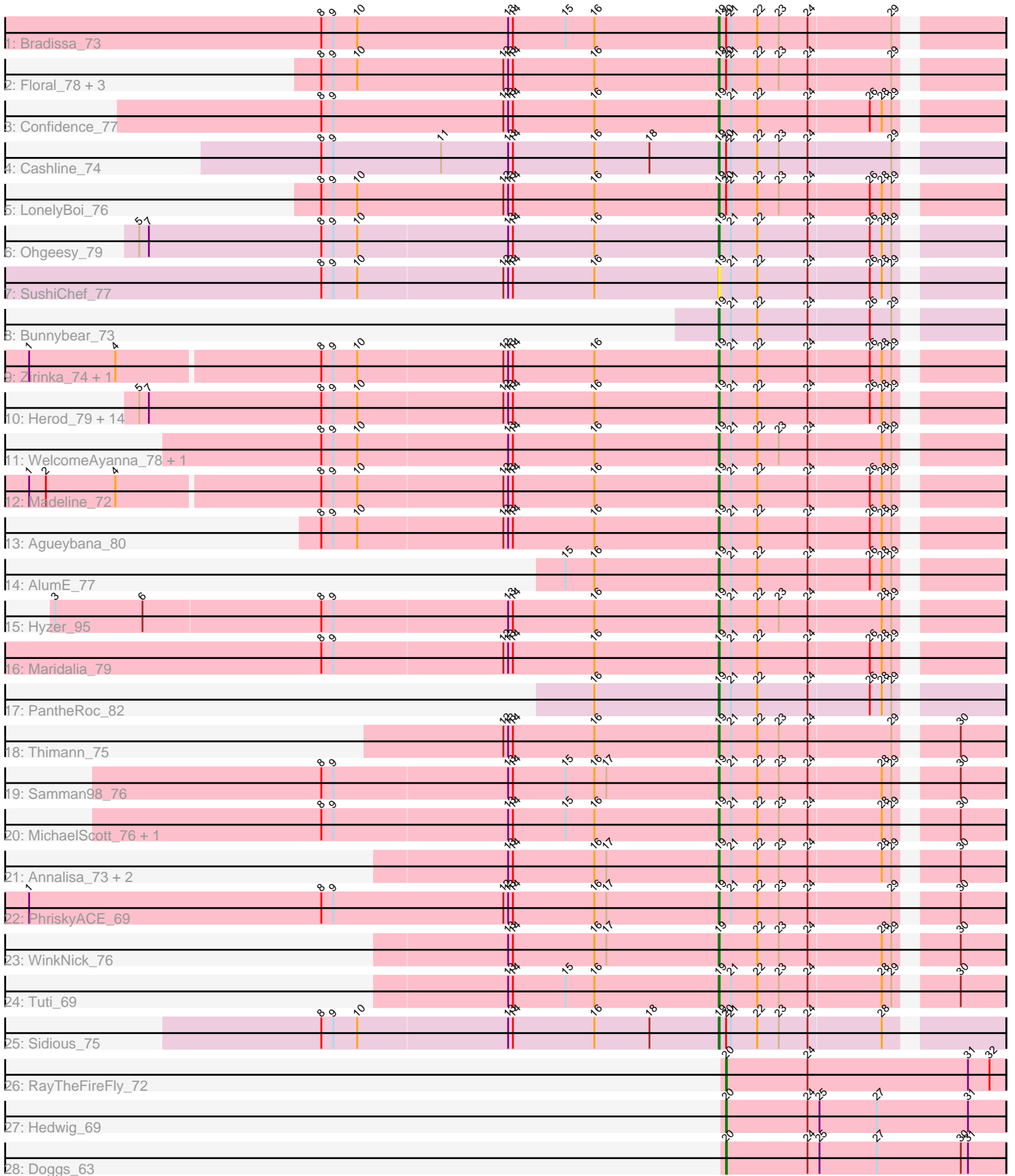


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Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. 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 311696 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311696 has 50 members, 1 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, Polly\_72, Susceptit\_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 : MichaelScott\_76, Clark\_74
- Track 21 : Annalisa\_73, Dolores\_76, Sekhmet\_75
- Track 22 : PhriskyACE\_69
- Track 23 : WinkNick\_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, 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 47 of 50 ( 94.0% ) 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), 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 50 ( 22.0% ) 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: 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),