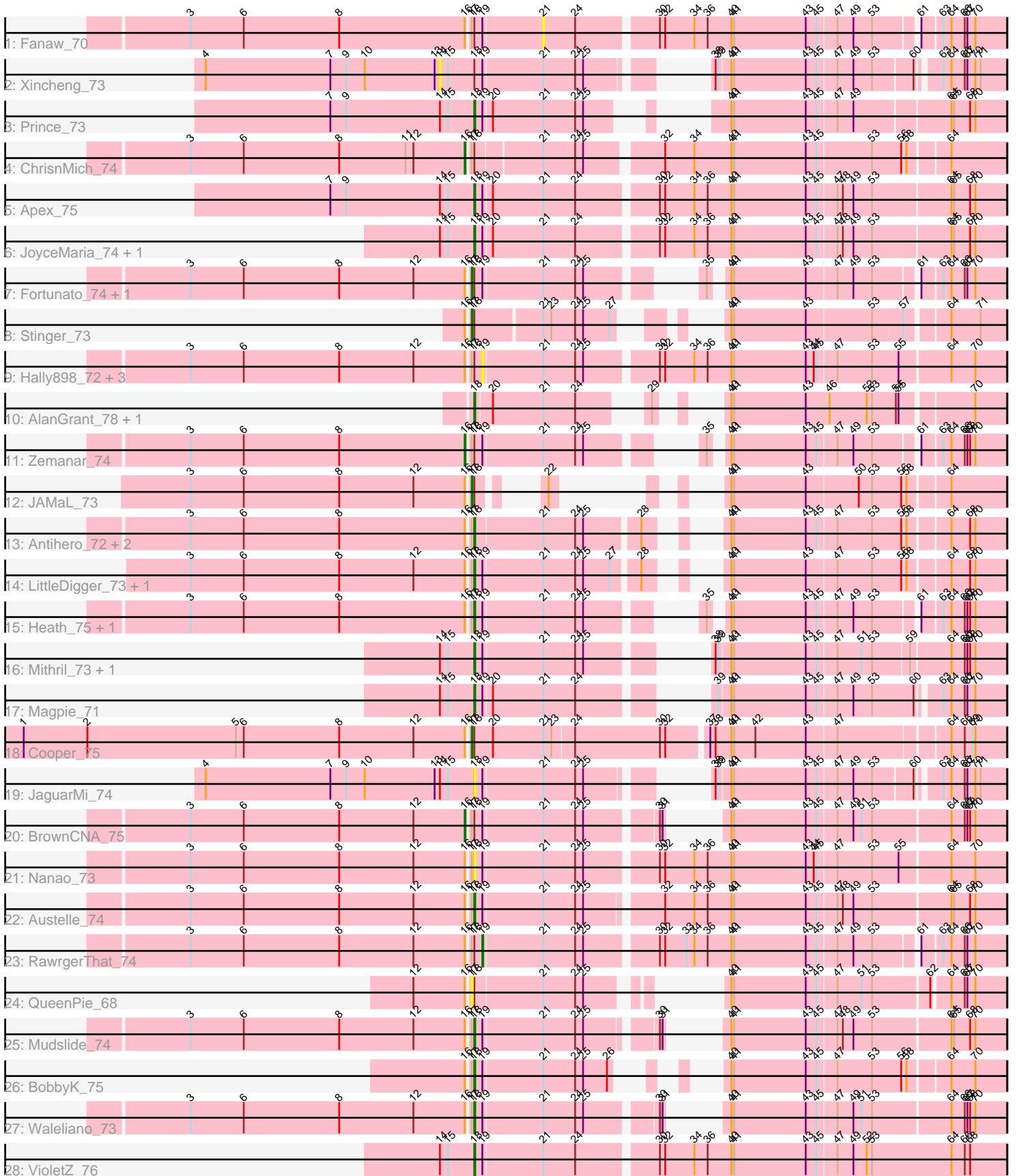


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Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. 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 311794 Report

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

Pham number 311794 has 39 members, 12 are drafts.

