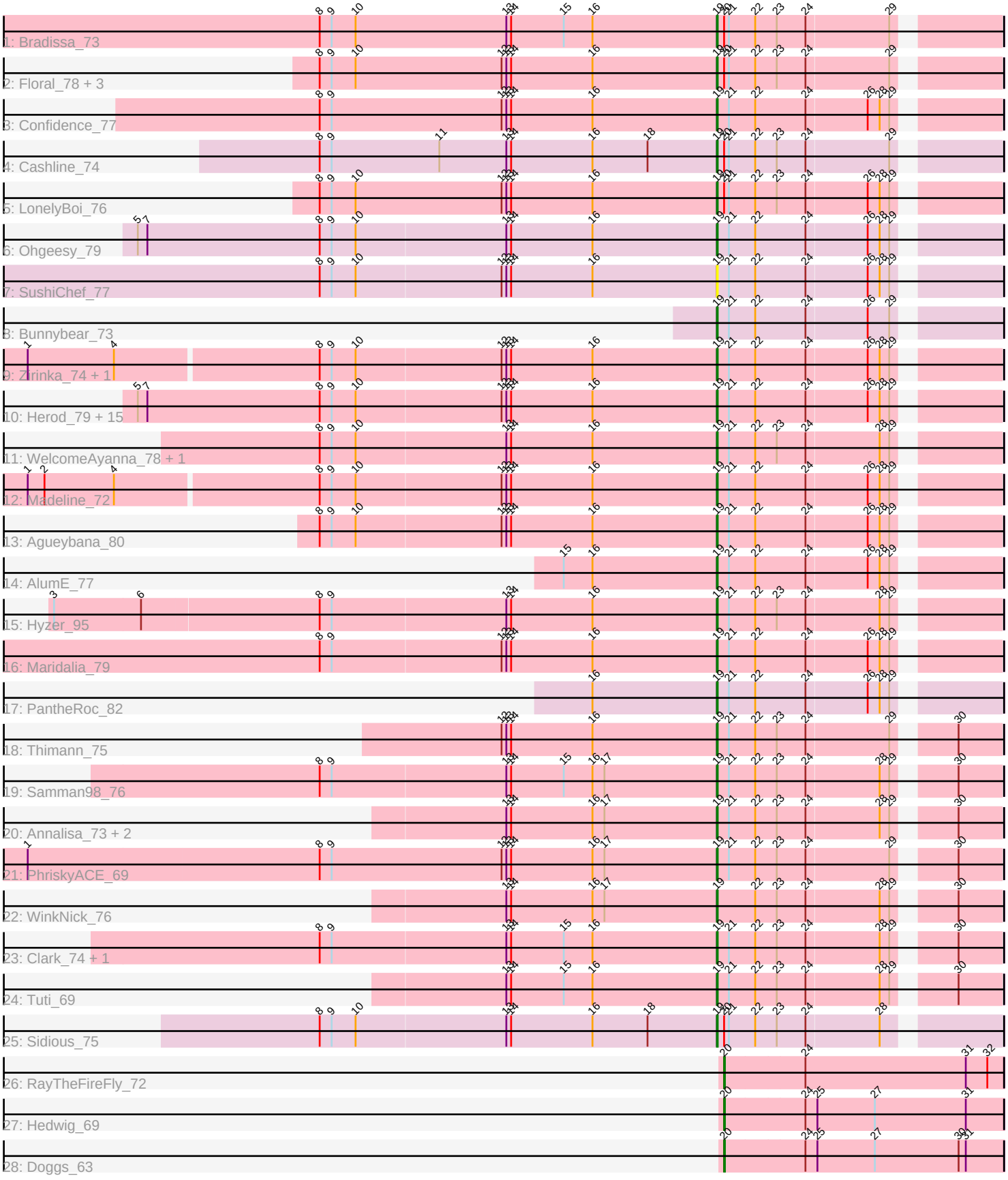
Pham 345829


1: Bradissa_73
2: Floral_78 + 3
3: Confidence_77
4: Cashline_74
5: LonelyBoi_76
6: Ohgeesy_79
7: SushiChef_77
8: Bunnybear_73
9: Zirinka_74 + 1
10: Herod_79 + 15
11: WelcomeAyanna_78 + 1
12: Madeline_72
13: Agueybana_80
14: AlumE_77
15: Hyzer_95
16: Maridalia_79
17: PantheRoc_82
18: Thimann_75
19: Samman98_76
20: Annalisa_73 + 2
21: PhriskyACE_69
22: WinkNick_76
23: Clark_74 + 1
24: Tuti_69
25: Sidious_75
26: RayTheFireFly_72
27: Hedwig_69
28: Doggs_63

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 345829 Report

This analysis was run 11/14/26 on database version 672.

Pham number 345829 has 51 members, 2 are drafts.

Phages represented in each track:
• Track 1 : Bradissa_73
• Track 2 : Floral_78, EnalisNailo_73, Lilas_74, EMsquaredA_77
• Track 3 : Confidence_77
• Track 4 : Cashline_74
• Track 5 : LonelyBoi_76
• Track 6 : Ohgeesy_79
• Track 7 : SushiChef_77
• Track 8 : Bunnybear_73
• Track 9 : Zirinka_74, Bialota_74
• Track 10 : Herod_79, Neobush_77, Bosnia_77, Eviarto_79, Trumpet_75, BatStarr_78, Zameen_75, Manasvini_77, Kita_76, Dillpickles_80, Polly_72, Suscepit_75, TimTam_79, Eudoria_75, Antonio_74, Tayonia_75
• Track 11 : WelcomeAyanna_78, ThankyouJordi_78
• Track 12 : Madeline_72
• Track 13 : Agueybana_80
• Track 14 : AlumE_77
• Track 15 : Hyzer_95
