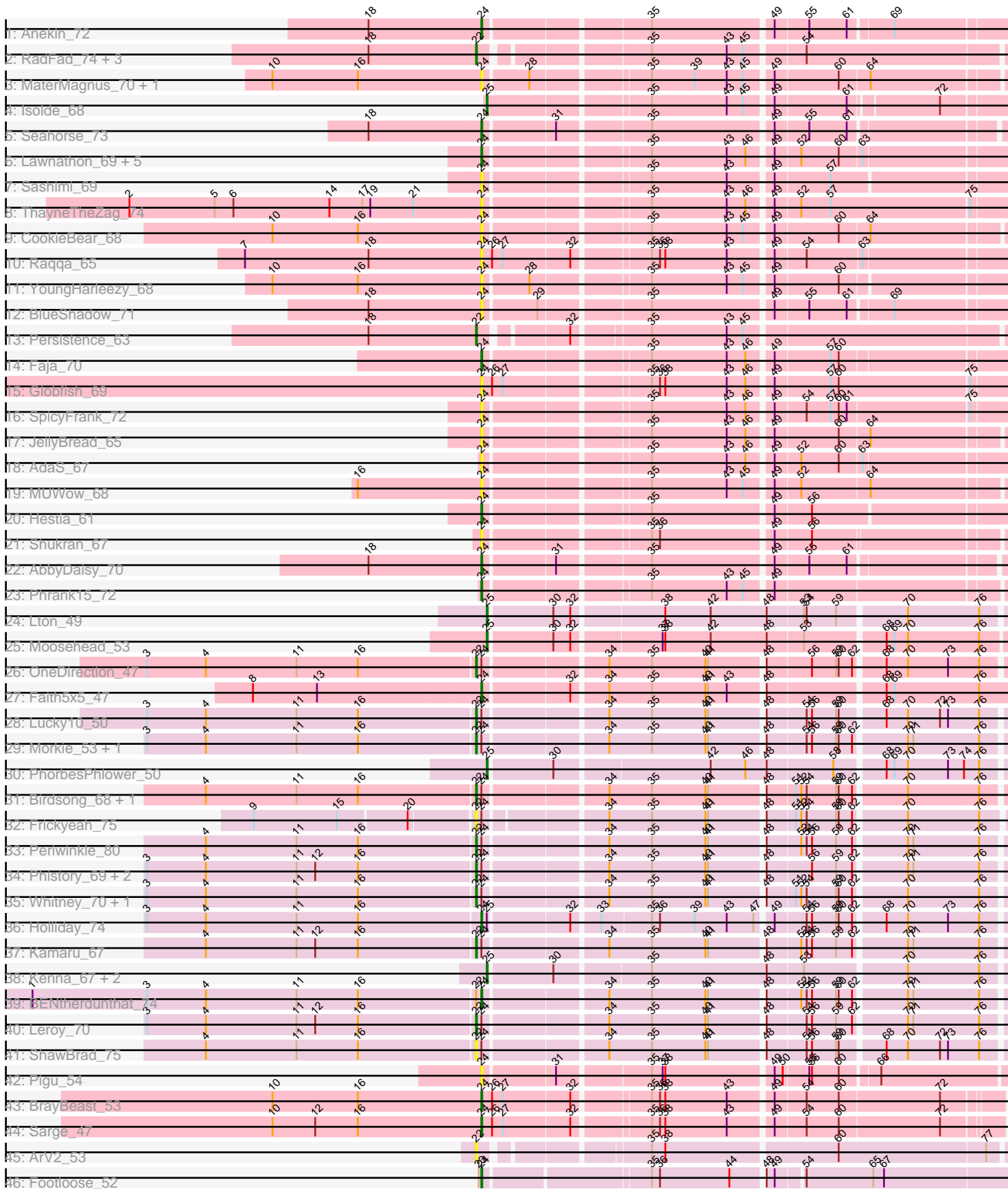


Pham 224586



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 224586 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224586 has 62 members, 23 are drafts.

