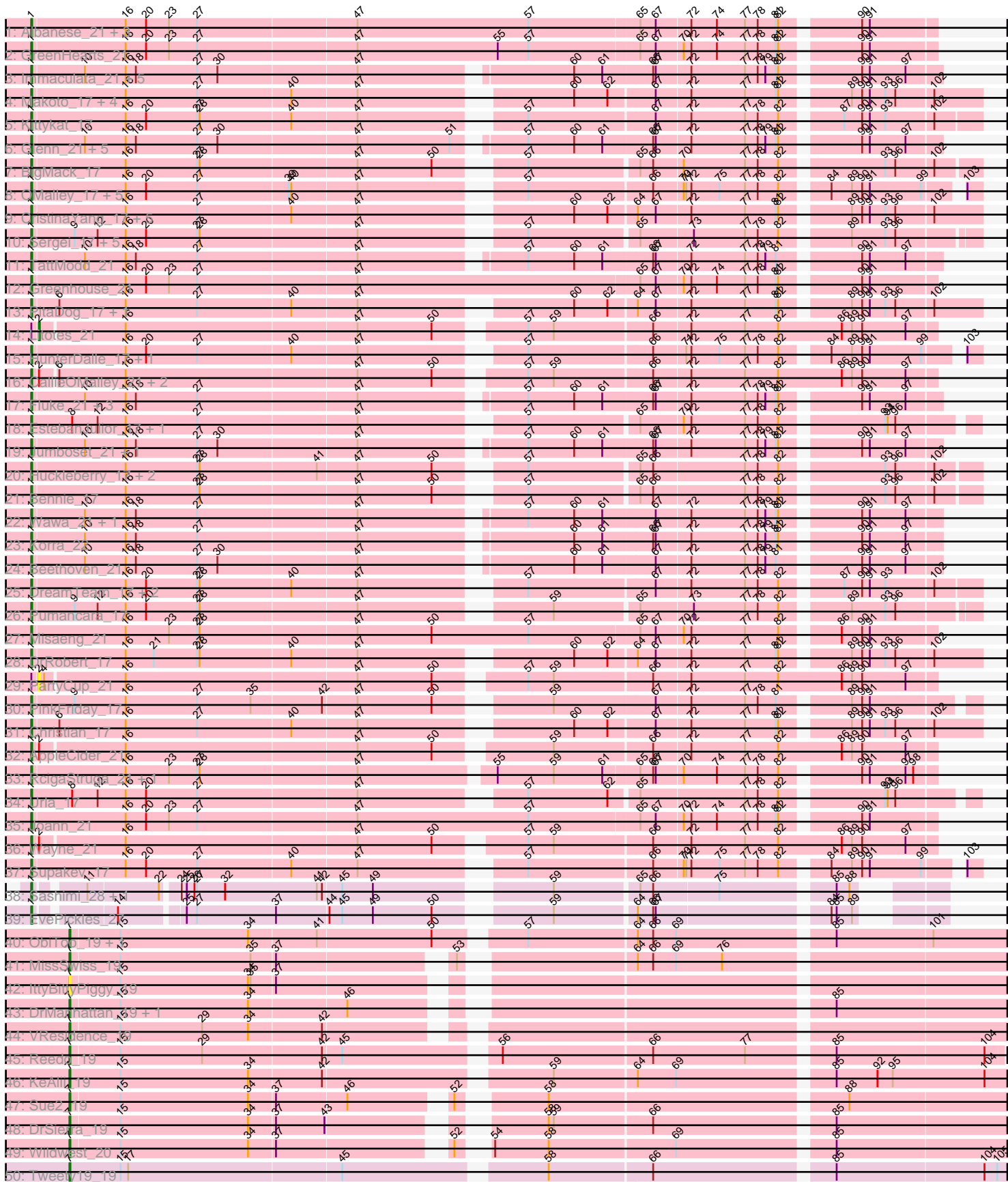
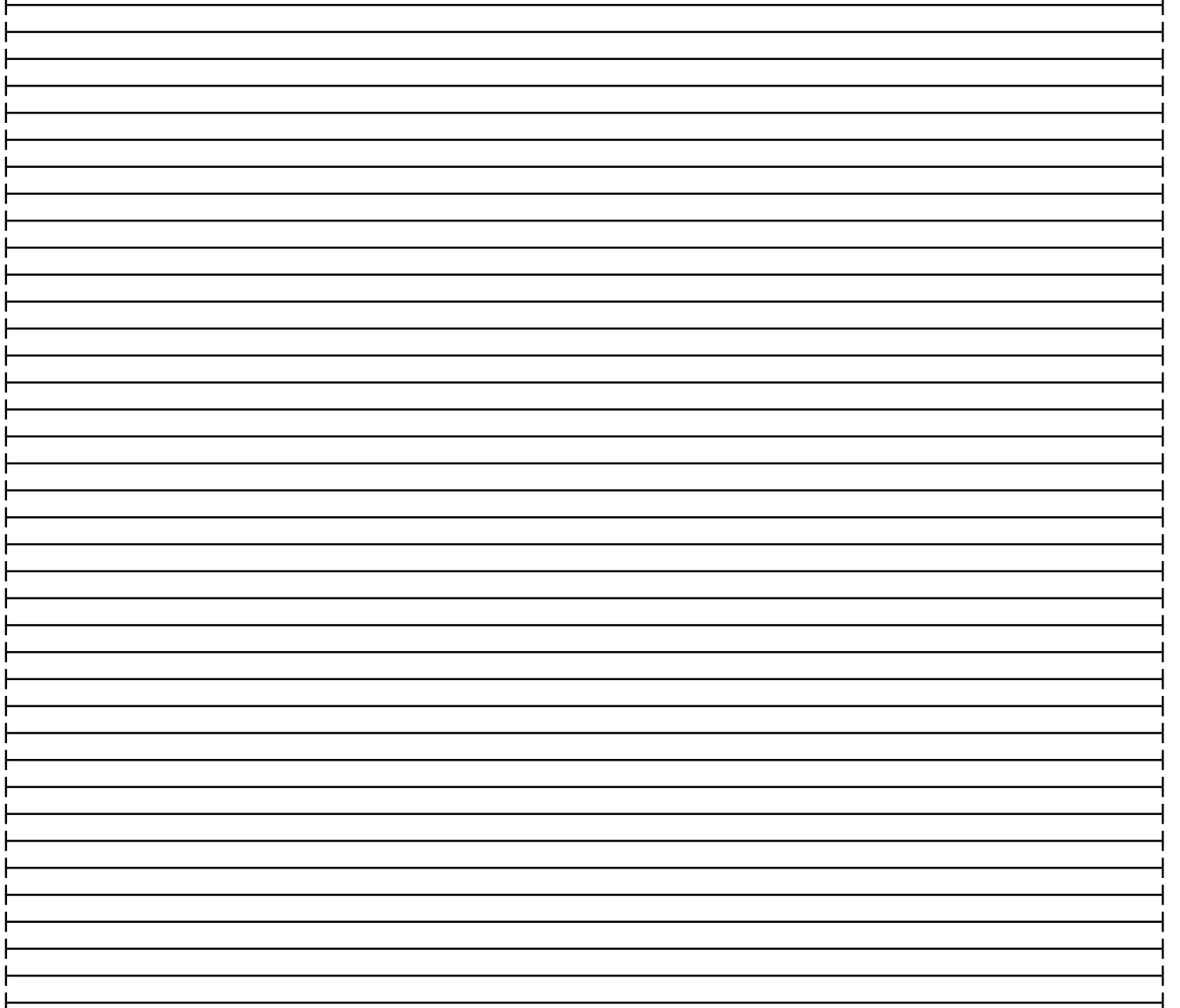
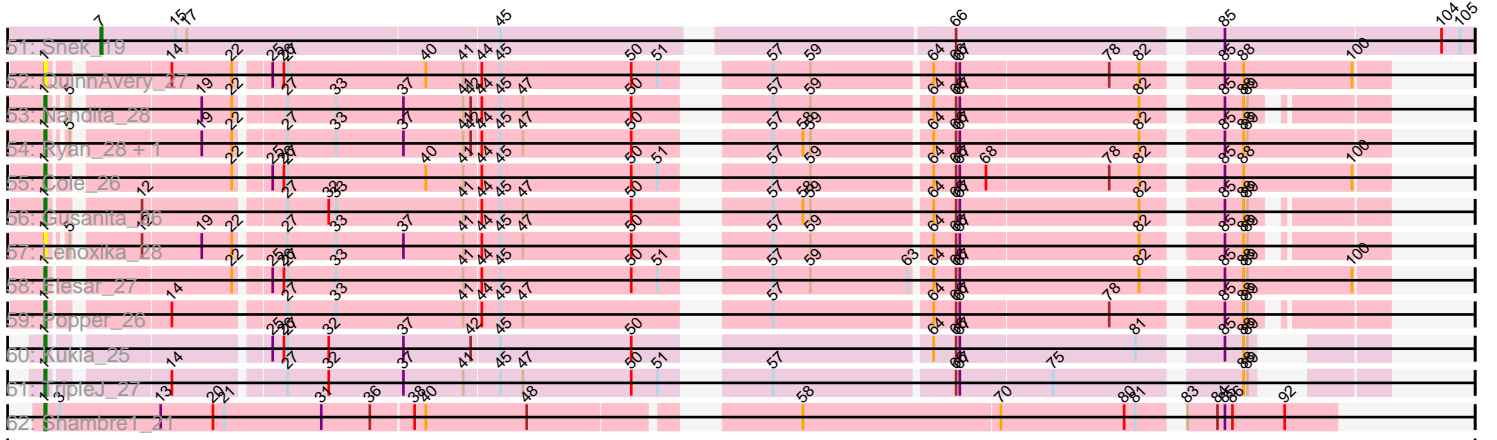


Pham 193862



Pham 193862



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 193862 Report

This analysis was run 11/02/24 on database version 579.