• Track 16 : Maridalia_79
• Track 17 : PantheRoc_82
• Track 18 : Thimann_75
• Track 19 : Samman98_76
• Track 20 : Annalisa_73, Dolores_76, Sekhmet_75
• Track 21 : PhriskyACE_69
• Track 22 : WinkNick_76
• Track 23 : Clark_74, MichaelScott_76
• Track 24 : Tuti_69
• Track 25 : Sidious_75
• Track 26 : RayTheFireFly_72
• Track 27 : Hedwig_69
• Track 28 : Doggs_63

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

The start number called the most often in the published annotations is 19, it was called in 46 of the 49 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Agueybana_80, AlumE_77, Annalisa_73, Antonio_74, BatStarr_78, Bialota_74, Bosnia_77, Bradissa_73, Bunnybear_73, Cashline_74, Clark_74, Confidence_77, Dillpickles_80, Dolores_76, EMsquaredA_77, EnalisNailo_73, Eudoria_75, Eviarto_79, Floral_78, Herod_79, Hyzer_95, Kita_76, Lilas_74, LonelyBoi_76, Madeline_72, Manasvini_77, Maridalia_79, MichaelScott_76, Neobush_77, Ohgeesy_79, PantheRoc_82, PhriskyACE_69, Polly_72, Samman98_76, Sekhmet_75, Sidious_75, Suscepit_75, SushiChef_77, Tayonia_75, ThankyouJordi_78, Thimann_75, TimTam_79, Trumpet_75, Tuti_69, WelcomeAyanna_78, WinkNick_76, Zameen_75, Zirinka_74,

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

Genes that do not have the "Most Annotated" start:
• Doggs_63, Hedwig_69, RayTheFireFly_72,

Summary by start number:

