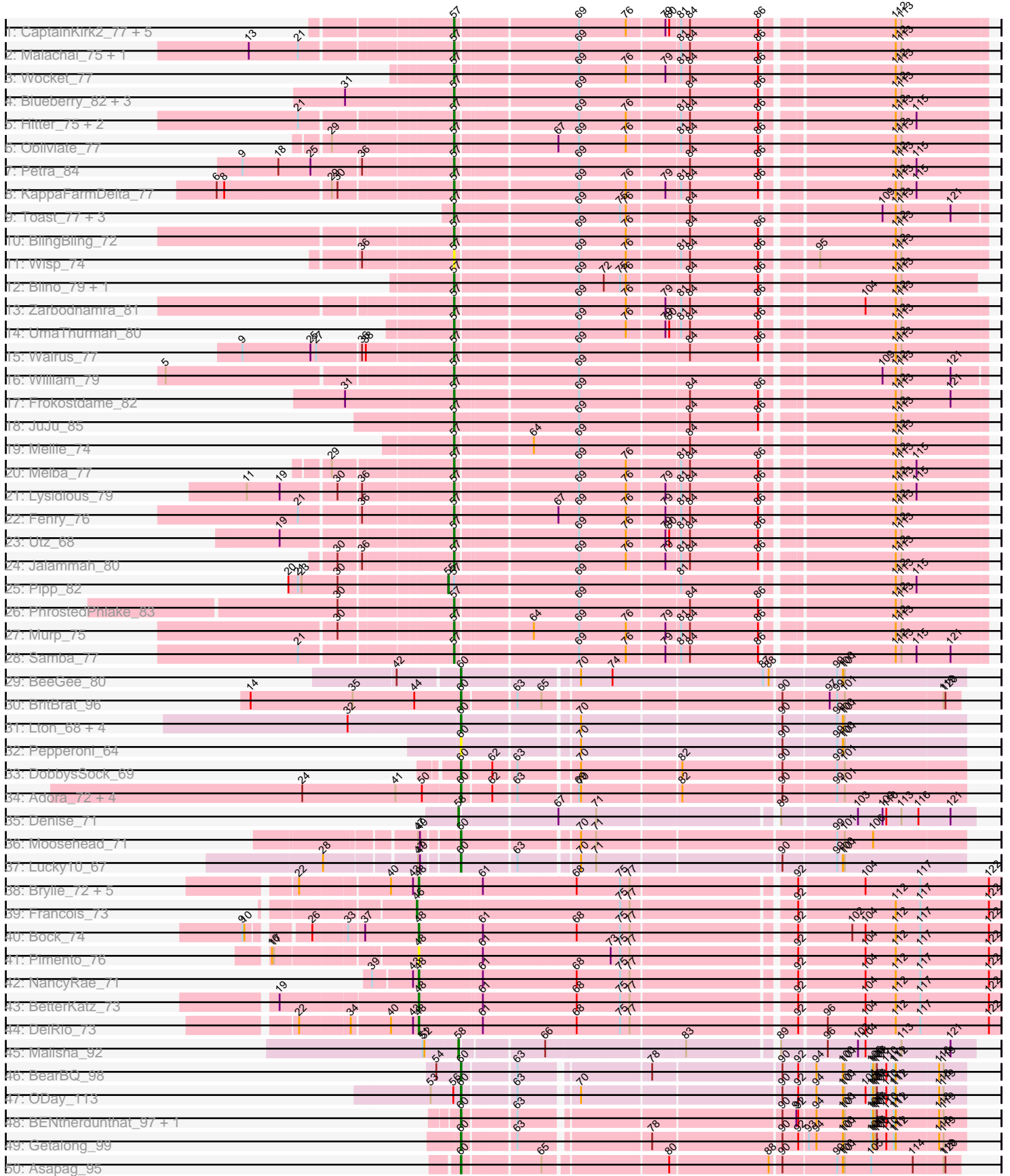


Pham 171393



Pham 171393



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 171393 Report

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

Pham number 171393 has 82 members, 4 are drafts.

Phages represented in each track:

- Track 1 : CaptainKirk2_77, Guacamole_75, Barco_74, JasperJr_75, Delian_80, MintFen_77
- Track 2 : Malachai_75, Begonia_75
- Track 3 : Wocket_77
- Track 4 : Blueberry_82, Azula_83, Gambino_85, MissRona_83
- Track 5 : Hitter_75, Archis_79, ZiggyZoo_78
- Track 6 : Obliviate_77
- Track 7 : Petra_84
- Track 8 : KappaFarmDelta_77
- Track 9 : Toast_77, PrincePatrick_79, Fairfaxidum_80, PCoral7_76
- Track 10 : BlingBling_72
- Track 11 : Wisp_74
- Track 12 : Blino_79, CarolAnn_78
- Track 13 : Zarbodnamra_81
- Track 14 : UmaThurman_80
- Track 15 : Walrus_77
- Track 16 : William_79
- Track 17 : Frokostdame_82
- Track 18 : JuJu_85
- Track 19 : Mellie_74
- Track 20 : Melba_77
- Track 21 : Lysidious_79
- Track 22 : Fenry_76
- Track 23 : Utz_68
- Track 24 : Jalammah_80
- Track 25 : Pipp_82
- Track 26 : PhrostedPhlake_83
- Track 27 : Murp_75
- Track 28 : Samba_77
- Track 29 : BeeGee_80
- Track 30 : BritBrat_96
- Track 31 : Lton_68, Kuwabara_89, OneDirection_65, Morkie_71, PhorbesPhlower_69
- Track 32 : Pepperoni_64
- Track 33 : DobbysSock_69
- Track 34 : Adora_72, Hortense_75, Twinkle_74, Shlim410_73, Howe_75
- Track 35 : Denise_71

