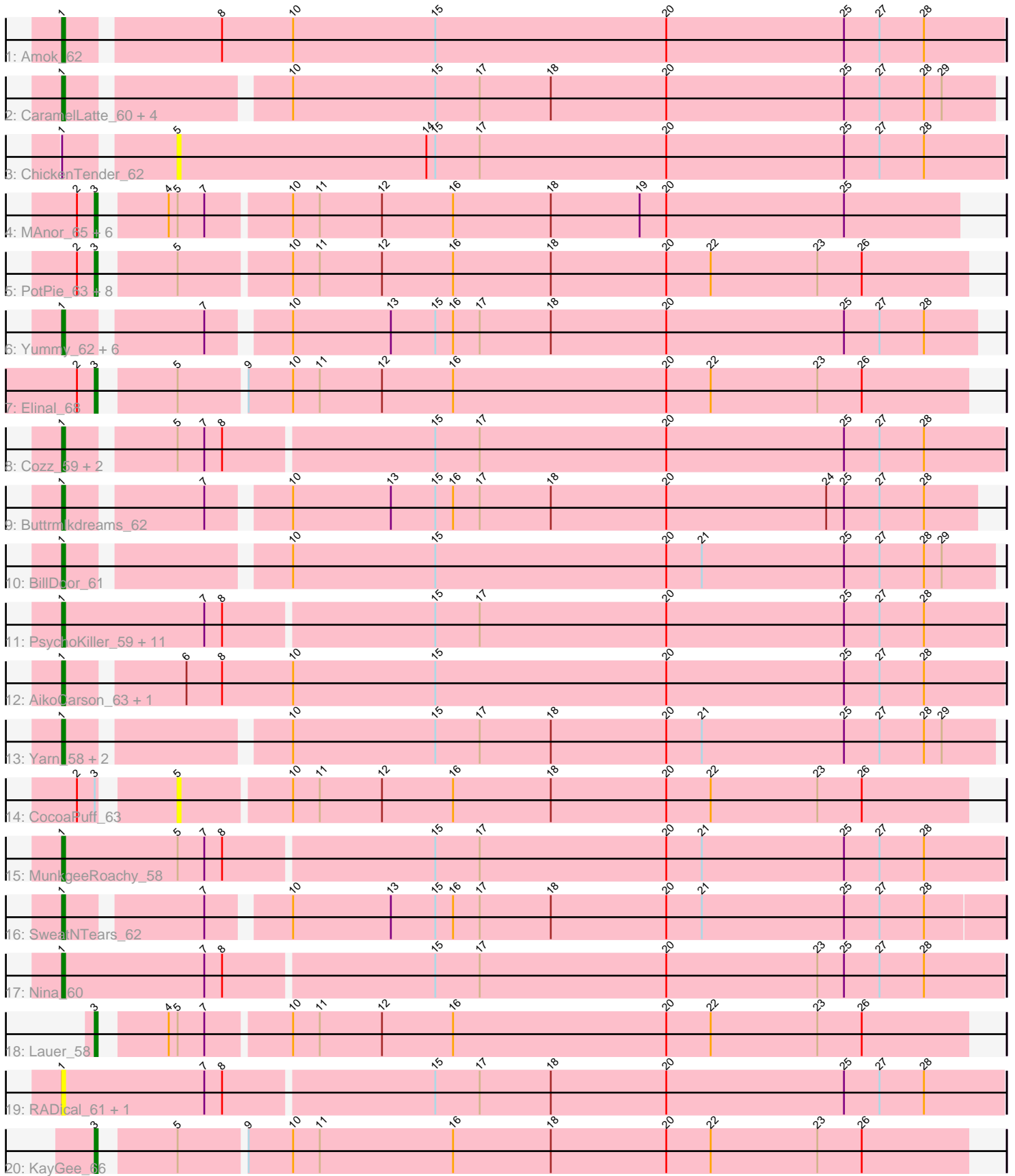


Pham 296584



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 296584 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296584 has 61 members, 20 are drafts.