Phages represented in each track:

- Track 1 : Anekin_72
- Track 2 : RadFad_74, Vopal_71, Hillester_74, MidnightRain_72
- Track 3 : MaterMagnus_70, Aikyam_68
- Track 4 : Isolde_68
- Track 5 : Seahorse_73
- Track 6 : Lawnathon_69, Windest_71, BillyTP_70, Richie_72, BenchScraper_69, Raphaella_69
- Track 7 : Sashimi_69
- Track 8 : ThayneTheZag_74
- Track 9 : CookieBear_68
- Track 10 : Raqqa_65
- Track 11 : YoungHarleezy_68
- Track 12 : BlueShadow_71
- Track 13 : Persistence_63
- Track 14 : Faja_70
- Track 15 : Globfish_69
- Track 16 : SpicyFrank_72
- Track 17 : JellyBread_65
- Track 18 : AdaS_67
- Track 19 : MUWow_68
- Track 20 : Hestia_61
- Track 21 : Shukran_67
- Track 22 : AbbyDaisy_70
- Track 23 : Phrank15_72
- Track 24 : Lton_49
- Track 25 : Moosehead_53
- Track 26 : OneDirection_47
- Track 27 : Faith5x5_47
- Track 28 : Lucky10_50
- Track 29 : Morkie_53, Pepperoni_49
- Track 30 : PhorbesPhlower_50
- Track 31 : Birdsong_68, Asapag_69
- Track 32 : Frickyeah_75
- Track 33 : Periwinkle_80
- Track 34 : Phistory_69, Crater_70, Apricot_70
- Track 35 : Whitney_70, Budski_75
- Track 36 : Holliday_74

- Track 37 : Kamaru_67
- Track 38 : Kenna_67, Getalong_73, Lutum_73
- Track 39 : BENtherdunthat_74
- Track 40 : Leroy_70
- Track 41 : ShawBrad_75
- Track 42 : Pigu_54
- Track 43 : BrayBeast_53
- Track 44 : Sarge_47
- Track 45 : ArV2_53
- Track 46 : Footloose_52

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

The start number called the most often in the published annotations is 24, it was called in 16 of the 39 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AbbyDaisy_70, AdaS_67, Aikyam_68, Anekin_72, BENtherdunthat_74, BenchScraper_69, BillyTP_70, BlueShadow_71, BrayBeast_53, CookieBear_68, Faith5x5_47, Faja_70, Footloose_52, Globfish_69, Hestia_61, Holliday_74, JellyBread_65, Lawnathon_69, MUWow_68, MaterMagnus_70, Phrank15_72, Pigu_54, Raphaella_69, Raqqa_65, Richie_72, Sarge_47, Sashimi_69, Seahorse_73, Shukran_67, SpicyFrank_72, ThayneTheZag_74, Windest_71, YoungHarleezy_68,

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

- Apricot_70, Asapag_69, Birdsong_68, Budski_75, Crater_70, Frickyeah_75, Kamaru_67, Leroy_70, Lucky10_50, Morkie_53, OneDirection_47, Pepperoni_49, Periwinkle_80, Phistory_69, ShawBrad_75, Whitney_70,

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

- ArV2_53, Getalong_73, Hillester_74, Isolde_68, Kenna_67, Lton_49, Lutum_73, MidnightRain_72, Moosehead_53, Persistence_63, PhorbesPhlower_50, RadFad_74, Vopal_71,

Summary by start number:

Start 22:

- Found in 23 of 62 (37.1%) of genes in pham
- Manual Annotations of this start: 16 of 39
- Called 95.7% of time when present
- Phage (with cluster) where this start called: Apricot_70 (DN3), ArV2_53 (singleton), Asapag_69 (DN1), Birdsong_68 (DN), Budski_75 (DN), Crater_70 (DN3), Frickyeah_75 (DN1), Hillester_74 (AY), Kamaru_67 (DN1), Leroy_70 (DN1), Lucky10_50 (DH), MidnightRain_72 (AY), Morkie_53 (DH), OneDirection_47 (CZ6), Pepperoni_49 (CZ), Periwinkle_80 (DN1), Persistence_63 (AY), Phistory_69 (DN1), RadFad_74 (AY), ShawBrad_75 (DN1), Vopal_71 (AY), Whitney_70 (DN1),

Start 24:

- Found in 49 of 62 (79.0%) of genes in pham
- Manual Annotations of this start: 16 of 39