Phages represented in each track:

- Track 1 : Fanaw\_70
- Track 2 : Xincheng\_73
- Track 3 : Prince\_73
- Track 4 : ChrisnMich\_74
- Track 5 : Apex\_75
- Track 6 : JoyceMaria\_74, Hangman\_75
- Track 7 : Fortunato\_74, Frederick\_76
- Track 8 : Stinger\_73
- Track 9 : Hally898\_72, Ahwei\_72, Poster\_72, Lambano\_72
- Track 10 : AlanGrant\_78, Vincenzo\_77
- Track 11 : Zemanar\_74
- Track 12 : JAMaL\_73
- Track 13 : Antihero\_72, GinPorsche\_74, Epah\_72
- Track 14 : LittleDigger\_73, Renkei\_73
- Track 15 : Heath\_75, Hydro\_75
- Track 16 : Mithril\_73, Lolalove\_75
- Track 17 : Magpie\_71
- Track 18 : Cooper\_75
- Track 19 : JaguarMi\_74
- Track 20 : BrownCNA\_75
- Track 21 : Nanao\_73
- Track 22 : Austelle\_74
- Track 23 : RawrgerThat\_74
- Track 24 : QueenPie\_68
- Track 25 : Mudslide\_74
- Track 26 : BobbyK\_75
- Track 27 : Waleliano\_73
- Track 28 : VioletZ\_76

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

The start number called the most often in the published annotations is 18, it was called in 18 of the 27 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AlanGrant\_78, Antihero\_72, Apex\_75, Austelle\_74, BobbyK\_75, Epah\_72, GinPorsche\_74, Hangman\_75, Heath\_75, Hydro\_75, JaguarMi\_74, JoyceMaria\_74, LittleDigger\_73, Lolalove\_75, Magpie\_71, Mithril\_73, Mudslide\_74, Nanao\_73, Prince\_73, Renkei\_73, Vincenzo\_77, VioletZ\_76, Waleliano\_73,

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

- Ahwei\_72, BrownCNA\_75, ChrisnMich\_74, Cooper\_75, Fanaw\_70, Fortunato\_74, Frederick\_76, Hally898\_72, JAMaL\_73, Lambano\_72, Poster\_72, QueenPie\_68, RawrgerThat\_74, Stinger\_73, Xincheng\_73, Zemanar\_74,

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

- 

### Summary by start number:

Start 14:

- Found in 10 of 39 ( 25.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Xincheng\_73 (B4),

Start 16:

- Found in 27 of 39 ( 69.2% ) of genes in pham
- Manual Annotations of this start: 3 of 27
- Called 11.1% of time when present
- Phage (with cluster) where this start called: BrownCNA\_75 (B4), ChrisnMich\_74 (B4), Zemanar\_74 (B4),

Start 17:

- Found in 27 of 39 ( 69.2% ) of genes in pham
- Manual Annotations of this start: 5 of 27
- Called 22.2% of time when present
- Phage (with cluster) where this start called: Cooper\_75 (B4), Fortunato\_74 (B4), Frederick\_76 (B4), JAMaL\_73 (B4), QueenPie\_68 (B4), Stinger\_73 (B4),

Start 18:

- Found in 39 of 39 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 18 of 27
- Called 59.0% of time when present
- Phage (with cluster) where this start called: AlanGrant\_78 (B4), Antihero\_72 (B4), Apex\_75 (B4), Austelle\_74 (B4), BobbyK\_75 (B4), Epah\_72 (B4), GinPorsche\_74 (B4), Hangman\_75 (B4), Heath\_75 (B4), Hydro\_75 (B4), JaguarMi\_74 (B4), JoyceMaria\_74 (B4), LittleDigger\_73 (B4), Lolalove\_75 (B4), Magpie\_71 (B4), Mithril\_73 (B4), Mudslide\_74 (B4), Nanao\_73 (B4), Prince\_73 (B4), Renkei\_73 (B4), Vincenzo\_77 (B4), VioletZ\_76 (B4), Waleliano\_73 (B4),

Start 19:

- Found in 29 of 39 ( 74.4% ) of genes in pham
- Manual Annotations of this start: 1 of 27
- Called 17.2% of time when present
- Phage (with cluster) where this start called: Ahwei\_72 (B4), Hally898\_72 (B4), Lambano\_72 (B4), Poster\_72 (B4), RawrgerThat\_74 (B4),

Start 21:

- Found in 38 of 39 ( 97.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 2.6% of time when present
- Phage (with cluster) where this start called: Fanaw\_70 (B4),

### **Summary by clusters:**

There is one cluster represented in this pham: B4

Info for manual annotations of cluster B4:

- Start number 16 was manually annotated 3 times for cluster B4.
- Start number 17 was manually annotated 5 times for cluster B4.
- Start number 18 was manually annotated 18 times for cluster B4.
- Start number 19 was manually annotated 1 time for cluster B4.

