

Pham 308258



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 308258 Report

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

Pham number 308258 has 130 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Doomslug\_114, Oksu\_99
- Track 2 : Blarby\_104, Cheesepuff\_101, Zapner\_103, Nitzel\_90, Avani\_102, Jabbawokkie\_103, SG4\_97, Cornie\_93, ShroomBoi\_94, SilverChicken\_104
- Track 3 : Beanstalk\_92, KristaRAM\_103, Coco12\_96, Phanphagia\_100, Chuckly\_92, Cerasum\_94, Corium\_94, Philus\_99, Topiatin\_98, Kingsley\_104, Hegedechwinu\_103, Velveteen\_93, BigPhil\_92, Sarma624\_98, Shauna1\_98, PatoPoderoso\_96, Fruitloop\_94, Batiatus\_95, Brookers\_94, KingJulian\_103
- Track 4 : Marker\_102, Ruby\_93, MisterCuddles\_96, Clank\_94, Girr\_95
- Track 5 : Geralt\_89, DotProduct\_90, Drago\_95, Stap\_91, Veteran\_87, Radiance\_94, Spikelee\_97, MulchExplorer\_96, Madiba\_95, BlueCrab\_97, IbOuu\_87, WillSterrel\_94, Juice456\_95, RockyHorror\_100, Pacc40\_92, Doug\_93, GigiOuiOui\_91, RitaG\_95, Ramsey\_101, DirtMcgirt\_97, IrishSherpFalk\_96, UncleRicky\_96, Lorde\_99, Deb65\_89, SiSi\_92, Lucia\_96, PMC\_95, Pollywog\_98, Job42\_97, Nimbo\_88, Hades\_93, Fastidio\_100, VRedHorse\_97, Kimberlium\_98, OldBen\_93, GUmble\_95, DaWorst\_96, Cornucopia\_96, Enby\_100, Daenerys\_94, PHappiness\_96, Rockne\_99, Mantra\_94, QuickMath\_97
- Track 6 : BodEinwohner17\_106, Inventum\_94, Empress\_96, KingMidas\_96, Dorothy\_97, Leperchaun\_98, MadMen\_101, Sassafras\_98, RedBird\_97, Poenanya\_100, Polka14\_100, JoeyJr\_99, Doomphist\_101
- Track 7 : LunaBlu\_101, Galactic\_98, Enzomatic\_107, Polo2Bam\_106, Royals2015\_100, Mwanjiwa\_98, NewHope4\_102, Demsculpinboyz\_110, SeaLumen\_103
- Track 8 : Krakatau\_89, Aubs\_96, Leozinho\_93, Spartacus\_103, Karhdo\_91
- Track 9 : Florinda\_108, Girafales\_105, Frankie\_95, Quico\_105
- Track 10 : Fancypants\_103
- Track 11 : Scottish\_96, DaddyRickover\_98
- Track 12 : SimranZ1\_93
- Track 13 : Yoshi\_109
- Track 14 : Soul22\_97, Che8\_103, Phasih\_93, Gandalph\_96, Rita\_97
- Track 15 : ThetaBob\_99
- Track 16 : Renaud18\_105, Che9d\_106
- Track 17 : LunaStella\_93
- Track 18 : MulchSalad\_98, IMpilo\_94, Mova\_98, Estave1\_104

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

The start number called the most often in the published annotations is 3, it was called in 112 of the 115 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aubs\_96, Avani\_102, Batiatus\_95, Beanstalk\_92, BigPhil\_92, Blarby\_104, BlueCrab\_97, BodEinwohner17\_106, Brookers\_94, Cerasum\_94, Che8\_103, Che9d\_106, Cheese puff\_101, Chuckly\_92, Clank\_94, Coco12\_96, Corium\_94, Cornie\_93, Cornucopia\_96, DaWorst\_96, Daenerys\_94, Deb65\_89, Demsculpinboyz\_110, DirtMcgirt\_97, Doomphist\_101, Doomslug\_114, Dorothy\_97, DotProduct\_90, Doug\_93, Drago\_95, Empress\_96, Enby\_100, Enzomatic\_107, Estave1\_104, Fancy pants\_103, Fastidio\_100, Florinda\_108, Frankie\_95, Fruitloop\_94, GUmbie\_95, Galactic\_98, Gandolph\_96, Geralt\_89, GigiOuiOui\_91, Girafales\_105, Girr\_95, Hades\_93, Hegedechwinu\_103, IMpilo\_94, IbOuu\_87, Inventum\_94, IrishSherpFalk\_96, Jabbawokkie\_103, Job42\_97, JoeyJr\_99, Juice456\_95, Karhdo\_91, Kimberlium\_98, KingJulian\_103, KingMidas\_96, Kingsley\_104, Krakatau\_89, KristaRAM\_103, Leozinho\_93, Leperchaun\_98, Lorde\_99, Lucia\_96, LunaBlu\_101, LunaStella\_93, MadMen\_101, Madiba\_95, Mantra\_94, Marker\_102, MisterCuddles\_96, Mova\_98, MulchExplorer\_96, MulchSalad\_98, Mwanjiwa\_98, NewHope4\_102, Nimbo\_88, Nitzel\_90, Oksu\_99, OldBen\_93, PHappiness\_96, PMC\_95, Pacc40\_92, PatoPoderoso\_96, Phanphagia\_100, Phasih\_93, Philus\_99, Poenanya\_100, Polka14\_100, Pollywog\_98, Polo2Bam\_106, QuickMath\_97, Quico\_105, Radiance\_94, Ramsey\_101, RedBird\_97, Renaud18\_105, RitaG\_95, Rita\_97, Rockne\_99, RockyHorror\_100, Royals2015\_100, Ruby\_93, SG4\_97, Sarma624\_98, Sassafras\_98, SeaLumen\_103, Shauna1\_98, ShroomBoi\_94, SiSi\_92, SilverChicken\_104, SimranZ1\_93, Soul22\_97, Spartacus\_103, Spikelee\_97, Stap\_91, ThetaBob\_99, Topiatin\_98, UncleRicky\_96, VRedHorse\_97, Velveteen\_93, Veteran\_87, WillSterrel\_94, Zapner\_103,

