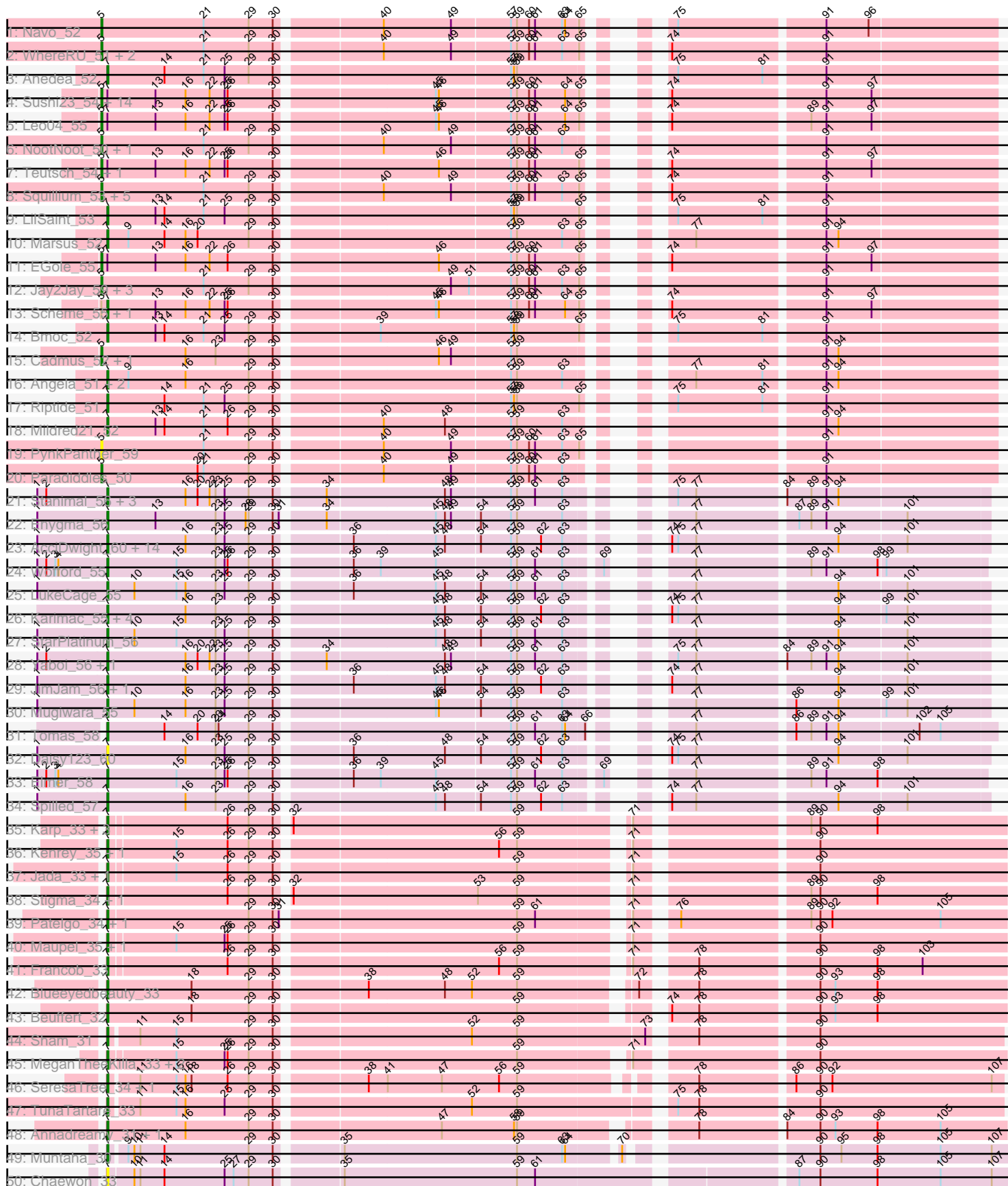
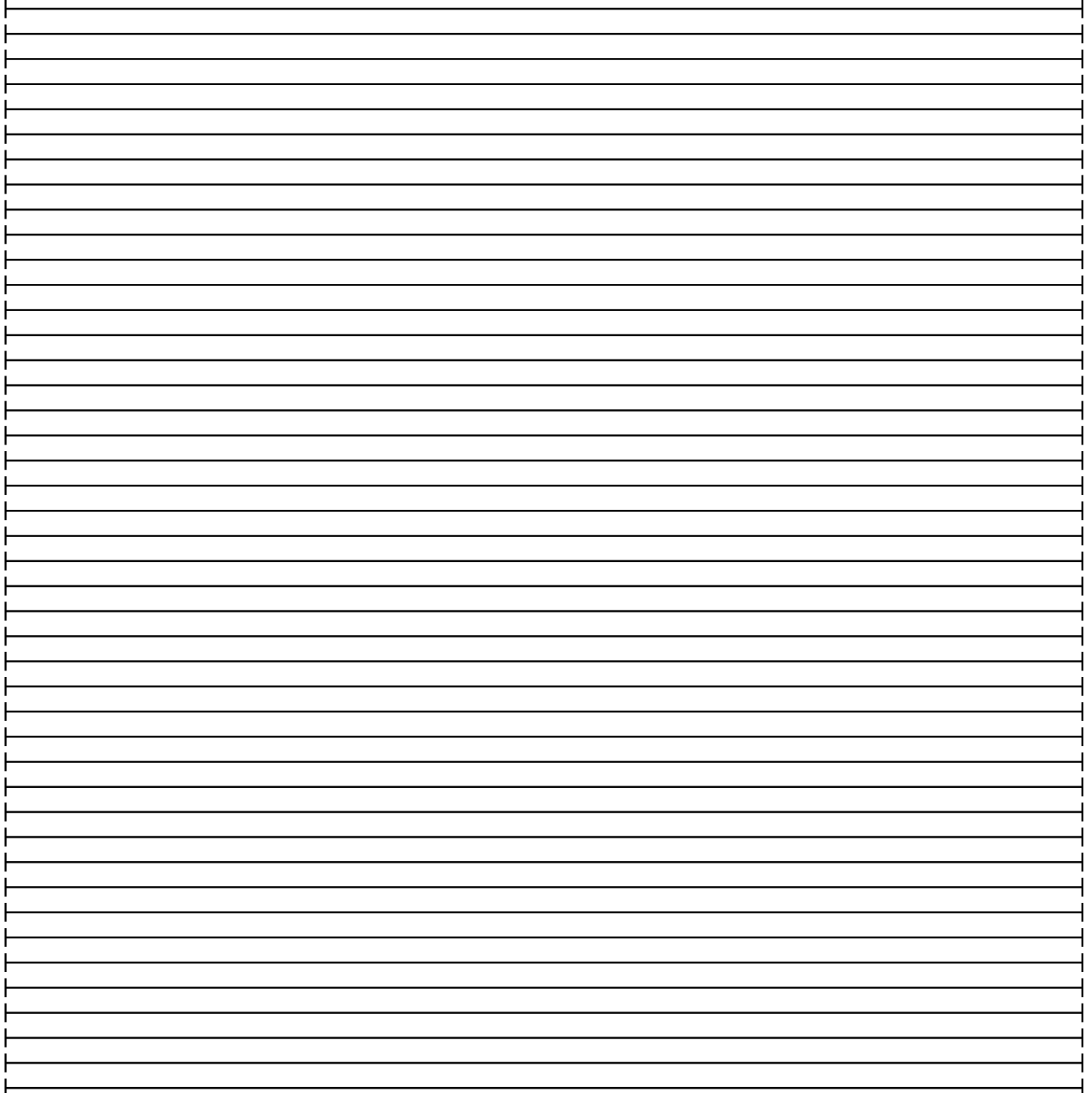
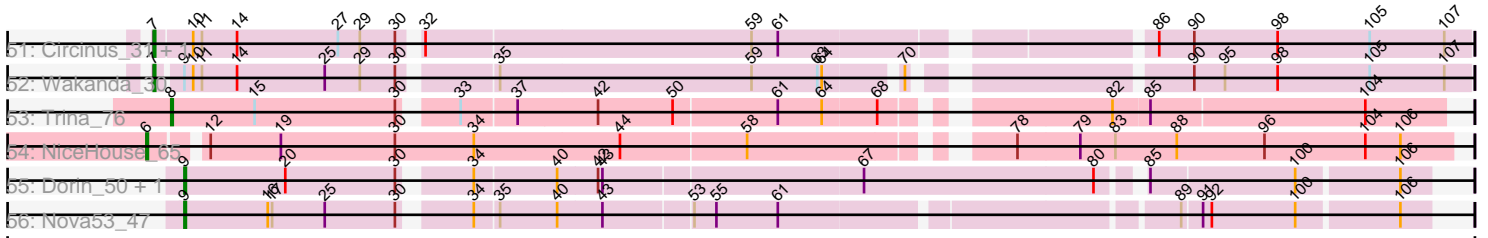


Pham 308287



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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 308287 Report

