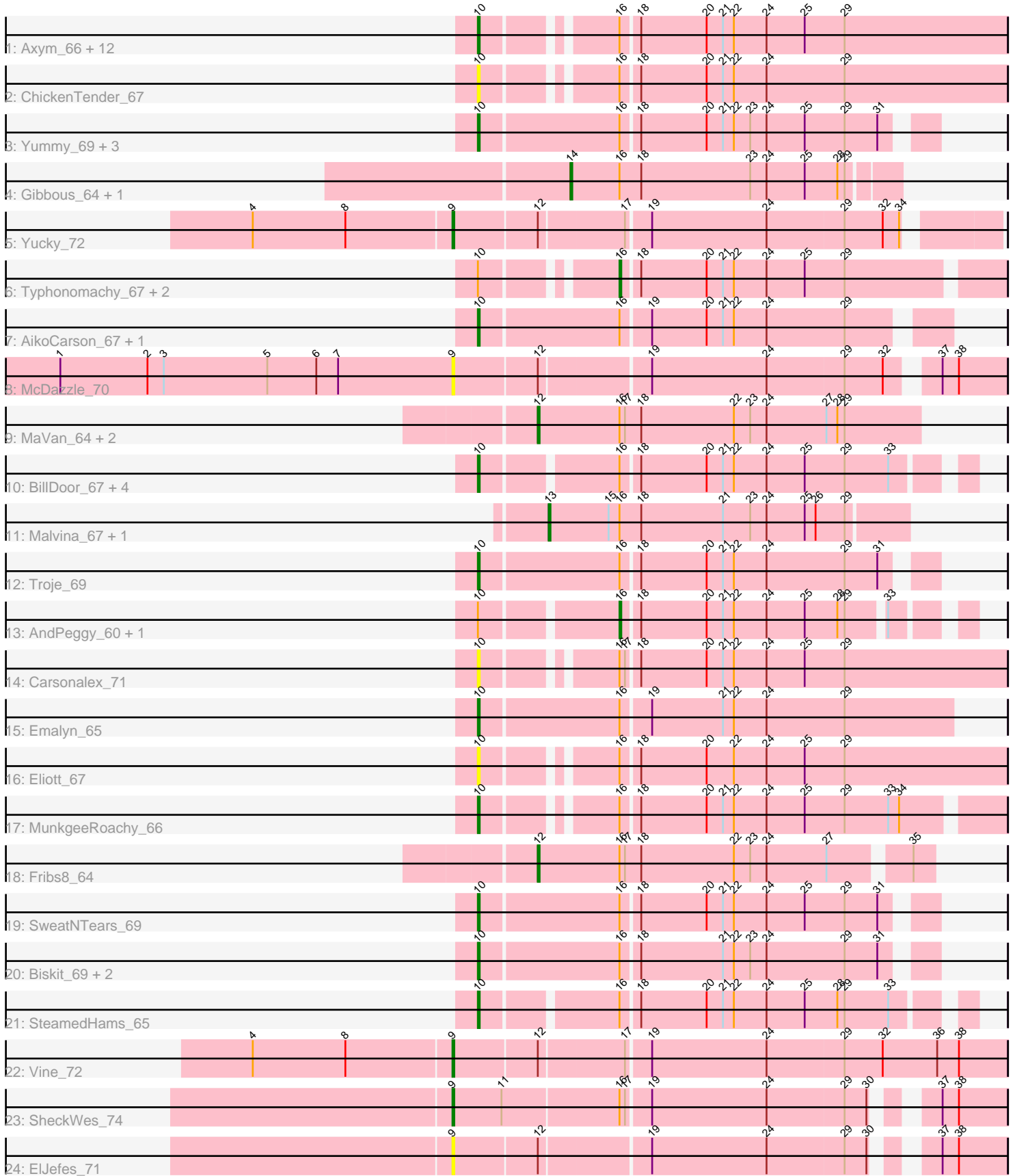


Pham 311667



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 311667 Report

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

Pham number 311667 has 53 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Axym\_66, RADical\_69, Sopespian\_64, GoldHunter\_69, Bubble\_67, Nina\_67, Agatha\_68, Cozz\_67, Socotra\_69, RSchmailzl\_68, Starburst\_69, RedBaron\_75, PsychoKiller\_66
- Track 2 : ChickenTender\_67
- Track 3 : Yummy\_69, Buttrmlkdreams\_69, MScarn\_71, Horseradish\_69
- Track 4 : Gibbous\_64, Dre3\_64
- Track 5 : Yucky\_72
- Track 6 : Typhonmachy\_67, Burnsey\_67, Quasar\_68
- Track 7 : AikoCarson\_67, Amok\_66
- Track 8 : McDazzle\_70
- Track 9 : MaVan\_64, Azira\_64, Survivors\_66
- Track 10 : BillDoor\_67, ChocoMunchkin\_63, Tolls\_66, CaramelLatte\_63, CanesSauce\_63
- Track 11 : Malvina\_67, HippoPololi\_64
- Track 12 : Troje\_69
- Track 13 : AndPeggy\_60, Yarn\_61
- Track 14 : Carsonalex\_71
- Track 15 : Emalyn\_65
- Track 16 : Elliott\_67
- Track 17 : MunkgeeRoachy\_66
- Track 18 : Fribs8\_64
- Track 19 : SweatNTears\_69
- Track 20 : Biskit\_69, SketchMex\_67, Blondies\_73
- Track 21 : SteamedHams\_65
- Track 22 : Vine\_72
- Track 23 : SheckWes\_74
- Track 24 : ElJefes\_71

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

The start number called the most often in the published annotations is 10, it was called in 23 of the 38 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agatha\_68, AikoCarson\_67, Amok\_66, Axym\_66, BillDoor\_67, Biskit\_69, Blondies\_73, Bubble\_67, Buttrmlkdreams\_69, CanesSauce\_63, CaramelLatte\_63, Carsonalex\_71, ChickenTender\_67, ChocoMunchkin\_63, Cozz\_67, Elliott\_67, Emalyn\_65