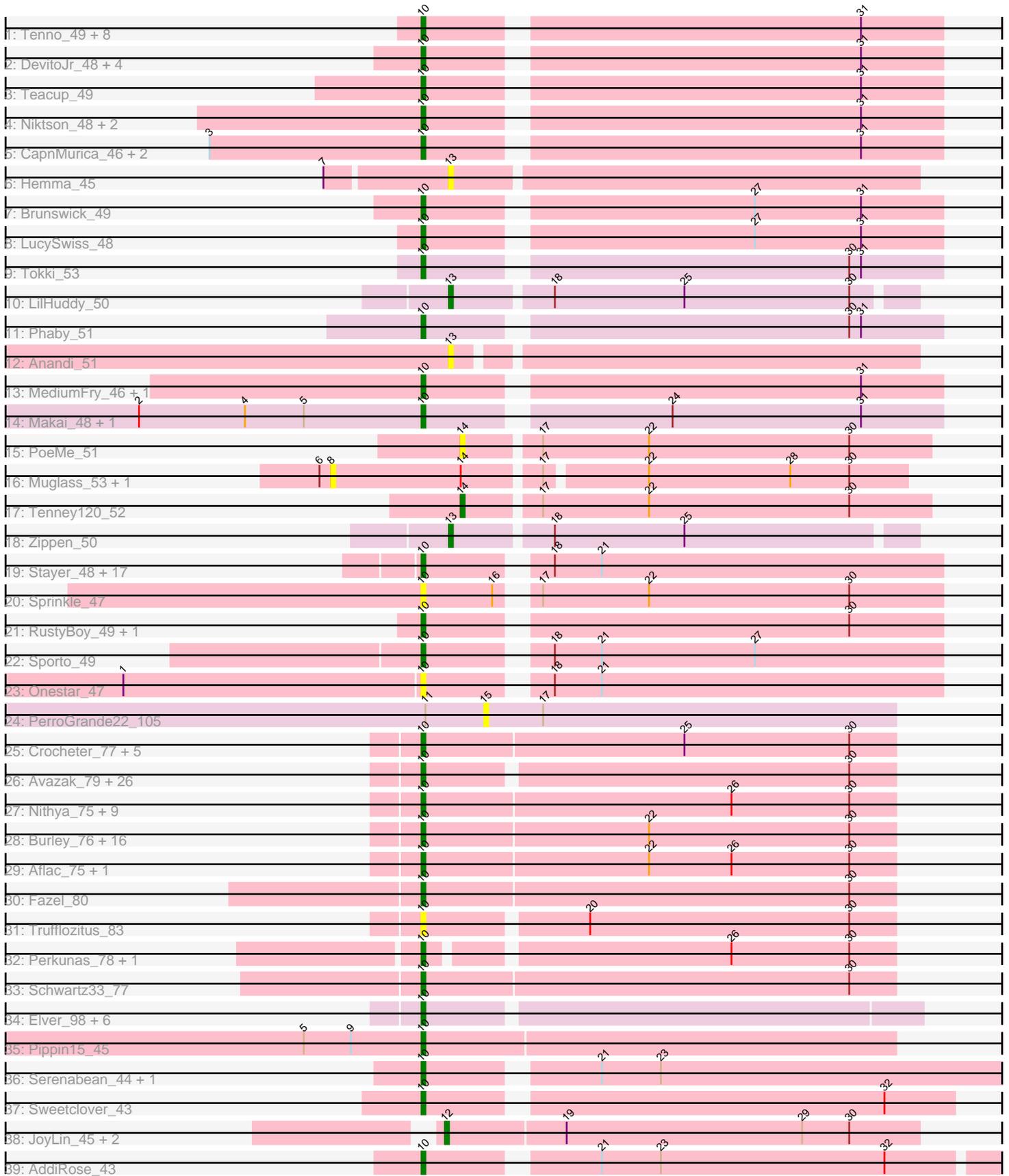Pham 290929

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 290929 Report

This analysis was run 03/28/26 on database version 641.

