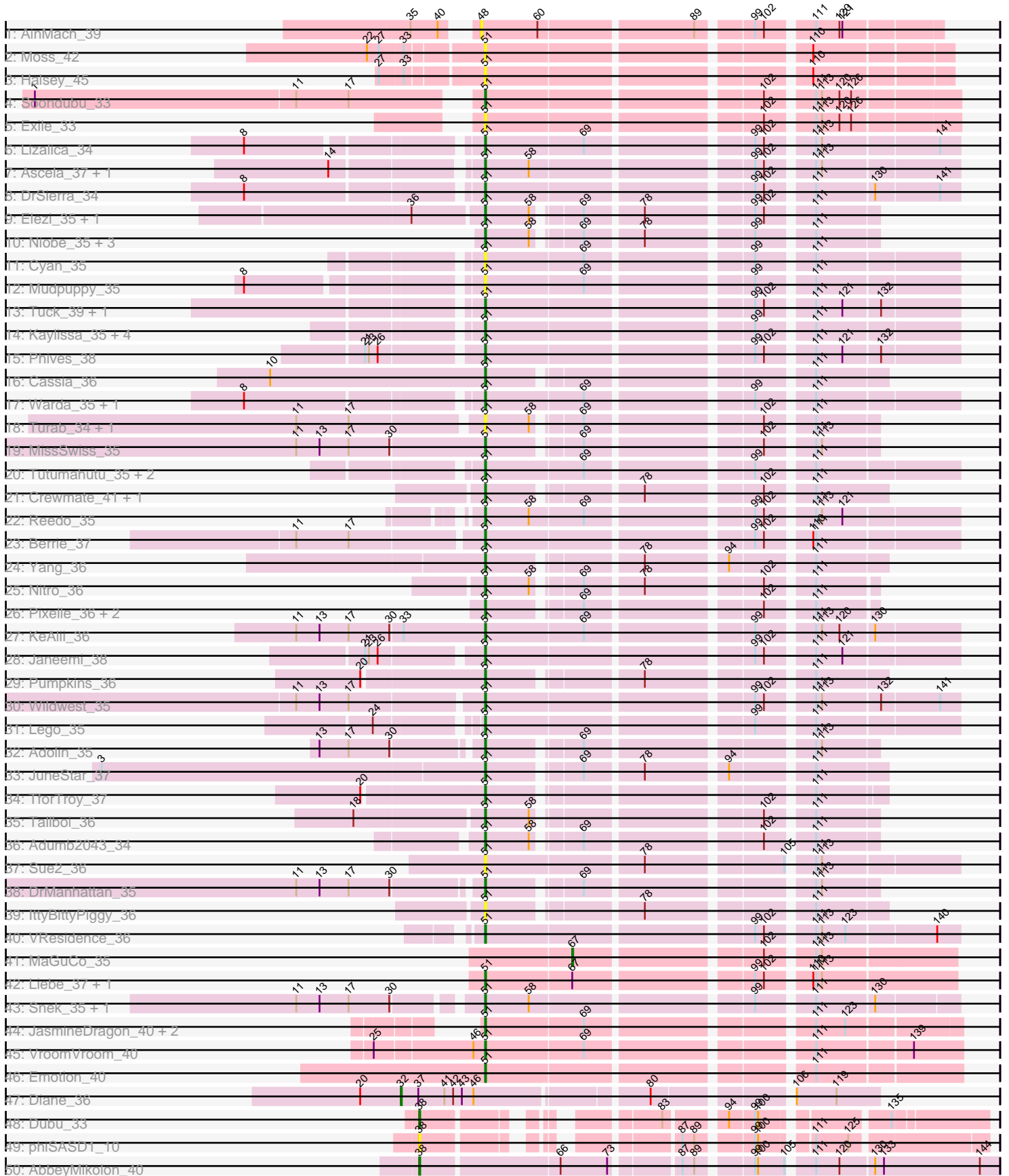
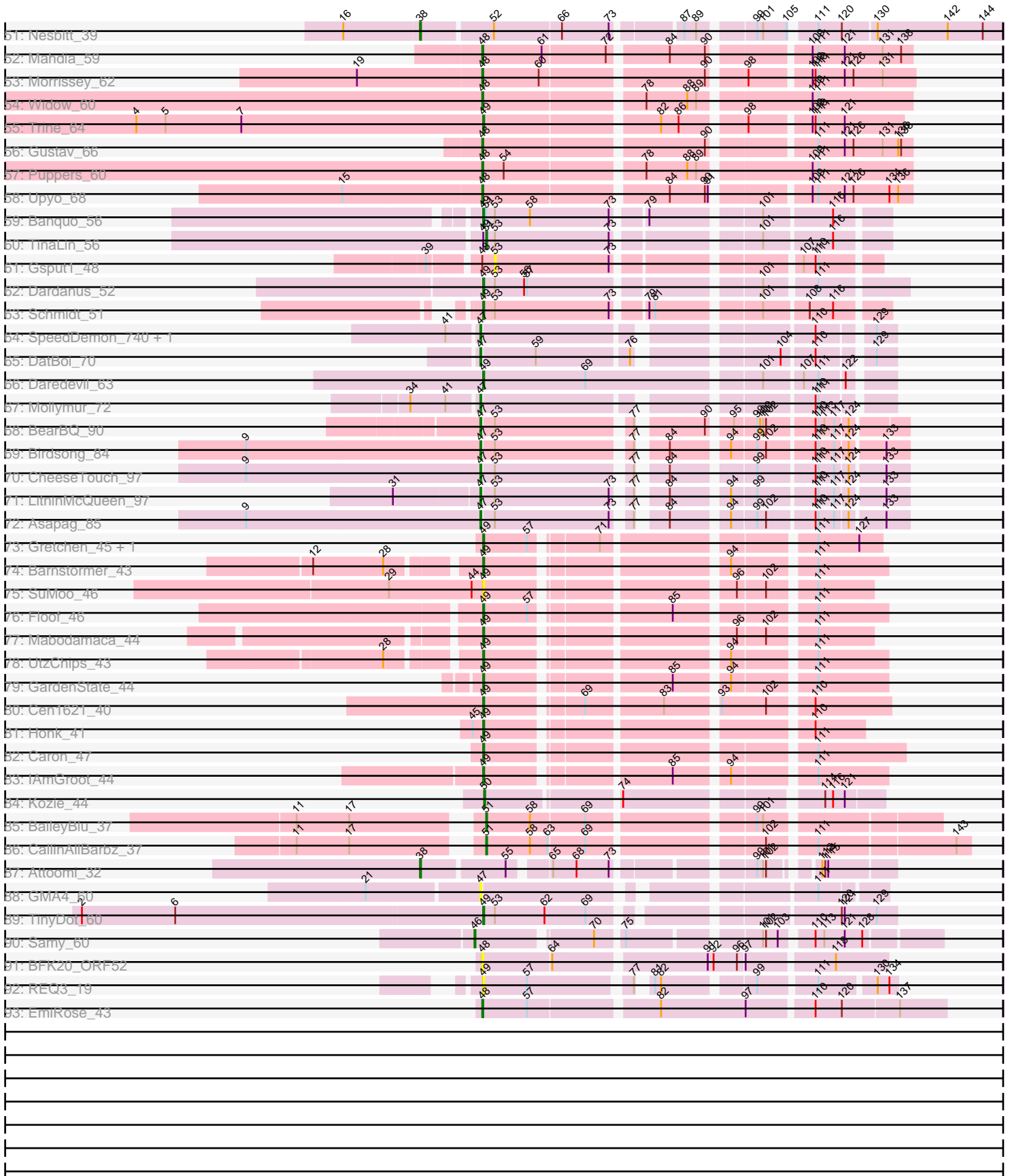