Pham number 193862 has 113 members, 5 are drafts.

Phages represented in each track:

- Track 1 : Albanese\_21, Lakshmi\_21, Nubia\_21, Oxyntrius\_21
- Track 2 : GreenHearts\_21
- Track 3 : Immaculata\_21, Riverdale\_21, Potatoes\_21, Scuttle\_21, Rozby\_21, Cholula\_21
- Track 4 : Makoto\_17, Lasagna\_17, OurGirlNessie\_17, Pterodactyl\_17, WonderBoy\_17
- Track 5 : Kittykat\_17
- Track 6 : Glenn\_21, RAP15\_21, MeganNoll\_21, Savage2526\_21, MrGloopy\_21, BrotherBLo\_21
- Track 7 : BigMack\_17
- Track 8 : OMalley\_17, AustinPowers\_17, Eunoia\_17, Aledel\_17, Chridison\_17, Riovina\_17
- Track 9 : CristinaYang\_17, LilStuart\_17, Nancia\_17, Bodacious\_17, Lucy\_17, Lennox\_17
- Track 10 : Sergei\_17, KingBob\_17, Herb\_17, Temper16\_17, Maria1952\_17, Daiboju\_17
- Track 11 : TattModd\_21
- Track 12 : Greenhouse\_21
- Track 13 : PitaDog\_17, ChewChew\_17
- Track 14 : Litotes\_21
- Track 15 : HunterDalle\_17, Vulture\_17
- Track 16 : CallieOMalley\_21, Suppi\_21, Canowicakte\_21
- Track 17 : Fluke\_21, Kalizoi\_21, Dino\_21, Zorro\_21
- Track 18 : EstebanJulior\_17, MamaPearl\_17
- Track 19 : Jumboset\_21, Carpal\_21
- Track 20 : Huckleberry\_17, HeadNerd\_17, Moki\_17
- Track 21 : Bennie\_17
- Track 22 : Wawa\_21, Vallejo\_21
- Track 23 : Korra\_22
- Track 24 : Beethoven\_21
- Track 25 : DreamTeam\_17, Preamble\_17, Gisselle\_17
- Track 26 : Pumancara\_17
- Track 27 : Misaeng\_21
- Track 28 : DrRobert\_17
- Track 29 : PartyCup\_21
- Track 30 : PinkFriday\_17
- Track 31 : Christian\_17

- Track 32 : AppleCider\_21
- Track 33 : RcigaStruga\_21, Huntingdon\_21
- Track 34 : Urla\_17
- Track 35 : Joann\_21
- Track 36 : Wayne\_21
- Track 37 : Supakev\_17
- Track 38 : Sashimi\_28, Faja\_27
- Track 39 : EvePickles\_27
- Track 40 : ObiToo\_19, Crewmate\_20
- Track 41 : MissSwiss\_19
- Track 42 : IttyBittyPiggy\_19
- Track 43 : DrManhattan\_19, Adolin\_19
- Track 44 : VResidence\_19
- Track 45 : Reedo\_19
- Track 46 : KeAlii\_19
- Track 47 : Sue2\_19
- Track 48 : DrSierra\_19
- Track 49 : Wildwest\_20
- Track 50 : Tweety19\_19
- Track 51 : Snek\_19
- Track 52 : QuinnAvery\_27
- Track 53 : Nandita\_28
- Track 54 : Ryan\_28, Zaheer\_28
- Track 55 : Cole\_26
- Track 56 : Gusanita\_26
- Track 57 : Lenoxika\_28
- Track 58 : Elesar\_27
- Track 59 : Popper\_26
- Track 60 : Kukla\_25
- Track 61 : TripleJ\_27
- Track 62 : Shambre1\_21

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

The start number called the most often in the published annotations is 1, it was called in 94 of the 108 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Albanese\_21, Aledel\_17, AppleCider\_21, AustinPowers\_17, Beethoven\_21, Bennie\_17, BigMack\_17, Bodacious\_17, BrotherBLo\_21, CallieOMalley\_21, Canowicakte\_21, Carpal\_21, ChewChew\_17, Cholula\_21, Chridison\_17, Christian\_17, Cole\_26, CristinaYang\_17, Daiboju\_17, Dino\_21, DrRobert\_17, DreamTeam\_17, Elesar\_27, EstebanJulior\_17, Eunoia\_17, EvePickles\_27, Faja\_27, Fluke\_21, Gisselle\_17, Glenn\_21, GreenHearts\_21, Greenhouse\_21, Gusanita\_26, HeadNerd\_17, Herb\_17, Huckleberry\_17, HunterDalle\_17, Huntingdon\_21, Immaculata\_21, Joann\_21, Jumboset\_21, Kalizoi\_21, KingBob\_17, Kittykat\_17, Korra\_22, Kukla\_25, Lakshmi\_21, Lasagna\_17, Lennox\_17, Lenoxika\_28, LilStuart\_17, Lucy\_17, Makoto\_17, MamaPearl\_17, Maria1952\_17, MeganNoll\_21, Misaeng\_21, Moki\_17, MrGloopy\_21, Nancia\_17, Nandita\_28, Nubia\_21, OMalley\_17, OurGirlNessie\_17, Oxyfnrius\_21, PinkFriday\_17, PitaDog\_17,

Popper\_26, Potatoes\_21, Preamble\_17, Pterodactyl\_17, Pumancara\_17, QuinnAvery\_27, RAP15\_21, RcigaStruga\_21, Riovina\_17, Riverdale\_21, Rozby\_21, Ryan\_28, Sashimi\_28, Savage2526\_21, Scuttle\_21, Sergei\_17, Shambre1\_21, Supakev\_17, Suppi\_21, TattModd\_21, Temper16\_17, TripleJ\_27, Urla\_17, Vallejo\_21, Vulture\_17, Wawa\_21, Wayne\_21, WonderBoy\_17, Zaheer\_28, Zorro\_21,

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

- Litotes\_21, PartyCup\_21,

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

- Adolin\_19, Crewmate\_20, DrManhattan\_19, DrSierra\_19, IttyBittyPiggy\_19, KeAlii\_19, MissSwiss\_19, ObiToo\_19, Reedo\_19, Snek\_19, Sue2\_19, Tweety19\_19, VResidence\_19, Wildwest\_20,

### Summary by start number:

Start 1:

- Found in 99 of 113 ( 87.6% ) of genes in pham
- Manual Annotations of this start: 94 of 108
- Called 98.0% of time when present
- Phage (with cluster) where this start called: Albanese\_21 (AK), Aledel\_17 (AK), AppleCider\_21 (AK), AustinPowers\_17 (AK), Beethoven\_21 (AK), Bennie\_17 (AK), BigMack\_17 (AK), Bodacious\_17 (AK), BrotherBLo\_21 (AK), CallieOMalley\_21 (AK), Canowicakte\_21 (AK), Carpal\_21 (AK), ChewChew\_17 (AK), Cholula\_21 (AK), Chridison\_17 (AK), Christian\_17 (AK), Cole\_26 (FF), CristinaYang\_17 (AK), Daiboju\_17 (AK), Dino\_21 (AK), DrRobert\_17 (AK), DreamTeam\_17 (AK), Elesar\_27 (FF), EstebanJulior\_17 (AK), Eunoia\_17 (AK), EvePickles\_27 (AY), Faja\_27 (AY), Fluke\_21 (AK), Gisselle\_17 (AK), Glenn\_21 (AK), GreenHearts\_21 (AK), Greenhouse\_21 (AK), Gusanita\_26 (FF), HeadNerd\_17 (AK), Herb\_17 (AK), Huckleberry\_17 (AK), HunterDalle\_17 (AK), Huntingdon\_21 (AK), Immaculata\_21 (AK), Joann\_21 (AK), Jumboset\_21 (AK), Kalizoi\_21 (AK), KingBob\_17 (AK), Kittykat\_17 (AK), Korra\_22 (AK), Kukla\_25 (FJ), Lakshmi\_21 (AK), Lasagna\_17 (AK), Lennox\_17 (AK), Lenoxika\_28 (FF), LilStuart\_17 (AK), Lucy\_17 (AK), Makoto\_17 (AK), MamaPearl\_17 (AK), Maria1952\_17 (AK), MeganNoll\_21 (AK), Misaeng\_21 (AK), Moki\_17 (AK), MrGloopy\_21 (AK), Nancia\_17 (AK), Nandita\_28 (FF), Nubia\_21 (AK), OMalley\_17 (AK), OurGirlNessie\_17 (AK), Oxyfrius\_21 (AK), PinkFriday\_17 (AK), PitaDog\_17 (AK), Popper\_26 (FF), Potatoes\_21 (AK), Preamble\_17 (AK), Pterodactyl\_17 (AK), Pumancara\_17 (AK), QuinnAvery\_27 (FF), RAP15\_21 (AK), RcigaStruga\_21 (AK), Riovina\_17 (AK), Riverdale\_21 (AK), Rozby\_21 (AK), Ryan\_28 (FF), Sashimi\_28 (AY), Savage2526\_21 (AK), Scuttle\_21 (AK), Sergei\_17 (AK), Shambre1\_21 (singleton), Supakev\_17 (AK), Suppi\_21 (AK), TattModd\_21 (AK), Temper16\_17 (AK), TripleJ\_27 (FJ), Urla\_17 (AK), Vallejo\_21 (AK), Vulture\_17 (AK), Wawa\_21 (AK), Wayne\_21 (AK), WonderBoy\_17 (AK), Zaheer\_28 (FF), Zorro\_21 (AK),