### **Gene Information:**

Gene: Ahwei\_72 Start: 61792, Stop: 61223, Start Num: 19

Candidate Starts for Ahwei\_72:

(3, 62116), (6, 62056), (8, 61948), (12, 61864), (Start: 16 @61807 has 3 MA's), (Start: 17 @61804 has 5 MA's), (Start: 18 @61801 has 18 MA's), (Start: 19 @61792 has 1 MA's), (21, 61726), (24, 61690), (25, 61681), (30, 61606), (32, 61600), (34, 61567), (36, 61552), (40, 61525), (41, 61522), (43, 61441), (44, 61432), (45, 61429), (47, 61408), (53, 61369), (55, 61339), (64, 61285), (70, 61258),

Gene: AlanGrant\_78 Start: 64158, Stop: 63676, Start Num: 18

Candidate Starts for AlanGrant\_78:

(Start: 18 @64158 has 18 MA's), (20, 64140), (21, 64083), (24, 64047), (29, 63999), (40, 63975), (41, 63972), (43, 63891), (46, 63864), (52, 63822), (53, 63816), (54, 63789), (55, 63786), (70, 63711),

Gene: Antihero\_72 Start: 61736, Stop: 61230, Start Num: 18

Candidate Starts for Antihero\_72:

(3, 62051), (6, 61991), (8, 61883), (Start: 16 @61742 has 3 MA's), (Start: 17 @61739 has 5 MA's), (Start: 18 @61736 has 18 MA's), (21, 61661), (24, 61625), (25, 61616), (28, 61559), (40, 61523), (41, 61520), (43, 61439), (45, 61427), (47, 61406), (53, 61367), (56, 61334), (58, 61331), (64, 61292), (68, 61271), (70, 61265),

Gene: Apex\_75 Start: 62900, Stop: 62322, Start Num: 18

Candidate Starts for Apex\_75:

(7, 63062), (9, 63044), (14, 62939), (15, 62930), (Start: 18 @62900 has 18 MA's), (Start: 19 @62891 has 1 MA's), (20, 62882), (21, 62825), (24, 62789), (30, 62705), (32, 62699), (34, 62666), (36, 62651), (40, 62624), (41, 62621), (43, 62540), (45, 62528), (47, 62507), (48, 62501), (49, 62489), (53, 62468), (64, 62384), (65, 62381), (68, 62363), (70, 62357),

Gene: Austelle\_74 Start: 63414, Stop: 62839, Start Num: 18

Candidate Starts for Austelle\_74:

(3, 63729), (6, 63669), (8, 63561), (12, 63477), (Start: 16 @63420 has 3 MA's), (Start: 17 @63417 has 5 MA's), (Start: 18 @63414 has 18 MA's), (Start: 19 @63405 has 1 MA's), (21, 63339), (24, 63303), (25, 63294), (32, 63216), (34, 63183), (36, 63168), (40, 63141), (41, 63138), (43, 63057), (45, 63045), (47, 63024), (48, 63018), (49, 63006), (53, 62985), (64, 62901), (65, 62898), (68, 62880), (70, 62874),

Gene: BobbyK\_75 Start: 62568, Stop: 62092, Start Num: 18

Candidate Starts for BobbyK\_75:

(Start: 16 @62574 has 3 MA's), (Start: 17 @62571 has 5 MA's), (Start: 18 @62568 has 18 MA's), (Start: 19 @62559 has 1 MA's), (21, 62493), (24, 62457), (25, 62448), (26, 62421), (40, 62385), (41, 62382), (43, 62301), (45, 62289), (47, 62268), (53, 62229), (56, 62196), (58, 62193), (64, 62154), (70, 62127),