- Called 67.3% of time when present
- Phage (with cluster) where this start called: AbbyDaisy_70 (AY), AdaS_67 (AY), Aikyam_68 (AY), Anekin_72 (AY), BENtherdunthat_74 (DN1), BenchScraper_69 (AY), BillyTP_70 (AY), BlueShadow_71 (AY), BrayBeast_53 (FB), CookieBear_68 (AY), Faith5x5_47 (CZ6), Faja_70 (AY), Footloose_52 (singleton), Globfish_69 (AY), Hestia_61 (AY), Holliday_74 (DN1), JellyBread_65 (AY), Lawnathon_69 (AY), MUWow_68 (AY), MaterMagnus_70 (AY), Phrank15_72 (AY), Pigu_54 (FB), Raphaella_69 (AY), Raqqa_65 (AY), Richie_72 (AY), Sarge_47 (FB), Sashimi_69 (AY), Seahorse_73 (AY), Shukran_67 (AY), SpicyFrank_72 (AY), ThayneTheZag_74 (AY), Windest_71 (AY), YoungHarleezy_68 (AY),

Start 25:

- Found in 8 of 62 (12.9%) of genes in pham
- Manual Annotations of this start: 7 of 39
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Getalong_73 (DN1), Isolde_68 (AY), Kenna_67 (DN1), Lton_49 (CZ), Lutum_73 (DN1), Moosehead_53 (CZ6), PhorbesPhlower_50 (DH),

Summary by clusters:

There are 9 clusters represented in this pham: DN, singleton, DH, CZ6, CZ, FB, DN1, DN3, AY,

Info for manual annotations of cluster AY:

- Start number 22 was manually annotated 3 times for cluster AY.
- Start number 24 was manually annotated 10 times for cluster AY.
- Start number 25 was manually annotated 1 time for cluster AY.

Info for manual annotations of cluster CZ:

- Start number 25 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ6:

- Start number 22 was manually annotated 1 time for cluster CZ6.
- Start number 24 was manually annotated 1 time for cluster CZ6.
- Start number 25 was manually annotated 1 time for cluster CZ6.

Info for manual annotations of cluster DH:

- Start number 22 was manually annotated 2 times for cluster DH.
- Start number 25 was manually annotated 1 time for cluster DH.

Info for manual annotations of cluster DN:

- Start number 22 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 22 was manually annotated 6 times for cluster DN1.
- Start number 24 was manually annotated 2 times for cluster DN1.
- Start number 25 was manually annotated 3 times for cluster DN1.

Info for manual annotations of cluster DN3:

- Start number 22 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster FB:

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

Gene Information:

Gene: AbbyDaisy_70 Start: 37654, Stop: 38199, Start Num: 24

Candidate Starts for AbbyDaisy_70:

(18, 37528), (Start: 24 @37654 has 16 MA's), (31, 37729), (35, 37825), (49, 37954), (55, 37990), (61, 38032),

Gene: AdaS_67 Start: 34944, Stop: 35498, Start Num: 24

Candidate Starts for AdaS_67:

(Start: 24 @34944 has 16 MA's), (35, 35112), (43, 35196), (46, 35217), (49, 35241), (52, 35268), (60, 35310), (63, 35334),

Gene: Aikyam_68 Start: 34815, Stop: 35363, Start Num: 24

Candidate Starts for Aikyam_68:

(10, 34581), (16, 34677), (Start: 24 @34815 has 16 MA's), (28, 34863), (35, 34983), (39, 35031), (43, 35067), (45, 35085), (49, 35112), (60, 35181), (64, 35214),

Gene: Anekin_72 Start: 37646, Stop: 38200, Start Num: 24

Candidate Starts for Anekin_72:

(18, 37520), (Start: 24 @37646 has 16 MA's), (35, 37817), (49, 37946), (55, 37982), (61, 38024), (69, 38069),

Gene: Apricot_70 Start: 41809, Stop: 42369, Start Num: 22

Candidate Starts for Apricot_70:

(3, 41443), (4, 41509), (11, 41611), (12, 41632), (16, 41680), (Start: 22 @41809 has 16 MA's), (Start: 24 @41815 has 16 MA's), (34, 41941), (35, 41989), (40, 42049), (41, 42052), (48, 42109), (56, 42157), (59, 42184), (62, 42202), (70, 42256), (71, 42262), (76, 42334),

Gene: ArV2_53 Start: 29854, Stop: 30420, Start Num: 22

Candidate Starts for ArV2_53:

(Start: 22 @29854 has 16 MA's), (35, 30016), (38, 30031), (60, 30217), (77, 30379),

Gene: Asapag_69 Start: 41803, Stop: 42363, Start Num: 22

Candidate Starts for Asapag_69:

(4, 41503), (11, 41605), (16, 41674), (Start: 22 @41803 has 16 MA's), (Start: 24 @41809 has 16 MA's), (34, 41935), (35, 41983), (40, 42043), (41, 42046), (48, 42103), (51, 42133), (52, 42139), (54, 42145), (59, 42178), (60, 42181), (62, 42196), (70, 42250), (76, 42328),

Gene: BENtherdunthat_74 Start: 43163, Stop: 43717, Start Num: 24

Candidate Starts for BENtherdunthat_74:

(1, 42662), (3, 42791), (4, 42857), (11, 42959), (16, 43028), (Start: 22 @43157 has 16 MA's), (Start: 24 @43163 has 16 MA's), (34, 43289), (35, 43337), (40, 43397), (41, 43400), (48, 43457), (52, 43493), (54, 43499), (56, 43505), (59, 43532), (60, 43535), (62, 43550), (70, 43604), (71, 43610), (76, 43682),

Gene: BenchScraper_69 Start: 36331, Stop: 36885, Start Num: 24

Candidate Starts for BenchScraper_69:

(Start: 24 @36331 has 16 MA's), (35, 36499), (43, 36583), (46, 36604), (49, 36628), (52, 36655), (60, 36697), (63, 36721),

Gene: BillyTP_70 Start: 38186, Stop: 38740, Start Num: 24

Candidate Starts for BillyTP_70:

(Start: 24 @38186 has 16 MA's), (35, 38354), (43, 38438), (46, 38459), (49, 38483), (52, 38510), (60, 38552), (63, 38576),

Gene: Birdsong_68 Start: 41539, Stop: 42099, Start Num: 22

Candidate Starts for Birdsong_68:

(4, 41239), (11, 41341), (16, 41410), (Start: 22 @41539 has 16 MA's), (Start: 24 @41545 has 16 MA's), (34, 41671), (35, 41719), (40, 41779), (41, 41782), (48, 41839), (51, 41869), (52, 41875), (54, 41881), (59, 41914), (60, 41917), (62, 41932), (70, 41986), (76, 42064),

Gene: BlueShadow_71 Start: 36657, Stop: 37211, Start Num: 24

Candidate Starts for BlueShadow_71:

(18, 36531), (Start: 24 @36657 has 16 MA's), (29, 36714), (35, 36828), (49, 36957), (55, 36993), (61, 37035), (69, 37080),

Gene: BrayBeast_53 Start: 30531, Stop: 31082, Start Num: 24

Candidate Starts for BrayBeast_53:

(10, 30297), (16, 30393), (Start: 24 @30531 has 16 MA's), (26, 30543), (27, 30555), (32, 30627), (35, 30705), (36, 30714), (38, 30720), (43, 30789), (49, 30834), (54, 30867), (60, 30903), (72, 31014),

Gene: Budski_75 Start: 43660, Stop: 44220, Start Num: 22

Candidate Starts for Budski_75:

(3, 43294), (4, 43360), (11, 43462), (16, 43531), (Start: 22 @43660 has 16 MA's), (Start: 24 @43666 has 16 MA's), (34, 43792), (35, 43840), (40, 43900), (41, 43903), (48, 43960), (51, 43990), (52, 43996), (54, 44002), (59, 44035), (60, 44038), (62, 44053), (70, 44107), (76, 44185),

Gene: CookieBear_68 Start: 36246, Stop: 36794, Start Num: 24

Candidate Starts for CookieBear_68:

(10, 36012), (16, 36108), (Start: 24 @36246 has 16 MA's), (35, 36414), (43, 36498), (45, 36516), (49, 36543), (60, 36612), (64, 36645),

Gene: Crater_70 Start: 42204, Stop: 42764, Start Num: 22

Candidate Starts for Crater_70:

(3, 41838), (4, 41904), (11, 42006), (12, 42027), (16, 42075), (Start: 22 @42204 has 16 MA's), (Start: 24 @42210 has 16 MA's), (34, 42336), (35, 42384), (40, 42444), (41, 42447), (48, 42504), (56, 42552), (59, 42579), (62, 42597), (70, 42651), (71, 42657), (76, 42729),

