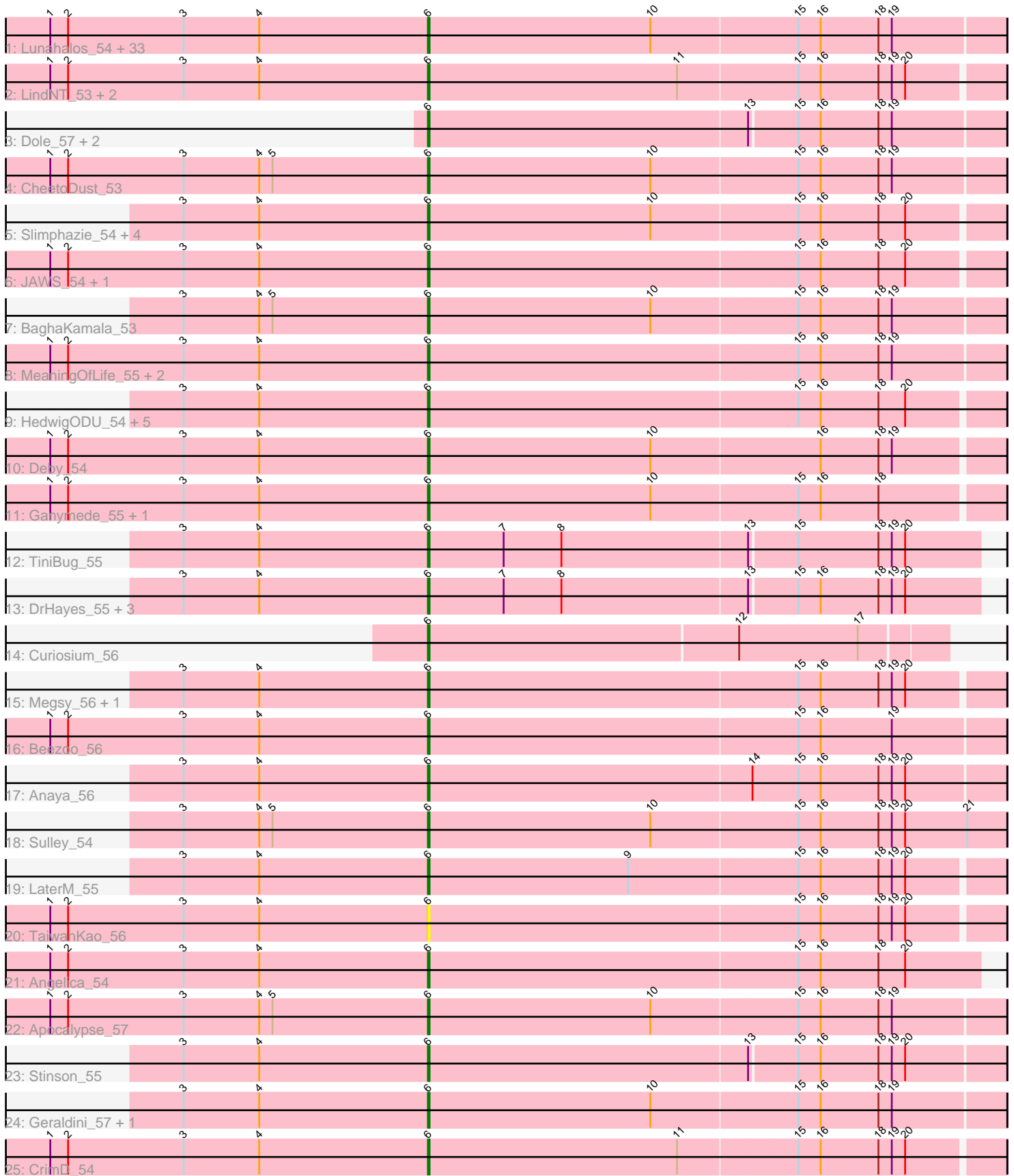


Pham 169917



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 169917 Report

This analysis was run 07/09/24 on database version 566.

Pham number 169917 has 80 members, 4 are drafts.