Phages represented in each track:

- Track 1 : Amok\_62
- Track 2 : CaramelLatte\_60, ChocoMunchkin\_60, Tolls\_63, CanesSauce\_60, SteamedHams\_62
- Track 3 : ChickenTender\_62
- Track 4 : MAnor\_65, Mayweather\_67, SheckWes\_67, Pons\_65, McDazzle\_65, ElJefes\_65, CherryonLim\_64
- Track 5 : PotPie\_63, Feastonyeet\_63, Balloona\_62, Vine\_66, Tarnish\_63, Yucky\_66, Bavidard\_62, SummitAcademy\_63, BigChungus\_63
- Track 6 : Yummy\_62, MScarn\_64, Blondies\_65, Troje\_62, Horseradish\_62, SketchMex\_60, Biskit\_62
- Track 7 : Elinal\_68
- Track 8 : Cozz\_59, Typhonomachy\_59, Carsonalex\_64
- Track 9 : Buttrmlkdreams\_62
- Track 10 : BillDoor\_61
- Track 11 : PsychoKiller\_59, Burnsey\_60, RedBaron\_66, Elliott\_60, Axym\_59, GoldHunter\_61, Quasar\_60, Agatha\_60, Sopespian\_57, Socotra\_61, RSchmailzl\_61, Bubble\_59
- Track 12 : AikoCarson\_63, Emalyn\_61
- Track 13 : Yarn\_58, AndPeggy\_57, GTE2\_50
- Track 14 : CocoaPuff\_63
- Track 15 : MunkgeeRoachy\_58
- Track 16 : SweatNTears\_62
- Track 17 : Nina\_60
- Track 18 : Lauer\_58
- Track 19 : RADical\_61, Starburst\_60
- Track 20 : KayGee\_66

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

The start number called the most often in the published annotations is 1, it was called in 26 of the 41 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agatha\_60, AikoCarson\_63, Amok\_62, AndPeggy\_57, Axym\_59, BillDoor\_61, Biskit\_62, Blondies\_65, Bubble\_59, Burnsey\_60, Buttrmlkdreams\_62, CanesSauce\_60, CaramellLatte\_60, Carsonalex\_64, ChocoMunchkin\_60, Cozz\_59, Elliott\_60, Emalyn\_61, GTE2\_50, GoldHunter\_61, Horseradish\_62, MScarn\_64, MunkgeeRoachy\_58, Nina\_60, PsychoKiller\_59, Quasar\_60, RADical\_61, RSchmailzl\_61, RedBaron\_66, SketchMex\_60, Socotra\_61, Sopespian\_57, Starburst\_60, SteamedHams\_62, SweatNTears\_62, Tolls\_63, Troje\_62, Typhonmarchy\_59, Yarn\_58, Yummy\_62,

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

- ChickenTender\_62,

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

- Balloona\_62, Bavidard\_62, BigChungus\_63, CherryonLim\_64, CocoaPuff\_63, ElJefes\_65, Elinal\_68, Feastonyeet\_63, KayGee\_66, Lauer\_58, MAnor\_65, Mayweather\_67, McDazzle\_65, Pons\_65, PotPie\_63, SheckWes\_67, SummitAcademy\_63, Tarnish\_63, Vine\_66, Yucky\_66,

### Summary by start number:

Start 1:

- Found in 41 of 61 ( 67.2% ) of genes in pham
- Manual Annotations of this start: 26 of 41
- Called 97.6% of time when present
- Phage (with cluster) where this start called: Agatha\_60 (CT), AikoCarson\_63 (CT), Amok\_62 (CT), AndPeggy\_57 (CT), Axym\_59 (CT), BillDoor\_61 (CT), Biskit\_62 (CT), Blondies\_65 (CT), Bubble\_59 (CT), Burnsey\_60 (CT), Buttrmlkdreams\_62 (CT), CanesSauce\_60 (CT), CaramellLatte\_60 (CT), Carsonalex\_64 (CT), ChocoMunchkin\_60 (CT), Cozz\_59 (CT), Elliott\_60 (CT), Emalyn\_61 (CT), GTE2\_50 (CT), GoldHunter\_61 (CT), Horseradish\_62 (CT), MScarn\_64 (CT), MunkgeeRoachy\_58 (CT), Nina\_60 (CT), PsychoKiller\_59 (CT), Quasar\_60 (CT), RADical\_61 (CT), RSchmailzl\_61 (CT), RedBaron\_66 (CT), SketchMex\_60 (CT), Socotra\_61 (CT), Sopespian\_57 (CT), Starburst\_60 (CT), SteamedHams\_62 (CT), SweatNTears\_62 (CT), Tolls\_63 (CT), Troje\_62 (CT), Typhonmarchy\_59 (CT), Yarn\_58 (CT), Yummy\_62 (CT),

Start 3:

- Found in 20 of 61 ( 32.8% ) of genes in pham
- Manual Annotations of this start: 15 of 41
- Called 95.0% of time when present
- Phage (with cluster) where this start called: Balloona\_62 (CT), Bavidard\_62 (CT), BigChungus\_63 (CT), CherryonLim\_64 (CT), ElJefes\_65 (CT), Elinal\_68 (CT), Feastonyeet\_63 (CT), KayGee\_66 (CT), Lauer\_58 (CT), MAnor\_65 (CT), Mayweather\_67 (CT), McDazzle\_65 (CT), Pons\_65 (CT), PotPie\_63 (CT), SheckWes\_67 (CT), SummitAcademy\_63 (CT), Tarnish\_63 (CT), Vine\_66 (CT), Yucky\_66 (CT),

Start 5:

- Found in 25 of 61 ( 41.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 8.0% of time when present
- Phage (with cluster) where this start called: ChickenTender\_62 (CT), CocoaPuff\_63 (CT),

## Summary by clusters:

There is one cluster represented in this pham: CT

Info for manual annotations of cluster CT:

- Start number 1 was manually annotated 26 times for cluster CT.
- Start number 3 was manually annotated 15 times for cluster CT.

### **Gene Information:**

Gene: Agatha\_60 Start: 42650, Stop: 42964, Start Num: 1

Candidate Starts for Agatha\_60:

(Start: 1 @42650 has 26 MA's), (7, 42698), (8, 42704), (15, 42773), (17, 42788), (20, 42851), (25, 42911), (27, 42923), (28, 42938),

Gene: AikoCarson\_63 Start: 42924, Stop: 43235, Start Num: 1

Candidate Starts for AikoCarson\_63:

(Start: 1 @42924 has 26 MA's), (6, 42960), (8, 42972), (10, 42996), (15, 43044), (20, 43122), (25, 43182), (27, 43194), (28, 43209),

Gene: Amok\_62 Start: 42830, Stop: 43141, Start Num: 1

Candidate Starts for Amok\_62:

(Start: 1 @42830 has 26 MA's), (8, 42878), (10, 42902), (15, 42950), (20, 43028), (25, 43088), (27, 43100), (28, 43115),

Gene: AndPeggy\_57 Start: 42101, Stop: 42403, Start Num: 1

Candidate Starts for AndPeggy\_57:

(Start: 1 @42101 has 26 MA's), (10, 42167), (15, 42215), (17, 42230), (18, 42254), (20, 42293), (21, 42305), (25, 42353), (27, 42365), (28, 42380), (29, 42386),

Gene: Axym\_59 Start: 42546, Stop: 42860, Start Num: 1

Candidate Starts for Axym\_59:

(Start: 1 @42546 has 26 MA's), (7, 42594), (8, 42600), (15, 42669), (17, 42684), (20, 42747), (25, 42807), (27, 42819), (28, 42834),

Gene: Balloona\_62 Start: 44767, Stop: 45051, Start Num: 3

Candidate Starts for Balloona\_62:

(2, 44761), (Start: 3 @44767 has 15 MA's), (5, 44788), (10, 44824), (11, 44833), (12, 44854), (16, 44878), (18, 44911), (20, 44950), (22, 44965), (23, 45001), (26, 45016),