, GoldHunter\_69, Horseradish\_69, MScarn\_71, MunkgeeRoachy\_66, Nina\_67, PsychoKiller\_66, RADical\_69, RSchmailzl\_68, RedBaron\_75, SketchMex\_67, Socotra\_69, Sopespian\_64, Starburst\_69, SteamedHams\_65, SweatNTears\_69, Tolls\_66, Troje\_69, Yummy\_69,

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

- AndPeggy\_60, Burnsey\_67, Quasar\_68, Typhonmarchy\_67, Yarn\_61,

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

- Azira\_64, Dre3\_64, ElJefes\_71, Fribs8\_64, Gibbous\_64, HippoPololi\_64, MaVan\_64, Malvina\_67, McDazzle\_70, SheckWes\_74, Survivors\_66, Vine\_72, Yucky\_72,

### Summary by start number:

Start 9:

- Found in 5 of 53 ( 9.4% ) of genes in pham
- Manual Annotations of this start: 3 of 38
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ElJefes\_71 (CT), McDazzle\_70 (CT), SheckWes\_74 (CT), Vine\_72 (CT), Yucky\_72 (CT),

Start 10:

- Found in 40 of 53 ( 75.5% ) of genes in pham
- Manual Annotations of this start: 23 of 38
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Agatha\_68 (CT), AikoCarson\_67 (CT), Amok\_66 (CT), Axym\_66 (CT), BillDoor\_67 (CT), Biskit\_69 (CT), Blondies\_73 (CT), Bubble\_67 (CT), Buttrmlkdreams\_69 (CT), CanesSauce\_63 (CT), CaramelLatte\_63 (CT), Carsonalex\_71 (CT), ChickenTender\_67 (CT), ChocoMunchkin\_63 (CT), Cozz\_67 (CT), Elliott\_67 (CT), Emalyn\_65 (CT), GoldHunter\_69 (CT), Horseradish\_69 (CT), MScarn\_71 (CT), MunkgeeRoachy\_66 (CT), Nina\_67 (CT), PsychoKiller\_66 (CT), RADical\_69 (CT), RSchmailzl\_68 (CT), RedBaron\_75 (CT), SketchMex\_67 (CT), Socotra\_69 (CT), Sopespian\_64 (CT), Starburst\_69 (CT), SteamedHams\_65 (CT), SweatNTears\_69 (CT), Tolls\_66 (CT), Troje\_69 (CT), Yummy\_69 (CT),

