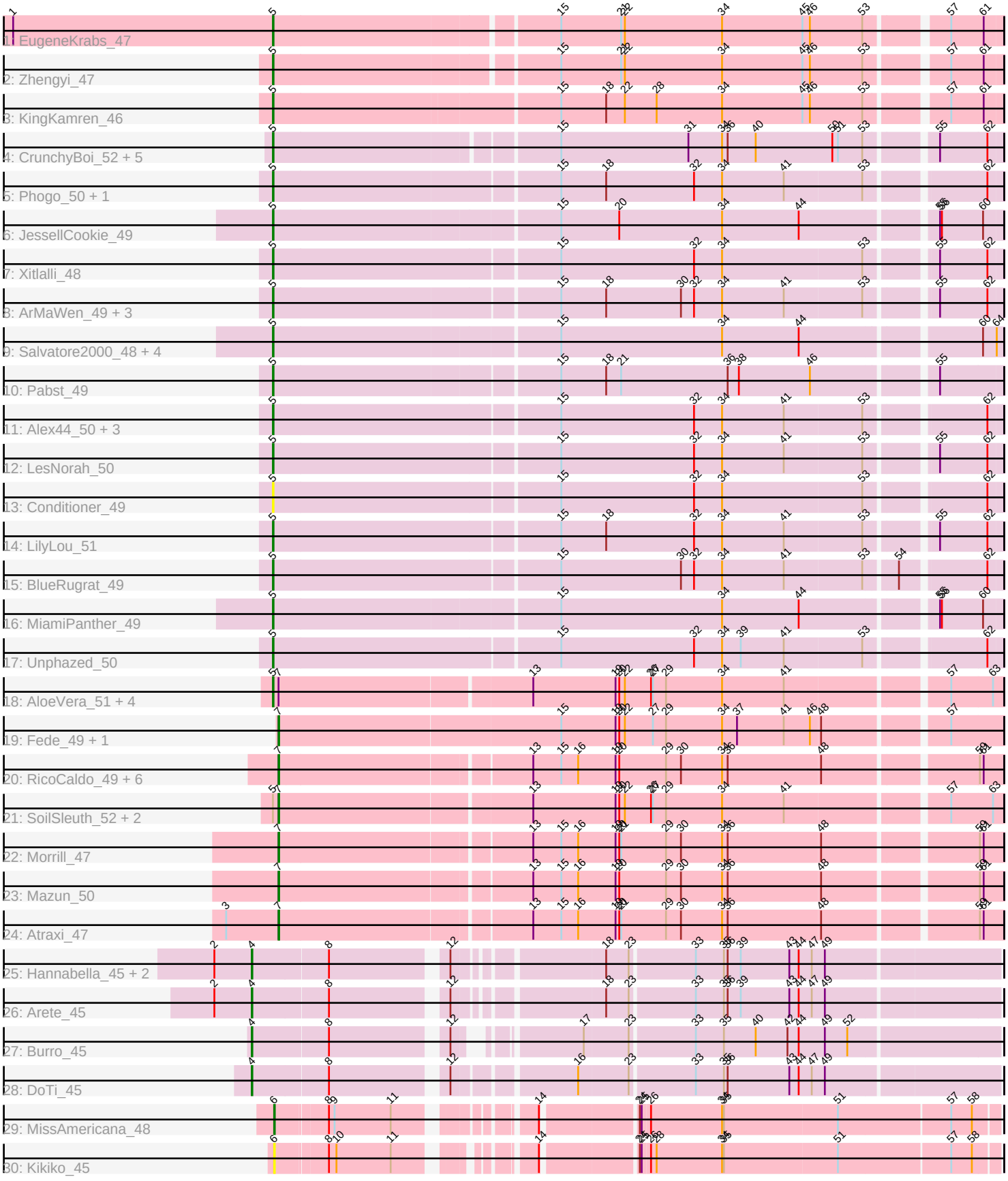
# Pham 306468


1: EugeneKrabs_47
2: Zhengyi_47
3: KingKamren_46
4: CrunchyBoi_52 + 5
5: Phogo_50 + 1
6: JessellCookie_49
7: Xitlalli_48
8: ArMaWen_49 + 3
9: Salvatore2000_48 + 4
10: Pabst_49
11: Alex44_50 + 3
12: LesNorah_50
13: Conditioner_49
14: LilyLou_51
15: BlueRugrat_49
16: MiamiPanther_49
17: Unphazed_50
18: AloeVera_51 + 4
19: Fede_49 + 1
20: RicoCaldo_49 + 6
21: SoilSleuth_52 + 2
22: Morrill_47
23: Mazun_50
24: Atraxi_47
25: Hannabella_45 + 2
26: Arete_45
27: Burro_45
28: DoTi_45
29: MissAmericana_48
30: Kikiko_45