Gene: Bavilard\_62 Start: 43777, Stop: 44061, Start Num: 3

Candidate Starts for Bavilard\_62:

(2, 43771), (Start: 3 @43777 has 15 MA's), (5, 43798), (10, 43834), (11, 43843), (12, 43864), (16, 43888), (18, 43921), (20, 43960), (22, 43975), (23, 44011), (26, 44026),

Gene: BigChungus\_63 Start: 44308, Stop: 44592, Start Num: 3

Candidate Starts for BigChungus\_63:

(2, 44302), (Start: 3 @44308 has 15 MA's), (5, 44329), (10, 44365), (11, 44374), (12, 44395), (16, 44419), (18, 44452), (20, 44491), (22, 44506), (23, 44542), (26, 44557),

Gene: BillDoor\_61 Start: 41785, Stop: 42087, Start Num: 1  
Candidate Starts for BillDoor\_61:  
(Start: 1 @41785 has 26 MA's), (10, 41851), (15, 41899), (20, 41977), (21, 41989), (25, 42037), (27, 42049), (28, 42064), (29, 42070),

Gene: Biskit\_62 Start: 42735, Stop: 43031, Start Num: 1  
Candidate Starts for Biskit\_62:  
(Start: 1 @42735 has 26 MA's), (7, 42777), (10, 42801), (13, 42834), (15, 42849), (16, 42855), (17, 42864), (18, 42888), (20, 42927), (25, 42987), (27, 42999), (28, 43014),

Gene: Blondies\_65 Start: 43052, Stop: 43348, Start Num: 1  
Candidate Starts for Blondies\_65:  
(Start: 1 @43052 has 26 MA's), (7, 43094), (10, 43118), (13, 43151), (15, 43166), (16, 43172), (17, 43181), (18, 43205), (20, 43244), (25, 43304), (27, 43316), (28, 43331),

Gene: Bubble\_59 Start: 42655, Stop: 42969, Start Num: 1  
Candidate Starts for Bubble\_59:  
(Start: 1 @42655 has 26 MA's), (7, 42703), (8, 42709), (15, 42778), (17, 42793), (20, 42856), (25, 42916), (27, 42928), (28, 42943),

Gene: Burnsey\_60 Start: 42640, Stop: 42954, Start Num: 1  
Candidate Starts for Burnsey\_60:  
(Start: 1 @42640 has 26 MA's), (7, 42688), (8, 42694), (15, 42763), (17, 42778), (20, 42841), (25, 42901), (27, 42913), (28, 42928),

Gene: Buttrmlkdreams\_62 Start: 42913, Stop: 43209, Start Num: 1  
Candidate Starts for Buttrmlkdreams\_62:  
(Start: 1 @42913 has 26 MA's), (7, 42955), (10, 42979), (13, 43012), (15, 43027), (16, 43033), (17, 43042), (18, 43066), (20, 43105), (24, 43159), (25, 43165), (27, 43177), (28, 43192),

Gene: CanesSauce\_60 Start: 42262, Stop: 42564, Start Num: 1  
Candidate Starts for CanesSauce\_60:  
(Start: 1 @42262 has 26 MA's), (10, 42328), (15, 42376), (17, 42391), (18, 42415), (20, 42454), (25, 42514), (27, 42526), (28, 42541), (29, 42547),

Gene: CaramellLatte\_60 Start: 42262, Stop: 42564, Start Num: 1  
Candidate Starts for CaramellLatte\_60:  
(Start: 1 @42262 has 26 MA's), (10, 42328), (15, 42376), (17, 42391), (18, 42415), (20, 42454), (25, 42514), (27, 42526), (28, 42541), (29, 42547),

Gene: Carsonalex\_64 Start: 43149, Stop: 43463, Start Num: 1  
Candidate Starts for Carsonalex\_64:  
(Start: 1 @43149 has 26 MA's), (5, 43188), (7, 43197), (8, 43203), (15, 43272), (17, 43287), (20, 43350), (25, 43410), (27, 43422), (28, 43437),