Start 12:

- Found in 8 of 53 ( 15.1% ) of genes in pham
- Manual Annotations of this start: 4 of 38
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Azira\_64 (CT), Fribs8\_64 (CT), MaVan\_64 (CT), Survivors\_66 (CT),

Start 13:

- Found in 2 of 53 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 1 of 38
- Called 100.0% of time when present
- Phage (with cluster) where this start called: HippoPololi\_64 (CT), Malvina\_67 (CT),

Start 14:

- Found in 2 of 53 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 2 of 38
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dre3\_64 (CT), Gibbous\_64 (CT),

Start 16:

- Found in 49 of 53 ( 92.5% ) of genes in pham
- Manual Annotations of this start: 5 of 38
- Called 10.2% of time when present
- Phage (with cluster) where this start called: AndPeggy\_60 (CT), Burnsey\_67 (CT), Quasar\_68 (CT), Typhonmarchy\_67 (CT), Yarn\_61 (CT),

### **Summary by clusters:**

There is one cluster represented in this pham: CT

Info for manual annotations of cluster CT:

- Start number 9 was manually annotated 3 times for cluster CT.
- Start number 10 was manually annotated 23 times for cluster CT.
- Start number 12 was manually annotated 4 times for cluster CT.
- Start number 13 was manually annotated 1 time for cluster CT.
- Start number 14 was manually annotated 2 times for cluster CT.
- Start number 16 was manually annotated 5 times for cluster CT.

### **Gene Information:**

Gene: Agatha\_68 Start: 45224, Stop: 45496, Start Num: 10

Candidate Starts for Agatha\_68:

(Start: 10 @45224 has 23 MA's), (Start: 16 @45287 has 5 MA's), (18, 45296), (20, 45332), (21, 45341), (22, 45347), (24, 45365), (25, 45386), (29, 45407),

Gene: AikoCarson\_67 Start: 44165, Stop: 44407, Start Num: 10

Candidate Starts for AikoCarson\_67:

(Start: 10 @44165 has 23 MA's), (Start: 16 @44240 has 5 MA's), (19, 44255), (20, 44285), (21, 44294), (22, 44300), (24, 44318), (29, 44360),

Gene: Amok\_66 Start: 44205, Stop: 44444, Start Num: 10

Candidate Starts for Amok\_66:

(Start: 10 @44205 has 23 MA's), (Start: 16 @44280 has 5 MA's), (19, 44295), (20, 44325), (21, 44334), (22, 44340), (24, 44358), (29, 44400),

Gene: AndPeggy\_60 Start: 43276, Stop: 43449, Start Num: 16

Candidate Starts for AndPeggy\_60:

(Start: 10 @43207 has 23 MA's), (Start: 16 @43276 has 5 MA's), (18, 43285), (20, 43321), (21, 43330), (22, 43336), (24, 43354), (25, 43375), (28, 43393), (29, 43396), (33, 43414),

Gene: Axym\_66 Start: 45099, Stop: 45371, Start Num: 10

Candidate Starts for Axym\_66:

(Start: 10 @45099 has 23 MA's), (Start: 16 @45162 has 5 MA's), (18, 45171), (20, 45207), (21, 45216), (22, 45222), (24, 45240), (25, 45261), (29, 45282),

Gene: Azira\_64 Start: 44044, Stop: 44253, Start Num: 12

Candidate Starts for Azira\_64:

(Start: 12 @44044 has 4 MA's), (Start: 16 @44089 has 5 MA's), (17, 44092), (18, 44101), (22, 44152), (23, 44161), (24, 44170), (27, 44203), (28, 44209), (29, 44212),

Gene: BillDoor\_67 Start: 43474, Stop: 43722, Start Num: 10

Candidate Starts for BillDoor\_67:

(Start: 10 @43474 has 23 MA's), (Start: 16 @43543 has 5 MA's), (18, 43552), (20, 43588), (21, 43597), (22, 43603), (24, 43621), (25, 43642), (29, 43663), (33, 43687),

Gene: Biskit\_69 Start: 44728, Stop: 44964, Start Num: 10

Candidate Starts for Biskit\_69:

(Start: 10 @44728 has 23 MA's), (Start: 16 @44803 has 5 MA's), (18, 44812), (21, 44857), (22, 44863), (23, 44872), (24, 44881), (29, 44923), (31, 44941),

Gene: Blondies\_73 Start: 45047, Stop: 45283, Start Num: 10

Candidate Starts for Blondies\_73:

(Start: 10 @45047 has 23 MA's), (Start: 16 @45122 has 5 MA's), (18, 45131), (21, 45176), (22, 45182), (23, 45191), (24, 45200), (29, 45242), (31, 45260),

Gene: Bubble\_67 Start: 45154, Stop: 45426, Start Num: 10

Candidate Starts for Bubble\_67:

(Start: 10 @45154 has 23 MA's), (Start: 16 @45217 has 5 MA's), (18, 45226), (20, 45262), (21, 45271), (22, 45277), (24, 45295), (25, 45316), (29, 45337),

Gene: Burnsey\_67 Start: 44874, Stop: 45083, Start Num: 16

Candidate Starts for Burnsey\_67:

(Start: 10 @44811 has 23 MA's), (Start: 16 @44874 has 5 MA's), (18, 44883), (20, 44919), (21, 44928), (22, 44934), (24, 44952), (25, 44973), (29, 44994),

Gene: Buttrmlkdreams\_69 Start: 44897, Stop: 45133, Start Num: 10

Candidate Starts for Buttrmlkdreams\_69:

(Start: 10 @44897 has 23 MA's), (Start: 16 @44972 has 5 MA's), (18, 44981), (20, 45017), (21, 45026), (22, 45032), (23, 45041), (24, 45050), (25, 45071), (29, 45092), (31, 45110),

Gene: CanesSauce\_63 Start: 43368, Stop: 43616, Start Num: 10

Candidate Starts for CanesSauce\_63:

(Start: 10 @43368 has 23 MA's), (Start: 16 @43437 has 5 MA's), (18, 43446), (20, 43482), (21, 43491), (22, 43497), (24, 43515), (25, 43536), (29, 43557), (33, 43581),

Gene: CaramellLatte\_63 Start: 43368, Stop: 43616, Start Num: 10

Candidate Starts for CaramellLatte\_63:

(Start: 10 @43368 has 23 MA's), (Start: 16 @43437 has 5 MA's), (18, 43446), (20, 43482), (21, 43491), (22, 43497), (24, 43515), (25, 43536), (29, 43557), (33, 43581),

Gene: Carsonalex\_71 Start: 45269, Stop: 45541, Start Num: 10

Candidate Starts for Carsonalex\_71:

(Start: 10 @45269 has 23 MA's), (Start: 16 @45332 has 5 MA's), (17, 45335), (18, 45341), (20, 45377), (21, 45386), (22, 45392), (24, 45410), (25, 45431), (29, 45452),

Gene: ChickenTender\_67 Start: 43889, Stop: 44161, Start Num: 10

Candidate Starts for ChickenTender\_67:

(Start: 10 @43889 has 23 MA's), (Start: 16 @43952 has 5 MA's), (18, 43961), (20, 43997), (21, 44006), (22, 44012), (24, 44030), (29, 44072),

Gene: ChocoMunchkin\_63 Start: 43368, Stop: 43616, Start Num: 10

Candidate Starts for ChocoMunchkin\_63:

(Start: 10 @43368 has 23 MA's), (Start: 16 @43437 has 5 MA's), (18, 43446), (20, 43482), (21, 43491), (22, 43497), (24, 43515), (25, 43536), (29, 43557), (33, 43581),

Gene: Cozz\_67 Start: 45226, Stop: 45498, Start Num: 10

Candidate Starts for Cozz\_67:

(Start: 10 @45226 has 23 MA's), (Start: 16 @45289 has 5 MA's), (18, 45298), (20, 45334), (21, 45343), (22, 45349), (24, 45367), (25, 45388), (29, 45409),

Gene: Dre3\_64 Start: 44202, Stop: 44378, Start Num: 14

Candidate Starts for Dre3\_64:

(Start: 14 @44202 has 2 MA's), (Start: 16 @44229 has 5 MA's), (18, 44241), (23, 44301), (24, 44310), (25, 44331), (28, 44349), (29, 44352),