Start 19:
• Found in 48 of 51 (94.1%) of genes in pham
• Manual Annotations of this start: 46 of 49
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Agueybana_80 (CZ1), AlumE_77 (CZ1), Annalisa_73 (CZ4), Antonio_74 (CZ1), BatStarr_78 (CZ1), Bialota_74 (CZ1), Bosnia_77 (CZ1), Bradissa_73 (CY1), Bunnybear_73 (CZ), Cashline_74 (CY6), Clark_74 (CZ4), Confidence_77 (CY1), Dillpickles_80 (CZ1), Dolores_76 (CZ4), EMsquaredA_77 (CY1), EnalisNailo_73 (CY1), Eudoria_75 (CZ1), Eviarto_79 (CZ1), Floral_78 (CY1), Herod_79 (CZ1), Hyzer_95 (CZ1), Kita_76 (CZ1), Lilas_74 (CY1), LonelyBoi_76 (CY7), Madeline_72 (CZ1), Manasvini_77 (CZ1), Maridalia_79 (CZ1), MichaelScott_76 (CZ4), Neobush_77 (CZ1), Ohgeesy_79 (CZ), PantheRoc_82 (CZ3), PhriskyACE_69 (CZ4), Polly_72 (CZ1), Samman98_76 (CZ4), Sekhmet_75 (CZ4), Sidious_75 (CZ7), Suscepit_75 (CZ1), SushiChef_77 (CZ), Tayonia_75 (CZ1), ThankyouJordi_78 (CZ1), Thimann_75 (CZ4), TimTam_79 (CZ1), Trumpet_75 (CZ1), Tuti_69 (CZ4), WelcomeAyanna_78 (CZ1), WinkNick_76 (CZ4), Zameen_75 (CZ1), Zirinka_74 (CZ1),

Start 20:
• Found in 11 of 51 (21.6%) of genes in pham
• Manual Annotations of this start: 3 of 49
• Called 27.3% of time when present
• Phage (with cluster) where this start called: Doggs_63 (DB), Hedwig_69 (DB), RayTheFireFly_72 (DB),

Summary by clusters:

There are 9 clusters represented in this pham: CY1, CY7, CY6, CZ3, CZ1, DB, CZ7, CZ4, CZ,

Info for manual annotations of cluster CY1:

•Start number 19 was manually annotated 6 times for cluster CY1.

Info for manual annotations of cluster CY6:
•Start number 19 was manually annotated 1 time for cluster CY6.

Info for manual annotations of cluster CY7:
•Start number 19 was manually annotated 1 time for cluster CY7.

Info for manual annotations of cluster CZ:
•Start number 19 was manually annotated 2 times for cluster CZ.

Info for manual annotations of cluster CZ1:
•Start number 19 was manually annotated 24 times for cluster CZ1.

Info for manual annotations of cluster CZ3:
•Start number 19 was manually annotated 1 time for cluster CZ3.

Info for manual annotations of cluster CZ4:
•Start number 19 was manually annotated 10 times for cluster CZ4.

Info for manual annotations of cluster CZ7:
•Start number 19 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster DB:
•Start number 20 was manually annotated 3 times for cluster DB.

Gene Information:

Gene: Agueybana_80 Start: 50971, Stop: 51297, Start Num: 19
Candidate Starts for Agueybana_80:
(8, 50476), (9, 50491), (10, 50521), (12, 50701), (13, 50707), (14, 50713), (16, 50815), (Start: 19 @50971 has 46 MA's), (21, 50986), (22, 51019), (24, 51082), (26, 51157), (28, 51172), (29, 51184),

Gene: AlumE_77 Start: 50854, Stop: 51180, Start Num: 19
Candidate Starts for AlumE_77:
(15, 50662), (16, 50698), (Start: 19 @50854 has 46 MA's), (21, 50869), (22, 50902), (24, 50965), (26, 51040), (28, 51055), (29, 51067),

Gene: Annalisa_73 Start: 45668, Stop: 45994, Start Num: 19
Candidate Starts for Annalisa_73:
(13, 45404), (14, 45410), (16, 45512), (17, 45527), (Start: 19 @45668 has 46 MA's), (21, 45683), (22, 45716), (23, 45743), (24, 45779), (28, 45869), (29, 45881), (30, 45941),

