





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 304824 Report

This analysis was run 06/08/26 on database version 649.

Pham number 304824 has 122 members, 7 are drafts.

Phages represented in each track:

- Track 1 : LilSaint\_71, Riptide\_69
- Track 2 : Larnav\_72, Peebs\_71, Teutsch\_72, Sushi23\_72
- Track 3 : Daubenski\_73
- Track 4 : Cursive\_70, Coogler\_72, Watermoore\_72, PacManQ\_71, Leo04\_73, Cross\_72, Lululemon\_71
- Track 5 : Paradiddles\_68, Braelyn\_71
- Track 6 : HangryHippo\_72, BlueOtter\_72, EGole\_73
- Track 7 : Jay2Jay\_77, Warpy\_76
- Track 8 : Anedea\_70
- Track 9 : Marsus\_70
- Track 10 : Targaryen\_73
- Track 11 : Tribute\_70, Pepperwood\_72, Scheme\_73
- Track 12 : MulchMansion\_69, LilMartin\_69, Angela\_69
- Track 13 : Evy\_73
- Track 14 : FreddyDRoo\_70, NootNoot\_68, Eliot67\_70, Squillium\_71, Persimmon\_68, Navo\_70, WhereRU\_69, Bartholomune\_70, Davielle\_69, Liandry\_71, PinkiePie\_70
- Track 15 : Samisti12\_72
- Track 16 : Bmoc\_70
- Track 17 : Cadmus\_70
- Track 18 : Shuckle\_70
- Track 19 : Mildred21\_70
- Track 20 : Starbow\_72, Battuta\_72, CeilingFan\_73, Quaran19\_74, Birchlyn\_71, SaltySpitoon\_74, Bordeaux\_72, Gibbi\_78, Spelly\_74, JimJam\_74, Karimac\_73, Amabiko\_74, KentuckyRacer\_74, PumpkinSpice\_73, AcciDwight\_78, Rikishi\_74, Jollison\_73, Brizzy\_73
- Track 21 : BoomerJR\_74, AngryGiraffe\_73, Stanimal\_74, Sollertia\_74, Genie2\_74, Yaboi\_74
- Track 22 : Elmer\_76
- Track 23 : MindFlayer\_72, TomSawyer\_72, Spilled\_75, IchabodCrane\_71
- Track 24 : LukeCage\_73
- Track 25 : StarPlatinum\_74
- Track 26 : Enygma\_74
- Track 27 : Mugiwara\_73
- Track 28 : Wofford\_73
- Track 29 : Tomas\_76
- Track 30 : Wipeout\_72

- Track 31 : Limpid\_49
- Track 32 : Emma1919\_53, Forrest\_53
- Track 33 : Stigma\_51, Karp\_50
- Track 34 : Faust\_52, SeresaTree\_51
- Track 35 : Patelgo\_52, Moab\_52
- Track 36 : Beuffert\_49
- Track 37 : Sham\_48
- Track 38 : Phredrick\_51
- Track 39 : Gilson\_52
- Track 40 : Kenrey\_53
- Track 41 : Blueeyedbeauty\_51
- Track 42 : Comrade\_52, Belfort\_53, Westy\_52, SparkleGoddess\_52
- Track 43 : DeluluLabubu\_51, MeganTheeKilla\_50, Jada\_51, Maupel\_51
- Track 44 : Francob\_50
- Track 45 : TunaTartare\_50
- Track 46 : Annadreamy\_49
- Track 47 : BillNye\_48
- Track 48 : Muntaha\_49
- Track 49 : Circinus\_49, Chaewon\_51
- Track 50 : Wakanda\_48
- Track 51 : Grayson\_94, Peregrin\_91
- Track 52 : Weasels2\_93
- Track 53 : NiceHouse\_82
- Track 54 : Trina\_93
- Track 55 : Nova53\_64
- Track 56 : Francesca\_67
- Track 57 : Dorin\_68

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

The start number called the most often in the published annotations is 17, it was called in 52 of the 115 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• AcciDwight\_78, Amabiko\_74, AngryGiraffe\_73, Bartholomune\_70, Battuta\_72, Birchlyn\_71, BoomerJR\_74, Bordeaux\_72, Brizzy\_73, CeilingFan\_73, Coogler\_72, Cross\_72, Cursive\_70, Davielle\_69, Eliot67\_70, Elmer\_76, Enygma\_74, FreddyDRoo\_70, Genie2\_74, Gibbi\_78, JimJam\_74, Jollison\_73, Karimac\_73, KentuckyRacer\_74, Leo04\_73, Liandry\_71, LukeCage\_73, Lululemon\_71, Marsus\_70, Mugiwara\_73, Navo\_70, NootNoot\_68, PacManQ\_71, Pepperwood\_72, Persimmon\_68, PinkiePie\_70, PumpkinSpice\_73, Quaran19\_74, Rikishi\_74, SaltySpittoon\_74, Samisti12\_72, Scheme\_73, Sollertia\_74, Spelly\_74, Squillum\_71, Stanimal\_74, StarPlatinum\_74, Starbow\_72, Targaryen\_73, Tomas\_76, Tribute\_70, Watermoore\_72, WhereRU\_69, Wipeout\_72, Wofford\_73, Yaboi\_74,

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

• Angela\_69, BlueOtter\_72, Braelyn\_71, EGole\_73, Evy\_73, HangryHippo\_72, IchabodCrane\_71, Jay2Jay\_77, Larnav\_72, LilMartin\_69, MindFlayer\_72, MulchMansion\_69, Paradiddles\_68, Peebs\_71, Shuckle\_70, Spilled\_75, Sushi23\_72, Teutsch\_72, TomSawyer\_72, Warpy\_76,

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

- Anedeia\_70, Annadreamy\_49, Belfort\_53, Beuffert\_49, BillNye\_48, Blueeyedbeauty\_51, Bmoc\_70, Cadmus\_70, Chaewon\_51, Circinus\_49, Comrade\_52, Daubenski\_73, DeluluLabubu\_51, Dorin\_68, Emma1919\_53, Faust\_52, Forrest\_53, Francesca\_67, Francob\_50, Gilson\_52, Grayson\_94, Jada\_51, Karp\_50, Kenrey\_53, LilSaint\_71, Limpid\_49, Maupel\_51, MeganTheeKilla\_50, Mildred21\_70, Moab\_52, Muntaha\_49, NiceHouse\_82, Nova53\_64, Patelgo\_52, Peregrin\_91, Phredrick\_51, Riptide\_69, SeresaTree\_51, Sham\_48, SparkleGoddess\_52, Stigma\_51, Trina\_93, TunaTartare\_50, Wakanda\_48, Weasels2\_93, Westy\_52,

### Summary by start number:

Start 6:

- Found in 4 of 122 ( 3.3% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Anedeia\_70 (BE1),

Start 11:

- Found in 31 of 122 ( 25.4% ) of genes in pham
- Manual Annotations of this start: 13 of 115
- Called 51.6% of time when present
- Phage (with cluster) where this start called: Beuffert\_49 (BK1), Chaewon\_51 (BK2), Circinus\_49 (BK2), DeluluLabubu\_51 (BK1), Faust\_52 (BK1), Francob\_50 (BK1), Jada\_51 (BK1), Karp\_50 (BK1), Maupel\_51 (BK1), MeganTheeKilla\_50 (BK1), Phredrick\_51 (BK1), SeresaTree\_51 (BK1), Sham\_48 (BK1), Stigma\_51 (BK1), TunaTartare\_50 (BK1), Wakanda\_48 (BK2),

Start 12:

- Found in 40 of 122 ( 32.8% ) of genes in pham
- Manual Annotations of this start: 16 of 115
- Called 40.0% of time when present
- Phage (with cluster) where this start called: Angela\_69 (BE1), BlueOtter\_72 (BE1), Braelyn\_71 (BE1), EGole\_73 (BE1), Evy\_73 (BE1), HangryHippo\_72 (BE1), Jay2Jay\_77 (BE1), Larnav\_72 (BE1), LilMartin\_69 (BE1), MulchMansion\_69 (BE1), Paradiddles\_68 (BE1), Peebs\_71 (BE1), Shuckle\_70 (BE1), Sushi23\_72 (BE1), Teutsch\_72 (BE1), Warpy\_76 (BE1),

Start 13:

- Found in 61 of 122 ( 50.0% ) of genes in pham
- Manual Annotations of this start: 5 of 115
- Called 8.2% of time when present
- Phage (with cluster) where this start called: Gilson\_52 (BK1), IchabodCrane\_71 (BE2), MindFlayer\_72 (BE2), Spilled\_75 (BE2), TomSawyer\_72 (BE2),