Phages represented in each track:

- Track 1 : Lunahalos\_54, Spock\_54, Capricorn\_54, Jarvi\_54, Twitch\_54, Asayake\_54, Padfoot\_54, AlishaPH\_54, Rosmarinus\_54, Belladonna\_54, Emerson\_55, CREW\_54, Jeckyll\_54, Atiba\_55, Piatt\_54, BEEST\_54, Durfee\_54, Topper\_54, Llorens\_54, Boiiii\_54, Adephagia\_54, Homura\_54, Dalmuri\_54, ShiaSurprise\_55, Tachez\_54, Blizzard\_54, Joy99\_54, Peel\_54, CaseJules\_56, BGIlluvia\_54, Tiri\_55, Inky\_54, Padpat\_56, Hyperbowlee\_54
- Track 2 : LindNT\_53, TreyKay\_55, Prithvi\_55
- Track 3 : Dole\_57, Illumine\_57, Devera\_59
- Track 4 : CheetoDust\_53
- Track 5 : Slimphazie\_54, BarrelRoll\_54, TruffulaTree\_54, Rapunzel97\_55, Jayhawk\_55
- Track 6 : JAWS\_54, Veliki\_55
- Track 7 : BaghaKamala\_53
- Track 8 : MeaningOfLife\_55, Adonis\_54, YoureAdopted\_53
- Track 9 : HedwigODU\_54, ActinUp\_54, Zavala\_56, Ramen\_55, Zabiza\_50, Mynx\_55
- Track 10 : Deby\_54
- Track 11 : Ganymede\_55, QuincyRose\_53
- Track 12 : TiniBug\_55
- Track 13 : DrHayes\_55, Urkel\_55, SamuelLPlaqson\_55, Bella96\_55
- Track 14 : Curiosium\_56
- Track 15 : Megsy\_56, Murucutumbu\_55
- Track 16 : Beezoo\_56
- Track 17 : Anaya\_56
- Track 18 : Sulley\_54
- Track 19 : LaterM\_55
- Track 20 : TaiwanKao\_56
- Track 21 : Angelica\_54
- Track 22 : Apocalypse\_57
- Track 23 : Stinson\_55
- Track 24 : Geraldini\_57, Pokerus\_53
- Track 25 : CrimD\_54

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

The start number called the most often in the published annotations is 6, it was called in 76 of the 76 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_54, Adephagia\_54, Adonis\_54, AlishaPH\_54, Anaya\_56, Angelica\_54, Apocalypse\_57, Asayake\_54, Atiba\_55, BEEST\_54, BGIlluviae\_54, BaghaKamala\_53, BarrelRoll\_54, Beezoo\_56, Bella96\_55, Belladonna\_54, Blizzard\_54, Boiiii\_54, CREW\_54, Capricorn\_54, CaseJules\_56, CheetoDust\_53, CrimD\_54, Curiosium\_56, Dalmuri\_54, Deby\_54, Devera\_59, Dole\_57, DrHayes\_55, Durfee\_54, Emerson\_55, Ganymede\_55, Geraldini\_57, HedwigODU\_54, Homura\_54, Hyperbowlee\_54, Illumine\_57, Inky\_54, JAWS\_54, Jarvi\_54, Jayhawk\_55, Jeckyll\_54, Joy99\_54, LaterM\_55, LindNT\_53, Llorens\_54, Lunahalos\_54, MeaningOfLife\_55, Megsy\_56, Murucutumbu\_55, Mynx\_55, Padfoot\_54, Padpat\_56, Peel\_54, Piatt\_54, Pokerus\_53, Prithvi\_55, QuincyRose\_53, Ramen\_55, Rapunzel97\_55, Rosmarinus\_54, SamuelLPlaqson\_55, ShiaSurprise\_55, Slimphazie\_54, Spock\_54, Stinson\_55, Sulley\_54, Tachez\_54, TaiwanKao\_56, TiniBug\_55, Tiri\_55, Topper\_54, TreyKay\_55, TruffulaTree\_54, Twitch\_54, Urkel\_55, Veliki\_55, YoureAdopted\_53, Zabiza\_50, Zavala\_56,

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

- 

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

- 

### Summary by start number:

Start 6:

- Found in 80 of 80 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 76 of 76
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ActinUp\_54 (K1), Adephagia\_54 (K1), Adonis\_54 (K1), AlishaPH\_54 (K1), Anaya\_56 (K1), Angelica\_54 (K1), Apocalypse\_57 (K1), Asayake\_54 (K1), Atiba\_55 (K1), BEEST\_54 (K1), BGIlluviae\_54 (K1), BaghaKamala\_53 (K1), BarrelRoll\_54 (K1), Beezoo\_56 (K1), Bella96\_55 (K1), Belladonna\_54 (K1), Blizzard\_54 (K1), Boiiii\_54 (K1), CREW\_54 (K1), Capricorn\_54 (K1), CaseJules\_56 (K1), CheetoDust\_53 (K1), CrimD\_54 (K1), Curiosium\_56 (K1), Dalmuri\_54 (K1), Deby\_54 (K1), Devera\_59 (K1), Dole\_57 (K1), DrHayes\_55 (K1), Durfee\_54 (K1), Emerson\_55 (K1), Ganymede\_55 (K1), Geraldini\_57 (K1), HedwigODU\_54 (K1), Homura\_54 (K1), Hyperbowlee\_54 (K1), Illumine\_57 (K1), Inky\_54 (K1), JAWS\_54 (K1), Jarvi\_54 (K1), Jayhawk\_55 (K1), Jeckyll\_54 (K1), Joy99\_54 (K1), LaterM\_55 (K1), LindNT\_53 (K1), Llorens\_54 (K1), Lunahalos\_54 (K1), MeaningOfLife\_55 (K1), Megsy\_56 (K1), Murucutumbu\_55 (K1), Mynx\_55 (K1), Padfoot\_54 (K1), Padpat\_56 (K1), Peel\_54 (K1), Piatt\_54 (K1), Pokerus\_53 (K1), Prithvi\_55 (K1), QuincyRose\_53 (K1), Ramen\_55 (K1), Rapunzel97\_55 (K1), Rosmarinus\_54 (K1), SamuelLPlaqson\_55 (K1), ShiaSurprise\_55 (K1), Slimphazie\_54 (K1), Spock\_54 (K1), Stinson\_55 (K1), Sulley\_54 (K1), Tachez\_54 (K1), TaiwanKao\_56 (K1), TiniBug\_55 (K1), Tiri\_55 (K1), Topper\_54 (K1), TreyKay\_55 (K1), TruffulaTree\_54 (K1), Twitch\_54 (K1), Urkel\_55 (K1), Veliki\_55 (K1), YoureAdopted\_53 (K1), Zabiza\_50 (K1), Zavala\_56 (K1),

### Summary by clusters:

There is one cluster represented in this pham: K1

Info for manual annotations of cluster K1:

•Start number 6 was manually annotated 76 times for cluster K1.

**Gene Information:**

Gene: ActinUp\_54 Start: 39118, Stop: 39498, Start Num: 6

Candidate Starts for ActinUp\_54:

(3, 38953), (4, 39004), (Start: 6 @39118 has 76 MA's), (15, 39364), (16, 39379), (18, 39418), (20, 39436),

Gene: Adephagia\_54 Start: 39115, Stop: 39498, Start Num: 6

Candidate Starts for Adephagia\_54:

(1, 38860), (2, 38872), (3, 38950), (4, 39001), (Start: 6 @39115 has 76 MA's), (10, 39265), (15, 39361), (16, 39376), (18, 39415), (19, 39424),

Gene: Adonis\_54 Start: 39359, Stop: 39742, Start Num: 6

Candidate Starts for Adonis\_54:

(1, 39104), (2, 39116), (3, 39194), (4, 39245), (Start: 6 @39359 has 76 MA's), (15, 39605), (16, 39620), (18, 39659), (19, 39668),

Gene: AlishaPH\_54 Start: 39376, Stop: 39759, Start Num: 6

Candidate Starts for AlishaPH\_54:

(1, 39121), (2, 39133), (3, 39211), (4, 39262), (Start: 6 @39376 has 76 MA's), (10, 39526), (15, 39622), (16, 39637), (18, 39676), (19, 39685),

Gene: Anaya\_56 Start: 39634, Stop: 40017, Start Num: 6

Candidate Starts for Anaya\_56:

(3, 39469), (4, 39520), (Start: 6 @39634 has 76 MA's), (14, 39850), (15, 39880), (16, 39895), (18, 39934), (19, 39943), (20, 39952),

Gene: Angelica\_54 Start: 39265, Stop: 39633, Start Num: 6

Candidate Starts for Angelica\_54:

(1, 39010), (2, 39022), (3, 39100), (4, 39151), (Start: 6 @39265 has 76 MA's), (15, 39511), (16, 39526), (18, 39565), (20, 39583),

Gene: Apocalypse\_57 Start: 40045, Stop: 40428, Start Num: 6

Candidate Starts for Apocalypse\_57:

(1, 39790), (2, 39802), (3, 39880), (4, 39931), (5, 39940), (Start: 6 @40045 has 76 MA's), (10, 40195), (15, 40291), (16, 40306), (18, 40345), (19, 40354),

Gene: Asayake\_54 Start: 39430, Stop: 39813, Start Num: 6

Candidate Starts for Asayake\_54:

(1, 39175), (2, 39187), (3, 39265), (4, 39316), (Start: 6 @39430 has 76 MA's), (10, 39580), (15, 39676), (16, 39691), (18, 39730), (19, 39739),

Gene: Atiba\_55 Start: 39078, Stop: 39461, Start Num: 6

Candidate Starts for Atiba\_55:

(1, 38823), (2, 38835), (3, 38913), (4, 38964), (Start: 6 @39078 has 76 MA's), (10, 39228), (15, 39324), (16, 39339), (18, 39378), (19, 39387),

