Pham 282087

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51: Celery_67
52: Saltant_62 + 1
53: Jhitchelle_64
54: BroPlease_67
55: GreenWeasel_69
56: phiHau3_69
57: RegnumDei_37
58: Snagrat_36
59: CurlyFries_40
60: Madraxi_43
61: SFuller_38
62: REQ1_07
63: Jflix2_37
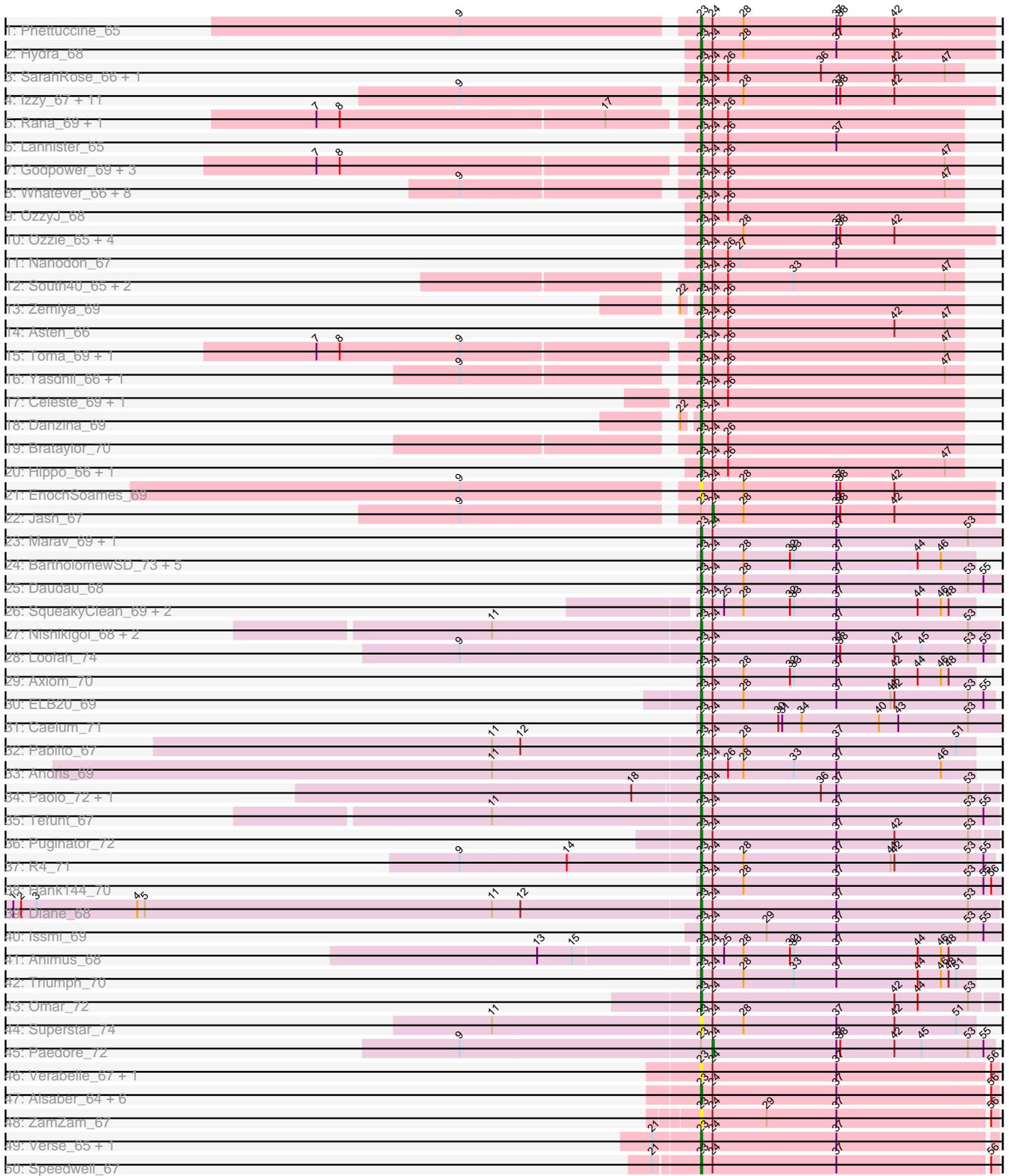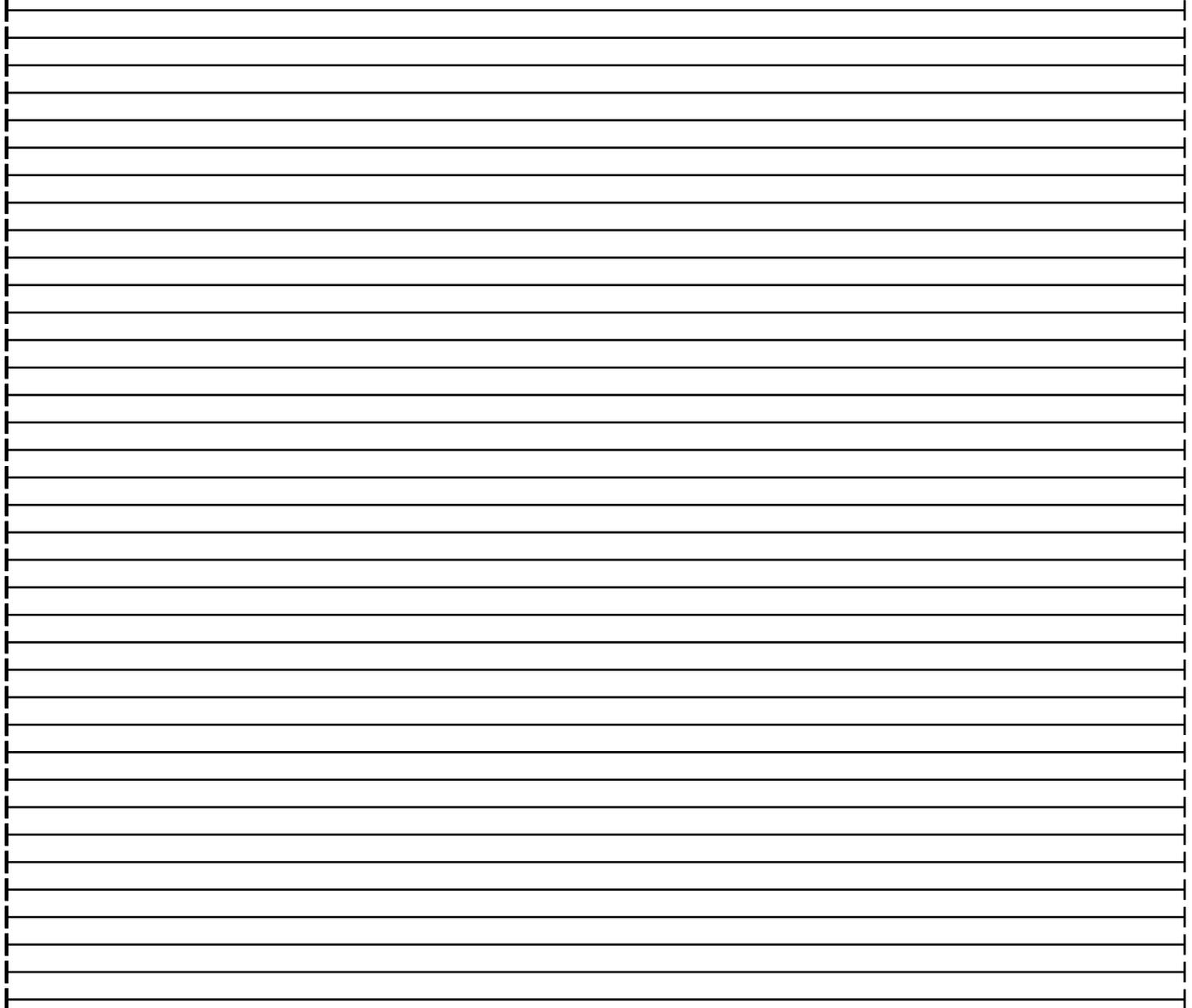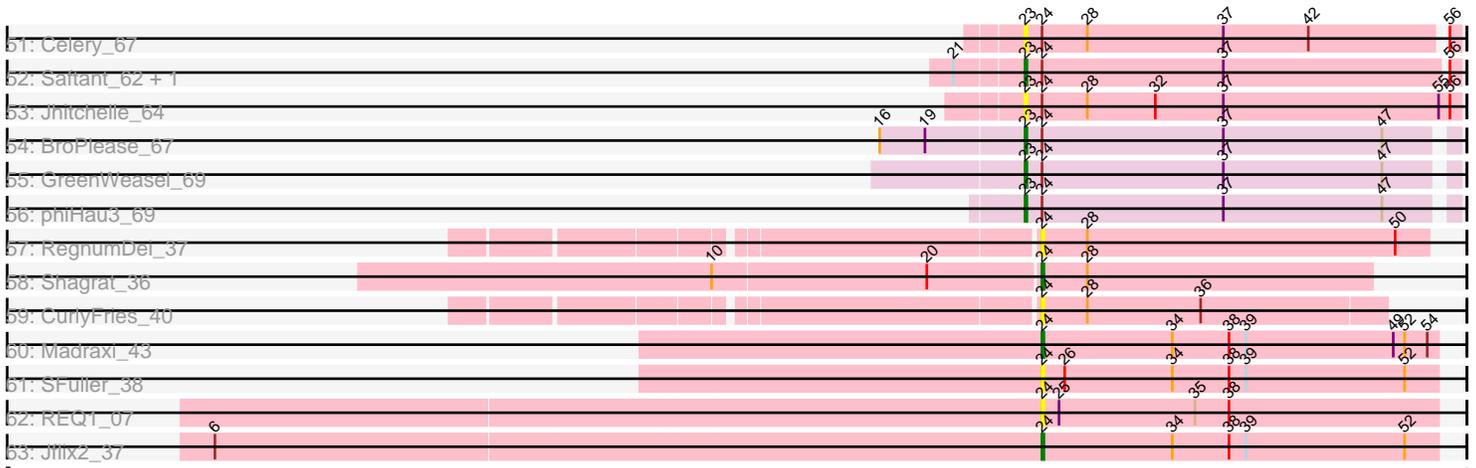
Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly 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 282087 Report