Start 14:

- Found in 2 of 122 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Cadmus\_70 (BE1),

Start 15:

- Found in 2 of 122 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Dorin\_68 (CG),

Start 16:

- Found in 5 of 122 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 4 of 115
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Bmoc\_70 (BE1), LilSaint\_71 (BE1), Mildred21\_70 (BE1), Riptide\_69 (BE1),

Start 17:

- Found in 76 of 122 ( 62.3% ) of genes in pham
- Manual Annotations of this start: 52 of 115
- Called 73.7% of time when present
- Phage (with cluster) where this start called: AcciDwight\_78 (BE2), Amabiko\_74 (BE2), AngryGiraffe\_73 (BE2), Bartholomune\_70 (BE1), Battuta\_72 (BE2), Birchlyn\_71 (BE2), BoomerJR\_74 (BE2), Bordeaux\_72 (BE2), Brizzy\_73 (BE2), CeilingFan\_73 (BE2), Coogler\_72 (BE1), Cross\_72 (BE1), Cursive\_70 (BE1), Davielle\_69 (BE1), Eliot67\_70 (BE1), Elmer\_76 (BE2), Enygma\_74 (BE2), FreddyDRoo\_70 (BE1), Genie2\_74 (BE2), Gibbi\_78 (BE2), JimJam\_74 (BE2), Jollison\_73 (BE2), Karimac\_73 (BE2), KentuckyRacer\_74 (BE2), Leo04\_73 (BE1), Liandry\_71 (BE1), LukeCage\_73 (BE2), Lululemon\_71 (BE1), Marsus\_70 (BE1), Mugiwara\_73 (BE2), Navo\_70 (BE1), NootNoot\_68 (BE1), PacManQ\_71 (BE1), Pepperwood\_72 (BE1), Persimmon\_68 (BE1), PinkiePie\_70 (BE1), PumpkinSpice\_73 (BE2), Quarant19\_74 (BE2), Rikishi\_74 (BE2), SaltySpittoon\_74 (BE2), Samisti12\_72 (BE1), Scheme\_73 (BE1), Sollertia\_74 (BE2), Spelly\_74 (BE2), Squillium\_71 (BE1), Stanimal\_74 (BE2), StarPlatinum\_74 (BE2), Starbow\_72 (BE2), Targaryen\_73 (BE1), Tomas\_76 (BE2), Tribute\_70 (BE1), Watermoore\_72 (BE1), WhereRU\_69 (BE1), Wipeout\_72 (BE2), Wofford\_73 (BE2), Yaboi\_74 (BE2),

Start 18:

- Found in 2 of 122 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Daubenski\_73 (BE1),

Start 19:

- Found in 2 of 122 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Trina\_93 (CE), Weasels2\_93 (CB),

Start 20:

- Found in 2 of 122 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Grayson\_94 (CB), Peregrin\_91 (CB),

Start 22:

- Found in 1 of 122 ( 0.8% ) of genes in pham

- Manual Annotations of this start: 1 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: NiceHouse\_82 (CE),

Start 25:

- Found in 5 of 122 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Limpid\_49 (BK1),

Start 27:

- Found in 3 of 122 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 2 of 115
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Francesca\_67 (CG), Nova53\_64 (CG),

Start 28:

- Found in 12 of 122 ( 9.8% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Kenrey\_53 (BK1),

Start 30:

- Found in 34 of 122 ( 27.9% ) of genes in pham
- Manual Annotations of this start: 12 of 115
- Called 35.3% of time when present
- Phage (with cluster) where this start called: Annadreamy\_49 (BK1), Belfort\_53 (BK1), BillNye\_48 (BK2), Blueeyedbeauty\_51 (BK1), Comrade\_52 (BK1), Emma1919\_53 (BK1), Forrest\_53 (BK1), Moab\_52 (BK1), Muntaha\_49 (BK2), Patelgo\_52 (BK1), SparkleGoddess\_52 (BK1), Westy\_52 (BK1),

### Summary by clusters:

There are 7 clusters represented in this pham: CB, CG, CE, BK1, BK2, BE2, BE1,

Info for manual annotations of cluster BE1:

- Start number 6 was manually annotated 1 time for cluster BE1.
- Start number 12 was manually annotated 16 times for cluster BE1.
- Start number 14 was manually annotated 1 time for cluster BE1.
- Start number 16 was manually annotated 4 times for cluster BE1.
- Start number 17 was manually annotated 22 times for cluster BE1.
- Start number 18 was manually annotated 1 time for cluster BE1.

Info for manual annotations of cluster BE2:

- Start number 13 was manually annotated 4 times for cluster BE2.
- Start number 17 was manually annotated 30 times for cluster BE2.

Info for manual annotations of cluster BK1:

- Start number 11 was manually annotated 11 times for cluster BK1.
- Start number 13 was manually annotated 1 time for cluster BK1.
- Start number 25 was manually annotated 1 time for cluster BK1.
- Start number 28 was manually annotated 1 time for cluster BK1.
- Start number 30 was manually annotated 10 times for cluster BK1.

Info for manual annotations of cluster BK2:

- Start number 11 was manually annotated 2 times for cluster BK2.
- Start number 30 was manually annotated 2 times for cluster BK2.

Info for manual annotations of cluster CB:

- Start number 19 was manually annotated 1 time for cluster CB.
- Start number 20 was manually annotated 2 times for cluster CB.

Info for manual annotations of cluster CE:

- Start number 19 was manually annotated 1 time for cluster CE.
- Start number 22 was manually annotated 1 time for cluster CE.

Info for manual annotations of cluster CG:

- Start number 15 was manually annotated 1 time for cluster CG.
- Start number 27 was manually annotated 2 times for cluster CG.

### **Gene Information:**

Gene: AcciDwight\_78 Start: 53577, Stop: 54098, Start Num: 17

Candidate Starts for AcciDwight\_78:

(9, 53541), (Start: 13 @53565 has 5 MA's), (Start: 17 @53577 has 52 MA's), (38, 53718), (39, 53727), (42, 53751), (46, 53787), (49, 53805), (51, 53811), (56, 53835), (62, 53895), (67, 53931), (68, 53934), (69, 53937), (72, 53979), (76, 54009), (78, 54018), (79, 54021), (81, 54033), (85, 54075),

Gene: Amabiko\_74 Start: 53622, Stop: 54143, Start Num: 17

Candidate Starts for Amabiko\_74:

(9, 53586), (Start: 13 @53610 has 5 MA's), (Start: 17 @53622 has 52 MA's), (38, 53763), (39, 53772), (42, 53796), (46, 53832), (49, 53850), (51, 53856), (56, 53880), (62, 53940), (67, 53976), (68, 53979), (69, 53982), (72, 54024), (76, 54054), (78, 54063), (79, 54066), (81, 54078), (85, 54120),

Gene: Anedea\_70 Start: 53108, Stop: 53716, Start Num: 6

Candidate Starts for Anedea\_70:

(Start: 6 @53108 has 1 MA's), (Start: 16 @53195 has 4 MA's), (42, 53369), (46, 53405), (66, 53540), (69, 53555), (71, 53591), (78, 53636), (79, 53639), (81, 53651),

Gene: Angela\_69 Start: 52641, Stop: 53171, Start Num: 12

Candidate Starts for Angela\_69:

(Start: 12 @52641 has 16 MA's), (Start: 17 @52656 has 52 MA's), (29, 52716), (42, 52824), (46, 52860), (78, 53091), (79, 53094), (81, 53106),

Gene: AngryGiraffe\_73 Start: 53585, Stop: 54094, Start Num: 17

Candidate Starts for AngryGiraffe\_73:

(9, 53549), (Start: 13 @53573 has 5 MA's), (Start: 17 @53585 has 52 MA's), (38, 53714), (39, 53723), (42, 53747), (44, 53774), (46, 53783), (51, 53807), (56, 53831), (62, 53891), (66, 53918), (67, 53927), (68, 53930), (76, 54005), (78, 54014), (79, 54017), (81, 54029), (85, 54071),

Gene: Annadreamy\_49 Start: 42625, Stop: 43077, Start Num: 30

Candidate Starts for Annadreamy\_49:

(Start: 11 @42541 has 13 MA's), (Start: 13 @42547 has 5 MA's), (Start: 25 @42598 has 1 MA's), (Start: 30 @42625 has 12 MA's), (34, 42664), (46, 42766), (63, 42877), (64, 42892), (68, 42913), (69,

42916), (73, 42970), (78, 42997), (79, 43000), (84, 43024), (85, 43054),

Gene: Bartholomune\_70 Start: 53022, Stop: 53537, Start Num: 17

Candidate Starts for Bartholomune\_70:

(Start: 12 @53007 has 16 MA's), (Start: 17 @53022 has 52 MA's), (40, 53175), (42, 53190), (44, 53217), (45, 53220), (46, 53226), (61, 53328), (67, 53370), (78, 53457), (79, 53460), (81, 53472),

Gene: Battuta\_72 Start: 53596, Stop: 54117, Start Num: 17

Candidate Starts for Battuta\_72:

(9, 53560), (Start: 13 @53584 has 5 MA's), (Start: 17 @53596 has 52 MA's), (38, 53737), (39, 53746), (42, 53770), (46, 53806), (49, 53824), (51, 53830), (56, 53854), (62, 53914), (67, 53950), (68, 53953), (69, 53956), (72, 53998), (76, 54028), (78, 54037), (79, 54040), (81, 54052), (85, 54094),

Gene: Belfort\_53 Start: 45146, Stop: 45598, Start Num: 30

Candidate Starts for Belfort\_53:

(Start: 11 @45062 has 13 MA's), (Start: 13 @45068 has 5 MA's), (Start: 30 @45146 has 12 MA's), (43, 45269), (46, 45287), (66, 45422), (74, 45491), (76, 45509), (78, 45518), (79, 45521), (81, 45533),

Gene: Beuffert\_49 Start: 43682, Stop: 44218, Start Num: 11

Candidate Starts for Beuffert\_49:

(Start: 11 @43682 has 13 MA's), (Start: 13 @43688 has 5 MA's), (Start: 30 @43766 has 12 MA's), (34, 43805), (46, 43907), (63, 44018), (64, 44033), (68, 44054), (69, 44057), (73, 44111), (78, 44138), (79, 44141), (84, 44165), (85, 44195),

Gene: BillNye\_48 Start: 46547, Stop: 46999, Start Num: 30

Candidate Starts for BillNye\_48:

(Start: 11 @46469 has 13 MA's), (Start: 30 @46547 has 12 MA's), (34, 46586), (36, 46598), (43, 46670), (46, 46688), (62, 46796), (73, 46892), (78, 46919), (79, 46922), (83, 46940),

Gene: Birchlyn\_71 Start: 51479, Stop: 52000, Start Num: 17

Candidate Starts for Birchlyn\_71:

(9, 51443), (Start: 13 @51467 has 5 MA's), (Start: 17 @51479 has 52 MA's), (38, 51620), (39, 51629), (42, 51653), (46, 51689), (49, 51707), (51, 51713), (56, 51737), (62, 51797), (67, 51833), (68, 51836), (69, 51839), (72, 51881), (76, 51911), (78, 51920), (79, 51923), (81, 51935), (85, 51977),

Gene: BlueOtter\_72 Start: 54381, Stop: 54911, Start Num: 12

Candidate Starts for BlueOtter\_72:

(Start: 12 @54381 has 16 MA's), (Start: 17 @54396 has 52 MA's), (34, 54498), (42, 54564), (45, 54594), (46, 54600), (61, 54702), (78, 54831), (79, 54834), (81, 54846), (85, 54888),

Gene: Blueeyedbeauty\_51 Start: 43137, Stop: 43589, Start Num: 30

Candidate Starts for Blueeyedbeauty\_51:

(Start: 11 @43053 has 13 MA's), (Start: 13 @43059 has 5 MA's), (Start: 25 @43110 has 1 MA's), (Start: 30 @43137 has 12 MA's), (34, 43176), (46, 43278), (63, 43389), (68, 43425), (69, 43428), (73, 43482), (78, 43509), (79, 43512), (84, 43536),

Gene: Bmoc\_70 Start: 52999, Stop: 53520, Start Num: 16

Candidate Starts for Bmoc\_70:

(Start: 6 @52912 has 1 MA's), (Start: 16 @52999 has 4 MA's), (42, 53173), (46, 53209), (66, 53344), (69, 53359), (71, 53395), (73, 53413), (78, 53440), (79, 53443), (81, 53455),

Gene: BoomerJR\_74 Start: 53474, Stop: 53983, Start Num: 17

Candidate Starts for BoomerJR\_74:

(9, 53438), (Start: 13 @53462 has 5 MA's), (Start: 17 @53474 has 52 MA's), (38, 53603), (39, 53612), (42, 53636), (44, 53663), (46, 53672), (51, 53696), (56, 53720), (62, 53780), (66, 53807), (67, 53816), (68, 53819), (76, 53894), (78, 53903), (79, 53906), (81, 53918), (85, 53960),

Gene: Bordeaux\_72 Start: 53751, Stop: 54272, Start Num: 17

Candidate Starts for Bordeaux\_72:

(9, 53715), (Start: 13 @53739 has 5 MA's), (Start: 17 @53751 has 52 MA's), (38, 53892), (39, 53901), (42, 53925), (46, 53961), (49, 53979), (51, 53985), (56, 54009), (62, 54069), (67, 54105), (68, 54108), (69, 54111), (72, 54153), (76, 54183), (78, 54192), (79, 54195), (81, 54207), (85, 54249),

Gene: Braelyn\_71 Start: 53774, Stop: 54304, Start Num: 12

Candidate Starts for Braelyn\_71:

(Start: 12 @53774 has 16 MA's), (Start: 17 @53789 has 52 MA's), (40, 53942), (42, 53957), (44, 53984), (45, 53987), (46, 53993), (61, 54095), (67, 54137), (78, 54224), (79, 54227), (81, 54239),

Gene: Brizzy\_73 Start: 53270, Stop: 53791, Start Num: 17

Candidate Starts for Brizzy\_73:

(9, 53234), (Start: 13 @53258 has 5 MA's), (Start: 17 @53270 has 52 MA's), (38, 53411), (39, 53420), (42, 53444), (46, 53480), (49, 53498), (51, 53504), (56, 53528), (62, 53588), (67, 53624), (68, 53627), (69, 53630), (72, 53672), (76, 53702), (78, 53711), (79, 53714), (81, 53726), (85, 53768),

Gene: Cadmus\_70 Start: 53395, Stop: 53886, Start Num: 14

Candidate Starts for Cadmus\_70:

(10, 53374), (Start: 14 @53395 has 1 MA's), (Start: 18 @53407 has 1 MA's), (42, 53572), (46, 53608), (61, 53710), (67, 53752), (69, 53758), (78, 53806), (79, 53809), (81, 53821), (85, 53863),

Gene: CeilingFan\_73 Start: 53511, Stop: 54032, Start Num: 17

Candidate Starts for CeilingFan\_73:

(9, 53475), (Start: 13 @53499 has 5 MA's), (Start: 17 @53511 has 52 MA's), (38, 53652), (39, 53661), (42, 53685), (46, 53721), (49, 53739), (51, 53745), (56, 53769), (62, 53829), (67, 53865), (68, 53868), (69, 53871), (72, 53913), (76, 53943), (78, 53952), (79, 53955), (81, 53967), (85, 54009),

Gene: Chaewon\_51 Start: 46609, Stop: 47139, Start Num: 11

Candidate Starts for Chaewon\_51:

(Start: 11 @46609 has 13 MA's), (Start: 30 @46687 has 12 MA's), (34, 46726), (36, 46738), (43, 46810), (46, 46828), (62, 46936), (73, 47032), (78, 47059), (79, 47062), (83, 47080),

Gene: Circinus\_49 Start: 46608, Stop: 47138, Start Num: 11

Candidate Starts for Circinus\_49:

(Start: 11 @46608 has 13 MA's), (Start: 30 @46686 has 12 MA's), (34, 46725), (36, 46737), (43, 46809), (46, 46827), (62, 46935), (73, 47031), (78, 47058), (79, 47061), (83, 47079),

Gene: Comrade\_52 Start: 44762, Stop: 45214, Start Num: 30

Candidate Starts for Comrade\_52:

(Start: 11 @44678 has 13 MA's), (Start: 13 @44684 has 5 MA's), (Start: 30 @44762 has 12 MA's), (43, 44885), (46, 44903), (66, 45038), (74, 45107), (76, 45125), (78, 45134), (79, 45137), (81, 45149),

Gene: Coogler\_72 Start: 54422, Stop: 54937, Start Num: 17

Candidate Starts for Coogler\_72:

(Start: 12 @54407 has 16 MA's), (Start: 17 @54422 has 52 MA's), (34, 54524), (42, 54590), (45, 54620), (46, 54626), (61, 54728), (78, 54857), (79, 54860), (81, 54872), (85, 54914),

