

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 283815 Report

This analysis was run 02/23/26 on database version 636.

Pham number 283815 has 62 members, 20 are drafts.

Phages represented in each track:

- Track 1 : Westerlin_68
- Track 2 : Teacup_72
- Track 3 : Nightmare_71
- Track 4 : Gordon_68
- Track 5 : Tatanka_64
- Track 6 : DevitoJr_70, Darby_68, Trustiboi_69
- Track 7 : ScienceWizSam_72
- Track 8 : LucySwiss_71
- Track 9 : Niktson_71, ElephantMan_71
- Track 10 : Brunswick_72
- Track 11 : Issa_66
- Track 12 : Dinallo_66, Tenno_70, CapnMurica_68
- Track 13 : CastorTray_74
- Track 14 : MiniBagel_71
- Track 15 : Tipton_75
- Track 16 : Chlochlo_76
- Track 17 : Bouchard_76
- Track 18 : LilHuddy_76
- Track 19 : Giantsbane_75
- Track 20 : Phaby_77
- Track 21 : Shepard_76
- Track 22 : Loretta_73, Ingrid_77
- Track 23 : Caterpillar_70
- Track 24 : MediumFry_70
- Track 25 : Anandi_76
- Track 26 : Altjira_77
- Track 27 : Biscute_75, BarbieDoll_79, Muglass_77
- Track 28 : Leathea_76
- Track 29 : Navi1117_78
- Track 30 : Zeina_78
- Track 31 : Barbonzobean_82
- Track 32 : Tenney120_76
- Track 33 : Kinny_78
- Track 34 : TrixiePhattel_76
- Track 35 : GantcherGoblin_73
- Track 36 : Zippen_77
- Track 37 : Inked_77

- Track 38 : Arzan_74
- Track 39 : Jazzy4900_72
- Track 40 : Sunny4976_71
- Track 41 : Elver_173, Gandionco_171, Marianna39_171
- Track 42 : JeNeSaisPas_168, Paella_174, Qui_174
- Track 43 : Paella_135, JeNeSaisPas_129, Gandionco_131, Marianna39_132, Qui_135
- Track 44 : Elver_135
- Track 45 : Kureo_132
- Track 46 : Kureo_173

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

The start number called the most often in the published annotations is 19, it was called in 28 of the 42 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Anandi_76, Bouchard_76, Brunswick_72, CapnMurica_68, CastorTray_74, Caterpillar_70, Chlochlo_76, Darby_68, DevitoJr_70, Dinallo_66, ElephantMan_71, Giantsbane_75, Gordon_68, Ingrid_77, Inked_77, Issa_66, LilHuddy_76, Loretta_73, LucySwiss_71, MiniBagel_71, Nightmare_71, Niktson_71, Phaby_77, ScienceWizSam_72, Shepard_76, Tatanka_64, Teacup_72, Tenno_70, Tipton_75, Trustiboi_69, Westerlin_68, Zippen_77,

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

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

- Altjira_77, Arzan_74, BarbieDoll_79, Barbonzobean_82, Biscute_75, Elver_135, Elver_173, Gandionco_131, Gandionco_171, GantcherGoblin_73, Jazzy4900_72, JeNeSaisPas_129, JeNeSaisPas_168, Kinny_78, Kureo_132, Kureo_173, Leathea_76, Marianna39_132, Marianna39_171, MediumFry_70, Muglass_77, Navi1117_78, Paella_135, Paella_174, Qui_135, Qui_174, Sunny4976_71, Tenney120_76, TrixiePhattel_76, Zeina_78,

Summary by start number:

Start 6:

- Found in 4 of 62 (6.5%) of genes in pham
- Manual Annotations of this start: 2 of 42
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altjira_77 (AU6), Leathea_76 (AU6), Navi1117_78 (AU6), Tenney120_76 (AU6),

Start 7:

- Found in 4 of 62 (6.5%) of genes in pham
- Manual Annotations of this start: 2 of 42
- Called 50.0% of time when present
- Phage (with cluster) where this start called: GantcherGoblin_73 (AU6), Zeina_78 (AU6),

Start 12:

- Found in 8 of 62 (12.9%) of genes in pham
- Manual Annotations of this start: 4 of 42
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Elver_135 (FK), Gandionco_131 (FK), JeNeSaisPas_129 (FK), Kureo_132 (FK), Marianna39_132 (FK), MediumFry_70 (AU4), Paella_135 (FK), Qui_135 (FK),