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

Pham number 282087 has 117 members, 12 are drafts.

Phages represented in each track:
• Track 1 : Phettuccine_65
• Track 2 : Hydra_68
• Track 3 : SarahRose_66, Snorlax_66
• Track 4 : Izzy_67, Esperer_66, BryanRecycles_67, Eddasa_68, Indigo_64, Bovely_65, Rusticus_67, Aaronocolus_65, Oliynyk_67, Nerdos_64, Leviticus_66, Unstoppable_65
• Track 5 : Rana_69, Lorelei_68
• Track 6 : Lannister_65
• Track 7 : Godpower_69, Lika_68, Sujidade_69, Nabi_69
• Track 8 : Whatever_66, Emaanora_69, Triste_67, TuanPN_64, TagePhighter_68, Werner_66, Ejemplo_64, Dwayne_66, Chucky_66
• Track 9 : OzzyJ_68
• Track 10 : Ozzie_65, Caliburn_65, Legacy_65, BeardedLady_66, SunsetPointe_65
• Track 11 : Nanodon_67
• Track 12 : South40_65, Katalie_65, RedBear_66
• Track 13 : Zemlya_69
• Track 14 : Asten_66
• Track 15 : Toma_69, Goby_69
• Track 16 : Yasdnil_66, Maneekul_66
• Track 17 : Celeste_69, Dattran_70
• Track 18 : Danzina_69
• Track 19 : Brataylor_70
• Track 20 : Hippo_66, BarryBee_69
• Track 21 : EnochSoames_69
• Track 22 : Jash_67
• Track 23 : Marav_69, Jevington_69
• Track 24 : BartholomewSD_73, TinaBelcher_68, Alvy_73, Thestral_70, Bowden_68, TrvxScott_67
• Track 25 : Daudau_68
• Track 26 : SqueakyClean_69, Janus_69, GirlDinner_68
• Track 27 : Nishikigoi_68, Amethyst_67, Haizum_67
• Track 28 : Loofah_74
• Track 29 : Axiom_70
• Track 30 : ELB20_69
• Track 31 : Caelum_71
• Track 32 : Pablito_67
• Track 33 : Andris_69

• Track 34 : Paolo_72, Zainub_72
• Track 35 : Tefunt_67
• Track 36 : Puginator_72
• Track 37 : R4_71
• Track 38 : Hank144_70
• Track 39 : Diane_68
• Track 40 : Issmi_69
• Track 41 : Animus_68
• Track 42 : Triumph_70
• Track 43 : Omar_72
• Track 44 : Superstar_74
• Track 45 : Paedore_72
• Track 46 : Verabelle_67, phiCAM_61
• Track 47 : Alsaber_64, Conan_65, ElGato_65, Kaine_64, Provolone_65, Pavo_65, Sudan_66
• Track 48 : ZamZam_67
• Track 49 : Verse_65, Amela_64
• Track 50 : Speedwell_67
• Track 51 : Celery_67
• Track 52 : Saftant_62, Dexers_62
• Track 53 : Jhitchelle_64
• Track 54 : BroPlease_67
• Track 55 : GreenWeasel_69
• Track 56 : phiHau3_69
• Track 57 : RegnumDei_37
• Track 58 : Shagrat_36
• Track 59 : CurlyFries_40
• Track 60 : Madraxi_43
• Track 61 : SFuller_38
• Track 62 : REQ1_07
• Track 63 : Jflix2_37