Start 2:

- Found in 7 of 113 ( 6.2% ) of genes in pham
- Manual Annotations of this start: 1 of 108
- Called 28.6% of time when present
- Phage (with cluster) where this start called: Litotes\_21 (AK), PartyCup\_21 (AK),

Start 7:

- Found in 14 of 113 ( 12.4% ) of genes in pham
- Manual Annotations of this start: 13 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adolin\_19 (AZ1), Crewmate\_20 (AZ1), DrManhattan\_19 (AZ1), DrSierra\_19 (AZ1), IttyBittyPiggy\_19 (AZ1), KeAlii\_19 (AZ1), MissSwiss\_19 (AZ1), ObiToo\_19 (AZ1), Reedo\_19 (AZ1), Sneek\_19 (AZ3), Sue2\_19 (AZ1), Tweety19\_19 (AZ3), VResidence\_19 (AZ1), Wildwest\_20 (AZ1),

### **Summary by clusters:**

There are 7 clusters represented in this pham: singleton, AK, FF, AY, AZ1, FJ, AZ3,

Info for manual annotations of cluster AK:

- Start number 1 was manually annotated 82 times for cluster AK.
- Start number 2 was manually annotated 1 time for cluster AK.

Info for manual annotations of cluster AY:

- Start number 1 was manually annotated 2 times for cluster AY.

Info for manual annotations of cluster AZ1:

- Start number 7 was manually annotated 11 times for cluster AZ1.

Info for manual annotations of cluster AZ3:

- Start number 7 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster FF:

- Start number 1 was manually annotated 7 times for cluster FF.

Info for manual annotations of cluster FJ:

- Start number 1 was manually annotated 2 times for cluster FJ.

### **Gene Information:**

Gene: Adolin\_19 Start: 15578, Stop: 16585, Start Num: 7

Candidate Starts for Adolin\_19:

(Start: 7 @15578 has 13 MA's), (15, 15635), (34, 15785), (46, 15896), (85, 16388),

Gene: Albanese\_21 Start: 17238, Stop: 18263, Start Num: 1

Candidate Starts for Albanese\_21:

(Start: 1 @17238 has 94 MA's), (16, 17346), (20, 17370), (23, 17397), (27, 17430), (47, 17613), (57, 17814), (65, 17940), (67, 17958), (72, 17997), (74, 18027), (77, 18060), (78, 18075), (81, 18096), (82, 18099), (90, 18180), (91, 18189),

Gene: Aledel\_17 Start: 15558, Stop: 16583, Start Num: 1

Candidate Starts for Aledel\_17:

(Start: 1 @15558 has 94 MA's), (16, 15666), (20, 15690), (27, 15750), (39, 15855), (40, 15858), (47, 15933), (57, 16098), (66, 16239), (70, 16272), (71, 16275), (72, 16281), (75, 16314), (77, 16344), (78, 16359), (82, 16383), (84, 16428), (89, 16452), (90, 16464), (91, 16473), (99, 16533), (103, 16566),

Gene: AppleCider\_21 Start: 17196, Stop: 18206, Start Num: 1

Candidate Starts for AppleCider\_21:

(Start: 1 @17196 has 94 MA's), (Start: 2 @17202 has 1 MA's), (16, 17298), (47, 17565), (50, 17652), (59, 17769), (66, 17880), (72, 17922), (77, 17985), (82, 18024), (86, 18099), (89, 18111), (90, 18123), (97, 18174),

Gene: AustinPowers\_17 Start: 15559, Stop: 16584, Start Num: 1

Candidate Starts for AustinPowers\_17:

(Start: 1 @15559 has 94 MA's), (16, 15667), (20, 15691), (27, 15751), (39, 15856), (40, 15859), (47, 15934), (57, 16099), (66, 16240), (70, 16273), (71, 16276), (72, 16282), (75, 16315), (77, 16345), (78, 16360), (82, 16384), (84, 16429), (89, 16453), (90, 16465), (91, 16474), (99, 16534), (103, 16567),

Gene: Beethoven\_21 Start: 17142, Stop: 18149, Start Num: 1

Candidate Starts for Beethoven\_21:

(Start: 1 @17142 has 94 MA's), (10, 17202), (16, 17250), (18, 17262), (27, 17334), (30, 17358), (47, 17517), (60, 17745), (61, 17778), (67, 17838), (72, 17877), (77, 17940), (78, 17955), (79, 17964), (81, 17976), (90, 18060), (91, 18069), (97, 18111),

Gene: Bennie\_17 Start: 15564, Stop: 16598, Start Num: 1

Candidate Starts for Bennie\_17:

(Start: 1 @15564 has 94 MA's), (16, 15672), (27, 15756), (28, 15759), (47, 15939), (50, 16026), (57, 16104), (65, 16227), (66, 16242), (77, 16347), (78, 16362), (82, 16386), (93, 16494), (96, 16506), (102, 16548),

Gene: BigMack\_17 Start: 15552, Stop: 16586, Start Num: 1

Candidate Starts for BigMack\_17:

(Start: 1 @15552 has 94 MA's), (16, 15660), (27, 15744), (28, 15747), (47, 15927), (50, 16014), (57, 16092), (65, 16215), (66, 16230), (70, 16263), (77, 16335), (78, 16350), (82, 16374), (93, 16482), (96, 16494), (102, 16536),

Gene: Bodacious\_17 Start: 15562, Stop: 16605, Start Num: 1

Candidate Starts for Bodacious\_17:

(Start: 1 @15562 has 94 MA's), (16, 15670), (27, 15754), (40, 15862), (47, 15937), (60, 16156), (62, 16195), (64, 16225), (67, 16246), (72, 16285), (77, 16348), (81, 16384), (82, 16387), (89, 16456), (90, 16468), (91, 16477), (93, 16495), (96, 16507), (102, 16549),

Gene: BrotherBLo\_21 Start: 17148, Stop: 18155, Start Num: 1

Candidate Starts for BrotherBLo\_21:

(Start: 1 @17148 has 94 MA's), (10, 17208), (16, 17256), (18, 17268), (27, 17340), (30, 17364), (47, 17523), (51, 17631), (57, 17697), (60, 17751), (61, 17784), (66, 17841), (67, 17844), (72, 17883), (77, 17946), (78, 17961), (79, 17970), (81, 17982), (82, 17985), (90, 18066), (91, 18075), (97, 18117),

Gene: CallieOMalley\_21 Start: 17196, Stop: 18206, Start Num: 1

Candidate Starts for CallieOMalley\_21:

(Start: 1 @17196 has 94 MA's), (Start: 2 @17202 has 1 MA's), (6, 17220), (16, 17298), (47, 17565), (50, 17652), (57, 17739), (59, 17769), (66, 17880), (72, 17922), (77, 17985), (82, 18024), (86, 18099), (89, 18111), (90, 18123), (97, 18174),

Gene: Canowicakte\_21 Start: 17231, Stop: 18241, Start Num: 1

Candidate Starts for Canowicakte\_21:

(Start: 1 @17231 has 94 MA's), (Start: 2 @17237 has 1 MA's), (6, 17255), (16, 17333), (47, 17600), (50, 17687), (57, 17774), (59, 17804), (66, 17915), (72, 17957), (77, 18020), (82, 18059), (86, 18134), (89, 18146), (90, 18158), (97, 18209),

Gene: Carpal\_21 Start: 17149, Stop: 18156, Start Num: 1

Candidate Starts for Carpal\_21:

(Start: 1 @17149 has 94 MA's), (10, 17209), (16, 17257), (18, 17269), (27, 17341), (30, 17365), (47, 17524), (57, 17698), (60, 17752), (61, 17785), (66, 17842), (67, 17845), (72, 17884), (77, 17947), (78, 17962), (79, 17971), (81, 17983), (82, 17986), (90, 18067), (91, 18076), (97, 18118),

Gene: ChewChew\_17 Start: 15561, Stop: 16604, Start Num: 1

Candidate Starts for ChewChew\_17:

(Start: 1 @15561 has 94 MA's), (6, 15591), (16, 15669), (27, 15753), (40, 15861), (47, 15936), (60, 16155), (62, 16194), (64, 16224), (67, 16245), (72, 16284), (77, 16347), (81, 16383), (82, 16386), (89, 16455), (90, 16467), (91, 16476), (93, 16494), (96, 16506), (102, 16548),

Gene: Cholula\_21 Start: 17194, Stop: 18201, Start Num: 1

Candidate Starts for Cholula\_21:

(Start: 1 @17194 has 94 MA's), (10, 17254), (16, 17302), (18, 17314), (27, 17386), (30, 17410), (47, 17569), (60, 17797), (61, 17830), (66, 17887), (67, 17890), (72, 17929), (77, 17992), (78, 18007), (79, 18016), (81, 18028), (82, 18031), (90, 18112), (91, 18121), (97, 18163),

Gene: Chridison\_17 Start: 15559, Stop: 16584, Start Num: 1

Candidate Starts for Chridison\_17:

(Start: 1 @15559 has 94 MA's), (16, 15667), (20, 15691), (27, 15751), (39, 15856), (40, 15859), (47, 15934), (57, 16099), (66, 16240), (70, 16273), (71, 16276), (72, 16282), (75, 16315), (77, 16345), (78, 16360), (82, 16384), (84, 16429), (89, 16453), (90, 16465), (91, 16474), (99, 16534), (103, 16567),

Gene: Christian\_17 Start: 15562, Stop: 16605, Start Num: 1

Candidate Starts for Christian\_17:

(Start: 1 @15562 has 94 MA's), (6, 15592), (16, 15670), (27, 15754), (40, 15862), (47, 15937), (60, 16156), (62, 16195), (67, 16246), (72, 16285), (77, 16348), (81, 16384), (82, 16387), (89, 16456), (90, 16468), (91, 16477), (93, 16495), (96, 16507), (102, 16549),

Gene: Cole\_26 Start: 20895, Stop: 21869, Start Num: 1

Candidate Starts for Cole\_26:

(Start: 1 @20895 has 94 MA's), (22, 21024), (25, 21045), (26, 21054), (27, 21057), (40, 21168), (41, 21198), (44, 21210), (45, 21225), (50, 21330), (51, 21351), (57, 21408), (59, 21438), (64, 21528), (66, 21546), (67, 21549), (68, 21570), (78, 21666), (82, 21690), (85, 21741), (88, 21756), (100, 21843),

Gene: Crewmate\_20 Start: 15561, Stop: 16601, Start Num: 7

Candidate Starts for Crewmate\_20:

(Start: 7 @15561 has 13 MA's), (15, 15618), (34, 15768), (41, 15846), (50, 15978), (57, 16065), (64, 16188), (66, 16206), (69, 16233), (85, 16404), (101, 16515),

Gene: CristinaYang\_17 Start: 15562, Stop: 16605, Start Num: 1

Candidate Starts for CristinaYang\_17:

(Start: 1 @15562 has 94 MA's), (16, 15670), (27, 15754), (40, 15862), (47, 15937), (60, 16156), (62, 16195), (64, 16225), (67, 16246), (72, 16285), (77, 16348), (81, 16384), (82, 16387), (89, 16456), (90, 16468), (91, 16477), (93, 16495), (96, 16507), (102, 16549),

Gene: Daiboju\_17 Start: 15567, Stop: 16598, Start Num: 1

Candidate Starts for Daiboju\_17:

(Start: 1 @15567 has 94 MA's), (9, 15615), (12, 15642), (16, 15675), (20, 15699), (27, 15759), (28, 15762), (47, 15942), (57, 16107), (65, 16230), (73, 16290), (77, 16350), (78, 16365), (82, 16389), (89, 16458), (93, 16497), (96, 16509),

Gene: Dino\_21 Start: 17147, Stop: 18154, Start Num: 1



Candidate Starts for Dino\_21:

(Start: 1 @17147 has 94 MA's), (10, 17207), (16, 17255), (18, 17267), (27, 17339), (47, 17522), (57, 17696), (60, 17750), (61, 17783), (66, 17840), (67, 17843), (72, 17882), (77, 17945), (78, 17960), (79, 17969), (81, 17981), (82, 17984), (90, 18065), (91, 18074), (97, 18116),

Gene: DrManhattan\_19 Start: 15568, Stop: 16575, Start Num: 7

Candidate Starts for DrManhattan\_19:

(Start: 7 @15568 has 13 MA's), (15, 15625), (34, 15775), (46, 15886), (85, 16378),

Gene: DrRobert\_17 Start: 15562, Stop: 16605, Start Num: 1

Candidate Starts for DrRobert\_17:

(Start: 1 @15562 has 94 MA's), (16, 15670), (21, 15703), (27, 15754), (28, 15757), (40, 15862), (47, 15937), (60, 16156), (62, 16195), (64, 16225), (67, 16246), (72, 16285), (77, 16348), (81, 16384), (82, 16387), (89, 16456), (90, 16468), (91, 16477), (93, 16495), (96, 16507), (102, 16549),

Gene: DrSierra\_19 Start: 15659, Stop: 16663, Start Num: 7

Candidate Starts for DrSierra\_19:

(Start: 7 @15659 has 13 MA's), (15, 15716), (34, 15866), (37, 15896), (43, 15953), (58, 16151), (59, 16157), (66, 16268), (85, 16466),

Gene: DreamTeam\_17 Start: 15601, Stop: 16638, Start Num: 1

Candidate Starts for DreamTeam\_17:

(Start: 1 @15601 has 94 MA's), (16, 15709), (20, 15733), (27, 15793), (28, 15796), (40, 15901), (47, 15976), (57, 16141), (67, 16285), (72, 16324), (77, 16387), (78, 16402), (82, 16426), (87, 16486), (90, 16507), (91, 16516), (93, 16534), (102, 16588),

Gene: Elesar\_27 Start: 21141, Stop: 22118, Start Num: 1

Candidate Starts for Elesar\_27:

(Start: 1 @21141 has 94 MA's), (22, 21270), (25, 21291), (26, 21300), (27, 21303), (33, 21342), (41, 21444), (44, 21456), (45, 21471), (50, 21576), (51, 21597), (57, 21654), (59, 21684), (63, 21762), (64, 21774), (66, 21792), (67, 21795), (82, 21939), (85, 21990), (88, 22005), (89, 22008), (100, 22092),

Gene: EstebanJulior\_17 Start: 15572, Stop: 16600, Start Num: 1

Candidate Starts for EstebanJulior\_17:

(Start: 1 @15572 has 94 MA's), (8, 15620), (12, 15650), (16, 15683), (27, 15767), (47, 15950), (57, 16115), (65, 16238), (70, 16286), (72, 16295), (77, 16358), (78, 16373), (82, 16397), (93, 16505), (94, 16508), (96, 16517),

Gene: Eunoia\_17 Start: 15558, Stop: 16583, Start Num: 1

Candidate Starts for Eunoia\_17:

(Start: 1 @15558 has 94 MA's), (16, 15666), (20, 15690), (27, 15750), (39, 15855), (40, 15858), (47, 15933), (57, 16098), (66, 16239), (70, 16272), (71, 16275), (72, 16281), (75, 16314), (77, 16344), (78, 16359), (82, 16383), (84, 16428), (89, 16452), (90, 16464), (91, 16473), (99, 16533), (103, 16566),

Gene: EvePickles\_27 Start: 20438, Stop: 21370, Start Num: 1

Candidate Starts for EvePickles\_27:

(Start: 1 @20438 has 94 MA's), (14, 20519), (25, 20588), (27, 20600), (37, 20693), (44, 20753), (45, 20768), (49, 20804), (50, 20873), (59, 20981), (64, 21071), (66, 21089), (67, 21092), (84, 21278), (85, 21284), (89, 21302),

Gene: Faja\_27 Start: 20331, Stop: 21263, Start Num: 1

Candidate Starts for Faja\_27:

(Start: 1 @20331 has 94 MA's), (11, 20379), (22, 20460), (24, 20475), (25, 20481), (26, 20490), (27, 20493), (32, 20526), (41, 20634), (42, 20640), (45, 20661), (49, 20697), (59, 20874), (65, 20967), (66, 20982), (75, 21057), (85, 21177), (88, 21192),

Gene: Fluke\_21 Start: 17190, Stop: 18197, Start Num: 1

Candidate Starts for Fluke\_21:

(Start: 1 @17190 has 94 MA's), (10, 17250), (16, 17298), (18, 17310), (27, 17382), (47, 17565), (57, 17739), (60, 17793), (61, 17826), (66, 17883), (67, 17886), (72, 17925), (77, 17988), (78, 18003), (79, 18012), (81, 18024), (82, 18027), (90, 18108), (91, 18117), (97, 18159),

Gene: Gisselle\_17 Start: 15601, Stop: 16638, Start Num: 1

Candidate Starts for Gisselle\_17:

(Start: 1 @15601 has 94 MA's), (16, 15709), (20, 15733), (27, 15793), (28, 15796), (40, 15901), (47, 15976), (57, 16141), (67, 16285), (72, 16324), (77, 16387), (78, 16402), (82, 16426), (87, 16486), (90, 16507), (91, 16516), (93, 16534), (102, 16588),

Gene: Glenn\_21 Start: 17199, Stop: 18206, Start Num: 1

Candidate Starts for Glenn\_21:

(Start: 1 @17199 has 94 MA's), (10, 17259), (16, 17307), (18, 17319), (27, 17391), (30, 17415), (47, 17574), (51, 17682), (57, 17748), (60, 17802), (61, 17835), (66, 17892), (67, 17895), (72, 17934), (77, 17997), (78, 18012), (79, 18021), (81, 18033), (82, 18036), (90, 18117), (91, 18126), (97, 18168),