Gene: Antonio_74 Start: 48617, Stop: 48943, Start Num: 19
Candidate Starts for Antonio_74:
(5, 47894), (7, 47906), (8, 48122), (9, 48137), (10, 48167), (12, 48347), (13, 48353), (14, 48359), (16, 48461), (Start: 19 @48617 has 46 MA's), (21, 48632), (22, 48665), (24, 48728), (26, 48803), (28, 48818), (29, 48830),

Gene: BatStarr_78 Start: 51585, Stop: 51911, Start Num: 19
Candidate Starts for BatStarr_78:

(5, 50862), (7, 50874), (8, 51090), (9, 51105), (10, 51135), (12, 51315), (13, 51321), (14, 51327), (16, 51429), (Start: 19 @51585 has 46 MA's), (21, 51600), (22, 51633), (24, 51696), (26, 51771), (28, 51786), (29, 51798),

Gene: Bialota_74 Start: 50305, Stop: 50631, Start Num: 19
Candidate Starts for Bialota_74:
(1, 49453), (4, 49561), (8, 49810), (9, 49825), (10, 49855), (12, 50035), (13, 50041), (14, 50047), (16, 50149), (Start: 19 @50305 has 46 MA's), (21, 50320), (22, 50353), (24, 50416), (26, 50491), (28, 50506), (29, 50518),

Gene: Bosnia_77 Start: 52699, Stop: 53025, Start Num: 19
Candidate Starts for Bosnia_77:
(5, 51976), (7, 51988), (8, 52204), (9, 52219), (10, 52249), (12, 52429), (13, 52435), (14, 52441), (16, 52543), (Start: 19 @52699 has 46 MA's), (21, 52714), (22, 52747), (24, 52810), (26, 52885), (28, 52900), (29, 52912),

Gene: Bradissa_73 Start: 50654, Stop: 50980, Start Num: 19
Candidate Starts for Bradissa_73:
(8, 50156), (9, 50171), (10, 50201), (13, 50390), (14, 50396), (15, 50462), (16, 50498), (Start: 19 @50654 has 46 MA's), (Start: 20 @50663 has 3 MA's), (21, 50669), (22, 50702), (23, 50729), (24, 50765), (29, 50867),

Gene: Bunnybear_73 Start: 49577, Stop: 49903, Start Num: 19
Candidate Starts for Bunnybear_73:
(Start: 19 @49577 has 46 MA's), (21, 49592), (22, 49625), (24, 49688), (26, 49763), (29, 49790),

Gene: Cashline_74 Start: 51349, Stop: 51675, Start Num: 19
Candidate Starts for Cashline_74:
(8, 50851), (9, 50866), (11, 51001), (13, 51085), (14, 51091), (16, 51193), (18, 51262), (Start: 19 @51349 has 46 MA's), (Start: 20 @51358 has 3 MA's), (21, 51364), (22, 51397), (23, 51424), (24, 51460), (29, 51562),

Gene: Clark_74 Start: 45978, Stop: 46304, Start Num: 19
Candidate Starts for Clark_74:
(8, 45483), (9, 45498), (13, 45714), (14, 45720), (15, 45786), (16, 45822), (Start: 19 @45978 has 46 MA's), (21, 45993), (22, 46026), (23, 46053), (24, 46089), (28, 46179), (29, 46191), (30, 46251),

Gene: Confidence_77 Start: 49429, Stop: 49755, Start Num: 19
Candidate Starts for Confidence_77:
(8, 48931), (9, 48946), (12, 49159), (13, 49165), (14, 49171), (16, 49273), (Start: 19 @49429 has 46 MA's), (21, 49444), (22, 49477), (24, 49540), (26, 49615), (28, 49630), (29, 49642),

Gene: Dillpickles_80 Start: 48661, Stop: 48987, Start Num: 19
Candidate Starts for Dillpickles_80:
(5, 47938), (7, 47950), (8, 48166), (9, 48181), (10, 48211), (12, 48391), (13, 48397), (14, 48403), (16, 48505), (Start: 19 @48661 has 46 MA's), (21, 48676), (22, 48709), (24, 48772), (26, 48847), (28, 48862), (29, 48874),