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

The start number called the most often in the published annotations is 23, it was called in 100 of the 105 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Aaronocolus_65, Alsaber_64, Alvy_73, Amela_64, Amethyst_67, Andris_69, Animus_68, Asten_66, Axiom_70, BarryBee_69, BartholomewSD_73, BeardedLady_66, Bovely_65, Bowden_68, Brataylor_70, BroPlease_67, BryanRecycles_67, Caelum_71, Caliburn_65, Celery_67, Celeste_69, Chucky_66, Conan_65, Danzina_69, Dattran_70, Daudau_68, Dexers_62, Diane_68, Dwayne_66, ELB20_69, Eddasa_68, Ejemplo_64, ElGato_65, Emaanora_69, EnochSoames_69, Esperer_66, GirlDinner_68, Goby_69, Godpower_69, GreenWeasel_69, Haizum_67, Hank144_70, Hippo_66, Hydra_68, Indigo_64, Issmi_69, Izzy_67, Janus_69, Jevington_69, Jhitchelle_64, Kaine_64, Katalie_65, Lannister_65, Legacy_65, Leviticus_66, Lika_68, Loofah_74, Lorelei_68, Maneekul_66, Marav_69, Nabi_69, Nanodon_67, Nerdos_64, Nishikigoi_68, Oliynyk_67, Omar_72, Ozzie_65, OzzyJ_68, Pablito_67, Paolo_72, Pavo_65,

Phettuccine_65, Provolone_65, Puginator_72, R4_71, Rana_69, RedBear_66, Rusticus_67, Saftant_62, SarahRose_66, Snorlax_66, South40_65, Speedwell_67, SqueakyClean_69, Sudan_66, Sujidade_69, SunsetPointe_65, Superstar_74, TagePhighter_68, Tefunt_67, Thestral_70, TinaBelcher_68, Toma_69, Triste_67, Triumph_70, TrvxScott_67, TuanPN_64, Unstoppable_65, Verabelle_67, Verse_65, Werner_66, Whatever_66, Yasdnil_66, Zainub_72, ZamZam_67, Zemlya_69, phiCAM_61, phiHau3_69,

Genes that have the "Most Annotated" start but do not call it:
• Jash_67, Paedore_72,

Genes that do not have the "Most Annotated" start:
• CurlyFries_40, Jflix2_37, Madraxi_43, REQ1_07, RegnumDei_37, SFuller_38, Shagrat_36,

Summary by start number:

Start 23:
• Found in 110 of 117 (94.0%) of genes in pham
• Manual Annotations of this start: 100 of 105
• Called 98.2% of time when present
• Phage (with cluster) where this start called: Aaronocolus_65 (BD1), Alsaber_64 (BD3), Alvy_73 (BD2), Amela_64 (BD3), Amethyst_67 (BD2), Andris_69 (BD2), Animus_68 (BD2), Asten_66 (BD1), Axiom_70 (BD2), BarryBee_69 (BD1), BartholomewSD_73 (BD2), BeardedLady_66 (BD1), Bovely_65 (BD1), Bowden_68 (BD2), Brataylor_70 (BD1), BroPlease_67 (BD4), BryanRecycles_67 (BD1), Caelum_71 (BD2), Caliburn_65 (BD1), Celery_67 (BD3), Celeste_69 (BD1), Chucky_66 (BD1), Conan_65 (BD3), Danzina_69 (BD1), Dattran_70 (BD1), Daudau_68 (BD2), Dexers_62 (BD3), Diane_68 (BD2), Dwayne_66 (BD1), ELB20_69 (BD2), Eddasa_68 (BD1), Ejemplo_64 (BD1), ElGato_65 (BD3), Emaanora_69 (BD1), EnochSoames_69 (BD1), Esperer_66 (BD1), GirlDinner_68 (BD2), Goby_69 (BD1), Godpower_69 (BD1), GreenWeasel_69 (BD4), Haizum_67 (BD2), Hank144_70 (BD2), Hippo_66 (BD1), Hydra_68 (BD1), Indigo_64 (BD1), Issmi_69 (BD2), Izzy_67 (BD1), Janus_69 (BD2), Jevington_69 (BD2), Jhitchelle_64 (BD3), Kaine_64 (BD3), Katalie_65 (BD1), Lannister_65 (BD1), Legacy_65 (BD1), Leviticus_66 (BD1), Lika_68 (BD1), Loofah_74 (BD2), Lorelei_68 (BD1), Maneekul_66 (BD1), Marav_69 (BD2), Nabi_69 (BD1), Nanodon_67 (BD1), Nerdos_64 (BD1), Nishikigoi_68 (BD2), Oliynyk_67 (BD1), Omar_72 (BD2), Ozzie_65 (BD1), OzzyJ_68 (BD1), Pablito_67 (BD2), Paolo_72 (BD2), Pavo_65 (BD3), Phettuccine_65 (BD1), Provolone_65 (BD3), Puginator_72 (BD2), R4_71 (BD2), Rana_69 (BD1), RedBear_66 (BD1), Rusticus_67 (BD1), Saftant_62 (BD3), SarahRose_66 (BD1), Snorlax_66 (BD1), South40_65 (BD1), Speedwell_67 (BD3), SqueakyClean_69 (BD2), Sudan_66 (BD3), Sujidade_69 (BD1), SunsetPointe_65 (BD1), Superstar_74 (BD2), TagePhighter_68 (BD1), Tefunt_67 (BD2), Thestral_70 (BD2), TinaBelcher_68 (BD2), Toma_69 (BD1), Triste_67 (BD1), Triumph_70 (BD2), TrvxScott_67 (BD2), TuanPN_64 (BD1), Unstoppable_65 (BD1), Verabelle_67 (BD3), Verse_65 (BD3), Werner_66 (BD1), Whatever_66 (BD1), Yasdnil_66 (BD1), Zainub_72 (BD2), ZamZam_67 (BD3), Zemlya_69 (BD1), phiCAM_61 (BD3), phiHau3_69 (BD4),

Start 24:
• Found in 117 of 117 (100.0%) of genes in pham
• Manual Annotations of this start: 5 of 105
• Called 7.7% of time when present

• Phage (with cluster) where this start called: CurlyFries_40 (CF), Jash_67 (BD1), Jflix2_37 (CF), Madraxi_43 (CF), Paedore_72 (BD2), REQ1_07 (CF), RegnumDei_37 (CF), SFuller_38 (CF), Shagrat_36 (CF),

Summary by clusters:

There are 5 clusters represented in this pham: BD4, BD1, CF, BD3, BD2,

Info for manual annotations of cluster BD1:
•Start number 23 was manually annotated 54 times for cluster BD1.
•Start number 24 was manually annotated 1 time for cluster BD1.

Info for manual annotations of cluster BD2:
•Start number 23 was manually annotated 32 times for cluster BD2.
•Start number 24 was manually annotated 1 time for cluster BD2.