Pham 171315



Pham 171315



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 171315 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171315 has 116 members, 25 are drafts.

Phages represented in each track:

- Track 1 : AinMach_39
- Track 2 : Moss_42
- Track 3 : Halsey_45
- Track 4 : Soondubu_33
- Track 5 : Exile_33
- Track 6 : Lizalica_34
- Track 7 : Ascela_37, Iter_37
- Track 8 : DrSierra_34
- Track 9 : Elezi_35, London_35
- Track 10 : Niobe_35, Asa16_35, Eraser_35, Jstan_37
- Track 11 : Cyan_35
- Track 12 : Mudpuppy_35
- Track 13 : Tuck_39, Community_38
- Track 14 : Kaylissa_35, JohnDoe_35, AGrandiflora_36, Powerpuff_37, YesChef_35
- Track 15 : Phives_38
- Track 16 : Cassia_36
- Track 17 : Warda_35, Tbone_34
- Track 18 : Turab_34, AEgle_34
- Track 19 : MissSwiss_35
- Track 20 : Tutumahutu_35, Joemato_37, Simpson_37
- Track 21 : Crewmate_41, ObiToo_40
- Track 22 : Reedo_35
- Track 23 : Berrie_37
- Track 24 : Yang_36
- Track 25 : Nitro_36
- Track 26 : Pixelle_36, Amyev_35, Tian_35
- Track 27 : KeAlii_36
- Track 28 : Janeemi_38
- Track 29 : Pumpkins_36
- Track 30 : Wildwest_35
- Track 31 : Lego_35
- Track 32 : Adolin_35
- Track 33 : JuneStar_37
- Track 34 : TforTroy_37
- Track 35 : Tallboi_36
- Track 36 : Adumb2043_34
- Track 37 : Sue2_36

- Track 38 : DrManhattan_35
- Track 39 : IttyBittyPiggy_36
- Track 40 : VResidence_36
- Track 41 : MaGuCo_35
- Track 42 : Liebe_37, Maureen_37
- Track 43 : Snek_35, Tweety19_35
- Track 44 : JasmineDragon_40, ShakeltOph_42, MiniMommy_42
- Track 45 : VroomVroom_40
- Track 46 : Emotion_40
- Track 47 : Diane_36
- Track 48 : Dubu_33
- Track 49 : phiSASD1_10
- Track 50 : AbbeyMikolon_40
- Track 51 : Nesbitt_39
- Track 52 : Mahdia_59
- Track 53 : Morrissey_62
- Track 54 : Widow_60
- Track 55 : Trine_64
- Track 56 : Gustav_66
- Track 57 : Puppies_60
- Track 58 : Upyo_68
- Track 59 : Banquo_56
- Track 60 : TinaLin_56
- Track 61 : Gspu1_48
- Track 62 : Dardanus_52
- Track 63 : Schmidt_51
- Track 64 : SpeedDemon_740, Bantam_72
- Track 65 : DatBoi_70
- Track 66 : Daredevil_63
- Track 67 : Mollymur_72
- Track 68 : BearBQ_90
- Track 69 : Birdsong_84
- Track 70 : CheeseTouch_97
- Track 71 : LitninMcQueen_97
- Track 72 : Asapag_85
- Track 73 : Gretchen_45, Percival_46
- Track 74 : Barnstormer_43
- Track 75 : SuMoo_46
- Track 76 : Floof_46
- Track 77 : Mabodamaca_44
- Track 78 : UtzChips_43
- Track 79 : GardenState_44
- Track 80 : Cen1621_40
- Track 81 : Honk_41
- Track 82 : Caron_47
- Track 83 : IAmGroot_44
- Track 84 : Kozie_44
- Track 85 : BaileyBlu_37
- Track 86 : CallinAllBarbz_37
- Track 87 : Attoomi_32
- Track 88 : GMA4_60
- Track 89 : TinyDot_60
- Track 90 : Samy_60

- Track 91 : BFK20_ORF52
- Track 92 : REQ3_19
- Track 93 : EmiRose_43

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

The start number called the most often in the published annotations is 51, it was called in 50 of the 91 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AEgle_34, AGrandiflora_36, Adolin_35, Adumb2043_34, Amyev_35, Asa16_35, Ascela_37, BaileyBlu_37, Berrie_37, CallinAllBarbz_37, Cassia_36, Community_38, Crewmate_41, Cyan_35, DrManhattan_35, DrSierra_34, Elezi_35, Emotion_40, Eraser_35, Exile_33, Halsey_45, Iter_37, IttyBittyPiggy_36, Janeemi_38, JasmineDragon_40, Joemato_37, JohnDoe_35, Jstan_37, JuneStar_37, Kaylissa_35, KeAlii_36, Lego_35, Liebe_37, Lizalica_34, London_35, Maureen_37, MiniMommy_42, MissSwiss_35, Moss_42, Mudpuppy_35, Niobe_35, Nitro_36, ObiToo_40, Phives_38, Pixelle_36, Powerpuff_37, Pumpkins_36, Reedo_35, ShakeltOph_42, Simpson_37, Snek_35, Soondubu_33, Sue2_36, Tallboi_36, Tbone_34, TforTroy_37, Tian_35, TinaLin_56, Tuck_39, Turab_34, Tutumahutu_35, Tweety19_35, VResidence_36, VroomVroom_40, Warda_35, Wildwest_35, Yang_36, YesChef_35,

