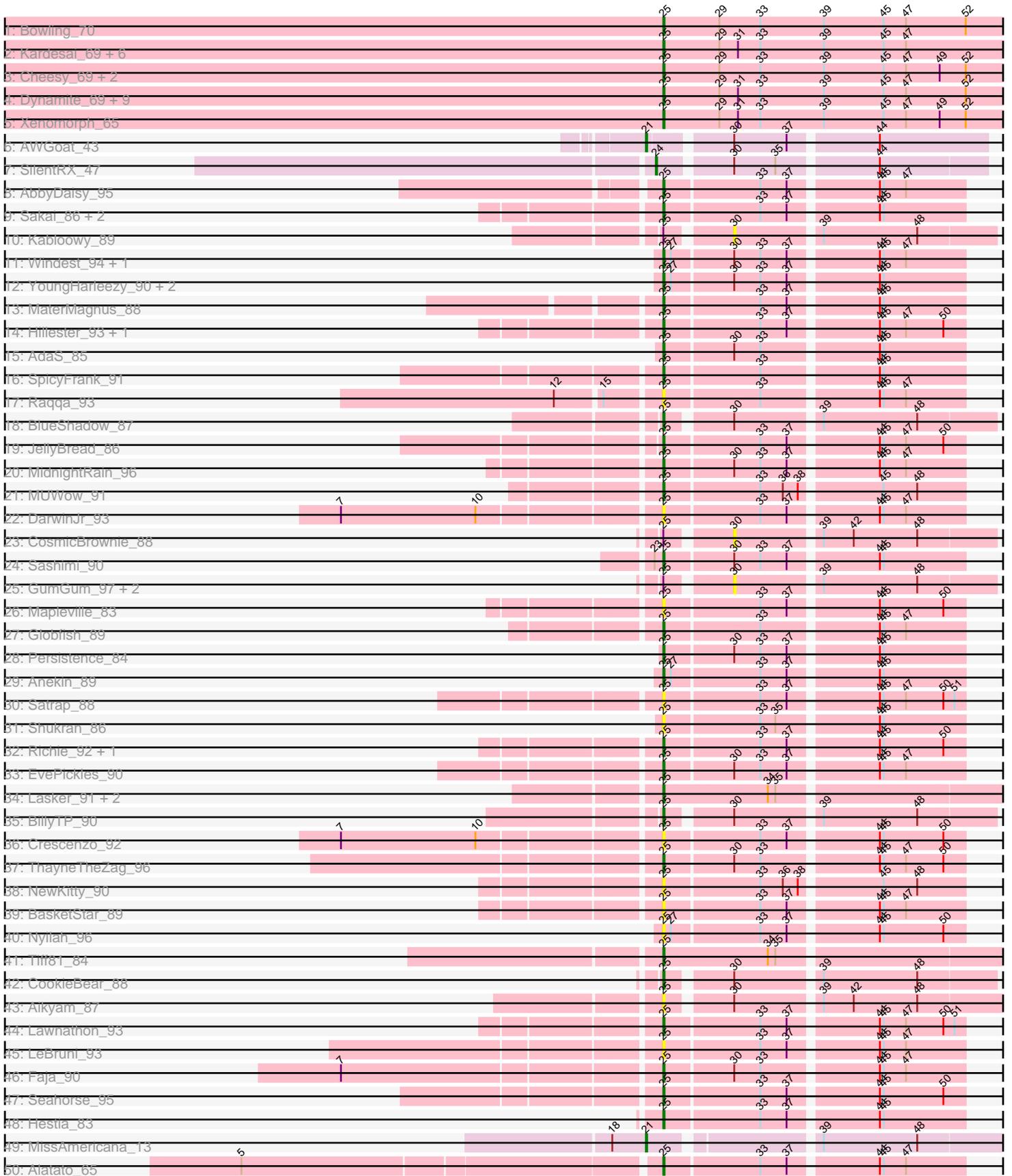
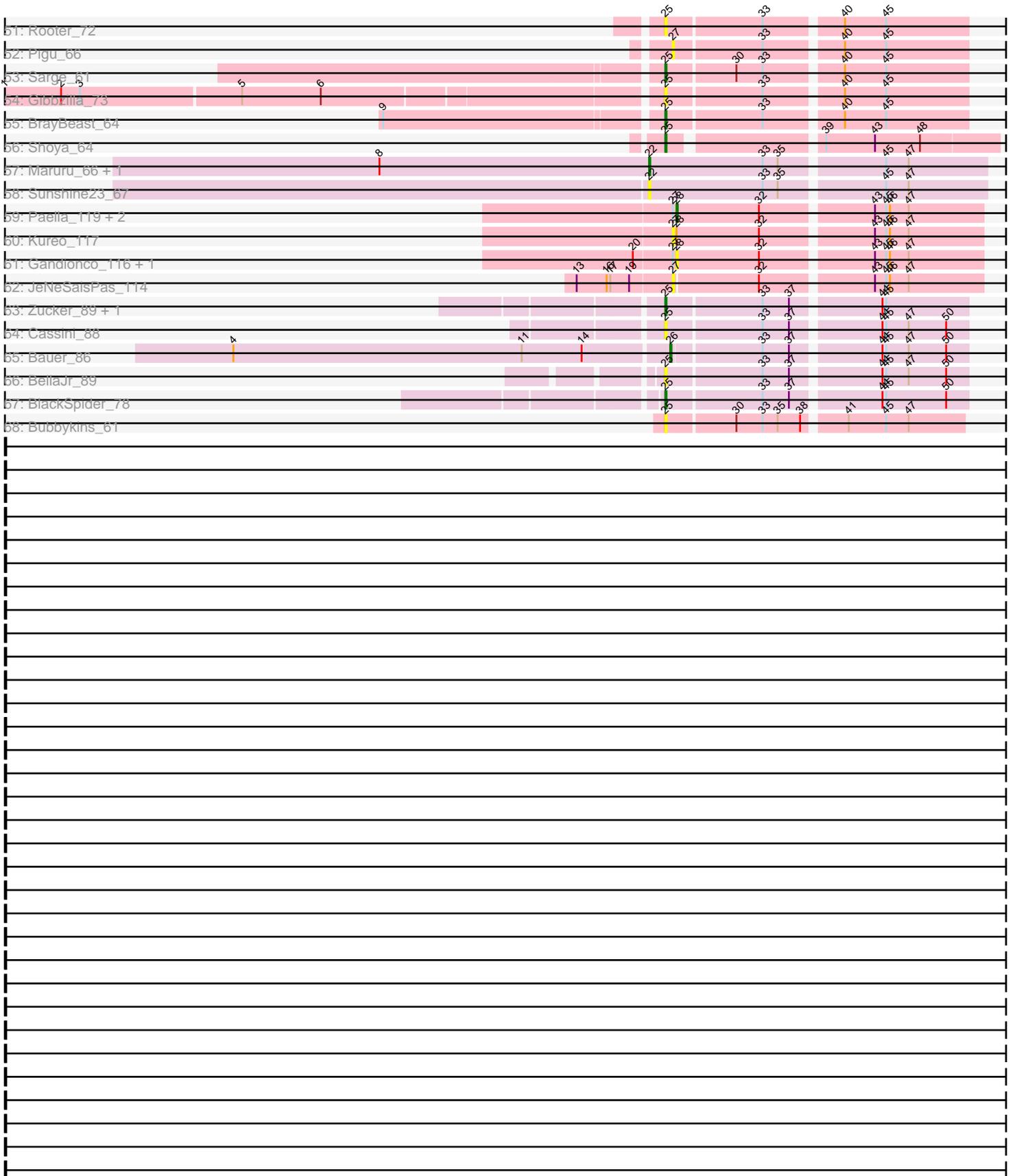