Info for manual annotations of cluster BD3:
•Start number 23 was manually annotated 11 times for cluster BD3.

Info for manual annotations of cluster BD4:
•Start number 23 was manually annotated 3 times for cluster BD4.

Info for manual annotations of cluster CF:
•Start number 24 was manually annotated 3 times for cluster CF.

Gene Information:

Gene: Aaronocolus_65 Start: 44978, Stop: 44751, Start Num: 23
Candidate Starts for Aaronocolus_65:
(9, 45149), (Start: 23 @44978 has 100 MA's), (Start: 24 @44969 has 5 MA's), (28, 44945), (37, 44873), (38, 44870), (42, 44828),

Gene: Alsaber_64 Start: 43086, Stop: 42862, Start Num: 23
Candidate Starts for Alsaber_64:
(Start: 23 @43086 has 100 MA's), (Start: 24 @43077 has 5 MA's), (37, 42981), (56, 42867),

Gene: Alvy_73 Start: 46741, Stop: 46529, Start Num: 23
Candidate Starts for Alvy_73:
(Start: 23 @46741 has 100 MA's), (Start: 24 @46732 has 5 MA's), (28, 46708), (32, 46672), (33, 46669), (37, 46636), (44, 46573), (46, 46555),

Gene: Amela_64 Start: 44073, Stop: 43849, Start Num: 23
Candidate Starts for Amela_64:
(21, 44109), (Start: 23 @44073 has 100 MA's), (Start: 24 @44064 has 5 MA's), (37, 43968),

Gene: Amethyst_67 Start: 43769, Stop: 43539, Start Num: 23
Candidate Starts for Amethyst_67:
(11, 43928), (Start: 23 @43769 has 100 MA's), (Start: 24 @43760 has 5 MA's), (37, 43664), (53, 43562),

Gene: Andris_69 Start: 44658, Stop: 44446, Start Num: 23

Candidate Starts for Andris_69:
(11, 44817), (Start: 23 @44658 has 100 MA's), (Start: 24 @44649 has 5 MA's), (26, 44637), (28, 44625), (33, 44586), (37, 44553), (46, 44472),

Gene: Animus_68 Start: 45712, Stop: 45500, Start Num: 23
Candidate Starts for Animus_68:
(13, 45829), (15, 45802), (Start: 23 @45712 has 100 MA's), (Start: 24 @45703 has 5 MA's), (25, 45694), (28, 45679), (32, 45643), (33, 45640), (37, 45607), (44, 45544), (46, 45526), (48, 45520),

Gene: Asten_66 Start: 47300, Stop: 47097, Start Num: 23
Candidate Starts for Asten_66:
(Start: 23 @47300 has 100 MA's), (Start: 24 @47291 has 5 MA's), (26, 47279), (42, 47150), (47, 47111),

Gene: Axiom_70 Start: 45406, Stop: 45194, Start Num: 23
Candidate Starts for Axiom_70:
(Start: 23 @45406 has 100 MA's), (Start: 24 @45397 has 5 MA's), (28, 45373), (32, 45337), (33, 45334), (37, 45301), (42, 45256), (44, 45238), (46, 45220), (48, 45214),

Gene: BarryBee_69 Start: 47274, Stop: 47071, Start Num: 23
Candidate Starts for BarryBee_69:
(Start: 23 @47274 has 100 MA's), (Start: 24 @47265 has 5 MA's), (26, 47253), (47, 47085),

Gene: BartholomewSD_73 Start: 45860, Stop: 45648, Start Num: 23
Candidate Starts for BartholomewSD_73:
(Start: 23 @45860 has 100 MA's), (Start: 24 @45851 has 5 MA's), (28, 45827), (32, 45791), (33, 45788), (37, 45755), (44, 45692), (46, 45674),

Gene: BeardedLady_66 Start: 45361, Stop: 45134, Start Num: 23
Candidate Starts for BeardedLady_66:
(Start: 23 @45361 has 100 MA's), (Start: 24 @45352 has 5 MA's), (28, 45328), (37, 45256), (38, 45253), (42, 45211),

Gene: Bovely_65 Start: 44981, Stop: 44754, Start Num: 23
Candidate Starts for Bovely_65:
(9, 45152), (Start: 23 @44981 has 100 MA's), (Start: 24 @44972 has 5 MA's), (28, 44948), (37, 44876), (38, 44873), (42, 44831),

Gene: Bowden_68 Start: 46430, Stop: 46218, Start Num: 23
Candidate Starts for Bowden_68:
(Start: 23 @46430 has 100 MA's), (Start: 24 @46421 has 5 MA's), (28, 46397), (32, 46361), (33, 46358), (37, 46325), (44, 46262), (46, 46244),

Gene: Brataylor_70 Start: 46827, Stop: 46624, Start Num: 23
Candidate Starts for Brataylor_70:
(Start: 23 @46827 has 100 MA's), (Start: 24 @46818 has 5 MA's), (26, 46806),

Gene: BroPlease_67 Start: 44201, Stop: 43980, Start Num: 23
Candidate Starts for BroPlease_67:
(16, 44273), (19, 44249), (Start: 23 @44201 has 100 MA's), (Start: 24 @44192 has 5 MA's), (37, 44096), (47, 44012),

Gene: BryanRecycles_67 Start: 45476, Stop: 45249, Start Num: 23

Candidate Starts for BryanRecycles_67:
(9, 45647), (Start: 23 @45476 has 100 MA's), (Start: 24 @45467 has 5 MA's), (28, 45443), (37, 45371), (38, 45368), (42, 45326),

Gene: Caelum_71 Start: 44728, Stop: 44495, Start Num: 23
Candidate Starts for Caelum_71:
(Start: 23 @44728 has 100 MA's), (Start: 24 @44719 has 5 MA's), (30, 44668), (31, 44665), (34, 44650), (40, 44590), (43, 44575), (53, 44521),

Gene: Caliburn_65 Start: 45369, Stop: 45142, Start Num: 23
Candidate Starts for Caliburn_65:
(Start: 23 @45369 has 100 MA's), (Start: 24 @45360 has 5 MA's), (28, 45336), (37, 45264), (38, 45261), (42, 45219),

Gene: Celery_67 Start: 42998, Stop: 42777, Start Num: 23
Candidate Starts for Celery_67:
(Start: 23 @42998 has 100 MA's), (Start: 24 @42989 has 5 MA's), (28, 42965), (37, 42893), (42, 42848), (56, 42782),

Gene: Celeste_69 Start: 46292, Stop: 46089, Start Num: 23
Candidate Starts for Celeste_69:
(Start: 23 @46292 has 100 MA's), (Start: 24 @46283 has 5 MA's), (26, 46271),

Gene: Chucky_66 Start: 47335, Stop: 47132, Start Num: 23
Candidate Starts for Chucky_66:
(9, 47503), (Start: 23 @47335 has 100 MA's), (Start: 24 @47326 has 5 MA's), (26, 47314), (47, 47146),

