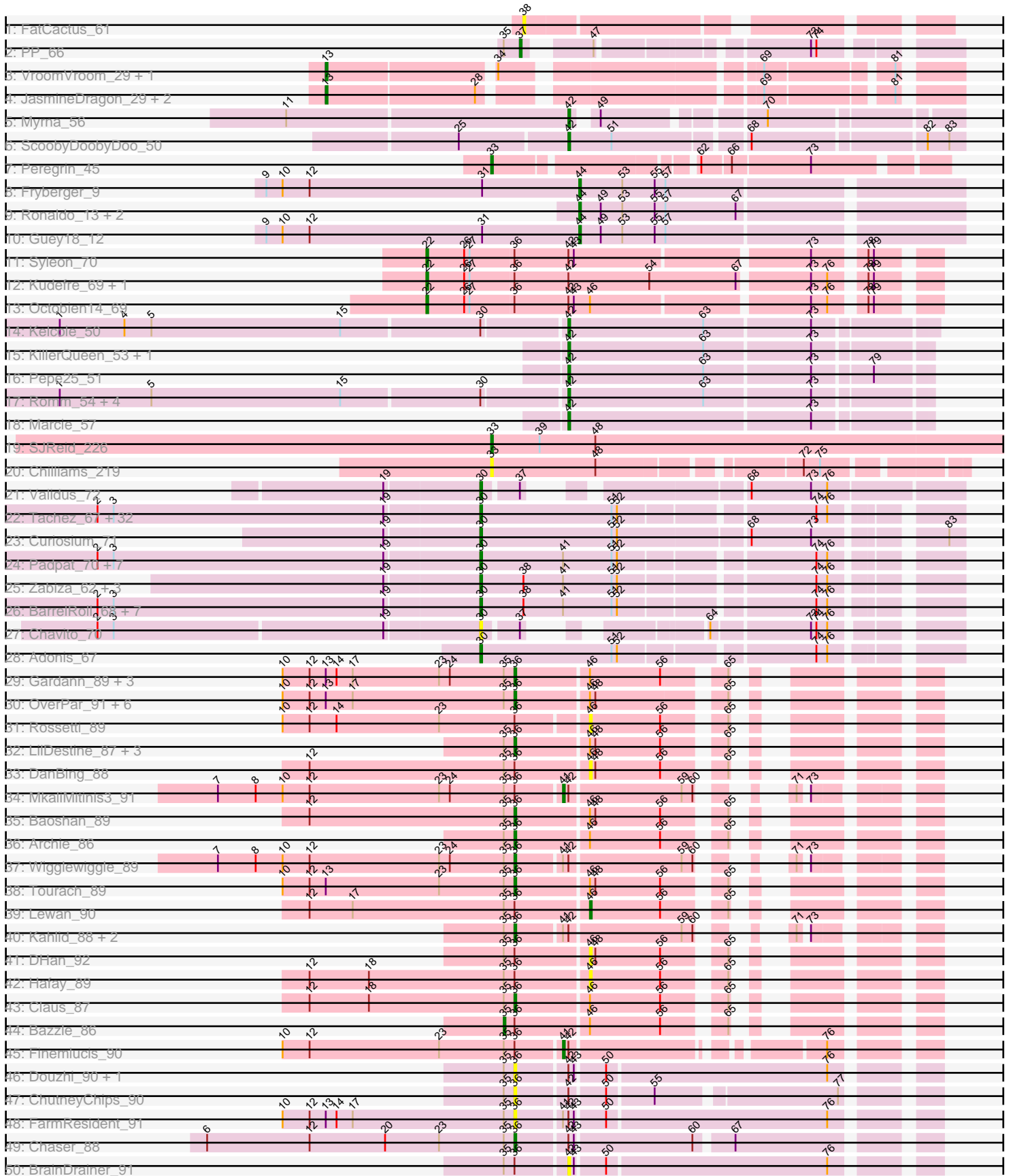
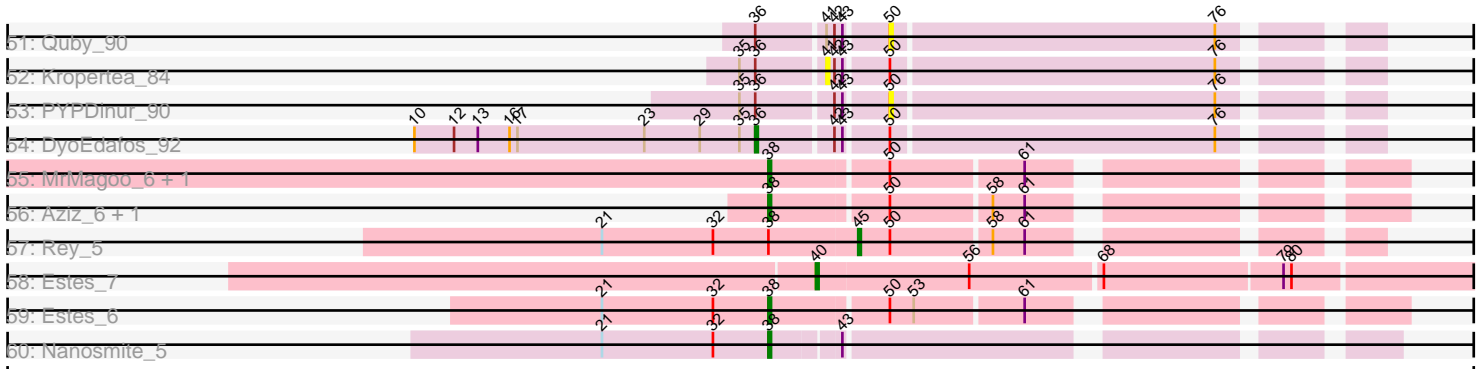


Pham 296340



Pham 296340



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 296340 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296340 has 137 members, 20 are drafts.

Phages represented in each track:

- Track 1 : FatCactus\_61
- Track 2 : PP\_66
- Track 3 : VroomVroom\_29, AceofSpades\_29
- Track 4 : JasmineDragon\_29, MiniMommy\_29, ShakeltOph\_29
- Track 5 : Myrna\_56
- Track 6 : ScoobyDoobyDoo\_50
- Track 7 : Peregrin\_45
- Track 8 : Fryberger\_9
- Track 9 : Ronaldo\_13, Ziko\_14, Volt\_13
- Track 10 : Guey18\_12
- Track 11 : Syleon\_70
- Track 12 : Kudefre\_69, Sephiroth\_68
- Track 13 : Octobien14\_69
- Track 14 : Kelcole\_50
- Track 15 : KillerQueen\_53, Tempo\_52
- Track 16 : Pepe25\_51
- Track 17 : Romm\_54, RobinRose\_54, CandC\_51, Fregley\_53, OneinaGillian\_52
- Track 18 : Marcie\_57
- Track 19 : SJReid\_226
- Track 20 : Chilliams\_219
- Track 21 : Validus\_72
- Track 22 : Tachez\_67, BGlluviae\_67, Jarvi\_67, Twitch\_67, Blizzard\_67, Atiba\_68, Llorens\_67, Adephagia\_67, Hyperbowlee\_67, Inky\_67, CaseJules\_69, Homura\_67, Spock\_67, Rosmarinus\_67, ShiaSurprise\_68, Joy99\_67, Boiiii\_67, Durfee\_67, Piatt\_67, Capricorn\_67, Peel\_67, Belladonna\_67, Padfoot\_67, Topper\_67, Dalmuri\_67, CallaLilly\_67, Asayake\_67, Jeckyll\_67, Lunahalos\_67, AlishaPH\_67, CREW\_67, BEEST\_67, Geraldini\_70
- Track 23 : Curiosium\_71
- Track 24 : Padpat\_70, Emerson\_69, Pokerus\_67, QuincyRose\_65, Clipper\_71, Beezoo\_69, Ganymede\_67, MacKat\_63
- Track 25 : Zabiza\_62, Ramen\_68, ActinUp\_67, HedwigODU\_67
- Track 26 : BarrelRoll\_68, Rapunzel97\_69, TruffulaTree\_68, Slimphazie\_68, MeaningOfLife\_68, Zavala\_70, Mynx\_69, Jayhawk\_69
- Track 27 : Chavito\_70
- Track 28 : Adonis\_67
- Track 29 : Gardann\_89, Underpass\_81, Nicholasp3\_89, Rumpelstiltskin\_85