Pham number 290929 has 143 members, 36 are drafts.

Phages represented in each track:
• Track 1 : Tenno_49, Darby_47, Trustiboi_48, Acai_49, Westerlin_47, Caterpillar_45, Issa_47, Breylor17_48, CastorTray_51
• Track 2 : DevitoJr_48, Nivinsha_50, Tatanka_46, ScienceWizSam_49, AreFloNak_51
• Track 3 : Teacup_49
• Track 4 : Niktson_48, ElephantMan_48, Nightmare_50
• Track 5 : CapnMurica_46, Dinallo_48, MiniBagel_48
• Track 6 : Hemma_45
• Track 7 : Brunswick_49
• Track 8 : LucySwiss_48
• Track 9 : Tokki_53
• Track 10 : LilHuddy_50
• Track 11 : Phaby_51
• Track 12 : Anandi_51
• Track 13 : MediumFry_46, Synepsis_47
• Track 14 : Makai_48, Truckee_46
• Track 15 : PoeMe_51
• Track 16 : Muglass_53, BarbieDoll_55
• Track 17 : Tenney120_52
• Track 18 : Zippen_50
• Track 19 : Stayer_48, ProfFrink_48, Sloopyjoe_48, Linda_48, Michelle_48, Djungelskog_48, Egad_48, Boog_47, BronxBay_48, Raunak_51, Salk_48, Jeremy4pt0_48, StarLord_48, Spain_51, HerbBucket_49, Shiba_47, MrAaronian_48, DoctorPepper_47
• Track 20 : Sprinkle_47
• Track 21 : RustyBoy_49, Natasha_49
• Track 22 : Sporto_49
• Track 23 : Onestar_47
• Track 24 : PerroGrande22_105
• Track 25 : Crocheter_77, Aloe25_80, ShaggyRogers_76, PestoPenguin_81, BetterYeti_76, Gusicorn_78
• Track 26 : Avazak_79, Kerry_75, Gravy_75, Talon44_80, Hortihabitatio_79, Artorias_78, Magel_77, Mossy_77, Roney_75, Bugg_82, Captrips_77, NoPickles_77, Football_81, JulesRay_78, ChickyNuggy_81, Blanky_74, AlainaMarie_75, Odesza_75, Dancer_78, Tairn4Wing_81, Hydrus_76, Tanis_76, Capybara_76, OhMyWard_73, Gill_76, Kenosha_75, FortCran_78

• Track 27 : Nithya_75, OlgasClover_77, Dialga_78, Untouchable_78, Nadmeg_76, Runhaar_75, ArtetaBall_76, Madvan_76, Duffington_76, CWormy_75
• Track 28 : Burley_76, Jodelie19_74, BluerMoon_74, Eddiemania_77, Luthien_76, Glintora_77, Arataki_75, Figliar_74, Zeph_78, Vardy_75, MajinBuu_76, Rickmore_74, Chikenjars_75, TenaciousP_76, EndAve_77, Citrus_75, Phepper_77
• Track 29 : Aflac_75, Tonaltzin_79
• Track 30 : Fazel_80
• Track 31 : Trufflozitus_83
• Track 32 : Perkunas_78, SweetCrkHerbs_79
• Track 33 : Schwartz33_77
• Track 34 : Elver_98, JeNeSaisPas_93, Gandionco_95, Kureo_97, Marianna39_96, Paella_99, Qui_99
• Track 35 : Pippin15_45
• Track 36 : Serenabean_44, Daddyjeff_44
• Track 37 : Sweetclover_43
• Track 38 : JoyLin_45, Eevee_45, Yotsuba_45
• Track 39 : AddiRose_43