Gene: Faith5x5_47 Start: 32247, Stop: 32810, Start Num: 24

Candidate Starts for Faith5x5_47:

(8, 32001), (13, 32070), (Start: 24 @32247 has 16 MA's), (32, 32337), (34, 32373), (35, 32421), (40, 32481), (41, 32484), (43, 32505), (48, 32541), (68, 32664), (69, 32673), (76, 32766),

Gene: Faja_70 Start: 37936, Stop: 38490, Start Num: 24

Candidate Starts for Faja_70:

(Start: 24 @37936 has 16 MA's), (35, 38104), (43, 38188), (46, 38209), (49, 38233), (57, 38293), (60, 38302),

Gene: Footloose_52 Start: 30290, Stop: 30850, Start Num: 24

Candidate Starts for Footloose_52:

(23, 30287), (Start: 24 @30290 has 16 MA's), (35, 30464), (36, 30473), (44, 30551), (48, 30584), (49, 30593), (54, 30620), (65, 30692), (67, 30704),

Gene: Frickyeah_75 Start: 42944, Stop: 43498, Start Num: 22

Candidate Starts for Frickyeah_75:

(9, 42710), (15, 42803), (20, 42878), (Start: 22 @42944 has 16 MA's), (Start: 24 @42950 has 16 MA's), (34, 43070), (35, 43118), (40, 43178), (41, 43181), (48, 43238), (51, 43268), (52, 43274), (54, 43280), (59, 43313), (60, 43316), (62, 43331), (70, 43385), (76, 43463),

Gene: Getalong_73 Start: 44401, Stop: 44958, Start Num: 25

Candidate Starts for Getalong_73:

(Start: 25 @44401 has 7 MA's), (30, 44470), (35, 44569), (48, 44698), (53, 44737), (70, 44845), (76, 44923),

Gene: Globfish_69 Start: 37028, Stop: 37594, Start Num: 24

Candidate Starts for Globfish_69:

(Start: 24 @37028 has 16 MA's), (26, 37040), (27, 37052), (35, 37202), (36, 37211), (38, 37217), (43, 37286), (46, 37307), (49, 37331), (57, 37391), (60, 37400), (75, 37544),

Gene: Hestia_61 Start: 34159, Stop: 34713, Start Num: 24

Candidate Starts for Hestia_61:

(Start: 24 @34159 has 16 MA's), (35, 34327), (49, 34456), (56, 34495),

Gene: Hillester_74 Start: 38114, Stop: 38662, Start Num: 22

Candidate Starts for Hillester_74:

(18, 37994), (Start: 22 @38114 has 16 MA's), (35, 38279), (43, 38363), (45, 38381), (54, 38441),

Gene: Holliday_74 Start: 45922, Stop: 46473, Start Num: 24

Candidate Starts for Holliday_74:

(3, 45550), (4, 45616), (11, 45718), (16, 45787), (Start: 24 @45922 has 16 MA's), (Start: 25 @45928 has 7 MA's), (32, 46012), (33, 46039), (35, 46093), (36, 46102), (39, 46141), (43, 46177), (47, 46207), (49, 46222), (54, 46255), (56, 46261), (59, 46288), (60, 46291), (62, 46306), (68, 46336), (70, 46360), (73, 46405), (76, 46438),

Gene: Isolde_68 Start: 36363, Stop: 36905, Start Num: 25

Candidate Starts for Isolde_68:

(Start: 25 @36363 has 7 MA's), (35, 36531), (43, 36615), (45, 36633), (49, 36660), (61, 36738), (72, 36831),

Gene: JellyBread_65 Start: 35591, Stop: 36139, Start Num: 24

Candidate Starts for JellyBread_65:

(Start: 24 @35591 has 16 MA's), (35, 35759), (43, 35843), (46, 35864), (49, 35888), (60, 35957), (64, 35990),

Gene: Kamaru_67 Start: 41724, Stop: 42284, Start Num: 22

Candidate Starts for Kamaru_67:

(4, 41424), (11, 41526), (12, 41547), (16, 41595), (Start: 22 @41724 has 16 MA's), (Start: 24 @41730 has 16 MA's), (34, 41856), (35, 41904), (40, 41964), (41, 41967), (48, 42024), (52, 42060), (54, 42066), (56, 42072), (59, 42099), (62, 42117), (70, 42171), (71, 42177), (76, 42249),