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

- DaddyRickover\_98, Scottish\_96, Yoshi\_109,

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

- 

### Summary by start number:

Start 2:

- Found in 15 of 130 ( 11.5% ) of genes in pham
- Manual Annotations of this start: 2 of 115
- Called 13.3% of time when present
- Phage (with cluster) where this start called: DaddyRickover\_98 (F1), Scottish\_96 (F1),

Start 3:

- Found in 130 of 130 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 112 of 115
- Called 97.7% of time when present
- Phage (with cluster) where this start called: Aubs\_96 (F1), Avani\_102 (F2), Batiatus\_95 (F1), Beanstalk\_92 (F1), BigPhil\_92 (F1), Blarby\_104 (F), BlueCrab\_97 (F1), BodEinwohner17\_106 (F1), Brookers\_94 (F1), Cerasum\_94 (F1), Che8\_103 (F1), Che9d\_106 (F2), Cheese puff\_101 (F1), Chuckly\_92 (F1), Clank\_94 (F), Coco12\_96 (F1), Corium\_94 (F1), Cornie\_93 (F5), Cornucopia\_96 (F1), DaWorst\_96

(F1), Daenerys\_94 (F1), Deb65\_89 (F1), Demsculpinboyz\_110 (F2), DirtMcgirt\_97 (F1), Doomphist\_101 (F1), Doomslug\_114 (F), Dorothy\_97 (F1), DotProduct\_90 (F1), Doug\_93 (F1), Drago\_95 (F1), Empress\_96 (F1), Enby\_100 (F1), Enzomatic\_107 (F1), Estave1\_104 (F1), Fancypants\_103 (F1), Fastidio\_100 (F1), Florinda\_108 (F1), Frankie\_95 (F1), Fruitloop\_94 (F1), GUmble\_95 (F1), Galactic\_98 (F1), Gandolph\_96 (F1), Geralt\_89 (F1), GigiOuiOui\_91 (F1), Girafales\_105 (F1), Girr\_95 (F1), Hades\_93 (F1), Hegedechwinu\_103 (F1), IMpilo\_94 (F1), IbOuu\_87 (F1), Inventum\_94 (F1), IrishSherpFalk\_96 (F1), Jabbawokkie\_103 (F2), Job42\_97 (F1), JoeyJr\_99 (F1), Juice456\_95 (F1), Karhdo\_91 (F1), Kimberlium\_98 (F1), KingJulian\_103 (F1), KingMidas\_96 (F1), Kingsley\_104 (F1), Krakatau\_89 (F1), KristaRAM\_103 (F1), Leozinho\_93 (F1), Leperchaun\_98 (F1), Lorde\_99 (F1), Lucia\_96 (F1), LunaBlu\_101 (F1), LunaStella\_93 (F4), MadMen\_101 (F1), Madiba\_95 (F1), Mantra\_94 (F1), Marker\_102 (F1), MisterCuddles\_96 (F1), Mova\_98 (F1), MulchExplorer\_96 (F1), MulchSalad\_98 (F7), Mwanjiwa\_98 (F1), NewHope4\_102 (F1), Nimbo\_88 (F1), Nitzel\_90 (F1), Oksu\_99 (F1), OldBen\_93 (F1), PHappiness\_96 (F1), PMC\_95 (F1), Pacc40\_92 (F1), PatoPoderoso\_96 (F1), Phanphagia\_100 (F1), Phasih\_93 (F1), Philus\_99 (F1), Poenanya\_100 (F1), Polka14\_100 (F1), Pollywog\_98 (F1), Polo2Bam\_106 (F1), QuickMath\_97 (F1), Quico\_105 (F1), Radiance\_94 (F1), Ramsey\_101 (F1), RedBird\_97 (F1), Renaud18\_105 (F4), RitaG\_95 (F1), Rita\_97 (F1), Rockne\_99 (F1), RockyHorror\_100 (F1), Royals2015\_100 (F1), Ruby\_93 (F1), SG4\_97 (F1), Sarma624\_98 (F1), Sassafras\_98 (F1), SeaLumen\_103 (F1), Shauna1\_98 (F1), ShroomBoi\_94 (F1), SiSi\_92 (F1), SilverChicken\_104 (F2), SimranZ1\_93 (F1), Soul22\_97 (F2), Spartacus\_103 (F1), Spikelee\_97 (F1), Stap\_91 (F1), ThetaBob\_99 (F4), Topiatin\_98 (F1), UncleRicky\_96 (F1), VRedHorse\_97 (F1), Velveteen\_93 (F1), Veteran\_87 (F1), WillSterrel\_94 (F1), Zapner\_103 (F2),

Start 6:

- Found in 74 of 130 ( 56.9% ) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 1.4% of time when present
- Phage (with cluster) where this start called: Yoshi\_109 (F2),

### Summary by clusters:

There are 6 clusters represented in this pham: F1, F2, F4, F5, F7, F,

Info for manual annotations of cluster F1:

- Start number 2 was manually annotated 2 times for cluster F1.
- Start number 3 was manually annotated 102 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 3 was manually annotated 6 times for cluster F2.
- Start number 6 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster F4:

- Start number 3 was manually annotated 3 times for cluster F4.