- Track 36 : Moosehead_71
- Track 37 : Lucky10_67
- Track 38 : Brylie_72, Nadeem_72, Parada_72, WheatThin_72, Mulch_72, Ayotoya_73
- Track 39 : Francois_73
- Track 40 : Bock_74
- Track 41 : Pimento_76
- Track 42 : NancyRae_71
- Track 43 : BetterKatz_73
- Track 44 : DelRio_73
- Track 45 : Malisha_92
- Track 46 : BearBQ_98
- Track 47 : ODay_113
- Track 48 : BENtherdunthat_97, CheeseTouch_105
- Track 49 : Getalong_99
- Track 50 : Asapag_95
- Track 51 : Ruthy_71
- Track 52 : DumpsterDude_69
- Track 53 : GMA4_62

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

The start number called the most often in the published annotations is 57, it was called in 41 of the 78 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Archis_79, Azula_83, Barco_74, Begonia_75, BlingBling_72, Blino_79, Blueberry_82, CaptainKirk2_77, CarolAnn_78, Delian_80, Fairfaxidum_80, Fenry_76, Frokostdame_82, Gambino_85, Guacamole_75, Hitter_75, Jalammah_80, JasperJr_75, JuJu_85, KappaFarmDelta_77, Lysidious_79, Malachai_75, Melba_77, Mellie_74, MintFen_77, MissRona_83, Murp_75, Obliviate_77, PCoral7_76, Petra_84, PhrostedPhlake_83, PrincePatrick_79, Samba_77, Toast_77, UmaThurman_80, Utz_68, Walrus_77, William_79, Wisp_74, Wocket_77, Zarbodnamra_81, ZiggyZoo_78,

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

- Pipp_82,

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

- Adora_72, Asapag_95, Ayotoya_73, BENtherdunthat_97, BearBQ_98, BeeGee_80, BetterKatz_73, Bock_74, BritBrat_96, Brylie_72, CheeseTouch_105, DelRio_73, Denise_71, DobbysSock_69, DumpsterDude_69, Francois_73, GMA4_62, Getalong_99, Hortense_75, Howe_75, Kuwabara_89, Lton_68, Lucky10_67, Malisha_92, Moosehead_71, Morkie_71, Mulch_72, Nadeem_72, NancyRae_71, ODay_113, OneDirection_65, Parada_72, Pepperoni_64, PhorbesPhlower_69, Pimento_76, Ruthy_71, Shlim410_73, Twinkle_74, WheatThin_72,

Summary by start number:

Start 45:

- Found in 2 of 82 (2.4%) of genes in pham
- Manual Annotations of this start: 2 of 78
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DumpsterDude_69 (DW), Ruthy_71 (DW),

Start 46:

- Found in 1 of 82 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 78
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Francois_73 (DI),

Start 48:

- Found in 11 of 82 (13.4%) of genes in pham
- Manual Annotations of this start: 10 of 78
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ayotoya_73 (DI), BetterKatz_73 (DI), Bock_74 (DI), Brylie_72 (DI), DelRio_73 (DI), Mulch_72 (DI), Nadeem_72 (DI), NancyRae_71 (DI), Parada_72 (DI), Pimento_76 (DI), WheatThin_72 (DI),

Start 55:

- Found in 1 of 82 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 78
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Pipp_82 (CV),

Start 57:

- Found in 43 of 82 (52.4%) of genes in pham
- Manual Annotations of this start: 41 of 78
- Called 97.7% of time when present
- Phage (with cluster) where this start called: Archis_79 (CV), Azula_83 (CV), Barco_74 (CV), Begonia_75 (CV), BlingBling_72 (CV), Blino_79 (CV), Blueberry_82 (CV), CaptainKirk2_77 (CV), CarolAnn_78 (CV), Delian_80 (CV), Fairfaxidum_80 (CV), Fenry_76 (CV), Frokostdame_82 (CV), Gambino_85 (CV), Guacamole_75 (CV), Hitter_75 (CV), Jalammah_80 (CV), JasperJr_75 (CV), JuJu_85 (CV), KappaFarmDelta_77 (CV), Lysidious_79 (CV), Malachai_75 (CV), Melba_77 (CV), Mellie_74 (CV), MintFen_77 (CV), MissRona_83 (CV), Murp_75 (CV), Obliviate_77 (CV), PCoral7_76 (CV), Petra_84 (CV), PhrostedPhlake_83 (CV), PrincePatrick_79 (CV), Samba_77 (CV), Toast_77 (CV), UmaThurman_80 (CV), Utz_68 (CV), Walrus_77 (CV), William_79 (CV), Wisp_74 (CV), Wocket_77 (CV), Zarbodnamra_81 (CV), ZiggyZoo_78 (CV),