Gene: CherryonLim\_64 Start: 45801, Stop: 46082, Start Num: 3  
Candidate Starts for CherryonLim\_64:  
(2, 45795), (Start: 3 @45801 has 15 MA's), (4, 45819), (5, 45822), (7, 45831), (10, 45858), (11, 45867), (12, 45888), (16, 45912), (18, 45945), (19, 45975), (20, 45984), (25, 46044),

Gene: ChickenTender\_62 Start: 42295, Stop: 42573, Start Num: 5  
Candidate Starts for ChickenTender\_62:

(Start: 1 @42262 has 26 MA's), (5, 42295), (14, 42379), (15, 42382), (17, 42397), (20, 42460), (25, 42520), (27, 42532), (28, 42547),

Gene: ChocoMunchkin\_60 Start: 42262, Stop: 42564, Start Num: 1

Candidate Starts for ChocoMunchkin\_60:

(Start: 1 @42262 has 26 MA's), (10, 42328), (15, 42376), (17, 42391), (18, 42415), (20, 42454), (25, 42514), (27, 42526), (28, 42541), (29, 42547),

Gene: CocoaPuff\_63 Start: 44334, Stop: 44597, Start Num: 5

Candidate Starts for CocoaPuff\_63:

(2, 44307), (Start: 3 @44313 has 15 MA's), (5, 44334), (10, 44370), (11, 44379), (12, 44400), (16, 44424), (18, 44457), (20, 44496), (22, 44511), (23, 44547), (26, 44562),

Gene: Cozz\_59 Start: 42658, Stop: 42966, Start Num: 1

Candidate Starts for Cozz\_59:

(Start: 1 @42658 has 26 MA's), (5, 42691), (7, 42700), (8, 42706), (15, 42775), (17, 42790), (20, 42853), (25, 42913), (27, 42925), (28, 42940),

Gene: ElJefes\_65 Start: 44793, Stop: 45074, Start Num: 3

Candidate Starts for ElJefes\_65:

(2, 44787), (Start: 3 @44793 has 15 MA's), (4, 44811), (5, 44814), (7, 44823), (10, 44850), (11, 44859), (12, 44880), (16, 44904), (18, 44937), (19, 44967), (20, 44976), (25, 45036),

Gene: Elinal\_68 Start: 45087, Stop: 45371, Start Num: 3

Candidate Starts for Elinal\_68:

(2, 45081), (Start: 3 @45087 has 15 MA's), (5, 45108), (9, 45129), (10, 45144), (11, 45153), (12, 45174), (16, 45198), (20, 45270), (22, 45285), (23, 45321), (26, 45336),

Gene: Elliott\_60 Start: 42533, Stop: 42847, Start Num: 1

Candidate Starts for Elliott\_60:

(Start: 1 @42533 has 26 MA's), (7, 42581), (8, 42587), (15, 42656), (17, 42671), (20, 42734), (25, 42794), (27, 42806), (28, 42821),

Gene: Emalyn\_61 Start: 41662, Stop: 41973, Start Num: 1

Candidate Starts for Emalyn\_61:

(Start: 1 @41662 has 26 MA's), (6, 41698), (8, 41710), (10, 41734), (15, 41782), (20, 41860), (25, 41920), (27, 41932), (28, 41947),

Gene: Feastonyeet\_63 Start: 44308, Stop: 44592, Start Num: 3

Candidate Starts for Feastonyeet\_63:

(2, 44302), (Start: 3 @44308 has 15 MA's), (5, 44329), (10, 44365), (11, 44374), (12, 44395), (16, 44419), (18, 44452), (20, 44491), (22, 44506), (23, 44542), (26, 44557),

Gene: GTE2\_50 Start: 42721, Stop: 43014, Start Num: 1

Candidate Starts for GTE2\_50:

(Start: 1 @42721 has 26 MA's), (10, 42787), (15, 42835), (17, 42850), (18, 42874), (20, 42913), (21, 42925), (25, 42973), (27, 42985), (28, 43000), (29, 43006),