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 306468 Report

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

Pham number 306468 has 61 members, 8 are drafts.

Phages represented in each track:
• Track 1 : EugeneKrabs_47
• Track 2 : Zhengyi_47
• Track 3 : KingKamren_46
• Track 4 : CrunchyBoi_52, TicTac_51, Biozilla_51, PineapplePluto_52, Oatly_51, HitchHiker_52
• Track 5 : Phogo_50, TownLake_48
• Track 6 : JessellCookie_49
• Track 7 : Xitlalli_48
• Track 8 : ArMaWen_49, Dashyla_49, Corn21_49, SwissCheezer_49
• Track 9 : Salvatore2000_48, Wesak_48, Sorvannah_48, YellowPanda_50, TinyTimothy_47
• Track 10 : Pabst_49
• Track 11 : Alex44_50, DumpQuist_49, Stormbreaker_50, Birdfeeder_48
• Track 12 : LesNorah_50
• Track 13 : Conditioner_49
• Track 14 : LilyLou_51
• Track 15 : BlueRugrat_49
• Track 16 : MiamiPanther_49
• Track 17 : Unphazed_50
• Track 18 : AloeVera_51, JordanFarm_52, Truong_50, Ashton_51, Akoni_50
• Track 19 : Fede_49, Kosier_49
• Track 20 : RicoCaldo_49, Phractured_49, Pharky_49, Fullmetal_49, Phedro_49, StagePhright_49, PhriedRice_50
• Track 21 : SoilSleuth_52, Waterlily_53, Barroma_49
• Track 22 : Morrill_47
• Track 23 : Mazun_50
• Track 24 : Atraxi_47
• Track 25 : Hannabella_45, Casino_44, Gshelby23_43
• Track 26 : Arete_45
• Track 27 : Burro_45
• Track 28 : DoTi_45
• Track 29 : MissAmericana_48
• Track 30 : Kikiko_45

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

The start number called the most often in the published annotations is 5, it was called in 33 of the 53 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Akoni_50, Alex44_50, AloeVera_51, ArMaWen_49, Ashton_51, Biozilla_51, Birdfeeder_48, BlueRugrat_49, Conditioner_49, Corn21_49, CrunchyBoi_52, Dashyla_49, DumpQuist_49, EugeneKrabs_47, HitchHiker_52, JessellCookie_49, JordanFarm_52, KingKamren_46, LesNorah_50, LilyLou_51, MiamiPanther_49, Oatly_51, Pabst_49, Phogo_50, PineapplePluto_52, Salvatore2000_48, Sorvannah_48, Stormbreaker_50, SwissCheezer_49, TicTac_51, TinyTimothy_47, TownLake_48, Truong_50, Unphazed_50, Wesak_48, Xitlalli_48, YellowPanda_50, Zhengyi_47,

Genes that have the "Most Annotated" start but do not call it:
• Barroma_49, SoilSleuth_52, Waterlily_53,

Genes that do not have the "Most Annotated" start:
• Arete_45, Atraxi_47, Burro_45, Casino_44, DoTi_45, Fede_49, Fullmetal_49, Gshelby23_43, Hannabella_45, Kikiko_45, Kosier_49, Mazun_50, MissAmericana_48, Morrill_47, Pharky_49, Phedro_49, Phractured_49, PhriedRice_50, RicoCaldo_49, StagePhright_49,

**Summary by start number:**

Start 4:
• Found in 6 of 61 ( 9.8% ) of genes in pham
• Manual Annotations of this start: 6 of 53
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Arete_45 (EM1), Burro_45 (EM1), Casino_44 (EM1), DoTi_45 (EM1), Gshelby23_43 (EM1), Hannabella_45 (EM1),