Gene: BrownCNA\_75 Start: 62778, Stop: 62263, Start Num: 16

Candidate Starts for BrownCNA\_75:

(3, 63087), (6, 63027), (8, 62919), (12, 62835), (Start: 16 @62778 has 3 MA's), (Start: 17 @62775 has 5 MA's), (Start: 18 @62772 has 18 MA's), (Start: 19 @62763 has 1 MA's), (21, 62697), (24, 62661), (25, 62652), (30, 62580), (31, 62577), (40, 62565), (41, 62562), (43, 62481), (45, 62469), (47, 62448), (49, 62430), (51, 62421), (53, 62409), (64, 62325), (66, 62310), (67, 62307), (68, 62304), (70, 62298),

Gene: ChrisnMich\_74 Start: 61774, Stop: 61208, Start Num: 16

Candidate Starts for ChrisnMich\_74:

(3, 62083), (6, 62023), (8, 61915), (11, 61840), (12, 61831), (Start: 16 @61774 has 3 MA's), (Start: 17 @61771 has 5 MA's), (Start: 18 @61768 has 18 MA's), (21, 61699), (24, 61663), (25, 61654), (32, 61576), (34, 61543), (40, 61501), (41, 61498), (43, 61417), (45, 61405), (53, 61345), (56, 61312), (58, 61309), (64, 61270),

Gene: Cooper\_75 Start: 62249, Stop: 61674, Start Num: 17

Candidate Starts for Cooper\_75:

(1, 62750), (2, 62678), (5, 62510), (6, 62501), (8, 62393), (12, 62309), (Start: 16 @62252 has 3 MA's), (Start: 17 @62249 has 5 MA's), (Start: 18 @62246 has 18 MA's), (20, 62225), (21, 62168), (23, 62159), (24, 62135), (30, 62039), (32, 62033), (37, 61991), (38, 61985), (40, 61967), (41, 61964), (42, 61940), (43, 61883), (47, 61850), (64, 61736), (66, 61721), (69, 61712), (70, 61709),

Gene: Epah\_72 Start: 61736, Stop: 61230, Start Num: 18

Candidate Starts for Epah\_72:

(3, 62051), (6, 61991), (8, 61883), (Start: 16 @61742 has 3 MA's), (Start: 17 @61739 has 5 MA's), (Start: 18 @61736 has 18 MA's), (21, 61661), (24, 61625), (25, 61616), (28, 61559), (40, 61523), (41, 61520), (43, 61439), (45, 61427), (47, 61406), (53, 61367), (56, 61334), (58, 61331), (64, 61292), (68, 61271), (70, 61265),

Gene: Fanaw\_70 Start: 62533, Stop: 62042, Start Num: 21

Candidate Starts for Fanaw\_70:

(3, 62923), (6, 62863), (8, 62755), (Start: 16 @62614 has 3 MA's), (Start: 17 @62611 has 5 MA's), (Start: 18 @62608 has 18 MA's), (Start: 19 @62599 has 1 MA's), (21, 62533), (24, 62497), (30, 62413), (32, 62407), (34, 62374), (36, 62359), (40, 62332), (41, 62329), (43, 62248), (45, 62236), (47, 62215), (49, 62197), (53, 62176), (61, 62134), (63, 62113), (64, 62104), (66, 62089), (67, 62086), (70, 62077),

Gene: Fortunato\_74 Start: 62541, Stop: 62041, Start Num: 17

Candidate Starts for Fortunato\_74:

(3, 62853), (6, 62793), (8, 62685), (12, 62601), (Start: 16 @62544 has 3 MA's), (Start: 17 @62541 has 5 MA's), (Start: 18 @62538 has 18 MA's), (Start: 19 @62529 has 1 MA's), (21, 62463), (24, 62427), (25, 62418), (35, 62343), (40, 62331), (41, 62328), (43, 62247), (47, 62214), (49, 62196), (53, 62175), (61, 62133), (63, 62112), (64, 62103), (66, 62088), (67, 62085), (70, 62076),

Gene: Frederick\_76 Start: 62845, Stop: 62345, Start Num: 17

Candidate Starts for Frederick\_76:

(3, 63157), (6, 63097), (8, 62989), (12, 62905), (Start: 16 @62848 has 3 MA's), (Start: 17 @62845 has 5 MA's), (Start: 18 @62842 has 18 MA's), (Start: 19 @62833 has 1 MA's), (21, 62767), (24, 62731), (25, 62722), (35, 62647), (40, 62635), (41, 62632), (43, 62551), (47, 62518), (49, 62500), (53, 62479), (61, 62437), (63, 62416), (64, 62407), (66, 62392), (67, 62389), (70, 62380),

Gene: GinPorsche\_74 Start: 61733, Stop: 61227, Start Num: 18

Candidate Starts for GinPorsche\_74:

(3, 62048), (6, 61988), (8, 61880), (Start: 16 @61739 has 3 MA's), (Start: 17 @61736 has 5 MA's), (Start: 18 @61733 has 18 MA's), (21, 61658), (24, 61622), (25, 61613), (28, 61556), (40, 61520), (41, 61517), (43, 61436), (45, 61424), (47, 61403), (53, 61364), (56, 61331), (58, 61328), (64, 61289), (68, 61268), (70, 61262),

Gene: Hally898\_72 Start: 61805, Stop: 61236, Start Num: 19

Candidate Starts for Hally898\_72:

(3, 62129), (6, 62069), (8, 61961), (12, 61877), (Start: 16 @61820 has 3 MA's), (Start: 17 @61817 has 5 MA's), (Start: 18 @61814 has 18 MA's), (Start: 19 @61805 has 1 MA's), (21, 61739), (24, 61703), (25, 61694), (30, 61619), (32, 61613), (34, 61580), (36, 61565), (40, 61538), (41, 61535), (43, 61454), (44, 61445), (45, 61442), (47, 61421), (53, 61382), (55, 61352), (64, 61298), (70, 61271),

Gene: Hangman\_75 Start: 63114, Stop: 62536, Start Num: 18

Candidate Starts for Hangman\_75:

(14, 63153), (15, 63144), (Start: 18 @63114 has 18 MA's), (Start: 19 @63105 has 1 MA's), (20, 63096), (21, 63039), (24, 63003), (30, 62919), (32, 62913), (34, 62880), (36, 62865), (40, 62838), (41, 62835), (43, 62754), (45, 62742), (47, 62721), (48, 62715), (49, 62703), (53, 62682), (64, 62598), (65, 62595), (68, 62577), (70, 62571),

Gene: Heath\_75 Start: 63053, Stop: 62556, Start Num: 18

Candidate Starts for Heath\_75:

(3, 63368), (6, 63308), (8, 63200), (Start: 16 @63059 has 3 MA's), (Start: 17 @63056 has 5 MA's), (Start: 18 @63053 has 18 MA's), (Start: 19 @63044 has 1 MA's), (21, 62978), (24, 62942), (25, 62933), (35, 62858), (40, 62846), (41, 62843), (43, 62762), (45, 62750), (47, 62729), (49, 62711), (53, 62690), (61, 62648), (63, 62627), (64, 62618), (66, 62603), (67, 62600), (68, 62597), (70, 62591),

Gene: Hydro\_75 Start: 62971, Stop: 62474, Start Num: 18

Candidate Starts for Hydro\_75:

(3, 63286), (6, 63226), (8, 63118), (Start: 16 @62977 has 3 MA's), (Start: 17 @62974 has 5 MA's), (Start: 18 @62971 has 18 MA's), (Start: 19 @62962 has 1 MA's), (21, 62896), (24, 62860), (25, 62851), (35, 62776), (40, 62764), (41, 62761), (43, 62680), (45, 62668), (47, 62647), (49, 62629), (53, 62608), (61, 62566), (63, 62545), (64, 62536), (66, 62521), (67, 62518), (68, 62515), (70, 62509),

Gene: JAMaL\_73 Start: 62294, Stop: 61929, Start Num: 17

Candidate Starts for JAMaL\_73:

(3, 62606), (6, 62546), (8, 62438), (12, 62354), (Start: 16 @62297 has 3 MA's), (Start: 17 @62294 has 5 MA's), (Start: 18 @62291 has 18 MA's), (22, 62264), (40, 62222), (41, 62219), (43, 62138), (50, 62081), (53, 62066), (56, 62033), (58, 62030), (64, 61991),