Gene: Kenna_67 Start: 41841, Stop: 42398, Start Num: 25

Candidate Starts for Kenna_67:

(Start: 25 @41841 has 7 MA's), (30, 41910), (35, 42009), (48, 42138), (53, 42177), (70, 42285), (76, 42363),

Gene: Lawnathon_69 Start: 36731, Stop: 37285, Start Num: 24

Candidate Starts for Lawnathon_69:

(Start: 24 @36731 has 16 MA's), (35, 36899), (43, 36983), (46, 37004), (49, 37028), (52, 37055), (60, 37097), (63, 37121),

Gene: Leroy_70 Start: 42140, Stop: 42700, Start Num: 22

Candidate Starts for Leroy_70:

(3, 41774), (4, 41840), (11, 41942), (12, 41963), (16, 42011), (Start: 22 @42140 has 16 MA's), (Start: 24 @42146 has 16 MA's), (34, 42272), (35, 42320), (40, 42380), (41, 42383), (48, 42440), (54, 42482), (56, 42488), (59, 42515), (62, 42533), (70, 42587), (71, 42593), (76, 42665),

Gene: Lton_49 Start: 31623, Stop: 32180, Start Num: 25

Candidate Starts for Lton_49:

(Start: 25 @31623 has 7 MA's), (30, 31692), (32, 31710), (38, 31806), (42, 31857), (48, 31920), (53, 31959), (54, 31962), (59, 31995), (70, 32067), (76, 32145),

Gene: Lucky10_50 Start: 34323, Stop: 34883, Start Num: 22

Candidate Starts for Lucky10_50:

(3, 33957), (4, 34023), (11, 34125), (16, 34194), (Start: 22 @34323 has 16 MA's), (Start: 24 @34329 has 16 MA's), (34, 34455), (35, 34503), (40, 34563), (41, 34566), (48, 34623), (54, 34665), (56, 34671), (59, 34698), (60, 34701), (68, 34746), (70, 34770), (72, 34806), (73, 34815), (76, 34848),

Gene: Lutum_73 Start: 43004, Stop: 43561, Start Num: 25

Candidate Starts for Lutum_73:

(Start: 25 @43004 has 7 MA's), (30, 43073), (35, 43172), (48, 43301), (53, 43340), (70, 43448), (76, 43526),

Gene: MUWow_68 Start: 36827, Stop: 37375, Start Num: 24

Candidate Starts for MUWow_68:

(16, 36689), (Start: 24 @36827 has 16 MA's), (35, 36995), (43, 37079), (45, 37097), (49, 37124), (52, 37151), (64, 37226),

Gene: MaterMagnus_70 Start: 36987, Stop: 37535, Start Num: 24

Candidate Starts for MaterMagnus_70:

(10, 36753), (16, 36849), (Start: 24 @36987 has 16 MA's), (28, 37035), (35, 37155), (39, 37203), (43, 37239), (45, 37257), (49, 37284), (60, 37353), (64, 37386),

Gene: MidnightRain_72 Start: 37900, Stop: 38448, Start Num: 22

Candidate Starts for MidnightRain_72:

(18, 37780), (Start: 22 @37900 has 16 MA's), (35, 38065), (43, 38149), (45, 38167), (54, 38227),

Gene: Moosehead_53 Start: 32750, Stop: 33310, Start Num: 25

Candidate Starts for Moosehead_53:

(Start: 25 @32750 has 7 MA's), (30, 32819), (32, 32837), (37, 32930), (38, 32933), (42, 32984), (48, 33047), (53, 33086), (68, 33170), (69, 33179), (70, 33194), (76, 33272),

Gene: Morkie_53 Start: 33852, Stop: 34412, Start Num: 22

Candidate Starts for Morkie_53:

(3, 33486), (4, 33552), (11, 33654), (16, 33723), (Start: 22 @33852 has 16 MA's), (Start: 24 @33858 has 16 MA's), (34, 33984), (35, 34032), (40, 34092), (41, 34095), (48, 34152), (54, 34194), (56, 34200), (59, 34227), (60, 34230), (62, 34245), (70, 34299), (71, 34305), (76, 34377),