Gene: BEEST\_54 Start: 39430, Stop: 39813, Start Num: 6

Candidate Starts for BEEST\_54:

(1, 39175), (2, 39187), (3, 39265), (4, 39316), (Start: 6 @39430 has 76 MA's), (10, 39580), (15, 39676), (16, 39691), (18, 39730), (19, 39739),

Gene: BGlluviae\_54 Start: 39233, Stop: 39616, Start Num: 6

Candidate Starts for BGlluviae\_54:

(1, 38978), (2, 38990), (3, 39068), (4, 39119), (Start: 6 @39233 has 76 MA's), (10, 39383), (15, 39479), (16, 39494), (18, 39533), (19, 39542),

Gene: BaghaKamala\_53 Start: 38477, Stop: 38860, Start Num: 6

Candidate Starts for BaghaKamala\_53:

(3, 38312), (4, 38363), (5, 38372), (Start: 6 @38477 has 76 MA's), (10, 38627), (15, 38723), (16, 38738), (18, 38777), (19, 38786),

Gene: BarrelRoll\_54 Start: 39101, Stop: 39481, Start Num: 6

Candidate Starts for BarrelRoll\_54:

(3, 38936), (4, 38987), (Start: 6 @39101 has 76 MA's), (10, 39251), (15, 39347), (16, 39362), (18, 39401), (20, 39419),

Gene: Beezoo\_56 Start: 40076, Stop: 40459, Start Num: 6

Candidate Starts for Beezoo\_56:

(1, 39821), (2, 39833), (3, 39911), (4, 39962), (Start: 6 @40076 has 76 MA's), (15, 40322), (16, 40337), (19, 40385),

Gene: Bella96\_55 Start: 39857, Stop: 40222, Start Num: 6

Candidate Starts for Bella96\_55:

(3, 39692), (4, 39743), (Start: 6 @39857 has 76 MA's), (7, 39908), (8, 39947), (13, 40070), (15, 40100), (16, 40115), (18, 40154), (19, 40163), (20, 40172),

Gene: Belladonna\_54 Start: 39233, Stop: 39616, Start Num: 6

Candidate Starts for Belladonna\_54:

(1, 38978), (2, 38990), (3, 39068), (4, 39119), (Start: 6 @39233 has 76 MA's), (10, 39383), (15, 39479), (16, 39494), (18, 39533), (19, 39542),

Gene: Blizzard\_54 Start: 39430, Stop: 39813, Start Num: 6

Candidate Starts for Blizzard\_54:

(1, 39175), (2, 39187), (3, 39265), (4, 39316), (Start: 6 @39430 has 76 MA's), (10, 39580), (15, 39676), (16, 39691), (18, 39730), (19, 39739),

Gene: Boiiii\_54 Start: 39432, Stop: 39815, Start Num: 6

Candidate Starts for Boiiii\_54:

(1, 39177), (2, 39189), (3, 39267), (4, 39318), (Start: 6 @39432 has 76 MA's), (10, 39582), (15, 39678), (16, 39693), (18, 39732), (19, 39741),

Gene: CREW\_54 Start: 39233, Stop: 39616, Start Num: 6

Candidate Starts for CREW\_54:

(1, 38978), (2, 38990), (3, 39068), (4, 39119), (Start: 6 @39233 has 76 MA's), (10, 39383), (15, 39479), (16, 39494), (18, 39533), (19, 39542),

Gene: Capricorn\_54 Start: 39233, Stop: 39616, Start Num: 6

Candidate Starts for Capricorn\_54:

(1, 38978), (2, 38990), (3, 39068), (4, 39119), (Start: 6 @39233 has 76 MA's), (10, 39383), (15, 39479), (16, 39494), (18, 39533), (19, 39542),

Gene: CaseJules\_56 Start: 39430, Stop: 39813, Start Num: 6

Candidate Starts for CaseJules\_56:

(1, 39175), (2, 39187), (3, 39265), (4, 39316), (Start: 6 @39430 has 76 MA's), (10, 39580), (15, 39676), (16, 39691), (18, 39730), (19, 39739),

Gene: CheetoDust\_53 Start: 38521, Stop: 38904, Start Num: 6

Candidate Starts for CheetoDust\_53:

(1, 38266), (2, 38278), (3, 38356), (4, 38407), (5, 38416), (Start: 6 @38521 has 76 MA's), (10, 38671), (15, 38767), (16, 38782), (18, 38821), (19, 38830),

Gene: CrimD\_54 Start: 39353, Stop: 39733, Start Num: 6

Candidate Starts for CrimD\_54:

(1, 39098), (2, 39110), (3, 39188), (4, 39239), (Start: 6 @39353 has 76 MA's), (11, 39521), (15, 39599), (16, 39614), (18, 39653), (19, 39662), (20, 39671),