Pham 289259



Pham 289259



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 289259 Report

This analysis was run 03/28/26 on database version 641.

Pham number 289259 has 101 members, 31 are drafts.

Phages represented in each track:

- Track 1 : Bowling\_70
- Track 2 : Kardesai\_69, Arcadia\_69, Nason\_69, Elsa\_69, Mooshroom\_70, KeaneyLin\_65, GoCrazy\_66
- Track 3 : Cheesy\_69, Tribby\_72, Correa\_67
- Track 4 : Dynamite\_69, YoshiYama\_70, JEGGS\_68, NapoleonB\_70, Heisenberger\_68, Circum\_70, Mudcat\_65, Benllo\_66, BenitoAntonio\_67, Hankly\_68
- Track 5 : Xenomorph\_65
- Track 6 : AWGoat\_43
- Track 7 : SilentRX\_47
- Track 8 : AbbyDaisy\_95
- Track 9 : Sakai\_86, Auxilium\_87, Gorpy\_87
- Track 10 : Kabloowy\_89
- Track 11 : Windest\_94, Isolde\_90
- Track 12 : YoungHarleezy\_90, JakeTheSnake\_94, Bhageatrice\_93
- Track 13 : MaterMagnus\_88
- Track 14 : Hillester\_93, RadFad\_94
- Track 15 : AdaS\_85
- Track 16 : SpicyFrank\_91
- Track 17 : Raqqa\_93
- Track 18 : BlueShadow\_87
- Track 19 : JellyBread\_86
- Track 20 : MidnightRain\_96
- Track 21 : MUWow\_91
- Track 22 : DarwinJr\_93
- Track 23 : CosmicBrownie\_88
- Track 24 : Sashimi\_90
- Track 25 : GumGum\_97, SonDevVon\_97, Sporco\_91
- Track 26 : Mapleville\_83
- Track 27 : Globfish\_89
- Track 28 : Persistence\_84
- Track 29 : Anekin\_89
- Track 30 : Satrap\_88
- Track 31 : Shukran\_86
- Track 32 : Richie\_92, BenchScraper\_89
- Track 33 : EvePickles\_90
- Track 34 : Lasker\_91, Raphaella\_89, Vopal\_90
- Track 35 : BillyTP\_90

- Track 36 : Crescenzo\_92
- Track 37 : ThayneTheZag\_96
- Track 38 : NewKitty\_90
- Track 39 : BasketStar\_89
- Track 40 : Nyilah\_96
- Track 41 : Tiff81\_84
- Track 42 : CookieBear\_88
- Track 43 : Aikyam\_87
- Track 44 : Lawnathon\_93
- Track 45 : LeBruni\_93
- Track 46 : Faja\_90
- Track 47 : Seahorse\_95
- Track 48 : Hestia\_83
- Track 49 : MissAmericana\_13
- Track 50 : Alatato\_65
- Track 51 : Rooter\_72
- Track 52 : Pigu\_66
- Track 53 : Sarge\_61
- Track 54 : Gibbzilla\_73
- Track 55 : BrayBeast\_64
- Track 56 : Shoya\_64
- Track 57 : Maruru\_66, Sonali\_66
- Track 58 : Sunshine23\_67
- Track 59 : Paella\_119, Qui\_119, Elver\_119
- Track 60 : Kureo\_117
- Track 61 : Gandionco\_116, Marianna39\_117
- Track 62 : JeNeSaisPas\_114
- Track 63 : Zucker\_89, Phrank15\_95
- Track 64 : Cassini\_88
- Track 65 : Bauer\_86
- Track 66 : BellaJr\_89
- Track 67 : BlackSpider\_78
- Track 68 : Bubbykins\_61