Gene: Doggs_63 Start: 44639, Stop: 44986, Start Num: 20
Candidate Starts for Doggs_63:
(Start: 20 @44639 has 3 MA's), (24, 44738), (25, 44753), (27, 44825), (30, 44930), (31, 44939),

Gene: Dolores_76 Start: 45721, Stop: 46047, Start Num: 19

Candidate Starts for Dolores_76:
(13, 45457), (14, 45463), (16, 45565), (17, 45580), (Start: 19 @45721 has 46 MA's), (21, 45736), (22, 45769), (23, 45796), (24, 45832), (28, 45922), (29, 45934), (30, 45994),

Gene: EMsquaredA_77 Start: 49446, Stop: 49772, Start Num: 19
Candidate Starts for EMsquaredA_77:
(8, 48948), (9, 48963), (10, 48993), (12, 49176), (13, 49182), (14, 49188), (16, 49290), (Start: 19 @49446 has 46 MA's), (Start: 20 @49455 has 3 MA's), (21, 49461), (22, 49494), (23, 49521), (24, 49557), (29, 49659),

Gene: EnalisNailo_73 Start: 49938, Stop: 50264, Start Num: 19
Candidate Starts for EnalisNailo_73:
(8, 49440), (9, 49455), (10, 49485), (12, 49668), (13, 49674), (14, 49680), (16, 49782), (Start: 19 @49938 has 46 MA's), (Start: 20 @49947 has 3 MA's), (21, 49953), (22, 49986), (23, 50013), (24, 50049), (29, 50151),

Gene: Eudoria_75 Start: 48617, Stop: 48943, Start Num: 19
Candidate Starts for Eudoria_75:
(5, 47894), (7, 47906), (8, 48122), (9, 48137), (10, 48167), (12, 48347), (13, 48353), (14, 48359), (16, 48461), (Start: 19 @48617 has 46 MA's), (21, 48632), (22, 48665), (24, 48728), (26, 48803), (28, 48818), (29, 48830),

Gene: Eviarto_79 Start: 51560, Stop: 51886, Start Num: 19
Candidate Starts for Eviarto_79:
(5, 50837), (7, 50849), (8, 51065), (9, 51080), (10, 51110), (12, 51290), (13, 51296), (14, 51302), (16, 51404), (Start: 19 @51560 has 46 MA's), (21, 51575), (22, 51608), (24, 51671), (26, 51746), (28, 51761), (29, 51773),

Gene: Floral_78 Start: 51403, Stop: 51729, Start Num: 19
Candidate Starts for Floral_78:
(8, 50905), (9, 50920), (10, 50950), (12, 51133), (13, 51139), (14, 51145), (16, 51247), (Start: 19 @51403 has 46 MA's), (Start: 20 @51412 has 3 MA's), (21, 51418), (22, 51451), (23, 51478), (24, 51514), (29, 51616),

Gene: Hedwig_69 Start: 43790, Stop: 44137, Start Num: 20
Candidate Starts for Hedwig_69:
(Start: 20 @43790 has 3 MA's), (24, 43889), (25, 43904), (27, 43976), (31, 44090),

Gene: Herod_79 Start: 51979, Stop: 52305, Start Num: 19
Candidate Starts for Herod_79:
(5, 51256), (7, 51268), (8, 51484), (9, 51499), (10, 51529), (12, 51709), (13, 51715), (14, 51721), (16, 51823), (Start: 19 @51979 has 46 MA's), (21, 51994), (22, 52027), (24, 52090), (26, 52165), (28, 52180), (29, 52192),