Gene: Curiosium\_56 Start: 38035, Stop: 38376, Start Num: 6

Candidate Starts for Curiosium\_56:

(Start: 6 @38035 has 76 MA's), (12, 38242), (17, 38320),

Gene: Dalmuri\_54 Start: 39233, Stop: 39616, Start Num: 6

Candidate Starts for Dalmuri\_54:

(1, 38978), (2, 38990), (3, 39068), (4, 39119), (Start: 6 @39233 has 76 MA's), (10, 39383), (15, 39479), (16, 39494), (18, 39533), (19, 39542),

Gene: Deby\_54 Start: 39292, Stop: 39672, Start Num: 6

Candidate Starts for Deby\_54:

(1, 39037), (2, 39049), (3, 39127), (4, 39178), (Start: 6 @39292 has 76 MA's), (10, 39442), (16, 39553), (18, 39592), (19, 39601),

Gene: Devera\_59 Start: 39872, Stop: 40252, Start Num: 6

Candidate Starts for Devera\_59:

(Start: 6 @39872 has 76 MA's), (13, 40085), (15, 40115), (16, 40130), (18, 40169), (19, 40178),

Gene: Dole\_57 Start: 39875, Stop: 40255, Start Num: 6

Candidate Starts for Dole\_57:

(Start: 6 @39875 has 76 MA's), (13, 40088), (15, 40118), (16, 40133), (18, 40172), (19, 40181),

Gene: DrHayes\_55 Start: 40012, Stop: 40377, Start Num: 6

Candidate Starts for DrHayes\_55:

(3, 39847), (4, 39898), (Start: 6 @40012 has 76 MA's), (7, 40063), (8, 40102), (13, 40225), (15, 40255), (16, 40270), (18, 40309), (19, 40318), (20, 40327),

Gene: Durfee\_54 Start: 39430, Stop: 39813, Start Num: 6

Candidate Starts for Durfee\_54:

(1, 39175), (2, 39187), (3, 39265), (4, 39316), (Start: 6 @39430 has 76 MA's), (10, 39580), (15, 39676), (16, 39691), (18, 39730), (19, 39739),

Gene: Emerson\_55 Start: 39112, Stop: 39495, Start Num: 6

Candidate Starts for Emerson\_55:

(1, 38857), (2, 38869), (3, 38947), (4, 38998), (Start: 6 @39112 has 76 MA's), (10, 39262), (15, 39358), (16, 39373), (18, 39412), (19, 39421),

Gene: Ganymede\_55 Start: 39494, Stop: 39874, Start Num: 6

Candidate Starts for Ganymede\_55:

(1, 39239), (2, 39251), (3, 39329), (4, 39380), (Start: 6 @39494 has 76 MA's), (10, 39644), (15, 39740), (16, 39755), (18, 39794),

Gene: Geraldini\_57 Start: 40165, Stop: 40548, Start Num: 6

Candidate Starts for Geraldini\_57:

(3, 40000), (4, 40051), (Start: 6 @40165 has 76 MA's), (10, 40315), (15, 40411), (16, 40426), (18, 40465), (19, 40474),

Gene: HedwigODU\_54 Start: 39118, Stop: 39498, Start Num: 6

Candidate Starts for HedwigODU\_54:

(3, 38953), (4, 39004), (Start: 6 @39118 has 76 MA's), (15, 39364), (16, 39379), (18, 39418), (20, 39436),

Gene: Homura\_54 Start: 39233, Stop: 39616, Start Num: 6

Candidate Starts for Homura\_54:

(1, 38978), (2, 38990), (3, 39068), (4, 39119), (Start: 6 @39233 has 76 MA's), (10, 39383), (15, 39479), (16, 39494), (18, 39533), (19, 39542),

Gene: Hyperbowlee\_54 Start: 39430, Stop: 39813, Start Num: 6

Candidate Starts for Hyperbowlee\_54:

(1, 39175), (2, 39187), (3, 39265), (4, 39316), (Start: 6 @39430 has 76 MA's), (10, 39580), (15, 39676), (16, 39691), (18, 39730), (19, 39739),

Gene: Illumine\_57 Start: 39874, Stop: 40254, Start Num: 6

Candidate Starts for Illumine\_57:

(Start: 6 @39874 has 76 MA's), (13, 40087), (15, 40117), (16, 40132), (18, 40171), (19, 40180),

Gene: Inky\_54 Start: 39233, Stop: 39616, Start Num: 6

Candidate Starts for Inky\_54:

(1, 38978), (2, 38990), (3, 39068), (4, 39119), (Start: 6 @39233 has 76 MA's), (10, 39383), (15, 39479), (16, 39494), (18, 39533), (19, 39542),