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

The start number called the most often in the published annotations is 25, it was called in 61 of the 70 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• AbbyDaisy\_95, AdaS\_85, Aikyam\_87, Alatato\_65, Anekin\_89, Arcadia\_69, Auxilium\_87, BasketStar\_89, BellaJr\_89, BenchScraper\_89, BenitoAntonio\_67, Benllo\_66, Bhageatrice\_93, BillyTP\_90, BlackSpider\_78, BlueShadow\_87, Bowling\_70, BrayBeast\_64, Bubbykins\_61, Cassini\_88, Cheesy\_69, Circum\_70, CookieBear\_88, Correa\_67, Crescenzo\_92, DarwinJr\_93, Dynamite\_69, Elsa\_69, EvePickles\_90, Faja\_90, Gibbzilla\_73, Globfish\_89, GoCrazy\_66, Gorpy\_87, Hankly\_68, Heisenberger\_68, Hestia\_83, Hillester\_93, Isolde\_90, JEGGS\_68, JakeTheSnake\_94, JellyBread\_86, Kardesai\_69, KeaneyLin\_65, Lasker\_91, Lawnathon\_93, LeBruni\_93, MUWow\_91, Mapleville\_83, MaterMagnus\_88, MidnightRain\_96, Mooshroom\_70, Mudcat\_65, NapoleonB\_70, Nason\_69,

NewKitty\_90, Nyilah\_96, Persistence\_84, Phrank15\_95, RadFad\_94, Raphaella\_89, Raqqa\_93, Richie\_92, Rooter\_72, Sakai\_86, Sarge\_61, Sashimi\_90, Satrap\_88, Seahorse\_95, Shoya\_64, Shukran\_86, SpicyFrank\_91, ThayneTheZag\_96, Tiff81\_84, Tribby\_72, Vopal\_90, Windest\_94, Xenomorph\_65, YoshiYama\_70, YoungHarleezy\_90, Zucker\_89,

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

- CosmicBrownie\_88, GumGum\_97, Kabloowy\_89, SonDevVon\_97, Sporco\_91,

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

- AWGoat\_43, Bauer\_86, Elver\_119, Gandionco\_116, JeNeSaisPas\_114, Kureo\_117, Marianna39\_117, Maruru\_66, MissAmericana\_13, Paella\_119, Pigu\_66, Qui\_119, SilentRX\_47, Sonali\_66, Sunshine23\_67,

### Summary by start number:

Start 21:

- Found in 2 of 101 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 2 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AWGoat\_43 (AP4), MissAmericana\_13 (EM2),

Start 22:

- Found in 3 of 101 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 2 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Maruru\_66 (FG), Sonali\_66 (FG), Sunshine23\_67 (FG),

Start 24:

- Found in 1 of 101 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 1 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SilentRX\_47 (AP4),

Start 25:

- Found in 86 of 101 ( 85.1% ) of genes in pham
- Manual Annotations of this start: 61 of 70
- Called 94.2% of time when present
- Phage (with cluster) where this start called: AbbyDaisy\_95 (AY), AdaS\_85 (AY), Aikyam\_87 (AY), Alatato\_65 (FB), Anekin\_89 (AY), Arcadia\_69 (AM), Auxilium\_87 (AY), BasketStar\_89 (AY), BellaJr\_89 (FN), BenchScraper\_89 (AY), BenitoAntonio\_67 (AM), Benllo\_66 (AM), Bhageatrice\_93 (AY), BillyTP\_90 (AY), BlackSpider\_78 (FN), BlueShadow\_87 (AY), Bowling\_70 (AM), BrayBeast\_64 (FB), Bubbykins\_61 (UNK), Cassini\_88 (FN), Cheesy\_69 (AM), Circum\_70 (AM), CookieBear\_88 (AY), Correa\_67 (AM), Crescenzo\_92 (AY), DarwinJr\_93 (AY), Dynamite\_69 (AM), Elsa\_69 (AM), EvePickles\_90 (AY), Faja\_90 (AY), Gibbzilla\_73 (FB), Globfish\_89 (AY), GoCrazy\_66 (AM), Gorpy\_87 (AY), Hankly\_68 (AM), Heisenberger\_68 (AM), Hestia\_83 (AY), Hillester\_93 (AY), Isolde\_90 (AY), JEGGS\_68 (AM), JakeTheSnake\_94 (AY), JellyBread\_86 (AY), Kardesai\_69 (AM), KeaneyLin\_65 (AM), Lasker\_91 (AY), Lawnathon\_93 (AY), LeBruni\_93 (AY), MUWow\_91 (AY), Mapleville\_83 (AY), MaterMagnus\_88 (AY), MidnightRain\_96 (AY),

Mooshroom\_70 (AM), Mudcat\_65 (AM), NapoleonB\_70 (AM), Nason\_69 (AM), NewKitty\_90 (AY), Nyilah\_96 (AY), Persistence\_84 (AY), Phrank15\_95 (AY), RadFad\_94 (AY), Raphaella\_89 (AY), Raqqa\_93 (AY), Richie\_92 (AY), Rooter\_72 (FB), Sakai\_86 (AY), Sarge\_61 (FB), Sashimi\_90 (AY), Satrap\_88 (AY), Seahorse\_95 (AY), Shoya\_64 (FB), Shukran\_86 (AY), SpicyFrank\_91 (AY), ThayneTheZag\_96 (AY), Tiff81\_84 (AY), Tribby\_72 (AM), Vopal\_90 (AY), Windest\_94 (AY), Xenomorph\_65 (AM), YoshiYama\_70 (AM), YoungHarleezy\_90 (AY), Zucker\_89 (FN),

Start 26:

- Found in 1 of 101 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 1 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bauer\_86 (FN),

Start 27:

- Found in 15 of 101 ( 14.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: JeNeSaisPas\_114 (FK), Kureo\_117 (FK), Pigu\_66 (FB),

Start 28:

- Found in 6 of 101 ( 5.9% ) of genes in pham
- Manual Annotations of this start: 3 of 70
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Elver\_119 (FK), Gandionco\_116 (FK), Marianna39\_117 (FK), Paella\_119 (FK), Qui\_119 (FK),

Start 30:

- Found in 25 of 101 ( 24.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: CosmicBrownie\_88 (AY), GumGum\_97 (AY), Kabloowy\_89 (AY), SonDevVon\_97 (AY), Sporco\_91 (AY),

### **Summary by clusters:**

There are 9 clusters represented in this pham: FK, EM2, AM, AP4, FB, FG, AY, UNK, FN,

Info for manual annotations of cluster AM:

- Start number 25 was manually annotated 21 times for cluster AM.