Gene: Hyzer_95 Start: 58629, Stop: 58955, Start Num: 19
Candidate Starts for Hyzer_95:
(3, 57807), (6, 57915), (8, 58134), (9, 58149), (13, 58365), (14, 58371), (16, 58473), (Start: 19 @58629 has 46 MA's), (21, 58644), (22, 58677), (23, 58704), (24, 58740), (28, 58830), (29, 58842),

Gene: Kita_76 Start: 48626, Stop: 48952, Start Num: 19
Candidate Starts for Kita_76:
(5, 47903), (7, 47915), (8, 48131), (9, 48146), (10, 48176), (12, 48356), (13, 48362), (14, 48368), (16, 48470), (Start: 19 @48626 has 46 MA's), (21, 48641), (22, 48674), (24, 48737), (26, 48812), (28,

48827), (29, 48839),

Gene: Lilas_74 Start: 51476, Stop: 51802, Start Num: 19
Candidate Starts for Lilas_74:
(8, 50978), (9, 50993), (10, 51023), (12, 51206), (13, 51212), (14, 51218), (16, 51320), (Start: 19 @51476 has 46 MA's), (Start: 20 @51485 has 3 MA's), (21, 51491), (22, 51524), (23, 51551), (24, 51587), (29, 51689),

Gene: LonelyBoi_76 Start: 52576, Stop: 52902, Start Num: 19
Candidate Starts for LonelyBoi_76:
(8, 52078), (9, 52093), (10, 52123), (12, 52306), (13, 52312), (14, 52318), (16, 52420), (Start: 19 @52576 has 46 MA's), (Start: 20 @52585 has 3 MA's), (21, 52591), (22, 52624), (23, 52651), (24, 52687), (26, 52762), (28, 52777), (29, 52789),

Gene: Madeline_72 Start: 49948, Stop: 50274, Start Num: 19
Candidate Starts for Madeline_72:
(1, 49096), (2, 49117), (4, 49204), (8, 49453), (9, 49468), (10, 49498), (12, 49678), (13, 49684), (14, 49690), (16, 49792), (Start: 19 @49948 has 46 MA's), (21, 49963), (22, 49996), (24, 50059), (26, 50134), (28, 50149), (29, 50161),

Gene: Manasvini_77 Start: 48641, Stop: 48967, Start Num: 19
Candidate Starts for Manasvini_77:
(5, 47918), (7, 47930), (8, 48146), (9, 48161), (10, 48191), (12, 48371), (13, 48377), (14, 48383), (16, 48485), (Start: 19 @48641 has 46 MA's), (21, 48656), (22, 48689), (24, 48752), (26, 48827), (28, 48842), (29, 48854),

Gene: Maridalia_79 Start: 49903, Stop: 50229, Start Num: 19
Candidate Starts for Maridalia_79:
(8, 49408), (9, 49423), (12, 49633), (13, 49639), (14, 49645), (16, 49747), (Start: 19 @49903 has 46 MA's), (21, 49918), (22, 49951), (24, 50014), (26, 50089), (28, 50104), (29, 50116),

Gene: MichaelScott_76 Start: 46659, Stop: 46985, Start Num: 19
Candidate Starts for MichaelScott_76:
(8, 46164), (9, 46179), (13, 46395), (14, 46401), (15, 46467), (16, 46503), (Start: 19 @46659 has 46 MA's), (21, 46674), (22, 46707), (23, 46734), (24, 46770), (28, 46860), (29, 46872), (30, 46932),

Gene: Neobush_77 Start: 49185, Stop: 49511, Start Num: 19
Candidate Starts for Neobush_77:
(5, 48462), (7, 48474), (8, 48690), (9, 48705), (10, 48735), (12, 48915), (13, 48921), (14, 48927), (16, 49029), (Start: 19 @49185 has 46 MA's), (21, 49200), (22, 49233), (24, 49296), (26, 49371), (28, 49386), (29, 49398),