Start 5:
• Found in 41 of 61 ( 67.2% ) of genes in pham
• Manual Annotations of this start: 33 of 53
• Called 92.7% of time when present
• Phage (with cluster) where this start called: Akoni_50 (EK2), Alex44_50 (EK1), AloeVera_51 (EK2), ArMaWen_49 (EK1), Ashton_51 (EK2), Biozilla_51 (EK1), Birdfeeder_48 (EK1), BlueRugrat_49 (EK1), Conditioner_49 (EK1), Corn21_49 (EK1), CrunchyBoi_52 (EK1), Dashyla_49 (EK1), DumpQuist_49 (EK1), EugeneKrabs_47 (EK), HitchHiker_52 (EK1), JessellCookie_49 (EK1), JordanFarm_52 (EK2), KingKamren_46 (EK), LesNorah_50 (EK1), LilyLou_51 (EK1), MiamiPanther_49 (EK1), Oatly_51 (EK1), Pabst_49 (EK1), Phogo_50 (EK1), PineapplePluto_52 (EK1), Salvatore2000_48 (EK1), Sorvannah_48 (EK1), Stormbreaker_50 (EK1), SwissCheezer_49 (EK1), TicTac_51 (EK1), TinyTimothy_47 (EK1), TownLake_48 (EK1), Truong_50 (EK2), Unphazed_50 (EK1), Wesak_48 (EK1), Xitlalli_48 (EK1), YellowPanda_50 (EK1), Zhengyi_47 (EK),

Start 6:
• Found in 2 of 61 ( 3.3% ) of genes in pham
• Manual Annotations of this start: 1 of 53
• Called 100.0% of time when present

• Phage (with cluster) where this start called: Kikiko_45 (EM2), MissAmericana_48 (EM2),

Start 7:
• Found in 20 of 61 ( 32.8% ) of genes in pham
• Manual Annotations of this start: 13 of 53
• Called 75.0% of time when present
• Phage (with cluster) where this start called: Atraxi_47 (EK2), Barroma_49 (EK2), Fede_49 (EK2), Fullmetal_49 (EK2), Kosier_49 (EK2), Mazun_50 (EK2), Morrill_47 (EK2), Pharky_49 (EK2), Phedro_49 (EK2), Phractured_49 (EK2), PhriedRice_50 (EK2), RicoCaldo_49 (EK2), SoilSleuth_52 (EK2), StagePhright_49 (EK2), Waterlily_53 (EK2),

**Summary by clusters:**

There are 5 clusters represented in this pham: EK, EM1, EK2, EK1, EM2,

Info for manual annotations of cluster EK:
•Start number 5 was manually annotated 3 times for cluster EK.

Info for manual annotations of cluster EK1:
•Start number 5 was manually annotated 25 times for cluster EK1.

Info for manual annotations of cluster EK2:
•Start number 5 was manually annotated 5 times for cluster EK2.
•Start number 7 was manually annotated 13 times for cluster EK2.

Info for manual annotations of cluster EM1:
•Start number 4 was manually annotated 6 times for cluster EM1.

Info for manual annotations of cluster EM2:
•Start number 6 was manually annotated 1 time for cluster EM2.

***Gene Information:***

Gene: Akoni_50 Start: 50074, Stop: 51201, Start Num: 5
Candidate Starts for Akoni_50:
(Start: 5 @50074 has 33 MA's), (Start: 7 @50083 has 13 MA's), (13, 50476), (19, 50608), (20, 50614), (22, 50623), (26, 50665), (27, 50668), (29, 50689), (34, 50779), (41, 50878), (57, 51118), (63, 51184),

Gene: Alex44_50 Start: 50187, Stop: 51302, Start Num: 5
Candidate Starts for Alex44_50:
(Start: 5 @50187 has 33 MA's), (15, 50631), (32, 50844), (34, 50889), (41, 50988), (53, 51111), (62, 51279),