Gene: GreenHearts\_21 Start: 17285, Stop: 18310, Start Num: 1

Candidate Starts for GreenHearts\_21:

(Start: 1 @17285 has 94 MA's), (16, 17393), (20, 17417), (23, 17444), (27, 17477), (47, 17660), (55, 17825), (57, 17861), (65, 17987), (67, 18005), (70, 18035), (72, 18044), (74, 18074), (77, 18107), (78, 18122), (81, 18143), (82, 18146), (90, 18227), (91, 18236),

Gene: Greenhouse\_21 Start: 17209, Stop: 18234, Start Num: 1

Candidate Starts for Greenhouse\_21:

(Start: 1 @17209 has 94 MA's), (16, 17317), (20, 17341), (23, 17368), (27, 17401), (47, 17584), (65, 17911), (67, 17929), (70, 17959), (72, 17968), (74, 17998), (77, 18031), (78, 18046), (81, 18067), (82, 18070), (90, 18151), (91, 18160),

Gene: Gusanita\_26 Start: 20850, Stop: 21803, Start Num: 1

Candidate Starts for Gusanita\_26:

(Start: 1 @20850 has 94 MA's), (12, 20910), (27, 21012), (32, 21045), (33, 21051), (41, 21153), (44, 21165), (45, 21180), (47, 21198), (50, 21285), (57, 21363), (58, 21387), (59, 21393), (64, 21483), (66, 21501), (67, 21504), (82, 21645), (85, 21696), (88, 21711), (89, 21714),

Gene: HeadNerd\_17 Start: 15564, Stop: 16598, Start Num: 1

Candidate Starts for HeadNerd\_17:

(Start: 1 @15564 has 94 MA's), (16, 15672), (27, 15756), (28, 15759), (41, 15894), (47, 15939), (50, 16026), (57, 16104), (65, 16227), (66, 16242), (77, 16347), (78, 16362), (82, 16386), (93, 16494), (96, 16506), (102, 16548),

Gene: Herb\_17 Start: 15567, Stop: 16598, Start Num: 1

Candidate Starts for Herb\_17:

(Start: 1 @15567 has 94 MA's), (9, 15615), (12, 15642), (16, 15675), (20, 15699), (27, 15759), (28, 15762), (47, 15942), (57, 16107), (65, 16230), (73, 16290), (77, 16350), (78, 16365), (82, 16389), (89, 16458), (93, 16497), (96, 16509),

Gene: Huckleberry\_17 Start: 15564, Stop: 16598, Start Num: 1

Candidate Starts for Huckleberry\_17:

(Start: 1 @15564 has 94 MA's), (16, 15672), (27, 15756), (28, 15759), (41, 15894), (47, 15939), (50, 16026), (57, 16104), (65, 16227), (66, 16242), (77, 16347), (78, 16362), (82, 16386), (93, 16494), (96, 16506), (102, 16548),

Gene: HunterDalle\_17 Start: 15558, Stop: 16583, Start Num: 1

Candidate Starts for HunterDalle\_17:

(Start: 1 @15558 has 94 MA's), (16, 15666), (20, 15690), (27, 15750), (40, 15858), (47, 15933), (57, 16098), (66, 16239), (71, 16275), (72, 16281), (75, 16314), (77, 16344), (78, 16359), (82, 16383), (84, 16428), (89, 16452), (90, 16464), (91, 16473), (99, 16533), (103, 16566),

Gene: Huntingdon\_21 Start: 17195, Stop: 18202, Start Num: 1

Candidate Starts for Huntingdon\_21:

(Start: 1 @17195 has 94 MA's), (16, 17303), (23, 17354), (27, 17387), (28, 17390), (47, 17570), (55, 17717), (59, 17783), (61, 17840), (65, 17879), (66, 17894), (67, 17897), (70, 17927), (74, 17966), (77, 17999), (78, 18014), (82, 18038), (90, 18119), (91, 18128), (97, 18170), (98, 18179),

Gene: Immaculata\_21 Start: 17193, Stop: 18200, Start Num: 1

Candidate Starts for Immaculata\_21:

(Start: 1 @17193 has 94 MA's), (10, 17253), (16, 17301), (18, 17313), (27, 17385), (30, 17409), (47, 17568), (60, 17796), (61, 17829), (66, 17886), (67, 17889), (72, 17928), (77, 17991), (78, 18006), (79, 18015), (81, 18027), (82, 18030), (90, 18111), (91, 18120), (97, 18162),

Gene: IttyBittyPiggy\_19 Start: 15653, Stop: 16660, Start Num: 7

Candidate Starts for IttyBittyPiggy\_19:

(Start: 7 @15653 has 13 MA's), (15, 15710), (34, 15860), (35, 15863), (37, 15890),

Gene: Joann\_21 Start: 17189, Stop: 18214, Start Num: 1

Candidate Starts for Joann\_21:

(Start: 1 @17189 has 94 MA's), (16, 17297), (20, 17321), (23, 17348), (27, 17381), (47, 17564), (57, 17765), (65, 17891), (67, 17909), (70, 17939), (72, 17948), (74, 17978), (77, 18011), (78, 18026), (81, 18047), (82, 18050), (90, 18131), (91, 18140),

Gene: Jumboset\_21 Start: 17142, Stop: 18149, Start Num: 1

Candidate Starts for Jumboset\_21:

(Start: 1 @17142 has 94 MA's), (10, 17202), (16, 17250), (18, 17262), (27, 17334), (30, 17358), (47, 17517), (57, 17691), (60, 17745), (61, 17778), (66, 17835), (67, 17838), (72, 17877), (77, 17940), (78, 17955), (79, 17964), (81, 17976), (82, 17979), (90, 18060), (91, 18069), (97, 18111),

Gene: Kalizoi\_21 Start: 17141, Stop: 18148, Start Num: 1

Candidate Starts for Kalizoi\_21:

(Start: 1 @17141 has 94 MA's), (10, 17201), (16, 17249), (18, 17261), (27, 17333), (47, 17516), (57, 17690), (60, 17744), (61, 17777), (66, 17834), (67, 17837), (72, 17876), (77, 17939), (78, 17954), (79, 17963), (81, 17975), (82, 17978), (90, 18059), (91, 18068), (97, 18110),

Gene: KeAlii\_19 Start: 15122, Stop: 16168, Start Num: 7

Candidate Starts for KeAlii\_19:

(Start: 7 @15122 has 13 MA's), (15, 15182), (34, 15332), (42, 15416), (59, 15659), (64, 15752), (69, 15797), (85, 15968), (92, 16016), (95, 16034), (104, 16142),

Gene: KingBob\_17 Start: 15567, Stop: 16598, Start Num: 1

Candidate Starts for KingBob\_17:

(Start: 1 @15567 has 94 MA's), (9, 15615), (12, 15642), (16, 15675), (20, 15699), (27, 15759), (28, 15762), (47, 15942), (57, 16107), (65, 16230), (73, 16290), (77, 16350), (78, 16365), (82, 16389), (89, 16458), (93, 16497), (96, 16509),

Gene: Kittykat\_17 Start: 15585, Stop: 16622, Start Num: 1

Candidate Starts for Kittykat\_17:

(Start: 1 @15585 has 94 MA's), (16, 15693), (20, 15717), (27, 15777), (28, 15780), (40, 15885), (47, 15960), (57, 16125), (67, 16269), (72, 16308), (77, 16371), (78, 16386), (82, 16410), (87, 16470), (90, 16491), (91, 16500), (93, 16518), (102, 16572),

Gene: Korra\_22 Start: 17147, Stop: 18154, Start Num: 1

Candidate Starts for Korra\_22:

(Start: 1 @17147 has 94 MA's), (10, 17207), (16, 17255), (18, 17267), (27, 17339), (47, 17522), (60, 17750), (61, 17783), (66, 17840), (67, 17843), (72, 17882), (77, 17945), (78, 17960), (79, 17969), (81, 17981), (82, 17984), (90, 18065), (91, 18074), (97, 18116),

Gene: Kukla\_25 Start: 19824, Stop: 20756, Start Num: 1

Candidate Starts for Kukla\_25:

(Start: 1 @19824 has 94 MA's), (25, 19974), (26, 19983), (27, 19986), (32, 20019), (37, 20079), (42, 20133), (45, 20154), (50, 20259), (64, 20457), (66, 20475), (67, 20478), (81, 20616), (85, 20670), (88, 20685), (89, 20688),

Gene: Lakshmi\_21 Start: 17214, Stop: 18239, Start Num: 1

Candidate Starts for Lakshmi\_21:

(Start: 1 @17214 has 94 MA's), (16, 17322), (20, 17346), (23, 17373), (27, 17406), (47, 17589), (57, 17790), (65, 17916), (67, 17934), (72, 17973), (74, 18003), (77, 18036), (78, 18051), (81, 18072), (82, 18075), (90, 18156), (91, 18165),

Gene: Lasagna\_17 Start: 15562, Stop: 16605, Start Num: 1

Candidate Starts for Lasagna\_17:

(Start: 1 @15562 has 94 MA's), (16, 15670), (27, 15754), (40, 15862), (47, 15937), (60, 16156), (62, 16195), (67, 16246), (72, 16285), (77, 16348), (81, 16384), (82, 16387), (89, 16456), (90, 16468), (91, 16477), (93, 16495), (96, 16507), (102, 16549),