Gene: Ohgeesy_79 Start: 51126, Stop: 51452, Start Num: 19
Candidate Starts for Ohgeesy_79:
(5, 50403), (7, 50415), (8, 50631), (9, 50646), (10, 50676), (13, 50862), (14, 50868), (16, 50970), (Start: 19 @51126 has 46 MA's), (21, 51141), (22, 51174), (24, 51237), (26, 51312), (28, 51327), (29, 51339),

Gene: PantheRoc_82 Start: 51319, Stop: 51645, Start Num: 19
Candidate Starts for PantheRoc_82:
(16, 51163), (Start: 19 @51319 has 46 MA's), (21, 51334), (22, 51367), (24, 51430), (26, 51505), (28, 51520), (29, 51532),

Gene: PhriskyACE_69 Start: 45509, Stop: 45835, Start Num: 19
Candidate Starts for PhriskyACE_69:
(1, 44648), (8, 45011), (9, 45026), (12, 45239), (13, 45245), (14, 45251), (16, 45353), (17, 45368), (Start: 19 @45509 has 46 MA's), (21, 45524), (22, 45557), (23, 45584), (24, 45620), (29, 45722), (30, 45782),

Gene: Polly_72 Start: 48060, Stop: 48386, Start Num: 19
Candidate Starts for Polly_72:
(5, 47337), (7, 47349), (8, 47565), (9, 47580), (10, 47610), (12, 47790), (13, 47796), (14, 47802), (16, 47904), (Start: 19 @48060 has 46 MA's), (21, 48075), (22, 48108), (24, 48171), (26, 48246), (28, 48261), (29, 48273),

Gene: RayTheFireFly_72 Start: 45008, Stop: 45355, Start Num: 20
Candidate Starts for RayTheFireFly_72:
(Start: 20 @45008 has 3 MA's), (24, 45107), (31, 45308), (32, 45335),

Gene: Samman98_76 Start: 46081, Stop: 46407, Start Num: 19
Candidate Starts for Samman98_76:
(8, 45586), (9, 45601), (13, 45817), (14, 45823), (15, 45889), (16, 45925), (17, 45940), (Start: 19 @46081 has 46 MA's), (21, 46096), (22, 46129), (23, 46156), (24, 46192), (28, 46282), (29, 46294), (30, 46354),

Gene: Sekhmet_75 Start: 46120, Stop: 46446, Start Num: 19
Candidate Starts for Sekhmet_75:
(13, 45856), (14, 45862), (16, 45964), (17, 45979), (Start: 19 @46120 has 46 MA's), (21, 46135), (22, 46168), (23, 46195), (24, 46231), (28, 46321), (29, 46333), (30, 46393),

Gene: Sidious_75 Start: 50002, Stop: 50328, Start Num: 19
Candidate Starts for Sidious_75:
(8, 49507), (9, 49522), (10, 49552), (13, 49738), (14, 49744), (16, 49846), (18, 49915), (Start: 19 @50002 has 46 MA's), (Start: 20 @50011 has 3 MA's), (21, 50017), (22, 50050), (23, 50077), (24, 50113), (28, 50203),

Gene: Suscepit_75 Start: 48618, Stop: 48944, Start Num: 19
Candidate Starts for Suscepit_75:
(5, 47895), (7, 47907), (8, 48123), (9, 48138), (10, 48168), (12, 48348), (13, 48354), (14, 48360), (16, 48462), (Start: 19 @48618 has 46 MA's), (21, 48633), (22, 48666), (24, 48729), (26, 48804), (28, 48819), (29, 48831),

Gene: SushiChef_77 Start: 50964, Stop: 51290, Start Num: 19
Candidate Starts for SushiChef_77:
(8, 50469), (9, 50484), (10, 50514), (12, 50694), (13, 50700), (14, 50706), (16, 50808), (Start: 19 @50964 has 46 MA's), (21, 50979), (22, 51012), (24, 51075), (26, 51150), (28, 51165), (29, 51177),