Gene: AloeVera_51 Start: 50287, Stop: 51414, Start Num: 5
Candidate Starts for AloeVera_51:
(Start: 5 @50287 has 33 MA's), (Start: 7 @50296 has 13 MA's), (13, 50689), (19, 50821), (20, 50827), (22, 50836), (26, 50878), (27, 50881), (29, 50902), (34, 50992), (41, 51091), (57, 51331), (63, 51397),

Gene: ArMaWen_49 Start: 49730, Stop: 50842, Start Num: 5

Candidate Starts for ArMaWen_49:
(Start: 5 @49730 has 33 MA's), (15, 50171), (18, 50243), (30, 50363), (32, 50384), (34, 50429), (41, 50528), (53, 50651), (55, 50744), (62, 50819),

Gene: Arete_45 Start: 50281, Stop: 51378, Start Num: 4
Candidate Starts for Arete_45:
(2, 50221), (Start: 4 @50281 has 6 MA's), (8, 50398), (12, 50566), (18, 50770), (23, 50806), (33, 50905), (35, 50950), (36, 50956), (39, 50977), (43, 51055), (44, 51070), (47, 51091), (49, 51112),

Gene: Ashton_51 Start: 50286, Stop: 51413, Start Num: 5
Candidate Starts for Ashton_51:
(Start: 5 @50286 has 33 MA's), (Start: 7 @50295 has 13 MA's), (13, 50688), (19, 50820), (20, 50826), (22, 50835), (26, 50877), (27, 50880), (29, 50901), (34, 50991), (41, 51090), (57, 51330), (63, 51396),

Gene: Atraxi_47 Start: 49413, Stop: 50522, Start Num: 7
Candidate Starts for Atraxi_47:
(3, 49329), (Start: 7 @49413 has 13 MA's), (13, 49797), (15, 49842), (16, 49869), (19, 49929), (20, 49935), (21, 49938), (29, 50010), (30, 50034), (34, 50100), (36, 50109), (48, 50256), (59, 50484), (61, 50490),

Gene: Barroma_49 Start: 50085, Stop: 51203, Start Num: 7
Candidate Starts for Barroma_49:
(Start: 5 @50076 has 33 MA's), (Start: 7 @50085 has 13 MA's), (13, 50478), (19, 50610), (20, 50616), (22, 50625), (26, 50667), (27, 50670), (29, 50691), (34, 50781), (41, 50880), (57, 51120), (63, 51186),

Gene: Biozilla_51 Start: 49633, Stop: 50739, Start Num: 5
Candidate Starts for Biozilla_51:
(Start: 5 @49633 has 33 MA's), (15, 50062), (31, 50266), (34, 50320), (36, 50329), (40, 50374), (50, 50497), (51, 50506), (53, 50545), (55, 50641), (62, 50716),

Gene: Birdfeeder_48 Start: 49936, Stop: 51051, Start Num: 5
Candidate Starts for Birdfeeder_48:
(Start: 5 @49936 has 33 MA's), (15, 50380), (32, 50593), (34, 50638), (41, 50737), (53, 50860), (62, 51028),

Gene: BlueRugrat_49 Start: 50169, Stop: 51284, Start Num: 5
Candidate Starts for BlueRugrat_49:
(Start: 5 @50169 has 33 MA's), (15, 50613), (30, 50805), (32, 50826), (34, 50871), (41, 50970), (53, 51093), (54, 51138), (62, 51261),

Gene: Burro_45 Start: 51075, Stop: 52154, Start Num: 4
Candidate Starts for Burro_45:
(Start: 4 @51075 has 6 MA's), (8, 51195), (12, 51363), (17, 51510), (23, 51579), (33, 51678), (35, 51723), (40, 51774), (42, 51825), (44, 51843), (49, 51885), (52, 51921),

Gene: Casino_44 Start: 50256, Stop: 51353, Start Num: 4
Candidate Starts for Casino_44:
(2, 50196), (Start: 4 @50256 has 6 MA's), (8, 50373), (12, 50541), (18, 50745), (23, 50781), (33, 50880), (35, 50925), (36, 50931), (39, 50952), (43, 51030), (44, 51045), (47, 51066), (49, 51087),

Gene: Conditioner_49 Start: 50245, Stop: 51360, Start Num: 5
Candidate Starts for Conditioner_49:
(Start: 5 @50245 has 33 MA's), (15, 50689), (32, 50902), (34, 50947), (53, 51169), (62, 51337),