Gene: OneDirection_47 Start: 31245, Stop: 31805, Start Num: 22

Candidate Starts for OneDirection_47:

(3, 30879), (4, 30945), (11, 31047), (16, 31116), (Start: 22 @31245 has 16 MA's), (Start: 24 @31251 has 16 MA's), (34, 31377), (35, 31425), (40, 31485), (41, 31488), (48, 31545), (56, 31593), (59, 31620), (60, 31623), (62, 31638), (68, 31668), (70, 31692), (73, 31737), (76, 31770),

Gene: Pepperoni_49 Start: 33008, Stop: 33568, Start Num: 22

Candidate Starts for Pepperoni_49:

(3, 32642), (4, 32708), (11, 32810), (16, 32879), (Start: 22 @33008 has 16 MA's), (Start: 24 @33014 has 16 MA's), (34, 33140), (35, 33188), (40, 33248), (41, 33251), (48, 33308), (54, 33350), (56, 33356), (59, 33383), (60, 33386), (62, 33401), (70, 33455), (71, 33461), (76, 33533),

Gene: Periwinkle_80 Start: 45304, Stop: 45864, Start Num: 22

Candidate Starts for Periwinkle_80:

(4, 45004), (11, 45106), (16, 45175), (Start: 22 @45304 has 16 MA's), (Start: 24 @45310 has 16 MA's), (34, 45436), (35, 45484), (40, 45544), (41, 45547), (48, 45604), (52, 45640), (54, 45646), (56, 45652), (59, 45679), (62, 45697), (70, 45751), (71, 45757), (76, 45829),

Gene: Persistence_63 Start: 35457, Stop: 36002, Start Num: 22

Candidate Starts for Persistence_63:

(18, 35337), (Start: 22 @35457 has 16 MA's), (32, 35541), (35, 35619), (43, 35703), (45, 35721),

Gene: Phistory_69 Start: 41369, Stop: 41929, Start Num: 22

Candidate Starts for Phistory_69:

(3, 41003), (4, 41069), (11, 41171), (12, 41192), (16, 41240), (Start: 22 @41369 has 16 MA's), (Start: 24 @41375 has 16 MA's), (34, 41501), (35, 41549), (40, 41609), (41, 41612), (48, 41669), (56, 41717), (59, 41744), (62, 41762), (70, 41816), (71, 41822), (76, 41894),

Gene: PhorbesPhlower_50 Start: 32807, Stop: 33364, Start Num: 25

Candidate Starts for PhorbesPhlower_50:

(Start: 25 @32807 has 7 MA's), (30, 32876), (42, 33041), (46, 33080), (48, 33104), (58, 33176), (68, 33227), (69, 33236), (70, 33251), (73, 33296), (74, 33314), (76, 33329),

Gene: Phrank15_72 Start: 37310, Stop: 37858, Start Num: 24

Candidate Starts for Phrank15_72:

(Start: 24 @37310 has 16 MA's), (35, 37478), (43, 37562), (45, 37580), (49, 37607),

Gene: Pigu_54 Start: 29678, Stop: 30238, Start Num: 24

Candidate Starts for Pigu_54:

(Start: 24 @29678 has 16 MA's), (31, 29753), (35, 29849), (37, 29861), (38, 29864), (49, 29978), (50, 29987), (55, 30014), (56, 30017), (60, 30047), (66, 30086),

Gene: RadFad_74 Start: 38114, Stop: 38662, Start Num: 22

Candidate Starts for RadFad_74:

(18, 37994), (Start: 22 @38114 has 16 MA's), (35, 38279), (43, 38363), (45, 38381), (54, 38441),

Gene: Raphaella_69 Start: 36429, Stop: 36983, Start Num: 24

Candidate Starts for Raphaella_69:

(Start: 24 @36429 has 16 MA's), (35, 36597), (43, 36681), (46, 36702), (49, 36726), (52, 36753), (60, 36795), (63, 36819),

Gene: Raqqa_65 Start: 34745, Stop: 35305, Start Num: 24

Candidate Starts for Raqqa_65:

(7, 34481), (18, 34619), (Start: 24 @34745 has 16 MA's), (26, 34757), (27, 34769), (32, 34841), (35, 34919), (36, 34928), (38, 34934), (43, 35003), (49, 35048), (54, 35081), (63, 35141),