Gene: Conan_65 Start: 43352, Stop: 43128, Start Num: 23
Candidate Starts for Conan_65:
(Start: 23 @43352 has 100 MA's), (Start: 24 @43343 has 5 MA's), (37, 43247), (56, 43133),

Gene: CurlyFries_40 Start: 29430, Stop: 29251, Start Num: 24
Candidate Starts for CurlyFries_40:
(Start: 24 @29430 has 5 MA's), (28, 29406), (36, 29346),

Gene: Danzina_69 Start: 46541, Stop: 46338, Start Num: 23
Candidate Starts for Danzina_69:
(22, 46550), (Start: 23 @46541 has 100 MA's), (Start: 24 @46532 has 5 MA's),

Gene: Dattran_70 Start: 46745, Stop: 46542, Start Num: 23
Candidate Starts for Dattran_70:
(Start: 23 @46745 has 100 MA's), (Start: 24 @46736 has 5 MA's), (26, 46724),

Gene: Daudau_68 Start: 44304, Stop: 44071, Start Num: 23
Candidate Starts for Daudau_68:
(Start: 23 @44304 has 100 MA's), (Start: 24 @44295 has 5 MA's), (28, 44271), (37, 44199), (53, 44097), (55, 44085),

Gene: Dexers_62 Start: 43326, Stop: 43102, Start Num: 23
Candidate Starts for Dexers_62:
(21, 43359), (Start: 23 @43326 has 100 MA's), (Start: 24 @43317 has 5 MA's), (37, 43221), (56, 43107),

Gene: Diane_68 Start: 44854, Stop: 44624, Start Num: 23
Candidate Starts for Diane_68:
(1, 45382), (2, 45376), (3, 45364), (4, 45286), (5, 45280), (11, 45013), (12, 44992), (Start: 23 @44854 has 100 MA's), (Start: 24 @44845 has 5 MA's), (37, 44749), (53, 44647),

Gene: Dwayne_66 Start: 47323, Stop: 47120, Start Num: 23
Candidate Starts for Dwayne_66:
(9, 47491), (Start: 23 @47323 has 100 MA's), (Start: 24 @47314 has 5 MA's), (26, 47302), (47, 47134),

Gene: ELB20_69 Start: 45139, Stop: 44912, Start Num: 23
Candidate Starts for ELB20_69:
(Start: 23 @45139 has 100 MA's), (Start: 24 @45130 has 5 MA's), (28, 45106), (37, 45034), (41, 44992), (42, 44989), (53, 44932), (55, 44920),

Gene: Eddasa_68 Start: 46015, Stop: 45788, Start Num: 23
Candidate Starts for Eddasa_68:
(9, 46186), (Start: 23 @46015 has 100 MA's), (Start: 24 @46006 has 5 MA's), (28, 45982), (37, 45910), (38, 45907), (42, 45865),

Gene: Ejemplo_64 Start: 47261, Stop: 47058, Start Num: 23
Candidate Starts for Ejemplo_64:
(9, 47429), (Start: 23 @47261 has 100 MA's), (Start: 24 @47252 has 5 MA's), (26, 47240), (47, 47072),

Gene: ElGato_65 Start: 43224, Stop: 43000, Start Num: 23
Candidate Starts for ElGato_65:
(Start: 23 @43224 has 100 MA's), (Start: 24 @43215 has 5 MA's), (37, 43119), (56, 43005),

Gene: Emaanora_69 Start: 47247, Stop: 47044, Start Num: 23
Candidate Starts for Emaanora_69:
(9, 47415), (Start: 23 @47247 has 100 MA's), (Start: 24 @47238 has 5 MA's), (26, 47226), (47, 47058),

Gene: EnochSoames_69 Start: 45273, Stop: 45046, Start Num: 23
Candidate Starts for EnochSoames_69:
(9, 45444), (Start: 23 @45273 has 100 MA's), (Start: 24 @45264 has 5 MA's), (28, 45240), (37, 45168), (38, 45165), (42, 45123),

Gene: Esperer_66 Start: 45324, Stop: 45097, Start Num: 23
Candidate Starts for Esperer_66:
(9, 45495), (Start: 23 @45324 has 100 MA's), (Start: 24 @45315 has 5 MA's), (28, 45291), (37, 45219), (38, 45216), (42, 45174),

Gene: GirlDinner_68 Start: 45204, Stop: 44992, Start Num: 23
Candidate Starts for GirlDinner_68:
(Start: 23 @45204 has 100 MA's), (Start: 24 @45195 has 5 MA's), (25, 45186), (28, 45171), (32, 45135), (33, 45132), (37, 45099), (44, 45036), (46, 45018), (48, 45012),

Gene: Goby_69 Start: 47162, Stop: 46959, Start Num: 23
Candidate Starts for Goby_69:
(7, 47447), (8, 47429), (9, 47336), (Start: 23 @47162 has 100 MA's), (Start: 24 @47153 has 5 MA's), (26, 47141), (47, 46973),

Gene: Godpower_69 Start: 46454, Stop: 46251, Start Num: 23
Candidate Starts for Godpower_69:

(7, 46739), (8, 46721), (Start: 23 @46454 has 100 MA's), (Start: 24 @46445 has 5 MA's), (26, 46433), (47, 46265),

Gene: GreenWeasel_69 Start: 44206, Stop: 43985, Start Num: 23
Candidate Starts for GreenWeasel_69:
(Start: 23 @44206 has 100 MA's), (Start: 24 @44197 has 5 MA's), (37, 44101), (47, 44017),

Gene: Haizum_67 Start: 44577, Stop: 44347, Start Num: 23
Candidate Starts for Haizum_67:
(11, 44736), (Start: 23 @44577 has 100 MA's), (Start: 24 @44568 has 5 MA's), (37, 44472), (53, 44370),

Gene: Hank144_70 Start: 45408, Stop: 45175, Start Num: 23
Candidate Starts for Hank144_70:
(Start: 23 @45408 has 100 MA's), (Start: 24 @45399 has 5 MA's), (28, 45375), (37, 45303), (53, 45201), (55, 45189), (56, 45183),

Gene: Hippo_66 Start: 47310, Stop: 47107, Start Num: 23
Candidate Starts for Hippo_66:
(Start: 23 @47310 has 100 MA's), (Start: 24 @47301 has 5 MA's), (26, 47289), (47, 47121),

Gene: Hydra_68 Start: 46171, Stop: 45944, Start Num: 23
Candidate Starts for Hydra_68:
(Start: 23 @46171 has 100 MA's), (Start: 24 @46162 has 5 MA's), (28, 46138), (37, 46066), (42, 46021),

Gene: Indigo_64 Start: 44974, Stop: 44747, Start Num: 23
Candidate Starts for Indigo_64:
(9, 45145), (Start: 23 @44974 has 100 MA's), (Start: 24 @44965 has 5 MA's), (28, 44941), (37, 44869), (38, 44866), (42, 44824),