Gene: Corn21_49 Start: 50250, Stop: 51365, Start Num: 5
Candidate Starts for Corn21_49:
(Start: 5 @50250 has 33 MA's), (15, 50694), (18, 50766), (30, 50886), (32, 50907), (34, 50952), (41, 51051), (53, 51174), (55, 51267), (62, 51342),

Gene: CrunchyBoi_52 Start: 49487, Stop: 50593, Start Num: 5
Candidate Starts for CrunchyBoi_52:
(Start: 5 @49487 has 33 MA's), (15, 49916), (31, 50120), (34, 50174), (36, 50183), (40, 50228), (50, 50351), (51, 50360), (53, 50399), (55, 50495), (62, 50570),

Gene: Dashyla_49 Start: 49861, Stop: 50976, Start Num: 5
Candidate Starts for Dashyla_49:
(Start: 5 @49861 has 33 MA's), (15, 50305), (18, 50377), (30, 50497), (32, 50518), (34, 50563), (41, 50662), (53, 50785), (55, 50878), (62, 50953),

Gene: DoTi_45 Start: 50660, Stop: 51769, Start Num: 4
Candidate Starts for DoTi_45:
(Start: 4 @50660 has 6 MA's), (8, 50777), (12, 50945), (16, 51119), (23, 51197), (33, 51296), (35, 51341), (36, 51347), (43, 51446), (44, 51461), (47, 51482), (49, 51503),

Gene: DumpQuist_49 Start: 49715, Stop: 50830, Start Num: 5
Candidate Starts for DumpQuist_49:
(Start: 5 @49715 has 33 MA's), (15, 50159), (32, 50372), (34, 50417), (41, 50516), (53, 50639), (62, 50807),

Gene: EugeneKrabs_47 Start: 50698, Stop: 51804, Start Num: 5
Candidate Starts for EugeneKrabs_47:
(1, 50281), (Start: 5 @50698 has 33 MA's), (15, 51130), (21, 51226), (22, 51232), (34, 51388), (45, 51517), (46, 51529), (53, 51613), (57, 51724), (61, 51775),

Gene: Fede_49 Start: 50536, Stop: 51663, Start Num: 7
Candidate Starts for Fede_49:
(Start: 7 @50536 has 13 MA's), (15, 50983), (19, 51070), (20, 51076), (22, 51085), (27, 51130), (29, 51151), (34, 51241), (37, 51265), (41, 51340), (46, 51382), (48, 51397), (57, 51580),

Gene: Fullmetal_49 Start: 49956, Stop: 51065, Start Num: 7
Candidate Starts for Fullmetal_49:
(Start: 7 @49956 has 13 MA's), (13, 50340), (15, 50385), (16, 50412), (19, 50472), (20, 50478), (29, 50553), (30, 50577), (34, 50643), (36, 50652), (48, 50799), (59, 51027), (61, 51033),

Gene: Gshelby23_43 Start: 50192, Stop: 51289, Start Num: 4
Candidate Starts for Gshelby23_43:
(2, 50132), (Start: 4 @50192 has 6 MA's), (8, 50309), (12, 50477), (18, 50681), (23, 50717), (33, 50816), (35, 50861), (36, 50867), (39, 50888), (43, 50966), (44, 50981), (47, 51002), (49, 51023),

Gene: Hannabella_45 Start: 50232, Stop: 51329, Start Num: 4
Candidate Starts for Hannabella_45:
(2, 50172), (Start: 4 @50232 has 6 MA's), (8, 50349), (12, 50517), (18, 50721), (23, 50757), (33, 50856), (35, 50901), (36, 50907), (39, 50928), (43, 51006), (44, 51021), (47, 51042), (49, 51063),

Gene: HitchHiker_52 Start: 49633, Stop: 50739, Start Num: 5
Candidate Starts for HitchHiker_52:

(Start: 5 @49633 has 33 MA's), (15, 50062), (31, 50266), (34, 50320), (36, 50329), (40, 50374), (50, 50497), (51, 50506), (53, 50545), (55, 50641), (62, 50716),

