Pham 282089

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51: VieEnRose_52
52: Itza_52 + 1
53: Celia_51

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 282089 Report

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

Pham number 282089 has 113 members, 9 are drafts.

Phages represented in each track:
• Track 1 : Sujidade_52, Lika_51
• Track 2 : Unstoppable_51, Bovely_51, Hydra_52
• Track 3 : Leviticus_51, Legacy_50, BeardedLady_51, EnochSoames_54, Jash_53, Esperer_51, BryanRecycles_53, Phettuccine_51, SunsetPointe_50, Indigo_50, Izzy_53, Oliynyk_53, Rusticus_53, Nerdos_50, Ozzie_50, Caliburn_50, Aaronocolus_51
• Track 4 : Lannister_53
• Track 5 : Asten_53, Ejemplo_51, Dwayne_53, Maneekul_53, Triste_54, Werner_53, Yasdnil_53, Whatever_53, OzzyJ_55, Chucky_53, Emaanora_56, Hippo_53, Snorlax_53, BarryBee_56, SarahRose_53, TuanPN_51, TagePhighter_55
• Track 6 : Toma_52, Danzina_54, Goby_52, Dattran_54, Godpower_53
• Track 7 : Celeste_54, Brataylor_55
• Track 8 : South40_52, Katalie_52
• Track 9 : Nanodon_55
• Track 10 : Eddasa_53
• Track 11 : Lorelei_53, Nabi_53, Rana_53
• Track 12 : Zemlya_53
• Track 13 : RedBear_53
• Track 14 : Alvy_59, TinaBelcher_56, BartholomewSD_59, TrvxScott_55, Daudau_55
• Track 15 : Animus_56, Janus_57, SqueakyClean_57, GirlDinner_56
• Track 16 : Jevington_54
• Track 17 : Amethyst_55, Diane_55
• Track 18 : Haizum_56, Nishikigoi_56
• Track 19 : Paedore_57, Loofah_58, ELB20_55
• Track 20 : R4_56, Triumph_58
• Track 21 : Issmi_57
• Track 22 : Tefunt_55
• Track 23 : Thestral_58, Bowden_56
• Track 24 : Pablito_54
• Track 25 : Andris_56
• Track 26 : Hank144_58
• Track 27 : Marav_56
• Track 28 : Omar_59
• Track 29 : Paolo_57, Zainub_57
• Track 30 : Superstar_62
• Track 31 : Axiom_57
• Track 32 : Puginator_57

- Track 33 : Caelum_58
- Track 34 : Celery_59
- Track 35 : Verabelle_58
- Track 36 : Provolone_55
- Track 37 : Alsaber_55
- Track 38 : Jhitchelle_56
- Track 39 : Saftant_53
- Track 40 : ZamZam_58
- Track 41 : Amela_55
- Track 42 : phiCAM_53
- Track 43 : Vanseggelen_60
- Track 44 : Sudan_56
- Track 45 : Kaine_55, Conan_55
- Track 46 : Pavo_56
- Track 47 : Verse_56
- Track 48 : Dexers_53, ElGato_55
- Track 49 : Yosif_58
- Track 50 : Speedwell_59
- Track 51 : VieEnRose_52
- Track 52 : Itza_52, Urza_51
- Track 53 : Celia_51

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 85 of the 104 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
- Aaronocolus_51, Alsaber_55, Alvy_59, Amela_55, Andris_56, Asten_53, Axiom_57, BarryBee_56, BartholomewSD_59, BeardedLady_51, Bowden_56, Brataylor_55, BryanRecycles_53, Caliburn_50, Celery_59, Celeste_54, Chucky_53, Conan_55, Danzina_54, Dattran_54, Daudau_55, Dexers_53, Dwayne_53, ELB20_55, Eddasa_53, Ejemplo_51, ElGato_55, Emaanora_56, EnochSoames_54, Esperer_51, Goby_52, Godpower_53, Hippo_53, Indigo_50, Issmi_57, Izzy_53, Jash_53, Jevington_54, Jhitchelle_56, Kaine_55, Katalie_52, Lannister_53, Legacy_50, Leviticus_51, Lika_51, Loofah_58, Lorelei_53, Maneekul_53, Marav_56, Nabi_53, Nanodon_55, Nerdos_50, Oliynyk_53, Ozzie_50, OzzyJ_55, Pablito_54, Paedore_57, Paolo_57, Pavo_56, Phettuccine_51, Provolone_55, Puginator_57, R4_56, Rana_53, RedBear_53, Rusticus_53, Saftant_53, SarahRose_53, Snorlax_53, South40_52, Speedwell_59, Sudan_56, Sujidade_52, SunsetPointe_50, TagePhighter_55, Thestral_58, TinaBelcher_56, Toma_52, Triste_54, Triumph_58, TrvxScott_55, TuanPN_51, Vanseggelen_60, Verabelle_58, Verse_56, Werner_53, Whatever_53, Yasdnil_53, Yosif_58, Zainub_57, ZamZam_58, Zemlya_53,

Genes that have the "Most Annotated" start but do not call it:
- Bovely_51, Hydra_52, Unstoppable_51, phiCAM_53,