Gene: Issmi_69 Start: 45371, Stop: 45138, Start Num: 23
Candidate Starts for Issmi_69:
(Start: 23 @45371 has 100 MA's), (Start: 24 @45362 has 5 MA's), (29, 45320), (37, 45266), (53, 45164), (55, 45152),

Gene: Izzy_67 Start: 45523, Stop: 45296, Start Num: 23
Candidate Starts for Izzy_67:
(9, 45694), (Start: 23 @45523 has 100 MA's), (Start: 24 @45514 has 5 MA's), (28, 45490), (37, 45418), (38, 45415), (42, 45373),

Gene: Janus_69 Start: 45544, Stop: 45332, Start Num: 23
Candidate Starts for Janus_69:
(Start: 23 @45544 has 100 MA's), (Start: 24 @45535 has 5 MA's), (25, 45526), (28, 45511), (32, 45475), (33, 45472), (37, 45439), (44, 45376), (46, 45358), (48, 45352),

Gene: Jash_67 Start: 45467, Stop: 45249, Start Num: 24
Candidate Starts for Jash_67:
(9, 45647), (Start: 23 @45476 has 100 MA's), (Start: 24 @45467 has 5 MA's), (28, 45443), (37, 45371), (38, 45368), (42, 45326),

Gene: Jevington_69 Start: 43739, Stop: 43506, Start Num: 23
Candidate Starts for Jevington_69:

(Start: 23 @43739 has 100 MA's), (Start: 24 @43730 has 5 MA's), (37, 43634), (53, 43532),

Gene: Jflix2_37 Start: 30409, Stop: 30200, Start Num: 24
Candidate Starts for Jflix2_37:
(6, 30841), (Start: 24 @30409 has 5 MA's), (34, 30340), (38, 30310), (39, 30301), (52, 30217),

Gene: Jhitchelle_64 Start: 42609, Stop: 42379, Start Num: 23
Candidate Starts for Jhitchelle_64:
(Start: 23 @42609 has 100 MA's), (Start: 24 @42600 has 5 MA's), (28, 42576), (32, 42540), (37, 42504), (55, 42390), (56, 42384),

Gene: Kaine_64 Start: 43110, Stop: 42886, Start Num: 23
Candidate Starts for Kaine_64:
(Start: 23 @43110 has 100 MA's), (Start: 24 @43101 has 5 MA's), (37, 43005), (56, 42891),

Gene: Katalie_65 Start: 47046, Stop: 46843, Start Num: 23
Candidate Starts for Katalie_65:
(Start: 23 @47046 has 100 MA's), (Start: 24 @47037 has 5 MA's), (26, 47025), (33, 46974), (47, 46857),

Gene: Lannister_65 Start: 45800, Stop: 45597, Start Num: 23
Candidate Starts for Lannister_65:
(Start: 23 @45800 has 100 MA's), (Start: 24 @45791 has 5 MA's), (26, 45779), (37, 45695),

Gene: Legacy_65 Start: 45360, Stop: 45133, Start Num: 23
Candidate Starts for Legacy_65:
(Start: 23 @45360 has 100 MA's), (Start: 24 @45351 has 5 MA's), (28, 45327), (37, 45255), (38, 45252), (42, 45210),

Gene: Leviticus_66 Start: 45511, Stop: 45284, Start Num: 23
Candidate Starts for Leviticus_66:
(9, 45682), (Start: 23 @45511 has 100 MA's), (Start: 24 @45502 has 5 MA's), (28, 45478), (37, 45406), (38, 45403), (42, 45361),

Gene: Lika_68 Start: 47007, Stop: 46804, Start Num: 23
Candidate Starts for Lika_68:
(7, 47292), (8, 47274), (Start: 23 @47007 has 100 MA's), (Start: 24 @46998 has 5 MA's), (26, 46986), (47, 46818),

Gene: Loofah_74 Start: 46120, Stop: 45893, Start Num: 23
Candidate Starts for Loofah_74:
(9, 46303), (Start: 23 @46120 has 100 MA's), (Start: 24 @46111 has 5 MA's), (37, 46015), (38, 46012), (42, 45970), (45, 45949), (53, 45913), (55, 45901),

Gene: Lorelei_68 Start: 46298, Stop: 46095, Start Num: 23
Candidate Starts for Lorelei_68:
(7, 46583), (8, 46565), (17, 46364), (Start: 23 @46298 has 100 MA's), (Start: 24 @46289 has 5 MA's), (26, 46277),

Gene: Madraxi_43 Start: 33621, Stop: 33412, Start Num: 24
Candidate Starts for Madraxi_43:
(Start: 24 @33621 has 5 MA's), (34, 33552), (38, 33522), (39, 33513), (49, 33435), (52, 33429), (54, 33417),

Gene: Maneekul_66 Start: 47340, Stop: 47137, Start Num: 23
Candidate Starts for Maneekul_66:
(9, 47508), (Start: 23 @47340 has 100 MA's), (Start: 24 @47331 has 5 MA's), (26, 47319), (47, 47151),

Gene: Marav_69 Start: 43726, Stop: 43493, Start Num: 23
Candidate Starts for Marav_69:
(Start: 23 @43726 has 100 MA's), (Start: 24 @43717 has 5 MA's), (37, 43621), (53, 43519),

Gene: Nabi_69 Start: 46867, Stop: 46664, Start Num: 23
Candidate Starts for Nabi_69:
(7, 47152), (8, 47134), (Start: 23 @46867 has 100 MA's), (Start: 24 @46858 has 5 MA's), (26, 46846), (47, 46678),

Gene: Nanodon_67 Start: 45729, Stop: 45526, Start Num: 23
Candidate Starts for Nanodon_67:
(Start: 23 @45729 has 100 MA's), (Start: 24 @45720 has 5 MA's), (26, 45708), (27, 45699), (37, 45624),

Gene: Nerdos_64 Start: 44973, Stop: 44746, Start Num: 23
Candidate Starts for Nerdos_64:
(9, 45144), (Start: 23 @44973 has 100 MA's), (Start: 24 @44964 has 5 MA's), (28, 44940), (37, 44868), (38, 44865), (42, 44823),

Gene: Nishikigoi_68 Start: 44577, Stop: 44347, Start Num: 23
Candidate Starts for Nishikigoi_68:
(11, 44736), (Start: 23 @44577 has 100 MA's), (Start: 24 @44568 has 5 MA's), (37, 44472), (53, 44370),

Gene: Oliynyk_67 Start: 45476, Stop: 45249, Start Num: 23
Candidate Starts for Oliynyk_67:
(9, 45647), (Start: 23 @45476 has 100 MA's), (Start: 24 @45467 has 5 MA's), (28, 45443), (37, 45371), (38, 45368), (42, 45326),