Gene: JessellCookie_49 Start: 49705, Stop: 50823, Start Num: 5
Candidate Starts for JessellCookie_49:
(Start: 5 @49705 has 33 MA's), (15, 50146), (20, 50239), (34, 50404), (44, 50527), (55, 50725), (56, 50728), (60, 50794),

Gene: JordanFarm_52 Start: 50287, Stop: 51414, Start Num: 5
Candidate Starts for JordanFarm_52:
(Start: 5 @50287 has 33 MA's), (Start: 7 @50296 has 13 MA's), (13, 50689), (19, 50821), (20, 50827), (22, 50836), (26, 50878), (27, 50881), (29, 50902), (34, 50992), (41, 51091), (57, 51331), (63, 51397),

Gene: Kikiko_45 Start: 50581, Stop: 51609, Start Num: 6
Candidate Starts for Kikiko_45:
(Start: 6 @50581 has 1 MA's), (8, 50659), (10, 50671), (11, 50758), (14, 50914), (24, 51052), (25, 51055), (26, 51067), (28, 51076), (34, 51181), (35, 51184), (51, 51364), (57, 51538), (58, 51571),

Gene: KingKamren_46 Start: 50655, Stop: 51770, Start Num: 5
Candidate Starts for KingKamren_46:
(Start: 5 @50655 has 33 MA's), (15, 51096), (18, 51168), (22, 51198), (28, 51249), (34, 51354), (45, 51483), (46, 51495), (53, 51579), (57, 51690), (61, 51741),

Gene: Kosier_49 Start: 50480, Stop: 51607, Start Num: 7
Candidate Starts for Kosier_49:
(Start: 7 @50480 has 13 MA's), (15, 50927), (19, 51014), (20, 51020), (22, 51029), (27, 51074), (29, 51095), (34, 51185), (37, 51209), (41, 51284), (46, 51326), (48, 51341), (57, 51524),

Gene: LesNorah_50 Start: 50566, Stop: 51681, Start Num: 5
Candidate Starts for LesNorah_50:
(Start: 5 @50566 has 33 MA's), (15, 51010), (32, 51223), (34, 51268), (41, 51367), (53, 51490), (55, 51583), (62, 51658),

Gene: LilyLou_51 Start: 50179, Stop: 51294, Start Num: 5
Candidate Starts for LilyLou_51:
(Start: 5 @50179 has 33 MA's), (15, 50623), (18, 50695), (32, 50836), (34, 50881), (41, 50980), (53, 51103), (55, 51196), (62, 51271),

Gene: Mazun_50 Start: 50359, Stop: 51468, Start Num: 7
Candidate Starts for Mazun_50:
(Start: 7 @50359 has 13 MA's), (13, 50743), (15, 50788), (16, 50815), (19, 50875), (20, 50881), (29, 50956), (30, 50980), (34, 51046), (36, 51055), (48, 51202), (59, 51430), (61, 51436),

Gene: MiamiPanther_49 Start: 49702, Stop: 50820, Start Num: 5
Candidate Starts for MiamiPanther_49:
(Start: 5 @49702 has 33 MA's), (15, 50143), (34, 50401), (44, 50524), (55, 50722), (56, 50725), (60, 50791),

Gene: MissAmericana_48 Start: 50516, Stop: 51553, Start Num: 6
Candidate Starts for MissAmericana_48:
(Start: 6 @50516 has 1 MA's), (8, 50594), (9, 50603), (11, 50693), (14, 50858), (24, 50996), (25, 50999), (26, 51011), (34, 51125), (35, 51128), (51, 51308), (57, 51482), (58, 51515),

Gene: Morrill_47 Start: 49394, Stop: 50503, Start Num: 7
Candidate Starts for Morrill_47:
(Start: 7 @49394 has 13 MA's), (13, 49778), (15, 49823), (16, 49850), (19, 49910), (20, 49916), (21, 49919), (29, 49991), (30, 50015), (34, 50081), (36, 50090), (48, 50237), (59, 50465), (61, 50471),

Gene: Oatly_51 Start: 49193, Stop: 50299, Start Num: 5
Candidate Starts for Oatly_51:
(Start: 5 @49193 has 33 MA's), (15, 49622), (31, 49826), (34, 49880), (36, 49889), (40, 49934), (50, 50057), (51, 50066), (53, 50105), (55, 50201), (62, 50276),