- Track 30 : OverPar\_91, Loadrie\_88, Faith1\_89, Zakai\_90, Itos\_89, Crossroads\_89, Gabriela\_89
- Track 31 : Rossetti\_89
- Track 32 : LilDestine\_87, GuuelaD\_86, Douge\_90, ZhongYanYuan\_86
- Track 33 : DanBing\_88
- Track 34 : MkaliMitinis3\_91
- Track 35 : Baoshan\_89
- Track 36 : Archie\_86
- Track 37 : Wigglewiggle\_89
- Track 38 : Tourach\_89
- Track 39 : Lewan\_90
- Track 40 : Kahlid\_88, Wilder\_90, Lynnae\_90
- Track 41 : DHan\_92
- Track 42 : Hafay\_89
- Track 43 : Claus\_87
- Track 44 : Bazzle\_86
- Track 45 : Finemlucis\_90
- Track 46 : Douzhi\_90, Sheng711\_91
- Track 47 : ChutneyChips\_90
- Track 48 : FarmResident\_91
- Track 49 : Chaser\_88
- Track 50 : BrainDrainer\_91
- Track 51 : Quby\_90
- Track 52 : Kropertea\_84
- Track 53 : PYPDinur\_90
- Track 54 : DyoEdafos\_92
- Track 55 : MrMagoo\_6, GardenSalsa\_6
- Track 56 : Aziz\_6, GenevaB15\_6
- Track 57 : Rey\_5
- Track 58 : Estes\_7
- Track 59 : Estes\_6
- Track 60 : Nanosmite\_5

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

The start number called the most often in the published annotations is 30, it was called in 56 of the 117 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_67, Adephagia\_67, Adonis\_67, AlishaPH\_67, Asayake\_67, Atiba\_68, BEEST\_67, BGIlluviae\_67, BarrelRoll\_68, Beezoo\_69, Belladonna\_67, Blizzard\_67, Boiiii\_67, CREW\_67, CallaLilly\_67, Capricorn\_67, CaseJules\_69, Chavito\_70, Clipper\_71, Curiosium\_71, Dalmuri\_67, Durfee\_67, Emerson\_69, Ganymede\_67, Geraldini\_70, HedwigODU\_67, Homura\_67, Hyperbowlee\_67, Inky\_67, Jarvi\_67, Jayhawk\_69, Jeckyll\_67, Joy99\_67, Llorens\_67, Lunahalos\_67, MacKat\_63, MeaningOfLife\_68, Mynx\_69, Padfoot\_67, Padpat\_70, Peel\_67, Piatt\_67, Pokerus\_67, QuincyRose\_65, Ramen\_68, Rapunzel97\_69, Rosmarinus\_67, ShiaSurprise\_68, Slimphazie\_68, Spock\_67, Tachez\_67, Topper\_67, TruffulaTree\_68, Twitch\_67, Validus\_72, Zabiza\_62, Zavala\_70,

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

- CandC\_51, Fregley\_53, Kelcole\_50, OneinaGillian\_52, RobinRose\_54, Romm\_54,

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

- AceofSpades\_29, Archie\_86, Aziz\_6, Baoshan\_89, Bazzle\_86, BrainDrainer\_91, Chaser\_88, Chilliams\_219, ChutneyChips\_90, Claus\_87, Crossroads\_89, DHan\_92, DanBing\_88, Douge\_90, Douzhi\_90, DyoEdafos\_92, Estes\_6, Estes\_7, Faith1\_89, FarmResident\_91, FatCactus\_61, Finemlucis\_90, Fryberger\_9, Gabriela\_89, Gardann\_89, GardenSalsa\_6, GenevaB15\_6, Guey18\_12, GuuelaD\_86, Hafay\_89, Itos\_89, JasmineDragon\_29, Kahlid\_88, KillerQueen\_53, Kropertea\_84, Kudetre\_69, Lewan\_90, LilDestine\_87, Loadrie\_88, Lynnae\_90, Marcie\_57, MiniMommy\_29, MkaliMinitis3\_91, MrMagoo\_6, Myrna\_56, Nanosmite\_5, Nicholasp3\_89, Octobien14\_69, OverPar\_91, PP\_66, PYPDinur\_90, Pepe25\_51, Peregrin\_45, Quby\_90, Rey\_5, Ronaldo\_13, Rossetti\_89, Rumpelstiltskin\_85, SJReid\_226, ScoobyDoobyDoo\_50, Sephiroth\_68, ShakeltOph\_29, Sheng711\_91, Syleon\_70, Tempo\_52, Tourach\_89, Underpass\_81, Volt\_13, VroomVroom\_29, Wigglewiggle\_89, Wilder\_90, Zakai\_90, ZhongYanYuan\_86, Ziko\_14,

### Summary by start number:

Start 13:

- Found in 19 of 137 ( 13.9% ) of genes in pham
- Manual Annotations of this start: 4 of 117
- Called 26.3% of time when present
- Phage (with cluster) where this start called: AceofSpades\_29 (AZ4), JasmineDragon\_29 (AZ4), MiniMommy\_29 (AZ4), ShakeltOph\_29 (AZ4), VroomVroom\_29 (AZ4),

Start 22:

- Found in 4 of 137 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 4 of 117
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kudetre\_69 (DU1), Octobien14\_69 (DU1), Sephiroth\_68 (DU1), Syleon\_70 (DU1),

Start 30:

- Found in 63 of 137 ( 46.0% ) of genes in pham
- Manual Annotations of this start: 56 of 117
- Called 90.5% of time when present
- Phage (with cluster) where this start called: ActinUp\_67 (K1), Adephegia\_67 (K1), Adonis\_67 (K1), AlishaPH\_67 (K1), Asayake\_67 (K1), Atiba\_68 (K1), BEEST\_67 (K1), BGlluviae\_67 (K1), BarrelRoll\_68 (K1), Beezoo\_69 (K1), Belladonna\_67 (K1), Blizzard\_67 (K1), Boiiii\_67 (K1), CREW\_67 (K1), CallaLilly\_67 (K1), Capricorn\_67 (K1), CaseJules\_69 (K1), Chavito\_70 (K1), Clipper\_71 (K1), Curiosium\_71 (K1), Dalmuri\_67 (K1), Durfee\_67 (K1), Emerson\_69 (K1), Ganymede\_67 (K1), Geraldini\_70 (K1), HedwigODU\_67 (K1), Homura\_67 (K1), Hyperbowlee\_67 (K1), Inky\_67 (K1), Jarvi\_67 (K1), Jayhawk\_69 (K1), Jeckyll\_67 (K1), Joy99\_67 (K1), Llorens\_67 (K1), Lunahalos\_67 (K1), MacKat\_63 (K1), MeaningOfLife\_68 (K1), Mynx\_69 (K1), Padfoot\_67 (K1), Padpat\_70 (K1), Peel\_67 (K1), Piatt\_67 (K1), Pokerus\_67 (K1), QuincyRose\_65 (K1), Ramen\_68 (K1), Rapunzel97\_69 (K1), Rosmarinus\_67 (K1), ShiaSurprise\_68 (K1), Slimphazie\_68 (K1), Spock\_67 (K1), Tachez\_67 (K1), Topper\_67 (K1), TruffulaTree\_68 (K1), Twitch\_67 (K1), Validus\_72 (K1), Zabiza\_62 (K1), Zavala\_70 (K1),

Start 33:

- Found in 3 of 137 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 2 of 117
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chilliams\_219 (FC), Peregrin\_45 (CB), SJReid\_226 (FC),

Start 35:

- Found in 40 of 137 ( 29.2% ) of genes in pham
- Manual Annotations of this start: 1 of 117
- Called 2.5% of time when present
- Phage (with cluster) where this start called: Bazzle\_86 (L2),

Start 36:

- Found in 45 of 137 ( 32.8% ) of genes in pham
- Manual Annotations of this start: 22 of 117
- Called 64.4% of time when present
- Phage (with cluster) where this start called: Archie\_86 (L2), Baoshan\_89 (L2), Chaser\_88 (L4), ChutneyChips\_90 (L4), Claus\_87 (L2), Crossroads\_89 (L2), Douge\_90 (L4), Douzhi\_90 (L4), DyoEdafos\_92 (L4), Faith1\_89 (L2), FarmResident\_91 (L4), Gabriela\_89 (L2), Gardann\_89 (L2), GuuelaD\_86 (L2), Itos\_89 (L2), Kahlid\_88 (L2), LilDestine\_87 (L2), Loadrie\_88 (L2), Lynnae\_90 (L2), Nicholasp3\_89 (L2), OverPar\_91 (L2), Rumpelstiltskin\_85 (L2), Sheng711\_91 (L4), Tourach\_89 (L2), Underpass\_81 (L2), Wigglewiggle\_89 (L2), Wilder\_90 (L2), Zakai\_90 (L2), ZhongYanYuan\_86 (L2),