Gene: GoldHunter\_61 Start: 42650, Stop: 42964, Start Num: 1

Candidate Starts for GoldHunter\_61:

(Start: 1 @42650 has 26 MA's), (7, 42698), (8, 42704), (15, 42773), (17, 42788), (20, 42851), (25, 42911), (27, 42923), (28, 42938),

Gene: Horseradish\_62 Start: 42668, Stop: 42964, Start Num: 1

Candidate Starts for Horseradish\_62:

(Start: 1 @42668 has 26 MA's), (7, 42710), (10, 42734), (13, 42767), (15, 42782), (16, 42788), (17, 42797), (18, 42821), (20, 42860), (25, 42920), (27, 42932), (28, 42947),

Gene: KayGee\_66 Start: 45086, Stop: 45370, Start Num: 3

Candidate Starts for KayGee\_66:

(Start: 3 @45086 has 15 MA's), (5, 45107), (9, 45128), (10, 45143), (11, 45152), (16, 45197), (18, 45230), (20, 45269), (22, 45284), (23, 45320), (26, 45335),

Gene: Lauer\_58 Start: 45271, Stop: 45555, Start Num: 3

Candidate Starts for Lauer\_58:

(Start: 3 @45271 has 15 MA's), (4, 45289), (5, 45292), (7, 45301), (10, 45328), (11, 45337), (12, 45358), (16, 45382), (20, 45454), (22, 45469), (23, 45505), (26, 45520),

Gene: MAnor\_65 Start: 45226, Stop: 45507, Start Num: 3

Candidate Starts for MAnor\_65:

(2, 45220), (Start: 3 @45226 has 15 MA's), (4, 45244), (5, 45247), (7, 45256), (10, 45283), (11, 45292), (12, 45313), (16, 45337), (18, 45370), (19, 45400), (20, 45409), (25, 45469),

Gene: MScarn\_64 Start: 42580, Stop: 42876, Start Num: 1

Candidate Starts for MScarn\_64:

(Start: 1 @42580 has 26 MA's), (7, 42622), (10, 42646), (13, 42679), (15, 42694), (16, 42700), (17, 42709), (18, 42733), (20, 42772), (25, 42832), (27, 42844), (28, 42859),

Gene: Mayweather\_67 Start: 45460, Stop: 45741, Start Num: 3

Candidate Starts for Mayweather\_67:

(2, 45454), (Start: 3 @45460 has 15 MA's), (4, 45478), (5, 45481), (7, 45490), (10, 45517), (11, 45526), (12, 45547), (16, 45571), (18, 45604), (19, 45634), (20, 45643), (25, 45703),

Gene: McDazzle\_65 Start: 44787, Stop: 45068, Start Num: 3

Candidate Starts for McDazzle\_65:

(2, 44781), (Start: 3 @44787 has 15 MA's), (4, 44805), (5, 44808), (7, 44817), (10, 44844), (11, 44853), (12, 44874), (16, 44898), (18, 44931), (19, 44961), (20, 44970), (25, 45030),

Gene: MunkgeeRoachy\_58 Start: 41984, Stop: 42298, Start Num: 1

Candidate Starts for MunkgeeRoachy\_58:

(Start: 1 @41984 has 26 MA's), (5, 42023), (7, 42032), (8, 42038), (15, 42107), (17, 42122), (20, 42185), (21, 42197), (25, 42245), (27, 42257), (28, 42272),

Gene: Nina\_60 Start: 43136, Stop: 43450, Start Num: 1

Candidate Starts for Nina\_60:

(Start: 1 @43136 has 26 MA's), (7, 43184), (8, 43190), (15, 43259), (17, 43274), (20, 43337), (23, 43388), (25, 43397), (27, 43409), (28, 43424),

Gene: Pons\_65 Start: 44802, Stop: 45083, Start Num: 3

Candidate Starts for Pons\_65:

(2, 44796), (Start: 3 @44802 has 15 MA's), (4, 44820), (5, 44823), (7, 44832), (10, 44859), (11, 44868), (12, 44889), (16, 44913), (18, 44946), (19, 44976), (20, 44985), (25, 45045),