Gene: Cross\_72 Start: 54397, Stop: 54912, Start Num: 17

Candidate Starts for Cross\_72:

(Start: 12 @54382 has 16 MA's), (Start: 17 @54397 has 52 MA's), (34, 54499), (42, 54565), (45, 54595), (46, 54601), (61, 54703), (78, 54832), (79, 54835), (81, 54847), (85, 54889),

Gene: Cursive\_70 Start: 53922, Stop: 54437, Start Num: 17

Candidate Starts for Cursive\_70:

(Start: 12 @53907 has 16 MA's), (Start: 17 @53922 has 52 MA's), (34, 54024), (42, 54090), (45, 54120), (46, 54126), (61, 54228), (78, 54357), (79, 54360), (81, 54372), (85, 54414),

Gene: Daubenski\_73 Start: 54171, Stop: 54650, Start Num: 18

Candidate Starts for Daubenski\_73:

(10, 54138), (Start: 14 @54159 has 1 MA's), (Start: 18 @54171 has 1 MA's), (42, 54336), (46, 54372), (61, 54474), (67, 54516), (69, 54522), (78, 54570), (79, 54573), (81, 54585), (85, 54627),

Gene: Davielle\_69 Start: 53209, Stop: 53724, Start Num: 17

Candidate Starts for Davielle\_69:

(Start: 12 @53194 has 16 MA's), (Start: 17 @53209 has 52 MA's), (40, 53362), (42, 53377), (44, 53404), (45, 53407), (46, 53413), (61, 53515), (67, 53557), (78, 53644), (79, 53647), (81, 53659),

Gene: DeluluLabubu\_51 Start: 42792, Stop: 43331, Start Num: 11

Candidate Starts for DeluluLabubu\_51:

(Start: 11 @42792 has 13 MA's), (Start: 13 @42798 has 5 MA's), (Start: 28 @42864 has 1 MA's), (Start: 30 @42876 has 12 MA's), (43, 42999), (46, 43017), (55, 43056), (60, 43116), (62, 43125), (64, 43143), (66, 43152), (76, 43242), (78, 43251), (79, 43254),

Gene: Dorin\_68 Start: 55174, Stop: 55680, Start Num: 15

Candidate Starts for Dorin\_68:

(Start: 15 @55174 has 1 MA's), (21, 55195), (24, 55207), (Start: 27 @55216 has 2 MA's), (34, 55276), (35, 55279), (37, 55306), (64, 55507), (75, 55579), (85, 55660),

Gene: EGole\_73 Start: 55328, Stop: 55858, Start Num: 12

Candidate Starts for EGole\_73:

(Start: 12 @55328 has 16 MA's), (Start: 17 @55343 has 52 MA's), (34, 55445), (42, 55511), (45, 55541), (46, 55547), (61, 55649), (78, 55778), (79, 55781), (81, 55793), (85, 55835),

Gene: Eliot67\_70 Start: 53064, Stop: 53579, Start Num: 17

Candidate Starts for Eliot67\_70:

(Start: 12 @53049 has 16 MA's), (Start: 17 @53064 has 52 MA's), (40, 53217), (42, 53232), (44, 53259), (45, 53262), (46, 53268), (61, 53370), (67, 53412), (78, 53499), (79, 53502), (81, 53514),

Gene: Elmer\_76 Start: 54689, Stop: 55210, Start Num: 17

Candidate Starts for Elmer\_76:

(9, 54653), (Start: 13 @54677 has 5 MA's), (Start: 17 @54689 has 52 MA's), (42, 54863), (46, 54899), (49, 54917), (51, 54923), (56, 54947), (62, 55007), (66, 55034), (67, 55043), (68, 55046), (73, 55103), (78, 55130), (79, 55133), (85, 55187),

Gene: Emma1919\_53 Start: 43559, Stop: 44014, Start Num: 30

Candidate Starts for Emma1919\_53:

(Start: 11 @43475 has 13 MA's), (Start: 13 @43481 has 5 MA's), (Start: 28 @43547 has 1 MA's), (Start: 30 @43559 has 12 MA's), (43, 43682), (46, 43700), (55, 43739), (60, 43799), (62, 43808), (64, 43826), (66, 43835), (76, 43925), (78, 43934), (79, 43937),

Gene: Enygma\_74 Start: 55414, Stop: 55917, Start Num: 17

Candidate Starts for Enygma\_74:

(9, 55378), (Start: 13 @55402 has 5 MA's), (Start: 17 @55414 has 52 MA's), (35, 55510), (38, 55540), (39, 55549), (42, 55573), (44, 55600), (46, 55609), (51, 55633), (62, 55717), (67, 55753), (68, 55756), (76, 55831), (78, 55840), (79, 55843),

Gene: Evy\_73 Start: 54276, Stop: 54806, Start Num: 12

Candidate Starts for Evy\_73:

(Start: 12 @54276 has 16 MA's), (Start: 17 @54291 has 52 MA's), (42, 54459), (46, 54495), (47, 54498), (53, 54525), (61, 54597), (62, 54603), (66, 54630), (67, 54639), (71, 54681), (78, 54726), (79, 54729), (81, 54741),

Gene: Faust\_52 Start: 44606, Stop: 45145, Start Num: 11

Candidate Starts for Faust\_52:

(Start: 11 @44606 has 13 MA's), (Start: 13 @44612 has 5 MA's), (Start: 25 @44663 has 1 MA's), (Start: 30 @44690 has 12 MA's), (41, 44783), (43, 44813), (46, 44831), (55, 44870), (76, 45056), (78, 45065), (79, 45068), (82, 45083), (84, 45092),

Gene: Forrest\_53 Start: 44256, Stop: 44711, Start Num: 30

Candidate Starts for Forrest\_53:

(Start: 11 @44172 has 13 MA's), (Start: 13 @44178 has 5 MA's), (Start: 28 @44244 has 1 MA's), (Start: 30 @44256 has 12 MA's), (43, 44379), (46, 44397), (55, 44436), (60, 44496), (62, 44505), (64, 44523), (66, 44532), (76, 44622), (78, 44631), (79, 44634),

Gene: Francesca\_67 Start: 55399, Stop: 55863, Start Num: 27

Candidate Starts for Francesca\_67:

(Start: 15 @55357 has 1 MA's), (21, 55378), (24, 55390), (Start: 27 @55399 has 2 MA's), (34, 55459), (35, 55462), (37, 55489), (64, 55690), (75, 55762), (85, 55843),

Gene: Francob\_50 Start: 43536, Stop: 44075, Start Num: 11

Candidate Starts for Francob\_50:

(Start: 11 @43536 has 13 MA's), (Start: 13 @43542 has 5 MA's), (Start: 30 @43620 has 12 MA's), (43, 43743), (46, 43761), (66, 43896), (69, 43911), (76, 43986), (79, 43998), (81, 44010),

Gene: FreddyDRoo\_70 Start: 53064, Stop: 53579, Start Num: 17

Candidate Starts for FreddyDRoo\_70:

(Start: 12 @53049 has 16 MA's), (Start: 17 @53064 has 52 MA's), (40, 53217), (42, 53232), (44, 53259), (45, 53262), (46, 53268), (61, 53370), (67, 53412), (78, 53499), (79, 53502), (81, 53514),

Gene: Genie2\_74 Start: 53588, Stop: 54097, Start Num: 17

Candidate Starts for Genie2\_74:

(9, 53552), (Start: 13 @53576 has 5 MA's), (Start: 17 @53588 has 52 MA's), (38, 53717), (39, 53726), (42, 53750), (44, 53777), (46, 53786), (51, 53810), (56, 53834), (62, 53894), (66, 53921), (67, 53930), (68, 53933), (76, 54008), (78, 54017), (79, 54020), (81, 54032), (85, 54074),

Gene: Gibbi\_78 Start: 53734, Stop: 54255, Start Num: 17

Candidate Starts for Gibbi\_78:

(9, 53698), (Start: 13 @53722 has 5 MA's), (Start: 17 @53734 has 52 MA's), (38, 53875), (39, 53884), (42, 53908), (46, 53944), (49, 53962), (51, 53968), (56, 53992), (62, 54052), (67, 54088), (68, 54091), (69, 54094), (72, 54136), (76, 54166), (78, 54175), (79, 54178), (81, 54190), (85, 54232),

Gene: Gilson\_52 Start: 43434, Stop: 43967, Start Num: 13

Candidate Starts for Gilson\_52:

(Start: 11 @43428 has 13 MA's), (Start: 13 @43434 has 5 MA's), (Start: 28 @43500 has 1 MA's),  
(Start: 30 @43512 has 12 MA's), (43, 43635), (46, 43653), (55, 43692), (60, 43752), (62, 43761), (64,  
43779), (66, 43788), (76, 43878), (78, 43887), (79, 43890),