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

Pham number 308287 has 123 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Navo\_52
- Track 2 : WhereRU\_51, Persimmon\_50, Davielle\_51
- Track 3 : Anedea\_52
- Track 4 : Sushi23\_54, Shuckle\_52, Lululemon\_53, BlueOtter\_54, WashU\_57, Cross\_54, Cursive\_52, ArianaSWT\_57, Larnav\_54, HangryHippo\_54, Coogler\_54, PacManQ\_53, Peebs\_53, Samisti12\_54, Pepperwood\_54
- Track 5 : Leo04\_55
- Track 6 : NootNoot\_50, Bartholomune\_52
- Track 7 : Deutsch\_54, Tribute\_52
- Track 8 : Squillium\_53, Liandry\_53, Eliot67\_51, Braelyn\_53, FreddyDRoo\_51, PinkiePie\_52
- Track 9 : LilSaint\_53
- Track 10 : Marsus\_52
- Track 11 : EGole\_55
- Track 12 : Jay2Jay\_59, Warpy\_58, Targaryen\_55, Evy\_55
- Track 13 : Scheme\_55, Watermoore\_54
- Track 14 : Bmoc\_52
- Track 15 : Cadmus\_52, Daubenski\_55
- Track 16 : Angela\_51, MulchMansion\_51, LilMartin\_51
- Track 17 : Riptide\_51
- Track 18 : Mildred21\_52
- Track 19 : PynkPanther\_59
- Track 20 : Paradiddles\_50
- Track 21 : Stanimal\_56, Sollertia\_56, Genie2\_56, AngryGiraffe\_55
- Track 22 : Enygma\_56
- Track 23 : AcciDwight\_60, TomSawyer\_54, Gibbi\_60, Rikishi\_56, Jollison\_55, Wipeout\_54, Birchlyn\_53, Bordeaux\_54, Spelly\_56, Amabiko\_56, Starbow\_54, Battuta\_54, PumpkinSpice\_55, Quaran19\_56, SaltySpitoon\_56
- Track 24 : Wofford\_55
- Track 25 : LukeCage\_55
- Track 26 : Karimac\_55, Brizzy\_55, KentuckyRacer\_56, IchabodCrane\_53, CeilingFan\_55
- Track 27 : StarPlatinum\_56
- Track 28 : Yaboi\_56, BoomerJR\_56
- Track 29 : JimJam\_56, MindFlayer\_54
- Track 30 : Mugiwara\_55
- Track 31 : Tomas\_58

- Track 32 : Daisy123\_60
- Track 33 : Elmer\_58
- Track 34 : Spilled\_57
- Track 35 : Karp\_33, Westy\_34, Belfort\_35, Comrade\_34
- Track 36 : Kenrey\_35, Phredrick\_33
- Track 37 : Jada\_33, Forrest\_35
- Track 38 : Stigma\_34, SparkleGoddess\_34
- Track 39 : Patelgo\_34, Moab\_34
- Track 40 : Maupel\_35, Gilson\_35
- Track 41 : Francob\_33
- Track 42 : Blueeyedbeauty\_33
- Track 43 : Beuffert\_32
- Track 44 : Sham\_31
- Track 45 : MeganTheeKilla\_33, DeluluLabubu\_33, Emma1919\_35
- Track 46 : SeresaTree\_34, Faust\_34
- Track 47 : TunaTartare\_33
- Track 48 : Annadreamy\_31, Limpid\_31
- Track 49 : Muntaha\_30
- Track 50 : Chaewon\_33
- Track 51 : Circinus\_31, BillNye\_29
- Track 52 : Wakanda\_30
- Track 53 : Trina\_76
- Track 54 : NiceHouse\_65
- Track 55 : Dorin\_50, Francesca\_49
- Track 56 : Nova53\_47

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

The start number called the most often in the published annotations is 7, it was called in 73 of the 112 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• AcciDwight\_60, Amabiko\_56, Anedea\_52, Angela\_51, AngryGiraffe\_55, Annadreamy\_31, Battuta\_54, Belfort\_35, Beuffert\_32, BillNye\_29, Birchlyn\_53, Blueeyedbeauty\_33, Bmoc\_52, BoomerJR\_56, Bordeaux\_54, Brizzy\_55, CeilingFan\_55, Chaewon\_33, Circinus\_31, Comrade\_34, Daisy123\_60, DeluluLabubu\_33, Elmer\_58, Emma1919\_35, Enygma\_56, Faust\_34, Forrest\_35, Francob\_33, Genie2\_56, Gibbi\_60, Gilson\_35, IchabodCrane\_53, Jada\_33, JimJam\_56, Jollison\_55, Karimac\_55, Karp\_33, Kenrey\_35, KentuckyRacer\_56, LilMartin\_51, LilSaint\_53, Limpid\_31, LukeCage\_55, Marsus\_52, Maupel\_35, MeganTheeKilla\_33, Mildred21\_52, MindFlayer\_54, Moab\_34, Mugiwara\_55, MulchMansion\_51, Muntaha\_30, Patelgo\_34, Phredrick\_33, PumpkinSpice\_55, Quarant19\_56, Rikishi\_56, Riptide\_51, SaltySpittoon\_56, Scheme\_55, SeresaTree\_34, Sham\_31, Sollertia\_56, SparkleGoddess\_34, Spelly\_56, Spilled\_57, Stanimal\_56, StarPlatinum\_56, Starbow\_54, Stigma\_34, TomSawyer\_54, Tomas\_58, TunaTartare\_33, Wakanda\_30, Watermoore\_54, Westy\_34, Wipeout\_54, Wofford\_55, Yaboi\_56,

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

- ArianaSWT\_57, BlueOtter\_54, Coogler\_54, Cross\_54, Cursive\_52, EGole\_55, HangryHippo\_54, Larnav\_54, Leo04\_55, Lululemon\_53, PacManQ\_53, Peebs\_53, Pepperwood\_54, Samisti12\_54, Shuckle\_52, Sushi23\_54, Teutsch\_54, Tribute\_52, WashU\_57,

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

- Bartholomune\_52, Braelyn\_53, Cadmus\_52, Daubenski\_55, Davielle\_51, Dorin\_50, Eliot67\_51, Evy\_55, Francesca\_49, FreddyDRoo\_51, Jay2Jay\_59, Liandry\_53, Navo\_52, NiceHouse\_65, NootNoot\_50, Nova53\_47, Paradiddles\_50, Persimmon\_50, PinkiePie\_52, PynkPanther\_59, Squillium\_53, Targaryen\_55, Trina\_76, Warpy\_58, WhereRU\_51,

### Summary by start number:

Start 5:

- Found in 41 of 123 ( 33.3% ) of genes in pham
- Manual Annotations of this start: 34 of 112
- Called 95.1% of time when present
- Phage (with cluster) where this start called: ArianaSWT\_57 (BE1), Bartholomune\_52 (BE1), BlueOtter\_54 (BE1), Braelyn\_53 (BE1), Cadmus\_52 (BE1), Coogler\_54 (BE1), Cross\_54 (BE1), Cursive\_52 (BE1), Daubenski\_55 (BE1), Davielle\_51 (BE1), EGole\_55 (BE1), Eliot67\_51 (BE1), Evy\_55 (BE1), FreddyDRoo\_51 (BE1), HangryHippo\_54 (BE1), Jay2Jay\_59 (BE1), Larnav\_54 (BE1), Leo04\_55 (BE1), Liandry\_53 (BE1), Lululemon\_53 (BE1), Navo\_52 (BE1), NootNoot\_50 (BE1), PacManQ\_53 (BE1), Paradiddles\_50 (BE1), Peebs\_53 (BE1), Pepperwood\_54 (BE1), Persimmon\_50 (BE1), PinkiePie\_52 (BE1), PynkPanther\_59 (BE1), Samisti12\_54 (BE1), Shuckle\_52 (BE1), Squillium\_53 (BE1), Sushi23\_54 (BE1), Targaryen\_55 (BE1), Teutsch\_54 (BE1), Tribute\_52 (BE1), Warpy\_58 (BE1), WashU\_57 (BE1), WhereRU\_51 (BE1),

Start 6:

- Found in 1 of 123 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 112
- Called 100.0% of time when present
- Phage (with cluster) where this start called: NiceHouse\_65 (CE),

Start 7:

- Found in 98 of 123 ( 79.7% ) of genes in pham
- Manual Annotations of this start: 73 of 112
- Called 80.6% of time when present
- Phage (with cluster) where this start called: AcciDwight\_60 (BE2), Amabiko\_56 (BE2), Anedea\_52 (BE1), Angela\_51 (BE1), AngryGiraffe\_55 (BE2), Annadreamy\_31 (BK1), Battuta\_54 (BE2), Belfort\_35 (BK1), Beuffert\_32 (BK1), BillNye\_29 (BK2), Birchlyn\_53 (BE2), Blueeyedbeauty\_33 (BK1), Bmoc\_52 (BE1), BoomerJR\_56 (BE2), Bordeaux\_54 (BE2), Brizzy\_55 (BE2), CeilingFan\_55 (BE2), Chaewon\_33 (BK2), Circinus\_31 (BK2), Comrade\_34 (BK1), Daisy123\_60 (BE2), DeluluLabubu\_33 (BK1), Elmer\_58 (BE2), Emma1919\_35 (BK1), Enygma\_56 (BE2), Faust\_34 (BK1), Forrest\_35 (BK1), Francob\_33 (BK1), Genie2\_56 (BE2), Gibbi\_60 (BE2), Gilson\_35 (BK1), IchabodCrane\_53 (BE2), Jada\_33 (BK1), JimJam\_56 (BE2), Jollison\_55 (BE2), Karimac\_55 (BE2), Karp\_33 (BK1), Kenrey\_35 (BK1), KentuckyRacer\_56 (BE2), LilMartin\_51 (BE1), LilSaint\_53 (BE1), Limpid\_31 (BK1), LukeCage\_55 (BE2), Marsus\_52 (BE1), Maupel\_35 (BK1), MeganTheeKilla\_33 (BK1), Mildred21\_52 (BE1), MindFlyer\_54 (BE2), Moab\_34 (BK1), Mugiwara\_55 (BE2),