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

The start number called the most often in the published annotations is 10, it was called in 101 of the 107 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Acai_49, AddiRose_43, Aflac_75, AlainaMarie_75, Aloe25_80, Arataki_75, AreFloNak_51, ArtetaBall_76, Artorias_78, Avazak_79, BetterYeti_76, Blanky_74, BluerMoon_74, Boog_47, Breylor17_48, BronxBay_48, Brunswick_49, Bugg_82, Burley_76, CWormy_75, CapnMurica_46, Captrips_77, Capybara_76, CastorTray_51, Caterpillar_45, ChickyNuggy_81, Chikenjars_75, Citrus_75, Crocheter_77, Daddyjeff_44, Dancer_78, Darby_47, DevitoJr_48, Dialga_78, Dinallo_48, Djungelskog_48, DoctorPepper_47, Duffington_76, Eddiemania_77, Egad_48, ElephantMan_48, Elver_98, EndAve_77, Fazel_80, Figliar_74, Football_81, FortCran_78, Gandionco_95, Gill_76, Glintora_77, Gravy_75, Gusicorn_78, HerbBucket_49, Hortihabitatio_79, Hydrus_76, Issa_47, JeNeSaisPas_93, Jeremy4pt0_48, Jodelie19_74, JulesRay_78, Kenosha_75, Kerry_75, Kureo_97, Linda_48, LucySwiss_48, Luthien_76, Madvan_76, Magel_77, MajinBuu_76, Makai_48, Marianna39_96, MediumFry_46, Michelle_48, MiniBagel_48, Mossy_77, MrAaronian_48, Nadmeg_76, Natasha_49, Nightmare_50, Niktson_48, Nithya_75, Nivinsha_50, NoPickles_77, Odesza_75, OhMyWard_73, OlgasClover_77, Onestar_47, Paella_99, Perkunas_78, PestoPenguin_81, Phaby_51, Phepper_77, Pippin15_45, ProfFrink_48, Qui_99, Raunak_51, Rickmore_74, Roney_75, Runhaar_75, RustyBoy_49, Salk_48, Schwartz33_77, ScienceWizSam_49, Serenabean_44, ShaggyRogers_76, Shiba_47, Sloopyjoe_48, Spain_51, Sporto_49, Sprinkle_47, StarLord_48, Stayer_48, SweetCrkHerbs_79, Sweetclover_43, Synepsis_47, Tairn4Wing_81, Talon44_80, Tanis_76, Tatanka_46, Teacup_49, TenaciousP_76, Tenno_49, Tokki_53, Tonaltzin_79, Truckee_46, Trufflozitus_83, Trustiboi_48, Untouchable_78, Vardy_75, Westerlin_47, Zeph_78,

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

Genes that do not have the "Most Annotated" start:
• Anandi_51, BarbieDoll_55, Eevee_45, Hemma_45, JoyLin_45, LilHuddy_50, Muglass_53, PerroGrande22_105, PoeMe_51, Tenney120_52, Yotsuba_45, Zippen_50,

Summary by start number:

Start 8:
• Found in 2 of 143 (1.4%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BarbieDoll_55 (AU6), Muglass_53 (AU6),