Gene: Pabst_49 Start: 49259, Stop: 50374, Start Num: 5
Candidate Starts for Pabst_49:
(Start: 5 @49259 has 33 MA's), (15, 49697), (18, 49769), (21, 49793), (36, 49964), (38, 49982), (46, 50096), (55, 50276),

Gene: Pharky_49 Start: 49959, Stop: 51068, Start Num: 7
Candidate Starts for Pharky_49:
(Start: 7 @49959 has 13 MA's), (13, 50343), (15, 50388), (16, 50415), (19, 50475), (20, 50481), (29, 50556), (30, 50580), (34, 50646), (36, 50655), (48, 50802), (59, 51030), (61, 51036),

Gene: Phedro_49 Start: 49959, Stop: 51068, Start Num: 7
Candidate Starts for Phedro_49:
(Start: 7 @49959 has 13 MA's), (13, 50343), (15, 50388), (16, 50415), (19, 50475), (20, 50481), (29, 50556), (30, 50580), (34, 50646), (36, 50655), (48, 50802), (59, 51030), (61, 51036),

Gene: Phogo_50 Start: 50007, Stop: 51119, Start Num: 5
Candidate Starts for Phogo_50:
(Start: 5 @50007 has 33 MA's), (15, 50448), (18, 50520), (32, 50661), (34, 50706), (41, 50805), (53, 50928), (62, 51096),

Gene: Phractured_49 Start: 49959, Stop: 51068, Start Num: 7
Candidate Starts for Phractured_49:
(Start: 7 @49959 has 13 MA's), (13, 50343), (15, 50388), (16, 50415), (19, 50475), (20, 50481), (29, 50556), (30, 50580), (34, 50646), (36, 50655), (48, 50802), (59, 51030), (61, 51036),

Gene: PhriedRice_50 Start: 50063, Stop: 51172, Start Num: 7
Candidate Starts for PhriedRice_50:
(Start: 7 @50063 has 13 MA's), (13, 50447), (15, 50492), (16, 50519), (19, 50579), (20, 50585), (29, 50660), (30, 50684), (34, 50750), (36, 50759), (48, 50906), (59, 51134), (61, 51140),

Gene: PineapplePluto_52 Start: 49555, Stop: 50661, Start Num: 5
Candidate Starts for PineapplePluto_52:
(Start: 5 @49555 has 33 MA's), (15, 49984), (31, 50188), (34, 50242), (36, 50251), (40, 50296), (50, 50419), (51, 50428), (53, 50467), (55, 50563), (62, 50638),

Gene: RicoCaldo_49 Start: 50041, Stop: 51150, Start Num: 7
Candidate Starts for RicoCaldo_49:
(Start: 7 @50041 has 13 MA's), (13, 50425), (15, 50470), (16, 50497), (19, 50557), (20, 50563), (29, 50638), (30, 50662), (34, 50728), (36, 50737), (48, 50884), (59, 51112), (61, 51118),

Gene: Salvatore2000_48 Start: 49702, Stop: 50820, Start Num: 5
Candidate Starts for Salvatore2000_48:
(Start: 5 @49702 has 33 MA's), (15, 50143), (34, 50401), (44, 50524), (60, 50791), (64, 50809),

Gene: SoilSleuth_52 Start: 50127, Stop: 51245, Start Num: 7
Candidate Starts for SoilSleuth_52:
(Start: 5 @50118 has 33 MA's), (Start: 7 @50127 has 13 MA's), (13, 50520), (19, 50652), (20, 50658), (22, 50667), (26, 50709), (27, 50712), (29, 50733), (34, 50823), (41, 50922), (57, 51162), (63, 51228),

Gene: Sorvannah_48 Start: 49702, Stop: 50820, Start Num: 5
Candidate Starts for Sorvannah_48:
(Start: 5 @49702 has 33 MA's), (15, 50143), (34, 50401), (44, 50524), (60, 50791), (64, 50809),