Genes that do not have the "Most Annotated" start:
- Amethyst_55, Animus_56, Caelum_58, Celia_51, Diane_55, GirlDinner_56, Haizum_56, Hank144_58, Itza_52, Janus_57, Nishikigoi_56, Omar_59,

SqueakyClean_57, Superstar_62, Tefunt_55, Urza_51, VieEnRose_52,

Summary by start number:

Start 17:
• Found in 2 of 113 (1.8%) of genes in pham
• Manual Annotations of this start: 1 of 104
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Hank144_58 (BD2),

Start 19:
• Found in 4 of 113 (3.5%) of genes in pham
• Manual Annotations of this start: 4 of 104
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Celia_51 (BD6), Itza_52 (BD6), Urza_51 (BD6), VieEnRose_52 (BD6),

Start 20:
• Found in 12 of 113 (10.6%) of genes in pham
• Manual Annotations of this start: 11 of 104
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Amethyst_55 (BD2), Animus_56 (BD2), Caelum_58 (BD2), Diane_55 (BD2), GirlDinner_56 (BD2), Haizum_56 (BD2), Janus_57 (BD2), Nishikigoi_56 (BD2), Omar_59 (BD2), SqueakyClean_57 (BD2), Superstar_62 (BD2), Tefunt_55 (BD2),

Start 22:
• Found in 69 of 113 (61.1%) of genes in pham
• Manual Annotations of this start: 3 of 104
• Called 5.8% of time when present
• Phage (with cluster) where this start called: Bovely_51 (BD1), Hydra_52 (BD1), Unstoppable_51 (BD1), phiCAM_53 (BD3),

Start 23:
• Found in 96 of 113 (85.0%) of genes in pham
• Manual Annotations of this start: 85 of 104
• Called 95.8% of time when present
• Phage (with cluster) where this start called: Aaronocolus_51 (BD1), Alsaber_55 (BD3), Alvy_59 (BD2), Amela_55 (BD3), Andris_56 (BD2), Asten_53 (BD1), Axiom_57 (BD2), BarryBee_56 (BD1), BartholomewSD_59 (BD2), BeardedLady_51 (BD1), Bowden_56 (BD2), Brataylor_55 (BD1), BryanRecycles_53 (BD1), Caliburn_50 (BD1), Celery_59 (BD3), Celeste_54 (BD1), Chucky_53 (BD1), Conan_55 (BD3), Danzina_54 (BD1), Dattran_54 (BD1), Daudau_55 (BD2), Dexers_53 (BD3), Dwayne_53 (BD1), ELB20_55 (BD2), Eddasa_53 (BD1), Ejemplo_51 (BD1), ElGato_55 (BD3), Emaanora_56 (BD1), EnochSoames_54 (BD1), Esperer_51 (BD1), Goby_52 (BD1), Godpower_53 (BD1), Hippo_53 (BD1), Indigo_50 (BD1), Issmi_57 (BD2), Izzy_53 (BD1), Jash_53 (BD1), Jevington_54 (BD2), Jhitchelle_56 (BD3), Kaine_55 (BD3), Katalie_52 (BD1), Lannister_53 (BD1), Legacy_50 (BD1), Leviticus_51 (BD1), Lika_51 (BD1), Loofah_58 (BD2), Lorelei_53 (BD1), Maneekul_53 (BD1), Marav_56 (BD2), Nabi_53 (BD1), Nanodon_55 (BD1), Nerdos_50 (BD1), Oliynyk_53 (BD1), Ozzie_50 (BD1), OzzyJ_55 (BD1), Pablito_54 (BD2), Paedore_57 (BD2), Paolo_57 (BD2), Pavo_56 (BD3), Phettuccine_51 (BD1), Provolone_55 (BD3), Puginator_57 (BD2), R4_56 (BD2), Rana_53 (BD1),

RedBear_53 (BD1), Rusticus_53 (BD1), Saftant_53 (BD3), SarahRose_53 (BD1), Snorlax_53 (BD1), South40_52 (BD1), Speedwell_59 (BD3), Sudan_56 (BD3), Sujidade_52 (BD1), SunsetPointe_50 (BD1), TagePhighter_55 (BD1), Thestral_58 (BD2), TinaBelcher_56 (BD2), Toma_52 (BD1), Triste_54 (BD1), Triumph_58 (BD2), TrvxScott_55 (BD2), TuanPN_51 (BD1), Vanseggelen_60 (BD3), Verabelle_58 (BD3), Verse_56 (BD3), Werner_53 (BD1), Whatever_53 (BD1), Yasdnil_53 (BD1), Yosif_58 (BD3), Zainub_57 (BD2), ZamZam_58 (BD3), Zemlya_53 (BD1),

Summary by clusters:

There are 4 clusters represented in this pham: BD6, BD1, BD3, BD2,

Info for manual annotations of cluster BD1:
•Start number 22 was manually annotated 3 times for cluster BD1.
•Start number 23 was manually annotated 52 times for cluster BD1.