Gene: JAWS\_54 Start: 39107, Stop: 39487, Start Num: 6

Candidate Starts for JAWS\_54:

(1, 38852), (2, 38864), (3, 38942), (4, 38993), (Start: 6 @39107 has 76 MA's), (15, 39353), (16, 39368), (18, 39407), (20, 39425),

Gene: Jarvi\_54 Start: 39233, Stop: 39616, Start Num: 6

Candidate Starts for Jarvi\_54:

(1, 38978), (2, 38990), (3, 39068), (4, 39119), (Start: 6 @39233 has 76 MA's), (10, 39383), (15, 39479), (16, 39494), (18, 39533), (19, 39542),

Gene: Jayhawk\_55 Start: 39116, Stop: 39496, Start Num: 6

Candidate Starts for Jayhawk\_55:

(3, 38951), (4, 39002), (Start: 6 @39116 has 76 MA's), (10, 39266), (15, 39362), (16, 39377), (18, 39416), (20, 39434),

Gene: Jeckyll\_54 Start: 39233, Stop: 39616, Start Num: 6

Candidate Starts for Jeckyll\_54:

(1, 38978), (2, 38990), (3, 39068), (4, 39119), (Start: 6 @39233 has 76 MA's), (10, 39383), (15, 39479), (16, 39494), (18, 39533), (19, 39542),

Gene: Joy99\_54 Start: 39162, Stop: 39545, Start Num: 6

Candidate Starts for Joy99\_54:

(1, 38907), (2, 38919), (3, 38997), (4, 39048), (Start: 6 @39162 has 76 MA's), (10, 39312), (15, 39408), (16, 39423), (18, 39462), (19, 39471),

Gene: LaterM\_55 Start: 39999, Stop: 40379, Start Num: 6

Candidate Starts for LaterM\_55:

(3, 39834), (4, 39885), (Start: 6 @39999 has 76 MA's), (9, 40134), (15, 40245), (16, 40260), (18, 40299), (19, 40308), (20, 40317),

Gene: LindNT\_53 Start: 39321, Stop: 39701, Start Num: 6

Candidate Starts for LindNT\_53:

(1, 39066), (2, 39078), (3, 39156), (4, 39207), (Start: 6 @39321 has 76 MA's), (11, 39489), (15, 39567), (16, 39582), (18, 39621), (19, 39630), (20, 39639),

Gene: Llorens\_54 Start: 39233, Stop: 39616, Start Num: 6

Candidate Starts for Llorens\_54:

(1, 38978), (2, 38990), (3, 39068), (4, 39119), (Start: 6 @39233 has 76 MA's), (10, 39383), (15, 39479), (16, 39494), (18, 39533), (19, 39542),

Gene: Lunahalos\_54 Start: 39233, Stop: 39616, Start Num: 6

Candidate Starts for Lunahalos\_54:

(1, 38978), (2, 38990), (3, 39068), (4, 39119), (Start: 6 @39233 has 76 MA's), (10, 39383), (15, 39479), (16, 39494), (18, 39533), (19, 39542),

Gene: MeaningOfLife\_55 Start: 39988, Stop: 40371, Start Num: 6

Candidate Starts for MeaningOfLife\_55:

(1, 39733), (2, 39745), (3, 39823), (4, 39874), (Start: 6 @39988 has 76 MA's), (15, 40234), (16, 40249), (18, 40288), (19, 40297),

Gene: Megsy\_56 Start: 39389, Stop: 39769, Start Num: 6

Candidate Starts for Megsy\_56:

(3, 39224), (4, 39275), (Start: 6 @39389 has 76 MA's), (15, 39635), (16, 39650), (18, 39689), (19, 39698), (20, 39707),

Gene: Murucutumbu\_55 Start: 40098, Stop: 40478, Start Num: 6

Candidate Starts for Murucutumbu\_55:

(3, 39933), (4, 39984), (Start: 6 @40098 has 76 MA's), (15, 40344), (16, 40359), (18, 40398), (19, 40407), (20, 40416),

Gene: Mynx\_55 Start: 39437, Stop: 39817, Start Num: 6

Candidate Starts for Mynx\_55:

(3, 39272), (4, 39323), (Start: 6 @39437 has 76 MA's), (15, 39683), (16, 39698), (18, 39737), (20, 39755),

Gene: Padfoot\_54 Start: 39430, Stop: 39813, Start Num: 6

Candidate Starts for Padfoot\_54:



(1, 39175), (2, 39187), (3, 39265), (4, 39316), (Start: 6 @39430 has 76 MA's), (10, 39580), (15, 39676), (16, 39691), (18, 39730), (19, 39739),