Gene: ElJefes\_71 Start: 46711, Stop: 46986, Start Num: 9

Candidate Starts for ElJefes\_71:

(Start: 9 @46711 has 3 MA's), (Start: 12 @46756 has 4 MA's), (19, 46813), (24, 46876), (29, 46918), (30, 46930), (37, 46951), (38, 46960),

Gene: Elliott\_67 Start: 44695, Stop: 44967, Start Num: 10

Candidate Starts for Elliott\_67:

(Start: 10 @44695 has 23 MA's), (Start: 16 @44758 has 5 MA's), (18, 44767), (20, 44803), (22, 44818), (24, 44836), (25, 44857), (29, 44878),

Gene: Emalyn\_65 Start: 42894, Stop: 43148, Start Num: 10

Candidate Starts for Emalyn\_65:

(Start: 10 @42894 has 23 MA's), (Start: 16 @42969 has 5 MA's), (19, 42984), (21, 43023), (22, 43029), (24, 43047), (29, 43089),

Gene: Fribs8\_64 Start: 44678, Stop: 44887, Start Num: 12

Candidate Starts for Fribs8\_64:

(Start: 12 @44678 has 4 MA's), (Start: 16 @44723 has 5 MA's), (17, 44726), (18, 44735), (22, 44786), (23, 44795), (24, 44804), (27, 44837), (35, 44876),

Gene: Gibbous\_64 Start: 44202, Stop: 44378, Start Num: 14

Candidate Starts for Gibbous\_64:

(Start: 14 @44202 has 2 MA's), (Start: 16 @44229 has 5 MA's), (18, 44241), (23, 44301), (24, 44310), (25, 44331), (28, 44349), (29, 44352),

Gene: GoldHunter\_69 Start: 45215, Stop: 45487, Start Num: 10

Candidate Starts for GoldHunter\_69:

(Start: 10 @45215 has 23 MA's), (Start: 16 @45278 has 5 MA's), (18, 45287), (20, 45323), (21, 45332), (22, 45338), (24, 45356), (25, 45377), (29, 45398),

Gene: HippoPololi\_64 Start: 43762, Stop: 43956, Start Num: 13

Candidate Starts for HippoPololi\_64:

(Start: 13 @43762 has 1 MA's), (15, 43795), (Start: 16 @43801 has 5 MA's), (18, 43813), (21, 43858), (23, 43873), (24, 43882), (25, 43903), (26, 43909), (29, 43924),

Gene: Horseradish\_69 Start: 44661, Stop: 44897, Start Num: 10

Candidate Starts for Horseradish\_69:

(Start: 10 @44661 has 23 MA's), (Start: 16 @44736 has 5 MA's), (18, 44745), (20, 44781), (21, 44790), (22, 44796), (23, 44805), (24, 44814), (25, 44835), (29, 44856), (31, 44874),

Gene: MScarn\_71 Start: 44575, Stop: 44811, Start Num: 10

Candidate Starts for MScarn\_71:

(Start: 10 @44575 has 23 MA's), (Start: 16 @44650 has 5 MA's), (18, 44659), (20, 44695), (21, 44704), (22, 44710), (23, 44719), (24, 44728), (25, 44749), (29, 44770), (31, 44788),

Gene: MaVan\_64 Start: 44074, Stop: 44283, Start Num: 12

Candidate Starts for MaVan\_64:

(Start: 12 @44074 has 4 MA's), (Start: 16 @44119 has 5 MA's), (17, 44122), (18, 44131), (22, 44182), (23, 44191), (24, 44200), (27, 44233), (28, 44239), (29, 44242),

Gene: Malvina\_67 Start: 43757, Stop: 43951, Start Num: 13

Candidate Starts for Malvina\_67:

(Start: 13 @43757 has 1 MA's), (15, 43790), (Start: 16 @43796 has 5 MA's), (18, 43808), (21, 43853), (23, 43868), (24, 43877), (25, 43898), (26, 43904), (29, 43919),

Gene: McDazzle\_70 Start: 46725, Stop: 47009, Start Num: 9

Candidate Starts for McDazzle\_70:

(1, 46509), (2, 46557), (3, 46566), (5, 46623), (6, 46650), (7, 46662), (Start: 9 @46725 has 3 MA's), (Start: 12 @46770 has 4 MA's), (19, 46827), (24, 46890), (29, 46932), (32, 46953), (37, 46974), (38, 46983),

Gene: MunkgeeRoachy\_66 Start: 44540, Stop: 44803, Start Num: 10

Candidate Starts for MunkgeeRoachy\_66:

(Start: 10 @44540 has 23 MA's), (Start: 16 @44603 has 5 MA's), (18, 44612), (20, 44648), (21, 44657), (22, 44663), (24, 44681), (25, 44702), (29, 44723), (33, 44747), (34, 44753),

Gene: Nina\_67 Start: 45298, Stop: 45570, Start Num: 10

Candidate Starts for Nina\_67:

(Start: 10 @45298 has 23 MA's), (Start: 16 @45361 has 5 MA's), (18, 45370), (20, 45406), (21, 45415), (22, 45421), (24, 45439), (25, 45460), (29, 45481),

Gene: PsychoKiller\_66 Start: 44696, Stop: 44968, Start Num: 10

Candidate Starts for PsychoKiller\_66:

(Start: 10 @44696 has 23 MA's), (Start: 16 @44759 has 5 MA's), (18, 44768), (20, 44804), (21, 44813), (22, 44819), (24, 44837), (25, 44858), (29, 44879),

Gene: Quasar\_68 Start: 45648, Stop: 45857, Start Num: 16

Candidate Starts for Quasar\_68:

(Start: 10 @45585 has 23 MA's), (Start: 16 @45648 has 5 MA's), (18, 45657), (20, 45693), (21, 45702), (22, 45708), (24, 45726), (25, 45747), (29, 45768),

Gene: RADical\_69 Start: 45102, Stop: 45374, Start Num: 10

Candidate Starts for RADical\_69:

(Start: 10 @45102 has 23 MA's), (Start: 16 @45165 has 5 MA's), (18, 45174), (20, 45210), (21, 45219), (22, 45225), (24, 45243), (25, 45264), (29, 45285),

Gene: RSchmailzl\_68 Start: 45118, Stop: 45390, Start Num: 10

Candidate Starts for RSchmailzl\_68:

(Start: 10 @45118 has 23 MA's), (Start: 16 @45181 has 5 MA's), (18, 45190), (20, 45226), (21, 45235), (22, 45241), (24, 45259), (25, 45280), (29, 45301),

Gene: RedBaron\_75 Start: 46122, Stop: 46394, Start Num: 10

Candidate Starts for RedBaron\_75:

(Start: 10 @46122 has 23 MA's), (Start: 16 @46185 has 5 MA's), (18, 46194), (20, 46230), (21, 46239), (22, 46245), (24, 46263), (25, 46284), (29, 46305),

Gene: SheckWes\_74 Start: 46431, Stop: 46709, Start Num: 9

Candidate Starts for SheckWes\_74:

(Start: 9 @46431 has 3 MA's), (11, 46458), (Start: 16 @46521 has 5 MA's), (17, 46524), (19, 46536), (24, 46599), (29, 46641), (30, 46653), (37, 46674), (38, 46683),

Gene: SketchMex\_67 Start: 44728, Stop: 44964, Start Num: 10

Candidate Starts for SketchMex\_67:

(Start: 10 @44728 has 23 MA's), (Start: 16 @44803 has 5 MA's), (18, 44812), (21, 44857), (22, 44863), (23, 44872), (24, 44881), (29, 44923), (31, 44941),

Gene: Socotra\_69 Start: 45208, Stop: 45480, Start Num: 10

Candidate Starts for Socotra\_69:

(Start: 10 @45208 has 23 MA's), (Start: 16 @45271 has 5 MA's), (18, 45280), (20, 45316), (21, 45325), (22, 45331), (24, 45349), (25, 45370), (29, 45391),

Gene: Sopespian\_64 Start: 44697, Stop: 44969, Start Num: 10

Candidate Starts for Sopespian\_64:

(Start: 10 @44697 has 23 MA's), (Start: 16 @44760 has 5 MA's), (18, 44769), (20, 44805), (21, 44814), (22, 44820), (24, 44838), (25, 44859), (29, 44880),