Info for manual annotations of cluster BD2:
•Start number 17 was manually annotated 1 time for cluster BD2.
•Start number 20 was manually annotated 11 times for cluster BD2.
•Start number 23 was manually annotated 21 times for cluster BD2.

Info for manual annotations of cluster BD3:
•Start number 23 was manually annotated 12 times for cluster BD3.

Info for manual annotations of cluster BD6:
•Start number 19 was manually annotated 4 times for cluster BD6.

Gene Information:
Gene: Aaronocolus_51 Start: 36535, Stop: 36260, Start Num: 23
Candidate Starts for Aaronocolus_51:
(Start: 22 @36541 has 3 MA's), (Start: 23 @36535 has 85 MA's), (26, 36514), (30, 36481), (42, 36358),

Gene: Alsaber_55 Start: 39807, Stop: 39556, Start Num: 23
Candidate Starts for Alsaber_55:
(10, 40023), (Start: 23 @39807 has 85 MA's), (42, 39633), (48, 39573), (50, 39561),

Gene: Alvy_59 Start: 41274, Stop: 41014, Start Num: 23
Candidate Starts for Alvy_59:
(Start: 23 @41274 has 85 MA's), (27, 41253), (42, 41106),

Gene: Amela_55 Start: 40778, Stop: 40527, Start Num: 23
Candidate Starts for Amela_55:
(Start: 23 @40778 has 85 MA's), (25, 40772), (32, 40697), (42, 40604), (48, 40544), (50, 40532),

Gene: Amethyst_55 Start: 39703, Stop: 39398, Start Num: 20
Candidate Starts for Amethyst_55:
(Start: 20 @39703 has 11 MA's), (36, 39577), (40, 39538), (49, 39427),

Gene: Andris_56 Start: 40198, Stop: 39935, Start Num: 23
Candidate Starts for Andris_56:

(Start: 23 @40198 has 85 MA's), (24, 40195), (27, 40177), (30, 40150), (42, 40030),

Gene: Animus_56 Start: 40829, Stop: 40485, Start Num: 20
Candidate Starts for Animus_56:
(Start: 20 @40829 has 11 MA's), (36, 40703), (40, 40664), (43, 40619), (44, 40613), (49, 40553),

Gene: Asten_53 Start: 38957, Stop: 38700, Start Num: 23
Candidate Starts for Asten_53:
(Start: 22 @38963 has 3 MA's), (Start: 23 @38957 has 85 MA's), (26, 38936), (42, 38783),

Gene: Axiom_57 Start: 40456, Stop: 40190, Start Num: 23
Candidate Starts for Axiom_57:
(Start: 23 @40456 has 85 MA's), (27, 40429), (30, 40402), (39, 40327), (42, 40282),

Gene: BarryBee_56 Start: 38979, Stop: 38722, Start Num: 23
Candidate Starts for BarryBee_56:
(Start: 22 @38985 has 3 MA's), (Start: 23 @38979 has 85 MA's), (26, 38958), (42, 38805),

Gene: BartholomewSD_59 Start: 40393, Stop: 40133, Start Num: 23
Candidate Starts for BartholomewSD_59:
(Start: 23 @40393 has 85 MA's), (27, 40372), (42, 40225),

Gene: BeardedLady_51 Start: 36909, Stop: 36634, Start Num: 23
Candidate Starts for BeardedLady_51:
(Start: 22 @36915 has 3 MA's), (Start: 23 @36909 has 85 MA's), (26, 36888), (30, 36855), (42, 36732),

Gene: Bovely_51 Start: 36544, Stop: 36263, Start Num: 22
Candidate Starts for Bovely_51:
(Start: 22 @36544 has 3 MA's), (Start: 23 @36538 has 85 MA's), (26, 36517), (30, 36484), (42, 36361),

Gene: Bowden_56 Start: 41221, Stop: 40961, Start Num: 23
Candidate Starts for Bowden_56:
(Start: 23 @41221 has 85 MA's), (27, 41200), (30, 41173), (42, 41053),

Gene: Brataylor_55 Start: 38348, Stop: 38091, Start Num: 23
Candidate Starts for Brataylor_55:
(Start: 22 @38354 has 3 MA's), (Start: 23 @38348 has 85 MA's), (26, 38327), (30, 38294), (38, 38237), (42, 38171), (45, 38153),

Gene: BryanRecycles_53 Start: 37025, Stop: 36753, Start Num: 23
Candidate Starts for BryanRecycles_53:
(Start: 22 @37031 has 3 MA's), (Start: 23 @37025 has 85 MA's), (26, 37004), (30, 36971), (42, 36848),

Gene: Caelum_58 Start: 39922, Stop: 39611, Start Num: 20
Candidate Starts for Caelum_58:
(Start: 20 @39922 has 11 MA's), (45, 39697), (47, 39670), (49, 39646), (51, 39628),

Gene: Caliburn_50 Start: 36639, Stop: 36364, Start Num: 23
Candidate Starts for Caliburn_50:
(Start: 22 @36645 has 3 MA's), (Start: 23 @36639 has 85 MA's), (26, 36618), (30, 36585), (42, 36462),

Gene: Celery_59 Start: 39939, Stop: 39688, Start Num: 23
Candidate Starts for Celery_59:

(Start: 22 @39945 has 3 MA's), (Start: 23 @39939 has 85 MA's), (30, 39885), (34, 39843), (42, 39765), (48, 39705), (50, 39693),

Gene: Celeste_54 Start: 37814, Stop: 37557, Start Num: 23
Candidate Starts for Celeste_54:
(Start: 22 @37820 has 3 MA's), (Start: 23 @37814 has 85 MA's), (26, 37793), (30, 37760), (38, 37703), (42, 37637), (45, 37619),

Gene: Celia_51 Start: 35208, Stop: 34918, Start Num: 19
Candidate Starts for Celia_51:
(13, 35376), (15, 35325), (Start: 19 @35208 has 4 MA's), (27, 35148), (28, 35145), (33, 35085), (38, 35067),

Gene: Chucky_53 Start: 38996, Stop: 38739, Start Num: 23
Candidate Starts for Chucky_53:
(Start: 22 @39002 has 3 MA's), (Start: 23 @38996 has 85 MA's), (26, 38975), (42, 38822),

Gene: Conan_55 Start: 39767, Stop: 39516, Start Num: 23
Candidate Starts for Conan_55:
(Start: 23 @39767 has 85 MA's), (42, 39593), (48, 39533), (50, 39521),

Gene: Danzina_54 Start: 38041, Stop: 37763, Start Num: 23
Candidate Starts for Danzina_54:
(Start: 22 @38047 has 3 MA's), (Start: 23 @38041 has 85 MA's), (30, 37981), (38, 37924), (42, 37858),

Gene: Dattran_54 Start: 37914, Stop: 37639, Start Num: 23
Candidate Starts for Dattran_54:
(Start: 22 @37920 has 3 MA's), (Start: 23 @37914 has 85 MA's), (30, 37857), (38, 37800), (42, 37734),

Gene: Daudau_55 Start: 39694, Stop: 39434, Start Num: 23
Candidate Starts for Daudau_55:
(Start: 23 @39694 has 85 MA's), (27, 39673), (42, 39526),

Gene: Dexers_53 Start: 40049, Stop: 39798, Start Num: 23
Candidate Starts for Dexers_53:
(Start: 23 @40049 has 85 MA's), (42, 39875), (48, 39815), (50, 39803),

Gene: Diane_55 Start: 40444, Stop: 40100, Start Num: 20
Candidate Starts for Diane_55:
(Start: 20 @40444 has 11 MA's), (36, 40318), (40, 40279), (49, 40168),

Gene: Dwayne_53 Start: 38984, Stop: 38727, Start Num: 23
Candidate Starts for Dwayne_53:
(Start: 22 @38990 has 3 MA's), (Start: 23 @38984 has 85 MA's), (26, 38963), (42, 38810),

Gene: ELB20_55 Start: 40216, Stop: 39953, Start Num: 23
Candidate Starts for ELB20_55:
(Start: 23 @40216 has 85 MA's), (27, 40189), (28, 40186), (42, 40039),

Gene: Eddasa_53 Start: 37025, Stop: 36753, Start Num: 23
Candidate Starts for Eddasa_53:
(Start: 17 @37058 has 1 MA's), (Start: 22 @37031 has 3 MA's), (Start: 23 @37025 has 85 MA's), (26, 37004), (30, 36971), (42, 36848),

Gene: Ejemplo_51 Start: 38922, Stop: 38665, Start Num: 23
Candidate Starts for Ejemplo_51:
(Start: 22 @38928 has 3 MA's), (Start: 23 @38922 has 85 MA's), (26, 38901), (42, 38748),

Gene: ElGato_55 Start: 39671, Stop: 39420, Start Num: 23
Candidate Starts for ElGato_55:
(Start: 23 @39671 has 85 MA's), (42, 39497), (48, 39437), (50, 39425),

Gene: Emaanora_56 Start: 38907, Stop: 38650, Start Num: 23
Candidate Starts for Emaanora_56:
(Start: 22 @38913 has 3 MA's), (Start: 23 @38907 has 85 MA's), (26, 38886), (42, 38733),

Gene: EnochSoames_54 Start: 36821, Stop: 36549, Start Num: 23
Candidate Starts for EnochSoames_54:
(Start: 22 @36827 has 3 MA's), (Start: 23 @36821 has 85 MA's), (26, 36800), (30, 36767), (42, 36644),

Gene: Esperer_51 Start: 36351, Stop: 36076, Start Num: 23
Candidate Starts for Esperer_51:
(Start: 22 @36357 has 3 MA's), (Start: 23 @36351 has 85 MA's), (26, 36330), (30, 36297), (42, 36174),

Gene: GirlDinner_56 Start: 40330, Stop: 39986, Start Num: 20
Candidate Starts for GirlDinner_56:
(Start: 20 @40330 has 11 MA's), (36, 40204), (40, 40165), (43, 40120), (44, 40114), (49, 40054),

Gene: Goby_52 Start: 37813, Stop: 37538, Start Num: 23
Candidate Starts for Goby_52:
(Start: 22 @37819 has 3 MA's), (Start: 23 @37813 has 85 MA's), (30, 37756), (38, 37699), (42, 37633),