Start 37:

- Found in 3 of 137 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 1 of 117
- Called 33.3% of time when present
- Phage (with cluster) where this start called: PP\_66 (A7),

Start 38:

- Found in 20 of 137 ( 14.6% ) of genes in pham
- Manual Annotations of this start: 6 of 117
- Called 35.0% of time when present
- Phage (with cluster) where this start called: Aziz\_6 (M2), Estes\_6 (M2), FatCactus\_61 (A20), GardenSalsa\_6 (M2), GenevaB15\_6 (M2), MrMagoo\_6 (M2), Nanosmite\_5 (M3),

Start 40:

- Found in 1 of 137 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 117
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Estes\_7 (M2),

Start 41:

- Found in 29 of 137 ( 21.2% ) of genes in pham
- Manual Annotations of this start: 2 of 117
- Called 10.3% of time when present
- Phage (with cluster) where this start called: Finemlucis\_90 (L2), Kropertea\_84 (L4), MkaliMitinis3\_91 (L2),

Start 42:

- Found in 32 of 137 ( 23.4% ) of genes in pham
- Manual Annotations of this start: 11 of 117
- Called 40.6% of time when present
- Phage (with cluster) where this start called: BrainDrainer\_91 (L4), CandC\_51 (EG), Fregley\_53 (EG), Kelcole\_50 (EG), KillerQueen\_53 (EG), Marcie\_57 (EG), Myrna\_56 (C2), OneinaGillian\_52 (EG), Pepe25\_51 (EG), RobinRose\_54 (EG), Romm\_54 (EG), ScoobyDoobyDoo\_50 (C2), Tempo\_52 (EG),

Start 44:

- Found in 5 of 137 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 5 of 117
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fryberger\_9 (DP), Guey18\_12 (DP), Ronaldo\_13 (DP), Volt\_13 (DP), Ziko\_14 (DP),

Start 45:

- Found in 1 of 137 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 117
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rey\_5 (M2),

Start 46:

- Found in 26 of 137 ( 19.0% ) of genes in pham
- Manual Annotations of this start: 1 of 117
- Called 19.2% of time when present
- Phage (with cluster) where this start called: DHan\_92 (L2), DanBing\_88 (L2), Hafay\_89 (L2), Lewan\_90 (L2), Rossetti\_89 (L2),

Start 50:

- Found in 15 of 137 ( 10.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 13.3% of time when present
- Phage (with cluster) where this start called: PYPDinur\_90 (L4), Quby\_90 (L4),

**Summary by clusters:**

There are 14 clusters represented in this pham: A20, M3, CB, EG, DU1, L4, K1, FC, L2, A7, M2, C2, AZ4, DP,

Info for manual annotations of cluster A7:

- Start number 37 was manually annotated 1 time for cluster A7.

Info for manual annotations of cluster AZ4:

- Start number 13 was manually annotated 4 times for cluster AZ4.

Info for manual annotations of cluster C2:

- Start number 42 was manually annotated 2 times for cluster C2.

Info for manual annotations of cluster CB:

- Start number 33 was manually annotated 1 time for cluster CB.

Info for manual annotations of cluster DP:

- Start number 44 was manually annotated 5 times for cluster DP.

Info for manual annotations of cluster DU1:

- Start number 22 was manually annotated 4 times for cluster DU1.

Info for manual annotations of cluster EG:

- Start number 42 was manually annotated 9 times for cluster EG.

Info for manual annotations of cluster FC:

- Start number 33 was manually annotated 1 time for cluster FC.

Info for manual annotations of cluster K1:

- Start number 30 was manually annotated 56 times for cluster K1.

Info for manual annotations of cluster L2:

- Start number 35 was manually annotated 1 time for cluster L2.
- Start number 36 was manually annotated 19 times for cluster L2.
- Start number 41 was manually annotated 2 times for cluster L2.
- Start number 46 was manually annotated 1 time for cluster L2.

Info for manual annotations of cluster L4:

- Start number 36 was manually annotated 3 times for cluster L4.

Info for manual annotations of cluster M2:

- Start number 38 was manually annotated 5 times for cluster M2.
- Start number 40 was manually annotated 1 time for cluster M2.
- Start number 45 was manually annotated 1 time for cluster M2.

Info for manual annotations of cluster M3:

- Start number 38 was manually annotated 1 time for cluster M3.

### ***Gene Information:***

Gene: AceofSpades\_29 Start: 22403, Stop: 22708, Start Num: 13

Candidate Starts for AceofSpades\_29:

(Start: 13 @22403 has 4 MA's), (34, 22490), (69, 22616), (81, 22679),

Gene: ActinUp\_67 Start: 43706, Stop: 43945, Start Num: 30

Candidate Starts for ActinUp\_67:

(19, 43655), (Start: 30 @43706 has 56 MA's), (Start: 38 @43730 has 6 MA's), (Start: 41 @43751 has 2 MA's), (51, 43778), (52, 43781), (74, 43880), (76, 43886),

Gene: Adephagia\_67 Start: 43743, Stop: 43982, Start Num: 30

Candidate Starts for Adephagia\_67:

(2, 43533), (3, 43542), (19, 43692), (Start: 30 @43743 has 56 MA's), (51, 43815), (52, 43818), (74, 43917), (76, 43923),

Gene: Adonis\_67 Start: 43978, Stop: 44217, Start Num: 30

Candidate Starts for Adonis\_67:

(Start: 30 @43978 has 56 MA's), (51, 44050), (52, 44053), (74, 44152), (76, 44158),

Gene: AlishaPH\_67 Start: 44004, Stop: 44243, Start Num: 30

Candidate Starts for AlishaPH\_67:

(2, 43794), (3, 43803), (19, 43953), (Start: 30 @44004 has 56 MA's), (51, 44076), (52, 44079), (74, 44178), (76, 44184),

Gene: Archie\_86 Start: 57063, Stop: 57242, Start Num: 36

Candidate Starts for Archie\_86:

(Start: 35 @57057 has 1 MA's), (Start: 36 @57063 has 22 MA's), (Start: 46 @57102 has 1 MA's), (56, 57141), (65, 57168),

Gene: Asayake\_67 Start: 44058, Stop: 44297, Start Num: 30

Candidate Starts for Asayake\_67:

(2, 43848), (3, 43857), (19, 44007), (Start: 30 @44058 has 56 MA's), (51, 44130), (52, 44133), (74, 44232), (76, 44238),

Gene: Atiba\_68 Start: 43706, Stop: 43945, Start Num: 30

Candidate Starts for Atiba\_68:

(2, 43496), (3, 43505), (19, 43655), (Start: 30 @43706 has 56 MA's), (51, 43778), (52, 43781), (74, 43880), (76, 43886),

Gene: Aziz\_6 Start: 2394, Stop: 2188, Start Num: 38

Candidate Starts for Aziz\_6:

(Start: 38 @2394 has 6 MA's), (50, 2352), (58, 2316), (61, 2304),

Gene: BEEST\_67 Start: 44058, Stop: 44297, Start Num: 30

Candidate Starts for BEEST\_67:

(2, 43848), (3, 43857), (19, 44007), (Start: 30 @44058 has 56 MA's), (51, 44130), (52, 44133), (74, 44232), (76, 44238),

Gene: BGlluviae\_67 Start: 43861, Stop: 44100, Start Num: 30

Candidate Starts for BGlluviae\_67:

(2, 43651), (3, 43660), (19, 43810), (Start: 30 @43861 has 56 MA's), (51, 43933), (52, 43936), (74, 44035), (76, 44041),

Gene: Baoshan\_89 Start: 57717, Stop: 57896, Start Num: 36

Candidate Starts for Baoshan\_89:

(12, 57603), (Start: 35 @57711 has 1 MA's), (Start: 36 @57717 has 22 MA's), (Start: 46 @57756 has 1 MA's), (48, 57759), (56, 57795), (65, 57822),