Gene: Richie_72 Start: 38234, Stop: 38788, Start Num: 24

Candidate Starts for Richie_72:

(Start: 24 @38234 has 16 MA's), (35, 38402), (43, 38486), (46, 38507), (49, 38531), (52, 38558), (60, 38600), (63, 38624),

Gene: Sarge_47 Start: 28278, Stop: 28829, Start Num: 24

Candidate Starts for Sarge_47:

(10, 28044), (12, 28092), (16, 28140), (Start: 24 @28278 has 16 MA's), (26, 28290), (27, 28302), (32, 28374), (35, 28452), (36, 28461), (38, 28467), (43, 28536), (49, 28581), (54, 28614), (60, 28650), (72, 28761),

Gene: Sashimi_69 Start: 37351, Stop: 37905, Start Num: 24

Candidate Starts for Sashimi_69:

(Start: 24 @37351 has 16 MA's), (35, 37519), (43, 37603), (49, 37648), (57, 37708),

Gene: Seahorse_73 Start: 38791, Stop: 39336, Start Num: 24

Candidate Starts for Seahorse_73:

(18, 38665), (Start: 24 @38791 has 16 MA's), (31, 38866), (35, 38962), (49, 39091), (55, 39127), (61, 39169),

Gene: ShawBrad_75 Start: 42460, Stop: 43020, Start Num: 22

Candidate Starts for ShawBrad_75:

(4, 42160), (11, 42262), (16, 42331), (Start: 22 @42460 has 16 MA's), (Start: 24 @42466 has 16 MA's), (34, 42592), (35, 42640), (40, 42700), (41, 42703), (48, 42760), (54, 42802), (56, 42808), (59, 42835), (60, 42838), (68, 42883), (70, 42907), (72, 42943), (73, 42952), (76, 42985),

Gene: Shukran_67 Start: 35241, Stop: 35786, Start Num: 24

Candidate Starts for Shukran_67:

(Start: 24 @35241 has 16 MA's), (35, 35409), (36, 35418), (49, 35538), (56, 35577),

Gene: SpicyFrank_72 Start: 37649, Stop: 38206, Start Num: 24

Candidate Starts for SpicyFrank_72:

(Start: 24 @37649 has 16 MA's), (35, 37817), (43, 37901), (46, 37922), (49, 37946), (54, 37979), (57, 38006), (60, 38015), (61, 38024), (75, 38156),

Gene: ThayneTheZag_74 Start: 37312, Stop: 37872, Start Num: 24

Candidate Starts for ThayneTheZag_74:

(2, 36919), (5, 37015), (6, 37036), (14, 37144), (17, 37180), (19, 37189), (21, 37237), (Start: 24 @37312 has 16 MA's), (35, 37480), (43, 37564), (46, 37585), (49, 37609), (52, 37636), (57, 37669), (75, 37822),

Gene: Vopal_71 Start: 39582, Stop: 40130, Start Num: 22

Candidate Starts for Vopal_71:

(18, 39462), (Start: 22 @39582 has 16 MA's), (35, 39747), (43, 39831), (45, 39849), (54, 39909),

Gene: Whitney_70 Start: 43573, Stop: 44133, Start Num: 22

Candidate Starts for Whitney_70:

(3, 43207), (4, 43273), (11, 43375), (16, 43444), (Start: 22 @43573 has 16 MA's), (Start: 24 @43579 has 16 MA's), (34, 43705), (35, 43753), (40, 43813), (41, 43816), (48, 43873), (51, 43903), (52, 43909), (54, 43915), (59, 43948), (60, 43951), (62, 43966), (70, 44020), (76, 44098),

Gene: Windest_71 Start: 35789, Stop: 36343, Start Num: 24

Candidate Starts for Windest_71:

(Start: 24 @35789 has 16 MA's), (35, 35957), (43, 36041), (46, 36062), (49, 36086), (52, 36113), (60, 36155), (63, 36179),

Gene: YoungHarleezy_68 Start: 36644, Stop: 37195, Start Num: 24

Candidate Starts for YoungHarleezy_68:

(10, 36410), (16, 36506), (Start: 24 @36644 has 16 MA's), (28, 36692), (35, 36812), (43, 36896), (45, 36914), (49, 36941), (60, 37010),