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

- Banquo_56,

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

- AbbeyMikolon_40, AinMach_39, Asapag_85, Attoomi_32, BFK20_ORF52, Bantam_72, Barnstormer_43, BearBQ_90, Birdsong_84, Caron_47, Cen1621_40, CheeseTouch_97, Dardanus_52, Daredevil_63, DatBoi_70, Diane_36, Dubu_33, EmiRose_43, Floof_46, GMA4_60, GardenState_44, Gretchen_45, Gsput1_48, Gustav_66, Honk_41, IAmGroot_44, Kozi_44, LitninMcQueen_97, MaGuCo_35, Mabodamaca_44, Mahdia_59, Mollymur_72, Morrissey_62, Nesbitt_39, Percival_46, Puppies_60, REQ3_19, Samy_60, Schmidt_51, SpeedDemon_740, SuMoo_46, TinyDot_60, Trine_64, Upyo_68, UtzChips_43, Widow_60, phiSASD1_10,

Summary by start number:

Start 32:

- Found in 1 of 116 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 91
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Diane_36 (BD2),

Start 38:

- Found in 5 of 116 (4.3%) of genes in pham
- Manual Annotations of this start: 4 of 91
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AbbeyMikolon_40 (BL), Attoomi_32 (singleton), Dubu_33 (BJ), Nesbitt_39 (BL), phiSASD1_10 (BJ),

Start 46:

- Found in 3 of 116 (2.6%) of genes in pham
- Manual Annotations of this start: 1 of 91
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Samy_60 (singleton),

Start 47:

- Found in 10 of 116 (8.6%) of genes in pham
- Manual Annotations of this start: 9 of 91
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Asapag_85 (DN1), Bantam_72 (DL), BearBQ_90 (DN), Birdsong_84 (DN), CheeseTouch_97 (DN1), DatBoi_70 (DL), GMA4_60 (singleton), LitninMcQueen_97 (DN1), Mollymur_72 (DL), SpeedDemon_740 (DL),

Start 48:

- Found in 10 of 116 (8.6%) of genes in pham
- Manual Annotations of this start: 7 of 91
- Called 90.0% of time when present
- Phage (with cluster) where this start called: AinMach_39 (AZ), BFK20_ORF52 (singleton), EmiRose_43 (singleton), Gustav_66 (CD), Mahdia_59 (CD), Morrissey_62 (CD), Puppies_60 (CD), Upyo_68 (CD), Widow_60 (CD),

Start 49:

- Found in 20 of 116 (17.2%) of genes in pham
- Manual Annotations of this start: 17 of 91
- Called 95.0% of time when present
- Phage (with cluster) where this start called: Banquo_56 (CU1), Barnstormer_43 (EH), Caron_47 (EH), Cen1621_40 (EH), Dardanus_52 (CU3), Daredevil_63 (DL), Floof_46 (EH), GardenState_44 (EH), Gretchen_45 (EH), Honk_41 (EH), IAmGroot_44 (EH), Mabodamaca_44 (EH), Percival_46 (EH), REQ3_19 (singleton), Schmidt_51 (CU4), SuMoo_46 (EH), TinyDot_60 (singleton), Trine_64 (CD), UtzChips_43 (EH),

Start 50:

- Found in 1 of 116 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 91
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kozie_44 (EI),

Start 51:

- Found in 69 of 116 (59.5%) of genes in pham
- Manual Annotations of this start: 50 of 91
- Called 98.6% of time when present
- Phage (with cluster) where this start called: AEgle_34 (AZ1), AGrandiflora_36 (AZ1), Adolin_35 (AZ1), Adumb2043_34 (AZ1), Amyev_35 (AZ1), Asa16_35 (AZ1), Ascela_37 (AZ1), BaileyBlu_37 (FP), Berrie_37 (AZ1), CallinAllBarbz_37 (FP), Cassia_36 (AZ1), Community_38 (AZ1), Crewmate_41 (AZ1), Cyan_35 (AZ1), DrManhattan_35 (AZ1), DrSierra_34 (AZ1), Elezi_35 (AZ1), Emotion_40 (AZ4), Eraser_35 (AZ1), Exile_33 (AZ), Halsey_45 (AZ), Iter_37 (AZ1), IttyBittyPiggy_36 (AZ1), Janeemi_38 (AZ1), JasmineDragon_40 (AZ4), Joemato_37 (AZ1), JohnDoe_35 (AZ1), Jstan_37 (AZ1), JuneStar_37 (AZ1), Kaylissa_35 (AZ1),

KeAlii_36 (AZ1), Lego_35 (AZ1), Liebe_37 (AZ2), Lizalica_34 (AZ1), London_35 (AZ1), Maureen_37 (AZ2), MiniMommy_42 (AZ4), MissSwiss_35 (AZ1), Moss_42 (AZ), Mudpuppy_35 (AZ1), Niobe_35 (AZ1), Nitro_36 (AZ1), ŌbiToo_40 (AZ1), Phives_38 (AZ1), Pixelle_36 (AZ1), Powerpuff_37 (AZ1), Pumpkins_36 (AZ1), Reedo_35 (AZ1), ShakeltOph_42 (AZ4), Simpson_37 (AZ1), Snek_35 (AZ3), Soondubu_33 (AZ), Sue2_36 (AZ1), Tallboi_36 (AZ1), Tbone_34 (AZ1), TforTroy_37 (AZ1), Tian_35 (AZ1), TinaLin_56 (CU1), Tuck_39 (AZ1), Turab_34 (AZ1), Tutumahutu_35 (AZ1), Tweety19_35 (AZ3), VResidence_36 (AZ1), VroomVroom_40 (AZ4), Warda_35 (AZ1), Wildwest_35 (AZ1), Yang_36 (AZ1), YesChef_35 (AZ1),

Start 53:

- Found in 11 of 116 (9.5%) of genes in pham
- No Manual Annotations of this start.
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Gspu1_48 (CU2),

Start 67:

- Found in 3 of 116 (2.6%) of genes in pham
- Manual Annotations of this start: 1 of 91
- Called 33.3% of time when present
- Phage (with cluster) where this start called: MaGuCo_35 (AZ2),

Summary by clusters:

There are 20 clusters represented in this pham: FP, DN, DL, AZ3, EI, EH, CU1, BL, CU3, singleton, BJ, CD, CU4, DN1, BD2, AZ1, AZ2, AZ, AZ4, CU2,

Info for manual annotations of cluster AZ:

- Start number 51 was manually annotated 1 time for cluster AZ.

Info for manual annotations of cluster AZ1:

- Start number 51 was manually annotated 39 times for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 51 was manually annotated 2 times for cluster AZ2.
- Start number 67 was manually annotated 1 time for cluster AZ2.

Info for manual annotations of cluster AZ3:

- Start number 51 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster AZ4:

- Start number 51 was manually annotated 3 times for cluster AZ4.