MulchMansion\_51 (BE1), Muntaha\_30 (BK2), Patelgo\_34 (BK1), Phredrick\_33 (BK1), PumpkinSpice\_55 (BE2), Quaran19\_56 (BE2), Rikishi\_56 (BE2), Riptide\_51 (BE1), SaltySpitooon\_56 (BE2), Scheme\_55 (BE1), SeresaTree\_34 (BK1), Sham\_31 (BK1), Sollertia\_56 (BE2), SparkleGoddess\_34 (BK1), Spelly\_56 (BE2), Spilled\_57 (BE2), Stanimal\_56 (BE2), StarPlatinum\_56 (BE2), Starbow\_54 (BE2), Stigma\_34 (BK1), TomSawyer\_54 (BE2), Tomas\_58 (BE2), TunaTartare\_33 (BK1), Wakanda\_30 (BK2), Watermoore\_54 (BE1), Westy\_34 (BK1), Wipeout\_54 (BE2), Wofford\_55 (BE2), Yaboi\_56 (BE2),

#### Start 8:

- Found in 1 of 123 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 112
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Trina\_76 (CE),

#### Start 9:

- Found in 9 of 123 ( 7.3% ) of genes in pham
- Manual Annotations of this start: 3 of 112
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Dorin\_50 (CG), Francesca\_49 (CG), Nova53\_47 (CG),

### **Summary by clusters:**

There are 6 clusters represented in this pham: CG, CE, BK1, BK2, BE2, BE1,

#### Info for manual annotations of cluster BE1:

- Start number 5 was manually annotated 34 times for cluster BE1.
- Start number 7 was manually annotated 11 times for cluster BE1.

#### Info for manual annotations of cluster BE2:

- Start number 7 was manually annotated 34 times for cluster BE2.

#### Info for manual annotations of cluster BK1:

- Start number 7 was manually annotated 24 times for cluster BK1.

#### Info for manual annotations of cluster BK2:

- Start number 7 was manually annotated 4 times for cluster BK2.

#### Info for manual annotations of cluster CE:

- Start number 6 was manually annotated 1 time for cluster CE.
- Start number 8 was manually annotated 1 time for cluster CE.

#### Info for manual annotations of cluster CG:

- Start number 9 was manually annotated 3 times for cluster CG.

### **Gene Information:**

Gene: AcciDwight\_60 Start: 30891, Stop: 31679, Start Num: 7

Candidate Starts for AcciDwight\_60:

(1, 30831), (Start: 7 @30891 has 73 MA's), (16, 30969), (23, 30999), (25, 31008), (29, 31032), (30, 31056), (36, 31122), (45, 31203), (48, 31212), (54, 31245), (57, 31275), (59, 31281), (62, 31305), (63, 31326), (74, 31377), (75, 31383), (77, 31401), (94, 31533), (101, 31599),

Gene: Amabiko\_56 Start: 30936, Stop: 31724, Start Num: 7

Candidate Starts for Amabiko\_56:

(1, 30876), (Start: 7 @30936 has 73 MA's), (16, 31014), (23, 31044), (25, 31053), (29, 31077), (30, 31101), (36, 31167), (45, 31248), (48, 31257), (54, 31290), (57, 31320), (59, 31326), (62, 31350), (63, 31371), (74, 31422), (75, 31428), (77, 31446), (94, 31578), (101, 31644),

Gene: Anedea\_52 Start: 30469, Stop: 31263, Start Num: 7

Candidate Starts for Anedea\_52:

(Start: 7 @30469 has 73 MA's), (14, 30526), (21, 30565), (25, 30586), (29, 30610), (30, 30634), (57, 30853), (58, 30856), (59, 30859), (75, 30958), (81, 31042), (91, 31096),

Gene: Angela\_51 Start: 29947, Stop: 30741, Start Num: 7

Candidate Starts for Angela\_51:

(Start: 7 @29947 has 73 MA's), (Start: 9 @29968 has 3 MA's), (16, 30025), (29, 30088), (30, 30112), (57, 30331), (59, 30337), (63, 30382), (77, 30454), (81, 30520), (91, 30574), (94, 30586),

Gene: AngryGiraffe\_55 Start: 30910, Stop: 31698, Start Num: 7

Candidate Starts for AngryGiraffe\_55:

(1, 30850), (2, 30859), (Start: 7 @30910 has 73 MA's), (16, 30988), (20, 31000), (22, 31012), (23, 31018), (25, 31027), (29, 31051), (30, 31075), (34, 31117), (48, 31231), (49, 31237), (57, 31294), (59, 31300), (61, 31318), (63, 31345), (75, 31402), (77, 31420), (84, 31501), (89, 31525), (91, 31540), (94, 31552),

Gene: Annadreamy\_31 Start: 19482, Stop: 20312, Start Num: 7

Candidate Starts for Annadreamy\_31:

(Start: 7 @19482 has 73 MA's), (16, 19560), (29, 19623), (30, 19647), (47, 19800), (58, 19872), (59, 19875), (78, 20016), (84, 20094), (90, 20127), (93, 20142), (98, 20184), (105, 20247),

Gene: ArianaSWT\_57 Start: 31581, Stop: 32381, Start Num: 5

Candidate Starts for ArianaSWT\_57:

(Start: 5 @31581 has 34 MA's), (Start: 7 @31587 has 73 MA's), (13, 31635), (16, 31665), (22, 31689), (25, 31704), (26, 31707), (30, 31752), (45, 31899), (46, 31902), (57, 31971), (59, 31977), (60, 31989), (61, 31995), (64, 32025), (65, 32037), (74, 32070), (91, 32214), (97, 32259),

Gene: Bartholomune\_52 Start: 30255, Stop: 31055, Start Num: 5

Candidate Starts for Bartholomune\_52:

(Start: 5 @30255 has 34 MA's), (21, 30357), (29, 30402), (30, 30426), (40, 30522), (49, 30588), (57, 30645), (59, 30651), (60, 30663), (61, 30669), (63, 30696), (91, 30888),

Gene: Battuta\_54 Start: 30910, Stop: 31698, Start Num: 7

Candidate Starts for Battuta\_54:

(1, 30850), (Start: 7 @30910 has 73 MA's), (16, 30988), (23, 31018), (25, 31027), (29, 31051), (30, 31075), (36, 31141), (45, 31222), (48, 31231), (54, 31264), (57, 31294), (59, 31300), (62, 31324), (63, 31345), (74, 31396), (75, 31402), (77, 31420), (94, 31552), (101, 31618),

Gene: Belfort\_35 Start: 22004, Stop: 22828, Start Num: 7

Candidate Starts for Belfort\_35:

(Start: 7 @22004 has 73 MA's), (26, 22118), (29, 22139), (30, 22163), (32, 22172), (59, 22391), (71, 22484), (89, 22634), (90, 22643), (98, 22700),

Gene: Beuffert\_32 Start: 20577, Stop: 21407, Start Num: 7

Candidate Starts for Beuffert\_32:

(Start: 7 @20577 has 73 MA's), (18, 20661), (29, 20718), (30, 20742), (59, 20970), (74, 21084), (78, 21111), (90, 21222), (93, 21237), (98, 21279),

Gene: BillNye\_29 Start: 22882, Stop: 23727, Start Num: 7

Candidate Starts for BillNye\_29:

(Start: 7 @22882 has 73 MA's), (10, 22906), (11, 22912), (14, 22936), (27, 23005), (29, 23020), (30, 23044), (32, 23053), (59, 23272), (61, 23290), (86, 23515), (90, 23539), (98, 23596), (105, 23659), (107, 23710),

Gene: Birchlyn\_53 Start: 28793, Stop: 29581, Start Num: 7

Candidate Starts for Birchlyn\_53:

(1, 28733), (Start: 7 @28793 has 73 MA's), (16, 28871), (23, 28901), (25, 28910), (29, 28934), (30, 28958), (36, 29024), (45, 29105), (48, 29114), (54, 29147), (57, 29177), (59, 29183), (62, 29207), (63, 29228), (74, 29279), (75, 29285), (77, 29303), (94, 29435), (101, 29501),

Gene: BlueOtter\_54 Start: 31619, Stop: 32419, Start Num: 5

Candidate Starts for BlueOtter\_54:

(Start: 5 @31619 has 34 MA's), (Start: 7 @31625 has 73 MA's), (13, 31673), (16, 31703), (22, 31727), (25, 31742), (26, 31745), (30, 31790), (45, 31937), (46, 31940), (57, 32009), (59, 32015), (60, 32027), (61, 32033), (64, 32063), (65, 32075), (74, 32108), (91, 32252), (97, 32297),

Gene: Blueeyedbeauty\_33 Start: 19974, Stop: 20804, Start Num: 7

Candidate Starts for Blueeyedbeauty\_33:

(Start: 7 @19974 has 73 MA's), (18, 20058), (29, 20115), (30, 20139), (38, 20220), (48, 20295), (52, 20322), (59, 20367), (72, 20466), (78, 20508), (90, 20619), (93, 20634), (98, 20676),

Gene: Bmoc\_52 Start: 30254, Stop: 31048, Start Num: 7

Candidate Starts for Bmoc\_52:

(Start: 7 @30254 has 73 MA's), (13, 30302), (14, 30311), (21, 30350), (25, 30371), (29, 30395), (30, 30419), (39, 30512), (57, 30638), (58, 30641), (59, 30644), (65, 30704), (75, 30743), (81, 30827), (91, 30881),

Gene: BoomerJR\_56 Start: 30799, Stop: 31587, Start Num: 7

Candidate Starts for BoomerJR\_56:

(1, 30739), (2, 30748), (Start: 7 @30799 has 73 MA's), (16, 30877), (20, 30889), (22, 30901), (23, 30907), (25, 30916), (29, 30940), (30, 30964), (34, 31006), (48, 31120), (49, 31126), (57, 31183), (59, 31189), (61, 31207), (63, 31234), (75, 31291), (77, 31309), (84, 31390), (89, 31414), (91, 31429), (94, 31441), (101, 31507),

Gene: Bordeaux\_54 Start: 31065, Stop: 31853, Start Num: 7

Candidate Starts for Bordeaux\_54:

(1, 31005), (Start: 7 @31065 has 73 MA's), (16, 31143), (23, 31173), (25, 31182), (29, 31206), (30, 31230), (36, 31296), (45, 31377), (48, 31386), (54, 31419), (57, 31449), (59, 31455), (62, 31479), (63, 31500), (74, 31551), (75, 31557), (77, 31575), (94, 31707), (101, 31773),

Gene: Braelyn\_53 Start: 31022, Stop: 31822, Start Num: 5

Candidate Starts for Braelyn\_53:

(Start: 5 @31022 has 34 MA's), (21, 31124), (29, 31169), (30, 31193), (40, 31289), (49, 31355), (57, 31412), (59, 31418), (60, 31430), (61, 31436), (63, 31463), (65, 31478), (74, 31511), (91, 31655),

Gene: Brizzy\_55 Start: 30584, Stop: 31372, Start Num: 7

Candidate Starts for Brizzy\_55:

(Start: 7 @30584 has 73 MA's), (16, 30662), (23, 30692), (29, 30725), (30, 30749), (45, 30896), (48, 30905), (54, 30938), (57, 30968), (59, 30974), (62, 30998), (63, 31019), (74, 31070), (75, 31076), (77, 31094), (94, 31226), (99, 31271), (101, 31292),

Gene: Cadmus\_52 Start: 30601, Stop: 31401, Start Num: 5

Candidate Starts for Cadmus\_52:

(Start: 5 @30601 has 34 MA's), (16, 30685), (23, 30715), (29, 30748), (30, 30772), (46, 30922), (49, 30934), (57, 30991), (59, 30997), (91, 31234), (94, 31246),

Gene: CeilingFan\_55 Start: 30825, Stop: 31613, Start Num: 7

Candidate Starts for CeilingFan\_55:

(Start: 7 @30825 has 73 MA's), (16, 30903), (23, 30933), (29, 30966), (30, 30990), (45, 31137), (48, 31146), (54, 31179), (57, 31209), (59, 31215), (62, 31239), (63, 31260), (74, 31311), (75, 31317), (77, 31335), (94, 31467), (99, 31512), (101, 31533),

Gene: Chaewon\_33 Start: 23004, Stop: 23855, Start Num: 7

Candidate Starts for Chaewon\_33:

(Start: 7 @23004 has 73 MA's), (10, 23028), (11, 23034), (14, 23058), (25, 23118), (27, 23127), (29, 23142), (30, 23166), (35, 23223), (59, 23394), (61, 23412), (87, 23643), (90, 23664), (98, 23721), (105, 23784), (107, 23835),

Gene: Circinus\_31 Start: 23018, Stop: 23863, Start Num: 7

Candidate Starts for Circinus\_31:

(Start: 7 @23018 has 73 MA's), (10, 23042), (11, 23048), (14, 23072), (27, 23141), (29, 23156), (30, 23180), (32, 23189), (59, 23408), (61, 23426), (86, 23651), (90, 23675), (98, 23732), (105, 23795), (107, 23846),

Gene: Comrade\_34 Start: 21619, Stop: 22443, Start Num: 7

Candidate Starts for Comrade\_34:

(Start: 7 @21619 has 73 MA's), (26, 21733), (29, 21754), (30, 21778), (32, 21787), (59, 22006), (71, 22099), (89, 22249), (90, 22258), (98, 22315),

Gene: Coogler\_54 Start: 31645, Stop: 32445, Start Num: 5

Candidate Starts for Coogler\_54:

(Start: 5 @31645 has 34 MA's), (Start: 7 @31651 has 73 MA's), (13, 31699), (16, 31729), (22, 31753), (25, 31768), (26, 31771), (30, 31816), (45, 31963), (46, 31966), (57, 32035), (59, 32041), (60, 32053), (61, 32059), (64, 32089), (65, 32101), (74, 32134), (91, 32278), (97, 32323),

Gene: Cross\_54 Start: 31620, Stop: 32420, Start Num: 5

Candidate Starts for Cross\_54:

(Start: 5 @31620 has 34 MA's), (Start: 7 @31626 has 73 MA's), (13, 31674), (16, 31704), (22, 31728), (25, 31743), (26, 31746), (30, 31791), (45, 31938), (46, 31941), (57, 32010), (59, 32016), (60, 32028), (61, 32034), (64, 32064), (65, 32076), (74, 32109), (91, 32253), (97, 32298),

Gene: Cursive\_52 Start: 31145, Stop: 31945, Start Num: 5

Candidate Starts for Cursive\_52:

(Start: 5 @31145 has 34 MA's), (Start: 7 @31151 has 73 MA's), (13, 31199), (16, 31229), (22, 31253), (25, 31268), (26, 31271), (30, 31316), (45, 31463), (46, 31466), (57, 31535), (59, 31541), (60, 31553), (61, 31559), (64, 31589), (65, 31601), (74, 31634), (91, 31778), (97, 31823),

Gene: Daisy123\_60 Start: 30684, Stop: 31472, Start Num: 7

Candidate Starts for Daisy123\_60:

(1, 30624), (Start: 7 @30684 has 73 MA's), (16, 30762), (23, 30792), (25, 30801), (29, 30825), (30, 30849), (36, 30915), (48, 31005), (54, 31038), (57, 31068), (59, 31074), (62, 31098), (63, 31119), (74, 31170), (75, 31176), (77, 31194), (94, 31326), (101, 31392),

Gene: Daubenski\_55 Start: 31365, Stop: 32165, Start Num: 5

Candidate Starts for Daubenski\_55:

(Start: 5 @31365 has 34 MA's), (16, 31449), (23, 31479), (29, 31512), (30, 31536), (46, 31686), (49, 31698), (57, 31755), (59, 31761), (91, 31998), (94, 32010),

Gene: Davielle\_51 Start: 30439, Stop: 31239, Start Num: 5

Candidate Starts for Davielle\_51:

(Start: 5 @30439 has 34 MA's), (21, 30541), (29, 30586), (30, 30610), (40, 30706), (49, 30772), (57, 30829), (59, 30835), (60, 30847), (61, 30853), (63, 30880), (65, 30895), (74, 30928), (91, 31072),

Gene: DeluluLabubu\_33 Start: 19702, Stop: 20526, Start Num: 7

Candidate Starts for DeluluLabubu\_33:

(Start: 7 @19702 has 73 MA's), (15, 19765), (25, 19813), (26, 19816), (29, 19837), (30, 19861), (59, 20089), (71, 20182), (90, 20341),

Gene: Dorin\_50 Start: 30618, Stop: 31415, Start Num: 9

Candidate Starts for Dorin\_50:

(Start: 9 @30618 has 3 MA's), (20, 30687), (30, 30762), (34, 30801), (40, 30855), (42, 30882), (43, 30885), (67, 31056), (80, 31212), (85, 31233), (100, 31329), (106, 31395),

Gene: EGole\_55 Start: 32524, Stop: 33324, Start Num: 5

Candidate Starts for EGole\_55:

(Start: 5 @32524 has 34 MA's), (Start: 7 @32530 has 73 MA's), (13, 32578), (16, 32608), (22, 32632), (26, 32650), (30, 32695), (46, 32845), (57, 32914), (59, 32920), (60, 32932), (61, 32938), (65, 32980), (74, 33013), (91, 33157), (97, 33202),

Gene: Eliot67\_51 Start: 30252, Stop: 31052, Start Num: 5

Candidate Starts for Eliot67\_51:

(Start: 5 @30252 has 34 MA's), (21, 30354), (29, 30399), (30, 30423), (40, 30519), (49, 30585), (57, 30642), (59, 30648), (60, 30660), (61, 30666), (63, 30693), (65, 30708), (74, 30741), (91, 30885),

Gene: Elmer\_58 Start: 31975, Stop: 32760, Start Num: 7

Candidate Starts for Elmer\_58:

(1, 31915), (2, 31924), (3, 31933), (4, 31936), (Start: 7 @31975 has 73 MA's), (15, 32044), (23, 32083), (25, 32092), (26, 32095), (29, 32116), (30, 32140), (36, 32206), (39, 32233), (45, 32287), (57, 32359), (59, 32365), (61, 32383), (63, 32410), (69, 32440), (77, 32485), (89, 32590), (91, 32605), (98, 32656),

Gene: Emma1919\_35 Start: 20397, Stop: 21221, Start Num: 7

Candidate Starts for Emma1919\_35:

(Start: 7 @20397 has 73 MA's), (15, 20460), (25, 20508), (26, 20511), (29, 20532), (30, 20556), (59, 20784), (71, 20877), (90, 21036),

Gene: Enygma\_56 Start: 32747, Stop: 33535, Start Num: 7

Candidate Starts for Enygma\_56:

(1, 32687), (Start: 7 @32747 has 73 MA's), (13, 32795), (23, 32855), (25, 32864), (28, 32885), (29, 32888), (30, 32912), (31, 32918), (34, 32954), (45, 33059), (48, 33068), (49, 33074), (54, 33101), (57, 33131), (59, 33137), (63, 33182), (77, 33257), (87, 33350), (89, 33362), (91, 33377), (101, 33455),