Start 10:
• Found in 131 of 143 (91.6%) of genes in pham
• Manual Annotations of this start: 101 of 107
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Acai_49 (AU1), AddiRose_43 (JA), Aflac_75 (DJ), AlainaMarie_75 (DJ), Aloe25_80 (DJ), Arataki_75 (DJ), AreFloNak_51 (AU1), ArtetaBall_76 (DJ), Artorias_78 (DJ), Avazak_79 (DJ), BetterYeti_76 (DJ), Blanky_74 (DJ), BluerMoon_74 (DJ), Boog_47 (AW), Breylor17_48 (AU1), BronxBay_48 (AW), Brunswick_49 (AU1), Bugg_82 (DJ), Burley_76 (DJ), CWormy_75 (DJ), CapnMurica_46 (AU1), Captrips_77 (DJ), Capybara_76 (DJ), CastorTray_51 (AU1), Caterpillar_45 (AU4), ChickyNuggy_81 (DJ), Chikenjars_75 (DJ), Citrus_75 (DJ), Crocheter_77 (DJ), Daddyjeff_44 (JA), Dancer_78 (DJ), Darby_47 (AU1), DevitoJr_48 (AU1), Dialga_78 (DJ), Dinallo_48 (AU1), Djungelskog_48 (AW), DoctorPepper_47 (AW), Duffington_76 (DJ), Eddiemania_77 (DJ), Egad_48 (AW), ElephantMan_48 (AU1), Elver_98 (FK), EndAve_77 (DJ), Fazel_80 (DJ), Figliar_74 (DJ), Football_81 (DJ), FortCran_78 (DJ), Gandionco_95 (FK), Gill_76 (DJ), Glintora_77 (DJ), Gravy_75 (DJ), Gusicorn_78 (DJ), HerbBucket_49 (AW), Hortihabitatio_79 (DJ), Hydrus_76 (DJ), Issa_47 (AU1), JeNeSaisPas_93 (FK), Jeremy4pt0_48 (AW), Jodelie19_74 (DJ), JulesRay_78 (DJ), Kenosha_75 (DJ), Kerry_75 (DJ), Kureo_97 (FK), Linda_48 (AW), LucySwiss_48 (AU1), Luthien_76 (DJ), Madvan_76 (DJ), Magel_77 (DJ), MajinBuu_76 (DJ), Makai_48 (AU5), Marianna39_96 (FK), MediumFry_46 (AU4), Michelle_48 (AW), MiniBagel_48 (AU1), Mossy_77 (DJ), MrAaronian_48 (AW), Nadmeg_76 (DJ), Natasha_49 (AW), Nightmare_50 (AU1), Niktson_48 (AU1), Nithya_75 (DJ), Nivinsha_50 (AU1), NoPickles_77 (DJ), Odesza_75 (DJ), OhMyWard_73 (DJ), OlgasClover_77 (DJ), Onestar_47 (AW), Paella_99 (FK), Perkunas_78 (DJ), PestoPenguin_81 (DJ), Phaby_51 (AU2), Phepper_77 (DJ), Pippin15_45 (JA), ProfFrink_48 (AW), Qui_99 (FK), Raunak_51 (AW), Rickmore_74 (DJ), Roney_75 (DJ), Runhaar_75 (DJ), RustyBoy_49 (AW), Salk_48 (AW), Schwartz33_77 (DJ), ScienceWizSam_49 (AU1), Serenabean_44 (JA), ShaggyRogers_76 (DJ), Shiba_47 (AW), Sloopyjoe_48 (AW), Spain_51 (AW), Sporto_49 (AW), Sprinkle_47 (AW), StarLord_48 (AW), Stayer_48 (AW), SweetCrkHerbs_79 (DJ), Sweetclover_43 (JA), Synepsis_47 (AU1), Tairn4Wing_81 (DJ), Talon44_80 (DJ), Tanis_76 (DJ), Tatanka_46 (AU1), Teacup_49 (AU1), TenaciousP_76 (DJ), Tenno_49 (AU1), Tokki_53 (AU2), Tonaltzin_79 (DJ), Truckee_46 (AU5), Trufflozitus_83 (DJ), Trustiboi_48 (AU1), Untouchable_78 (DJ), Vardy_75 (DJ), Westerlin_47 (AU1), Zeph_78 (DJ),

Start 12:
• Found in 3 of 143 (2.1%) of genes in pham
• Manual Annotations of this start: 3 of 107
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Eevee_45 (JA), JoyLin_45 (JA), Yotsuba_45 (JA),

Start 13:
• Found in 4 of 143 (2.8%) of genes in pham
• Manual Annotations of this start: 2 of 107
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Anandi_51 (AU4), Hemma_45 (AU1), LilHuddy_50 (AU2), Zippen_50 (AU7),