Gene: Tayonia_75 Start: 48617, Stop: 48943, Start Num: 19
Candidate Starts for Tayonia_75:
(5, 47894), (7, 47906), (8, 48122), (9, 48137), (10, 48167), (12, 48347), (13, 48353), (14, 48359), (16, 48461), (Start: 19 @48617 has 46 MA's), (21, 48632), (22, 48665), (24, 48728), (26, 48803), (28, 48818), (29, 48830),

Gene: ThankyouJordi_78 Start: 51789, Stop: 52115, Start Num: 19
Candidate Starts for ThankyouJordi_78:

(8, 51294), (9, 51309), (10, 51339), (13, 51525), (14, 51531), (16, 51633), (Start: 19 @51789 has 46 MA's), (21, 51804), (22, 51837), (23, 51864), (24, 51900), (28, 51990), (29, 52002),

Gene: Thimann_75 Start: 46120, Stop: 46446, Start Num: 19
Candidate Starts for Thimann_75:
(12, 45850), (13, 45856), (14, 45862), (16, 45964), (Start: 19 @46120 has 46 MA's), (21, 46135), (22, 46168), (23, 46195), (24, 46231), (29, 46333), (30, 46393),

Gene: TimTam_79 Start: 51584, Stop: 51910, Start Num: 19
Candidate Starts for TimTam_79:
(5, 50861), (7, 50873), (8, 51089), (9, 51104), (10, 51134), (12, 51314), (13, 51320), (14, 51326), (16, 51428), (Start: 19 @51584 has 46 MA's), (21, 51599), (22, 51632), (24, 51695), (26, 51770), (28, 51785), (29, 51797),

Gene: Trumpet_75 Start: 48618, Stop: 48944, Start Num: 19
Candidate Starts for Trumpet_75:
(5, 47895), (7, 47907), (8, 48123), (9, 48138), (10, 48168), (12, 48348), (13, 48354), (14, 48360), (16, 48462), (Start: 19 @48618 has 46 MA's), (21, 48633), (22, 48666), (24, 48729), (26, 48804), (28, 48819), (29, 48831),

Gene: Tuti_69 Start: 46517, Stop: 46843, Start Num: 19
Candidate Starts for Tuti_69:
(13, 46253), (14, 46259), (15, 46325), (16, 46361), (Start: 19 @46517 has 46 MA's), (21, 46532), (22, 46565), (23, 46592), (24, 46628), (28, 46718), (29, 46730), (30, 46790),

Gene: WelcomeAyanna_78 Start: 51936, Stop: 52262, Start Num: 19
Candidate Starts for WelcomeAyanna_78:
(8, 51441), (9, 51456), (10, 51486), (13, 51672), (14, 51678), (16, 51780), (Start: 19 @51936 has 46 MA's), (21, 51951), (22, 51984), (23, 52011), (24, 52047), (28, 52137), (29, 52149),

Gene: WinkNick_76 Start: 45644, Stop: 45970, Start Num: 19
Candidate Starts for WinkNick_76:
(13, 45380), (14, 45386), (16, 45488), (17, 45503), (Start: 19 @45644 has 46 MA's), (22, 45692), (23, 45719), (24, 45755), (28, 45845), (29, 45857), (30, 45917),

Gene: Zameen_75 Start: 48617, Stop: 48943, Start Num: 19
Candidate Starts for Zameen_75:
(5, 47894), (7, 47906), (8, 48122), (9, 48137), (10, 48167), (12, 48347), (13, 48353), (14, 48359), (16, 48461), (Start: 19 @48617 has 46 MA's), (21, 48632), (22, 48665), (24, 48728), (26, 48803), (28, 48818), (29, 48830),

Gene: Zirinka_74 Start: 50293, Stop: 50619, Start Num: 19
Candidate Starts for Zirinka_74:
(1, 49441), (4, 49549), (8, 49798), (9, 49813), (10, 49843), (12, 50023), (13, 50029), (14, 50035), (16, 50137), (Start: 19 @50293 has 46 MA's), (21, 50308), (22, 50341), (24, 50404), (26, 50479), (28, 50494), (29, 50506),