Gene: Evy\_55 Start: 31621, Stop: 32421, Start Num: 5

Candidate Starts for Evy\_55:

(Start: 5 @31621 has 34 MA's), (21, 31723), (29, 31768), (30, 31792), (49, 31954), (51, 31972), (57, 32011), (59, 32017), (60, 32029), (61, 32035), (63, 32062), (65, 32077), (91, 32254),

Gene: Faust\_34 Start: 20990, Stop: 21811, Start Num: 7

Candidate Starts for Faust\_34:

(Start: 7 @20990 has 73 MA's), (11, 21017), (15, 21053), (16, 21062), (18, 21068), (26, 21104), (29, 21125), (30, 21149), (38, 21230), (41, 21248), (47, 21302), (56, 21359), (59, 21377), (78, 21518), (86, 21605), (90, 21629), (92, 21641), (107, 21800),

Gene: Forrest\_35 Start: 20520, Stop: 21344, Start Num: 7

Candidate Starts for Forrest\_35:

(Start: 7 @20520 has 73 MA's), (15, 20583), (26, 20634), (29, 20655), (30, 20679), (59, 20907), (71, 21000), (90, 21159),

Gene: Francesca\_49 Start: 30750, Stop: 31547, Start Num: 9

Candidate Starts for Francesca\_49:

(Start: 9 @30750 has 3 MA's), (20, 30819), (30, 30894), (34, 30933), (40, 30987), (42, 31014), (43, 31017), (67, 31188), (80, 31344), (85, 31365), (100, 31461), (106, 31527),

Gene: Francob\_33 Start: 20528, Stop: 21352, Start Num: 7

Candidate Starts for Francob\_33:

(Start: 7 @20528 has 73 MA's), (26, 20642), (29, 20663), (30, 20687), (56, 20897), (59, 20915), (71, 21008), (78, 21056), (90, 21167), (98, 21224), (103, 21269),

Gene: FreddyDRoo\_51 Start: 30252, Stop: 31052, Start Num: 5

Candidate Starts for FreddyDRoo\_51:

(Start: 5 @30252 has 34 MA's), (21, 30354), (29, 30399), (30, 30423), (40, 30519), (49, 30585), (57, 30642), (59, 30648), (60, 30660), (61, 30666), (63, 30693), (65, 30708), (74, 30741), (91, 30885),

Gene: Genie2\_56 Start: 30913, Stop: 31701, Start Num: 7

Candidate Starts for Genie2\_56:

(1, 30853), (2, 30862), (Start: 7 @30913 has 73 MA's), (16, 30991), (20, 31003), (22, 31015), (23, 31021), (25, 31030), (29, 31054), (30, 31078), (34, 31120), (48, 31234), (49, 31240), (57, 31297), (59, 31303), (61, 31321), (63, 31348), (75, 31405), (77, 31423), (84, 31504), (89, 31528), (91, 31543), (94, 31555),

Gene: Gibbi\_60 Start: 31048, Stop: 31836, Start Num: 7

Candidate Starts for Gibbi\_60:

(1, 30988), (Start: 7 @31048 has 73 MA's), (16, 31126), (23, 31156), (25, 31165), (29, 31189), (30, 31213), (36, 31279), (45, 31360), (48, 31369), (54, 31402), (57, 31432), (59, 31438), (62, 31462), (63, 31483), (74, 31534), (75, 31540), (77, 31558), (94, 31690), (101, 31756),

Gene: Gilson\_35 Start: 20350, Stop: 21174, Start Num: 7

Candidate Starts for Gilson\_35:

(Start: 7 @20350 has 73 MA's), (15, 20413), (25, 20461), (26, 20464), (29, 20485), (30, 20509), (59, 20737), (71, 20830), (90, 20989),

Gene: HangryHippo\_54 Start: 31619, Stop: 32419, Start Num: 5

Candidate Starts for HangryHippo\_54:

(Start: 5 @31619 has 34 MA's), (Start: 7 @31625 has 73 MA's), (13, 31673), (16, 31703), (22, 31727), (25, 31742), (26, 31745), (30, 31790), (45, 31937), (46, 31940), (57, 32009), (59, 32015), (60, 32027),

(61, 32033), (64, 32063), (65, 32075), (74, 32108), (91, 32252), (97, 32297),

Gene: IchabodCrane\_53 Start: 30637, Stop: 31425, Start Num: 7

Candidate Starts for IchabodCrane\_53:

(Start: 7 @30637 has 73 MA's), (16, 30715), (23, 30745), (29, 30778), (30, 30802), (45, 30949), (48, 30958), (54, 30991), (57, 31021), (59, 31027), (62, 31051), (63, 31072), (74, 31123), (75, 31129), (77, 31147), (94, 31279), (99, 31324), (101, 31345),

Gene: Jada\_33 Start: 19702, Stop: 20526, Start Num: 7

Candidate Starts for Jada\_33:

(Start: 7 @19702 has 73 MA's), (15, 19765), (26, 19816), (29, 19837), (30, 19861), (59, 20089), (71, 20182), (90, 20341),

Gene: Jay2Jay\_59 Start: 32429, Stop: 33229, Start Num: 5

Candidate Starts for Jay2Jay\_59:

(Start: 5 @32429 has 34 MA's), (21, 32531), (29, 32576), (30, 32600), (49, 32762), (51, 32780), (57, 32819), (59, 32825), (60, 32837), (61, 32843), (63, 32870), (65, 32885), (91, 33062),

Gene: JimJam\_56 Start: 31011, Stop: 31799, Start Num: 7

Candidate Starts for JimJam\_56:

(1, 30951), (Start: 7 @31011 has 73 MA's), (16, 31089), (23, 31119), (25, 31128), (29, 31152), (30, 31176), (36, 31242), (45, 31323), (48, 31332), (54, 31365), (57, 31395), (59, 31401), (62, 31425), (63, 31446), (74, 31497), (77, 31521), (94, 31653), (101, 31719),

Gene: Jollison\_55 Start: 30893, Stop: 31681, Start Num: 7

Candidate Starts for Jollison\_55:

(1, 30833), (Start: 7 @30893 has 73 MA's), (16, 30971), (23, 31001), (25, 31010), (29, 31034), (30, 31058), (36, 31124), (45, 31205), (48, 31214), (54, 31247), (57, 31277), (59, 31283), (62, 31307), (63, 31328), (74, 31379), (75, 31385), (77, 31403), (94, 31535), (101, 31601),

Gene: Karimac\_55 Start: 31042, Stop: 31830, Start Num: 7

Candidate Starts for Karimac\_55:

(Start: 7 @31042 has 73 MA's), (16, 31120), (23, 31150), (29, 31183), (30, 31207), (45, 31354), (48, 31363), (54, 31396), (57, 31426), (59, 31432), (62, 31456), (63, 31477), (74, 31528), (75, 31534), (77, 31552), (94, 31684), (99, 31729), (101, 31750),

Gene: Karp\_33 Start: 21219, Stop: 22043, Start Num: 7

Candidate Starts for Karp\_33:

(Start: 7 @21219 has 73 MA's), (26, 21333), (29, 21354), (30, 21378), (32, 21387), (59, 21606), (71, 21699), (89, 21849), (90, 21858), (98, 21915),

Gene: Kenrey\_35 Start: 20399, Stop: 21223, Start Num: 7

Candidate Starts for Kenrey\_35:

(Start: 7 @20399 has 73 MA's), (15, 20462), (26, 20513), (29, 20534), (30, 20558), (56, 20768), (59, 20786), (71, 20879), (90, 21038),

Gene: KentuckyRacer\_56 Start: 30826, Stop: 31614, Start Num: 7

Candidate Starts for KentuckyRacer\_56:

(Start: 7 @30826 has 73 MA's), (16, 30904), (23, 30934), (29, 30967), (30, 30991), (45, 31138), (48, 31147), (54, 31180), (57, 31210), (59, 31216), (62, 31240), (63, 31261), (74, 31312), (75, 31318), (77, 31336), (94, 31468), (99, 31513), (101, 31534),

Gene: Larnav\_54 Start: 31604, Stop: 32404, Start Num: 5

Candidate Starts for Larnav\_54:

(Start: 5 @31604 has 34 MA's), (Start: 7 @31610 has 73 MA's), (13, 31658), (16, 31688), (22, 31712), (25, 31727), (26, 31730), (30, 31775), (45, 31922), (46, 31925), (57, 31994), (59, 32000), (60, 32012), (61, 32018), (64, 32048), (65, 32060), (74, 32093), (91, 32237), (97, 32282),

Gene: Leo04\_55 Start: 32119, Stop: 32919, Start Num: 5

Candidate Starts for Leo04\_55:

(Start: 5 @32119 has 34 MA's), (Start: 7 @32125 has 73 MA's), (13, 32173), (16, 32203), (22, 32227), (25, 32242), (26, 32245), (30, 32290), (45, 32437), (46, 32440), (57, 32509), (59, 32515), (60, 32527), (61, 32533), (64, 32563), (65, 32575), (74, 32608), (89, 32737), (91, 32752), (97, 32797),

Gene: Liandry\_53 Start: 30959, Stop: 31759, Start Num: 5

Candidate Starts for Liandry\_53:

(Start: 5 @30959 has 34 MA's), (21, 31061), (29, 31106), (30, 31130), (40, 31226), (49, 31292), (57, 31349), (59, 31355), (60, 31367), (61, 31373), (63, 31400), (65, 31415), (74, 31448), (91, 31592),

