobsFeet_50 Start: 33462, Stop: 33836, Start Num: 49

Candidate Starts for RobsFeet_50:

(Start: 49 @33462 has 17 MA's), (97, 33669), (107, 33720), (108, 33744), (112, 33756), (125, 33804), (129, 33813),

Gene: RosiePosie_95 Start: 62047, Stop: 62460, Start Num: 43

Candidate Starts for RosiePosie_95:

(Start: 43 @62047 has 18 MA's), (Start: 45 @62050 has 1 MA's), (55, 62077), (58, 62086), (60, 62092), (63, 62104), (65, 62116), (74, 62158), (82, 62182), (92, 62242), (96, 62278), (101, 62308), (108, 62359), (121, 62401), (134, 62440),

Gene: Sbash_61 Start: 42805, Stop: 43188, Start Num: 44

Candidate Starts for Sbash_61:

(8, 42580), (29, 42736), (30, 42739), (Start: 44 @42805 has 13 MA's), (53, 42826), (66, 42877), (106, 43069), (107, 43072), (131, 43153), (136, 43180),

Gene: Scavito_96 Start: 62040, Stop: 62453, Start Num: 43

Candidate Starts for Scavito_96:

(Start: 43 @62040 has 18 MA's), (Start: 45 @62043 has 1 MA's), (55, 62070), (58, 62079), (60, 62085), (63, 62097), (65, 62109), (74, 62151), (82, 62175), (92, 62235), (96, 62271), (101, 62301), (108, 62352), (121, 62394), (134, 62433),

Gene: Scitech_46 Start: 32555, Stop: 32974, Start Num: 35

Candidate Starts for Scitech_46:

(35, 32555), (39, 32582), (Start: 44 @32597 has 13 MA's), (66, 32666), (80, 32702), (85, 32720), (107, 32861), (131, 32942), (135, 32966),

Gene: ShawBrad_95 Start: 49284, Stop: 49652, Start Num: 50

Candidate Starts for ShawBrad_95:

(Start: 50 @49284 has 12 MA's), (66, 49341), (86, 49398), (90, 49440), (91, 49443), (92, 49449), (103, 49530), (108, 49569), (112, 49581), (114, 49587), (128, 49617),

Gene: Shlim410_69 Start: 48744, Stop: 49163, Start Num: 42

Candidate Starts for Shlim410_69:

(Start: 42 @48744 has 3 MA's), (Start: 50 @48762 has 12 MA's), (94, 48939), (112, 49083), (130, 49125),

Gene: Shrubaron_49 Start: 33096, Stop: 33470, Start Num: 49

Candidate Starts for Shrubaron_49:

(Start: 49 @33096 has 17 MA's), (97, 33303), (107, 33354), (108, 33378), (112, 33390), (125, 33438), (129, 33447),

Gene: SirFrank_47 Start: 32289, Stop: 32663, Start Num: 49

Candidate Starts for SirFrank_47:

(Start: 49 @32289 has 17 MA's), (66, 32349), (78, 32376), (91, 32445), (93, 32454), (95, 32463), (97, 32496), (103, 32532), (107, 32547), (108, 32571), (112, 32583), (126, 32634), (129, 32640),

Gene: SkinnyPete_48 Start: 33096, Stop: 33473, Start Num: 44

Candidate Starts for SkinnyPete_48:

(Start: 44 @33096 has 13 MA's), (66, 33165), (80, 33201), (85, 33219), (107, 33360), (131, 33441), (135, 33465),

Gene: Soos_13 Start: 6967, Stop: 7356, Start Num: 41

Candidate Starts for Soos_13:

(12, 6781), (24, 6892), (35, 6937), (40, 6964), (Start: 41 @6967 has 3 MA's), (Start: 43 @6976 has 18 MA's), (Start: 48 @6985 has 1 MA's), (70, 7060), (92, 7159), (102, 7237), (106, 7252), (108, 7279), (112, 7291), (115, 7309), (118, 7318), (126, 7342),

Gene: Sting_14 Start: 7379, Stop: 7768, Start Num: 41

Candidate Starts for Sting_14:

(9, 7172), (12, 7193), (24, 7304), (35, 7349), (40, 7376), (Start: 41 @7379 has 3 MA's), (Start: 43 @7388 has 18 MA's), (Start: 48 @7397 has 1 MA's), (70, 7472), (92, 7571), (102, 7649), (106, 7664), (108, 7691), (112, 7703), (115, 7721), (118, 7730), (126, 7754),

Gene: Teamocil_49 Start: 32160, Stop: 32534, Start Num: 49

Candidate Starts for Teamocil_49:

(Start: 49 @32160 has 17 MA's), (83, 32265), (91, 32316), (97, 32367), (107, 32418), (108, 32442), (112, 32454), (114, 32460), (117, 32475), (126, 32505), (129, 32511),

Gene: Tonitrus_75 Start: 53537, Stop: 53983, Start Num: 38

Candidate Starts for Tonitrus_75:

(6, 53345), (37, 53534), (Start: 38 @53537 has 1 MA's), (46, 53561), (64, 53606), (66, 53618), (69, 53630), (81, 53669), (89, 53714), (93, 53729), (102, 53804),

Gene: TootsiePop_68 Start: 42725, Stop: 43102, Start Num: 44

Candidate Starts for TootsiePop_68:

(Start: 44 @42725 has 13 MA's), (66, 42794), (80, 42830), (85, 42848), (107, 42989), (108, 43013), (131, 43070), (135, 43094),

Gene: Tophat_96 Start: 62229, Stop: 62642, Start Num: 43

Candidate Starts for Tophat_96:

(Start: 43 @62229 has 18 MA's), (Start: 45 @62232 has 1 MA's), (55, 62259), (58, 62268), (60, 62274), (63, 62286), (65, 62298), (74, 62340), (82, 62364), (92, 62424), (96, 62460), (101, 62490), (108, 62541), (121, 62583), (134, 62622),

Gene: Tortellini_59 Start: 41926, Stop: 42303, Start Num: 44

Candidate Starts for Tortellini_59:

(1, 41533), (14, 41752), (32, 41869), (Start: 44 @41926 has 13 MA's), (66, 41995), (80, 42031), (85, 42049), (108, 42214), (131, 42271), (135, 42295),

Gene: Twinkle_70 Start: 49803, Stop: 50222, Start Num: 42

Candidate Starts for Twinkle_70:

(Start: 42 @49803 has 3 MA's), (Start: 50 @49821 has 12 MA's), (94, 49998), (112, 50142), (130, 50184),

Gene: Tyrumbra_47 Start: 33262, Stop: 33636, Start Num: 49

Candidate Starts for Tyrumbra_47:

(Start: 49 @33262 has 17 MA's), (97, 33469), (107, 33520), (108, 33544), (112, 33556), (125, 33604), (129, 33613),