Info for manual annotations of cluster AP4:

- Start number 21 was manually annotated 1 time for cluster AP4.
- Start number 24 was manually annotated 1 time for cluster AP4.

Info for manual annotations of cluster AY:

- Start number 25 was manually annotated 34 times for cluster AY.

Info for manual annotations of cluster EM2:

- Start number 21 was manually annotated 1 time for cluster EM2.

Info for manual annotations of cluster FB:

- Start number 25 was manually annotated 4 times for cluster FB.

Info for manual annotations of cluster FG:

- Start number 22 was manually annotated 2 times for cluster FG.

Info for manual annotations of cluster FK:

- Start number 28 was manually annotated 3 times for cluster FK.

Info for manual annotations of cluster FN:

- Start number 25 was manually annotated 2 times for cluster FN.
- Start number 26 was manually annotated 1 time for cluster FN.

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

Gene: AWGoat\_43 Start: 36435, Stop: 36184, Start Num: 21

Candidate Starts for AWGoat\_43:

(Start: 21 @36435 has 2 MA's), (30, 36378), (37, 36336), (44, 36270),

Gene: AbbyDaisy\_95 Start: 52716, Stop: 52943, Start Num: 25

Candidate Starts for AbbyDaisy\_95:

(Start: 25 @52716 has 61 MA's), (33, 52788), (37, 52809), (44, 52875), (45, 52878), (47, 52896),

Gene: AdaS\_85 Start: 47194, Stop: 47421, Start Num: 25

Candidate Starts for AdaS\_85:

(Start: 25 @47194 has 61 MA's), (30, 47245), (33, 47266), (44, 47353), (45, 47356),

Gene: Aikyam\_87 Start: 47697, Stop: 47942, Start Num: 25

Candidate Starts for Aikyam\_87:

(Start: 25 @47697 has 61 MA's), (30, 47739), (39, 47802), (42, 47826), (48, 47877),

Gene: Alatato\_65 Start: 36428, Stop: 36655, Start Num: 25

Candidate Starts for Alatato\_65:

(5, 36107), (Start: 25 @36428 has 61 MA's), (33, 36500), (37, 36521), (44, 36587), (45, 36590), (47, 36608),

Gene: Anekin\_89 Start: 49928, Stop: 50155, Start Num: 25

Candidate Starts for Anekin\_89:

(Start: 25 @49928 has 61 MA's), (27, 49934), (33, 50000), (37, 50021), (44, 50087), (45, 50090),

Gene: Arcadia\_69 Start: 43472, Stop: 43750, Start Num: 25

Candidate Starts for Arcadia\_69:

(Start: 25 @43472 has 61 MA's), (29, 43517), (31, 43532), (33, 43550), (39, 43601), (45, 43649), (47, 43667),

Gene: Auxilium\_87 Start: 46996, Stop: 47223, Start Num: 25

Candidate Starts for Auxilium\_87:

(Start: 25 @46996 has 61 MA's), (33, 47068), (37, 47089), (44, 47155), (45, 47158),

Gene: BasketStar\_89 Start: 49542, Stop: 49769, Start Num: 25

Candidate Starts for BasketStar\_89:

(Start: 25 @49542 has 61 MA's), (33, 49614), (37, 49635), (44, 49701), (45, 49704), (47, 49722),

Gene: Bauer\_86 Start: 46271, Stop: 46492, Start Num: 26

Candidate Starts for Bauer\_86:

(4, 45926), (11, 46157), (14, 46205), (Start: 26 @46271 has 1 MA's), (33, 46337), (37, 46358), (44, 46424), (45, 46427), (47, 46445), (50, 46475),

Gene: BellaJr\_89 Start: 49728, Stop: 49955, Start Num: 25

Candidate Starts for BellaJr\_89:

(Start: 25 @49728 has 61 MA's), (33, 49800), (37, 49821), (44, 49887), (45, 49890), (47, 49908), (50, 49938),

Gene: BenchScraper\_89 Start: 47947, Stop: 48174, Start Num: 25

Candidate Starts for BenchScraper\_89:

(Start: 25 @47947 has 61 MA's), (33, 48019), (37, 48040), (44, 48106), (45, 48109), (50, 48157),

Gene: BenitoAntonio\_67 Start: 42507, Stop: 42785, Start Num: 25

Candidate Starts for BenitoAntonio\_67:

(Start: 25 @42507 has 61 MA's), (29, 42552), (31, 42567), (33, 42585), (39, 42636), (45, 42684), (47, 42702), (52, 42750),

Gene: Benllo\_66 Start: 43185, Stop: 43463, Start Num: 25

Candidate Starts for Benllo\_66:

(Start: 25 @43185 has 61 MA's), (29, 43230), (31, 43245), (33, 43263), (39, 43314), (45, 43362), (47, 43380), (52, 43428),

Gene: Bhageatrice\_93 Start: 52222, Stop: 52449, Start Num: 25

Candidate Starts for Bhageatrice\_93:

(Start: 25 @52222 has 61 MA's), (27, 52228), (30, 52273), (33, 52294), (37, 52315), (44, 52381), (45, 52384),

Gene: BillyTP\_90 Start: 50050, Stop: 50289, Start Num: 25

Candidate Starts for BillyTP\_90:

(Start: 25 @50050 has 61 MA's), (30, 50092), (39, 50155), (48, 50230),

Gene: BlackSpider\_78 Start: 47304, Stop: 47531, Start Num: 25

Candidate Starts for BlackSpider\_78:

(Start: 25 @47304 has 61 MA's), (33, 47376), (37, 47397), (44, 47463), (45, 47466), (50, 47514),

Gene: BlueShadow\_87 Start: 49643, Stop: 49882, Start Num: 25

Candidate Starts for BlueShadow\_87:

(Start: 25 @49643 has 61 MA's), (30, 49685), (39, 49748), (48, 49823),

Gene: Bowling\_70 Start: 43461, Stop: 43739, Start Num: 25

Candidate Starts for Bowling\_70:

(Start: 25 @43461 has 61 MA's), (29, 43506), (33, 43539), (39, 43590), (45, 43638), (47, 43656), (52, 43704),

Gene: BrayBeast\_64 Start: 36058, Stop: 36285, Start Num: 25

Candidate Starts for BrayBeast\_64:

(9, 35845), (Start: 25 @36058 has 61 MA's), (33, 36130), (40, 36187), (45, 36220),

Gene: Bubbykins\_61 Start: 45574, Stop: 45798, Start Num: 25

Candidate Starts for Bubbykins\_61:

(Start: 25 @45574 has 61 MA's), (30, 45625), (33, 45646), (35, 45658), (38, 45676), (41, 45706), (45, 45736), (47, 45754),

Gene: Cassini\_88 Start: 49322, Stop: 49549, Start Num: 25

Candidate Starts for Cassini\_88:

(Start: 25 @49322 has 61 MA's), (33, 49394), (37, 49415), (44, 49481), (45, 49484), (47, 49502), (50, 49532),

Gene: Cheesy\_69 Start: 42699, Stop: 42977, Start Num: 25

Candidate Starts for Cheesy\_69:

(Start: 25 @42699 has 61 MA's), (29, 42744), (33, 42777), (39, 42828), (45, 42876), (47, 42894), (49, 42921), (52, 42942),

Gene: Circum\_70 Start: 43275, Stop: 43553, Start Num: 25

Candidate Starts for Circum\_70:

(Start: 25 @43275 has 61 MA's), (29, 43320), (31, 43335), (33, 43353), (39, 43404), (45, 43452), (47, 43470), (52, 43518),

Gene: CookieBear\_88 Start: 49258, Stop: 49497, Start Num: 25

Candidate Starts for CookieBear\_88:

(Start: 25 @49258 has 61 MA's), (30, 49300), (39, 49363), (48, 49438),

Gene: Correa\_67 Start: 42273, Stop: 42551, Start Num: 25

Candidate Starts for Correa\_67:

(Start: 25 @42273 has 61 MA's), (29, 42318), (33, 42351), (39, 42402), (45, 42450), (47, 42468), (49, 42495), (52, 42516),

Gene: CosmicBrownie\_88 Start: 48350, Stop: 48547, Start Num: 30

Candidate Starts for CosmicBrownie\_88:

(Start: 25 @48308 has 61 MA's), (30, 48350), (39, 48413), (42, 48437), (48, 48488),

Gene: Crescenzo\_92 Start: 50951, Stop: 51178, Start Num: 25

Candidate Starts for Crescenzo\_92:

(7, 50708), (10, 50816), (Start: 25 @50951 has 61 MA's), (33, 51023), (37, 51044), (44, 51110), (45, 51113), (50, 51161),

Gene: DarwinJr\_93 Start: 51065, Stop: 51292, Start Num: 25

Candidate Starts for DarwinJr\_93:

(7, 50822), (10, 50930), (Start: 25 @51065 has 61 MA's), (33, 51137), (37, 51158), (44, 51224), (45, 51227), (47, 51245),

Gene: Dynamite\_69 Start: 43288, Stop: 43566, Start Num: 25

Candidate Starts for Dynamite\_69:

(Start: 25 @43288 has 61 MA's), (29, 43333), (31, 43348), (33, 43366), (39, 43417), (45, 43465), (47, 43483), (52, 43531),

Gene: Elsa\_69 Start: 43472, Stop: 43750, Start Num: 25

Candidate Starts for Elsa\_69:

(Start: 25 @43472 has 61 MA's), (29, 43517), (31, 43532), (33, 43550), (39, 43601), (45, 43649), (47, 43667),

Gene: Elver\_119 Start: 65771, Stop: 66007, Start Num: 28

Candidate Starts for Elver\_119:

(27, 65768), (Start: 28 @65771 has 3 MA's), (32, 65837), (43, 65921), (45, 65930), (46, 65933), (47, 65948),

Gene: EvePickles\_90 Start: 50663, Stop: 50890, Start Num: 25

Candidate Starts for EvePickles\_90:

(Start: 25 @50663 has 61 MA's), (30, 50714), (33, 50735), (37, 50756), (44, 50822), (45, 50825), (47, 50843),

Gene: Faja\_90 Start: 49924, Stop: 50151, Start Num: 25

Candidate Starts for Faja\_90:

(7, 49681), (Start: 25 @49924 has 61 MA's), (30, 49975), (33, 49996), (44, 50083), (45, 50086), (47, 50104),

Gene: Gandionco\_116 Start: 64583, Stop: 64819, Start Num: 28

Candidate Starts for Gandionco\_116:

(20, 64550), (27, 64580), (Start: 28 @64583 has 3 MA's), (32, 64649), (43, 64733), (45, 64742), (46, 64745), (47, 64760),

Gene: Gibbzilla\_73 Start: 36826, Stop: 37053, Start Num: 25

Candidate Starts for Gibbzilla\_73:

(1, 36319), (2, 36364), (3, 36379), (5, 36505), (6, 36568), (Start: 25 @36826 has 61 MA's), (33, 36898), (40, 36955), (45, 36988),

Gene: Globfish\_89 Start: 48667, Stop: 48894, Start Num: 25

Candidate Starts for Globfish\_89:

(Start: 25 @48667 has 61 MA's), (33, 48739), (44, 48826), (45, 48829), (47, 48847),