Gene: Godpower_53 Start: 37793, Stop: 37518, Start Num: 23
Candidate Starts for Godpower_53:
(Start: 22 @37799 has 3 MA's), (Start: 23 @37793 has 85 MA's), (30, 37736), (38, 37679), (42, 37613),

Gene: Haizum_56 Start: 40479, Stop: 40174, Start Num: 20
Candidate Starts for Haizum_56:
(Start: 20 @40479 has 11 MA's), (28, 40425), (36, 40353), (40, 40314),

Gene: Hank144_58 Start: 40774, Stop: 40472, Start Num: 17
Candidate Starts for Hank144_58:
(Start: 17 @40774 has 1 MA's), (21, 40753), (Start: 22 @40747 has 3 MA's), (28, 40711), (30, 40687), (42, 40564),

Gene: Hippo_53 Start: 38970, Stop: 38713, Start Num: 23
Candidate Starts for Hippo_53:
(Start: 22 @38976 has 3 MA's), (Start: 23 @38970 has 85 MA's), (26, 38949), (42, 38796),

Gene: Hydra_52 Start: 37193, Stop: 36912, Start Num: 22
Candidate Starts for Hydra_52:
(Start: 22 @37193 has 3 MA's), (Start: 23 @37187 has 85 MA's), (26, 37166), (30, 37133), (42, 37010),

Gene: Indigo_50 Start: 36531, Stop: 36256, Start Num: 23
Candidate Starts for Indigo_50:
(Start: 22 @36537 has 3 MA's), (Start: 23 @36531 has 85 MA's), (26, 36510), (30, 36477), (42, 36354),

Gene: Issmi_57 Start: 40372, Stop: 40103, Start Num: 23
Candidate Starts for Issmi_57:
(Start: 22 @40378 has 3 MA's), (Start: 23 @40372 has 85 MA's), (31, 40303), (42, 40195),

Gene: Itza_52 Start: 35141, Stop: 34851, Start Num: 19
Candidate Starts for Itza_52:
(13, 35309), (15, 35258), (Start: 19 @35141 has 4 MA's), (27, 35081), (28, 35078), (33, 35018), (37, 35009), (38, 35000),

Gene: Izzy_53 Start: 37072, Stop: 36800, Start Num: 23
Candidate Starts for Izzy_53:
(Start: 22 @37078 has 3 MA's), (Start: 23 @37072 has 85 MA's), (26, 37051), (30, 37018), (42, 36895),

Gene: Janus_57 Start: 40670, Stop: 40326, Start Num: 20
Candidate Starts for Janus_57:
(Start: 20 @40670 has 11 MA's), (36, 40544), (40, 40505), (43, 40460), (44, 40454), (49, 40394),

Gene: Jash_53 Start: 37025, Stop: 36753, Start Num: 23
Candidate Starts for Jash_53:
(Start: 22 @37031 has 3 MA's), (Start: 23 @37025 has 85 MA's), (26, 37004), (30, 36971), (42, 36848),

Gene: Jevington_54 Start: 38665, Stop: 38399, Start Num: 23
Candidate Starts for Jevington_54:
(Start: 22 @38671 has 3 MA's), (Start: 23 @38665 has 85 MA's), (42, 38491),

Gene: Jhitchelle_56 Start: 39595, Stop: 39344, Start Num: 23
Candidate Starts for Jhitchelle_56:
(Start: 22 @39601 has 3 MA's), (Start: 23 @39595 has 85 MA's), (28, 39565), (41, 39442), (42, 39421), (46, 39400), (48, 39361), (50, 39349),

Gene: Kaine_55 Start: 39959, Stop: 39708, Start Num: 23
Candidate Starts for Kaine_55:
(Start: 23 @39959 has 85 MA's), (42, 39785), (48, 39725), (50, 39713),

Gene: Katalie_52 Start: 39063, Stop: 38773, Start Num: 23
Candidate Starts for Katalie_52:
(1, 41049), (2, 41034), (3, 40452), (4, 39672), (5, 39630), (14, 39216), (Start: 22 @39069 has 3 MA's), (Start: 23 @39063 has 85 MA's), (27, 39027), (28, 39024), (42, 38880), (46, 38859),

Gene: Lannister_53 Start: 37755, Stop: 37486, Start Num: 23
Candidate Starts for Lannister_53:
(Start: 22 @37761 has 3 MA's), (Start: 23 @37755 has 85 MA's), (31, 37689), (42, 37581),

Gene: Legacy_50 Start: 36630, Stop: 36355, Start Num: 23
Candidate Starts for Legacy_50:
(Start: 22 @36636 has 3 MA's), (Start: 23 @36630 has 85 MA's), (26, 36609), (30, 36576), (42, 36453),

Gene: Leviticus_51 Start: 36538, Stop: 36263, Start Num: 23
Candidate Starts for Leviticus_51:
(Start: 22 @36544 has 3 MA's), (Start: 23 @36538 has 85 MA's), (26, 36517), (30, 36484), (42, 36361),