Start 18:

- Found in 7 of 62 (11.3%) of genes in pham
- Manual Annotations of this start: 3 of 42
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Elver_173 (FK), Gandionco_171 (FK), JeNeSaisPas_168 (FK), Kureo_173 (FK), Marianna39_171 (FK), Paella_174 (FK), Qui_174 (FK),

Start 19:

- Found in 32 of 62 (51.6%) of genes in pham
- Manual Annotations of this start: 28 of 42
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anandi_76 (AU4), Bouchard_76 (AU2), Brunswick_72 (AU1), CapnMurica_68 (AU1), CastorTray_74 (AU1), Caterpillar_70 (AU4), Chlochlo_76 (AU2), Darby_68 (AU1), DevitoJr_70 (AU1), Dinallo_66 (AU1), ElephantMan_71 (AU1), Giantsbane_75 (AU2), Gordon_68 (AU1), Ingrid_77 (AU3), Inked_77 (AU7), Issa_66 (AU1), LilHuddy_76 (AU2), Loretta_73 (AU3), LucySwiss_71 (AU1), MiniBagel_71 (AU1), Nightmare_71 (AU1), Niktson_71 (AU1), Phaby_77 (AU2), ScienceWizSam_72 (AU1), Shepard_76 (AU2), Tatanka_64 (AU1), Teacup_72 (AU1), Tenno_70 (AU1), Tipton_75 (AU2), Trustiboi_69 (AU1), Westerlin_68 (AU1), Zippen_77 (AU7),

Start 20:

- Found in 1 of 62 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 42
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TrixiePhattel_76 (AU6),

Start 21:

- Found in 5 of 62 (8.1%) of genes in pham
- Manual Annotations of this start: 1 of 42
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Kinny_78 (AU6),

Start 22:

- Found in 5 of 62 (8.1%) of genes in pham
- Manual Annotations of this start: 1 of 42
- Called 80.0% of time when present
- Phage (with cluster) where this start called: BarbieDoll_79 (AU6), Barbonzobean_82 (AU6), Biscute_75 (AU6), Muglass_77 (AU6),

Start 23:

- Found in 3 of 62 (4.8%) of genes in pham
- No Manual Annotations of this start.

- Called 66.7% of time when present
- Phage (with cluster) where this start called: Arzan_74 (FI), Sunny4976_71 (FI),

Start 25:

- Found in 3 of 62 (4.8%) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Jazzy4900_72 (FI),

Summary by clusters:

There are 8 clusters represented in this pham: AU1, AU3, AU2, AU4, AU7, AU6, FI, FK,

Info for manual annotations of cluster AU1:

- Start number 19 was manually annotated 17 times for cluster AU1.

Info for manual annotations of cluster AU2:

- Start number 19 was manually annotated 6 times for cluster AU2.

Info for manual annotations of cluster AU3:

- Start number 19 was manually annotated 2 times for cluster AU3.

Info for manual annotations of cluster AU4:

- Start number 12 was manually annotated 1 time for cluster AU4.
- Start number 19 was manually annotated 1 time for cluster AU4.

Info for manual annotations of cluster AU6:

- Start number 6 was manually annotated 2 times for cluster AU6.
- Start number 7 was manually annotated 2 times for cluster AU6.
- Start number 20 was manually annotated 1 time for cluster AU6.
- Start number 21 was manually annotated 1 time for cluster AU6.
- Start number 22 was manually annotated 1 time for cluster AU6.

Info for manual annotations of cluster AU7:

- Start number 19 was manually annotated 2 times for cluster AU7.

Info for manual annotations of cluster FK:

- Start number 12 was manually annotated 3 times for cluster FK.
- Start number 18 was manually annotated 3 times for cluster FK.