Info for manual annotations of cluster F5:

- Start number 3 was manually annotated 1 time for cluster F5.

**Gene Information:**

Gene: Aubs\_96 Start: 54716, Stop: 54874, Start Num: 3

Candidate Starts for Aubs\_96:

(Start: 3 @54716 has 112 MA's), (5, 54731), (Start: 6 @54737 has 1 MA's), (9, 54833),

Gene: Avani\_102 Start: 50962, Stop: 51120, Start Num: 3

Candidate Starts for Avani\_102:

(Start: 3 @50962 has 112 MA's), (9, 51079),

Gene: Batiatus\_95 Start: 53238, Stop: 53423, Start Num: 3

Candidate Starts for Batiatus\_95:

(Start: 3 @53238 has 112 MA's), (10, 53373), (11, 53391), (12, 53397),

Gene: Beanstalk\_92 Start: 52388, Stop: 52573, Start Num: 3

Candidate Starts for Beanstalk\_92:

(Start: 3 @52388 has 112 MA's), (10, 52523), (11, 52541), (12, 52547),

Gene: BigPhil\_92 Start: 50030, Stop: 50215, Start Num: 3

Candidate Starts for BigPhil\_92:

(Start: 3 @50030 has 112 MA's), (10, 50165), (11, 50183), (12, 50189),

Gene: Blarby\_104 Start: 51789, Stop: 51947, Start Num: 3

Candidate Starts for Blarby\_104:

(Start: 3 @51789 has 112 MA's), (9, 51906),

Gene: BlueCrab\_97 Start: 54102, Stop: 54260, Start Num: 3

Candidate Starts for BlueCrab\_97:

(Start: 3 @54102 has 112 MA's), (5, 54117), (Start: 6 @54123 has 1 MA's), (9, 54219),

Gene: BodEinwohner17\_106 Start: 55754, Stop: 55912, Start Num: 3

Candidate Starts for BodEinwohner17\_106:

(Start: 2 @55748 has 2 MA's), (Start: 3 @55754 has 112 MA's), (5, 55769), (Start: 6 @55775 has 1 MA's), (9, 55871),

Gene: Brookers\_94 Start: 52981, Stop: 53166, Start Num: 3

Candidate Starts for Brookers\_94:

(Start: 3 @52981 has 112 MA's), (10, 53116), (11, 53134), (12, 53140),

Gene: Cerasum\_94 Start: 50048, Stop: 50233, Start Num: 3

Candidate Starts for Cerasum\_94:

(Start: 3 @50048 has 112 MA's), (10, 50183), (11, 50201), (12, 50207),

Gene: Che8\_103 Start: 54898, Stop: 55056, Start Num: 3

Candidate Starts for Che8\_103:

(Start: 3 @54898 has 112 MA's), (8, 54976), (9, 55015),

Gene: Che9d\_106 Start: 52777, Stop: 52935, Start Num: 3

Candidate Starts for Che9d\_106:

(Start: 3 @52777 has 112 MA's),

Gene: Cheese puff\_101 Start: 53083, Stop: 53238, Start Num: 3

Candidate Starts for Cheese puff\_101:

(Start: 3 @53083 has 112 MA's), (9, 53197),

Gene: Chuckly\_92 Start: 49918, Stop: 50103, Start Num: 3

Candidate Starts for Chuckly\_92:

(Start: 3 @49918 has 112 MA's), (10, 50053), (11, 50071), (12, 50077),

Gene: Clank\_94 Start: 50915, Stop: 51073, Start Num: 3

Candidate Starts for Clank\_94:

(1, 50864), (Start: 3 @50915 has 112 MA's), (4, 50921), (Start: 6 @50936 has 1 MA's), (9, 51032),

Gene: Coco12\_96 Start: 54105, Stop: 54290, Start Num: 3

Candidate Starts for Coco12\_96:

(Start: 3 @54105 has 112 MA's), (10, 54240), (11, 54258), (12, 54264),

Gene: Corium\_94 Start: 54905, Stop: 55090, Start Num: 3

Candidate Starts for Corium\_94:

(Start: 3 @54905 has 112 MA's), (10, 55040), (11, 55058), (12, 55064),

Gene: Cornie\_93 Start: 52525, Stop: 52683, Start Num: 3

Candidate Starts for Cornie\_93:

(Start: 3 @52525 has 112 MA's), (9, 52642),

Gene: Cornucopia\_96 Start: 51265, Stop: 51423, Start Num: 3

Candidate Starts for Cornucopia\_96:

(Start: 3 @51265 has 112 MA's), (5, 51280), (Start: 6 @51286 has 1 MA's), (9, 51382),

Gene: DaWorst\_96 Start: 53081, Stop: 53239, Start Num: 3

Candidate Starts for DaWorst\_96:

(Start: 3 @53081 has 112 MA's), (5, 53096), (Start: 6 @53102 has 1 MA's), (9, 53198),

Gene: DaddyRickover\_98 Start: 53942, Stop: 54106, Start Num: 2

Candidate Starts for DaddyRickover\_98:

(Start: 2 @53942 has 2 MA's), (Start: 3 @53948 has 112 MA's), (5, 53963), (Start: 6 @53969 has 1 MA's), (9, 54065),

Gene: Daenerys\_94 Start: 54116, Stop: 54274, Start Num: 3

Candidate Starts for Daenerys\_94:

(Start: 3 @54116 has 112 MA's), (5, 54131), (Start: 6 @54137 has 1 MA's), (9, 54233),

Gene: Deb65\_89 Start: 51840, Stop: 51998, Start Num: 3

Candidate Starts for Deb65\_89:

(Start: 3 @51840 has 112 MA's), (5, 51855), (Start: 6 @51861 has 1 MA's), (9, 51957),

Gene: Demsculpinboyz\_110 Start: 53410, Stop: 53568, Start Num: 3

Candidate Starts for Demsculpinboyz\_110:

(Start: 3 @53410 has 112 MA's), (9, 53527),

Gene: DirtMcgirt\_97 Start: 50596, Stop: 50754, Start Num: 3

Candidate Starts for DirtMcgirt\_97:

(Start: 3 @50596 has 112 MA's), (5, 50611), (Start: 6 @50617 has 1 MA's), (9, 50713),

Gene: Doomphist\_101 Start: 54768, Stop: 54926, Start Num: 3

Candidate Starts for Doomphist\_101:

(Start: 2 @54762 has 2 MA's), (Start: 3 @54768 has 112 MA's), (5, 54783), (Start: 6 @54789 has 1 MA's), (9, 54885),

Gene: Doomslug\_114 Start: 56207, Stop: 56392, Start Num: 3  
Candidate Starts for Doomslug\_114:  
(Start: 3 @56207 has 112 MA's), (10, 56342), (11, 56360), (12, 56366),

Gene: Dorothy\_97 Start: 54937, Stop: 55095, Start Num: 3  
Candidate Starts for Dorothy\_97:  
(Start: 2 @54931 has 2 MA's), (Start: 3 @54937 has 112 MA's), (5, 54952), (Start: 6 @54958 has 1 MA's), (9, 55054),

Gene: DotProduct\_90 Start: 50954, Stop: 51112, Start Num: 3  
Candidate Starts for DotProduct\_90:  
(Start: 3 @50954 has 112 MA's), (5, 50969), (Start: 6 @50975 has 1 MA's), (9, 51071),

Gene: Doug\_93 Start: 54435, Stop: 54593, Start Num: 3  
Candidate Starts for Doug\_93:  
(Start: 3 @54435 has 112 MA's), (5, 54450), (Start: 6 @54456 has 1 MA's), (9, 54552),

Gene: Drago\_95 Start: 50599, Stop: 50757, Start Num: 3  
Candidate Starts for Drago\_95:  
(Start: 3 @50599 has 112 MA's), (5, 50614), (Start: 6 @50620 has 1 MA's), (9, 50716),

Gene: Empress\_96 Start: 53031, Stop: 53189, Start Num: 3  
Candidate Starts for Empress\_96:  
(Start: 2 @53025 has 2 MA's), (Start: 3 @53031 has 112 MA's), (5, 53046), (Start: 6 @53052 has 1 MA's), (9, 53148),

Gene: Enby\_100 Start: 50875, Stop: 51033, Start Num: 3  
Candidate Starts for Enby\_100:  
(Start: 3 @50875 has 112 MA's), (5, 50890), (Start: 6 @50896 has 1 MA's), (9, 50992),

Gene: Enzomatic\_107 Start: 52263, Stop: 52421, Start Num: 3  
Candidate Starts for Enzomatic\_107:  
(Start: 3 @52263 has 112 MA's), (9, 52380),

Gene: Estave1\_104 Start: 56759, Stop: 56917, Start Num: 3  
Candidate Starts for Estave1\_104:  
(Start: 3 @56759 has 112 MA's), (5, 56774), (Start: 6 @56780 has 1 MA's), (9, 56876),

Gene: Fancypants\_103 Start: 56265, Stop: 56423, Start Num: 3  
Candidate Starts for Fancypants\_103:  
(Start: 3 @56265 has 112 MA's), (9, 56382),

Gene: Fastidio\_100 Start: 51346, Stop: 51504, Start Num: 3  
Candidate Starts for Fastidio\_100:  
(Start: 3 @51346 has 112 MA's), (5, 51361), (Start: 6 @51367 has 1 MA's), (9, 51463),

Gene: Florinda\_108 Start: 55253, Stop: 55408, Start Num: 3  
Candidate Starts for Florinda\_108:  
(Start: 3 @55253 has 112 MA's), (9, 55367),

Gene: Frankie\_95 Start: 52839, Stop: 52994, Start Num: 3

Candidate Starts for Frankie\_95:

(Start: 3 @52839 has 112 MA's), (9, 52953),

Gene: Fruitloop\_94 Start: 54018, Stop: 54203, Start Num: 3

Candidate Starts for Fruitloop\_94:

(Start: 3 @54018 has 112 MA's), (10, 54153), (11, 54171), (12, 54177),

Gene: GUmbie\_95 Start: 52968, Stop: 53126, Start Num: 3

Candidate Starts for GUmbie\_95:

(Start: 3 @52968 has 112 MA's), (5, 52983), (Start: 6 @52989 has 1 MA's), (9, 53085),

Gene: Galactic\_98 Start: 52797, Stop: 52955, Start Num: 3

Candidate Starts for Galactic\_98:

(Start: 3 @52797 has 112 MA's), (9, 52914),

Gene: Gandalph\_96 Start: 51008, Stop: 51166, Start Num: 3

Candidate Starts for Gandalph\_96:

(Start: 3 @51008 has 112 MA's), (8, 51086), (9, 51125),

Gene: Geralt\_89 Start: 51838, Stop: 51996, Start Num: 3

Candidate Starts for Geralt\_89:

(Start: 3 @51838 has 112 MA's), (5, 51853), (Start: 6 @51859 has 1 MA's), (9, 51955),

Gene: GigiOuiOui\_91 Start: 51971, Stop: 52129, Start Num: 3

Candidate Starts for GigiOuiOui\_91:

(Start: 3 @51971 has 112 MA's), (5, 51986), (Start: 6 @51992 has 1 MA's), (9, 52088),

Gene: Girafales\_105 Start: 54858, Stop: 55013, Start Num: 3

Candidate Starts for Girafales\_105:

(Start: 3 @54858 has 112 MA's), (9, 54972),

Gene: Girr\_95 Start: 53837, Stop: 53995, Start Num: 3

Candidate Starts for Girr\_95:

(1, 53786), (Start: 3 @53837 has 112 MA's), (4, 53843), (Start: 6 @53858 has 1 MA's), (9, 53954),

Gene: Hades\_93 Start: 50557, Stop: 50715, Start Num: 3

Candidate Starts for Hades\_93:

(Start: 3 @50557 has 112 MA's), (5, 50572), (Start: 6 @50578 has 1 MA's), (9, 50674),

Gene: Hegedechwinu\_103 Start: 53239, Stop: 53424, Start Num: 3

Candidate Starts for Hegedechwinu\_103:

(Start: 3 @53239 has 112 MA's), (10, 53374), (11, 53392), (12, 53398),

Gene: IMpilo\_94 Start: 51570, Stop: 51728, Start Num: 3

Candidate Starts for IMpilo\_94:

(Start: 3 @51570 has 112 MA's), (5, 51585), (Start: 6 @51591 has 1 MA's), (9, 51687),

Gene: lbOuu\_87 Start: 50868, Stop: 51026, Start Num: 3

Candidate Starts for lbOuu\_87:

(Start: 3 @50868 has 112 MA's), (5, 50883), (Start: 6 @50889 has 1 MA's), (9, 50985),

Gene: Inventum\_94 Start: 53125, Stop: 53283, Start Num: 3

Candidate Starts for Inventum\_94:

(Start: 2 @53119 has 2 MA's), (Start: 3 @53125 has 112 MA's), (5, 53140), (Start: 6 @53146 has 1 MA's), (9, 53242),

Gene: IrishSherpFalk\_96 Start: 53395, Stop: 53553, Start Num: 3

Candidate Starts for IrishSherpFalk\_96:

(Start: 3 @53395 has 112 MA's), (5, 53410), (Start: 6 @53416 has 1 MA's), (9, 53512),

Gene: Jabbawokkie\_103 Start: 51709, Stop: 51867, Start Num: 3

Candidate Starts for Jabbawokkie\_103:

(Start: 3 @51709 has 112 MA's), (9, 51826),

Gene: Job42\_97 Start: 55548, Stop: 55706, Start Num: 3

Candidate Starts for Job42\_97:

(Start: 3 @55548 has 112 MA's), (5, 55563), (Start: 6 @55569 has 1 MA's), (9, 55665),

Gene: JoeyJr\_99 Start: 55033, Stop: 55191, Start Num: 3

Candidate Starts for JoeyJr\_99:

(Start: 2 @55027 has 2 MA's), (Start: 3 @55033 has 112 MA's), (5, 55048), (Start: 6 @55054 has 1 MA's), (9, 55150),

Gene: Juice456\_95 Start: 52744, Stop: 52902, Start Num: 3

Candidate Starts for Juice456\_95:

(Start: 3 @52744 has 112 MA's), (5, 52759), (Start: 6 @52765 has 1 MA's), (9, 52861),

Gene: Karhdo\_91 Start: 51137, Stop: 51295, Start Num: 3

Candidate Starts for Karhdo\_91:

(Start: 3 @51137 has 112 MA's), (5, 51152), (Start: 6 @51158 has 1 MA's), (9, 51254),

Gene: Kimberlium\_98 Start: 52844, Stop: 53002, Start Num: 3

Candidate Starts for Kimberlium\_98:

(Start: 3 @52844 has 112 MA's), (5, 52859), (Start: 6 @52865 has 1 MA's), (9, 52961),

Gene: KingJulian\_103 Start: 55769, Stop: 55954, Start Num: 3

Candidate Starts for KingJulian\_103:

(Start: 3 @55769 has 112 MA's), (10, 55904), (11, 55922), (12, 55928),

Gene: KingMidas\_96 Start: 53262, Stop: 53420, Start Num: 3

Candidate Starts for KingMidas\_96:

(Start: 2 @53256 has 2 MA's), (Start: 3 @53262 has 112 MA's), (5, 53277), (Start: 6 @53283 has 1 MA's), (9, 53379),

Gene: Kingsley\_104 Start: 56712, Stop: 56897, Start Num: 3

Candidate Starts for Kingsley\_104:

(Start: 3 @56712 has 112 MA's), (10, 56847), (11, 56865), (12, 56871),

Gene: Krakatau\_89 Start: 49095, Stop: 49253, Start Num: 3

Candidate Starts for Krakatau\_89:

(Start: 3 @49095 has 112 MA's), (5, 49110), (Start: 6 @49116 has 1 MA's), (9, 49212),

Gene: KristaRAM\_103 Start: 54435, Stop: 54620, Start Num: 3

Candidate Starts for KristaRAM\_103:

(Start: 3 @54435 has 112 MA's), (10, 54570), (11, 54588), (12, 54594),

Gene: Leozinho\_93 Start: 50782, Stop: 50940, Start Num: 3

Candidate Starts for Leozinho\_93:

(Start: 3 @50782 has 112 MA's), (5, 50797), (Start: 6 @50803 has 1 MA's), (9, 50899),

Gene: Leperchaun\_98 Start: 54267, Stop: 54425, Start Num: 3

Candidate Starts for Leperchaun\_98:

(Start: 2 @54261 has 2 MA's), (Start: 3 @54267 has 112 MA's), (5, 54282), (Start: 6 @54288 has 1 MA's), (9, 54384),

Gene: Lorde\_99 Start: 50040, Stop: 50198, Start Num: 3

Candidate Starts for Lorde\_99:

(Start: 3 @50040 has 112 MA's), (5, 50055), (Start: 6 @50061 has 1 MA's), (9, 50157),

Gene: Lucia\_96 Start: 50888, Stop: 51046, Start Num: 3

Candidate Starts for Lucia\_96:

(Start: 3 @50888 has 112 MA's), (5, 50903), (Start: 6 @50909 has 1 MA's), (9, 51005),

Gene: LunaBlu\_101 Start: 54283, Stop: 54441, Start Num: 3

Candidate Starts for LunaBlu\_101:

(Start: 3 @54283 has 112 MA's), (9, 54400),

Gene: LunaStella\_93 Start: 51434, Stop: 51592, Start Num: 3

Candidate Starts for LunaStella\_93:

(Start: 3 @51434 has 112 MA's), (5, 51449), (9, 51551),

Gene: MadMen\_101 Start: 53804, Stop: 53962, Start Num: 3

Candidate Starts for MadMen\_101:

(Start: 2 @53798 has 2 MA's), (Start: 3 @53804 has 112 MA's), (5, 53819), (Start: 6 @53825 has 1 MA's), (9, 53921),

Gene: Madiba\_95 Start: 52481, Stop: 52639, Start Num: 3

Candidate Starts for Madiba\_95:

(Start: 3 @52481 has 112 MA's), (5, 52496), (Start: 6 @52502 has 1 MA's), (9, 52598),

Gene: Mantra\_94 Start: 52867, Stop: 53025, Start Num: 3

Candidate Starts for Mantra\_94:

(Start: 3 @52867 has 112 MA's), (5, 52882), (Start: 6 @52888 has 1 MA's), (9, 52984),

Gene: Marker\_102 Start: 54587, Stop: 54745, Start Num: 3

Candidate Starts for Marker\_102:

(1, 54536), (Start: 3 @54587 has 112 MA's), (4, 54593), (Start: 6 @54608 has 1 MA's), (9, 54704),

Gene: MisterCuddles\_96 Start: 53837, Stop: 53995, Start Num: 3

Candidate Starts for MisterCuddles\_96:

(1, 53786), (Start: 3 @53837 has 112 MA's), (4, 53843), (Start: 6 @53858 has 1 MA's), (9, 53954),

Gene: Mova\_98 Start: 53625, Stop: 53783, Start Num: 3

Candidate Starts for Mova\_98:

(Start: 3 @53625 has 112 MA's), (5, 53640), (Start: 6 @53646 has 1 MA's), (9, 53742),

Gene: MulchExplorer\_96 Start: 52515, Stop: 52673, Start Num: 3

Candidate Starts for MulchExplorer\_96:

(Start: 3 @52515 has 112 MA's), (5, 52530), (Start: 6 @52536 has 1 MA's), (9, 52632),

Gene: MulchSalad\_98 Start: 54450, Stop: 54608, Start Num: 3

Candidate Starts for MulchSalad\_98:

(Start: 3 @54450 has 112 MA's), (5, 54465), (Start: 6 @54471 has 1 MA's), (9, 54567),

Gene: Mwanjiwa\_98 Start: 54370, Stop: 54528, Start Num: 3

Candidate Starts for Mwanjiwa\_98:

(Start: 3 @54370 has 112 MA's), (9, 54487),

Gene: NewHope4\_102 Start: 52409, Stop: 52567, Start Num: 3

Candidate Starts for NewHope4\_102:

(Start: 3 @52409 has 112 MA's), (9, 52526),

Gene: Nimbo\_88 Start: 51840, Stop: 51998, Start Num: 3

Candidate Starts for Nimbo\_88:

(Start: 3 @51840 has 112 MA's), (5, 51855), (Start: 6 @51861 has 1 MA's), (9, 51957),

Gene: Nitzel\_90 Start: 50387, Stop: 50545, Start Num: 3

Candidate Starts for Nitzel\_90:

(Start: 3 @50387 has 112 MA's), (9, 50504),

Gene: Oksu\_99 Start: 55504, Stop: 55689, Start Num: 3

Candidate Starts for Oksu\_99:

(Start: 3 @55504 has 112 MA's), (10, 55639), (11, 55657), (12, 55663),

Gene: OldBen\_93 Start: 53232, Stop: 53390, Start Num: 3

Candidate Starts for OldBen\_93:

(Start: 3 @53232 has 112 MA's), (5, 53247), (Start: 6 @53253 has 1 MA's), (9, 53349),

Gene: PHappiness\_96 Start: 54061, Stop: 54219, Start Num: 3

Candidate Starts for PHappiness\_96:

(Start: 3 @54061 has 112 MA's), (5, 54076), (Start: 6 @54082 has 1 MA's), (9, 54178),

Gene: PMC\_95 Start: 52210, Stop: 52368, Start Num: 3

Candidate Starts for PMC\_95:

(Start: 3 @52210 has 112 MA's), (5, 52225), (Start: 6 @52231 has 1 MA's), (9, 52327),