Gene: Padpat\_56 Start: 39112, Stop: 39495, Start Num: 6

Candidate Starts for Padpat\_56:

(1, 38857), (2, 38869), (3, 38947), (4, 38998), (Start: 6 @39112 has 76 MA's), (10, 39262), (15, 39358), (16, 39373), (18, 39412), (19, 39421),

Gene: Peel\_54 Start: 39235, Stop: 39618, Start Num: 6

Candidate Starts for Peel\_54:

(1, 38980), (2, 38992), (3, 39070), (4, 39121), (Start: 6 @39235 has 76 MA's), (10, 39385), (15, 39481), (16, 39496), (18, 39535), (19, 39544),

Gene: Piatt\_54 Start: 39430, Stop: 39813, Start Num: 6

Candidate Starts for Piatt\_54:

(1, 39175), (2, 39187), (3, 39265), (4, 39316), (Start: 6 @39430 has 76 MA's), (10, 39580), (15, 39676), (16, 39691), (18, 39730), (19, 39739),

Gene: Pokerus\_53 Start: 39165, Stop: 39548, Start Num: 6

Candidate Starts for Pokerus\_53:

(3, 39000), (4, 39051), (Start: 6 @39165 has 76 MA's), (10, 39315), (15, 39411), (16, 39426), (18, 39465), (19, 39474),

Gene: Prithvi\_55 Start: 39321, Stop: 39701, Start Num: 6

Candidate Starts for Prithvi\_55:

(1, 39066), (2, 39078), (3, 39156), (4, 39207), (Start: 6 @39321 has 76 MA's), (11, 39489), (15, 39567), (16, 39582), (18, 39621), (19, 39630), (20, 39639),

Gene: QuincyRose\_53 Start: 39494, Stop: 39874, Start Num: 6

Candidate Starts for QuincyRose\_53:

(1, 39239), (2, 39251), (3, 39329), (4, 39380), (Start: 6 @39494 has 76 MA's), (10, 39644), (15, 39740), (16, 39755), (18, 39794),

Gene: Ramen\_55 Start: 39120, Stop: 39500, Start Num: 6

Candidate Starts for Ramen\_55:

(3, 38955), (4, 39006), (Start: 6 @39120 has 76 MA's), (15, 39366), (16, 39381), (18, 39420), (20, 39438),

Gene: Rapunzel97\_55 Start: 39116, Stop: 39496, Start Num: 6

Candidate Starts for Rapunzel97\_55:

(3, 38951), (4, 39002), (Start: 6 @39116 has 76 MA's), (10, 39266), (15, 39362), (16, 39377), (18, 39416), (20, 39434),

Gene: Rosmarinus\_54 Start: 39221, Stop: 39604, Start Num: 6

Candidate Starts for Rosmarinus\_54:

(1, 38966), (2, 38978), (3, 39056), (4, 39107), (Start: 6 @39221 has 76 MA's), (10, 39371), (15, 39467), (16, 39482), (18, 39521), (19, 39530),

Gene: SamuelLPlaqson\_55 Start: 40012, Stop: 40377, Start Num: 6

Candidate Starts for SamuelLPlaqson\_55:

(3, 39847), (4, 39898), (Start: 6 @40012 has 76 MA's), (7, 40063), (8, 40102), (13, 40225), (15, 40255), (16, 40270), (18, 40309), (19, 40318), (20, 40327),

Gene: ShiaSurprise\_55 Start: 39430, Stop: 39813, Start Num: 6

Candidate Starts for ShiaSurprise\_55:

(1, 39175), (2, 39187), (3, 39265), (4, 39316), (Start: 6 @39430 has 76 MA's), (10, 39580), (15, 39676), (16, 39691), (18, 39730), (19, 39739),

Gene: Slimphazie\_54 Start: 39116, Stop: 39496, Start Num: 6

Candidate Starts for Slimphazie\_54:

(3, 38951), (4, 39002), (Start: 6 @39116 has 76 MA's), (10, 39266), (15, 39362), (16, 39377), (18, 39416), (20, 39434),

Gene: Spock\_54 Start: 39234, Stop: 39617, Start Num: 6

Candidate Starts for Spock\_54:

(1, 38979), (2, 38991), (3, 39069), (4, 39120), (Start: 6 @39234 has 76 MA's), (10, 39384), (15, 39480), (16, 39495), (18, 39534), (19, 39543),

Gene: Stinson\_55 Start: 39621, Stop: 40001, Start Num: 6

Candidate Starts for Stinson\_55:

(3, 39456), (4, 39507), (Start: 6 @39621 has 76 MA's), (13, 39834), (15, 39864), (16, 39879), (18, 39918), (19, 39927), (20, 39936),