Gene: Lika_51 Start: 37796, Stop: 37521, Start Num: 23

Candidate Starts for Lika_51:
(Start: 22 @37802 has 3 MA's), (Start: 23 @37796 has 85 MA's), (30, 37739), (38, 37682), (42, 37616), (45, 37598),

Gene: Loofah_58 Start: 40402, Stop: 40139, Start Num: 23
Candidate Starts for Loofah_58:
(Start: 23 @40402 has 85 MA's), (27, 40375), (28, 40372), (42, 40225),

Gene: Lorelei_53 Start: 37815, Stop: 37543, Start Num: 23
Candidate Starts for Lorelei_53:
(Start: 22 @37821 has 3 MA's), (Start: 23 @37815 has 85 MA's), (38, 37704), (42, 37638),

Gene: Maneekul_53 Start: 39000, Stop: 38743, Start Num: 23
Candidate Starts for Maneekul_53:
(Start: 22 @39006 has 3 MA's), (Start: 23 @39000 has 85 MA's), (26, 38979), (42, 38826),

Gene: Marav_56 Start: 39162, Stop: 38896, Start Num: 23
Candidate Starts for Marav_56:
(7, 39474), (Start: 22 @39168 has 3 MA's), (Start: 23 @39162 has 85 MA's), (42, 38988),

Gene: Nabi_53 Start: 37815, Stop: 37543, Start Num: 23
Candidate Starts for Nabi_53:
(Start: 22 @37821 has 3 MA's), (Start: 23 @37815 has 85 MA's), (38, 37704), (42, 37638),

Gene: Nanodon_55 Start: 37748, Stop: 37470, Start Num: 23
Candidate Starts for Nanodon_55:
(Start: 22 @37754 has 3 MA's), (Start: 23 @37748 has 85 MA's), (42, 37574),

Gene: Nerdos_50 Start: 36530, Stop: 36255, Start Num: 23
Candidate Starts for Nerdos_50:
(Start: 22 @36536 has 3 MA's), (Start: 23 @36530 has 85 MA's), (26, 36509), (30, 36476), (42, 36353),

Gene: Nishikigoi_56 Start: 40479, Stop: 40174, Start Num: 20
Candidate Starts for Nishikigoi_56:
(Start: 20 @40479 has 11 MA's), (28, 40425), (36, 40353), (40, 40314),

Gene: Oliynyk_53 Start: 37025, Stop: 36753, Start Num: 23
Candidate Starts for Oliynyk_53:
(Start: 22 @37031 has 3 MA's), (Start: 23 @37025 has 85 MA's), (26, 37004), (30, 36971), (42, 36848),

Gene: Omar_59 Start: 39059, Stop: 38754, Start Num: 20
Candidate Starts for Omar_59:
(18, 39065), (Start: 20 @39059 has 11 MA's), (28, 39005), (33, 38945), (35, 38936), (36, 38933), (49, 38783),

Gene: Ozzie_50 Start: 36639, Stop: 36364, Start Num: 23
Candidate Starts for Ozzie_50:
(Start: 22 @36645 has 3 MA's), (Start: 23 @36639 has 85 MA's), (26, 36618), (30, 36585), (42, 36462),

Gene: OzzyJ_55 Start: 38896, Stop: 38639, Start Num: 23
Candidate Starts for OzzyJ_55:
(Start: 22 @38902 has 3 MA's), (Start: 23 @38896 has 85 MA's), (26, 38875), (42, 38722),

Gene: Pablito_54 Start: 39238, Stop: 38972, Start Num: 23
Candidate Starts for Pablito_54:
(Start: 23 @39238 has 85 MA's), (30, 39184), (42, 39064), (48, 39004),

Gene: Paedore_57 Start: 40387, Stop: 40124, Start Num: 23
Candidate Starts for Paedore_57:
(Start: 23 @40387 has 85 MA's), (27, 40360), (28, 40357), (42, 40210),

Gene: Paolo_57 Start: 40338, Stop: 40072, Start Num: 23
Candidate Starts for Paolo_57:
(Start: 22 @40344 has 3 MA's), (Start: 23 @40338 has 85 MA's), (28, 40308), (42, 40164),

Gene: Pavo_56 Start: 39965, Stop: 39714, Start Num: 23
Candidate Starts for Pavo_56:
(Start: 23 @39965 has 85 MA's), (42, 39791), (48, 39731), (50, 39719),

Gene: Phettuccine_51 Start: 36531, Stop: 36256, Start Num: 23
Candidate Starts for Phettuccine_51:
(Start: 22 @36537 has 3 MA's), (Start: 23 @36531 has 85 MA's), (26, 36510), (30, 36477), (42, 36354),

Gene: Provolone_55 Start: 39805, Stop: 39554, Start Num: 23
Candidate Starts for Provolone_55:
(Start: 23 @39805 has 85 MA's), (39, 39676), (42, 39631), (48, 39571), (50, 39559),

Gene: Puginator_57 Start: 40384, Stop: 40118, Start Num: 23
Candidate Starts for Puginator_57:
(Start: 22 @40390 has 3 MA's), (Start: 23 @40384 has 85 MA's), (27, 40357), (28, 40354), (42, 40210),