Gene: PotPie\_63 Start: 45343, Stop: 45627, Start Num: 3

Candidate Starts for PotPie\_63:

(2, 45337), (Start: 3 @45343 has 15 MA's), (5, 45364), (10, 45400), (11, 45409), (12, 45430), (16, 45454), (18, 45487), (20, 45526), (22, 45541), (23, 45577), (26, 45592),

Gene: PsychoKiller\_59 Start: 42534, Stop: 42848, Start Num: 1

Candidate Starts for PsychoKiller\_59:

(Start: 1 @42534 has 26 MA's), (7, 42582), (8, 42588), (15, 42657), (17, 42672), (20, 42735), (25, 42795), (27, 42807), (28, 42822),

Gene: Quasar\_60 Start: 43239, Stop: 43547, Start Num: 1

Candidate Starts for Quasar\_60:

(Start: 1 @43239 has 26 MA's), (7, 43281), (8, 43287), (15, 43356), (17, 43371), (20, 43434), (25, 43494), (27, 43506), (28, 43521),

Gene: RADical\_61 Start: 42528, Stop: 42842, Start Num: 1

Candidate Starts for RADical\_61:

(Start: 1 @42528 has 26 MA's), (7, 42576), (8, 42582), (15, 42651), (17, 42666), (18, 42690), (20, 42729), (25, 42789), (27, 42801), (28, 42816),

Gene: RSchmailzl\_61 Start: 42962, Stop: 43276, Start Num: 1

Candidate Starts for RSchmailzl\_61:

(Start: 1 @42962 has 26 MA's), (7, 43010), (8, 43016), (15, 43085), (17, 43100), (20, 43163), (25, 43223), (27, 43235), (28, 43250),

Gene: RedBaron\_66 Start: 43956, Stop: 44270, Start Num: 1

Candidate Starts for RedBaron\_66:

(Start: 1 @43956 has 26 MA's), (7, 44004), (8, 44010), (15, 44079), (17, 44094), (20, 44157), (25, 44217), (27, 44229), (28, 44244),

Gene: SheckWes\_67 Start: 44362, Stop: 44643, Start Num: 3

Candidate Starts for SheckWes\_67:

(2, 44356), (Start: 3 @44362 has 15 MA's), (4, 44380), (5, 44383), (7, 44392), (10, 44419), (11, 44428), (12, 44449), (16, 44473), (18, 44506), (19, 44536), (20, 44545), (25, 44605),

Gene: SketchMex\_60 Start: 42735, Stop: 43031, Start Num: 1

Candidate Starts for SketchMex\_60:

(Start: 1 @42735 has 26 MA's), (7, 42777), (10, 42801), (13, 42834), (15, 42849), (16, 42855), (17, 42864), (18, 42888), (20, 42927), (25, 42987), (27, 42999), (28, 43014),

Gene: Socotra\_61 Start: 42634, Stop: 42948, Start Num: 1

Candidate Starts for Socotra\_61:

(Start: 1 @42634 has 26 MA's), (7, 42682), (8, 42688), (15, 42757), (17, 42772), (20, 42835), (25, 42895), (27, 42907), (28, 42922),

Gene: Sopespian\_57 Start: 42535, Stop: 42849, Start Num: 1

Candidate Starts for Sopespian\_57:

(Start: 1 @42535 has 26 MA's), (7, 42583), (8, 42589), (15, 42658), (17, 42673), (20, 42736), (25, 42796), (27, 42808), (28, 42823),

Gene: Starburst\_60 Start: 42530, Stop: 42844, Start Num: 1

Candidate Starts for Starburst\_60:

(Start: 1 @42530 has 26 MA's), (7, 42578), (8, 42584), (15, 42653), (17, 42668), (18, 42692), (20, 42731), (25, 42791), (27, 42803), (28, 42818),