Gene: Lennox\_17 Start: 15550, Stop: 16593, Start Num: 1

Candidate Starts for Lennox\_17:

(Start: 1 @15550 has 94 MA's), (16, 15658), (27, 15742), (40, 15850), (47, 15925), (60, 16144), (62, 16183), (64, 16213), (67, 16234), (72, 16273), (77, 16336), (81, 16372), (82, 16375), (89, 16444), (90, 16456), (91, 16465), (93, 16483), (96, 16495), (102, 16537),

Gene: Lenoxika\_28 Start: 21090, Stop: 22037, Start Num: 1

Candidate Starts for Lenoxika\_28:

(Start: 1 @21090 has 94 MA's), (5, 21099), (12, 21144), (19, 21189), (22, 21213), (27, 21246), (33, 21285), (37, 21339), (41, 21387), (44, 21399), (45, 21414), (47, 21432), (50, 21519), (57, 21597), (59, 21627), (64, 21717), (66, 21735), (67, 21738), (82, 21879), (85, 21930), (88, 21945), (89, 21948),

Gene: LilStuart\_17 Start: 15550, Stop: 16593, Start Num: 1

Candidate Starts for LilStuart\_17:

(Start: 1 @15550 has 94 MA's), (16, 15658), (27, 15742), (40, 15850), (47, 15925), (60, 16144), (62, 16183), (64, 16213), (67, 16234), (72, 16273), (77, 16336), (81, 16372), (82, 16375), (89, 16444), (90, 16456), (91, 16465), (93, 16483), (96, 16495), (102, 16537),

Gene: Litotes\_21 Start: 17187, Stop: 18191, Start Num: 2

Candidate Starts for Litotes\_21:

(Start: 1 @17181 has 94 MA's), (Start: 2 @17187 has 1 MA's), (16, 17283), (47, 17550), (50, 17637), (57, 17724), (59, 17754), (66, 17865), (72, 17907), (77, 17970), (82, 18009), (86, 18084), (89, 18096), (90, 18108), (97, 18159),

Gene: Lucy\_17 Start: 15542, Stop: 16585, Start Num: 1

Candidate Starts for Lucy\_17:

(Start: 1 @15542 has 94 MA's), (16, 15650), (27, 15734), (40, 15842), (47, 15917), (60, 16136), (62, 16175), (64, 16205), (67, 16226), (72, 16265), (77, 16328), (81, 16364), (82, 16367), (89, 16436), (90, 16448), (91, 16457), (93, 16475), (96, 16487), (102, 16529),

Gene: Makoto\_17 Start: 15563, Stop: 16606, Start Num: 1

Candidate Starts for Makoto\_17:

(Start: 1 @15563 has 94 MA's), (16, 15671), (27, 15755), (40, 15863), (47, 15938), (60, 16157), (62, 16196), (67, 16247), (72, 16286), (77, 16349), (81, 16385), (82, 16388), (89, 16457), (90, 16469), (91, 16478), (93, 16496), (96, 16508), (102, 16550),

Gene: MamaPearl\_17 Start: 15572, Stop: 16600, Start Num: 1

Candidate Starts for MamaPearl\_17:

(Start: 1 @15572 has 94 MA's), (8, 15620), (12, 15650), (16, 15683), (27, 15767), (47, 15950), (57, 16115), (65, 16238), (70, 16286), (72, 16295), (77, 16358), (78, 16373), (82, 16397), (93, 16505), (94, 16508), (96, 16517),

Gene: Maria1952\_17 Start: 15567, Stop: 16598, Start Num: 1

Candidate Starts for Maria1952\_17:

(Start: 1 @15567 has 94 MA's), (9, 15615), (12, 15642), (16, 15675), (20, 15699), (27, 15759), (28, 15762), (47, 15942), (57, 16107), (65, 16230), (73, 16290), (77, 16350), (78, 16365), (82, 16389), (89, 16458), (93, 16497), (96, 16509),

Gene: MeganNoll\_21 Start: 17199, Stop: 18206, Start Num: 1

Candidate Starts for MeganNoll\_21:

(Start: 1 @17199 has 94 MA's), (10, 17259), (16, 17307), (18, 17319), (27, 17391), (30, 17415), (47, 17574), (51, 17682), (57, 17748), (60, 17802), (61, 17835), (66, 17892), (67, 17895), (72, 17934), (77, 17997), (78, 18012), (79, 18021), (81, 18033), (82, 18036), (90, 18117), (91, 18126), (97, 18168),

Gene: Misaeng\_21 Start: 17259, Stop: 18284, Start Num: 1

Candidate Starts for Misaeng\_21:

(Start: 1 @17259 has 94 MA's), (16, 17367), (23, 17418), (27, 17451), (28, 17454), (47, 17634), (50, 17721), (57, 17835), (65, 17961), (67, 17979), (70, 18009), (72, 18018), (77, 18081), (82, 18120), (86, 18177), (90, 18201), (91, 18210),

Gene: MissSwiss\_19 Start: 15610, Stop: 16614, Start Num: 7

Candidate Starts for MissSwiss\_19:

(Start: 7 @15610 has 13 MA's), (15, 15667), (35, 15820), (37, 15847), (53, 16027), (64, 16201), (66, 16219), (69, 16246), (76, 16300),

Gene: Moki\_17 Start: 15564, Stop: 16598, Start Num: 1

Candidate Starts for Moki\_17:

(Start: 1 @15564 has 94 MA's), (16, 15672), (27, 15756), (28, 15759), (41, 15894), (47, 15939), (50, 16026), (57, 16104), (65, 16227), (66, 16242), (77, 16347), (78, 16362), (82, 16386), (93, 16494), (96, 16506), (102, 16548),

Gene: MrGloopy\_21 Start: 17133, Stop: 18140, Start Num: 1

Candidate Starts for MrGloopy\_21:

(Start: 1 @17133 has 94 MA's), (10, 17193), (16, 17241), (18, 17253), (27, 17325), (30, 17349), (47, 17508), (51, 17616), (57, 17682), (60, 17736), (61, 17769), (66, 17826), (67, 17829), (72, 17868), (77, 17931), (78, 17946), (79, 17955), (81, 17967), (82, 17970), (90, 18051), (91, 18060), (97, 18102),

Gene: Nancia\_17 Start: 15562, Stop: 16605, Start Num: 1

Candidate Starts for Nancia\_17:

(Start: 1 @15562 has 94 MA's), (16, 15670), (27, 15754), (40, 15862), (47, 15937), (60, 16156), (62, 16195), (64, 16225), (67, 16246), (72, 16285), (77, 16348), (81, 16384), (82, 16387), (89, 16456), (90, 16468), (91, 16477), (93, 16495), (96, 16507), (102, 16549),

Gene: Nandita\_28 Start: 21094, Stop: 22041, Start Num: 1

Candidate Starts for Nandita\_28:

(Start: 1 @21094 has 94 MA's), (5, 21103), (19, 21193), (22, 21217), (27, 21250), (33, 21289), (37, 21343), (41, 21391), (42, 21397), (44, 21403), (45, 21418), (47, 21436), (50, 21523), (57, 21601), (59, 21631), (64, 21721), (66, 21739), (67, 21742), (82, 21883), (85, 21934), (88, 21949), (89, 21952),

Gene: Nubia\_21 Start: 17174, Stop: 18199, Start Num: 1

Candidate Starts for Nubia\_21:

(Start: 1 @17174 has 94 MA's), (16, 17282), (20, 17306), (23, 17333), (27, 17366), (47, 17549), (57, 17750), (65, 17876), (67, 17894), (72, 17933), (74, 17963), (77, 17996), (78, 18011), (81, 18032), (82, 18035), (90, 18116), (91, 18125),

Gene: OMalley\_17 Start: 15558, Stop: 16583, Start Num: 1

Candidate Starts for OMalley\_17:

(Start: 1 @15558 has 94 MA's), (16, 15666), (20, 15690), (27, 15750), (39, 15855), (40, 15858), (47, 15933), (57, 16098), (66, 16239), (70, 16272), (71, 16275), (72, 16281), (75, 16314), (77, 16344), (78, 16359), (82, 16383), (84, 16428), (89, 16452), (90, 16464), (91, 16473), (99, 16533), (103, 16566),

Gene: ObiToo\_19 Start: 15298, Stop: 16338, Start Num: 7

Candidate Starts for ObiToo\_19:

(Start: 7 @15298 has 13 MA's), (15, 15355), (34, 15505), (41, 15583), (50, 15715), (57, 15802), (64, 15925), (66, 15943), (69, 15970), (85, 16141), (101, 16252),

Gene: OurGirlNessie\_17 Start: 15542, Stop: 16585, Start Num: 1

Candidate Starts for OurGirlNessie\_17:

(Start: 1 @15542 has 94 MA's), (16, 15650), (27, 15734), (40, 15842), (47, 15917), (60, 16136), (62, 16175), (67, 16226), (72, 16265), (77, 16328), (81, 16364), (82, 16367), (89, 16436), (90, 16448), (91, 16457), (93, 16475), (96, 16487), (102, 16529),

Gene: Oxynfrius\_21 Start: 17187, Stop: 18212, Start Num: 1

Candidate Starts for Oxynfrius\_21:

(Start: 1 @17187 has 94 MA's), (16, 17295), (20, 17319), (23, 17346), (27, 17379), (47, 17562), (57, 17763), (65, 17889), (67, 17907), (72, 17946), (74, 17976), (77, 18009), (78, 18024), (81, 18045), (82, 18048), (90, 18129), (91, 18138),

Gene: PartyCup\_21 Start: 17234, Stop: 18238, Start Num: 2

Candidate Starts for PartyCup\_21:

(Start: 1 @17228 has 94 MA's), (Start: 2 @17234 has 1 MA's), (4, 17240), (16, 17330), (47, 17597), (50, 17684), (57, 17771), (59, 17801), (66, 17912), (72, 17954), (77, 18017), (82, 18056), (86, 18131), (89, 18143), (90, 18155), (97, 18206),

Gene: PinkFriday\_17 Start: 15588, Stop: 16619, Start Num: 1

Candidate Starts for PinkFriday\_17:

(Start: 1 @15588 has 94 MA's), (9, 15636), (16, 15696), (27, 15780), (35, 15843), (42, 15924), (47, 15963), (50, 16050), (59, 16158), (67, 16275), (72, 16314), (77, 16377), (78, 16392), (81, 16413), (89, 16485), (90, 16497), (91, 16506),

Gene: PitaDog\_17 Start: 15553, Stop: 16596, Start Num: 1

Candidate Starts for PitaDog\_17:

(Start: 1 @15553 has 94 MA's), (6, 15583), (16, 15661), (27, 15745), (40, 15853), (47, 15928), (60, 16147), (62, 16186), (64, 16216), (67, 16237), (72, 16276), (77, 16339), (81, 16375), (82, 16378), (89, 16447), (90, 16459), (91, 16468), (93, 16486), (96, 16498), (102, 16540),

Gene: Popper\_26 Start: 20999, Stop: 21952, Start Num: 1

Candidate Starts for Popper\_26:

(Start: 1 @20999 has 94 MA's), (14, 21080), (27, 21161), (33, 21200), (41, 21302), (44, 21314), (45, 21329), (47, 21347), (57, 21512), (64, 21632), (66, 21650), (67, 21653), (78, 21770), (85, 21845), (88, 21860), (89, 21863),

Gene: Potatoes\_21 Start: 17194, Stop: 18201, Start Num: 1

Candidate Starts for Potatoes\_21:

(Start: 1 @17194 has 94 MA's), (10, 17254), (16, 17302), (18, 17314), (27, 17386), (30, 17410), (47, 17569), (60, 17797), (61, 17830), (66, 17887), (67, 17890), (72, 17929), (77, 17992), (78, 18007), (79, 18016), (81, 18028), (82, 18031), (90, 18112), (91, 18121), (97, 18163),

Gene: Preamble\_17 Start: 15562, Stop: 16599, Start Num: 1

Candidate Starts for Preamble\_17:

(Start: 1 @15562 has 94 MA's), (16, 15670), (20, 15694), (27, 15754), (28, 15757), (40, 15862), (47, 15937), (57, 16102), (67, 16246), (72, 16285), (77, 16348), (78, 16363), (82, 16387), (87, 16447), (90, 16468), (91, 16477), (93, 16495), (102, 16549),

Gene: Pterodactyl\_17 Start: 15543, Stop: 16586, Start Num: 1

Candidate Starts for Pterodactyl\_17:

(Start: 1 @15543 has 94 MA's), (16, 15651), (27, 15735), (40, 15843), (47, 15918), (60, 16137), (62, 16176), (67, 16227), (72, 16266), (77, 16329), (81, 16365), (82, 16368), (89, 16437), (90, 16449), (91, 16458), (93, 16476), (96, 16488), (102, 16530),

Gene: Pumancara\_17 Start: 15569, Stop: 16600, Start Num: 1

Candidate Starts for Pumancara\_17:

(Start: 1 @15569 has 94 MA's), (9, 15617), (12, 15644), (16, 15677), (20, 15701), (27, 15761), (28, 15764), (47, 15944), (59, 16139), (65, 16232), (73, 16292), (77, 16352), (78, 16367), (82, 16391), (89, 16460), (93, 16499), (96, 16511),

Gene: QuinnAvery\_27 Start: 21157, Stop: 22131, Start Num: 1

Candidate Starts for QuinnAvery\_27:

(Start: 1 @21157 has 94 MA's), (14, 21238), (22, 21286), (25, 21307), (26, 21316), (27, 21319), (40, 21430), (41, 21460), (44, 21472), (45, 21487), (50, 21592), (51, 21613), (57, 21670), (59, 21700), (64, 21790), (66, 21808), (67, 21811), (78, 21928), (82, 21952), (85, 22003), (88, 22018), (100, 22105),

Gene: RAP15\_21 Start: 17199, Stop: 18206, Start Num: 1

Candidate Starts for RAP15\_21:

(Start: 1 @17199 has 94 MA's), (10, 17259), (16, 17307), (18, 17319), (27, 17391), (30, 17415), (47, 17574), (51, 17682), (57, 17748), (60, 17802), (61, 17835), (66, 17892), (67, 17895), (72, 17934), (77, 17997), (78, 18012), (79, 18021), (81, 18033), (82, 18036), (90, 18117), (91, 18126), (97, 18168),

Gene: RcigaStruga\_21 Start: 17195, Stop: 18202, Start Num: 1

Candidate Starts for RcigaStruga\_21:

(Start: 1 @17195 has 94 MA's), (16, 17303), (23, 17354), (27, 17387), (28, 17390), (47, 17570), (55, 17717), (59, 17783), (61, 17840), (65, 17879), (66, 17894), (67, 17897), (70, 17927), (74, 17966), (77, 17999), (78, 18014), (82, 18038), (90, 18119), (91, 18128), (97, 18170), (98, 18179),

Gene: Reedo\_19 Start: 15141, Stop: 16175, Start Num: 7

Candidate Starts for Reedo\_19:

(Start: 7 @15141 has 13 MA's), (15, 15198), (29, 15294), (42, 15432), (45, 15453), (56, 15615), (66, 15786), (77, 15894), (85, 15984), (104, 16155),

Gene: Riovina\_17 Start: 15558, Stop: 16583, Start Num: 1

Candidate Starts for Riovina\_17:

(Start: 1 @15558 has 94 MA's), (16, 15666), (20, 15690), (27, 15750), (39, 15855), (40, 15858), (47, 15933), (57, 16098), (66, 16239), (70, 16272), (71, 16275), (72, 16281), (75, 16314), (77, 16344), (78, 16359), (82, 16383), (84, 16428), (89, 16452), (90, 16464), (91, 16473), (99, 16533), (103, 16566),

Gene: Riverdale\_21 Start: 17129, Stop: 18136, Start Num: 1

Candidate Starts for Riverdale\_21:

(Start: 1 @17129 has 94 MA's), (10, 17189), (16, 17237), (18, 17249), (27, 17321), (30, 17345), (47, 17504), (60, 17732), (61, 17765), (66, 17822), (67, 17825), (72, 17864), (77, 17927), (78, 17942), (79, 17951), (81, 17963), (82, 17966), (90, 18047), (91, 18056), (97, 18098),

Gene: Rozby\_21 Start: 17130, Stop: 18137, Start Num: 1

Candidate Starts for Rozby\_21:

(Start: 1 @17130 has 94 MA's), (10, 17190), (16, 17238), (18, 17250), (27, 17322), (30, 17346), (47, 17505), (60, 17733), (61, 17766), (66, 17823), (67, 17826), (72, 17865), (77, 17928), (78, 17943), (79, 17952), (81, 17964), (82, 17967), (90, 18048), (91, 18057), (97, 18099),

Gene: Ryan\_28 Start: 21684, Stop: 22652, Start Num: 1

Candidate Starts for Ryan\_28:

(Start: 1 @21684 has 94 MA's), (5, 21693), (19, 21783), (22, 21807), (27, 21840), (33, 21879), (37, 21933), (41, 21981), (42, 21987), (44, 21993), (45, 22008), (47, 22026), (50, 22113), (57, 22191), (58, 22215), (59, 22221), (64, 22311), (66, 22329), (67, 22332), (82, 22473), (85, 22524), (88, 22539), (89, 22542),

Gene: Sashimi\_28 Start: 20237, Stop: 21169, Start Num: 1

Candidate Starts for Sashimi\_28:

(Start: 1 @20237 has 94 MA's), (11, 20285), (22, 20366), (24, 20381), (25, 20387), (26, 20396), (27, 20399), (32, 20432), (41, 20540), (42, 20546), (45, 20567), (49, 20603), (59, 20780), (65, 20873), (66, 20888), (75, 20963), (85, 21083), (88, 21098),

Gene: Savage2526\_21 Start: 17193, Stop: 18200, Start Num: 1

Candidate Starts for Savage2526\_21:

(Start: 1 @17193 has 94 MA's), (10, 17253), (16, 17301), (18, 17313), (27, 17385), (30, 17409), (47, 17568), (51, 17676), (57, 17742), (60, 17796), (61, 17829), (66, 17886), (67, 17889), (72, 17928), (77, 17991), (78, 18006), (79, 18015), (81, 18027), (82, 18030), (90, 18111), (91, 18120), (97, 18162),