Gene: Omar_72 Start: 43507, Stop: 43280, Start Num: 23
Candidate Starts for Omar_72:
(Start: 23 @43507 has 100 MA's), (Start: 24 @43498 has 5 MA's), (42, 43357), (44, 43339), (53, 43300),

Gene: Ozzie_65 Start: 45369, Stop: 45142, Start Num: 23
Candidate Starts for Ozzie_65:
(Start: 23 @45369 has 100 MA's), (Start: 24 @45360 has 5 MA's), (28, 45336), (37, 45264), (38, 45261), (42, 45219),

Gene: OzzyJ_68 Start: 47243, Stop: 47040, Start Num: 23
Candidate Starts for OzzyJ_68:
(Start: 23 @47243 has 100 MA's), (Start: 24 @47234 has 5 MA's), (26, 47222),

Gene: Pablito_67 Start: 43979, Stop: 43767, Start Num: 23
Candidate Starts for Pablito_67:
(11, 44138), (12, 44117), (Start: 23 @43979 has 100 MA's), (Start: 24 @43970 has 5 MA's), (28, 43946), (37, 43874), (51, 43781),

Gene: Paedore_72 Start: 46477, Stop: 46259, Start Num: 24
Candidate Starts for Paedore_72:
(9, 46669), (Start: 23 @46486 has 100 MA's), (Start: 24 @46477 has 5 MA's), (37, 46381), (38, 46378), (42, 46336), (45, 46315), (53, 46279), (55, 46267),

Gene: Paolo_72 Start: 45420, Stop: 45193, Start Num: 23
Candidate Starts for Paolo_72:
(18, 45468), (Start: 23 @45420 has 100 MA's), (Start: 24 @45411 has 5 MA's), (36, 45327), (37, 45315), (53, 45213),

Gene: Pavo_65 Start: 43295, Stop: 43071, Start Num: 23
Candidate Starts for Pavo_65:
(Start: 23 @43295 has 100 MA's), (Start: 24 @43286 has 5 MA's), (37, 43190), (56, 43076),

Gene: Phettuccine_65 Start: 44974, Stop: 44747, Start Num: 23
Candidate Starts for Phettuccine_65:
(9, 45145), (Start: 23 @44974 has 100 MA's), (Start: 24 @44965 has 5 MA's), (28, 44941), (37, 44869), (38, 44866), (42, 44824),

Gene: Provolone_65 Start: 43436, Stop: 43212, Start Num: 23
Candidate Starts for Provolone_65:
(Start: 23 @43436 has 100 MA's), (Start: 24 @43427 has 5 MA's), (37, 43331), (56, 43217),

Gene: Puginator_72 Start: 45467, Stop: 45240, Start Num: 23
Candidate Starts for Puginator_72:
(Start: 23 @45467 has 100 MA's), (Start: 24 @45458 has 5 MA's), (37, 45362), (42, 45317), (53, 45260),

Gene: R4_71 Start: 45299, Stop: 45072, Start Num: 23
Candidate Starts for R4_71:
(9, 45482), (14, 45401), (Start: 23 @45299 has 100 MA's), (Start: 24 @45290 has 5 MA's), (28, 45266), (37, 45194), (41, 45152), (42, 45149), (53, 45092), (55, 45080),

Gene: REQ1_07 Start: 2205, Stop: 1996, Start Num: 24
Candidate Starts for REQ1_07:
(Start: 24 @2205 has 5 MA's), (25, 2196), (35, 2124), (38, 2106),

Gene: Rana_69 Start: 46720, Stop: 46517, Start Num: 23
Candidate Starts for Rana_69:
(7, 47005), (8, 46987), (17, 46786), (Start: 23 @46720 has 100 MA's), (Start: 24 @46711 has 5 MA's), (26, 46699),

Gene: RedBear_66 Start: 47046, Stop: 46843, Start Num: 23
Candidate Starts for RedBear_66:
(Start: 23 @47046 has 100 MA's), (Start: 24 @47037 has 5 MA's), (26, 47025), (33, 46974), (47, 46857),

Gene: RegnumDei_37 Start: 30011, Stop: 29808, Start Num: 24
Candidate Starts for RegnumDei_37:
(Start: 24 @30011 has 5 MA's), (28, 29987), (50, 29825),

Gene: Rusticus_67 Start: 45476, Stop: 45249, Start Num: 23
Candidate Starts for Rusticus_67:

(9, 45647), (Start: 23 @45476 has 100 MA's), (Start: 24 @45467 has 5 MA's), (28, 45443), (37, 45371), (38, 45368), (42, 45326),

Gene: SFuller_38 Start: 30771, Stop: 30562, Start Num: 24
Candidate Starts for SFuller_38:
(Start: 24 @30771 has 5 MA's), (26, 30759), (34, 30702), (38, 30672), (39, 30663), (52, 30579),

Gene: Saftant_62 Start: 43176, Stop: 42952, Start Num: 23
Candidate Starts for Saftant_62:
(21, 43209), (Start: 23 @43176 has 100 MA's), (Start: 24 @43167 has 5 MA's), (37, 43071), (56, 42957),

Gene: SarahRose_66 Start: 47310, Stop: 47107, Start Num: 23
Candidate Starts for SarahRose_66:
(Start: 23 @47310 has 100 MA's), (Start: 24 @47301 has 5 MA's), (26, 47289), (36, 47217), (42, 47160), (47, 47121),

Gene: Shagrat_36 Start: 30057, Stop: 29884, Start Num: 24
Candidate Starts for Shagrat_36:
(10, 30225), (20, 30114), (Start: 24 @30057 has 5 MA's), (28, 30033),

Gene: Snorlax_66 Start: 47335, Stop: 47132, Start Num: 23
Candidate Starts for Snorlax_66:
(Start: 23 @47335 has 100 MA's), (Start: 24 @47326 has 5 MA's), (26, 47314), (36, 47242), (42, 47185), (47, 47146),

Gene: South40_65 Start: 47046, Stop: 46843, Start Num: 23
Candidate Starts for South40_65:
(Start: 23 @47046 has 100 MA's), (Start: 24 @47037 has 5 MA's), (26, 47025), (33, 46974), (47, 46857),

Gene: Speedwell_67 Start: 44221, Stop: 43997, Start Num: 23
Candidate Starts for Speedwell_67:
(21, 44254), (Start: 23 @44221 has 100 MA's), (Start: 24 @44212 has 5 MA's), (37, 44116), (56, 44002),

Gene: SqueakyClean_69 Start: 45722, Stop: 45510, Start Num: 23
Candidate Starts for SqueakyClean_69:
(Start: 23 @45722 has 100 MA's), (Start: 24 @45713 has 5 MA's), (25, 45704), (28, 45689), (32, 45653), (33, 45650), (37, 45617), (44, 45554), (46, 45536), (48, 45530),