Gene: BarrelRoll\_68 Start: 44144, Stop: 44383, Start Num: 30

Candidate Starts for BarrelRoll\_68:

(2, 43934), (3, 43943), (19, 44093), (Start: 30 @44144 has 56 MA's), (Start: 38 @44168 has 6 MA's), (Start: 41 @44189 has 2 MA's), (51, 44216), (52, 44219), (74, 44318), (76, 44324),

Gene: Bazzle\_86 Start: 57613, Stop: 57798, Start Num: 35

Candidate Starts for Bazzle\_86:

(Start: 35 @57613 has 1 MA's), (Start: 36 @57619 has 22 MA's), (Start: 46 @57658 has 1 MA's), (56, 57697), (65, 57724),

Gene: Beezoo\_69 Start: 44656, Stop: 44895, Start Num: 30

Candidate Starts for Beezoo\_69:

(2, 44446), (3, 44455), (19, 44605), (Start: 30 @44656 has 56 MA's), (Start: 41 @44701 has 2 MA's), (51, 44728), (52, 44731), (74, 44830), (76, 44836),

Gene: Belladonna\_67 Start: 43861, Stop: 44100, Start Num: 30

Candidate Starts for Belladonna\_67:

(2, 43651), (3, 43660), (19, 43810), (Start: 30 @43861 has 56 MA's), (51, 43933), (52, 43936), (74, 44035), (76, 44041),

Gene: Blizzard\_67 Start: 44058, Stop: 44297, Start Num: 30

Candidate Starts for Blizzard\_67:

(2, 43848), (3, 43857), (19, 44007), (Start: 30 @44058 has 56 MA's), (51, 44130), (52, 44133), (74, 44232), (76, 44238),

Gene: Boiiii\_67 Start: 44060, Stop: 44299, Start Num: 30

Candidate Starts for Boiiii\_67:

(2, 43850), (3, 43859), (19, 44009), (Start: 30 @44060 has 56 MA's), (51, 44132), (52, 44135), (74, 44234), (76, 44240),

Gene: BrainDrainer\_91 Start: 57339, Stop: 57524, Start Num: 42

Candidate Starts for BrainDrainer\_91:

(Start: 35 @57306 has 1 MA's), (Start: 36 @57312 has 22 MA's), (Start: 42 @57339 has 11 MA's), (43, 57342), (50, 57357), (76, 57477),

Gene: CREW\_67 Start: 43861, Stop: 44100, Start Num: 30

Candidate Starts for CREW\_67:

(2, 43651), (3, 43660), (19, 43810), (Start: 30 @43861 has 56 MA's), (51, 43933), (52, 43936), (74, 44035), (76, 44041),

Gene: CallaLilly\_67 Start: 43784, Stop: 44023, Start Num: 30

Candidate Starts for CallaLilly\_67:

(2, 43574), (3, 43583), (19, 43733), (Start: 30 @43784 has 56 MA's), (51, 43856), (52, 43859), (74, 43958), (76, 43964),

Gene: CandC\_51 Start: 36309, Stop: 36118, Start Num: 42

Candidate Starts for CandC\_51:

(1, 36582), (5, 36531), (15, 36426), (Start: 30 @36351 has 56 MA's), (Start: 42 @36309 has 11 MA's), (63, 36234), (73, 36177),

Gene: Capricorn\_67 Start: 43861, Stop: 44100, Start Num: 30

Candidate Starts for Capricorn\_67:

(2, 43651), (3, 43660), (19, 43810), (Start: 30 @43861 has 56 MA's), (51, 43933), (52, 43936), (74, 44035), (76, 44041),

Gene: CaseJules\_69 Start: 44058, Stop: 44297, Start Num: 30

Candidate Starts for CaseJules\_69:

(2, 43848), (3, 43857), (19, 44007), (Start: 30 @44058 has 56 MA's), (51, 44130), (52, 44133), (74, 44232), (76, 44238),

Gene: Chaser\_88 Start: 56443, Stop: 56652, Start Num: 36

Candidate Starts for Chaser\_88:

(6, 56272), (12, 56329), (20, 56371), (23, 56401), (Start: 35 @56437 has 1 MA's), (Start: 36 @56443 has 22 MA's), (Start: 42 @56470 has 11 MA's), (43, 56473), (60, 56536), (67, 56554),

Gene: Chavito\_70 Start: 44900, Stop: 45100, Start Num: 30

Candidate Starts for Chavito\_70:

(2, 44693), (3, 44702), (19, 44849), (Start: 30 @44900 has 56 MA's), (Start: 37 @44918 has 1 MA's), (64, 44981), (73, 45032), (74, 45035), (76, 45041),

Gene: Chilliams\_219 Start: 144486, Stop: 144719, Start Num: 33

Candidate Starts for Chilliams\_219:

(Start: 33 @144486 has 2 MA's), (48, 144543), (72, 144642), (75, 144651),

Gene: ChutneyChips\_90 Start: 57198, Stop: 57401, Start Num: 36

Candidate Starts for ChutneyChips\_90:

(Start: 35 @57192 has 1 MA's), (Start: 36 @57198 has 22 MA's), (Start: 42 @57225 has 11 MA's), (50, 57243), (55, 57267), (77, 57360),

Gene: Claus\_87 Start: 57401, Stop: 57580, Start Num: 36

Candidate Starts for Claus\_87:

(12, 57287), (18, 57320), (Start: 35 @57395 has 1 MA's), (Start: 36 @57401 has 22 MA's), (Start: 46 @57440 has 1 MA's), (56, 57479), (65, 57506),

Gene: Clipper\_71 Start: 44760, Stop: 44999, Start Num: 30

Candidate Starts for Clipper\_71:

(2, 44550), (3, 44559), (19, 44709), (Start: 30 @44760 has 56 MA's), (Start: 41 @44805 has 2 MA's), (51, 44832), (52, 44835), (74, 44934), (76, 44940),

Gene: Crossroads\_89 Start: 57560, Stop: 57739, Start Num: 36

Candidate Starts for Crossroads\_89:

(10, 57431), (12, 57446), (Start: 13 @57455 has 4 MA's), (17, 57470), (Start: 35 @57554 has 1 MA's), (Start: 36 @57560 has 22 MA's), (Start: 46 @57599 has 1 MA's), (48, 57602), (65, 57665),

Gene: Curiosium\_71 Start: 43377, Stop: 43622, Start Num: 30

Candidate Starts for Curiosium\_71:

(19, 43326), (Start: 30 @43377 has 56 MA's), (51, 43449), (52, 43452), (68, 43521), (73, 43554), (83, 43614),

Gene: DHan\_92 Start: 57819, Stop: 57959, Start Num: 46

Candidate Starts for DHan\_92:

(Start: 35 @57774 has 1 MA's), (Start: 36 @57780 has 22 MA's), (Start: 46 @57819 has 1 MA's), (48, 57822), (56, 57858), (65, 57885),

Gene: Dalmuri\_67 Start: 43861, Stop: 44100, Start Num: 30

Candidate Starts for Dalmuri\_67:

(2, 43651), (3, 43660), (19, 43810), (Start: 30 @43861 has 56 MA's), (51, 43933), (52, 43936), (74, 44035), (76, 44041),

Gene: DanBing\_88 Start: 57317, Stop: 57457, Start Num: 46

Candidate Starts for DanBing\_88:

(12, 57164), (Start: 35 @57272 has 1 MA's), (Start: 36 @57278 has 22 MA's), (Start: 46 @57317 has 1 MA's), (48, 57320), (56, 57356), (65, 57383),

Gene: Douge\_90 Start: 56768, Stop: 56947, Start Num: 36

Candidate Starts for Douge\_90:

(Start: 35 @56762 has 1 MA's), (Start: 36 @56768 has 22 MA's), (Start: 46 @56807 has 1 MA's), (48, 56810), (56, 56846), (65, 56873),

Gene: Douzhi\_90 Start: 57001, Stop: 57213, Start Num: 36

Candidate Starts for Douzhi\_90:

(Start: 35 @56995 has 1 MA's), (Start: 36 @57001 has 22 MA's), (Start: 42 @57028 has 11 MA's), (43, 57031), (50, 57046), (76, 57166),

Gene: Durfee\_67 Start: 44058, Stop: 44297, Start Num: 30

Candidate Starts for Durfee\_67:

(2, 43848), (3, 43857), (19, 44007), (Start: 30 @44058 has 56 MA's), (51, 44130), (52, 44133), (74, 44232), (76, 44238),

Gene: DyoEdafos\_92 Start: 57153, Stop: 57365, Start Num: 36

Candidate Starts for DyoEdafos\_92:

(10, 57024), (12, 57039), (Start: 13 @57048 has 4 MA's), (16, 57060), (17, 57063), (23, 57111), (29, 57132), (Start: 35 @57147 has 1 MA's), (Start: 36 @57153 has 22 MA's), (Start: 42 @57180 has 11 MA's), (43, 57183), (50, 57198), (76, 57318),

Gene: Emerson\_69 Start: 44178, Stop: 44417, Start Num: 30

Candidate Starts for Emerson\_69:

(2, 43968), (3, 43977), (19, 44127), (Start: 30 @44178 has 56 MA's), (Start: 41 @44223 has 2 MA's), (51, 44250), (52, 44253), (74, 44352), (76, 44358),

Gene: Estes\_7 Start: 2641, Stop: 2399, Start Num: 40

Candidate Starts for Estes\_7:

(Start: 40 @2641 has 1 MA's), (56, 2584), (68, 2536), (79, 2470), (80, 2467),

Gene: Estes\_6 Start: 2402, Stop: 2196, Start Num: 38

Candidate Starts for Estes\_6:

(21, 2465), (32, 2423), (Start: 38 @2402 has 6 MA's), (50, 2360), (53, 2351), (61, 2312),

Gene: Faith1\_89 Start: 57485, Stop: 57664, Start Num: 36

Candidate Starts for Faith1\_89:

(10, 57356), (12, 57371), (Start: 13 @57380 has 4 MA's), (17, 57395), (Start: 35 @57479 has 1 MA's), (Start: 36 @57485 has 22 MA's), (Start: 46 @57524 has 1 MA's), (48, 57527), (65, 57590),

Gene: FarmResident\_91 Start: 56713, Stop: 56925, Start Num: 36

Candidate Starts for FarmResident\_91:

(10, 56584), (12, 56599), (Start: 13 @56608 has 4 MA's), (14, 56614), (17, 56623), (Start: 35 @56707 has 1 MA's), (Start: 36 @56713 has 22 MA's), (Start: 41 @56737 has 2 MA's), (Start: 42 @56740 has 11 MA's), (43, 56743), (50, 56758), (76, 56878),

Gene: FatCactus\_61 Start: 39939, Stop: 39736, Start Num: 38

Candidate Starts for FatCactus\_61:

(Start: 38 @39939 has 6 MA's),

Gene: Finemlucis\_90 Start: 58613, Stop: 58783, Start Num: 41

Candidate Starts for Finemlucis\_90:

(10, 58460), (12, 58475), (23, 58547), (Start: 35 @58583 has 1 MA's), (Start: 36 @58589 has 22 MA's), (Start: 41 @58613 has 2 MA's), (Start: 42 @58616 has 11 MA's), (76, 58736),

Gene: Fregley\_53 Start: 36870, Stop: 36679, Start Num: 42

Candidate Starts for Fregley\_53:

(1, 37143), (5, 37092), (15, 36987), (Start: 30 @36912 has 56 MA's), (Start: 42 @36870 has 11 MA's), (63, 36795), (73, 36738),

Gene: Fryberger\_9 Start: 2013, Stop: 1810, Start Num: 44

Candidate Starts for Fryberger\_9:

(9, 2187), (10, 2178), (12, 2163), (31, 2067), (Start: 44 @2013 has 5 MA's), (53, 1989), (55, 1971), (57, 1965),

Gene: Gabriela\_89 Start: 56831, Stop: 57010, Start Num: 36

Candidate Starts for Gabriela\_89:

(10, 56702), (12, 56717), (Start: 13 @56726 has 4 MA's), (17, 56741), (Start: 35 @56825 has 1 MA's), (Start: 36 @56831 has 22 MA's), (Start: 46 @56870 has 1 MA's), (48, 56873), (65, 56936),

Gene: Ganymede\_67 Start: 44084, Stop: 44323, Start Num: 30

Candidate Starts for Ganymede\_67:

(2, 43874), (3, 43883), (19, 44033), (Start: 30 @44084 has 56 MA's), (Start: 41 @44129 has 2 MA's), (51, 44156), (52, 44159), (74, 44258), (76, 44264),

Gene: Gardann\_89 Start: 57320, Stop: 57499, Start Num: 36

Candidate Starts for Gardann\_89:

(10, 57191), (12, 57206), (Start: 13 @57215 has 4 MA's), (14, 57221), (17, 57230), (23, 57278), (24, 57284), (Start: 35 @57314 has 1 MA's), (Start: 36 @57320 has 22 MA's), (Start: 46 @57359 has 1 MA's), (56, 57398), (65, 57425),

Gene: GardenSalsa\_6 Start: 2415, Stop: 2209, Start Num: 38

Candidate Starts for GardenSalsa\_6:

(Start: 38 @2415 has 6 MA's), (50, 2373), (61, 2325),

Gene: GenevaB15\_6 Start: 2394, Stop: 2188, Start Num: 38

Candidate Starts for GenevaB15\_6:

(Start: 38 @2394 has 6 MA's), (50, 2352), (58, 2316), (61, 2304),

Gene: Geraldini\_70 Start: 44740, Stop: 44979, Start Num: 30

Candidate Starts for Geraldini\_70:

(2, 44530), (3, 44539), (19, 44689), (Start: 30 @44740 has 56 MA's), (51, 44812), (52, 44815), (74, 44914), (76, 44920),

Gene: Guey18\_12 Start: 2707, Stop: 2504, Start Num: 44

Candidate Starts for Guey18\_12:

(9, 2881), (10, 2872), (12, 2857), (31, 2761), (Start: 44 @2707 has 5 MA's), (49, 2695), (53, 2683), (55, 2665), (57, 2659),

Gene: GuuelaD\_86 Start: 57444, Stop: 57623, Start Num: 36

Candidate Starts for GuuelaD\_86:

(Start: 35 @57438 has 1 MA's), (Start: 36 @57444 has 22 MA's), (Start: 46 @57483 has 1 MA's), (48, 57486), (56, 57522), (65, 57549),

Gene: Hafay\_89 Start: 57435, Stop: 57575, Start Num: 46

Candidate Starts for Hafay\_89:

(12, 57282), (18, 57315), (Start: 35 @57390 has 1 MA's), (Start: 36 @57396 has 22 MA's), (Start: 46 @57435 has 1 MA's), (56, 57474), (65, 57501),

Gene: HedwigODU\_67 Start: 43706, Stop: 43945, Start Num: 30

Candidate Starts for HedwigODU\_67:

(19, 43655), (Start: 30 @43706 has 56 MA's), (Start: 38 @43730 has 6 MA's), (Start: 41 @43751 has 2 MA's), (51, 43778), (52, 43781), (74, 43880), (76, 43886),

Gene: Homura\_67 Start: 43861, Stop: 44100, Start Num: 30

Candidate Starts for Homura\_67:

(2, 43651), (3, 43660), (19, 43810), (Start: 30 @43861 has 56 MA's), (51, 43933), (52, 43936), (74, 44035), (76, 44041),

Gene: Hyperbowlee\_67 Start: 44058, Stop: 44297, Start Num: 30

Candidate Starts for Hyperbowlee\_67:

(2, 43848), (3, 43857), (19, 44007), (Start: 30 @44058 has 56 MA's), (51, 44130), (52, 44133), (74, 44232), (76, 44238),

Gene: Inky\_67 Start: 43861, Stop: 44100, Start Num: 30

Candidate Starts for Inky\_67:

(2, 43651), (3, 43660), (19, 43810), (Start: 30 @43861 has 56 MA's), (51, 43933), (52, 43936), (74, 44035), (76, 44041),

Gene: Itos\_89 Start: 56391, Stop: 56570, Start Num: 36

Candidate Starts for Itos\_89:

(10, 56262), (12, 56277), (Start: 13 @56286 has 4 MA's), (17, 56301), (Start: 35 @56385 has 1 MA's), (Start: 36 @56391 has 22 MA's), (Start: 46 @56430 has 1 MA's), (48, 56433), (65, 56496),