Gene: Starburst\_69 Start: 45104, Stop: 45376, Start Num: 10

Candidate Starts for Starburst\_69:

(Start: 10 @45104 has 23 MA's), (Start: 16 @45167 has 5 MA's), (18, 45176), (20, 45212), (21, 45221), (22, 45227), (24, 45245), (25, 45266), (29, 45287),

Gene: SteamedHams\_65 Start: 43184, Stop: 43432, Start Num: 10

Candidate Starts for SteamedHams\_65:

(Start: 10 @43184 has 23 MA's), (Start: 16 @43253 has 5 MA's), (18, 43262), (20, 43298), (21, 43307), (22, 43313), (24, 43331), (25, 43352), (28, 43370), (29, 43373), (33, 43397),

Gene: Survivors\_66 Start: 44109, Stop: 44309, Start Num: 12

Candidate Starts for Survivors\_66:

(Start: 12 @44109 has 4 MA's), (Start: 16 @44154 has 5 MA's), (17, 44157), (18, 44166), (22, 44217), (23, 44226), (24, 44235), (27, 44268), (28, 44274), (29, 44277),

Gene: SweatNTears\_69 Start: 44823, Stop: 45059, Start Num: 10

Candidate Starts for SweatNTears\_69:

(Start: 10 @44823 has 23 MA's), (Start: 16 @44898 has 5 MA's), (18, 44907), (20, 44943), (21, 44952), (22, 44958), (24, 44976), (25, 44997), (29, 45018), (31, 45036),

Gene: Tolls\_66 Start: 43455, Stop: 43703, Start Num: 10

Candidate Starts for Tolls\_66:

(Start: 10 @43455 has 23 MA's), (Start: 16 @43524 has 5 MA's), (18, 43533), (20, 43569), (21, 43578), (22, 43584), (24, 43602), (25, 43623), (29, 43644), (33, 43668),

Gene: Troje\_69 Start: 44798, Stop: 45034, Start Num: 10

Candidate Starts for Troje\_69:

(Start: 10 @44798 has 23 MA's), (Start: 16 @44873 has 5 MA's), (18, 44882), (20, 44918), (21, 44927), (22, 44933), (24, 44951), (29, 44993), (31, 45011),

Gene: Typhonomachy\_67 Start: 44986, Stop: 45186, Start Num: 16

Candidate Starts for Typhonomachy\_67:

(Start: 10 @44923 has 23 MA's), (Start: 16 @44986 has 5 MA's), (18, 44995), (20, 45031), (21, 45040), (22, 45046), (24, 45064), (25, 45085), (29, 45106),

Gene: Vine\_72 Start: 46824, Stop: 47120, Start Num: 9

Candidate Starts for Vine\_72:

(4, 46716), (8, 46767), (Start: 9 @46824 has 3 MA's), (Start: 12 @46869 has 4 MA's), (17, 46914), (19, 46926), (24, 46989), (29, 47031), (32, 47052), (36, 47082), (38, 47094),

Gene: Yarn\_61 Start: 43281, Stop: 43460, Start Num: 16

Candidate Starts for Yarn\_61:

(Start: 10 @43212 has 23 MA's), (Start: 16 @43281 has 5 MA's), (18, 43290), (20, 43326), (21, 43335), (22, 43341), (24, 43359), (25, 43380), (28, 43398), (29, 43401), (33, 43425),

Gene: Yucky\_72 Start: 46625, Stop: 46906, Start Num: 9

Candidate Starts for Yucky\_72:

(4, 46517), (8, 46568), (Start: 9 @46625 has 3 MA's), (Start: 12 @46670 has 4 MA's), (17, 46715), (19, 46727), (24, 46790), (29, 46832), (32, 46853), (34, 46862),

Gene: Yummy\_69 Start: 44775, Stop: 45011, Start Num: 10

Candidate Starts for Yummy\_69:

(Start: 10 @44775 has 23 MA's), (Start: 16 @44850 has 5 MA's), (18, 44859), (20, 44895), (21, 44904), (22, 44910), (23, 44919), (24, 44928), (25, 44949), (29, 44970), (31, 44988),