Start 58:

- Found in 2 of 82 (2.4%) of genes in pham
- Manual Annotations of this start: 2 of 78
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Denise_71 (CZ5), Malisha_92 (DN),

Start 59:

- Found in 1 of 82 (1.2%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA4_62 (singleton),

Start 60:

- Found in 22 of 82 (26.8%) of genes in pham
- Manual Annotations of this start: 21 of 78
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adora_72 (CZ4), Asapag_95 (DN1), BENTherdunthat_97 (DN1), BearBQ_98 (DN), BeeGee_80 (CY), BritBrat_96 (CY2), CheeseTouch_105 (DN1), DobbysSock_69 (CZ4), Getalong_99 (DN1), Hortense_75 (CZ4), Howe_75 (CZ4), Kuwabara_89 (DN4), Lton_68 (CZ), Lucky10_67 (DH), Moosehead_71 (CZ6), Morkie_71 (DH), ODay_113 (DN), OneDirection_65 (CZ6), Pepperoni_64 (CZ), PhorbesPhlower_69 (DH), Shlim410_73 (CZ4), Twinkle_74 (CZ4),

Summary by clusters:

There are 14 clusters represented in this pham: DN, CY2, singleton, DN4, DH, DI, CZ6, CZ4, CZ5, CZ, CY, DN1, DW, CV,

Info for manual annotations of cluster CV:

- Start number 55 was manually annotated 1 time for cluster CV.
- Start number 57 was manually annotated 41 times for cluster CV.

Info for manual annotations of cluster CY:

- Start number 60 was manually annotated 1 time for cluster CY.

Info for manual annotations of cluster CY2:

- Start number 60 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster CZ:

- Start number 60 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ4:

- Start number 60 was manually annotated 6 times for cluster CZ4.

Info for manual annotations of cluster CZ5:

- Start number 58 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ6:

- Start number 60 was manually annotated 2 times for cluster CZ6.

Info for manual annotations of cluster DH:

- Start number 60 was manually annotated 3 times for cluster DH.

Info for manual annotations of cluster DI:

- Start number 46 was manually annotated 1 time for cluster DI.
- Start number 48 was manually annotated 10 times for cluster DI.

Info for manual annotations of cluster DN:

- Start number 58 was manually annotated 1 time for cluster DN.
- Start number 60 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 60 was manually annotated 4 times for cluster DN1.

Info for manual annotations of cluster DN4:

- Start number 60 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DW:

- Start number 45 was manually annotated 2 times for cluster DW.

Gene Information:

Gene: Adora_72 Start: 48969, Stop: 49706, Start Num: 60

Candidate Starts for Adora_72:

(24, 48723), (41, 48870), (50, 48912), (Start: 60 @48969 has 21 MA's), (62, 49011), (63, 49044), (69, 49125), (70, 49128), (82, 49275), (90, 49425), (99, 49506), (101, 49518),

Gene: Archis_79 Start: 46629, Stop: 47405, Start Num: 57

Candidate Starts for Archis_79:

(21, 46410), (Start: 57 @46629 has 41 MA's), (69, 46806), (76, 46878), (81, 46956), (84, 46968), (86, 47076), (112, 47262), (113, 47271), (115, 47295),

Gene: Asapag_95 Start: 52545, Stop: 53270, Start Num: 60

Candidate Starts for Asapag_95:

(Start: 60 @52545 has 21 MA's), (65, 52656), (80, 52833), (88, 52983), (90, 52998), (99, 53079), (100, 53088), (101, 53091), (105, 53133), (114, 53199), (119, 53244), (120, 53247),

Gene: Ayotoya_73 Start: 49136, Stop: 50011, Start Num: 48

Candidate Starts for Ayotoya_73:

(22, 48965), (40, 49097), (43, 49130), (Start: 48 @49136 has 10 MA's), (61, 49229), (68, 49376), (75, 49445), (77, 49460), (92, 49700), (104, 49799), (117, 49886), (122, 49994),

Gene: Azula_83 Start: 51089, Stop: 51874, Start Num: 57

Candidate Starts for Azula_83:

(31, 50924), (Start: 57 @51089 has 41 MA's), (69, 51272), (84, 51434), (86, 51542), (112, 51728), (113, 51737),

Gene: BENtherdunthat_97 Start: 52077, Stop: 52805, Start Num: 60

Candidate Starts for BENtherdunthat_97:

(Start: 60 @52077 has 21 MA's), (63, 52152), (90, 52527), (91, 52548), (92, 52551), (94, 52575), (100, 52617), (101, 52620), (105, 52662), (106, 52665), (107, 52668), (108, 52671), (110, 52686), (111, 52698), (112, 52701), (118, 52767), (119, 52773),

Gene: Barco_74 Start: 46443, Stop: 47219, Start Num: 57

Candidate Starts for Barco_74:

(Start: 57 @46443 has 41 MA's), (69, 46620), (76, 46692), (79, 46749), (80, 46755), (81, 46770), (84, 46782), (86, 46890), (112, 47076), (113, 47085),

Gene: BearBQ_98 Start: 53192, Stop: 53920, Start Num: 60

Candidate Starts for BearBQ_98:

(54, 53159), (Start: 60 @53192 has 21 MA's), (63, 53267), (78, 53450), (90, 53642), (92, 53666), (94, 53690), (100, 53732), (101, 53735), (105, 53777), (106, 53780), (107, 53783), (108, 53786), (110, 53801), (111, 53813), (112, 53816), (118, 53882), (119, 53888),

Gene: BeeGee_80 Start: 50088, Stop: 50837, Start Num: 60
Candidate Starts for BeeGee_80:
(42, 49998), (Start: 60 @50088 has 21 MA's), (70, 50253), (74, 50301), (87, 50532), (88, 50541), (99, 50637), (100, 50646), (101, 50649),

Gene: Begonia_75 Start: 49240, Stop: 50016, Start Num: 57
Candidate Starts for Begonia_75:
(13, 48943), (21, 49021), (Start: 57 @49240 has 41 MA's), (69, 49417), (81, 49567), (84, 49579), (86, 49687), (112, 49873), (113, 49882),

Gene: BetterKatz_73 Start: 48918, Stop: 49793, Start Num: 48
Candidate Starts for BetterKatz_73:
(19, 48711), (Start: 48 @48918 has 10 MA's), (61, 49011), (68, 49158), (75, 49227), (77, 49242), (92, 49482), (104, 49581), (112, 49629), (117, 49668), (122, 49776),

Gene: BlingBling_72 Start: 46215, Stop: 46991, Start Num: 57
Candidate Starts for BlingBling_72:
(Start: 57 @46215 has 41 MA's), (69, 46392), (76, 46464), (84, 46554), (86, 46662), (112, 46848), (113, 46857),

Gene: Blino_79 Start: 52044, Stop: 52805, Start Num: 57
Candidate Starts for Blino_79:
(Start: 57 @52044 has 41 MA's), (69, 52221), (72, 52260), (75, 52284), (76, 52293), (84, 52383), (86, 52491), (112, 52677), (113, 52686),

Gene: Blueberry_82 Start: 51089, Stop: 51874, Start Num: 57
Candidate Starts for Blueberry_82:
(31, 50924), (Start: 57 @51089 has 41 MA's), (69, 51272), (84, 51434), (86, 51542), (112, 51728), (113, 51737),

Gene: Bock_74 Start: 48502, Stop: 49377, Start Num: 48
Candidate Starts for Bock_74:
(9, 48271), (10, 48274), (26, 48349), (33, 48400), (37, 48421), (Start: 48 @48502 has 10 MA's), (61, 48595), (68, 48742), (75, 48811), (77, 48826), (92, 49066), (102, 49144), (104, 49165), (112, 49213), (117, 49252), (122, 49360),

Gene: BritBrat_96 Start: 54041, Stop: 54766, Start Num: 60
Candidate Starts for BritBrat_96:
(14, 53711), (35, 53873), (44, 53969), (Start: 60 @54041 has 21 MA's), (63, 54116), (65, 54152), (90, 54494), (97, 54563), (99, 54575), (101, 54587), (119, 54740), (120, 54743),

Gene: Brylie_72 Start: 48152, Stop: 49027, Start Num: 48
Candidate Starts for Brylie_72:
(22, 47981), (40, 48113), (43, 48146), (Start: 48 @48152 has 10 MA's), (61, 48245), (68, 48392), (75, 48461), (77, 48476), (92, 48716), (104, 48815), (117, 48902), (122, 49010),

Gene: CaptainKirk2_77 Start: 46000, Stop: 46776, Start Num: 57
Candidate Starts for CaptainKirk2_77:
(Start: 57 @46000 has 41 MA's), (69, 46177), (76, 46249), (79, 46306), (80, 46312), (81, 46327), (84, 46339), (86, 46447), (112, 46633), (113, 46642),

Gene: CarolAnn_78 Start: 52043, Stop: 52804, Start Num: 57
Candidate Starts for CarolAnn_78:

(Start: 57 @52043 has 41 MA's), (69, 52220), (72, 52259), (75, 52283), (76, 52292), (84, 52382), (86, 52490), (112, 52676), (113, 52685),

Gene: CheeseTouch_105 Start: 51190, Stop: 51918, Start Num: 60

Candidate Starts for CheeseTouch_105:

(Start: 60 @51190 has 21 MA's), (63, 51265), (90, 51640), (91, 51661), (92, 51664), (94, 51688), (100, 51730), (101, 51733), (105, 51775), (106, 51778), (107, 51781), (108, 51784), (110, 51799), (111, 51811), (112, 51814), (118, 51880), (119, 51886),

Gene: DelRio_73 Start: 49243, Stop: 50118, Start Num: 48

Candidate Starts for DelRio_73:

(22, 49072), (34, 49147), (40, 49204), (43, 49237), (Start: 48 @49243 has 10 MA's), (61, 49336), (68, 49483), (75, 49552), (77, 49567), (92, 49807), (96, 49846), (104, 49906), (112, 49954), (117, 49993), (122, 50101),