Gene: Pacc40\_92 Start: 54058, Stop: 54216, Start Num: 3

Candidate Starts for Pacc40\_92:

(Start: 3 @54058 has 112 MA's), (5, 54073), (Start: 6 @54079 has 1 MA's), (9, 54175),

Gene: PatoPoderoso\_96 Start: 55769, Stop: 55954, Start Num: 3

Candidate Starts for PatoPoderoso\_96:

(Start: 3 @55769 has 112 MA's), (10, 55904), (11, 55922), (12, 55928),

Gene: Phanphagia\_100 Start: 54951, Stop: 55136, Start Num: 3

Candidate Starts for Phanphagia\_100:

(Start: 3 @54951 has 112 MA's), (10, 55086), (11, 55104), (12, 55110),

Gene: Phasih\_93 Start: 52107, Stop: 52265, Start Num: 3

Candidate Starts for Phasih\_93:

(Start: 3 @52107 has 112 MA's), (8, 52185), (9, 52224),

Gene: Philus\_99 Start: 55258, Stop: 55443, Start Num: 3  
Candidate Starts for Philus\_99:  
(Start: 3 @55258 has 112 MA's), (10, 55393), (11, 55411), (12, 55417),

Gene: Poenanya\_100 Start: 54768, Stop: 54926, Start Num: 3  
Candidate Starts for Poenanya\_100:  
(Start: 2 @54762 has 2 MA's), (Start: 3 @54768 has 112 MA's), (5, 54783), (Start: 6 @54789 has 1 MA's), (9, 54885),

Gene: Polka14\_100 Start: 54829, Stop: 54987, Start Num: 3  
Candidate Starts for Polka14\_100:  
(Start: 2 @54823 has 2 MA's), (Start: 3 @54829 has 112 MA's), (5, 54844), (Start: 6 @54850 has 1 MA's), (9, 54946),

Gene: Pollywog\_98 Start: 54888, Stop: 55046, Start Num: 3  
Candidate Starts for Pollywog\_98:  
(Start: 3 @54888 has 112 MA's), (5, 54903), (Start: 6 @54909 has 1 MA's), (9, 55005),

Gene: Polo2Bam\_106 Start: 52263, Stop: 52421, Start Num: 3  
Candidate Starts for Polo2Bam\_106:  
(Start: 3 @52263 has 112 MA's), (9, 52380),

Gene: QuickMath\_97 Start: 53096, Stop: 53254, Start Num: 3  
Candidate Starts for QuickMath\_97:  
(Start: 3 @53096 has 112 MA's), (5, 53111), (Start: 6 @53117 has 1 MA's), (9, 53213),

Gene: Quico\_105 Start: 55073, Stop: 55228, Start Num: 3  
Candidate Starts for Quico\_105:  
(Start: 3 @55073 has 112 MA's), (9, 55187),

Gene: Radiance\_94 Start: 53173, Stop: 53331, Start Num: 3  
Candidate Starts for Radiance\_94:  
(Start: 3 @53173 has 112 MA's), (5, 53188), (Start: 6 @53194 has 1 MA's), (9, 53290),

Gene: Ramsey\_101 Start: 55069, Stop: 55227, Start Num: 3  
Candidate Starts for Ramsey\_101:  
(Start: 3 @55069 has 112 MA's), (5, 55084), (Start: 6 @55090 has 1 MA's), (9, 55186),

Gene: RedBird\_97 Start: 54807, Stop: 54965, Start Num: 3  
Candidate Starts for RedBird\_97:  
(Start: 2 @54801 has 2 MA's), (Start: 3 @54807 has 112 MA's), (5, 54822), (Start: 6 @54828 has 1 MA's), (9, 54924),

Gene: Renaud18\_105 Start: 54054, Stop: 54209, Start Num: 3  
Candidate Starts for Renaud18\_105:  
(Start: 3 @54054 has 112 MA's),

Gene: Rita\_97 Start: 54816, Stop: 54974, Start Num: 3  
Candidate Starts for Rita\_97:  
(Start: 3 @54816 has 112 MA's), (8, 54894), (9, 54933),

Gene: RitaG\_95 Start: 53863, Stop: 54021, Start Num: 3

Candidate Starts for RitaG\_95:

(Start: 3 @53863 has 112 MA's), (5, 53878), (Start: 6 @53884 has 1 MA's), (9, 53980),

Gene: Rockne\_99 Start: 52222, Stop: 52380, Start Num: 3

Candidate Starts for Rockne\_99:

(Start: 3 @52222 has 112 MA's), (5, 52237), (Start: 6 @52243 has 1 MA's), (9, 52339),

Gene: RockyHorror\_100 Start: 52973, Stop: 53131, Start Num: 3

Candidate Starts for RockyHorror\_100:

(Start: 3 @52973 has 112 MA's), (5, 52988), (Start: 6 @52994 has 1 MA's), (9, 53090),

Gene: Royals2015\_100 Start: 52320, Stop: 52478, Start Num: 3

Candidate Starts for Royals2015\_100:

(Start: 3 @52320 has 112 MA's), (9, 52437),

Gene: Ruby\_93 Start: 53839, Stop: 53997, Start Num: 3

Candidate Starts for Ruby\_93:

(1, 53788), (Start: 3 @53839 has 112 MA's), (4, 53845), (Start: 6 @53860 has 1 MA's), (9, 53956),

Gene: SG4\_97 Start: 54587, Stop: 54745, Start Num: 3

Candidate Starts for SG4\_97:

(Start: 3 @54587 has 112 MA's), (9, 54704),

Gene: Sarma624\_98 Start: 50724, Stop: 50909, Start Num: 3

Candidate Starts for Sarma624\_98:

(Start: 3 @50724 has 112 MA's), (10, 50859), (11, 50877), (12, 50883),

Gene: Sassafras\_98 Start: 53124, Stop: 53282, Start Num: 3

Candidate Starts for Sassafras\_98:

(Start: 2 @53118 has 2 MA's), (Start: 3 @53124 has 112 MA's), (5, 53139), (Start: 6 @53145 has 1 MA's), (9, 53241),

Gene: Scottish\_96 Start: 52695, Stop: 52859, Start Num: 2

Candidate Starts for Scottish\_96:

(Start: 2 @52695 has 2 MA's), (Start: 3 @52701 has 112 MA's), (5, 52716), (Start: 6 @52722 has 1 MA's), (9, 52818),

Gene: SeaLumen\_103 Start: 52263, Stop: 52421, Start Num: 3

Candidate Starts for SeaLumen\_103:

(Start: 3 @52263 has 112 MA's), (9, 52380),

Gene: Shauna1\_98 Start: 54567, Stop: 54752, Start Num: 3

Candidate Starts for Shauna1\_98:

(Start: 3 @54567 has 112 MA's), (10, 54702), (11, 54720), (12, 54726),

Gene: ShroomBoi\_94 Start: 53142, Stop: 53300, Start Num: 3

Candidate Starts for ShroomBoi\_94:

(Start: 3 @53142 has 112 MA's), (9, 53259),

Gene: SiSi\_92 Start: 52392, Stop: 52550, Start Num: 3

Candidate Starts for SiSi\_92:

(Start: 3 @52392 has 112 MA's), (5, 52407), (Start: 6 @52413 has 1 MA's), (9, 52509),

Gene: SilverChicken\_104 Start: 53941, Stop: 54099, Start Num: 3  
Candidate Starts for SilverChicken\_104:  
(Start: 3 @53941 has 112 MA's), (9, 54058),

Gene: SimranZ1\_93 Start: 51689, Stop: 51847, Start Num: 3  
Candidate Starts for SimranZ1\_93:  
(Start: 3 @51689 has 112 MA's), (7, 51734), (9, 51806),

Gene: Soul22\_97 Start: 51311, Stop: 51469, Start Num: 3  
Candidate Starts for Soul22\_97:  
(Start: 3 @51311 has 112 MA's), (8, 51389), (9, 51428),

Gene: Spartacus\_103 Start: 56424, Stop: 56582, Start Num: 3  
Candidate Starts for Spartacus\_103:  
(Start: 3 @56424 has 112 MA's), (5, 56439), (Start: 6 @56445 has 1 MA's), (9, 56541),

Gene: Spikelee\_97 Start: 54867, Stop: 55025, Start Num: 3  
Candidate Starts for Spikelee\_97:  
(Start: 3 @54867 has 112 MA's), (5, 54882), (Start: 6 @54888 has 1 MA's), (9, 54984),

Gene: Stap\_91 Start: 50354, Stop: 50512, Start Num: 3  
Candidate Starts for Stap\_91:  
(Start: 3 @50354 has 112 MA's), (5, 50369), (Start: 6 @50375 has 1 MA's), (9, 50471),

Gene: ThetaBob\_99 Start: 52568, Stop: 52726, Start Num: 3  
Candidate Starts for ThetaBob\_99:  
(Start: 3 @52568 has 112 MA's), (8, 52646), (9, 52685),

Gene: Topiatin\_98 Start: 54314, Stop: 54499, Start Num: 3  
Candidate Starts for Topiatin\_98:  
(Start: 3 @54314 has 112 MA's), (10, 54449), (11, 54467), (12, 54473),

Gene: UncleRicky\_96 Start: 52096, Stop: 52254, Start Num: 3  
Candidate Starts for UncleRicky\_96:  
(Start: 3 @52096 has 112 MA's), (5, 52111), (Start: 6 @52117 has 1 MA's), (9, 52213),

Gene: VRedHorse\_97 Start: 50912, Stop: 51070, Start Num: 3  
Candidate Starts for VRedHorse\_97:  
(Start: 3 @50912 has 112 MA's), (5, 50927), (Start: 6 @50933 has 1 MA's), (9, 51029),

Gene: Velveteen\_93 Start: 50724, Stop: 50909, Start Num: 3  
Candidate Starts for Velveteen\_93:  
(Start: 3 @50724 has 112 MA's), (10, 50859), (11, 50877), (12, 50883),

Gene: Veteran\_87 Start: 52260, Stop: 52418, Start Num: 3  
Candidate Starts for Veteran\_87:  
(Start: 3 @52260 has 112 MA's), (5, 52275), (Start: 6 @52281 has 1 MA's), (9, 52377),

Gene: WillSterrel\_94 Start: 53428, Stop: 53586, Start Num: 3  
Candidate Starts for WillSterrel\_94:  
(Start: 3 @53428 has 112 MA's), (5, 53443), (Start: 6 @53449 has 1 MA's), (9, 53545),

Gene: Yoshi\_109 Start: 54720, Stop: 54851, Start Num: 6

Candidate Starts for Yoshi\_109:

(Start: 3 @54699 has 112 MA's), (Start: 6 @54720 has 1 MA's), (9, 54813),

Gene: Zapner\_103 Start: 51803, Stop: 51961, Start Num: 3

Candidate Starts for Zapner\_103:

(Start: 3 @51803 has 112 MA's), (9, 51920),