Gene: LilMartin\_51 Start: 29895, Stop: 30689, Start Num: 7

Candidate Starts for LilMartin\_51:

(Start: 7 @29895 has 73 MA's), (Start: 9 @29916 has 3 MA's), (16, 29973), (29, 30036), (30, 30060), (57, 30279), (59, 30285), (63, 30330), (77, 30402), (81, 30468), (91, 30522), (94, 30534),

Gene: LilSaint\_53 Start: 30141, Stop: 30935, Start Num: 7

Candidate Starts for LilSaint\_53:

(Start: 7 @30141 has 73 MA's), (13, 30189), (14, 30198), (21, 30237), (25, 30258), (29, 30282), (30, 30306), (57, 30525), (58, 30528), (59, 30531), (65, 30591), (75, 30630), (81, 30714), (91, 30768),

Gene: Limpid\_31 Start: 19481, Stop: 20311, Start Num: 7

Candidate Starts for Limpid\_31:

(Start: 7 @19481 has 73 MA's), (16, 19559), (29, 19622), (30, 19646), (47, 19799), (58, 19871), (59, 19874), (78, 20015), (84, 20093), (90, 20126), (93, 20141), (98, 20183), (105, 20246),

Gene: LukeCage\_55 Start: 30793, Stop: 31581, Start Num: 7

Candidate Starts for LukeCage\_55:

(1, 30733), (Start: 7 @30793 has 73 MA's), (10, 30820), (15, 30862), (16, 30871), (23, 30901), (25, 30910), (29, 30934), (30, 30958), (36, 31024), (45, 31105), (48, 31114), (54, 31147), (57, 31177), (59, 31183), (61, 31201), (63, 31228), (77, 31303), (94, 31435), (101, 31501),

Gene: Lululemon\_53 Start: 31000, Stop: 31800, Start Num: 5

Candidate Starts for Lululemon\_53:

(Start: 5 @31000 has 34 MA's), (Start: 7 @31006 has 73 MA's), (13, 31054), (16, 31084), (22, 31108), (25, 31123), (26, 31126), (30, 31171), (45, 31318), (46, 31321), (57, 31390), (59, 31396), (60, 31408), (61, 31414), (64, 31444), (65, 31456), (74, 31489), (91, 31633), (97, 31678),

Gene: Marsus\_52 Start: 30167, Stop: 30961, Start Num: 7

Candidate Starts for Marsus\_52:

(Start: 7 @30167 has 73 MA's), (Start: 9 @30188 has 3 MA's), (14, 30224), (16, 30245), (20, 30257), (29, 30308), (30, 30332), (57, 30551), (59, 30557), (63, 30602), (65, 30617), (77, 30674), (91, 30794), (94, 30806),

Gene: Maupel\_35 Start: 20350, Stop: 21174, Start Num: 7

Candidate Starts for Maupel\_35:

(Start: 7 @20350 has 73 MA's), (15, 20413), (25, 20461), (26, 20464), (29, 20485), (30, 20509), (59, 20737), (71, 20830), (90, 20989),

Gene: MeganTheeKilla\_33 Start: 19711, Stop: 20535, Start Num: 7

Candidate Starts for MeganTheeKilla\_33:

(Start: 7 @19711 has 73 MA's), (15, 19774), (25, 19822), (26, 19825), (29, 19846), (30, 19870), (59, 20098), (71, 20191), (90, 20350),

Gene: Mildred21\_52 Start: 30088, Stop: 30882, Start Num: 7

Candidate Starts for Mildred21\_52:

(Start: 7 @30088 has 73 MA's), (13, 30136), (14, 30145), (21, 30184), (26, 30208), (29, 30229), (30, 30253), (40, 30349), (48, 30409), (57, 30472), (59, 30478), (63, 30523), (91, 30715), (94, 30727),

Gene: MindFlayer\_54 Start: 30544, Stop: 31332, Start Num: 7

Candidate Starts for MindFlayer\_54:

(1, 30484), (Start: 7 @30544 has 73 MA's), (16, 30622), (23, 30652), (25, 30661), (29, 30685), (30, 30709), (36, 30775), (45, 30856), (48, 30865), (54, 30898), (57, 30928), (59, 30934), (62, 30958), (63, 30979), (74, 31030), (77, 31054), (94, 31186), (101, 31252),

Gene: Moab\_34 Start: 21547, Stop: 22374, Start Num: 7

Candidate Starts for Moab\_34:

(Start: 7 @21547 has 73 MA's), (29, 21685), (30, 21709), (31, 21715), (59, 21937), (61, 21955), (71, 22030), (76, 22060), (89, 22180), (90, 22189), (92, 22201), (105, 22309),

Gene: Mugiwara\_55 Start: 31292, Stop: 32080, Start Num: 7

Candidate Starts for Mugiwara\_55:

(1, 31232), (Start: 7 @31292 has 73 MA's), (10, 31319), (16, 31370), (23, 31400), (25, 31409), (29, 31433), (30, 31457), (45, 31604), (46, 31607), (54, 31646), (57, 31676), (59, 31682), (63, 31727), (77, 31802), (86, 31892), (94, 31934), (99, 31979), (101, 32000),

Gene: MulchMansion\_51 Start: 29895, Stop: 30689, Start Num: 7

Candidate Starts for MulchMansion\_51:

(Start: 7 @29895 has 73 MA's), (Start: 9 @29916 has 3 MA's), (16, 29973), (29, 30036), (30, 30060), (57, 30279), (59, 30285), (63, 30330), (77, 30402), (81, 30468), (91, 30522), (94, 30534),

Gene: Muntaha\_30 Start: 21354, Stop: 22181, Start Num: 7

Candidate Starts for Muntaha\_30:

(Start: 7 @21354 has 73 MA's), (Start: 9 @21369 has 3 MA's), (10, 21375), (11, 21381), (14, 21405), (29, 21489), (30, 21513), (35, 21570), (59, 21741), (63, 21786), (64, 21789), (70, 21834), (90, 21993), (95, 22014), (98, 22050), (105, 22113), (107, 22164),

Gene: Navo\_52 Start: 30917, Stop: 31717, Start Num: 5

Candidate Starts for Navo\_52:

(Start: 5 @30917 has 34 MA's), (21, 31019), (29, 31064), (30, 31088), (40, 31184), (49, 31250), (57, 31307), (59, 31313), (60, 31325), (61, 31331), (63, 31358), (64, 31361), (65, 31373), (75, 31412), (91, 31550), (96, 31592),

Gene: NiceHouse\_65 Start: 36974, Stop: 37813, Start Num: 6

Candidate Starts for NiceHouse\_65:

(Start: 6 @36974 has 1 MA's), (12, 37004), (19, 37052), (30, 37130), (34, 37184), (44, 37283), (58, 37367), (78, 37517), (79, 37559), (83, 37583), (88, 37625), (96, 37685), (104, 37754), (106, 37778),

Gene: NootNoot\_50 Start: 29873, Stop: 30673, Start Num: 5

Candidate Starts for NootNoot\_50:

(Start: 5 @29873 has 34 MA's), (21, 29975), (29, 30020), (30, 30044), (40, 30140), (49, 30206), (57, 30263), (59, 30269), (60, 30281), (61, 30287), (63, 30314), (91, 30506),

Gene: Nova53\_47 Start: 30754, Stop: 31545, Start Num: 9

Candidate Starts for Nova53\_47:

(Start: 9 @30754 has 3 MA's), (16, 30811), (17, 30814), (25, 30850), (30, 30898), (34, 30937), (35, 30952), (40, 30991), (43, 31021), (53, 31078), (55, 31093), (61, 31135), (89, 31384), (91, 31396), (92, 31402), (100, 31459), (106, 31525),

Gene: PacManQ\_53 Start: 31000, Stop: 31800, Start Num: 5

Candidate Starts for PacManQ\_53:

(Start: 5 @31000 has 34 MA's), (Start: 7 @31006 has 73 MA's), (13, 31054), (16, 31084), (22, 31108), (25, 31123), (26, 31126), (30, 31171), (45, 31318), (46, 31321), (57, 31390), (59, 31396), (60, 31408), (61, 31414), (64, 31444), (65, 31456), (74, 31489), (91, 31633), (97, 31678),

Gene: Paradiddles\_50 Start: 30134, Stop: 30934, Start Num: 5

Candidate Starts for Paradiddles\_50:

(Start: 5 @30134 has 34 MA's), (20, 30230), (21, 30236), (29, 30281), (30, 30305), (40, 30401), (49, 30467), (57, 30524), (59, 30530), (60, 30542), (61, 30548), (63, 30575), (91, 30767),

Gene: Patelgo\_34 Start: 21737, Stop: 22564, Start Num: 7

Candidate Starts for Patelgo\_34:

(Start: 7 @21737 has 73 MA's), (29, 21875), (30, 21899), (31, 21905), (59, 22127), (61, 22145), (71, 22220), (76, 22250), (89, 22370), (90, 22379), (92, 22391), (105, 22499),

Gene: Peebs\_53 Start: 31357, Stop: 32157, Start Num: 5

Candidate Starts for Peebs\_53:

(Start: 5 @31357 has 34 MA's), (Start: 7 @31363 has 73 MA's), (13, 31411), (16, 31441), (22, 31465), (25, 31480), (26, 31483), (30, 31528), (45, 31675), (46, 31678), (57, 31747), (59, 31753), (60, 31765), (61, 31771), (64, 31801), (65, 31813), (74, 31846), (91, 31990), (97, 32035),