Gene: Sudan_66 Start: 43093, Stop: 42869, Start Num: 23
Candidate Starts for Sudan_66:
(Start: 23 @43093 has 100 MA's), (Start: 24 @43084 has 5 MA's), (37, 42988), (56, 42874),

Gene: Sujidade_69 Start: 47304, Stop: 47101, Start Num: 23
Candidate Starts for Sujidade_69:
(7, 47589), (8, 47571), (Start: 23 @47304 has 100 MA's), (Start: 24 @47295 has 5 MA's), (26, 47283), (47, 47115),

Gene: SunsetPointe_65 Start: 45376, Stop: 45149, Start Num: 23
Candidate Starts for SunsetPointe_65:

(Start: 23 @45376 has 100 MA's), (Start: 24 @45367 has 5 MA's), (28, 45343), (37, 45271), (38, 45268), (42, 45226),

Gene: Superstar_74 Start: 44742, Stop: 44530, Start Num: 23
Candidate Starts for Superstar_74:
(11, 44901), (Start: 23 @44742 has 100 MA's), (Start: 24 @44733 has 5 MA's), (28, 44709), (37, 44637), (42, 44592), (51, 44544),

Gene: TagePhighter_68 Start: 47310, Stop: 47107, Start Num: 23
Candidate Starts for TagePhighter_68:
(9, 47478), (Start: 23 @47310 has 100 MA's), (Start: 24 @47301 has 5 MA's), (26, 47289), (47, 47121),

Gene: Tefunt_67 Start: 44491, Stop: 44261, Start Num: 23
Candidate Starts for Tefunt_67:
(11, 44650), (Start: 23 @44491 has 100 MA's), (Start: 24 @44482 has 5 MA's), (37, 44386), (53, 44284), (55, 44272),

Gene: Thestral_70 Start: 46457, Stop: 46245, Start Num: 23
Candidate Starts for Thestral_70:
(Start: 23 @46457 has 100 MA's), (Start: 24 @46448 has 5 MA's), (28, 46424), (32, 46388), (33, 46385), (37, 46352), (44, 46289), (46, 46271),

Gene: TinaBelcher_68 Start: 46319, Stop: 46107, Start Num: 23
Candidate Starts for TinaBelcher_68:
(Start: 23 @46319 has 100 MA's), (Start: 24 @46310 has 5 MA's), (28, 46286), (32, 46250), (33, 46247), (37, 46214), (44, 46151), (46, 46133),

Gene: Toma_69 Start: 47165, Stop: 46962, Start Num: 23
Candidate Starts for Toma_69:
(7, 47450), (8, 47432), (9, 47339), (Start: 23 @47165 has 100 MA's), (Start: 24 @47156 has 5 MA's), (26, 47144), (47, 46976),

Gene: Triste_67 Start: 47309, Stop: 47106, Start Num: 23
Candidate Starts for Triste_67:
(9, 47477), (Start: 23 @47309 has 100 MA's), (Start: 24 @47300 has 5 MA's), (26, 47288), (47, 47120),

Gene: Triumph_70 Start: 45144, Stop: 44932, Start Num: 23
Candidate Starts for Triumph_70:
(Start: 23 @45144 has 100 MA's), (Start: 24 @45135 has 5 MA's), (28, 45111), (33, 45072), (37, 45039), (44, 44976), (46, 44958), (48, 44952), (51, 44946),

Gene: TrvxScott_67 Start: 46424, Stop: 46212, Start Num: 23
Candidate Starts for TrvxScott_67:
(Start: 23 @46424 has 100 MA's), (Start: 24 @46415 has 5 MA's), (28, 46391), (32, 46355), (33, 46352), (37, 46319), (44, 46256), (46, 46238),

Gene: TuanPN_64 Start: 47261, Stop: 47058, Start Num: 23
Candidate Starts for TuanPN_64:
(9, 47429), (Start: 23 @47261 has 100 MA's), (Start: 24 @47252 has 5 MA's), (26, 47240), (47, 47072),

Gene: Unstoppable_65 Start: 44972, Stop: 44745, Start Num: 23
Candidate Starts for Unstoppable_65:

(9, 45143), (Start: 23 @44972 has 100 MA's), (Start: 24 @44963 has 5 MA's), (28, 44939), (37, 44867), (38, 44864), (42, 44822),

Gene: Verabelle_67 Start: 42771, Stop: 42547, Start Num: 23
Candidate Starts for Verabelle_67:
(Start: 23 @42771 has 100 MA's), (Start: 24 @42762 has 5 MA's), (37, 42666), (56, 42552),

Gene: Verse_65 Start: 44064, Stop: 43840, Start Num: 23
Candidate Starts for Verse_65:
(21, 44100), (Start: 23 @44064 has 100 MA's), (Start: 24 @44055 has 5 MA's), (37, 43959),

Gene: Werner_66 Start: 47307, Stop: 47104, Start Num: 23
Candidate Starts for Werner_66:
(9, 47475), (Start: 23 @47307 has 100 MA's), (Start: 24 @47298 has 5 MA's), (26, 47286), (47, 47118),

Gene: Whatever_66 Start: 47332, Stop: 47129, Start Num: 23
Candidate Starts for Whatever_66:
(9, 47500), (Start: 23 @47332 has 100 MA's), (Start: 24 @47323 has 5 MA's), (26, 47311), (47, 47143),

Gene: Yasdnil_66 Start: 47359, Stop: 47156, Start Num: 23
Candidate Starts for Yasdnil_66:
(9, 47527), (Start: 23 @47359 has 100 MA's), (Start: 24 @47350 has 5 MA's), (26, 47338), (47, 47170),

Gene: Zainub_72 Start: 45394, Stop: 45167, Start Num: 23
Candidate Starts for Zainub_72:
(18, 45442), (Start: 23 @45394 has 100 MA's), (Start: 24 @45385 has 5 MA's), (36, 45301), (37, 45289), (53, 45187),

Gene: ZamZam_67 Start: 43519, Stop: 43295, Start Num: 23
Candidate Starts for ZamZam_67:
(Start: 23 @43519 has 100 MA's), (Start: 24 @43510 has 5 MA's), (29, 43468), (37, 43414), (56, 43300),

Gene: Zemlya_69 Start: 46846, Stop: 46643, Start Num: 23
Candidate Starts for Zemlya_69:
(22, 46855), (Start: 23 @46846 has 100 MA's), (Start: 24 @46837 has 5 MA's), (26, 46825),

Gene: phiCAM_61 Start: 44832, Stop: 44608, Start Num: 23
Candidate Starts for phiCAM_61:
(Start: 23 @44832 has 100 MA's), (Start: 24 @44823 has 5 MA's), (37, 44727), (56, 44613),

Gene: phiHau3_69 Start: 44634, Stop: 44413, Start Num: 23
Candidate Starts for phiHau3_69:
(Start: 23 @44634 has 100 MA's), (Start: 24 @44625 has 5 MA's), (37, 44529), (47, 44445),