Gene Information:

Gene: Altjira_77 Start: 46533, Stop: 46949, Start Num: 6

Candidate Starts for Altjira_77:

(Start: 6 @46533 has 2 MA's), (14, 46563), (33, 46647), (56, 46734), (84, 46839), (100, 46905),

Gene: Anandi_76 Start: 48145, Stop: 48471, Start Num: 19

Candidate Starts for Anandi_76:

(Start: 19 @48145 has 28 MA's), (29, 48193), (88, 48406),

Gene: Arzan_74 Start: 46947, Stop: 47339, Start Num: 23
Candidate Starts for Arzan_74:
(1, 46821), (4, 46842), (23, 46947), (25, 46956), (99, 47292),

Gene: BarbieDoll_79 Start: 46967, Stop: 47353, Start Num: 22
Candidate Starts for BarbieDoll_79:
(2, 46850), (5, 46883), (9, 46907), (13, 46931), (15, 46937), (Start: 21 @46961 has 1 MA's), (Start: 22 @46967 has 1 MA's), (52, 47123), (65, 47180), (66, 47186), (91, 47288), (100, 47306), (101, 47309),

Gene: Barbonzobean_82 Start: 47363, Stop: 47725, Start Num: 22
Candidate Starts for Barbonzobean_82:
(2, 47246), (5, 47279), (9, 47303), (13, 47327), (Start: 21 @47357 has 1 MA's), (Start: 22 @47363 has 1 MA's), (26, 47381), (53, 47522), (57, 47531), (86, 47645), (100, 47681), (101, 47684),

Gene: Biscute_75 Start: 46619, Stop: 47005, Start Num: 22
Candidate Starts for Biscute_75:
(2, 46502), (5, 46535), (9, 46559), (13, 46583), (15, 46589), (Start: 21 @46613 has 1 MA's), (Start: 22 @46619 has 1 MA's), (52, 46775), (65, 46832), (66, 46838), (91, 46940), (100, 46958), (101, 46961),

Gene: Bouchard_76 Start: 48019, Stop: 48327, Start Num: 19
Candidate Starts for Bouchard_76:
(Start: 19 @48019 has 28 MA's), (30, 48049), (43, 48118), (45, 48130), (77, 48205), (82, 48220), (105, 48310),

Gene: Brunswick_72 Start: 47263, Stop: 47580, Start Num: 19
Candidate Starts for Brunswick_72:
(Start: 19 @47263 has 28 MA's), (68, 47407), (75, 47440), (77, 47443), (105, 47554), (110, 47572),

Gene: CapnMurica_68 Start: 47980, Stop: 48297, Start Num: 19
Candidate Starts for CapnMurica_68:
(Start: 19 @47980 has 28 MA's), (68, 48130), (70, 48133), (72, 48139), (77, 48166), (96, 48241), (98, 48247), (105, 48271), (110, 48289),

Gene: CastorTray_74 Start: 48014, Stop: 48340, Start Num: 19
Candidate Starts for CastorTray_74:
(Start: 19 @48014 has 28 MA's), (24, 48044), (82, 48239), (83, 48242), (104, 48314),

Gene: Caterpillar_70 Start: 46858, Stop: 47175, Start Num: 19
Candidate Starts for Caterpillar_70:
(Start: 19 @46858 has 28 MA's), (77, 47065), (87, 47116),

Gene: Chlochlo_76 Start: 47546, Stop: 47869, Start Num: 19
Candidate Starts for Chlochlo_76:
(Start: 19 @47546 has 28 MA's), (29, 47570), (47, 47672), (74, 47726), (77, 47732),

Gene: Darby_68 Start: 47007, Stop: 47324, Start Num: 19
Candidate Starts for Darby_68:
(Start: 19 @47007 has 28 MA's), (75, 47184), (77, 47187), (105, 47298),

Gene: DevitoJr_70 Start: 47392, Stop: 47709, Start Num: 19
Candidate Starts for DevitoJr_70:
(Start: 19 @47392 has 28 MA's), (75, 47569), (77, 47572), (105, 47683),

Gene: Dinallo_66 Start: 48272, Stop: 48589, Start Num: 19

Candidate Starts for Dinallo_66:

(Start: 19 @48272 has 28 MA's), (68, 48422), (70, 48425), (72, 48431), (77, 48458), (96, 48533), (98, 48539), (105, 48563), (110, 48581),

Gene: ElephantMan_71 Start: 47893, Stop: 48210, Start Num: 19

Candidate Starts for ElephantMan_71:

(Start: 19 @47893 has 28 MA's), (36, 47962), (68, 48043), (70, 48046), (77, 48079), (79, 48088), (90, 48142), (96, 48154), (98, 48160), (105, 48184),