Gene: StagePhright_49 Start: 49959, Stop: 51068, Start Num: 7
Candidate Starts for StagePhright_49:
(Start: 7 @49959 has 13 MA's), (13, 50343), (15, 50388), (16, 50415), (19, 50475), (20, 50481), (29, 50556), (30, 50580), (34, 50646), (36, 50655), (48, 50802), (59, 51030), (61, 51036),

Gene: Stormbreaker_50 Start: 50095, Stop: 51210, Start Num: 5
Candidate Starts for Stormbreaker_50:
(Start: 5 @50095 has 33 MA's), (15, 50539), (32, 50752), (34, 50797), (41, 50896), (53, 51019), (62, 51187),

Gene: SwissCheezer_49 Start: 49747, Stop: 50859, Start Num: 5
Candidate Starts for SwissCheezer_49:
(Start: 5 @49747 has 33 MA's), (15, 50188), (18, 50260), (30, 50380), (32, 50401), (34, 50446), (41, 50545), (53, 50668), (55, 50761), (62, 50836),

Gene: TicTac_51 Start: 49563, Stop: 50669, Start Num: 5
Candidate Starts for TicTac_51:
(Start: 5 @49563 has 33 MA's), (15, 49992), (31, 50196), (34, 50250), (36, 50259), (40, 50304), (50, 50427), (51, 50436), (53, 50475), (55, 50571), (62, 50646),

Gene: TinyTimothy_47 Start: 49702, Stop: 50820, Start Num: 5
Candidate Starts for TinyTimothy_47:
(Start: 5 @49702 has 33 MA's), (15, 50143), (34, 50401), (44, 50524), (60, 50791), (64, 50809),

Gene: TownLake_48 Start: 49859, Stop: 50974, Start Num: 5
Candidate Starts for TownLake_48:
(Start: 5 @49859 has 33 MA's), (15, 50303), (18, 50375), (32, 50516), (34, 50561), (41, 50660), (53, 50783), (62, 50951),

Gene: Truong_50 Start: 50076, Stop: 51203, Start Num: 5
Candidate Starts for Truong_50:
(Start: 5 @50076 has 33 MA's), (Start: 7 @50085 has 13 MA's), (13, 50478), (19, 50610), (20, 50616), (22, 50625), (26, 50667), (27, 50670), (29, 50691), (34, 50781), (41, 50880), (57, 51120), (63, 51186),

Gene: Unphazed_50 Start: 49964, Stop: 51079, Start Num: 5
Candidate Starts for Unphazed_50:
(Start: 5 @49964 has 33 MA's), (15, 50408), (32, 50621), (34, 50666), (39, 50696), (41, 50765), (53, 50888), (62, 51056),

Gene: Waterlily_53 Start: 50336, Stop: 51454, Start Num: 7
Candidate Starts for Waterlily_53:
(Start: 5 @50327 has 33 MA's), (Start: 7 @50336 has 13 MA's), (13, 50729), (19, 50861), (20, 50867), (22, 50876), (26, 50918), (27, 50921), (29, 50942), (34, 51032), (41, 51131), (57, 51371), (63, 51437),

Gene: Wesak_48 Start: 49547, Stop: 50665, Start Num: 5
Candidate Starts for Wesak_48:
(Start: 5 @49547 has 33 MA's), (15, 49988), (34, 50246), (44, 50369), (60, 50636), (64, 50654),

Gene: Xitlalli_48 Start: 49974, Stop: 51089, Start Num: 5
Candidate Starts for Xitlalli_48:
(Start: 5 @49974 has 33 MA's), (15, 50418), (32, 50631), (34, 50676), (53, 50898), (55, 50991), (62, 51066),

Gene: YellowPanda_50 Start: 49428, Stop: 50546, Start Num: 5
Candidate Starts for YellowPanda_50:
(Start: 5 @49428 has 33 MA's), (15, 49869), (34, 50127), (44, 50250), (60, 50517), (64, 50535),

Gene: Zhengyi_47 Start: 50747, Stop: 51853, Start Num: 5
Candidate Starts for Zhengyi_47:
(Start: 5 @50747 has 33 MA's), (15, 51179), (21, 51275), (22, 51281), (34, 51437), (45, 51566), (46, 51578), (53, 51662), (57, 51773), (61, 51824),