Gene: Scuttle\_21 Start: 17198, Stop: 18205, Start Num: 1

Candidate Starts for Scuttle\_21:

(Start: 1 @17198 has 94 MA's), (10, 17258), (16, 17306), (18, 17318), (27, 17390), (30, 17414), (47, 17573), (60, 17801), (61, 17834), (66, 17891), (67, 17894), (72, 17933), (77, 17996), (78, 18011), (79, 18020), (81, 18032), (82, 18035), (90, 18116), (91, 18125), (97, 18167),



Gene: Sergei\_17 Start: 15567, Stop: 16598, Start Num: 1

Candidate Starts for Sergei\_17:

(Start: 1 @15567 has 94 MA's), (9, 15615), (12, 15642), (16, 15675), (20, 15699), (27, 15759), (28, 15762), (47, 15942), (57, 16107), (65, 16230), (73, 16290), (77, 16350), (78, 16365), (82, 16389), (89, 16458), (93, 16497), (96, 16509),

Gene: Shambre1\_21 Start: 17642, Stop: 18598, Start Num: 1

Candidate Starts for Shambre1\_21:

(Start: 1 @17642 has 94 MA's), (3, 17654), (13, 17732), (20, 17774), (21, 17783), (31, 17861), (36, 17900), (38, 17930), (40, 17939), (48, 18020), (58, 18194), (70, 18350), (80, 18446), (81, 18455), (83, 18479), (84, 18503), (85, 18509), (86, 18515), (92, 18557),

Gene: Snek\_19 Start: 14174, Stop: 15217, Start Num: 7

Candidate Starts for Snek\_19:

(Start: 7 @14174 has 13 MA's), (15, 14234), (17, 14243), (45, 14489), (66, 14822), (85, 15020), (104, 15191), (105, 15206),

Gene: Sue2\_19 Start: 15808, Stop: 16815, Start Num: 7

Candidate Starts for Sue2\_19:

(Start: 7 @15808 has 13 MA's), (15, 15865), (34, 16015), (37, 16045), (46, 16126), (52, 16225), (58, 16303), (88, 16633),

Gene: Supakev\_17 Start: 15560, Stop: 16585, Start Num: 1

Candidate Starts for Supakev\_17:

(Start: 1 @15560 has 94 MA's), (16, 15668), (20, 15692), (27, 15752), (40, 15860), (47, 15935), (57, 16100), (66, 16241), (70, 16274), (71, 16277), (72, 16283), (75, 16316), (77, 16346), (78, 16361), (82, 16385), (84, 16430), (89, 16454), (90, 16466), (91, 16475), (99, 16535), (103, 16568),

Gene: Suppi\_21 Start: 17231, Stop: 18241, Start Num: 1

Candidate Starts for Suppi\_21:

(Start: 1 @17231 has 94 MA's), (Start: 2 @17237 has 1 MA's), (6, 17255), (16, 17333), (47, 17600), (50, 17687), (57, 17774), (59, 17804), (66, 17915), (72, 17957), (77, 18020), (82, 18059), (86, 18134), (89, 18146), (90, 18158), (97, 18209),

Gene: TattModd\_21 Start: 17192, Stop: 18199, Start Num: 1

Candidate Starts for TattModd\_21:

(Start: 1 @17192 has 94 MA's), (10, 17252), (16, 17300), (18, 17312), (27, 17384), (47, 17567), (57, 17741), (60, 17795), (61, 17828), (66, 17885), (67, 17888), (72, 17927), (77, 17990), (78, 18005), (79, 18014), (81, 18026), (90, 18110), (91, 18119), (97, 18161),

Gene: Temper16\_17 Start: 15567, Stop: 16598, Start Num: 1

Candidate Starts for Temper16\_17:

(Start: 1 @15567 has 94 MA's), (9, 15615), (12, 15642), (16, 15675), (20, 15699), (27, 15759), (28, 15762), (47, 15942), (57, 16107), (65, 16230), (73, 16290), (77, 16350), (78, 16365), (82, 16389), (89, 16458), (93, 16497), (96, 16509),

Gene: TripleJ\_27 Start: 20708, Stop: 21640, Start Num: 1

Candidate Starts for TripleJ\_27:

(Start: 1 @20708 has 94 MA's), (14, 20789), (27, 20870), (32, 20903), (37, 20963), (41, 21011), (45, 21038), (47, 21056), (50, 21143), (51, 21164), (57, 21221), (66, 21359), (67, 21362), (75, 21434), (88, 21569), (89, 21572),

Gene: Tweety19\_19 Start: 14173, Stop: 15216, Start Num: 7

Candidate Starts for Tweety19\_19:

(Start: 7 @14173 has 13 MA's), (15, 14233), (17, 14242), (45, 14488), (58, 14704), (66, 14821), (85, 15019), (104, 15190), (105, 15205),

Gene: Urla\_17 Start: 15574, Stop: 16602, Start Num: 1

Candidate Starts for Urla\_17:

(Start: 1 @15574 has 94 MA's), (8, 15622), (12, 15652), (16, 15685), (20, 15709), (27, 15769), (47, 15952), (57, 16117), (62, 16210), (65, 16240), (77, 16360), (78, 16375), (82, 16399), (93, 16507), (94, 16510), (96, 16519),

Gene: VResidence\_19 Start: 15221, Stop: 16234, Start Num: 7

Candidate Starts for VResidence\_19:

(Start: 7 @15221 has 13 MA's), (15, 15278), (29, 15374), (34, 15428), (42, 15512),

Gene: Vallejo\_21 Start: 17131, Stop: 18138, Start Num: 1

Candidate Starts for Vallejo\_21:

(Start: 1 @17131 has 94 MA's), (10, 17191), (16, 17239), (18, 17251), (27, 17323), (47, 17506), (57, 17680), (60, 17734), (61, 17767), (67, 17827), (72, 17866), (77, 17929), (78, 17944), (79, 17953), (81, 17965), (82, 17968), (90, 18049), (91, 18058), (97, 18100),

Gene: Vulture\_17 Start: 15558, Stop: 16583, Start Num: 1

Candidate Starts for Vulture\_17:

(Start: 1 @15558 has 94 MA's), (16, 15666), (20, 15690), (27, 15750), (40, 15858), (47, 15933), (57, 16098), (66, 16239), (71, 16275), (72, 16281), (75, 16314), (77, 16344), (78, 16359), (82, 16383), (84, 16428), (89, 16452), (90, 16464), (91, 16473), (99, 16533), (103, 16566),

Gene: Wawa\_21 Start: 17168, Stop: 18175, Start Num: 1

Candidate Starts for Wawa\_21:

(Start: 1 @17168 has 94 MA's), (10, 17228), (16, 17276), (18, 17288), (27, 17360), (47, 17543), (57, 17717), (60, 17771), (61, 17804), (67, 17864), (72, 17903), (77, 17966), (78, 17981), (79, 17990), (81, 18002), (82, 18005), (90, 18086), (91, 18095), (97, 18137),

Gene: Wayne\_21 Start: 17277, Stop: 18287, Start Num: 1

Candidate Starts for Wayne\_21:

(Start: 1 @17277 has 94 MA's), (Start: 2 @17283 has 1 MA's), (16, 17379), (47, 17646), (50, 17733), (57, 17820), (59, 17850), (66, 17961), (72, 18003), (77, 18066), (82, 18105), (86, 18180), (89, 18192), (90, 18204), (97, 18255),

Gene: Wildwest\_20 Start: 16573, Stop: 17577, Start Num: 7

Candidate Starts for Wildwest\_20:

(Start: 7 @16573 has 13 MA's), (15, 16630), (34, 16780), (37, 16810), (52, 16987), (54, 17002), (58, 17065), (69, 17209), (85, 17380),

Gene: WonderBoy\_17 Start: 15543, Stop: 16586, Start Num: 1

Candidate Starts for WonderBoy\_17:

(Start: 1 @15543 has 94 MA's), (16, 15651), (27, 15735), (40, 15843), (47, 15918), (60, 16137), (62, 16176), (67, 16227), (72, 16266), (77, 16329), (81, 16365), (82, 16368), (89, 16437), (90, 16449), (91, 16458), (93, 16476), (96, 16488), (102, 16530),

Gene: Zaheer\_28 Start: 21773, Stop: 22741, Start Num: 1

Candidate Starts for Zaheer\_28:

(Start: 1 @21773 has 94 MA's), (5, 21782), (19, 21872), (22, 21896), (27, 21929), (33, 21968), (37, 22022), (41, 22070), (42, 22076), (44, 22082), (45, 22097), (47, 22115), (50, 22202), (57, 22280), (58, 22304), (59, 22310), (64, 22400), (66, 22418), (67, 22421), (82, 22562), (85, 22613), (88, 22628), (89, 22631),

Gene: Zorro\_21 Start: 17147, Stop: 18154, Start Num: 1

Candidate Starts for Zorro\_21:

(Start: 1 @17147 has 94 MA's), (10, 17207), (16, 17255), (18, 17267), (27, 17339), (47, 17522), (57, 17696), (60, 17750), (61, 17783), (66, 17840), (67, 17843), (72, 17882), (77, 17945), (78, 17960), (79, 17969), (81, 17981), (82, 17984), (90, 18065), (91, 18074), (97, 18116),