Gene: Pepperwood\_54 Start: 31490, Stop: 32290, Start Num: 5

Candidate Starts for Pepperwood\_54:

(Start: 5 @31490 has 34 MA's), (Start: 7 @31496 has 73 MA's), (13, 31544), (16, 31574), (22, 31598), (25, 31613), (26, 31616), (30, 31661), (45, 31808), (46, 31811), (57, 31880), (59, 31886), (60, 31898), (61, 31904), (64, 31934), (65, 31946), (74, 31979), (91, 32123), (97, 32168),

Gene: Persimmon\_50 Start: 29848, Stop: 30648, Start Num: 5

Candidate Starts for Persimmon\_50:

(Start: 5 @29848 has 34 MA's), (21, 29950), (29, 29995), (30, 30019), (40, 30115), (49, 30181), (57, 30238), (59, 30244), (60, 30256), (61, 30262), (63, 30289), (65, 30304), (74, 30337), (91, 30481),

Gene: Phredrick\_33 Start: 19605, Stop: 20429, Start Num: 7

Candidate Starts for Phredrick\_33:

(Start: 7 @19605 has 73 MA's), (15, 19668), (26, 19719), (29, 19740), (30, 19764), (56, 19974), (59, 19992), (71, 20085), (90, 20244),

Gene: PinkiePie\_52 Start: 30959, Stop: 31759, Start Num: 5

Candidate Starts for PinkiePie\_52:

(Start: 5 @30959 has 34 MA's), (21, 31061), (29, 31106), (30, 31130), (40, 31226), (49, 31292), (57, 31349), (59, 31355), (60, 31367), (61, 31373), (63, 31400), (65, 31415), (74, 31448), (91, 31592),

Gene: PumpkinSpice\_55 Start: 30936, Stop: 31724, Start Num: 7

Candidate Starts for PumpkinSpice\_55:

(1, 30876), (Start: 7 @30936 has 73 MA's), (16, 31014), (23, 31044), (25, 31053), (29, 31077), (30, 31101), (36, 31167), (45, 31248), (48, 31257), (54, 31290), (57, 31320), (59, 31326), (62, 31350), (63, 31371), (74, 31422), (75, 31428), (77, 31446), (94, 31578), (101, 31644),

Gene: PynkPanther\_59 Start: 30987, Stop: 31787, Start Num: 5

Candidate Starts for PynkPanther\_59:

(Start: 5 @30987 has 34 MA's), (21, 31089), (29, 31134), (30, 31158), (40, 31254), (49, 31320), (57, 31377), (59, 31383), (60, 31395), (61, 31401), (63, 31428), (65, 31443), (91, 31620),

Gene: Quaran19\_56 Start: 30927, Stop: 31715, Start Num: 7

Candidate Starts for Quaran19\_56:

(1, 30867), (Start: 7 @30927 has 73 MA's), (16, 31005), (23, 31035), (25, 31044), (29, 31068), (30, 31092), (36, 31158), (45, 31239), (48, 31248), (54, 31281), (57, 31311), (59, 31317), (62, 31341), (63, 31362), (74, 31413), (75, 31419), (77, 31437), (94, 31569), (101, 31635),

Gene: Rikishi\_56 Start: 30842, Stop: 31630, Start Num: 7

Candidate Starts for Rikishi\_56:

(1, 30782), (Start: 7 @30842 has 73 MA's), (16, 30920), (23, 30950), (25, 30959), (29, 30983), (30, 31007), (36, 31073), (45, 31154), (48, 31163), (54, 31196), (57, 31226), (59, 31232), (62, 31256), (63, 31277), (74, 31328), (75, 31334), (77, 31352), (94, 31484), (101, 31550),

Gene: Riptide\_51 Start: 29690, Stop: 30484, Start Num: 7

Candidate Starts for Riptide\_51:

(Start: 7 @29690 has 73 MA's), (14, 29747), (21, 29786), (25, 29807), (29, 29831), (30, 29855), (57, 30074), (58, 30077), (59, 30080), (65, 30140), (75, 30179), (81, 30263), (91, 30317),

Gene: SaltySpittoon\_56 Start: 30936, Stop: 31724, Start Num: 7

Candidate Starts for SaltySpittoon\_56:

(1, 30876), (Start: 7 @30936 has 73 MA's), (16, 31014), (23, 31044), (25, 31053), (29, 31077), (30, 31101), (36, 31167), (45, 31248), (48, 31257), (54, 31290), (57, 31320), (59, 31326), (62, 31350), (63, 31371), (74, 31422), (75, 31428), (77, 31446), (94, 31578), (101, 31644),

Gene: Samisti12\_54 Start: 32793, Stop: 33593, Start Num: 5

Candidate Starts for Samisti12\_54:

(Start: 5 @32793 has 34 MA's), (Start: 7 @32799 has 73 MA's), (13, 32847), (16, 32877), (22, 32901), (25, 32916), (26, 32919), (30, 32964), (45, 33111), (46, 33114), (57, 33183), (59, 33189), (60, 33201), (61, 33207), (64, 33237), (65, 33249), (74, 33282), (91, 33426), (97, 33471),

Gene: Scheme\_55 Start: 32210, Stop: 33004, Start Num: 7

Candidate Starts for Scheme\_55:

(Start: 5 @32204 has 34 MA's), (Start: 7 @32210 has 73 MA's), (13, 32258), (16, 32288), (22, 32312), (25, 32327), (26, 32330), (30, 32375), (45, 32522), (46, 32525), (57, 32594), (59, 32600), (60, 32612), (61, 32618), (64, 32648), (65, 32660), (74, 32693), (91, 32837), (97, 32882),

Gene: SeresaTree\_34 Start: 20380, Stop: 21201, Start Num: 7

Candidate Starts for SeresaTree\_34:

(Start: 7 @20380 has 73 MA's), (11, 20407), (15, 20443), (16, 20452), (18, 20458), (26, 20494), (29, 20515), (30, 20539), (38, 20620), (41, 20638), (47, 20692), (56, 20749), (59, 20767), (78, 20908), (86, 20995), (90, 21019), (92, 21031), (107, 21190),

Gene: Sham\_31 Start: 21459, Stop: 22298, Start Num: 7

Candidate Starts for Sham\_31:

(Start: 7 @21459 has 73 MA's), (11, 21486), (15, 21522), (29, 21594), (30, 21618), (52, 21801), (59, 21846), (73, 21969), (78, 22005), (90, 22116),

Gene: Shuckle\_52 Start: 31810, Stop: 32610, Start Num: 5

Candidate Starts for Shuckle\_52:

(Start: 5 @31810 has 34 MA's), (Start: 7 @31816 has 73 MA's), (13, 31864), (16, 31894), (22, 31918), (25, 31933), (26, 31936), (30, 31981), (45, 32128), (46, 32131), (57, 32200), (59, 32206), (60, 32218), (61, 32224), (64, 32254), (65, 32266), (74, 32299), (91, 32443), (97, 32488),

Gene: Sollertia\_56 Start: 30913, Stop: 31701, Start Num: 7

Candidate Starts for Sollertia\_56:

(1, 30853), (2, 30862), (Start: 7 @30913 has 73 MA's), (16, 30991), (20, 31003), (22, 31015), (23, 31021), (25, 31030), (29, 31054), (30, 31078), (34, 31120), (48, 31234), (49, 31240), (57, 31297), (59, 31303), (61, 31321), (63, 31348), (75, 31405), (77, 31423), (84, 31504), (89, 31528), (91, 31543), (94, 31555),

Gene: SparkleGoddess\_34 Start: 21621, Stop: 22445, Start Num: 7

Candidate Starts for SparkleGoddess\_34:

(Start: 7 @21621 has 73 MA's), (26, 21735), (29, 21756), (30, 21780), (32, 21789), (53, 21969), (59, 22008), (71, 22101), (89, 22251), (90, 22260), (98, 22317),

Gene: Spelly\_56 Start: 30891, Stop: 31679, Start Num: 7

Candidate Starts for Spelly\_56:

(1, 30831), (Start: 7 @30891 has 73 MA's), (16, 30969), (23, 30999), (25, 31008), (29, 31032), (30, 31056), (36, 31122), (45, 31203), (48, 31212), (54, 31245), (57, 31275), (59, 31281), (62, 31305), (63, 31326), (74, 31377), (75, 31383), (77, 31401), (94, 31533), (101, 31599),

Gene: Spilled\_57 Start: 31008, Stop: 31796, Start Num: 7

Candidate Starts for Spilled\_57:

(1, 30948), (Start: 7 @31008 has 73 MA's), (16, 31086), (23, 31116), (29, 31149), (30, 31173), (45, 31320), (48, 31329), (54, 31362), (57, 31392), (59, 31398), (62, 31422), (63, 31443), (74, 31494), (77, 31518), (94, 31650), (101, 31716),

Gene: Squillium\_53 Start: 30960, Stop: 31760, Start Num: 5

Candidate Starts for Squillium\_53:

(Start: 5 @30960 has 34 MA's), (21, 31062), (29, 31107), (30, 31131), (40, 31227), (49, 31293), (57, 31350), (59, 31356), (60, 31368), (61, 31374), (63, 31401), (65, 31416), (74, 31449), (91, 31593),

Gene: Stanimal\_56 Start: 30802, Stop: 31590, Start Num: 7

Candidate Starts for Stanimal\_56:

(1, 30742), (2, 30751), (Start: 7 @30802 has 73 MA's), (16, 30880), (20, 30892), (22, 30904), (23, 30910), (25, 30919), (29, 30943), (30, 30967), (34, 31009), (48, 31123), (49, 31129), (57, 31186), (59, 31192), (61, 31210), (63, 31237), (75, 31294), (77, 31312), (84, 31393), (89, 31417), (91, 31432), (94, 31444),