Gene: R4_56 Start: 40376, Stop: 40113, Start Num: 23
Candidate Starts for R4_56:
(Start: 23 @40376 has 85 MA's), (27, 40349), (28, 40346), (30, 40322), (42, 40199),

Gene: Rana_53 Start: 37815, Stop: 37543, Start Num: 23
Candidate Starts for Rana_53:
(Start: 22 @37821 has 3 MA's), (Start: 23 @37815 has 85 MA's), (38, 37704), (42, 37638),

Gene: RedBear_53 Start: 39063, Stop: 38773, Start Num: 23
Candidate Starts for RedBear_53:
(1, 41049), (2, 41034), (3, 40452), (4, 39672), (5, 39630), (11, 39255), (14, 39216), (Start: 22 @39069 has 3 MA's), (Start: 23 @39063 has 85 MA's), (27, 39027), (28, 39024), (42, 38880), (46, 38859),

Gene: Rusticus_53 Start: 37025, Stop: 36753, Start Num: 23
Candidate Starts for Rusticus_53:
(Start: 22 @37031 has 3 MA's), (Start: 23 @37025 has 85 MA's), (26, 37004), (30, 36971), (42, 36848),

Gene: Saftant_53 Start: 39914, Stop: 39663, Start Num: 23
Candidate Starts for Saftant_53:
(Start: 23 @39914 has 85 MA's), (25, 39908), (42, 39740), (48, 39680), (50, 39668),

Gene: SarahRose_53 Start: 38969, Stop: 38712, Start Num: 23
Candidate Starts for SarahRose_53:
(Start: 22 @38975 has 3 MA's), (Start: 23 @38969 has 85 MA's), (26, 38948), (42, 38795),

Gene: Snorlax_53 Start: 38994, Stop: 38737, Start Num: 23
Candidate Starts for Snorlax_53:
(Start: 22 @39000 has 3 MA's), (Start: 23 @38994 has 85 MA's), (26, 38973), (42, 38820),

Gene: South40_52 Start: 39063, Stop: 38773, Start Num: 23
Candidate Starts for South40_52:
(1, 41049), (2, 41034), (3, 40452), (4, 39672), (5, 39630), (14, 39216), (Start: 22 @39069 has 3 MA's),
(Start: 23 @39063 has 85 MA's), (27, 39027), (28, 39024), (42, 38880), (46, 38859),

Gene: Speedwell_59 Start: 41127, Stop: 40876, Start Num: 23
Candidate Starts for Speedwell_59:
(Start: 22 @41133 has 3 MA's), (Start: 23 @41127 has 85 MA's), (30, 41073), (32, 41046), (42, 40953),
(50, 40881),

Gene: SqueakyClean_57 Start: 40848, Stop: 40543, Start Num: 20
Candidate Starts for SqueakyClean_57:
(Start: 20 @40848 has 11 MA's), (36, 40722), (40, 40683), (43, 40638), (44, 40632), (49, 40572),

Gene: Sudan_56 Start: 39805, Stop: 39554, Start Num: 23
Candidate Starts for Sudan_56:
(12, 39991), (Start: 23 @39805 has 85 MA's), (42, 39631), (48, 39571), (50, 39559),

Gene: Sujidade_52 Start: 38084, Stop: 37809, Start Num: 23
Candidate Starts for Sujidade_52:
(Start: 22 @38090 has 3 MA's), (Start: 23 @38084 has 85 MA's), (30, 38027), (38, 37970), (42, 37904),
(45, 37886),

Gene: SunsetPointe_50 Start: 36646, Stop: 36371, Start Num: 23
Candidate Starts for SunsetPointe_50:
(Start: 22 @36652 has 3 MA's), (Start: 23 @36646 has 85 MA's), (26, 36625), (30, 36592), (42, 36469),

Gene: Superstar_62 Start: 41096, Stop: 40791, Start Num: 20
Candidate Starts for Superstar_62:
(Start: 20 @41096 has 11 MA's), (40, 40931), (46, 40868), (49, 40820),

Gene: TagePhighter_55 Start: 38970, Stop: 38713, Start Num: 23
Candidate Starts for TagePhighter_55:
(Start: 22 @38976 has 3 MA's), (Start: 23 @38970 has 85 MA's), (26, 38949), (42, 38796),

Gene: Tefunt_55 Start: 40393, Stop: 40049, Start Num: 20
Candidate Starts for Tefunt_55:
(Start: 20 @40393 has 11 MA's), (28, 40339), (40, 40228), (45, 40168), (47, 40141), (49, 40117),

Gene: Thestral_58 Start: 41212, Stop: 40952, Start Num: 23
Candidate Starts for Thestral_58:
(Start: 23 @41212 has 85 MA's), (27, 41191), (30, 41164), (42, 41044),

Gene: TinaBelcher_56 Start: 41160, Stop: 40900, Start Num: 23
Candidate Starts for TinaBelcher_56:
(Start: 23 @41160 has 85 MA's), (27, 41139), (42, 40992),

Gene: Toma_52 Start: 37813, Stop: 37538, Start Num: 23
Candidate Starts for Toma_52:

(Start: 22 @37819 has 3 MA's), (Start: 23 @37813 has 85 MA's), (30, 37756), (38, 37699), (42, 37633),

Gene: Triste_54 Start: 38969, Stop: 38712, Start Num: 23
Candidate Starts for Triste_54:
(Start: 22 @38975 has 3 MA's), (Start: 23 @38969 has 85 MA's), (26, 38948), (42, 38795),

Gene: Triumph_58 Start: 40532, Stop: 40266, Start Num: 23
Candidate Starts for Triumph_58:
(Start: 23 @40532 has 85 MA's), (27, 40502), (28, 40499), (30, 40475), (42, 40355),

Gene: TrvxScott_55 Start: 41206, Stop: 40946, Start Num: 23
Candidate Starts for TrvxScott_55:
(Start: 23 @41206 has 85 MA's), (27, 41185), (42, 41038),

Gene: TuanPN_51 Start: 38922, Stop: 38665, Start Num: 23
Candidate Starts for TuanPN_51:
(Start: 22 @38928 has 3 MA's), (Start: 23 @38922 has 85 MA's), (26, 38901), (42, 38748),

Gene: Unstoppable_51 Start: 36535, Stop: 36254, Start Num: 22
Candidate Starts for Unstoppable_51:
(Start: 22 @36535 has 3 MA's), (Start: 23 @36529 has 85 MA's), (26, 36508), (30, 36475), (42, 36352),

Gene: Urza_51 Start: 35162, Stop: 34872, Start Num: 19
Candidate Starts for Urza_51:
(13, 35330), (15, 35279), (Start: 19 @35162 has 4 MA's), (27, 35102), (28, 35099), (33, 35039), (37, 35030), (38, 35021),

Gene: Vanseggelen_60 Start: 39827, Stop: 39576, Start Num: 23
Candidate Starts for Vanseggelen_60:
(9, 40139), (Start: 22 @39833 has 3 MA's), (Start: 23 @39827 has 85 MA's), (26, 39806), (41, 39674), (42, 39653), (48, 39593), (50, 39581),

Gene: Verabelle_58 Start: 39493, Stop: 39242, Start Num: 23
Candidate Starts for Verabelle_58:
(Start: 23 @39493 has 85 MA's), (30, 39439), (42, 39319), (48, 39259), (50, 39247),

Gene: Verse_56 Start: 40772, Stop: 40521, Start Num: 23
Candidate Starts for Verse_56:
(Start: 23 @40772 has 85 MA's), (25, 40766), (32, 40691), (42, 40598), (48, 40538), (50, 40526),

Gene: VieEnRose_52 Start: 35225, Stop: 34935, Start Num: 19
Candidate Starts for VieEnRose_52:
(13, 35390), (15, 35339), (Start: 19 @35225 has 4 MA's), (27, 35165), (28, 35162), (33, 35102), (38, 35084),

Gene: Werner_53 Start: 38967, Stop: 38710, Start Num: 23
Candidate Starts for Werner_53:
(Start: 22 @38973 has 3 MA's), (Start: 23 @38967 has 85 MA's), (26, 38946), (42, 38793),

Gene: Whatever_53 Start: 38993, Stop: 38736, Start Num: 23
Candidate Starts for Whatever_53:
(Start: 22 @38999 has 3 MA's), (Start: 23 @38993 has 85 MA's), (26, 38972), (42, 38819),

Gene: Yasdnil_53 Start: 39019, Stop: 38762, Start Num: 23
Candidate Starts for Yasdnil_53:
(Start: 22 @39025 has 3 MA's), (Start: 23 @39019 has 85 MA's), (26, 38998), (42, 38845),

Gene: Yosif_58 Start: 40821, Stop: 40543, Start Num: 23
Candidate Starts for Yosif_58:
(16, 40917), (Start: 22 @40827 has 3 MA's), (Start: 23 @40821 has 85 MA's), (29, 40773), (52, 40548),

Gene: Zainub_57 Start: 40313, Stop: 40047, Start Num: 23
Candidate Starts for Zainub_57:
(Start: 22 @40319 has 3 MA's), (Start: 23 @40313 has 85 MA's), (28, 40283), (42, 40139),

Gene: ZamZam_58 Start: 40228, Stop: 39974, Start Num: 23
Candidate Starts for ZamZam_58:
(Start: 23 @40228 has 85 MA's), (42, 40051), (48, 39991), (50, 39979),

Gene: Zemlya_53 Start: 37835, Stop: 37563, Start Num: 23
Candidate Starts for Zemlya_53:
(Start: 22 @37841 has 3 MA's), (Start: 23 @37835 has 85 MA's), (26, 37814), (30, 37781), (38, 37724),
(42, 37658),

Gene: phiCAM_53 Start: 41755, Stop: 41498, Start Num: 22
Candidate Starts for phiCAM_53:
(6, 42109), (8, 42103), (Start: 22 @41755 has 3 MA's), (Start: 23 @41749 has 85 MA's), (30, 41695),
(34, 41653), (42, 41575), (48, 41515), (50, 41503),