Gene: Sulley\_54 Start: 39280, Stop: 39666, Start Num: 6

Candidate Starts for Sulley\_54:

(3, 39115), (4, 39166), (5, 39175), (Start: 6 @39280 has 76 MA's), (10, 39430), (15, 39526), (16, 39541), (18, 39580), (19, 39589), (20, 39598), (21, 39640),

Gene: Tachez\_54 Start: 39078, Stop: 39461, Start Num: 6

Candidate Starts for Tachez\_54:

(1, 38823), (2, 38835), (3, 38913), (4, 38964), (Start: 6 @39078 has 76 MA's), (10, 39228), (15, 39324), (16, 39339), (18, 39378), (19, 39387),

Gene: TaiwanKao\_56 Start: 39383, Stop: 39763, Start Num: 6

Candidate Starts for TaiwanKao\_56:

(1, 39128), (2, 39140), (3, 39218), (4, 39269), (Start: 6 @39383 has 76 MA's), (15, 39629), (16, 39644), (18, 39683), (19, 39692), (20, 39701),

Gene: TiniBug\_55 Start: 40008, Stop: 40373, Start Num: 6

Candidate Starts for TiniBug\_55:

(3, 39843), (4, 39894), (Start: 6 @40008 has 76 MA's), (7, 40059), (8, 40098), (13, 40221), (15, 40251), (18, 40305), (19, 40314), (20, 40323),

Gene: Tiri\_55 Start: 39408, Stop: 39788, Start Num: 6

Candidate Starts for Tiri\_55:

(1, 39153), (2, 39165), (3, 39243), (4, 39294), (Start: 6 @39408 has 76 MA's), (10, 39558), (15, 39654), (16, 39669), (18, 39708), (19, 39717),

Gene: Topper\_54 Start: 39233, Stop: 39616, Start Num: 6

Candidate Starts for Topper\_54:

(1, 38978), (2, 38990), (3, 39068), (4, 39119), (Start: 6 @39233 has 76 MA's), (10, 39383), (15, 39479), (16, 39494), (18, 39533), (19, 39542),

Gene: TreyKay\_55 Start: 39321, Stop: 39701, Start Num: 6

Candidate Starts for TreyKay\_55:

(1, 39066), (2, 39078), (3, 39156), (4, 39207), (Start: 6 @39321 has 76 MA's), (11, 39489), (15, 39567), (16, 39582), (18, 39621), (19, 39630), (20, 39639),

Gene: TruffulaTree\_54 Start: 39112, Stop: 39492, Start Num: 6

Candidate Starts for TruffulaTree\_54:

(3, 38947), (4, 38998), (Start: 6 @39112 has 76 MA's), (10, 39262), (15, 39358), (16, 39373), (18, 39412), (20, 39430),

Gene: Twitch\_54 Start: 39235, Stop: 39618, Start Num: 6

Candidate Starts for Twitch\_54:

(1, 38980), (2, 38992), (3, 39070), (4, 39121), (Start: 6 @39235 has 76 MA's), (10, 39385), (15, 39481), (16, 39496), (18, 39535), (19, 39544),

Gene: Urkel\_55 Start: 40012, Stop: 40377, Start Num: 6

Candidate Starts for Urkel\_55:

(3, 39847), (4, 39898), (Start: 6 @40012 has 76 MA's), (7, 40063), (8, 40102), (13, 40225), (15, 40255), (16, 40270), (18, 40309), (19, 40318), (20, 40327),

Gene: Veliki\_55 Start: 39098, Stop: 39478, Start Num: 6

Candidate Starts for Veliki\_55:

(1, 38843), (2, 38855), (3, 38933), (4, 38984), (Start: 6 @39098 has 76 MA's), (15, 39344), (16, 39359), (18, 39398), (20, 39416),

Gene: YoureAdopted\_53 Start: 39236, Stop: 39616, Start Num: 6

Candidate Starts for YoureAdopted\_53:

(1, 38981), (2, 38993), (3, 39071), (4, 39122), (Start: 6 @39236 has 76 MA's), (15, 39482), (16, 39497), (18, 39536), (19, 39545),

Gene: Zabiza\_50 Start: 35423, Stop: 35803, Start Num: 6

Candidate Starts for Zabiza\_50:

(3, 35258), (4, 35309), (Start: 6 @35423 has 76 MA's), (15, 35669), (16, 35684), (18, 35723), (20, 35741),

Gene: Zavala\_56 Start: 39397, Stop: 39777, Start Num: 6

Candidate Starts for Zavala\_56:

(3, 39232), (4, 39283), (Start: 6 @39397 has 76 MA's), (15, 39643), (16, 39658), (18, 39697), (20, 39715),