Gene: GoCrazy\_66 Start: 42732, Stop: 43010, Start Num: 25

Candidate Starts for GoCrazy\_66:

(Start: 25 @42732 has 61 MA's), (29, 42777), (31, 42792), (33, 42810), (39, 42861), (45, 42909), (47, 42927),

Gene: Gorpy\_87 Start: 50675, Stop: 50902, Start Num: 25

Candidate Starts for Gorpy\_87:

(Start: 25 @50675 has 61 MA's), (33, 50747), (37, 50768), (44, 50834), (45, 50837),

Gene: GumGum\_97 Start: 51052, Stop: 51249, Start Num: 30

Candidate Starts for GumGum\_97:

(Start: 25 @51010 has 61 MA's), (30, 51052), (39, 51115), (48, 51190),

Gene: Hankly\_68 Start: 42356, Stop: 42634, Start Num: 25

Candidate Starts for Hankly\_68:

(Start: 25 @42356 has 61 MA's), (29, 42401), (31, 42416), (33, 42434), (39, 42485), (45, 42533), (47, 42551), (52, 42599),

Gene: Heisenberger\_68 Start: 42694, Stop: 42972, Start Num: 25

Candidate Starts for Heisenberger\_68:

(Start: 25 @42694 has 61 MA's), (29, 42739), (31, 42754), (33, 42772), (39, 42823), (45, 42871), (47, 42889), (52, 42937),

Gene: Hestia\_83 Start: 47282, Stop: 47509, Start Num: 25  
Candidate Starts for Hestia\_83:  
(Start: 25 @47282 has 61 MA's), (33, 47354), (37, 47375), (44, 47441), (45, 47444),

Gene: Hillester\_93 Start: 49669, Stop: 49896, Start Num: 25  
Candidate Starts for Hillester\_93:  
(Start: 25 @49669 has 61 MA's), (33, 49741), (37, 49762), (44, 49828), (45, 49831), (47, 49849), (50, 49879),

Gene: Isolde\_90 Start: 50517, Stop: 50744, Start Num: 25  
Candidate Starts for Isolde\_90:  
(Start: 25 @50517 has 61 MA's), (27, 50523), (30, 50568), (33, 50589), (37, 50610), (44, 50676), (45, 50679), (47, 50697),

Gene: JEGGS\_68 Start: 42773, Stop: 43051, Start Num: 25  
Candidate Starts for JEGGS\_68:  
(Start: 25 @42773 has 61 MA's), (29, 42818), (31, 42833), (33, 42851), (39, 42902), (45, 42950), (47, 42968), (52, 43016),

Gene: JakeTheSnake\_94 Start: 51814, Stop: 52041, Start Num: 25  
Candidate Starts for JakeTheSnake\_94:  
(Start: 25 @51814 has 61 MA's), (27, 51820), (30, 51865), (33, 51886), (37, 51907), (44, 51973), (45, 51976),

Gene: JeNeSaisPas\_114 Start: 65186, Stop: 65422, Start Num: 27  
Candidate Starts for JeNeSaisPas\_114:  
(13, 65111), (16, 65135), (17, 65138), (19, 65153), (27, 65186), (32, 65252), (43, 65336), (45, 65345), (46, 65348), (47, 65363),

Gene: JellyBread\_86 Start: 49663, Stop: 49890, Start Num: 25  
Candidate Starts for JellyBread\_86:  
(Start: 25 @49663 has 61 MA's), (33, 49735), (37, 49756), (44, 49822), (45, 49825), (47, 49843), (50, 49873),

Gene: Kabloowy\_89 Start: 49965, Stop: 50162, Start Num: 30  
Candidate Starts for Kabloowy\_89:  
(Start: 25 @49923 has 61 MA's), (30, 49965), (39, 50028), (48, 50103),

Gene: Kardesai\_69 Start: 43082, Stop: 43360, Start Num: 25  
Candidate Starts for Kardesai\_69:  
(Start: 25 @43082 has 61 MA's), (29, 43127), (31, 43142), (33, 43160), (39, 43211), (45, 43259), (47, 43277),

Gene: KeaneyLin\_65 Start: 42732, Stop: 43010, Start Num: 25  
Candidate Starts for KeaneyLin\_65:  
(Start: 25 @42732 has 61 MA's), (29, 42777), (31, 42792), (33, 42810), (39, 42861), (45, 42909), (47, 42927),

Gene: Kureo\_117 Start: 64776, Stop: 65015, Start Num: 27  
Candidate Starts for Kureo\_117:  
(27, 64776), (Start: 28 @64779 has 3 MA's), (32, 64845), (43, 64929), (45, 64938), (46, 64941), (47, 64956),

Gene: Lasker\_91 Start: 50385, Stop: 50648, Start Num: 25

Candidate Starts for Lasker\_91:

(Start: 25 @50385 has 61 MA's), (34, 50466), (35, 50472),

Gene: Lawnathon\_93 Start: 50019, Stop: 50246, Start Num: 25

Candidate Starts for Lawnathon\_93:

(Start: 25 @50019 has 61 MA's), (33, 50091), (37, 50112), (44, 50178), (45, 50181), (47, 50199), (50, 50229), (51, 50238),

Gene: LeBruni\_93 Start: 49787, Stop: 50014, Start Num: 25

Candidate Starts for LeBruni\_93:

(Start: 25 @49787 has 61 MA's), (33, 49859), (37, 49880), (44, 49946), (45, 49949), (47, 49967),

Gene: MUWow\_91 Start: 50713, Stop: 50940, Start Num: 25

Candidate Starts for MUWow\_91:

(Start: 25 @50713 has 61 MA's), (33, 50785), (36, 50803), (38, 50815), (45, 50875), (48, 50902),

Gene: Mapleville\_83 Start: 48161, Stop: 48388, Start Num: 25

Candidate Starts for Mapleville\_83:

(Start: 25 @48161 has 61 MA's), (33, 48233), (37, 48254), (44, 48320), (45, 48323), (50, 48371),

Gene: Marianna39\_117 Start: 65194, Stop: 65430, Start Num: 28

Candidate Starts for Marianna39\_117:

(20, 65161), (27, 65191), (Start: 28 @65194 has 3 MA's), (32, 65260), (43, 65344), (45, 65353), (46, 65356), (47, 65371),

Gene: Maruru\_66 Start: 45050, Stop: 45310, Start Num: 22

Candidate Starts for Maruru\_66:

(8, 44834), (Start: 22 @45050 has 2 MA's), (33, 45140), (35, 45152), (45, 45230), (47, 45248),

Gene: MaterMagnus\_88 Start: 49961, Stop: 50188, Start Num: 25

Candidate Starts for MaterMagnus\_88:

(Start: 25 @49961 has 61 MA's), (33, 50033), (37, 50054), (44, 50120), (45, 50123),

Gene: MidnightRain\_96 Start: 51168, Stop: 51395, Start Num: 25

Candidate Starts for MidnightRain\_96:

(Start: 25 @51168 has 61 MA's), (30, 51219), (33, 51240), (37, 51261), (44, 51327), (45, 51330), (47, 51348),

Gene: MissAmericana\_13 Start: 9042, Stop: 8782, Start Num: 21

Candidate Starts for MissAmericana\_13:

(18, 9063), (Start: 21 @9042 has 2 MA's), (39, 8925), (48, 8850),

Gene: Mooshroom\_70 Start: 43082, Stop: 43360, Start Num: 25

Candidate Starts for Mooshroom\_70:

(Start: 25 @43082 has 61 MA's), (29, 43127), (31, 43142), (33, 43160), (39, 43211), (45, 43259), (47, 43277),

Gene: Mudcat\_65 Start: 44131, Stop: 44409, Start Num: 25

Candidate Starts for Mudcat\_65:

(Start: 25 @44131 has 61 MA's), (29, 44176), (31, 44191), (33, 44209), (39, 44260), (45, 44308), (47, 44326), (52, 44374),

Gene: NapoleonB\_70 Start: 43288, Stop: 43566, Start Num: 25

Candidate Starts for NapoleonB\_70:

(Start: 25 @43288 has 61 MA's), (29, 43333), (31, 43348), (33, 43366), (39, 43417), (45, 43465), (47, 43483), (52, 43531),

Gene: Nason\_69 Start: 43472, Stop: 43750, Start Num: 25

Candidate Starts for Nason\_69:

(Start: 25 @43472 has 61 MA's), (29, 43517), (31, 43532), (33, 43550), (39, 43601), (45, 43649), (47, 43667),

Gene: NewKitty\_90 Start: 50156, Stop: 50383, Start Num: 25

Candidate Starts for NewKitty\_90:

(Start: 25 @50156 has 61 MA's), (33, 50228), (36, 50246), (38, 50258), (45, 50318), (48, 50345),

Gene: Nyilah\_96 Start: 49629, Stop: 49856, Start Num: 25

Candidate Starts for Nyilah\_96:

(Start: 25 @49629 has 61 MA's), (27, 49635), (33, 49701), (37, 49722), (44, 49788), (45, 49791), (50, 49839),

Gene: Paella\_119 Start: 66359, Stop: 66595, Start Num: 28

Candidate Starts for Paella\_119:

(27, 66356), (Start: 28 @66359 has 3 MA's), (32, 66425), (43, 66509), (45, 66518), (46, 66521), (47, 66536),

Gene: Persistence\_84 Start: 47327, Stop: 47554, Start Num: 25

Candidate Starts for Persistence\_84:

(Start: 25 @47327 has 61 MA's), (30, 47378), (33, 47399), (37, 47420), (44, 47486), (45, 47489),

Gene: Phrank15\_95 Start: 50347, Stop: 50574, Start Num: 25

Candidate Starts for Phrank15\_95:

(Start: 25 @50347 has 61 MA's), (33, 50419), (37, 50440), (44, 50506), (45, 50509),

Gene: Pigu\_66 Start: 34831, Stop: 35052, Start Num: 27

Candidate Starts for Pigu\_66:

(27, 34831), (33, 34897), (40, 34954), (45, 34987),

Gene: Qui\_119 Start: 66359, Stop: 66595, Start Num: 28

Candidate Starts for Qui\_119:

(27, 66356), (Start: 28 @66359 has 3 MA's), (32, 66425), (43, 66509), (45, 66518), (46, 66521), (47, 66536),

Gene: RadFad\_94 Start: 49669, Stop: 49896, Start Num: 25

Candidate Starts for RadFad\_94:

(Start: 25 @49669 has 61 MA's), (33, 49741), (37, 49762), (44, 49828), (45, 49831), (47, 49849), (50, 49879),

Gene: Raphaella\_89 Start: 48624, Stop: 48887, Start Num: 25

Candidate Starts for Raphaella\_89:

(Start: 25 @48624 has 61 MA's), (34, 48705), (35, 48711),

Gene: Raqqa\_93 Start: 50720, Stop: 50947, Start Num: 25

Candidate Starts for Raqqa\_93:

(12, 50645), (15, 50678), (Start: 25 @50720 has 61 MA's), (33, 50792), (44, 50879), (45, 50882), (47, 50900),

Gene: Richie\_92 Start: 50519, Stop: 50746, Start Num: 25

Candidate Starts for Richie\_92:

(Start: 25 @50519 has 61 MA's), (33, 50591), (37, 50612), (44, 50678), (45, 50681), (50, 50729),

Gene: Rooter\_72 Start: 36880, Stop: 37107, Start Num: 25

Candidate Starts for Rooter\_72:

(Start: 25 @36880 has 61 MA's), (33, 36952), (40, 37009), (45, 37042),

Gene: Sakai\_86 Start: 49386, Stop: 49613, Start Num: 25

Candidate Starts for Sakai\_86:

(Start: 25 @49386 has 61 MA's), (33, 49458), (37, 49479), (44, 49545), (45, 49548),

Gene: Sarge\_61 Start: 33816, Stop: 34043, Start Num: 25

Candidate Starts for Sarge\_61:

(Start: 25 @33816 has 61 MA's), (30, 33867), (33, 33888), (40, 33945), (45, 33978),

Gene: Sashimi\_90 Start: 49657, Stop: 49884, Start Num: 25

Candidate Starts for Sashimi\_90:

(23, 49651), (Start: 25 @49657 has 61 MA's), (30, 49708), (33, 49729), (37, 49750), (44, 49816), (45, 49819),

Gene: Satrap\_88 Start: 49096, Stop: 49323, Start Num: 25

Candidate Starts for Satrap\_88:

(Start: 25 @49096 has 61 MA's), (33, 49168), (37, 49189), (44, 49255), (45, 49258), (47, 49276), (50, 49306), (51, 49315),

Gene: Seahorse\_95 Start: 54032, Stop: 54259, Start Num: 25

Candidate Starts for Seahorse\_95:

(Start: 25 @54032 has 61 MA's), (33, 54104), (37, 54125), (44, 54191), (45, 54194), (50, 54242),

Gene: Shoya\_64 Start: 35887, Stop: 36126, Start Num: 25

Candidate Starts for Shoya\_64:

(Start: 25 @35887 has 61 MA's), (39, 35992), (43, 36031), (48, 36067),

Gene: Shukran\_86 Start: 47862, Stop: 48089, Start Num: 25

Candidate Starts for Shukran\_86:

(Start: 25 @47862 has 61 MA's), (33, 47934), (35, 47946), (44, 48021), (45, 48024),

Gene: SilentRX\_47 Start: 38442, Stop: 38200, Start Num: 24

Candidate Starts for SilentRX\_47:

(Start: 24 @38442 has 1 MA's), (30, 38391), (35, 38358), (44, 38283),

Gene: SonDevVon\_97 Start: 50289, Stop: 50486, Start Num: 30

Candidate Starts for SonDevVon\_97:

(Start: 25 @50247 has 61 MA's), (30, 50289), (39, 50352), (48, 50427),

Gene: Sonali\_66 Start: 45518, Stop: 45778, Start Num: 22

Candidate Starts for Sonali\_66:

(8, 45302), (Start: 22 @45518 has 2 MA's), (33, 45608), (35, 45620), (45, 45698), (47, 45716),

Gene: SpicyFrank\_91 Start: 49438, Stop: 49665, Start Num: 25  
Candidate Starts for SpicyFrank\_91:  
(Start: 25 @49438 has 61 MA's), (33, 49510), (44, 49597), (45, 49600),

Gene: Sporco\_91 Start: 51052, Stop: 51249, Start Num: 30  
Candidate Starts for Sporco\_91:  
(Start: 25 @51010 has 61 MA's), (30, 51052), (39, 51115), (48, 51190),

Gene: Sunshine23\_67 Start: 45169, Stop: 45429, Start Num: 22  
Candidate Starts for Sunshine23\_67:  
(Start: 22 @45169 has 2 MA's), (33, 45259), (35, 45271), (45, 45349), (47, 45367),

Gene: ThayneTheZag\_96 Start: 51075, Stop: 51302, Start Num: 25  
Candidate Starts for ThayneTheZag\_96:  
(Start: 25 @51075 has 61 MA's), (30, 51126), (33, 51147), (44, 51234), (45, 51237), (47, 51255), (50, 51285),

Gene: Tiff81\_84 Start: 47744, Stop: 48007, Start Num: 25  
Candidate Starts for Tiff81\_84:  
(Start: 25 @47744 has 61 MA's), (34, 47825), (35, 47831),

Gene: Tribby\_72 Start: 43659, Stop: 43937, Start Num: 25  
Candidate Starts for Tribby\_72:  
(Start: 25 @43659 has 61 MA's), (29, 43704), (33, 43737), (39, 43788), (45, 43836), (47, 43854), (49, 43881), (52, 43902),

Gene: Vopal\_90 Start: 50690, Stop: 50953, Start Num: 25  
Candidate Starts for Vopal\_90:  
(Start: 25 @50690 has 61 MA's), (34, 50771), (35, 50777),

Gene: Windest\_94 Start: 48912, Stop: 49139, Start Num: 25  
Candidate Starts for Windest\_94:  
(Start: 25 @48912 has 61 MA's), (27, 48918), (30, 48963), (33, 48984), (37, 49005), (44, 49071), (45, 49074), (47, 49092),

Gene: Xenomorph\_65 Start: 43143, Stop: 43421, Start Num: 25  
Candidate Starts for Xenomorph\_65:  
(Start: 25 @43143 has 61 MA's), (29, 43188), (31, 43203), (33, 43221), (39, 43272), (45, 43320), (47, 43338), (49, 43365), (52, 43386),

Gene: YoshiYama\_70 Start: 43715, Stop: 43993, Start Num: 25  
Candidate Starts for YoshiYama\_70:  
(Start: 25 @43715 has 61 MA's), (29, 43760), (31, 43775), (33, 43793), (39, 43844), (45, 43892), (47, 43910), (52, 43958),

Gene: YoungHarleezy\_90 Start: 50145, Stop: 50372, Start Num: 25  
Candidate Starts for YoungHarleezy\_90:  
(Start: 25 @50145 has 61 MA's), (27, 50151), (30, 50196), (33, 50217), (37, 50238), (44, 50304), (45, 50307),

Gene: Zucker\_89 Start: 50629, Stop: 50856, Start Num: 25  
Candidate Starts for Zucker\_89:  
(Start: 25 @50629 has 61 MA's), (33, 50701), (37, 50722), (44, 50788), (45, 50791),