Gene: StarPlatinum\_56 Start: 31436, Stop: 32224, Start Num: 7

Candidate Starts for StarPlatinum\_56:

(1, 31376), (Start: 7 @31436 has 73 MA's), (10, 31463), (15, 31505), (23, 31544), (25, 31553), (29, 31577), (30, 31601), (45, 31748), (48, 31757), (54, 31790), (57, 31820), (59, 31826), (61, 31844), (63, 31871), (77, 31946), (94, 32078), (101, 32144),

Gene: Starbow\_54 Start: 30912, Stop: 31700, Start Num: 7

Candidate Starts for Starbow\_54:

(1, 30852), (Start: 7 @30912 has 73 MA's), (16, 30990), (23, 31020), (25, 31029), (29, 31053), (30, 31077), (36, 31143), (45, 31224), (48, 31233), (54, 31266), (57, 31296), (59, 31302), (62, 31326), (63, 31347), (74, 31398), (75, 31404), (77, 31422), (94, 31554), (101, 31620),

Gene: Stigma\_34 Start: 21622, Stop: 22446, Start Num: 7

Candidate Starts for Stigma\_34:

(Start: 7 @21622 has 73 MA's), (26, 21736), (29, 21757), (30, 21781), (32, 21790), (53, 21970), (59, 22009), (71, 22102), (89, 22252), (90, 22261), (98, 22318),

Gene: Sushi23\_54 Start: 31715, Stop: 32515, Start Num: 5

Candidate Starts for Sushi23\_54:

(Start: 5 @31715 has 34 MA's), (Start: 7 @31721 has 73 MA's), (13, 31769), (16, 31799), (22, 31823), (25, 31838), (26, 31841), (30, 31886), (45, 32033), (46, 32036), (57, 32105), (59, 32111), (60, 32123), (61, 32129), (64, 32159), (65, 32171), (74, 32204), (91, 32348), (97, 32393),

Gene: Targaryen\_55 Start: 32478, Stop: 33278, Start Num: 5

Candidate Starts for Targaryen\_55:

(Start: 5 @32478 has 34 MA's), (21, 32580), (29, 32625), (30, 32649), (49, 32811), (51, 32829), (57, 32868), (59, 32874), (60, 32886), (61, 32892), (63, 32919), (65, 32934), (91, 33111),

Gene: Teutsch\_54 Start: 31984, Stop: 32784, Start Num: 5

Candidate Starts for Teutsch\_54:

(Start: 5 @31984 has 34 MA's), (Start: 7 @31990 has 73 MA's), (13, 32038), (16, 32068), (22, 32092), (25, 32107), (26, 32110), (30, 32155), (46, 32305), (57, 32374), (59, 32380), (60, 32392), (61, 32398), (65, 32440), (74, 32473), (91, 32617), (97, 32662),

Gene: TomSawyer\_54 Start: 30530, Stop: 31318, Start Num: 7

Candidate Starts for TomSawyer\_54:

(1, 30470), (Start: 7 @30530 has 73 MA's), (16, 30608), (23, 30638), (25, 30647), (29, 30671), (30, 30695), (36, 30761), (45, 30842), (48, 30851), (54, 30884), (57, 30914), (59, 30920), (62, 30944), (63, 30965), (74, 31016), (75, 31022), (77, 31040), (94, 31172), (101, 31238),

Gene: Tomas\_58 Start: 33262, Stop: 34056, Start Num: 7

Candidate Starts for Tomas\_58:

(Start: 7 @33262 has 73 MA's), (14, 33319), (20, 33352), (23, 33370), (24, 33373), (29, 33403), (30, 33427), (57, 33646), (59, 33652), (61, 33670), (63, 33697), (64, 33700), (66, 33718), (77, 33772), (86, 33862), (89, 33877), (91, 33892), (94, 33904), (102, 33982), (105, 34003),

Gene: Tribute\_52 Start: 31184, Stop: 31984, Start Num: 5

Candidate Starts for Tribute\_52:

(Start: 5 @31184 has 34 MA's), (Start: 7 @31190 has 73 MA's), (13, 31238), (16, 31268), (22, 31292), (25, 31307), (26, 31310), (30, 31355), (46, 31505), (57, 31574), (59, 31580), (60, 31592), (61, 31598), (65, 31640), (74, 31673), (91, 31817), (97, 31862),

Gene: Trina\_76 Start: 40485, Stop: 41291, Start Num: 8

Candidate Starts for Trina\_76:

(Start: 8 @40485 has 1 MA's), (15, 40542), (30, 40638), (33, 40668), (37, 40704), (42, 40758), (50, 40809), (61, 40878), (64, 40908), (68, 40944), (82, 41070), (85, 41094), (104, 41238),

Gene: TunaTartare\_33 Start: 21752, Stop: 22591, Start Num: 7

Candidate Starts for TunaTartare\_33:

(Start: 7 @21752 has 73 MA's), (11, 21779), (15, 21815), (16, 21824), (25, 21863), (29, 21887), (30, 21911), (52, 22094), (59, 22139), (75, 22277), (78, 22298), (90, 22409),

Gene: Wakanda\_30 Start: 21292, Stop: 22119, Start Num: 7

Candidate Starts for Wakanda\_30:

(Start: 7 @21292 has 73 MA's), (Start: 9 @21307 has 3 MA's), (10, 21313), (11, 21319), (14, 21343), (25, 21403), (29, 21427), (30, 21451), (35, 21508), (59, 21679), (63, 21724), (64, 21727), (70, 21772), (90, 21931), (95, 21952), (98, 21988), (105, 22051), (107, 22102),

Gene: Warpy\_58 Start: 31942, Stop: 32742, Start Num: 5

Candidate Starts for Warpy\_58:

(Start: 5 @31942 has 34 MA's), (21, 32044), (29, 32089), (30, 32113), (49, 32275), (51, 32293), (57, 32332), (59, 32338), (60, 32350), (61, 32356), (63, 32383), (65, 32398), (91, 32575),

Gene: WashU\_57 Start: 31493, Stop: 32293, Start Num: 5

Candidate Starts for WashU\_57:

(Start: 5 @31493 has 34 MA's), (Start: 7 @31499 has 73 MA's), (13, 31547), (16, 31577), (22, 31601), (25, 31616), (26, 31619), (30, 31664), (45, 31811), (46, 31814), (57, 31883), (59, 31889), (60, 31901), (61, 31907), (64, 31937), (65, 31949), (74, 31982), (91, 32126), (97, 32171),

Gene: Watermoore\_54 Start: 32197, Stop: 32991, Start Num: 7

Candidate Starts for Watermoore\_54:

(Start: 5 @32191 has 34 MA's), (Start: 7 @32197 has 73 MA's), (13, 32245), (16, 32275), (22, 32299), (25, 32314), (26, 32317), (30, 32362), (45, 32509), (46, 32512), (57, 32581), (59, 32587), (60, 32599), (61, 32605), (64, 32635), (65, 32647), (74, 32680), (91, 32824), (97, 32869),

Gene: Westy\_34 Start: 21622, Stop: 22446, Start Num: 7

Candidate Starts for Westy\_34:

(Start: 7 @21622 has 73 MA's), (26, 21736), (29, 21757), (30, 21781), (32, 21790), (59, 22009), (71, 22102), (89, 22252), (90, 22261), (98, 22318),

Gene: WhereRU\_51 Start: 30439, Stop: 31239, Start Num: 5

Candidate Starts for WhereRU\_51:

(Start: 5 @30439 has 34 MA's), (21, 30541), (29, 30586), (30, 30610), (40, 30706), (49, 30772), (57, 30829), (59, 30835), (60, 30847), (61, 30853), (63, 30880), (65, 30895), (74, 30928), (91, 31072),

Gene: Wipeout\_54 Start: 31281, Stop: 32069, Start Num: 7

Candidate Starts for Wipeout\_54:

(1, 31221), (Start: 7 @31281 has 73 MA's), (16, 31359), (23, 31389), (25, 31398), (29, 31422), (30, 31446), (36, 31512), (45, 31593), (48, 31602), (54, 31635), (57, 31665), (59, 31671), (62, 31695), (63, 31716), (74, 31767), (75, 31773), (77, 31791), (94, 31923), (101, 31989),

Gene: Wofford\_55 Start: 31938, Stop: 32723, Start Num: 7

Candidate Starts for Wofford\_55:

(1, 31878), (2, 31887), (3, 31896), (4, 31899), (Start: 7 @31938 has 73 MA's), (15, 32007), (23, 32046), (25, 32055), (26, 32058), (29, 32079), (30, 32103), (36, 32169), (39, 32196), (45, 32250), (57, 32322), (59, 32328), (61, 32346), (63, 32373), (69, 32403), (77, 32448), (89, 32553), (91, 32568), (98, 32619), (99, 32625),

Gene: Yaboi\_56 Start: 30890, Stop: 31678, Start Num: 7

Candidate Starts for Yaboi\_56:

(1, 30830), (2, 30839), (Start: 7 @30890 has 73 MA's), (16, 30968), (20, 30980), (22, 30992), (23, 30998), (25, 31007), (29, 31031), (30, 31055), (34, 31097), (48, 31211), (49, 31217), (57, 31274), (59, 31280), (61, 31298), (63, 31325), (75, 31382), (77, 31400), (84, 31481), (89, 31505), (91, 31520), (94, 31532), (101, 31598),