Gene: JaguarMi\_74 Start: 63782, Stop: 63291, Start Num: 18

Candidate Starts for JaguarMi\_74:

(4, 64085), (7, 63944), (9, 63926), (10, 63905), (13, 63827), (14, 63821), (15, 63812), (Start: 18 @63782 has 18 MA's), (Start: 19 @63773 has 1 MA's), (21, 63707), (24, 63671), (25, 63662), (38, 63593), (39, 63590), (40, 63578), (41, 63575), (43, 63494), (45, 63482), (47, 63461), (49, 63443), (53, 63422), (60, 63383), (63, 63362), (64, 63353), (66, 63338), (67, 63335), (70, 63326), (71, 63320),

Gene: JoyceMaria\_74 Start: 62940, Stop: 62362, Start Num: 18

Candidate Starts for JoyceMaria\_74:

(14, 62979), (15, 62970), (Start: 18 @62940 has 18 MA's), (Start: 19 @62931 has 1 MA's), (20, 62922), (21, 62865), (24, 62829), (30, 62745), (32, 62739), (34, 62706), (36, 62691), (40, 62664), (41, 62661), (43, 62580), (45, 62568), (47, 62547), (48, 62541), (49, 62529), (53, 62508), (64, 62424), (65, 62421), (68, 62403), (70, 62397),

Gene: Lambano\_72 Start: 61805, Stop: 61236, Start Num: 19

Candidate Starts for Lambano\_72:

(3, 62129), (6, 62069), (8, 61961), (12, 61877), (Start: 16 @61820 has 3 MA's), (Start: 17 @61817 has 5 MA's), (Start: 18 @61814 has 18 MA's), (Start: 19 @61805 has 1 MA's), (21, 61739), (24, 61703), (25, 61694), (30, 61619), (32, 61613), (34, 61580), (36, 61565), (40, 61538), (41, 61535), (43, 61454), (44, 61445), (45, 61442), (47, 61421), (53, 61382), (55, 61352), (64, 61298), (70, 61271),

Gene: LittleDigger\_73 Start: 61667, Stop: 61161, Start Num: 18

Candidate Starts for LittleDigger\_73:

(3, 61982), (6, 61922), (8, 61814), (12, 61730), (Start: 16 @61673 has 3 MA's), (Start: 17 @61670 has 5 MA's), (Start: 18 @61667 has 18 MA's), (Start: 19 @61658 has 1 MA's), (21, 61592), (24, 61556), (25, 61547), (27, 61517), (28, 61490), (40, 61454), (41, 61451), (43, 61370), (47, 61337), (53, 61298), (56, 61265), (58, 61262), (64, 61223), (68, 61202), (70, 61196),

Gene: Lolalove\_75 Start: 62700, Stop: 62194, Start Num: 18

Candidate Starts for Lolalove\_75:

(14, 62739), (15, 62730), (Start: 18 @62700 has 18 MA's), (Start: 19 @62691 has 1 MA's), (21, 62625), (24, 62589), (25, 62580), (38, 62508), (39, 62505), (40, 62493), (41, 62490), (43, 62409), (45, 62397), (47, 62376), (51, 62349), (53, 62337), (59, 62298), (64, 62256), (66, 62241), (67, 62238), (68, 62235), (70, 62229),

Gene: Magpie\_71 Start: 62312, Stop: 61815, Start Num: 18

Candidate Starts for Magpie\_71:

(14, 62351), (15, 62342), (Start: 18 @62312 has 18 MA's), (Start: 19 @62303 has 1 MA's), (20, 62294), (21, 62237), (24, 62201), (39, 62117), (40, 62105), (41, 62102), (43, 62021), (45, 62009), (47, 61988), (49, 61970), (53, 61949), (60, 61907), (63, 61886), (64, 61877), (66, 61862), (67, 61859), (70, 61850),

Gene: Mithril\_73 Start: 62699, Stop: 62193, Start Num: 18

Candidate Starts for Mithril\_73:

(14, 62738), (15, 62729), (Start: 18 @62699 has 18 MA's), (Start: 19 @62690 has 1 MA's), (21, 62624), (24, 62588), (25, 62579), (38, 62507), (39, 62504), (40, 62492), (41, 62489), (43, 62408), (45, 62396), (47, 62375), (51, 62348), (53, 62336), (59, 62297), (64, 62255), (66, 62240), (67, 62237), (68, 62234), (70, 62228),