Gene: Delian_80 Start: 45998, Stop: 46774, Start Num: 57

Candidate Starts for Delian_80:

(Start: 57 @45998 has 41 MA's), (69, 46175), (76, 46247), (79, 46304), (80, 46310), (81, 46325), (84, 46337), (86, 46445), (112, 46631), (113, 46640),

Gene: Denise_71 Start: 41520, Stop: 42272, Start Num: 58

Candidate Starts for Denise_71:

(Start: 58 @41520 has 2 MA's), (67, 41658), (71, 41715), (89, 41973), (103, 42087), (109, 42126), (110, 42132), (113, 42156), (116, 42183), (121, 42234),

Gene: DobbysSock_69 Start: 45937, Stop: 46674, Start Num: 60

Candidate Starts for DobbysSock_69:

(Start: 60 @45937 has 21 MA's), (62, 45979), (63, 46012), (70, 46096), (82, 46243), (90, 46393), (99, 46474), (101, 46486),

Gene: DumpsterDude_69 Start: 50376, Stop: 51257, Start Num: 45

Candidate Starts for DumpsterDude_69:

(2, 49788), (4, 49821), (7, 50073), (15, 50124), (Start: 45 @50376 has 2 MA's),

Gene: Fairfaxidum_80 Start: 48694, Stop: 49470, Start Num: 57

Candidate Starts for Fairfaxidum_80:

(Start: 57 @48694 has 41 MA's), (69, 48874), (75, 48937), (76, 48946), (84, 49036), (109, 49309), (112, 49330), (113, 49339), (121, 49417),

Gene: Fenry_76 Start: 48068, Stop: 48844, Start Num: 57

Candidate Starts for Fenry_76:

(21, 47849), (36, 47936), (Start: 57 @48068 has 41 MA's), (67, 48212), (69, 48245), (76, 48317), (79, 48374), (81, 48395), (84, 48407), (86, 48515), (112, 48701), (113, 48710),

Gene: Francois_73 Start: 48813, Stop: 49691, Start Num: 46

Candidate Starts for Francois_73:

(Start: 46 @48813 has 1 MA's), (75, 49125), (77, 49140), (92, 49380), (112, 49527), (117, 49566), (122, 49674),

Gene: Frokostdame_82 Start: 50554, Stop: 51336, Start Num: 57

Candidate Starts for Frokostdame_82:

(31, 50389), (Start: 57 @50554 has 41 MA's), (69, 50737), (84, 50899), (86, 51007), (112, 51193), (113, 51202), (121, 51280),

Gene: GMA4_62 Start: 40731, Stop: 41486, Start Num: 59

Candidate Starts for GMA4_62:

(12, 40401), (59, 40731), (85, 41109), (98, 41280), (101, 41298), (107, 41346),

Gene: Gambino_85 Start: 51089, Stop: 51874, Start Num: 57

Candidate Starts for Gambino_85:

(31, 50924), (Start: 57 @51089 has 41 MA's), (69, 51272), (84, 51434), (86, 51542), (112, 51728), (113, 51737),

Gene: Getalong_99 Start: 53422, Stop: 54150, Start Num: 60

Candidate Starts for Getalong_99:

(Start: 60 @53422 has 21 MA's), (63, 53497), (78, 53680), (90, 53872), (92, 53896), (93, 53908), (94, 53920), (100, 53962), (101, 53965), (105, 54007), (106, 54010), (107, 54013), (108, 54016), (110, 54031), (111, 54043), (112, 54046), (118, 54112), (119, 54118),

Gene: Guacamole_75 Start: 47418, Stop: 48194, Start Num: 57

Candidate Starts for Guacamole_75:

(Start: 57 @47418 has 41 MA's), (69, 47595), (76, 47667), (79, 47724), (80, 47730), (81, 47745), (84, 47757), (86, 47865), (112, 48051), (113, 48060),

Gene: Hitter_75 Start: 45674, Stop: 46450, Start Num: 57

Candidate Starts for Hitter_75:

(21, 45455), (Start: 57 @45674 has 41 MA's), (69, 45851), (76, 45923), (81, 46001), (84, 46013), (86, 46121), (112, 46307), (113, 46316), (115, 46340),

Gene: Hortense_75 Start: 50324, Stop: 51061, Start Num: 60

Candidate Starts for Hortense_75:

(24, 50078), (41, 50225), (50, 50267), (Start: 60 @50324 has 21 MA's), (62, 50366), (63, 50399), (69, 50480), (70, 50483), (82, 50630), (90, 50780), (99, 50861), (101, 50873),

Gene: Howe_75 Start: 50324, Stop: 51061, Start Num: 60

Candidate Starts for Howe_75:

(24, 50078), (41, 50225), (50, 50267), (Start: 60 @50324 has 21 MA's), (62, 50366), (63, 50399), (69, 50480), (70, 50483), (82, 50630), (90, 50780), (99, 50861), (101, 50873),

Gene: Jalammah_80 Start: 49580, Stop: 50356, Start Num: 57

Candidate Starts for Jalammah_80:

(30, 49415), (36, 49448), (Start: 57 @49580 has 41 MA's), (69, 49757), (76, 49829), (79, 49886), (81, 49907), (84, 49919), (86, 50027), (112, 50213), (113, 50222),

Gene: JasperJr_75 Start: 47418, Stop: 48194, Start Num: 57

Candidate Starts for JasperJr_75:

(Start: 57 @47418 has 41 MA's), (69, 47595), (76, 47667), (79, 47724), (80, 47730), (81, 47745), (84, 47757), (86, 47865), (112, 48051), (113, 48060),

Gene: JuJu_85 Start: 51321, Stop: 52103, Start Num: 57

Candidate Starts for JuJu_85:

(Start: 57 @51321 has 41 MA's), (69, 51504), (84, 51666), (86, 51774), (112, 51960), (113, 51969),

Gene: KappaFarmDelta_77 Start: 47260, Stop: 48036, Start Num: 57

Candidate Starts for KappaFarmDelta_77:

(6, 46912), (8, 46924), (29, 47086), (30, 47095), (Start: 57 @47260 has 41 MA's), (69, 47437), (76, 47509), (79, 47566), (81, 47587), (84, 47599), (86, 47707), (112, 47893), (113, 47902), (115, 47926),

Gene: Kuwabara_89 Start: 52072, Stop: 52815, Start Num: 60

Candidate Starts for Kuwabara_89:

(32, 51901), (Start: 60 @52072 has 21 MA's), (70, 52237), (90, 52534), (99, 52615), (100, 52624), (101, 52627),

Gene: Lton_68 Start: 39225, Stop: 39968, Start Num: 60

Candidate Starts for Lton_68:

(32, 39054), (Start: 60 @39225 has 21 MA's), (70, 39390), (90, 39687), (99, 39768), (100, 39777), (101, 39780),

Gene: Lucky10_67 Start: 41325, Stop: 42068, Start Num: 60

Candidate Starts for Lucky10_67:

(28, 41145), (47, 41274), (49, 41277), (Start: 60 @41325 has 21 MA's), (63, 41406), (70, 41490), (71, 41514), (90, 41787), (99, 41868), (100, 41877), (101, 41880),

Gene: Lysidious_79 Start: 48328, Stop: 49104, Start Num: 57

Candidate Starts for Lysidious_79:

(11, 48028), (19, 48079), (30, 48163), (36, 48196), (Start: 57 @48328 has 41 MA's), (69, 48505), (76, 48577), (79, 48634), (81, 48655), (84, 48667), (86, 48775), (112, 48961), (113, 48970), (115, 48994),

Gene: Malachai_75 Start: 49240, Stop: 50016, Start Num: 57

Candidate Starts for Malachai_75:

(13, 48943), (21, 49021), (Start: 57 @49240 has 41 MA's), (69, 49417), (81, 49567), (84, 49579), (86, 49687), (112, 49873), (113, 49882),

Gene: Malisha_92 Start: 53316, Stop: 54062, Start Num: 58

Candidate Starts for Malisha_92:

(51, 53265), (52, 53268), (Start: 58 @53316 has 2 MA's), (66, 53430), (83, 53634), (89, 53763), (96, 53829), (103, 53877), (104, 53889), (113, 53946), (121, 54024),

Gene: Melba_77 Start: 46375, Stop: 47151, Start Num: 57

Candidate Starts for Melba_77:

(29, 46201), (Start: 57 @46375 has 41 MA's), (69, 46552), (76, 46624), (81, 46702), (84, 46714), (86, 46822), (112, 47008), (113, 47017), (115, 47041),

Gene: Mellie_74 Start: 46392, Stop: 47168, Start Num: 57

Candidate Starts for Mellie_74:

(Start: 57 @46392 has 41 MA's), (64, 46497), (69, 46569), (84, 46731), (112, 47025), (113, 47034),

Gene: MintFen_77 Start: 46614, Stop: 47390, Start Num: 57

Candidate Starts for MintFen_77:

(Start: 57 @46614 has 41 MA's), (69, 46791), (76, 46863), (79, 46920), (80, 46926), (81, 46941), (84, 46953), (86, 47061), (112, 47247), (113, 47256),

Gene: MissRona_83 Start: 51090, Stop: 51875, Start Num: 57

Candidate Starts for MissRona_83:

(31, 50925), (Start: 57 @51090 has 41 MA's), (69, 51273), (84, 51435), (86, 51543), (112, 51729), (113, 51738),

Gene: Moosehead_71 Start: 39747, Stop: 40490, Start Num: 60

Candidate Starts for Moosehead_71:

(47, 39696), (49, 39699), (Start: 60 @39747 has 21 MA's), (70, 39912), (71, 39936), (99, 40290), (101, 40302), (106, 40347),

Gene: Morkie_71 Start: 40373, Stop: 41116, Start Num: 60

Candidate Starts for Morkie_71:

(32, 40202), (Start: 60 @40373 has 21 MA's), (70, 40538), (90, 40835), (99, 40916), (100, 40925), (101, 40928),