Info for manual annotations of cluster BD2:

- Start number 32 was manually annotated 1 time for cluster BD2.

Info for manual annotations of cluster BJ:

- Start number 38 was manually annotated 1 time for cluster BJ.

Info for manual annotations of cluster BL:

- Start number 38 was manually annotated 2 times for cluster BL.

Info for manual annotations of cluster CD:

- Start number 48 was manually annotated 6 times for cluster CD.
- Start number 49 was manually annotated 1 time for cluster CD.

Info for manual annotations of cluster CU1:

- Start number 49 was manually annotated 1 time for cluster CU1.
- Start number 51 was manually annotated 1 time for cluster CU1.

Info for manual annotations of cluster CU3:

- Start number 49 was manually annotated 1 time for cluster CU3.

Info for manual annotations of cluster CU4:

- Start number 49 was manually annotated 1 time for cluster CU4.

Info for manual annotations of cluster DL:

- Start number 47 was manually annotated 4 times for cluster DL.
- Start number 49 was manually annotated 1 time for cluster DL.

Info for manual annotations of cluster DN:

- Start number 47 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 47 was manually annotated 3 times for cluster DN1.

Info for manual annotations of cluster EH:

- Start number 49 was manually annotated 11 times for cluster EH.

Info for manual annotations of cluster EI:

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

Info for manual annotations of cluster FP:

- Start number 51 was manually annotated 2 times for cluster FP.

Gene Information:

Gene: AEgle_34 Start: 25272, Stop: 25622, Start Num: 51

Candidate Starts for AEgle_34:

(11, 25092), (17, 25146), (Start: 51 @25272 has 50 MA's), (58, 25317), (69, 25356), (102, 25518), (111, 25560),

Gene: AGrandiflora_36 Start: 25133, Stop: 25576, Start Num: 51

Candidate Starts for AGrandiflora_36:

(Start: 51 @25133 has 50 MA's), (99, 25385), (111, 25436),

Gene: AbbeyMikolon_40 Start: 26256, Stop: 26795, Start Num: 38

Candidate Starts for AbbeyMikolon_40:

(Start: 38 @26256 has 4 MA's), (66, 26391), (73, 26439), (87, 26499), (89, 26511), (99, 26559), (100, 26562), (105, 26589), (111, 26610), (120, 26634), (130, 26667), (133, 26676), (144, 26775),

Gene: Adolin_35 Start: 24126, Stop: 24476, Start Num: 51

Candidate Starts for Adolin_35:

(13, 23973), (17, 24003), (30, 24045), (Start: 51 @24126 has 50 MA's), (69, 24210), (111, 24414), (113, 24420),

Gene: Adumb2043_34 Start: 25291, Stop: 25641, Start Num: 51

Candidate Starts for Adumb2043_34:

(Start: 51 @25291 has 50 MA's), (58, 25336), (69, 25375), (102, 25537), (111, 25579),

Gene: AinMach_39 Start: 26488, Stop: 26916, Start Num: 48

Candidate Starts for AinMach_39:

(35, 26443), (40, 26470), (Start: 48 @26488 has 7 MA's), (60, 26545), (89, 26695), (99, 26743), (102, 26752), (111, 26794), (120, 26818), (121, 26821),

Gene: Amyev_35 Start: 26817, Stop: 27164, Start Num: 51

Candidate Starts for Amyev_35:

(Start: 51 @26817 has 50 MA's), (69, 26901), (102, 27063), (111, 27105),

Gene: Asa16_35 Start: 26861, Stop: 27211, Start Num: 51

Candidate Starts for Asa16_35:

(Start: 51 @26861 has 50 MA's), (58, 26906), (69, 26945), (78, 26999), (99, 27098), (111, 27149),

Gene: Asapag_85 Start: 49353, Stop: 49730, Start Num: 47

Candidate Starts for Asapag_85:

(9, 49113), (Start: 47 @49353 has 9 MA's), (53, 49365), (73, 49482), (77, 49494), (84, 49515), (94, 49566), (99, 49590), (102, 49599), (110, 49644), (111, 49647), (117, 49662), (124, 49674), (133, 49707),

Gene: Ascela_37 Start: 25854, Stop: 26297, Start Num: 51

Candidate Starts for Ascela_37:

(14, 25725), (Start: 51 @25854 has 50 MA's), (58, 25899), (99, 26106), (102, 26115), (111, 26157), (113, 26163),

Gene: Attoomi_32 Start: 23857, Stop: 24264, Start Num: 38

Candidate Starts for Attoomi_32:

(Start: 38 @23857 has 4 MA's), (55, 23938), (65, 23971), (68, 23995), (73, 24028), (99, 24148), (101, 24154), (102, 24157), (112, 24193), (114, 24196), (115, 24199),

Gene: BFK20_ORF52 Start: 41172, Stop: 41558, Start Num: 48

Candidate Starts for BFK20_ORF52:

(Start: 48 @41172 has 7 MA's), (64, 41238), (91, 41385), (92, 41391), (96, 41415), (97, 41421), (118, 41505),

Gene: BaileyBlu_37 Start: 25414, Stop: 25836, Start Num: 51

Candidate Starts for BaileyBlu_37:

(11, 25246), (17, 25300), (Start: 51 @25414 has 50 MA's), (58, 25459), (69, 25513), (99, 25666), (101, 25672),

Gene: Banquo_56 Start: 37048, Stop: 37422, Start Num: 49

Candidate Starts for Banquo_56:

(Start: 49 @37048 has 17 MA's), (Start: 51 @37051 has 50 MA's), (53, 37060), (58, 37096), (73, 37177), (79, 37204), (101, 37306), (116, 37372),

Gene: Bantam_72 Start: 52490, Stop: 52125, Start Num: 47

Candidate Starts for Bantam_72:

(41, 52520), (Start: 47 @52490 has 9 MA's), (110, 52193), (129, 52145),

Gene: Barnstormer_43 Start: 27456, Stop: 27818, Start Num: 49

Candidate Starts for Barnstormer_43:

(12, 27303), (28, 27375), (Start: 49 @27456 has 17 MA's), (94, 27672), (111, 27747),

Gene: BearBQ_90 Start: 50811, Stop: 51185, Start Num: 47

Candidate Starts for BearBQ_90:

(Start: 47 @50811 has 9 MA's), (53, 50823), (77, 50952), (90, 51009), (95, 51027), (99, 51048), (100, 51051), (101, 51054), (102, 51057), (110, 51102), (111, 51105), (113, 51111), (117, 51120), (124, 51132),

Gene: Berrie_37 Start: 26747, Stop: 27190, Start Num: 51

Candidate Starts for Berrie_37:

(11, 26564), (17, 26618), (Start: 51 @26747 has 50 MA's), (99, 26999), (102, 27008), (110, 27047), (111, 27050),

Gene: Birdsong_84 Start: 49089, Stop: 49466, Start Num: 47

Candidate Starts for Birdsong_84:

(9, 48849), (Start: 47 @49089 has 9 MA's), (53, 49101), (77, 49230), (84, 49251), (94, 49302), (99, 49326), (102, 49335), (110, 49380), (111, 49383), (117, 49398), (124, 49410), (133, 49443),

Gene: CallinAllBarbz_37 Start: 25811, Stop: 26263, Start Num: 51

Candidate Starts for CallinAllBarbz_37:

(11, 25643), (17, 25697), (Start: 51 @25811 has 50 MA's), (58, 25856), (63, 25874), (69, 25910), (102, 26072), (111, 26114), (143, 26249),

Gene: Caron_47 Start: 28859, Stop: 29239, Start Num: 49

Candidate Starts for Caron_47:

(Start: 49 @28859 has 17 MA's), (111, 29150),

Gene: Cassia_36 Start: 25737, Stop: 26096, Start Num: 51

Candidate Starts for Cassia_36:

(10, 25515), (Start: 51 @25737 has 50 MA's), (111, 26025),

Gene: Cen1621_40 Start: 25799, Stop: 26167, Start Num: 49

Candidate Starts for Cen1621_40:

(Start: 49 @25799 has 17 MA's), (69, 25886), (83, 25958), (93, 26006), (102, 26051), (110, 26090),

Gene: CheeseTouch_97 Start: 48676, Stop: 49053, Start Num: 47

Candidate Starts for CheeseTouch_97:

(9, 48436), (Start: 47 @48676 has 9 MA's), (53, 48688), (77, 48817), (84, 48838), (99, 48913), (110, 48967), (111, 48970), (117, 48985), (124, 48997), (133, 49030),

Gene: Community_38 Start: 27474, Stop: 27917, Start Num: 51

Candidate Starts for Community_38:

(Start: 51 @27474 has 50 MA's), (99, 27726), (102, 27735), (111, 27777), (121, 27804), (132, 27840),

Gene: Crewmate_41 Start: 26389, Stop: 26751, Start Num: 51

Candidate Starts for Crewmate_41:

(Start: 51 @26389 has 50 MA's), (78, 26527), (102, 26635), (111, 26677),

Gene: Cyan_35 Start: 25187, Stop: 25630, Start Num: 51

Candidate Starts for Cyan_35:

(Start: 51 @25187 has 50 MA's), (69, 25286), (99, 25439), (111, 25490),

Gene: Dardanus_52 Start: 35477, Stop: 35866, Start Num: 49

Candidate Starts for Dardanus_52:

(Start: 49 @35477 has 17 MA's), (53, 35489), (56, 35519), (57, 35522), (101, 35735), (111, 35783),

Gene: Daredevil_63 Start: 48481, Stop: 48092, Start Num: 49

Candidate Starts for Daredevil_63:

(Start: 49 @48481 has 17 MA's), (69, 48376), (101, 48208), (107, 48172), (111, 48157), (122, 48133),

Gene: DatBoi_70 Start: 52480, Stop: 52115, Start Num: 47

Candidate Starts for DatBoi_70:

(Start: 47 @52480 has 9 MA's), (59, 52426), (76, 52336), (104, 52213), (110, 52183), (129, 52135),

Gene: Diane_36 Start: 27972, Stop: 28412, Start Num: 32

Candidate Starts for Diane_36:

(20, 27930), (Start: 32 @27972 has 1 MA's), (37, 27990), (41, 28017), (42, 28026), (43, 28035), (Start: 46 @28047 has 1 MA's), (80, 28209), (106, 28329), (119, 28368),

Gene: DrManhattan_35 Start: 24117, Stop: 24467, Start Num: 51

Candidate Starts for DrManhattan_35:

(11, 23940), (13, 23964), (17, 23994), (30, 24036), (Start: 51 @24117 has 50 MA's), (69, 24201), (111, 24405), (113, 24411),

Gene: DrSierra_34 Start: 24046, Stop: 24489, Start Num: 51

Candidate Starts for DrSierra_34:

(8, 23824), (Start: 51 @24046 has 50 MA's), (99, 24298), (102, 24307), (111, 24349), (130, 24406), (141, 24469),

Gene: Dubu_33 Start: 24220, Stop: 24681, Start Num: 38

Candidate Starts for Dubu_33:

(Start: 38 @24220 has 4 MA's), (83, 24400), (94, 24451), (99, 24475), (100, 24478), (135, 24589),

Gene: Elezi_35 Start: 26877, Stop: 27227, Start Num: 51

Candidate Starts for Elezi_35:

(36, 26808), (Start: 51 @26877 has 50 MA's), (58, 26922), (69, 26961), (78, 27015), (99, 27114), (102, 27123), (111, 27165),

Gene: EmiRose_43 Start: 35914, Stop: 36360, Start Num: 48

Candidate Starts for EmiRose_43:

(Start: 48 @35914 has 7 MA's), (57, 35959), (82, 36082), (97, 36166), (110, 36229), (120, 36256), (137, 36313),

Gene: Emotion_40 Start: 26793, Stop: 27239, Start Num: 51

Candidate Starts for Emotion_40:

(Start: 51 @26793 has 50 MA's), (111, 27096),

Gene: Eraser_35 Start: 26868, Stop: 27218, Start Num: 51

Candidate Starts for Eraser_35:

(Start: 51 @26868 has 50 MA's), (58, 26913), (69, 26952), (78, 27006), (99, 27105), (111, 27156),

Gene: Exile_33 Start: 27350, Stop: 27793, Start Num: 51

Candidate Starts for Exile_33:

(Start: 51 @27350 has 50 MA's), (102, 27611), (111, 27653), (113, 27659), (120, 27677), (126, 27689),

Gene: Floof_46 Start: 28537, Stop: 28899, Start Num: 49

Candidate Starts for Floof_46:

(Start: 49 @28537 has 17 MA's), (57, 28582), (85, 28705), (111, 28828),

Gene: GMA4_60 Start: 40216, Stop: 40572, Start Num: 47

Candidate Starts for GMA4_60:

(21, 40105), (Start: 47 @40216 has 9 MA's), (111, 40510),

Gene: GardenState_44 Start: 27681, Stop: 28043, Start Num: 49

Candidate Starts for GardenState_44:

(Start: 49 @27681 has 17 MA's), (85, 27849), (94, 27897), (111, 27972),

Gene: Gretchen_45 Start: 29159, Stop: 29515, Start Num: 49

Candidate Starts for Gretchen_45:

(Start: 49 @29159 has 17 MA's), (57, 29204), (71, 29261), (111, 29450), (127, 29492),

Gene: Gspu1_48 Start: 35124, Stop: 35474, Start Num: 53

Candidate Starts for Gspu1_48:

(39, 35067), (Start: 48 @35112 has 7 MA's), (53, 35124), (73, 35241), (107, 35403), (110, 35415), (111, 35418),

Gene: Gustav_66 Start: 43170, Stop: 43571, Start Num: 48

Candidate Starts for Gustav_66:

(Start: 48 @43170 has 7 MA's), (90, 43383), (111, 43476), (121, 43503), (126, 43512), (131, 43542), (136, 43557), (138, 43560),

Gene: Halsey_45 Start: 24217, Stop: 24651, Start Num: 51

Candidate Starts for Halsey_45:

(27, 24121), (33, 24145), (Start: 51 @24217 has 50 MA's), (110, 24517),

Gene: Honk_41 Start: 24866, Stop: 25207, Start Num: 49

Candidate Starts for Honk_41:

(45, 24857), (Start: 49 @24866 has 17 MA's), (110, 25157),

Gene: IAmGroot_44 Start: 28148, Stop: 28510, Start Num: 49

Candidate Starts for IAmGroot_44:

(Start: 49 @28148 has 17 MA's), (85, 28316), (94, 28364), (111, 28439),

Gene: Iter_37 Start: 25853, Stop: 26296, Start Num: 51

Candidate Starts for Iter_37:

(14, 25724), (Start: 51 @25853 has 50 MA's), (58, 25898), (99, 26105), (102, 26114), (111, 26156), (113, 26162),

Gene: IttyBittyPiggy_36 Start: 25503, Stop: 25862, Start Num: 51

Candidate Starts for IttyBittyPiggy_36:

(Start: 51 @25503 has 50 MA's), (78, 25641), (111, 25791),

Gene: Janeemi_38 Start: 27485, Stop: 27928, Start Num: 51

Candidate Starts for Janeemi_38:

(21, 27377), (23, 27380), (26, 27389), (Start: 51 @27485 has 50 MA's), (99, 27737), (102, 27746), (111, 27788), (121, 27815),

Gene: JasmineDragon_40 Start: 26737, Stop: 27180, Start Num: 51
Candidate Starts for JasmineDragon_40:
(Start: 51 @26737 has 50 MA's), (69, 26836), (111, 27040), (123, 27070),

Gene: Joemato_37 Start: 25218, Stop: 25661, Start Num: 51
Candidate Starts for Joemato_37:
(Start: 51 @25218 has 50 MA's), (69, 25317), (99, 25470), (111, 25521),

Gene: JohnDoe_35 Start: 25209, Stop: 25652, Start Num: 51
Candidate Starts for JohnDoe_35:
(Start: 51 @25209 has 50 MA's), (99, 25461), (111, 25512),

Gene: Jstan_37 Start: 26862, Stop: 27212, Start Num: 51
Candidate Starts for Jstan_37:
(Start: 51 @26862 has 50 MA's), (58, 26907), (69, 26946), (78, 27000), (99, 27099), (111, 27150),

Gene: JuneStar_37 Start: 27633, Stop: 27992, Start Num: 51
Candidate Starts for JuneStar_37:
(3, 27243), (Start: 51 @27633 has 50 MA's), (69, 27717), (78, 27771), (94, 27846), (111, 27921),

Gene: Kaylissa_35 Start: 25154, Stop: 25597, Start Num: 51
Candidate Starts for Kaylissa_35:
(Start: 51 @25154 has 50 MA's), (99, 25406), (111, 25457),

Gene: KeAlii_36 Start: 25807, Stop: 26250, Start Num: 51
Candidate Starts for KeAlii_36:
(11, 25615), (13, 25639), (17, 25669), (30, 25711), (33, 25723), (Start: 51 @25807 has 50 MA's), (69, 25906), (99, 26059), (111, 26110), (113, 26116), (120, 26134), (130, 26167),

Gene: Kozie_44 Start: 32286, Stop: 32642, Start Num: 50
Candidate Starts for Kozie_44:
(Start: 50 @32286 has 1 MA's), (74, 32409), (114, 32586), (116, 32592), (121, 32604),

Gene: Lego_35 Start: 25100, Stop: 25543, Start Num: 51
Candidate Starts for Lego_35:
(24, 25007), (Start: 51 @25100 has 50 MA's), (99, 25352), (111, 25403),

Gene: Liebe_37 Start: 26991, Stop: 27434, Start Num: 51
Candidate Starts for Liebe_37:
(Start: 51 @26991 has 50 MA's), (Start: 67 @27078 has 1 MA's), (99, 27243), (102, 27252), (110, 27291), (111, 27294), (113, 27300),

Gene: LitninMcQueen_97 Start: 51856, Stop: 52233, Start Num: 47
Candidate Starts for LitninMcQueen_97:
(31, 51772), (Start: 47 @51856 has 9 MA's), (53, 51868), (73, 51985), (77, 51997), (84, 52018), (94, 52069), (99, 52093), (110, 52147), (111, 52150), (117, 52165), (124, 52177), (133, 52210),

Gene: Lizalica_34 Start: 25001, Stop: 25444, Start Num: 51
Candidate Starts for Lizalica_34:

(8, 24788), (Start: 51 @25001 has 50 MA's), (69, 25100), (99, 25253), (102, 25262), (111, 25304), (113, 25310), (141, 25424),

Gene: London_35 Start: 26877, Stop: 27227, Start Num: 51

Candidate Starts for London_35:

(36, 26808), (Start: 51 @26877 has 50 MA's), (58, 26922), (69, 26961), (78, 27015), (99, 27114), (102, 27123), (111, 27165),

Gene: MaGuCo_35 Start: 25925, Stop: 26281, Start Num: 67

Candidate Starts for MaGuCo_35:

(Start: 67 @25925 has 1 MA's), (102, 26099), (111, 26141), (113, 26147),

Gene: Mabodamaca_44 Start: 28805, Stop: 29152, Start Num: 49

Candidate Starts for Mabodamaca_44:

(Start: 49 @28805 has 17 MA's), (96, 29027), (102, 29054), (111, 29096),

Gene: Mahdia_59 Start: 41385, Stop: 41786, Start Num: 48

Candidate Starts for Mahdia_59:

(Start: 48 @41385 has 7 MA's), (61, 41445), (72, 41508), (84, 41562), (90, 41598), (109, 41685), (111, 41691), (121, 41718), (131, 41757), (138, 41775),

Gene: Maureen_37 Start: 26991, Stop: 27434, Start Num: 51

Candidate Starts for Maureen_37:

(Start: 51 @26991 has 50 MA's), (Start: 67 @27078 has 1 MA's), (99, 27243), (102, 27252), (110, 27291), (111, 27294), (113, 27300),

Gene: MiniMommy_42 Start: 26738, Stop: 27181, Start Num: 51

Candidate Starts for MiniMommy_42:

(Start: 51 @26738 has 50 MA's), (69, 26837), (111, 27041), (123, 27071),

Gene: MissSwiss_35 Start: 24190, Stop: 24540, Start Num: 51

Candidate Starts for MissSwiss_35:

(11, 23998), (13, 24022), (17, 24052), (30, 24094), (Start: 51 @24190 has 50 MA's), (69, 24274), (102, 24436), (111, 24478), (113, 24484),

Gene: Mollymur_72 Start: 52998, Stop: 52633, Start Num: 47

Candidate Starts for Mollymur_72:

(34, 53064), (41, 53028), (Start: 47 @52998 has 9 MA's), (110, 52701), (111, 52698),

Gene: Morrissey_62 Start: 43281, Stop: 43685, Start Num: 48

Candidate Starts for Morrissey_62:

(19, 43155), (Start: 48 @43281 has 7 MA's), (60, 43338), (90, 43494), (98, 43524), (109, 43581), (110, 43584), (111, 43587), (121, 43614), (126, 43623), (131, 43653),

Gene: Moss_42 Start: 24158, Stop: 24592, Start Num: 51

Candidate Starts for Moss_42:

(22, 24050), (27, 24062), (33, 24086), (Start: 51 @24158 has 50 MA's), (110, 24458),

Gene: Mudpuppy_35 Start: 24965, Stop: 25408, Start Num: 51

Candidate Starts for Mudpuppy_35:

(8, 24752), (Start: 51 @24965 has 50 MA's), (69, 25064), (99, 25217), (111, 25268),

Gene: Nesbitt_39 Start: 26358, Stop: 26897, Start Num: 38

Candidate Starts for Nesbitt_39:

(16, 26283), (Start: 38 @26358 has 4 MA's), (52, 26427), (66, 26493), (73, 26541), (87, 26601), (89, 26613), (99, 26661), (101, 26667), (105, 26691), (111, 26712), (120, 26736), (130, 26769), (142, 26841), (144, 26877),

Gene: Niobe_35 Start: 26862, Stop: 27212, Start Num: 51

Candidate Starts for Niobe_35:

(Start: 51 @26862 has 50 MA's), (58, 26907), (69, 26946), (78, 27000), (99, 27099), (111, 27150),

Gene: Nitro_36 Start: 26582, Stop: 26929, Start Num: 51

Candidate Starts for Nitro_36:

(Start: 51 @26582 has 50 MA's), (58, 26627), (69, 26666), (78, 26720), (102, 26828), (111, 26870),

Gene: ObiToo_40 Start: 26129, Stop: 26491, Start Num: 51

Candidate Starts for ObiToo_40:

(Start: 51 @26129 has 50 MA's), (78, 26267), (102, 26375), (111, 26417),

Gene: Percival_46 Start: 28994, Stop: 29350, Start Num: 49

Candidate Starts for Percival_46:

(Start: 49 @28994 has 17 MA's), (57, 29039), (71, 29096), (111, 29285), (127, 29327),

Gene: Phives_38 Start: 27302, Stop: 27745, Start Num: 51

Candidate Starts for Phives_38:

(21, 27194), (23, 27197), (26, 27206), (Start: 51 @27302 has 50 MA's), (99, 27554), (102, 27563), (111, 27605), (121, 27632), (132, 27668),

Gene: Pixelle_36 Start: 26837, Stop: 27184, Start Num: 51

Candidate Starts for Pixelle_36:

(Start: 51 @26837 has 50 MA's), (69, 26921), (102, 27083), (111, 27125),

Gene: Powerpuff_37 Start: 26303, Stop: 26746, Start Num: 51

Candidate Starts for Powerpuff_37:

(Start: 51 @26303 has 50 MA's), (99, 26555), (111, 26606),

Gene: Pumpkins_36 Start: 26180, Stop: 26539, Start Num: 51

Candidate Starts for Pumpkins_36:

(20, 26060), (Start: 51 @26180 has 50 MA's), (78, 26318), (111, 26468),

Gene: Puppies_60 Start: 41273, Stop: 41683, Start Num: 48

Candidate Starts for Puppies_60:

(Start: 48 @41273 has 7 MA's), (54, 41294), (78, 41426), (88, 41468), (89, 41477), (109, 41582), (111, 41588),

Gene: REQ3_19 Start: 8920, Stop: 9282, Start Num: 49

Candidate Starts for REQ3_19:

(Start: 49 @8920 has 17 MA's), (57, 8965), (77, 9061), (81, 9067), (82, 9073), (99, 9157), (111, 9211), (130, 9262), (134, 9274),

Gene: Reedo_35 Start: 24148, Stop: 24591, Start Num: 51

Candidate Starts for Reedo_35:

(Start: 51 @24148 has 50 MA's), (58, 24193), (69, 24247), (99, 24400), (102, 24409), (111, 24451), (113, 24457), (121, 24478),

Gene: Samy_60 Start: 37282, Stop: 37698, Start Num: 46
Candidate Starts for Samy_60:
(Start: 46 @37282 has 1 MA's), (70, 37390), (75, 37414), (101, 37534), (102, 37537), (103, 37549),
(110, 37576), (113, 37585), (121, 37606), (128, 37624),

Gene: Schmidt_51 Start: 34772, Stop: 35146, Start Num: 49
Candidate Starts for Schmidt_51:
(Start: 49 @34772 has 17 MA's), (53, 34784), (73, 34901), (79, 34928), (81, 34934), (101, 35030),
(108, 35072), (116, 35096),

Gene: ShakeltOph_42 Start: 26737, Stop: 27180, Start Num: 51
Candidate Starts for ShakeltOph_42:
(Start: 51 @26737 has 50 MA's), (69, 26836), (111, 27040), (123, 27070),

Gene: Simpson_37 Start: 25218, Stop: 25661, Start Num: 51
Candidate Starts for Simpson_37:
(Start: 51 @25218 has 50 MA's), (69, 25317), (99, 25470), (111, 25521),

Gene: Snek_35 Start: 24475, Stop: 24915, Start Num: 51
Candidate Starts for Snek_35:
(11, 24304), (13, 24328), (17, 24358), (30, 24400), (Start: 51 @24475 has 50 MA's), (58, 24520), (99,
24727), (111, 24778), (130, 24835),