Gene: Mudslide\_74 Start: 62930, Stop: 62424, Start Num: 18

Candidate Starts for Mudslide\_74:

(3, 63245), (6, 63185), (8, 63077), (12, 62993), (Start: 16 @62936 has 3 MA's), (Start: 17 @62933 has 5 MA's), (Start: 18 @62930 has 18 MA's), (Start: 19 @62921 has 1 MA's), (21, 62855), (24, 62819), (25, 62810), (30, 62741), (31, 62738), (40, 62726), (41, 62723), (43, 62642), (45, 62630), (47, 62609), (48, 62603), (49, 62591), (53, 62570), (64, 62486), (65, 62483), (68, 62465), (70, 62459),

Gene: Nanao\_73 Start: 61804, Stop: 61226, Start Num: 18

Candidate Starts for Nanao\_73:

(3, 62119), (6, 62059), (8, 61951), (12, 61867), (Start: 16 @61810 has 3 MA's), (Start: 17 @61807 has 5 MA's), (Start: 18 @61804 has 18 MA's), (Start: 19 @61795 has 1 MA's), (21, 61729), (24, 61693), (25, 61684), (30, 61609), (32, 61603), (34, 61570), (36, 61555), (40, 61528), (41, 61525), (43, 61444),

(44, 61435), (45, 61432), (47, 61411), (53, 61372), (55, 61342), (64, 61288), (70, 61261),

Gene: Poster\_72 Start: 61796, Stop: 61227, Start Num: 19

Candidate Starts for Poster\_72:

(3, 62120), (6, 62060), (8, 61952), (12, 61868), (Start: 16 @61811 has 3 MA's), (Start: 17 @61808 has 5 MA's), (Start: 18 @61805 has 18 MA's), (Start: 19 @61796 has 1 MA's), (21, 61730), (24, 61694), (25, 61685), (30, 61610), (32, 61604), (34, 61571), (36, 61556), (40, 61529), (41, 61526), (43, 61445), (44, 61436), (45, 61433), (47, 61412), (53, 61373), (55, 61343), (64, 61289), (70, 61262),

Gene: Prince\_73 Start: 62803, Stop: 62321, Start Num: 18

Candidate Starts for Prince\_73:

(7, 62965), (9, 62947), (14, 62842), (15, 62833), (Start: 18 @62803 has 18 MA's), (Start: 19 @62794 has 1 MA's), (20, 62785), (21, 62728), (24, 62692), (25, 62683), (40, 62620), (41, 62617), (43, 62536), (45, 62524), (47, 62503), (49, 62485), (64, 62383), (65, 62380), (68, 62362), (70, 62356),

Gene: QueenPie\_68 Start: 61541, Stop: 61059, Start Num: 17

Candidate Starts for QueenPie\_68:

(12, 61601), (Start: 16 @61544 has 3 MA's), (Start: 17 @61541 has 5 MA's), (Start: 18 @61538 has 18 MA's), (21, 61463), (24, 61427), (25, 61418), (40, 61355), (41, 61352), (43, 61271), (45, 61259), (47, 61238), (51, 61211), (53, 61199), (62, 61139), (64, 61121), (66, 61106), (67, 61103), (70, 61094),

Gene: RawrgerThat\_74 Start: 62576, Stop: 62019, Start Num: 19

Candidate Starts for RawrgerThat\_74:

(3, 62900), (6, 62840), (8, 62732), (12, 62648), (Start: 16 @62591 has 3 MA's), (Start: 17 @62588 has 5 MA's), (Start: 18 @62585 has 18 MA's), (Start: 19 @62576 has 1 MA's), (21, 62510), (24, 62474), (25, 62465), (30, 62390), (32, 62384), (33, 62360), (34, 62351), (36, 62336), (40, 62309), (41, 62306), (43, 62225), (45, 62213), (47, 62192), (49, 62174), (53, 62153), (61, 62111), (63, 62090), (64, 62081), (66, 62066), (67, 62063), (70, 62054),