Gene: SteamedHams\_62 Start: 42078, Stop: 42380, Start Num: 1  
Candidate Starts for SteamedHams\_62:  
(Start: 1 @42078 has 26 MA's), (10, 42144), (15, 42192), (17, 42207), (18, 42231), (20, 42270), (25, 42330), (27, 42342), (28, 42357), (29, 42363),

Gene: SummitAcademy\_63 Start: 44486, Stop: 44770, Start Num: 3  
Candidate Starts for SummitAcademy\_63:  
(2, 44480), (Start: 3 @44486 has 15 MA's), (5, 44507), (10, 44543), (11, 44552), (12, 44573), (16, 44597), (18, 44630), (20, 44669), (22, 44684), (23, 44720), (26, 44735),

Gene: SweatNTears\_62 Start: 42809, Stop: 43114, Start Num: 1  
Candidate Starts for SweatNTears\_62:  
(Start: 1 @42809 has 26 MA's), (7, 42851), (10, 42875), (13, 42908), (15, 42923), (16, 42929), (17, 42938), (18, 42962), (20, 43001), (21, 43013), (25, 43061), (27, 43073), (28, 43088),

Gene: Tarnish\_63 Start: 44667, Stop: 44951, Start Num: 3  
Candidate Starts for Tarnish\_63:  
(2, 44661), (Start: 3 @44667 has 15 MA's), (5, 44688), (10, 44724), (11, 44733), (12, 44754), (16, 44778), (18, 44811), (20, 44850), (22, 44865), (23, 44901), (26, 44916),

Gene: Tolls\_63 Start: 42349, Stop: 42651, Start Num: 1  
Candidate Starts for Tolls\_63:  
(Start: 1 @42349 has 26 MA's), (10, 42415), (15, 42463), (17, 42478), (18, 42502), (20, 42541), (25, 42601), (27, 42613), (28, 42628), (29, 42634),

Gene: Troje\_62 Start: 42803, Stop: 43099, Start Num: 1  
Candidate Starts for Troje\_62:  
(Start: 1 @42803 has 26 MA's), (7, 42845), (10, 42869), (13, 42902), (15, 42917), (16, 42923), (17, 42932), (18, 42956), (20, 42995), (25, 43055), (27, 43067), (28, 43082),

Gene: Typhonomachy\_59 Start: 42347, Stop: 42661, Start Num: 1  
Candidate Starts for Typhonomachy\_59:  
(Start: 1 @42347 has 26 MA's), (5, 42386), (7, 42395), (8, 42401), (15, 42470), (17, 42485), (20, 42548), (25, 42608), (27, 42620), (28, 42635),

Gene: Vine\_66 Start: 45109, Stop: 45393, Start Num: 3  
Candidate Starts for Vine\_66:  
(2, 45103), (Start: 3 @45109 has 15 MA's), (5, 45130), (10, 45166), (11, 45175), (12, 45196), (16, 45220), (18, 45253), (20, 45292), (22, 45307), (23, 45343), (26, 45358),

Gene: Yarn\_58 Start: 42106, Stop: 42408, Start Num: 1  
Candidate Starts for Yarn\_58:  
(Start: 1 @42106 has 26 MA's), (10, 42172), (15, 42220), (17, 42235), (18, 42259), (20, 42298), (21, 42310), (25, 42358), (27, 42370), (28, 42385), (29, 42391),

Gene: Yucky\_66 Start: 44901, Stop: 45185, Start Num: 3  
Candidate Starts for Yucky\_66:  
(2, 44895), (Start: 3 @44901 has 15 MA's), (5, 44922), (10, 44958), (11, 44967), (12, 44988), (16, 45012), (18, 45045), (20, 45084), (22, 45099), (23, 45135), (26, 45150),

Gene: Yummy\_62 Start: 42782, Stop: 43078, Start Num: 1  
Candidate Starts for Yummy\_62:

(Start: 1 @42782 has 26 MA's), (7, 42824), (10, 42848), (13, 42881), (15, 42896), (16, 42902), (17, 42911), (18, 42935), (20, 42974), (25, 43034), (27, 43046), (28, 43061),