Gene: Jarvi\_67 Start: 43861, Stop: 44100, Start Num: 30

Candidate Starts for Jarvi\_67:

(2, 43651), (3, 43660), (19, 43810), (Start: 30 @43861 has 56 MA's), (51, 43933), (52, 43936), (74, 44035), (76, 44041),

Gene: JasmineDragon\_29 Start: 22315, Stop: 22620, Start Num: 13

Candidate Starts for JasmineDragon\_29:

(Start: 13 @22315 has 4 MA's), (28, 22396), (69, 22528), (81, 22591),

Gene: Jayhawk\_69 Start: 44204, Stop: 44443, Start Num: 30

Candidate Starts for Jayhawk\_69:

(2, 43994), (3, 44003), (19, 44153), (Start: 30 @44204 has 56 MA's), (Start: 38 @44228 has 6 MA's), (Start: 41 @44249 has 2 MA's), (51, 44276), (52, 44279), (74, 44378), (76, 44384),

Gene: Jeckyll\_67 Start: 43861, Stop: 44100, Start Num: 30

Candidate Starts for Jeckyll\_67:

(2, 43651), (3, 43660), (19, 43810), (Start: 30 @43861 has 56 MA's), (51, 43933), (52, 43936), (74, 44035), (76, 44041),

Gene: Joy99\_67 Start: 43790, Stop: 44029, Start Num: 30

Candidate Starts for Joy99\_67:

(2, 43580), (3, 43589), (19, 43739), (Start: 30 @43790 has 56 MA's), (51, 43862), (52, 43865), (74, 43964), (76, 43970),

Gene: Kahlid\_88 Start: 57250, Stop: 57417, Start Num: 36

Candidate Starts for Kahlid\_88:

(Start: 35 @57244 has 1 MA's), (Start: 36 @57250 has 22 MA's), (Start: 41 @57274 has 2 MA's), (Start: 42 @57277 has 11 MA's), (59, 57337), (60, 57343), (71, 57361), (73, 57364),

Gene: Kelcole\_50 Start: 36504, Stop: 36310, Start Num: 42

Candidate Starts for Kelcole\_50:

(1, 36777), (4, 36741), (5, 36726), (15, 36621), (Start: 30 @36546 has 56 MA's), (Start: 42 @36504 has 11 MA's), (63, 36429), (73, 36372),

Gene: KillerQueen\_53 Start: 36753, Stop: 36562, Start Num: 42

Candidate Starts for KillerQueen\_53:

(Start: 42 @36753 has 11 MA's), (63, 36678), (73, 36621),

Gene: Kropertea\_84 Start: 56457, Stop: 56645, Start Num: 41

Candidate Starts for Kropertea\_84:

(Start: 35 @56427 has 1 MA's), (Start: 36 @56433 has 22 MA's), (Start: 41 @56457 has 2 MA's), (Start: 42 @56460 has 11 MA's), (43, 56463), (50, 56478), (76, 56598),

Gene: Kudrefre\_69 Start: 44258, Stop: 44521, Start Num: 22

Candidate Starts for Kudrefre\_69:

(Start: 22 @44258 has 4 MA's), (26, 44279), (27, 44282), (Start: 36 @44306 has 22 MA's), (Start: 42 @44336 has 11 MA's), (54, 44381), (67, 44429), (73, 44465), (76, 44474), (78, 44489), (79, 44492),

Gene: Lewan\_90 Start: 57483, Stop: 57623, Start Num: 46

Candidate Starts for Lewan\_90:

(12, 57330), (17, 57354), (Start: 35 @57438 has 1 MA's), (Start: 36 @57444 has 22 MA's), (Start: 46 @57483 has 1 MA's), (56, 57522), (65, 57549),

Gene: LilDestine\_87 Start: 57157, Stop: 57336, Start Num: 36

Candidate Starts for LilDestine\_87:

(Start: 35 @57151 has 1 MA's), (Start: 36 @57157 has 22 MA's), (Start: 46 @57196 has 1 MA's), (48, 57199), (56, 57235), (65, 57262),

Gene: Llorens\_67 Start: 43861, Stop: 44100, Start Num: 30

Candidate Starts for Llorens\_67:

(2, 43651), (3, 43660), (19, 43810), (Start: 30 @43861 has 56 MA's), (51, 43933), (52, 43936), (74, 44035), (76, 44041),

Gene: Loadrie\_88 Start: 57652, Stop: 57831, Start Num: 36

Candidate Starts for Loadrie\_88:

(10, 57523), (12, 57538), (Start: 13 @57547 has 4 MA's), (17, 57562), (Start: 35 @57646 has 1 MA's), (Start: 36 @57652 has 22 MA's), (Start: 46 @57691 has 1 MA's), (48, 57694), (65, 57757),

Gene: Lunahalos\_67 Start: 43861, Stop: 44100, Start Num: 30

Candidate Starts for Lunahalos\_67:

(2, 43651), (3, 43660), (19, 43810), (Start: 30 @43861 has 56 MA's), (51, 43933), (52, 43936), (74, 44035), (76, 44041),

Gene: Lynnae\_90 Start: 57262, Stop: 57429, Start Num: 36

Candidate Starts for Lynnae\_90:

(Start: 35 @57256 has 1 MA's), (Start: 36 @57262 has 22 MA's), (Start: 41 @57286 has 2 MA's), (Start: 42 @57289 has 11 MA's), (59, 57349), (60, 57355), (71, 57373), (73, 57376),

Gene: MacKat\_63 Start: 39644, Stop: 39883, Start Num: 30

Candidate Starts for MacKat\_63:

(2, 39434), (3, 39443), (19, 39593), (Start: 30 @39644 has 56 MA's), (Start: 41 @39689 has 2 MA's), (51, 39716), (52, 39719), (74, 39818), (76, 39824),

Gene: Marcie\_57 Start: 37372, Stop: 37181, Start Num: 42

Candidate Starts for Marcie\_57:

(Start: 42 @37372 has 11 MA's), (73, 37240),

Gene: MeaningOfLife\_68 Start: 44613, Stop: 44852, Start Num: 30

Candidate Starts for MeaningOfLife\_68:

(2, 44403), (3, 44412), (19, 44562), (Start: 30 @44613 has 56 MA's), (Start: 38 @44637 has 6 MA's), (Start: 41 @44658 has 2 MA's), (51, 44685), (52, 44688), (74, 44787), (76, 44793),

Gene: MiniMommy\_29 Start: 22316, Stop: 22621, Start Num: 13

Candidate Starts for MiniMommy\_29:

(Start: 13 @22316 has 4 MA's), (28, 22397), (69, 22529), (81, 22592),

Gene: MkaliMitinis3\_91 Start: 57639, Stop: 57782, Start Num: 41

Candidate Starts for MkaliMitinis3\_91:

(7, 57450), (8, 57471), (10, 57486), (12, 57501), (23, 57573), (24, 57579), (Start: 35 @57609 has 1 MA's), (Start: 36 @57615 has 22 MA's), (Start: 41 @57639 has 2 MA's), (Start: 42 @57642 has 11 MA's), (59, 57702), (60, 57708), (71, 57726), (73, 57729),

Gene: MrMagoo\_6 Start: 2415, Stop: 2209, Start Num: 38

Candidate Starts for MrMagoo\_6:

(Start: 38 @2415 has 6 MA's), (50, 2373), (61, 2325),

Gene: Mynx\_69 Start: 44473, Stop: 44712, Start Num: 30

Candidate Starts for Mynx\_69:

(2, 44263), (3, 44272), (19, 44422), (Start: 30 @44473 has 56 MA's), (Start: 38 @44497 has 6 MA's), (Start: 41 @44518 has 2 MA's), (51, 44545), (52, 44548), (74, 44647), (76, 44653),

Gene: Myrna\_56 Start: 22168, Stop: 22353, Start Num: 42

Candidate Starts for Myrna\_56:

(11, 22015), (Start: 42 @22168 has 11 MA's), (49, 22177), (70, 22255),

Gene: Nanosmite\_5 Start: 2451, Stop: 2248, Start Num: 38

Candidate Starts for Nanosmite\_5:

(21, 2514), (32, 2472), (Start: 38 @2451 has 6 MA's), (43, 2427),

Gene: Nicholasp3\_89 Start: 57320, Stop: 57499, Start Num: 36

Candidate Starts for Nicholasp3\_89:

(10, 57191), (12, 57206), (Start: 13 @57215 has 4 MA's), (14, 57221), (17, 57230), (23, 57278), (24, 57284), (Start: 35 @57314 has 1 MA's), (Start: 36 @57320 has 22 MA's), (Start: 46 @57359 has 1 MA's), (56, 57398), (65, 57425),

Gene: Octobien14\_69 Start: 44537, Stop: 44797, Start Num: 22

Candidate Starts for Octobien14\_69:

(Start: 22 @44537 has 4 MA's), (26, 44558), (27, 44561), (Start: 36 @44585 has 22 MA's), (Start: 42 @44615 has 11 MA's), (43, 44618), (Start: 46 @44627 has 1 MA's), (73, 44741), (76, 44750), (78, 44765), (79, 44768),

Gene: OneinaGillian\_52 Start: 36406, Stop: 36215, Start Num: 42

Candidate Starts for OneinaGillian\_52:

(1, 36679), (5, 36628), (15, 36523), (Start: 30 @36448 has 56 MA's), (Start: 42 @36406 has 11 MA's), (63, 36331), (73, 36274),

Gene: OverPar\_91 Start: 57652, Stop: 57831, Start Num: 36

Candidate Starts for OverPar\_91:

(10, 57523), (12, 57538), (Start: 13 @57547 has 4 MA's), (17, 57562), (Start: 35 @57646 has 1 MA's), (Start: 36 @57652 has 22 MA's), (Start: 46 @57691 has 1 MA's), (48, 57694), (65, 57757),

Gene: PP\_66 Start: 45311, Stop: 45114, Start Num: 37

Candidate Starts for PP\_66:

(Start: 35 @45320 has 1 MA's), (Start: 37 @45311 has 1 MA's), (47, 45284), (73, 45182), (74, 45179),

Gene: PYPDinur\_90 Start: 57609, Stop: 57776, Start Num: 50

Candidate Starts for PYPDinur\_90:

(Start: 35 @57558 has 1 MA's), (Start: 36 @57564 has 22 MA's), (Start: 42 @57591 has 11 MA's), (43, 57594), (50, 57609), (76, 57729),

Gene: Padfoot\_67 Start: 44058, Stop: 44297, Start Num: 30

Candidate Starts for Padfoot\_67:

(2, 43848), (3, 43857), (19, 44007), (Start: 30 @44058 has 56 MA's), (51, 44130), (52, 44133), (74, 44232), (76, 44238),

Gene: Padpat\_70 Start: 44178, Stop: 44417, Start Num: 30

Candidate Starts for Padpat\_70:

(2, 43968), (3, 43977), (19, 44127), (Start: 30 @44178 has 56 MA's), (Start: 41 @44223 has 2 MA's), (51, 44250), (52, 44253), (74, 44352), (76, 44358),

Gene: Peel\_67 Start: 43863, Stop: 44102, Start Num: 30

Candidate Starts for Peel\_67:

(2, 43653), (3, 43662), (19, 43812), (Start: 30 @43863 has 56 MA's), (51, 43935), (52, 43938), (74, 44037), (76, 44043),

Gene: Pepe25\_51 Start: 35948, Stop: 35757, Start Num: 42

Candidate Starts for Pepe25\_51:

(Start: 42 @35948 has 11 MA's), (63, 35873), (73, 35816), (79, 35786),

Gene: Peregrin\_45 Start: 15804, Stop: 15583, Start Num: 33

Candidate Starts for Peregrin\_45:

(Start: 33 @15804 has 2 MA's), (62, 15705), (66, 15690), (73, 15648),

Gene: Piatt\_67 Start: 44058, Stop: 44297, Start Num: 30

Candidate Starts for Piatt\_67:

(2, 43848), (3, 43857), (19, 44007), (Start: 30 @44058 has 56 MA's), (51, 44130), (52, 44133), (74, 44232), (76, 44238),

Gene: Pokerus\_67 Start: 44203, Stop: 44442, Start Num: 30

Candidate Starts for Pokerus\_67:

(2, 43993), (3, 44002), (19, 44152), (Start: 30 @44203 has 56 MA's), (Start: 41 @44248 has 2 MA's), (51, 44275), (52, 44278), (74, 44377), (76, 44383),

Gene: Quby\_90 Start: 56844, Stop: 57011, Start Num: 50

Candidate Starts for Quby\_90:

(Start: 36 @56799 has 22 MA's), (Start: 41 @56823 has 2 MA's), (Start: 42 @56826 has 11 MA's), (43, 56829), (50, 56844), (76, 56964),

Gene: QuincyRose\_65 Start: 44084, Stop: 44323, Start Num: 30

Candidate Starts for QuincyRose\_65:

(2, 43874), (3, 43883), (19, 44033), (Start: 30 @44084 has 56 MA's), (Start: 41 @44129 has 2 MA's), (51, 44156), (52, 44159), (74, 44258), (76, 44264),

Gene: Ramen\_68 Start: 43708, Stop: 43947, Start Num: 30

Candidate Starts for Ramen\_68:

(19, 43657), (Start: 30 @43708 has 56 MA's), (Start: 38 @43732 has 6 MA's), (Start: 41 @43753 has 2 MA's), (51, 43780), (52, 43783), (74, 43882), (76, 43888),

Gene: Rapunzel97\_69 Start: 44159, Stop: 44398, Start Num: 30

Candidate Starts for Rapunzel97\_69:

(2, 43949), (3, 43958), (19, 44108), (Start: 30 @44159 has 56 MA's), (Start: 38 @44183 has 6 MA's), (Start: 41 @44204 has 2 MA's), (51, 44231), (52, 44234), (74, 44333), (76, 44339),

Gene: Rey\_5 Start: 2370, Stop: 2203, Start Num: 45

Candidate Starts for Rey\_5:

(21, 2466), (32, 2424), (Start: 38 @2403 has 6 MA's), (Start: 45 @2370 has 1 MA's), (50, 2358), (58, 2322), (61, 2310),

Gene: RobinRose\_54 Start: 36915, Stop: 36724, Start Num: 42

Candidate Starts for RobinRose\_54:

(1, 37188), (5, 37137), (15, 37032), (Start: 30 @36957 has 56 MA's), (Start: 42 @36915 has 11 MA's), (63, 36840), (73, 36783),

Gene: Romm\_54 Start: 36915, Stop: 36724, Start Num: 42

Candidate Starts for Romm\_54:

(1, 37188), (5, 37137), (15, 37032), (Start: 30 @36957 has 56 MA's), (Start: 42 @36915 has 11 MA's), (63, 36840), (73, 36783),

Gene: Ronaldo\_13 Start: 3139, Stop: 2936, Start Num: 44

Candidate Starts for Ronaldo\_13:

(Start: 44 @3139 has 5 MA's), (49, 3127), (53, 3115), (55, 3097), (57, 3091), (67, 3052),

Gene: Rosmarinus\_67 Start: 43849, Stop: 44088, Start Num: 30

Candidate Starts for Rosmarinus\_67:

(2, 43639), (3, 43648), (19, 43798), (Start: 30 @43849 has 56 MA's), (51, 43921), (52, 43924), (74, 44023), (76, 44029),

Gene: Rossetti\_89 Start: 57710, Stop: 57850, Start Num: 46

Candidate Starts for Rossetti\_89:

(10, 57545), (12, 57560), (14, 57575), (23, 57632), (Start: 36 @57674 has 22 MA's), (Start: 46 @57710 has 1 MA's), (56, 57749), (65, 57776),

Gene: Rumpelstiltskin\_85 Start: 57113, Stop: 57292, Start Num: 36

Candidate Starts for Rumpelstiltskin\_85:

(10, 56984), (12, 56999), (Start: 13 @57008 has 4 MA's), (14, 57014), (17, 57023), (23, 57071), (24, 57077), (Start: 35 @57107 has 1 MA's), (Start: 36 @57113 has 22 MA's), (Start: 46 @57152 has 1 MA's), (56, 57191), (65, 57218),

Gene: SJReid\_226 Start: 142221, Stop: 142508, Start Num: 33

Candidate Starts for SJReid\_226:

(Start: 33 @142221 has 2 MA's), (39, 142248), (48, 142278),

Gene: ScoobyDoobyDoo\_50 Start: 17925, Stop: 18128, Start Num: 42

Candidate Starts for ScoobyDoobyDoo\_50:

(25, 17868), (Start: 42 @17925 has 11 MA's), (51, 17949), (68, 18018), (82, 18108), (83, 18120),

Gene: Sephiroth\_68 Start: 44430, Stop: 44693, Start Num: 22

Candidate Starts for Sephiroth\_68:

(Start: 22 @44430 has 4 MA's), (26, 44451), (27, 44454), (Start: 36 @44478 has 22 MA's), (Start: 42 @44508 has 11 MA's), (54, 44553), (67, 44601), (73, 44637), (76, 44646), (78, 44661), (79, 44664),

Gene: ShakeltOph\_29 Start: 22315, Stop: 22620, Start Num: 13

Candidate Starts for ShakeltOph\_29:

(Start: 13 @22315 has 4 MA's), (28, 22396), (69, 22528), (81, 22591),

Gene: Sheng711\_91 Start: 57040, Stop: 57252, Start Num: 36

Candidate Starts for Sheng711\_91:

(Start: 35 @57034 has 1 MA's), (Start: 36 @57040 has 22 MA's), (Start: 42 @57067 has 11 MA's), (43, 57070), (50, 57085), (76, 57205),

Gene: ShiaSurprise\_68 Start: 44058, Stop: 44297, Start Num: 30

Candidate Starts for ShiaSurprise\_68:

(2, 43848), (3, 43857), (19, 44007), (Start: 30 @44058 has 56 MA's), (51, 44130), (52, 44133), (74, 44232), (76, 44238),

Gene: Slimphazie\_68 Start: 44159, Stop: 44398, Start Num: 30

Candidate Starts for Slimphazie\_68:

(2, 43949), (3, 43958), (19, 44108), (Start: 30 @44159 has 56 MA's), (Start: 38 @44183 has 6 MA's), (Start: 41 @44204 has 2 MA's), (51, 44231), (52, 44234), (74, 44333), (76, 44339),

Gene: Spock\_67 Start: 43862, Stop: 44101, Start Num: 30

Candidate Starts for Spock\_67:

(2, 43652), (3, 43661), (19, 43811), (Start: 30 @43862 has 56 MA's), (51, 43934), (52, 43937), (74, 44036), (76, 44042),

Gene: Syleon\_70 Start: 44371, Stop: 44631, Start Num: 22

Candidate Starts for Syleon\_70:

(Start: 22 @44371 has 4 MA's), (26, 44392), (27, 44395), (Start: 36 @44419 has 22 MA's), (Start: 42 @44449 has 11 MA's), (43, 44452), (73, 44575), (78, 44599), (79, 44602),

Gene: Tachez\_67 Start: 43706, Stop: 43945, Start Num: 30

Candidate Starts for Tachez\_67:

(2, 43496), (3, 43505), (19, 43655), (Start: 30 @43706 has 56 MA's), (51, 43778), (52, 43781), (74, 43880), (76, 43886),

Gene: Tempo\_52 Start: 36794, Stop: 36603, Start Num: 42

Candidate Starts for Tempo\_52:

(Start: 42 @36794 has 11 MA's), (63, 36719), (73, 36662),

Gene: Topper\_67 Start: 43861, Stop: 44100, Start Num: 30

Candidate Starts for Topper\_67:

(2, 43651), (3, 43660), (19, 43810), (Start: 30 @43861 has 56 MA's), (51, 43933), (52, 43936), (74, 44035), (76, 44041),

Gene: Tourach\_89 Start: 58025, Stop: 58204, Start Num: 36

Candidate Starts for Tourach\_89:

(10, 57896), (12, 57911), (Start: 13 @57920 has 4 MA's), (23, 57983), (Start: 35 @58019 has 1 MA's), (Start: 36 @58025 has 22 MA's), (Start: 46 @58064 has 1 MA's), (48, 58067), (56, 58103), (65, 58130),

Gene: TruffulaTree\_68 Start: 44155, Stop: 44394, Start Num: 30

Candidate Starts for TruffulaTree\_68:

(2, 43945), (3, 43954), (19, 44104), (Start: 30 @44155 has 56 MA's), (Start: 38 @44179 has 6 MA's), (Start: 41 @44200 has 2 MA's), (51, 44227), (52, 44230), (74, 44329), (76, 44335),

Gene: Twitch\_67 Start: 43863, Stop: 44102, Start Num: 30

Candidate Starts for Twitch\_67:

(2, 43653), (3, 43662), (19, 43812), (Start: 30 @43863 has 56 MA's), (51, 43935), (52, 43938), (74, 44037), (76, 44043),

Gene: Underpass\_81 Start: 52356, Stop: 52535, Start Num: 36

Candidate Starts for Underpass\_81:

(10, 52227), (12, 52242), (Start: 13 @52251 has 4 MA's), (14, 52257), (17, 52266), (23, 52314), (24, 52320), (Start: 35 @52350 has 1 MA's), (Start: 36 @52356 has 22 MA's), (Start: 46 @52395 has 1 MA's), (56, 52434), (65, 52461),

Gene: Validus\_72 Start: 44730, Stop: 44951, Start Num: 30

Candidate Starts for Validus\_72:

(19, 44679), (Start: 30 @44730 has 56 MA's), (Start: 37 @44748 has 1 MA's), (68, 44838), (73, 44871), (76, 44880),

Gene: Volt\_13 Start: 3139, Stop: 2936, Start Num: 44

Candidate Starts for Volt\_13:

(Start: 44 @3139 has 5 MA's), (49, 3127), (53, 3115), (55, 3097), (57, 3091), (67, 3052),

Gene: VroomVroom\_29 Start: 22410, Stop: 22715, Start Num: 13

Candidate Starts for VroomVroom\_29:

(Start: 13 @22410 has 4 MA's), (34, 22497), (69, 22623), (81, 22686),

Gene: Wigglewiggles\_89 Start: 57408, Stop: 57575, Start Num: 36

Candidate Starts for Wigglewiggles\_89:

(7, 57243), (8, 57264), (10, 57279), (12, 57294), (23, 57366), (24, 57372), (Start: 35 @57402 has 1 MA's), (Start: 36 @57408 has 22 MA's), (Start: 41 @57432 has 2 MA's), (Start: 42 @57435 has 11 MA's), (59, 57495), (60, 57501), (71, 57519), (73, 57522),

Gene: Wilder\_90 Start: 57250, Stop: 57417, Start Num: 36

Candidate Starts for Wilder\_90:

(Start: 35 @57244 has 1 MA's), (Start: 36 @57250 has 22 MA's), (Start: 41 @57274 has 2 MA's), (Start: 42 @57277 has 11 MA's), (59, 57337), (60, 57343), (71, 57361), (73, 57364),

Gene: Zabiza\_62 Start: 40011, Stop: 40250, Start Num: 30

Candidate Starts for Zabiza\_62:

(19, 39960), (Start: 30 @40011 has 56 MA's), (Start: 38 @40035 has 6 MA's), (Start: 41 @40056 has 2 MA's), (51, 40083), (52, 40086), (74, 40185), (76, 40191),

Gene: Zakai\_90 Start: 57893, Stop: 58072, Start Num: 36

Candidate Starts for Zakai\_90:

(10, 57764), (12, 57779), (Start: 13 @57788 has 4 MA's), (17, 57803), (Start: 35 @57887 has 1 MA's), (Start: 36 @57893 has 22 MA's), (Start: 46 @57932 has 1 MA's), (48, 57935), (65, 57998),

Gene: Zavala\_70 Start: 44433, Stop: 44672, Start Num: 30

Candidate Starts for Zavala\_70:

(2, 44223), (3, 44232), (19, 44382), (Start: 30 @44433 has 56 MA's), (Start: 38 @44457 has 6 MA's), (Start: 41 @44478 has 2 MA's), (51, 44505), (52, 44508), (74, 44607), (76, 44613),

Gene: ZhongYanYuan\_86 Start: 57300, Stop: 57479, Start Num: 36

Candidate Starts for ZhongYanYuan\_86:

(Start: 35 @57294 has 1 MA's), (Start: 36 @57300 has 22 MA's), (Start: 46 @57339 has 1 MA's), (48, 57342), (56, 57378), (65, 57405),

Gene: Ziko\_14 Start: 3153, Stop: 2950, Start Num: 44

Candidate Starts for Ziko\_14:

(Start: 44 @3153 has 5 MA's), (49, 3141), (53, 3129), (55, 3111), (57, 3105), (67, 3066),