Gene: Mulch_72 Start: 48191, Stop: 49066, Start Num: 48

Candidate Starts for Mulch_72:

(22, 48020), (40, 48152), (43, 48185), (Start: 48 @48191 has 10 MA's), (61, 48284), (68, 48431), (75, 48500), (77, 48515), (92, 48755), (104, 48854), (117, 48941), (122, 49049),

Gene: Murp_75 Start: 49491, Stop: 50267, Start Num: 57

Candidate Starts for Murp_75:

(30, 49326), (Start: 57 @49491 has 41 MA's), (64, 49596), (69, 49668), (76, 49740), (79, 49797), (81, 49818), (84, 49830), (86, 49938), (112, 50124), (113, 50133),

Gene: Nadeem_72 Start: 48179, Stop: 49054, Start Num: 48

Candidate Starts for Nadeem_72:

(22, 48008), (40, 48140), (43, 48173), (Start: 48 @48179 has 10 MA's), (61, 48272), (68, 48419), (75, 48488), (77, 48503), (92, 48743), (104, 48842), (117, 48929), (122, 49037),

Gene: NancyRae_71 Start: 48057, Stop: 48932, Start Num: 48

Candidate Starts for NancyRae_71:

(39, 47997), (43, 48051), (Start: 48 @48057 has 10 MA's), (61, 48150), (68, 48297), (75, 48366), (77, 48381), (92, 48621), (104, 48720), (112, 48768), (117, 48807), (122, 48915),

Gene: ODay_113 Start: 56624, Stop: 57352, Start Num: 60

Candidate Starts for ODay_113:

(53, 56576), (56, 56612), (Start: 60 @56624 has 21 MA's), (63, 56699), (70, 56777), (90, 57074), (92, 57098), (94, 57122), (100, 57164), (101, 57167), (104, 57200), (105, 57209), (106, 57212), (107, 57215), (108, 57218), (110, 57233), (111, 57245), (112, 57248), (118, 57314), (119, 57320),

Gene: Obliviate_77 Start: 46932, Stop: 47708, Start Num: 57

Candidate Starts for Obliviate_77:

(29, 46752), (Start: 57 @46932 has 41 MA's), (67, 47076), (69, 47109), (76, 47181), (81, 47259), (84, 47271), (86, 47379), (112, 47565), (113, 47574),

Gene: OneDirection_65 Start: 37787, Stop: 38530, Start Num: 60

Candidate Starts for OneDirection_65:

(32, 37616), (Start: 60 @37787 has 21 MA's), (70, 37952), (90, 38249), (99, 38330), (100, 38339), (101, 38342),

Gene: PCoral7_76 Start: 47524, Stop: 48300, Start Num: 57

Candidate Starts for PCoral7_76:

(Start: 57 @47524 has 41 MA's), (69, 47704), (75, 47767), (76, 47776), (84, 47866), (109, 48139), (112, 48160), (113, 48169), (121, 48247),

Gene: Parada_72 Start: 48191, Stop: 49066, Start Num: 48

Candidate Starts for Parada_72:

(22, 48020), (40, 48152), (43, 48185), (Start: 48 @48191 has 10 MA's), (61, 48284), (68, 48431), (75, 48500), (77, 48515), (92, 48755), (104, 48854), (117, 48941), (122, 49049),

Gene: Pepperoni_64 Start: 38913, Stop: 39656, Start Num: 60

Candidate Starts for Pepperoni_64:

(Start: 60 @38913 has 21 MA's), (70, 39078), (90, 39375), (99, 39456), (100, 39465), (101, 39468),

Gene: Petra_84 Start: 49488, Stop: 50267, Start Num: 57

Candidate Starts for Petra_84:

(9, 49173), (18, 49230), (25, 49281), (36, 49356), (Start: 57 @49488 has 41 MA's), (69, 49665), (84, 49827), (86, 49935), (112, 50121), (113, 50130), (115, 50154),

Gene: PhorbesPhlower_69 Start: 39768, Stop: 40511, Start Num: 60

Candidate Starts for PhorbesPhlower_69:

(32, 39597), (Start: 60 @39768 has 21 MA's), (70, 39933), (90, 40230), (99, 40311), (100, 40320), (101, 40323),

Gene: PhrostedPhlake_83 Start: 49071, Stop: 49847, Start Num: 57

Candidate Starts for PhrostedPhlake_83:

(30, 48906), (Start: 57 @49071 has 41 MA's), (69, 49248), (84, 49410), (86, 49518), (112, 49704), (113, 49713),

Gene: Pimento_76 Start: 48276, Stop: 49151, Start Num: 48

Candidate Starts for Pimento_76:

(16, 48075), (17, 48078), (Start: 48 @48276 has 10 MA's), (61, 48369), (73, 48570), (75, 48585), (77, 48600), (92, 48840), (104, 48939), (112, 48987), (117, 49026), (122, 49134),

Gene: Pipp_82 Start: 48884, Stop: 49675, Start Num: 55

Candidate Starts for Pipp_82:

(20, 48650), (21, 48665), (23, 48671), (30, 48728), (Start: 55 @48884 has 1 MA's), (Start: 57 @48893 has 41 MA's), (69, 49076), (81, 49226), (112, 49532), (113, 49541), (115, 49565),