Gene: Renkei\_73 Start: 61661, Stop: 61155, Start Num: 18

Candidate Starts for Renkei\_73:

(3, 61976), (6, 61916), (8, 61808), (12, 61724), (Start: 16 @61667 has 3 MA's), (Start: 17 @61664 has 5 MA's), (Start: 18 @61661 has 18 MA's), (Start: 19 @61652 has 1 MA's), (21, 61586), (24, 61550), (25, 61541), (27, 61511), (28, 61484), (40, 61448), (41, 61445), (43, 61364), (47, 61331), (53, 61292), (56, 61259), (58, 61256), (64, 61217), (68, 61196), (70, 61190),

Gene: Stinger\_73 Start: 61438, Stop: 60947, Start Num: 17

Candidate Starts for Stinger\_73:

(Start: 16 @61441 has 3 MA's), (Start: 17 @61438 has 5 MA's), (Start: 18 @61435 has 18 MA's), (21, 61363), (23, 61354), (24, 61327), (25, 61318), (27, 61288), (40, 61240), (41, 61237), (43, 61156), (53, 61084), (57, 61051), (64, 61009), (71, 60976),

Gene: Vincenzo\_77 Start: 64188, Stop: 63706, Start Num: 18

Candidate Starts for Vincenzo\_77:

(Start: 18 @64188 has 18 MA's), (20, 64170), (21, 64113), (24, 64077), (29, 64029), (40, 64005), (41, 64002), (43, 63921), (46, 63894), (52, 63852), (53, 63846), (54, 63819), (55, 63816), (70, 63741),

Gene: VioletZ\_76 Start: 62902, Stop: 62318, Start Num: 18

Candidate Starts for VioletZ\_76:

(14, 62941), (15, 62932), (Start: 18 @62902 has 18 MA's), (Start: 19 @62893 has 1 MA's), (21, 62827), (24, 62791), (30, 62707), (32, 62701), (34, 62668), (36, 62653), (40, 62626), (41, 62623), (43, 62542), (45, 62530), (47, 62509), (49, 62491), (52, 62476), (53, 62470), (64, 62380), (66, 62365), (68, 62359),

Gene: Waleliano\_73 Start: 62525, Stop: 62016, Start Num: 18

Candidate Starts for Waleliano\_73:

(3, 62840), (6, 62780), (8, 62672), (12, 62588), (Start: 16 @62531 has 3 MA's), (Start: 17 @62528 has 5 MA's), (Start: 18 @62525 has 18 MA's), (Start: 19 @62516 has 1 MA's), (21, 62450), (24, 62414), (25, 62405), (30, 62333), (31, 62330), (40, 62318), (41, 62315), (43, 62234), (45, 62222), (47, 62201), (49, 62183), (51, 62174), (53, 62162), (64, 62078), (66, 62063), (67, 62060), (68, 62057), (70, 62051),

Gene: Xincheng\_73 Start: 63772, Stop: 63242, Start Num: 14

Candidate Starts for Xincheng\_73:

(4, 64036), (7, 63895), (9, 63877), (10, 63856), (13, 63778), (14, 63772), (15, 63763), (Start: 18 @63733 has 18 MA's), (Start: 19 @63724 has 1 MA's), (21, 63658), (24, 63622), (25, 63613), (38, 63544), (39, 63541), (40, 63529), (41, 63526), (43, 63445), (45, 63433), (47, 63412), (49, 63394), (53, 63373), (60, 63334), (63, 63313), (64, 63304), (66, 63289), (67, 63286), (70, 63277), (71, 63271),

Gene: Zemanar\_74 Start: 62768, Stop: 62265, Start Num: 16

Candidate Starts for Zemanar\_74:

(3, 63077), (6, 63017), (8, 62909), (Start: 16 @62768 has 3 MA's), (Start: 17 @62765 has 5 MA's), (Start: 18 @62762 has 18 MA's), (Start: 19 @62753 has 1 MA's), (21, 62687), (24, 62651), (25, 62642), (35, 62567), (40, 62555), (41, 62552), (43, 62471), (45, 62459), (47, 62438), (49, 62420), (53, 62399), (61, 62357), (63, 62336), (64, 62327), (66, 62312), (67, 62309), (68, 62306), (70, 62300),