Gene: Elver_173 Start: 85588, Stop: 85980, Start Num: 18

Candidate Starts for Elver_173:

(Start: 18 @85588 has 3 MA's), (29, 85612), (47, 85711), (77, 85813), (94, 85879),

Gene: Elver_135 Start: 71797, Stop: 72144, Start Num: 12

Candidate Starts for Elver_135:

(Start: 12 @71797 has 4 MA's), (61, 71974), (68, 72007), (81, 72052), (85, 72070),

Gene: Gandionco_171 Start: 84981, Stop: 85373, Start Num: 18

Candidate Starts for Gandionco_171:

(Start: 18 @84981 has 3 MA's), (29, 85005), (47, 85104), (77, 85206), (94, 85272),

Gene: Gandionco_131 Start: 70615, Stop: 70962, Start Num: 12

Candidate Starts for Gandionco_131:

(Start: 12 @70615 has 4 MA's), (61, 70792), (68, 70825),

Gene: GantcherGoblin_73 Start: 45315, Stop: 45701, Start Num: 7

Candidate Starts for GantcherGoblin_73:

(Start: 7 @45315 has 2 MA's), (16, 45360), (84, 45594), (100, 45660),

Gene: Giantsbane_75 Start: 46546, Stop: 46899, Start Num: 19

Candidate Starts for Giantsbane_75:

(Start: 19 @46546 has 28 MA's), (55, 46702), (58, 46708), (63, 46732), (70, 46753), (71, 46756), (78, 46786), (86, 46825),

Gene: Gordon_68 Start: 47880, Stop: 48197, Start Num: 19

Candidate Starts for Gordon_68:

(Start: 19 @47880 has 28 MA's), (44, 47982), (68, 48024), (75, 48057), (77, 48060), (96, 48135), (105, 48171),

Gene: Ingrid_77 Start: 47844, Stop: 48110, Start Num: 19

Candidate Starts for Ingrid_77:

(11, 47814), (Start: 19 @47844 has 28 MA's), (28, 47868), (64, 47973), (69, 47985), (76, 48012), (85, 48045), (96, 48087),

Gene: Inked_77 Start: 48470, Stop: 48871, Start Num: 19

Candidate Starts for Inked_77:

(Start: 19 @48470 has 28 MA's), (32, 48545), (35, 48569), (38, 48578), (49, 48623), (51, 48629), (77, 48758), (105, 48854),

Gene: Issa_66 Start: 47054, Stop: 47380, Start Num: 19

Candidate Starts for Issa_66:

(Start: 19 @47054 has 28 MA's), (46, 47165), (48, 47168), (82, 47279), (83, 47282), (104, 47354),

Gene: Jazzy4900_72 Start: 47820, Stop: 48170, Start Num: 25

Candidate Starts for Jazzy4900_72:

(1, 47685), (3, 47691), (4, 47706), (Start: 7 @47733 has 2 MA's), (8, 47736), (10, 47748), (23, 47811), (25, 47820), (41, 47913), (67, 48000), (95, 48111), (99, 48123),

Gene: JeNeSaisPas_168 Start: 85709, Stop: 86101, Start Num: 18

Candidate Starts for JeNeSaisPas_168:

(Start: 18 @85709 has 3 MA's), (29, 85733), (47, 85832), (77, 85934), (94, 86000), (109, 86060),

Gene: JeNeSaisPas_129 Start: 71211, Stop: 71558, Start Num: 12

Candidate Starts for JeNeSaisPas_129:

(Start: 12 @71211 has 4 MA's), (61, 71388), (68, 71421),

Gene: Kinny_78 Start: 47440, Stop: 47832, Start Num: 21

Candidate Starts for Kinny_78:

(2, 47329), (5, 47362), (9, 47386), (13, 47410), (15, 47416), (Start: 21 @47440 has 1 MA's), (Start: 22 @47446 has 1 MA's), (52, 47602), (65, 47659), (66, 47665), (91, 47767), (100, 47785), (101, 47788),

Gene: Kureo_132 Start: 70811, Stop: 71158, Start Num: 12

Candidate Starts for Kureo_132:

(Start: 12 @70811 has 4 MA's), (61, 70988), (68, 71021), (85, 71084),

Gene: Kureo_173 Start: 85163, Stop: 85549, Start Num: 18

Candidate Starts for Kureo_173:

(17, 85160), (Start: 18 @85163 has 3 MA's), (29, 85187), (39, 85238), (77, 85385), (91, 85448), (94, 85451),

Gene: Leathea_76 Start: 45220, Stop: 45642, Start Num: 6

Candidate Starts for Leathea_76:

(Start: 6 @45220 has 2 MA's), (14, 45250), (37, 45361), (40, 45373), (89, 45574), (97, 45595), (100, 45601),

Gene: LilHuddy_76 Start: 47672, Stop: 48037, Start Num: 19

Candidate Starts for LilHuddy_76:

(Start: 19 @47672 has 28 MA's), (29, 47696), (62, 47852), (77, 47912),

Gene: Loretta_73 Start: 47844, Stop: 48110, Start Num: 19

Candidate Starts for Loretta_73:

(11, 47814), (Start: 19 @47844 has 28 MA's), (28, 47868), (64, 47973), (69, 47985), (76, 48012), (85, 48045), (96, 48087),

Gene: LucySwiss_71 Start: 46999, Stop: 47349, Start Num: 19

Candidate Starts for LucySwiss_71:

(Start: 19 @46999 has 28 MA's), (46, 47134), (96, 47308), (104, 47323), (108, 47344),

Gene: Marianna39_171 Start: 85586, Stop: 85978, Start Num: 18

Candidate Starts for Marianna39_171:

(Start: 18 @85586 has 3 MA's), (29, 85610), (47, 85709), (77, 85811), (94, 85877),

Gene: Marianna39_132 Start: 71220, Stop: 71567, Start Num: 12

Candidate Starts for Marianna39_132:

(Start: 12 @71220 has 4 MA's), (61, 71397), (68, 71430),

Gene: MediumFry_70 Start: 47193, Stop: 47540, Start Num: 12

Candidate Starts for MediumFry_70:

(Start: 12 @47193 has 4 MA's), (68, 47367), (77, 47403), (105, 47514),

Gene: MiniBagel_71 Start: 47984, Stop: 48301, Start Num: 19

Candidate Starts for MiniBagel_71:

(Start: 19 @47984 has 28 MA's), (68, 48134), (70, 48137), (72, 48143), (77, 48170), (96, 48245), (98, 48251), (105, 48275), (107, 48287),

Gene: Muglass_77 Start: 46523, Stop: 46909, Start Num: 22

Candidate Starts for Muglass_77:

(2, 46406), (5, 46439), (9, 46463), (13, 46487), (15, 46493), (Start: 21 @46517 has 1 MA's), (Start: 22 @46523 has 1 MA's), (52, 46679), (65, 46736), (66, 46742), (91, 46844), (100, 46862), (101, 46865),

Gene: Navi1117_78 Start: 46395, Stop: 46790, Start Num: 6

Candidate Starts for Navi1117_78:

(Start: 6 @46395 has 2 MA's), (14, 46425), (34, 46512), (42, 46536), (54, 46587), (66, 46638), (68, 46641), (91, 46728), (100, 46746), (103, 46755),

Gene: Nightmare_71 Start: 48297, Stop: 48647, Start Num: 19

Candidate Starts for Nightmare_71:

(Start: 19 @48297 has 28 MA's), (46, 48432), (74, 48525), (77, 48531), (78, 48534),

Gene: Niktson_71 Start: 47893, Stop: 48210, Start Num: 19

Candidate Starts for Niktson_71:

(Start: 19 @47893 has 28 MA's), (36, 47962), (68, 48043), (70, 48046), (77, 48079), (79, 48088), (90, 48142), (96, 48154), (98, 48160), (105, 48184),

Gene: Paella_174 Start: 86462, Stop: 86854, Start Num: 18

Candidate Starts for Paella_174:

(Start: 18 @86462 has 3 MA's), (29, 86486), (47, 86585), (77, 86687), (94, 86753), (109, 86813),

Gene: Paella_135 Start: 72360, Stop: 72707, Start Num: 12

Candidate Starts for Paella_135:

(Start: 12 @72360 has 4 MA's), (61, 72537), (68, 72570),

Gene: Phaby_77 Start: 48203, Stop: 48517, Start Num: 19

Candidate Starts for Phaby_77:

(Start: 19 @48203 has 28 MA's), (30, 48233), (45, 48314), (77, 48386), (78, 48389), (105, 48491),

Gene: Qui_174 Start: 86460, Stop: 86852, Start Num: 18

Candidate Starts for Qui_174:

(Start: 18 @86460 has 3 MA's), (29, 86484), (47, 86583), (77, 86685), (94, 86751), (109, 86811),

Gene: Qui_135 Start: 72360, Stop: 72707, Start Num: 12

Candidate Starts for Qui_135:

(Start: 12 @72360 has 4 MA's), (61, 72537), (68, 72570),

Gene: ScienceWizSam_72 Start: 47594, Stop: 47908, Start Num: 19

Candidate Starts for ScienceWizSam_72:

(Start: 19 @47594 has 28 MA's), (74, 47768), (75, 47771), (77, 47774), (105, 47885), (110, 47900),

Gene: Shepard_76 Start: 47525, Stop: 47896, Start Num: 19
Candidate Starts for Shepard_76:
(Start: 19 @47525 has 28 MA's), (29, 47549), (50, 47660), (59, 47687), (62, 47711), (77, 47771),

Gene: Sunny4976_71 Start: 47811, Stop: 48170, Start Num: 23
Candidate Starts for Sunny4976_71:
(1, 47685), (3, 47691), (4, 47706), (Start: 7 @47733 has 2 MA's), (8, 47736), (10, 47748), (23, 47811),
(25, 47820), (41, 47913), (67, 48000), (95, 48111), (99, 48123),

Gene: Tatanka_64 Start: 47501, Stop: 47827, Start Num: 19
Candidate Starts for Tatanka_64:
(Start: 19 @47501 has 28 MA's), (24, 47531), (82, 47726), (83, 47729), (104, 47801), (108, 47822),

Gene: Teacup_72 Start: 47933, Stop: 48250, Start Num: 19
Candidate Starts for Teacup_72:
(Start: 19 @47933 has 28 MA's), (68, 48077), (73, 48104), (75, 48110), (77, 48113), (105, 48224),
(110, 48242),

Gene: Tenney120_76 Start: 45975, Stop: 46385, Start Num: 6
Candidate Starts for Tenney120_76:
(Start: 6 @45975 has 2 MA's), (14, 46005), (34, 46092), (42, 46116), (54, 46167), (84, 46275), (100,
46341),

Gene: Tenno_70 Start: 48017, Stop: 48334, Start Num: 19
Candidate Starts for Tenno_70:
(Start: 19 @48017 has 28 MA's), (68, 48167), (70, 48170), (72, 48176), (77, 48203), (96, 48278), (98,
48284), (105, 48308), (110, 48326),

Gene: Tipton_75 Start: 48040, Stop: 48423, Start Num: 19
Candidate Starts for Tipton_75:
(Start: 19 @48040 has 28 MA's), (45, 48151), (60, 48220), (77, 48289), (82, 48304), (88, 48343), (92,
48355), (101, 48379), (105, 48397),

Gene: TrixiePhattel_76 Start: 45610, Stop: 45984, Start Num: 20
Candidate Starts for TrixiePhattel_76:
(Start: 20 @45610 has 1 MA's), (26, 45637), (31, 45664), (53, 45781), (66, 45838), (86, 45904), (100,
45940), (106, 45961),

Gene: Trustiboi_69 Start: 47616, Stop: 47933, Start Num: 19
Candidate Starts for Trustiboi_69:
(Start: 19 @47616 has 28 MA's), (75, 47793), (77, 47796), (105, 47907),

Gene: Westerlin_68 Start: 48703, Stop: 49020, Start Num: 19
Candidate Starts for Westerlin_68:
(Start: 19 @48703 has 28 MA's), (68, 48847), (73, 48874), (75, 48880), (77, 48883), (98, 48964), (105,
48994),

Gene: Zeina_78 Start: 46274, Stop: 46717, Start Num: 7
Candidate Starts for Zeina_78:
(Start: 7 @46274 has 2 MA's), (80, 46592), (84, 46604), (93, 46646), (102, 46676),

Gene: Zippen_77 Start: 48335, Stop: 48745, Start Num: 19

Candidate Starts for Zippen_77:

(Start: 19 @48335 has 28 MA's), (27, 48386), (29, 48395), (49, 48500), (77, 48632), (105, 48728),