Gene: Soondubu_33 Start: 27354, Stop: 27797, Start Num: 51
Candidate Starts for Soondubu_33:
(1, 26925), (11, 27192), (17, 27246), (Start: 51 @27354 has 50 MA's), (102, 27615), (111, 27657),
(113, 27663), (120, 27681), (126, 27693),

Gene: SpeedDemon_740 Start: 54721, Stop: 54356, Start Num: 47
Candidate Starts for SpeedDemon_740:
(41, 54751), (Start: 47 @54721 has 9 MA's), (110, 54424), (129, 54376),

Gene: SuMoo_46 Start: 28468, Stop: 28815, Start Num: 49
Candidate Starts for SuMoo_46:
(29, 28372), (44, 28456), (Start: 49 @28468 has 17 MA's), (96, 28690), (102, 28717), (111, 28759),

Gene: Sue2_36 Start: 26239, Stop: 26682, Start Num: 51
Candidate Starts for Sue2_36:
(Start: 51 @26239 has 50 MA's), (78, 26392), (105, 26521), (111, 26542), (113, 26548),

Gene: Tallboi_36 Start: 27029, Stop: 27379, Start Num: 51
Candidate Starts for Tallboi_36:
(18, 26903), (Start: 51 @27029 has 50 MA's), (58, 27074), (102, 27275), (111, 27317),

Gene: Tbone_34 Start: 25013, Stop: 25456, Start Num: 51
Candidate Starts for Tbone_34:
(8, 24791), (Start: 51 @25013 has 50 MA's), (69, 25112), (99, 25265), (111, 25316),

Gene: TforTroy_37 Start: 26052, Stop: 26408, Start Num: 51
Candidate Starts for TforTroy_37:
(20, 25932), (Start: 51 @26052 has 50 MA's), (111, 26340),

Gene: Tian_35 Start: 26817, Stop: 27164, Start Num: 51

Candidate Starts for Tian_35:

(Start: 51 @26817 has 50 MA's), (69, 26901), (102, 27063), (111, 27105),

Gene: TinaLin_56 Start: 36975, Stop: 37346, Start Num: 51

Candidate Starts for TinaLin_56:

(Start: 49 @36972 has 17 MA's), (Start: 51 @36975 has 50 MA's), (53, 36984), (73, 37101), (101, 37230), (116, 37296),

Gene: TinyDot_60 Start: 38014, Stop: 38394, Start Num: 49

Candidate Starts for TinyDot_60:

(2, 37603), (6, 37699), (Start: 49 @38014 has 17 MA's), (53, 38026), (62, 38077), (69, 38119), (120, 38338), (121, 38341), (129, 38374),

Gene: Trine_64 Start: 42629, Stop: 43021, Start Num: 49

Candidate Starts for Trine_64:

(4, 42272), (5, 42302), (7, 42380), (Start: 49 @42629 has 17 MA's), (82, 42797), (86, 42815), (98, 42872), (109, 42929), (110, 42932), (111, 42935), (121, 42962),

Gene: Tuck_39 Start: 27855, Stop: 28298, Start Num: 51

Candidate Starts for Tuck_39:

(Start: 51 @27855 has 50 MA's), (99, 28107), (102, 28116), (111, 28158), (121, 28185), (132, 28221),

Gene: Turab_34 Start: 25291, Stop: 25641, Start Num: 51

Candidate Starts for Turab_34:

(11, 25111), (17, 25165), (Start: 51 @25291 has 50 MA's), (58, 25336), (69, 25375), (102, 25537), (111, 25579),

Gene: Tutumahutu_35 Start: 25185, Stop: 25628, Start Num: 51

Candidate Starts for Tutumahutu_35:

(Start: 51 @25185 has 50 MA's), (69, 25284), (99, 25437), (111, 25488),

Gene: Tweety19_35 Start: 24474, Stop: 24914, Start Num: 51

Candidate Starts for Tweety19_35:

(11, 24303), (13, 24327), (17, 24357), (30, 24399), (Start: 51 @24474 has 50 MA's), (58, 24519), (99, 24726), (111, 24777), (130, 24834),

Gene: Upyo_68 Start: 44581, Stop: 44982, Start Num: 48

Candidate Starts for Upyo_68:

(15, 44440), (Start: 48 @44581 has 7 MA's), (84, 44758), (90, 44794), (91, 44797), (109, 44881), (111, 44887), (121, 44914), (126, 44923), (134, 44959), (136, 44968),

Gene: UtzChips_43 Start: 27442, Stop: 27804, Start Num: 49

Candidate Starts for UtzChips_43:

(28, 27361), (Start: 49 @27442 has 17 MA's), (94, 27658), (111, 27733),

Gene: VResidence_36 Start: 25348, Stop: 25791, Start Num: 51

Candidate Starts for VResidence_36:

(Start: 51 @25348 has 50 MA's), (99, 25600), (102, 25609), (111, 25651), (113, 25657), (123, 25681), (140, 25768),

Gene: VroomVroom_40 Start: 26879, Stop: 27325, Start Num: 51

Candidate Starts for VroomVroom_40:

(25, 26771), (Start: 46 @26867 has 1 MA's), (Start: 51 @26879 has 50 MA's), (69, 26978), (111, 27182), (139, 27275),

Gene: Warda_35 Start: 25189, Stop: 25632, Start Num: 51

Candidate Starts for Warda_35:

(8, 24967), (Start: 51 @25189 has 50 MA's), (69, 25288), (99, 25441), (111, 25492),

Gene: Widow_60 Start: 41819, Stop: 42229, Start Num: 48

Candidate Starts for Widow_60:

(Start: 48 @41819 has 7 MA's), (78, 41972), (88, 42014), (89, 42023), (109, 42128), (111, 42134),

Gene: Wildwest_35 Start: 25377, Stop: 25820, Start Num: 51

Candidate Starts for Wildwest_35:

(11, 25194), (13, 25218), (17, 25248), (Start: 51 @25377 has 50 MA's), (99, 25629), (102, 25638), (111, 25680), (113, 25686), (132, 25743), (141, 25800),

Gene: Yang_36 Start: 25545, Stop: 25904, Start Num: 51

Candidate Starts for Yang_36:

(Start: 51 @25545 has 50 MA's), (78, 25683), (94, 25758), (111, 25833),

Gene: YesChef_35 Start: 25162, Stop: 25605, Start Num: 51

Candidate Starts for YesChef_35:

(Start: 51 @25162 has 50 MA's), (99, 25414), (111, 25465),

Gene: phiSASD1_10 Start: 25051, Stop: 25515, Start Num: 38

Candidate Starts for phiSASD1_10:

(Start: 38 @25051 has 4 MA's), (87, 25246), (89, 25258), (99, 25306), (100, 25309), (111, 25351), (125, 25384),