Gene: Grayson\_94 Start: 57408, Stop: 57893, Start Num: 20

Candidate Starts for Grayson\_94:

(Start: 20 @57408 has 2 MA's), (Start: 30 @57453 has 12 MA's), (54, 57627), (64, 57717), (70, 57750),  
(75, 57789), (79, 57819),

Gene: HangryHippo\_72 Start: 54381, Stop: 54911, Start Num: 12

Candidate Starts for HangryHippo\_72:

(Start: 12 @54381 has 16 MA's), (Start: 17 @54396 has 52 MA's), (34, 54498), (42, 54564), (45,  
54594), (46, 54600), (61, 54702), (78, 54831), (79, 54834), (81, 54846), (85, 54888),

Gene: IchabodCrane\_71 Start: 53311, Stop: 53844, Start Num: 13

Candidate Starts for IchabodCrane\_71:

(9, 53287), (Start: 13 @53311 has 5 MA's), (Start: 17 @53323 has 52 MA's), (38, 53464), (39, 53473),  
(42, 53497), (46, 53533), (49, 53551), (51, 53557), (56, 53581), (62, 53641), (67, 53677), (68, 53680),  
(69, 53683), (72, 53725), (76, 53755), (78, 53764), (79, 53767), (81, 53779), (85, 53821),

Gene: Jada\_51 Start: 43354, Stop: 43893, Start Num: 11

Candidate Starts for Jada\_51:

(Start: 11 @43354 has 13 MA's), (Start: 13 @43360 has 5 MA's), (Start: 28 @43426 has 1 MA's),  
(Start: 30 @43438 has 12 MA's), (43, 43561), (46, 43579), (55, 43618), (60, 43678), (62, 43687), (64,  
43705), (66, 43714), (76, 43804), (78, 43813), (79, 43816),

Gene: Jay2Jay\_77 Start: 55129, Stop: 55659, Start Num: 12

Candidate Starts for Jay2Jay\_77:

(Start: 12 @55129 has 16 MA's), (Start: 17 @55144 has 52 MA's), (42, 55312), (46, 55348), (47,  
55351), (61, 55450), (62, 55456), (67, 55492), (71, 55534), (78, 55579), (79, 55582), (81, 55594),

Gene: JimJam\_74 Start: 53697, Stop: 54218, Start Num: 17

Candidate Starts for JimJam\_74:

(9, 53661), (Start: 13 @53685 has 5 MA's), (Start: 17 @53697 has 52 MA's), (38, 53838), (39, 53847),  
(42, 53871), (46, 53907), (49, 53925), (51, 53931), (56, 53955), (62, 54015), (67, 54051), (68, 54054),  
(69, 54057), (72, 54099), (76, 54129), (78, 54138), (79, 54141), (81, 54153), (85, 54195),

Gene: Jollison\_73 Start: 53579, Stop: 54100, Start Num: 17

Candidate Starts for Jollison\_73:

(9, 53543), (Start: 13 @53567 has 5 MA's), (Start: 17 @53579 has 52 MA's), (38, 53720), (39, 53729),  
(42, 53753), (46, 53789), (49, 53807), (51, 53813), (56, 53837), (62, 53897), (67, 53933), (68, 53936),  
(69, 53939), (72, 53981), (76, 54011), (78, 54020), (79, 54023), (81, 54035), (85, 54077),

Gene: Karimac\_73 Start: 53728, Stop: 54249, Start Num: 17

Candidate Starts for Karimac\_73:

(9, 53692), (Start: 13 @53716 has 5 MA's), (Start: 17 @53728 has 52 MA's), (38, 53869), (39, 53878),  
(42, 53902), (46, 53938), (49, 53956), (51, 53962), (56, 53986), (62, 54046), (67, 54082), (68, 54085),  
(69, 54088), (72, 54130), (76, 54160), (78, 54169), (79, 54172), (81, 54184), (85, 54226),

Gene: Karp\_50 Start: 44277, Stop: 44813, Start Num: 11

Candidate Starts for Karp\_50:

(Start: 11 @44277 has 13 MA's), (Start: 13 @44283 has 5 MA's), (Start: 30 @44361 has 12 MA's), (43,  
44484), (46, 44502), (66, 44637), (74, 44706), (76, 44724), (78, 44733), (79, 44736), (81, 44748),

Gene: Kenrey\_53 Start: 43695, Stop: 44162, Start Num: 28

Candidate Starts for Kenrey\_53:

(Start: 11 @43623 has 13 MA's), (Start: 13 @43629 has 5 MA's), (Start: 28 @43695 has 1 MA's),  
(Start: 30 @43707 has 12 MA's), (43, 43830), (46, 43848), (55, 43887), (62, 43956), (64, 43974), (66,  
43983), (76, 44073), (78, 44082), (79, 44085),

Gene: KentuckyRacer\_74 Start: 53512, Stop: 54033, Start Num: 17

Candidate Starts for KentuckyRacer\_74:

(9, 53476), (Start: 13 @53500 has 5 MA's), (Start: 17 @53512 has 52 MA's), (38, 53653), (39, 53662),  
(42, 53686), (46, 53722), (49, 53740), (51, 53746), (56, 53770), (62, 53830), (67, 53866), (68, 53869),  
(69, 53872), (72, 53914), (76, 53944), (78, 53953), (79, 53956), (81, 53968), (85, 54010),

Gene: Larnav\_72 Start: 54366, Stop: 54896, Start Num: 12

Candidate Starts for Larnav\_72:

(Start: 12 @54366 has 16 MA's), (Start: 17 @54381 has 52 MA's), (42, 54549), (45, 54579), (46,  
54585), (61, 54687), (78, 54816), (79, 54819), (81, 54831), (85, 54873),

Gene: Leo04\_73 Start: 54896, Stop: 55411, Start Num: 17

Candidate Starts for Leo04\_73:

(Start: 12 @54881 has 16 MA's), (Start: 17 @54896 has 52 MA's), (34, 54998), (42, 55064), (45,  
55094), (46, 55100), (61, 55202), (78, 55331), (79, 55334), (81, 55346), (85, 55388),

Gene: Liandry\_71 Start: 53771, Stop: 54286, Start Num: 17

Candidate Starts for Liandry\_71:

(Start: 12 @53756 has 16 MA's), (Start: 17 @53771 has 52 MA's), (40, 53924), (42, 53939), (44,  
53966), (45, 53969), (46, 53975), (61, 54077), (67, 54119), (78, 54206), (79, 54209), (81, 54221),

Gene: LilMartin\_69 Start: 52589, Stop: 53119, Start Num: 12

Candidate Starts for LilMartin\_69:

(Start: 12 @52589 has 16 MA's), (Start: 17 @52604 has 52 MA's), (29, 52664), (42, 52772), (46,  
52808), (78, 53039), (79, 53042), (81, 53054),

Gene: LilSaint\_71 Start: 52867, Stop: 53388, Start Num: 16

Candidate Starts for LilSaint\_71:

(1, 52690), (2, 52696), (3, 52714), (4, 52735), (Start: 6 @52780 has 1 MA's), (Start: 16 @52867 has 4  
MA's), (42, 53041), (46, 53077), (66, 53212), (69, 53227), (71, 53263), (78, 53308), (79, 53311), (81,  
53323),

Gene: Limpid\_49 Start: 42597, Stop: 43076, Start Num: 25

Candidate Starts for Limpid\_49:

(Start: 11 @42540 has 13 MA's), (Start: 13 @42546 has 5 MA's), (Start: 25 @42597 has 1 MA's),  
(Start: 30 @42624 has 12 MA's), (34, 42663), (46, 42765), (63, 42876), (64, 42891), (68, 42912), (69,  
42915), (73, 42969), (78, 42996), (79, 42999), (84, 43023), (85, 43053),

Gene: LukeCage\_73 Start: 53482, Stop: 54003, Start Num: 17

Candidate Starts for LukeCage\_73:

(9, 53446), (Start: 13 @53470 has 5 MA's), (Start: 17 @53482 has 52 MA's), (35, 53593), (38, 53623),  
(39, 53632), (42, 53656), (44, 53683), (46, 53692), (51, 53716), (62, 53800), (67, 53836), (68, 53839),  
(72, 53884), (76, 53914), (78, 53923), (79, 53926), (85, 53980),

Gene: Lululemon\_71 Start: 53777, Stop: 54292, Start Num: 17

Candidate Starts for Lululemon\_71:

(Start: 12 @53762 has 16 MA's), (Start: 17 @53777 has 52 MA's), (34, 53879), (42, 53945), (45, 53975), (46, 53981), (61, 54083), (78, 54212), (79, 54215), (81, 54227), (85, 54269),

Gene: Marsus\_70 Start: 52876, Stop: 53391, Start Num: 17

Candidate Starts for Marsus\_70:

(Start: 12 @52861 has 16 MA's), (Start: 17 @52876 has 52 MA's), (29, 52936), (42, 53044), (46, 53080), (78, 53311), (79, 53314), (81, 53326),

Gene: Maupel\_51 Start: 43428, Stop: 43967, Start Num: 11

Candidate Starts for Maupel\_51:

(Start: 11 @43428 has 13 MA's), (Start: 13 @43434 has 5 MA's), (Start: 28 @43500 has 1 MA's), (Start: 30 @43512 has 12 MA's), (43, 43635), (46, 43653), (55, 43692), (60, 43752), (62, 43761), (64, 43779), (66, 43788), (76, 43878), (78, 43887), (79, 43890),

Gene: MeganTheeKilla\_50 Start: 42789, Stop: 43328, Start Num: 11

Candidate Starts for MeganTheeKilla\_50:

(Start: 11 @42789 has 13 MA's), (Start: 13 @42795 has 5 MA's), (Start: 28 @42861 has 1 MA's), (Start: 30 @42873 has 12 MA's), (43, 42996), (46, 43014), (55, 43053), (60, 43113), (62, 43122), (64, 43140), (66, 43149), (76, 43239), (78, 43248), (79, 43251),

Gene: Mildred21\_70 Start: 52801, Stop: 53316, Start Num: 16

Candidate Starts for Mildred21\_70:

(5, 52675), (7, 52720), (Start: 16 @52801 has 4 MA's), (24, 52834), (29, 52861), (42, 52969), (46, 53005), (71, 53191), (78, 53236), (79, 53239), (81, 53251),

Gene: MindFlayer\_72 Start: 53218, Stop: 53751, Start Num: 13

Candidate Starts for MindFlayer\_72:

(9, 53194), (Start: 13 @53218 has 5 MA's), (Start: 17 @53230 has 52 MA's), (38, 53371), (39, 53380), (42, 53404), (46, 53440), (49, 53458), (51, 53464), (56, 53488), (62, 53548), (67, 53584), (68, 53587), (69, 53590), (72, 53632), (76, 53662), (78, 53671), (79, 53674), (81, 53686), (85, 53728),

Gene: Moab\_52 Start: 44732, Stop: 45187, Start Num: 30

Candidate Starts for Moab\_52:

(Start: 11 @44648 has 13 MA's), (Start: 13 @44654 has 5 MA's), (Start: 30 @44732 has 12 MA's), (39, 44813), (43, 44855), (46, 44873), (49, 44891), (59, 44969), (64, 44999), (66, 45008), (69, 45023), (76, 45098), (78, 45107), (79, 45110),

Gene: Mugiwara\_73 Start: 53981, Stop: 54502, Start Num: 17

Candidate Starts for Mugiwara\_73:

(9, 53945), (Start: 13 @53969 has 5 MA's), (Start: 17 @53981 has 52 MA's), (39, 54131), (42, 54155), (46, 54191), (51, 54215), (56, 54239), (62, 54299), (67, 54335), (68, 54338), (69, 54341), (72, 54383), (76, 54413), (78, 54422), (79, 54425), (81, 54437), (85, 54479),

Gene: MulchMansion\_69 Start: 52589, Stop: 53119, Start Num: 12

Candidate Starts for MulchMansion\_69:

(Start: 12 @52589 has 16 MA's), (Start: 17 @52604 has 52 MA's), (29, 52664), (42, 52772), (46, 52808), (78, 53039), (79, 53042), (81, 53054),

Gene: Muntaha\_49 Start: 44943, Stop: 45395, Start Num: 30

Candidate Starts for Muntaha\_49:

(Start: 11 @44865 has 13 MA's), (Start: 30 @44943 has 12 MA's), (34, 44982), (43, 45066), (46, 45084), (62, 45192), (73, 45288), (78, 45315), (79, 45318), (83, 45336), (84, 45342), (86, 45384),

Gene: Navo\_70 Start: 53693, Stop: 54208, Start Num: 17

Candidate Starts for Navo\_70:

(Start: 12 @53678 has 16 MA's), (Start: 17 @53693 has 52 MA's), (40, 53846), (42, 53861), (44, 53888), (45, 53891), (46, 53897), (61, 53999), (67, 54041), (78, 54128), (79, 54131), (81, 54143),

Gene: NiceHouse\_82 Start: 60077, Stop: 60556, Start Num: 22

Candidate Starts for NiceHouse\_82:

(8, 59999), (Start: 22 @60077 has 1 MA's), (Start: 28 @60104 has 1 MA's), (34, 60155), (60, 60359), (64, 60386), (75, 60458), (79, 60488),

Gene: NootNoot\_68 Start: 52685, Stop: 53200, Start Num: 17

Candidate Starts for NootNoot\_68:

(Start: 12 @52670 has 16 MA's), (Start: 17 @52685 has 52 MA's), (40, 52838), (42, 52853), (44, 52880), (45, 52883), (46, 52889), (61, 52991), (67, 53033), (78, 53120), (79, 53123), (81, 53135),

Gene: Nova53\_64 Start: 54807, Stop: 55271, Start Num: 27

Candidate Starts for Nova53\_64:

(23, 54789), (Start: 27 @54807 has 2 MA's), (37, 54897), (46, 54969), (50, 54990), (75, 55170), (85, 55251),

Gene: PacManQ\_71 Start: 53777, Stop: 54292, Start Num: 17

Candidate Starts for PacManQ\_71:

(Start: 12 @53762 has 16 MA's), (Start: 17 @53777 has 52 MA's), (34, 53879), (42, 53945), (45, 53975), (46, 53981), (61, 54083), (78, 54212), (79, 54215), (81, 54227), (85, 54269),

Gene: Paradiddles\_68 Start: 52934, Stop: 53464, Start Num: 12

Candidate Starts for Paradiddles\_68:

(Start: 12 @52934 has 16 MA's), (Start: 17 @52949 has 52 MA's), (40, 53102), (42, 53117), (44, 53144), (45, 53147), (46, 53153), (61, 53255), (67, 53297), (78, 53384), (79, 53387), (81, 53399),

Gene: Patelgo\_52 Start: 44919, Stop: 45374, Start Num: 30

Candidate Starts for Patelgo\_52:

(Start: 11 @44835 has 13 MA's), (Start: 13 @44841 has 5 MA's), (Start: 30 @44919 has 12 MA's), (39, 45000), (43, 45042), (46, 45060), (49, 45078), (59, 45156), (64, 45186), (66, 45195), (69, 45210), (76, 45285), (78, 45294), (79, 45297),

Gene: Peebs\_71 Start: 54116, Stop: 54646, Start Num: 12

Candidate Starts for Peebs\_71:

(Start: 12 @54116 has 16 MA's), (Start: 17 @54131 has 52 MA's), (42, 54299), (45, 54329), (46, 54335), (61, 54437), (78, 54566), (79, 54569), (81, 54581), (85, 54623),

Gene: Pepperwood\_72 Start: 54264, Stop: 54779, Start Num: 17

Candidate Starts for Pepperwood\_72:

(Start: 12 @54249 has 16 MA's), (Start: 17 @54264 has 52 MA's), (42, 54432), (45, 54462), (46, 54468), (61, 54570), (78, 54699), (79, 54702), (81, 54714), (85, 54756),

Gene: Peregrin\_91 Start: 55775, Stop: 56260, Start Num: 20

Candidate Starts for Peregrin\_91:

(Start: 20 @55775 has 2 MA's), (Start: 30 @55820 has 12 MA's), (54, 55994), (64, 56084), (70, 56117), (75, 56156), (79, 56186),

Gene: Persimmon\_68 Start: 52618, Stop: 53133, Start Num: 17

Candidate Starts for Persimmon\_68:

(Start: 12 @52603 has 16 MA's), (Start: 17 @52618 has 52 MA's), (40, 52771), (42, 52786), (44, 52813), (45, 52816), (46, 52822), (61, 52924), (67, 52966), (78, 53053), (79, 53056), (81, 53068),

Gene: Phredrick\_51 Start: 42694, Stop: 43233, Start Num: 11

Candidate Starts for Phredrick\_51:

(Start: 11 @42694 has 13 MA's), (Start: 13 @42700 has 5 MA's), (Start: 28 @42766 has 1 MA's), (Start: 30 @42778 has 12 MA's), (43, 42901), (46, 42919), (55, 42958), (62, 43027), (64, 43045), (66, 43054), (76, 43144), (78, 43153), (79, 43156),

Gene: PinkiePie\_70 Start: 53771, Stop: 54286, Start Num: 17

Candidate Starts for PinkiePie\_70:

(Start: 12 @53756 has 16 MA's), (Start: 17 @53771 has 52 MA's), (40, 53924), (42, 53939), (44, 53966), (45, 53969), (46, 53975), (61, 54077), (67, 54119), (78, 54206), (79, 54209), (81, 54221),

Gene: PumpkinSpice\_73 Start: 53622, Stop: 54143, Start Num: 17

Candidate Starts for PumpkinSpice\_73:

(9, 53586), (Start: 13 @53610 has 5 MA's), (Start: 17 @53622 has 52 MA's), (38, 53763), (39, 53772), (42, 53796), (46, 53832), (49, 53850), (51, 53856), (56, 53880), (62, 53940), (67, 53976), (68, 53979), (69, 53982), (72, 54024), (76, 54054), (78, 54063), (79, 54066), (81, 54078), (85, 54120),

Gene: Quaran19\_74 Start: 53613, Stop: 54134, Start Num: 17

Candidate Starts for Quaran19\_74:

(9, 53577), (Start: 13 @53601 has 5 MA's), (Start: 17 @53613 has 52 MA's), (38, 53754), (39, 53763), (42, 53787), (46, 53823), (49, 53841), (51, 53847), (56, 53871), (62, 53931), (67, 53967), (68, 53970), (69, 53973), (72, 54015), (76, 54045), (78, 54054), (79, 54057), (81, 54069), (85, 54111),

Gene: Rikishi\_74 Start: 53528, Stop: 54049, Start Num: 17

Candidate Starts for Rikishi\_74:

(9, 53492), (Start: 13 @53516 has 5 MA's), (Start: 17 @53528 has 52 MA's), (38, 53669), (39, 53678), (42, 53702), (46, 53738), (49, 53756), (51, 53762), (56, 53786), (62, 53846), (67, 53882), (68, 53885), (69, 53888), (72, 53930), (76, 53960), (78, 53969), (79, 53972), (81, 53984), (85, 54026),

Gene: Riptide\_69 Start: 52417, Stop: 52932, Start Num: 16

Candidate Starts for Riptide\_69:

(1, 52240), (2, 52246), (3, 52264), (4, 52285), (Start: 6 @52330 has 1 MA's), (Start: 16 @52417 has 4 MA's), (42, 52585), (46, 52621), (66, 52756), (69, 52771), (71, 52807), (78, 52852), (79, 52855), (81, 52867),

Gene: SaltySpittoon\_74 Start: 53622, Stop: 54143, Start Num: 17

Candidate Starts for SaltySpittoon\_74:

(9, 53586), (Start: 13 @53610 has 5 MA's), (Start: 17 @53622 has 52 MA's), (38, 53763), (39, 53772), (42, 53796), (46, 53832), (49, 53850), (51, 53856), (56, 53880), (62, 53940), (67, 53976), (68, 53979), (69, 53982), (72, 54024), (76, 54054), (78, 54063), (79, 54066), (81, 54078), (85, 54120),

Gene: Samisti12\_72 Start: 55574, Stop: 56089, Start Num: 17

Candidate Starts for Samisti12\_72:

(Start: 12 @55559 has 16 MA's), (Start: 17 @55574 has 52 MA's), (34, 55676), (42, 55742), (45, 55772), (46, 55778), (61, 55880), (67, 55922), (78, 56009), (79, 56012), (81, 56024), (85, 56066),

Gene: Scheme\_73 Start: 54978, Stop: 55493, Start Num: 17

Candidate Starts for Scheme\_73:

(Start: 12 @54963 has 16 MA's), (Start: 17 @54978 has 52 MA's), (42, 55146), (45, 55176), (46, 55182), (61, 55284), (78, 55413), (79, 55416), (81, 55428), (85, 55470),

Gene: SeresaTree\_51 Start: 43996, Stop: 44535, Start Num: 11

Candidate Starts for SeresaTree\_51:

(Start: 11 @43996 has 13 MA's), (Start: 13 @44002 has 5 MA's), (Start: 25 @44053 has 1 MA's),  
(Start: 30 @44080 has 12 MA's), (41, 44173), (43, 44203), (46, 44221), (55, 44260), (76, 44446), (78,  
44455), (79, 44458), (82, 44473), (84, 44482),

Gene: Sham\_48 Start: 44537, Stop: 45076, Start Num: 11

Candidate Starts for Sham\_48:

(Start: 11 @44537 has 13 MA's), (Start: 13 @44543 has 5 MA's), (Start: 28 @44609 has 1 MA's),  
(Start: 30 @44621 has 12 MA's), (43, 44744), (46, 44762), (55, 44801), (68, 44909), (69, 44912), (76,  
44987), (78, 44996), (79, 44999), (82, 45014),

Gene: Shuckle\_70 Start: 54573, Stop: 55103, Start Num: 12

Candidate Starts for Shuckle\_70:

(Start: 12 @54573 has 16 MA's), (Start: 17 @54588 has 52 MA's), (42, 54756), (45, 54786), (46,  
54792), (61, 54894), (67, 54936), (78, 55023), (79, 55026), (81, 55038), (85, 55080),

Gene: Sollertia\_74 Start: 53588, Stop: 54097, Start Num: 17

Candidate Starts for Sollertia\_74:

(9, 53552), (Start: 13 @53576 has 5 MA's), (Start: 17 @53588 has 52 MA's), (38, 53717), (39, 53726),  
(42, 53750), (44, 53777), (46, 53786), (51, 53810), (56, 53834), (62, 53894), (66, 53921), (67, 53930),  
(68, 53933), (76, 54008), (78, 54017), (79, 54020), (81, 54032), (85, 54074),

Gene: SparkleGoddess\_52 Start: 44763, Stop: 45215, Start Num: 30

Candidate Starts for SparkleGoddess\_52:

(Start: 11 @44679 has 13 MA's), (Start: 13 @44685 has 5 MA's), (Start: 30 @44763 has 12 MA's), (43,  
44886), (46, 44904), (66, 45039), (74, 45108), (76, 45126), (78, 45135), (79, 45138), (81, 45150),

Gene: Spelly\_74 Start: 53577, Stop: 54098, Start Num: 17

Candidate Starts for Spelly\_74:

(9, 53541), (Start: 13 @53565 has 5 MA's), (Start: 17 @53577 has 52 MA's), (38, 53718), (39, 53727),  
(42, 53751), (46, 53787), (49, 53805), (51, 53811), (56, 53835), (62, 53895), (67, 53931), (68, 53934),  
(69, 53937), (72, 53979), (76, 54009), (78, 54018), (79, 54021), (81, 54033), (85, 54075),

Gene: Spilled\_75 Start: 53682, Stop: 54215, Start Num: 13

Candidate Starts for Spilled\_75:

(9, 53658), (Start: 13 @53682 has 5 MA's), (Start: 17 @53694 has 52 MA's), (38, 53835), (39, 53844),  
(42, 53868), (46, 53904), (49, 53922), (51, 53928), (56, 53952), (62, 54012), (67, 54048), (68, 54051),  
(69, 54054), (72, 54096), (76, 54126), (78, 54135), (79, 54138), (81, 54150), (85, 54192),

Gene: Squillium\_71 Start: 53772, Stop: 54287, Start Num: 17

Candidate Starts for Squillium\_71:

(Start: 12 @53757 has 16 MA's), (Start: 17 @53772 has 52 MA's), (40, 53925), (42, 53940), (44,  
53967), (45, 53970), (46, 53976), (61, 54078), (67, 54120), (78, 54207), (79, 54210), (81, 54222),

Gene: Stanimal\_74 Start: 53477, Stop: 53986, Start Num: 17

Candidate Starts for Stanimal\_74:

(9, 53441), (Start: 13 @53465 has 5 MA's), (Start: 17 @53477 has 52 MA's), (38, 53606), (39, 53615),  
(42, 53639), (44, 53666), (46, 53675), (51, 53699), (56, 53723), (62, 53783), (66, 53810), (67, 53819),  
(68, 53822), (76, 53897), (78, 53906), (79, 53909), (81, 53921), (85, 53963),

Gene: StarPlatinum\_74 Start: 54122, Stop: 54643, Start Num: 17

Candidate Starts for StarPlatinum\_74:

(9, 54086), (Start: 13 @54110 has 5 MA's), (Start: 17 @54122 has 52 MA's), (35, 54233), (38, 54263), (39, 54272), (42, 54296), (44, 54323), (46, 54332), (51, 54356), (62, 54440), (66, 54467), (67, 54476), (68, 54479), (69, 54482), (72, 54524), (76, 54554), (78, 54563), (79, 54566), (85, 54620),

Gene: Starbow\_72 Start: 53598, Stop: 54119, Start Num: 17

Candidate Starts for Starbow\_72:

(9, 53562), (Start: 13 @53586 has 5 MA's), (Start: 17 @53598 has 52 MA's), (38, 53739), (39, 53748), (42, 53772), (46, 53808), (49, 53826), (51, 53832), (56, 53856), (62, 53916), (67, 53952), (68, 53955), (69, 53958), (72, 54000), (76, 54030), (78, 54039), (79, 54042), (81, 54054), (85, 54096),

Gene: Stigma\_51 Start: 44693, Stop: 45229, Start Num: 11

Candidate Starts for Stigma\_51:

(Start: 11 @44693 has 13 MA's), (Start: 13 @44699 has 5 MA's), (Start: 30 @44777 has 12 MA's), (43, 44900), (46, 44918), (66, 45053), (74, 45122), (76, 45140), (78, 45149), (79, 45152), (81, 45164),

Gene: Sushi23\_72 Start: 54474, Stop: 55004, Start Num: 12

Candidate Starts for Sushi23\_72:

(Start: 12 @54474 has 16 MA's), (Start: 17 @54489 has 52 MA's), (42, 54657), (45, 54687), (46, 54693), (61, 54795), (78, 54924), (79, 54927), (81, 54939), (85, 54981),

Gene: Targaryen\_73 Start: 55193, Stop: 55708, Start Num: 17

Candidate Starts for Targaryen\_73:

(Start: 12 @55178 has 16 MA's), (Start: 17 @55193 has 52 MA's), (42, 55361), (46, 55397), (47, 55400), (53, 55427), (61, 55499), (66, 55532), (67, 55541), (71, 55583), (78, 55628), (79, 55631), (81, 55643),

Gene: Teutsch\_72 Start: 54737, Stop: 55267, Start Num: 12

Candidate Starts for Teutsch\_72:

(Start: 12 @54737 has 16 MA's), (Start: 17 @54752 has 52 MA's), (42, 54920), (45, 54950), (46, 54956), (61, 55058), (78, 55187), (79, 55190), (81, 55202), (85, 55244),

Gene: TomSawyer\_72 Start: 53204, Stop: 53737, Start Num: 13

Candidate Starts for TomSawyer\_72:

(9, 53180), (Start: 13 @53204 has 5 MA's), (Start: 17 @53216 has 52 MA's), (38, 53357), (39, 53366), (42, 53390), (46, 53426), (49, 53444), (51, 53450), (56, 53474), (62, 53534), (67, 53570), (68, 53573), (69, 53576), (72, 53618), (76, 53648), (78, 53657), (79, 53660), (81, 53672), (85, 53714),

Gene: Tomas\_76 Start: 55938, Stop: 56459, Start Num: 17

Candidate Starts for Tomas\_76:

(Start: 17 @55938 has 52 MA's), (38, 56079), (39, 56088), (42, 56112), (46, 56148), (51, 56172), (52, 56175), (58, 56214), (61, 56250), (67, 56292), (77, 56373), (78, 56379), (79, 56382), (81, 56394), (85, 56436),

Gene: Tribute\_70 Start: 53958, Stop: 54473, Start Num: 17

Candidate Starts for Tribute\_70:

(Start: 12 @53943 has 16 MA's), (Start: 17 @53958 has 52 MA's), (42, 54126), (45, 54156), (46, 54162), (61, 54264), (78, 54393), (79, 54396), (81, 54408), (85, 54450),

Gene: Trina\_93 Start: 63190, Stop: 63669, Start Num: 19

Candidate Starts for Trina\_93:

(Start: 19 @63190 has 2 MA's), (31, 63238), (33, 63253), (34, 63271), (40, 63322), (47, 63376), (48, 63382), (57, 63430), (60, 63469), (64, 63496), (75, 63568), (79, 63598),

Gene: TunaTartare\_50 Start: 44837, Stop: 45376, Start Num: 11

Candidate Starts for TunaTartare\_50:

(Start: 11 @44837 has 13 MA's), (Start: 13 @44843 has 5 MA's), (Start: 28 @44909 has 1 MA's), (Start: 30 @44921 has 12 MA's), (43, 45044), (46, 45062), (55, 45101), (69, 45212), (76, 45287), (78, 45296), (79, 45299), (82, 45314),

Gene: Wakanda\_48 Start: 44802, Stop: 45332, Start Num: 11

Candidate Starts for Wakanda\_48:

(Start: 11 @44802 has 13 MA's), (Start: 30 @44880 has 12 MA's), (34, 44919), (43, 45003), (46, 45021), (62, 45129), (73, 45225), (78, 45252), (79, 45255), (83, 45273), (84, 45279), (86, 45321),

Gene: Warpy\_76 Start: 54642, Stop: 55172, Start Num: 12

Candidate Starts for Warpy\_76:

(Start: 12 @54642 has 16 MA's), (Start: 17 @54657 has 52 MA's), (42, 54825), (46, 54861), (47, 54864), (61, 54963), (62, 54969), (67, 55005), (71, 55047), (78, 55092), (79, 55095), (81, 55107),

Gene: Watermoore\_72 Start: 54968, Stop: 55483, Start Num: 17

Candidate Starts for Watermoore\_72:

(Start: 12 @54953 has 16 MA's), (Start: 17 @54968 has 52 MA's), (34, 55070), (42, 55136), (45, 55166), (46, 55172), (61, 55274), (78, 55403), (79, 55406), (81, 55418), (85, 55460),

Gene: Weasels2\_93 Start: 56930, Stop: 57418, Start Num: 19

Candidate Starts for Weasels2\_93:

(Start: 19 @56930 has 2 MA's), (Start: 30 @56978 has 12 MA's), (32, 56996), (34, 57017), (46, 57119), (64, 57242), (65, 57245), (66, 57251), (75, 57314), (76, 57332), (79, 57344), (80, 57347),

Gene: Westy\_52 Start: 44764, Stop: 45216, Start Num: 30

Candidate Starts for Westy\_52:

(Start: 11 @44680 has 13 MA's), (Start: 13 @44686 has 5 MA's), (Start: 30 @44764 has 12 MA's), (43, 44887), (46, 44905), (66, 45040), (74, 45109), (76, 45127), (78, 45136), (79, 45139), (81, 45151),

Gene: WhereRU\_69 Start: 53209, Stop: 53724, Start Num: 17

Candidate Starts for WhereRU\_69:

(Start: 12 @53194 has 16 MA's), (Start: 17 @53209 has 52 MA's), (40, 53362), (42, 53377), (44, 53404), (45, 53407), (46, 53413), (61, 53515), (67, 53557), (78, 53644), (79, 53647), (81, 53659),

Gene: Wipeout\_72 Start: 53967, Stop: 54488, Start Num: 17

Candidate Starts for Wipeout\_72:

(9, 53931), (Start: 13 @53955 has 5 MA's), (Start: 17 @53967 has 52 MA's), (35, 54078), (38, 54108), (39, 54117), (42, 54141), (44, 54168), (46, 54177), (49, 54195), (51, 54201), (56, 54225), (62, 54285), (67, 54321), (68, 54324), (69, 54327), (72, 54369), (76, 54399), (78, 54408), (79, 54411), (81, 54423), (85, 54465),

Gene: Wofford\_73 Start: 54652, Stop: 55173, Start Num: 17

Candidate Starts for Wofford\_73:

(9, 54616), (Start: 13 @54640 has 5 MA's), (Start: 17 @54652 has 52 MA's), (26, 54697), (42, 54826), (46, 54862), (49, 54880), (51, 54886), (56, 54910), (62, 54970), (66, 54997), (67, 55006), (68, 55009), (73, 55066), (78, 55093), (79, 55096), (85, 55150),

Gene: Yaboi\_74 Start: 53565, Stop: 54074, Start Num: 17

Candidate Starts for Yaboi\_74:

(9, 53529), (Start: 13 @53553 has 5 MA's), (Start: 17 @53565 has 52 MA's), (38, 53694), (39, 53703),  
(42, 53727), (44, 53754), (46, 53763), (51, 53787), (56, 53811), (62, 53871), (66, 53898), (67, 53907),  
(68, 53910), (76, 53985), (78, 53994), (79, 53997), (81, 54009), (85, 54051),