Gene: PrincePatrick_79 Start: 47344, Stop: 48120, Start Num: 57

Candidate Starts for PrincePatrick_79:

(Start: 57 @47344 has 41 MA's), (69, 47524), (75, 47587), (76, 47596), (84, 47686), (109, 47959), (112, 47980), (113, 47989), (121, 48067),

Gene: Ruthy_71 Start: 49474, Stop: 50355, Start Num: 45

Candidate Starts for Ruthy_71:

(1, 48862), (3, 48916), (15, 49222), (Start: 45 @49474 has 2 MA's), (75, 49786),

Gene: Samba_77 Start: 49525, Stop: 50301, Start Num: 57

Candidate Starts for Samba_77:

(21, 49306), (Start: 57 @49525 has 41 MA's), (69, 49702), (76, 49774), (79, 49831), (81, 49852), (84, 49864), (86, 49972), (112, 50158), (113, 50167), (115, 50191), (121, 50245),

Gene: Shlim410_73 Start: 50324, Stop: 51061, Start Num: 60

Candidate Starts for Shlim410_73:

(24, 50078), (41, 50225), (50, 50267), (Start: 60 @50324 has 21 MA's), (62, 50366), (63, 50399), (69, 50480), (70, 50483), (82, 50630), (90, 50780), (99, 50861), (101, 50873),

Gene: Toast_77 Start: 47524, Stop: 48300, Start Num: 57

Candidate Starts for Toast_77:

(Start: 57 @47524 has 41 MA's), (69, 47704), (75, 47767), (76, 47776), (84, 47866), (109, 48139), (112, 48160), (113, 48169), (121, 48247),

Gene: Twinkle_74 Start: 51383, Stop: 52120, Start Num: 60

Candidate Starts for Twinkle_74:

(24, 51137), (41, 51284), (50, 51326), (Start: 60 @51383 has 21 MA's), (62, 51425), (63, 51458), (69, 51539), (70, 51542), (82, 51689), (90, 51839), (99, 51920), (101, 51932),

Gene: UmaThurman_80 Start: 47661, Stop: 48437, Start Num: 57

Candidate Starts for UmaThurman_80:

(Start: 57 @47661 has 41 MA's), (69, 47838), (76, 47910), (79, 47967), (80, 47973), (81, 47988), (84, 48000), (86, 48108), (112, 48294), (113, 48303),

Gene: Utz_68 Start: 47303, Stop: 48079, Start Num: 57

Candidate Starts for Utz_68:

(19, 47054), (Start: 57 @47303 has 41 MA's), (69, 47480), (76, 47552), (79, 47609), (80, 47615), (81, 47630), (84, 47642), (86, 47750), (112, 47936), (113, 47945),

Gene: Walrus_77 Start: 48349, Stop: 49125, Start Num: 57

Candidate Starts for Walrus_77:

(9, 48034), (25, 48142), (27, 48151), (36, 48217), (38, 48223), (Start: 57 @48349 has 41 MA's), (69, 48526), (84, 48688), (86, 48796), (112, 48982), (113, 48991),

Gene: WheatThin_72 Start: 48179, Stop: 49054, Start Num: 48

Candidate Starts for WheatThin_72:

(22, 48008), (40, 48140), (43, 48173), (Start: 48 @48179 has 10 MA's), (61, 48272), (68, 48419), (75, 48488), (77, 48503), (92, 48743), (104, 48842), (117, 48929), (122, 49037),

Gene: William_79 Start: 48596, Stop: 49372, Start Num: 57

Candidate Starts for William_79:

(5, 48164), (Start: 57 @48596 has 41 MA's), (69, 48776), (109, 49211), (112, 49232), (113, 49241), (121, 49319),

Gene: Wisp_74 Start: 47248, Stop: 48024, Start Num: 57

Candidate Starts for Wisp_74:

(36, 47116), (Start: 57 @47248 has 41 MA's), (69, 47425), (76, 47497), (81, 47575), (84, 47587), (86, 47695), (95, 47761), (112, 47881), (113, 47890),

Gene: Wocket_77 Start: 47897, Stop: 48673, Start Num: 57

Candidate Starts for Wocket_77:

(Start: 57 @47897 has 41 MA's), (69, 48074), (76, 48146), (79, 48203), (81, 48224), (84, 48236), (86, 48344), (112, 48530), (113, 48539),

Gene: Zarbodnamra_81 Start: 47607, Stop: 48383, Start Num: 57

Candidate Starts for Zarbodnamra_81:

(Start: 57 @47607 has 41 MA's), (69, 47784), (76, 47856), (79, 47913), (81, 47934), (84, 47946), (86, 48054), (104, 48192), (112, 48240), (113, 48249),

Gene: ZiggyZoo_78 Start: 49093, Stop: 49869, Start Num: 57

Candidate Starts for ZiggyZoo_78:

(21, 48874), (Start: 57 @49093 has 41 MA's), (69, 49270), (76, 49342), (81, 49420), (84, 49432), (86, 49540), (112, 49726), (113, 49735), (115, 49759),