Start 14:
• Found in 4 of 143 (2.8%) of genes in pham
• Manual Annotations of this start: 1 of 107
• Called 50.0% of time when present
• Phage (with cluster) where this start called: PoeMe_51 (AU6), Tenney120_52 (AU6),

Start 15:
• Found in 1 of 143 (0.7%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: PerroGrande22_105 (CC),

Summary by clusters:

There are 11 clusters represented in this pham: DJ, AU7, CC, AU1, AU2, AU5, AU4, AW, AU6, FK, JA,

Info for manual annotations of cluster AU1:
•Start number 10 was manually annotated 18 times for cluster AU1.

Info for manual annotations of cluster AU2:
•Start number 10 was manually annotated 2 times for cluster AU2.
•Start number 13 was manually annotated 1 time for cluster AU2.

Info for manual annotations of cluster AU4:
•Start number 10 was manually annotated 2 times for cluster AU4.

Info for manual annotations of cluster AU5:
•Start number 10 was manually annotated 2 times for cluster AU5.

Info for manual annotations of cluster AU6:
•Start number 14 was manually annotated 1 time for cluster AU6.

Info for manual annotations of cluster AU7:
•Start number 13 was manually annotated 1 time for cluster AU7.

Info for manual annotations of cluster AW:
•Start number 10 was manually annotated 17 times for cluster AW.

Info for manual annotations of cluster DJ:
•Start number 10 was manually annotated 52 times for cluster DJ.

Info for manual annotations of cluster FK:
•Start number 10 was manually annotated 3 times for cluster FK.

Info for manual annotations of cluster JA:
•Start number 10 was manually annotated 5 times for cluster JA.
•Start number 12 was manually annotated 3 times for cluster JA.

Gene Information:

Gene: Acai_49 Start: 34862, Stop: 34987, Start Num: 10
Candidate Starts for Acai_49:
(Start: 10 @34862 has 101 MA's), (31, 34967),

Gene: AddiRose_43 Start: 31154, Stop: 31291, Start Num: 10
Candidate Starts for AddiRose_43:
(Start: 10 @31154 has 101 MA's), (21, 31193), (23, 31208), (32, 31265),

Gene: Aflac_75 Start: 51259, Stop: 51378, Start Num: 10
Candidate Starts for Aflac_75:
(Start: 10 @51259 has 101 MA's), (22, 51316), (26, 51337), (30, 51367),

Gene: AlainaMarie_75 Start: 51316, Stop: 51435, Start Num: 10
Candidate Starts for AlainaMarie_75:
(Start: 10 @51316 has 101 MA's), (30, 51424),

Gene: Aloe25_80 Start: 51133, Stop: 51252, Start Num: 10
Candidate Starts for Aloe25_80:
(Start: 10 @51133 has 101 MA's), (25, 51199), (30, 51241),

Gene: Anandi_51 Start: 35089, Stop: 35202, Start Num: 13
Candidate Starts for Anandi_51:
(Start: 13 @35089 has 2 MA's),

Gene: Arataki_75 Start: 50746, Stop: 50865, Start Num: 10
Candidate Starts for Arataki_75:
(Start: 10 @50746 has 101 MA's), (22, 50803), (30, 50854),

Gene: AreFloNak_51 Start: 34832, Stop: 34957, Start Num: 10
Candidate Starts for AreFloNak_51:
(Start: 10 @34832 has 101 MA's), (31, 34937),

Gene: ArtetaBall_76 Start: 51306, Stop: 51425, Start Num: 10
Candidate Starts for ArtetaBall_76:
(Start: 10 @51306 has 101 MA's), (26, 51384), (30, 51414),

Gene: Artorias_78 Start: 50947, Stop: 51063, Start Num: 10
Candidate Starts for Artorias_78:

(Start: 10 @50947 has 101 MA's), (30, 51052),

Gene: Avazak_79 Start: 51629, Stop: 51745, Start Num: 10
Candidate Starts for Avazak_79:
(Start: 10 @51629 has 101 MA's), (30, 51734),

Gene: BarbieDoll_55 Start: 34950, Stop: 35090, Start Num: 8
Candidate Starts for BarbieDoll_55:
(6, 34947), (8, 34950), (Start: 14 @34983 has 1 MA's), (17, 35001), (22, 35025), (28, 35061), (30, 35076),

Gene: BetterYeti_76 Start: 51132, Stop: 51251, Start Num: 10
Candidate Starts for BetterYeti_76:
(Start: 10 @51132 has 101 MA's), (25, 51198), (30, 51240),

Gene: Blanky_74 Start: 52228, Stop: 52347, Start Num: 10
Candidate Starts for Blanky_74:
(Start: 10 @52228 has 101 MA's), (30, 52336),

Gene: BluerMoon_74 Start: 51213, Stop: 51332, Start Num: 10
Candidate Starts for BluerMoon_74:
(Start: 10 @51213 has 101 MA's), (22, 51270), (30, 51321),

Gene: Boog_47 Start: 32283, Stop: 32408, Start Num: 10
Candidate Starts for Boog_47:
(Start: 10 @32283 has 101 MA's), (18, 32310), (21, 32322),

Gene: Breylor17_48 Start: 35423, Stop: 35548, Start Num: 10
Candidate Starts for Breylor17_48:
(Start: 10 @35423 has 101 MA's), (31, 35528),

Gene: BronxBay_48 Start: 32581, Stop: 32706, Start Num: 10
Candidate Starts for BronxBay_48:
(Start: 10 @32581 has 101 MA's), (18, 32608), (21, 32620),

Gene: Brunswick_49 Start: 34716, Stop: 34841, Start Num: 10
Candidate Starts for Brunswick_49:
(Start: 10 @34716 has 101 MA's), (27, 34794), (31, 34821),

Gene: Bugg_82 Start: 50992, Stop: 51108, Start Num: 10
Candidate Starts for Bugg_82:
(Start: 10 @50992 has 101 MA's), (30, 51097),

Gene: Burley_76 Start: 50762, Stop: 50881, Start Num: 10
Candidate Starts for Burley_76:
(Start: 10 @50762 has 101 MA's), (22, 50819), (30, 50870),

Gene: CWormy_75 Start: 50723, Stop: 50842, Start Num: 10
Candidate Starts for CWormy_75:
(Start: 10 @50723 has 101 MA's), (26, 50801), (30, 50831),

Gene: CapnMurica_46 Start: 35616, Stop: 35741, Start Num: 10
Candidate Starts for CapnMurica_46:

(3, 35562), (Start: 10 @35616 has 101 MA's), (31, 35721),

Gene: Captrips_77 Start: 50777, Stop: 50893, Start Num: 10
Candidate Starts for Captrips_77:
(Start: 10 @50777 has 101 MA's), (30, 50882),

Gene: Capybara_76 Start: 50614, Stop: 50730, Start Num: 10
Candidate Starts for Capybara_76:
(Start: 10 @50614 has 101 MA's), (30, 50719),

Gene: CastorTray_51 Start: 35487, Stop: 35612, Start Num: 10
Candidate Starts for CastorTray_51:
(Start: 10 @35487 has 101 MA's), (31, 35592),

Gene: Caterpillar_45 Start: 33882, Stop: 34007, Start Num: 10
Candidate Starts for Caterpillar_45:
(Start: 10 @33882 has 101 MA's), (31, 33987),

Gene: ChickyNuggy_81 Start: 51371, Stop: 51487, Start Num: 10
Candidate Starts for ChickyNuggy_81:
(Start: 10 @51371 has 101 MA's), (30, 51476),

Gene: Chikenjars_75 Start: 51562, Stop: 51681, Start Num: 10
Candidate Starts for Chikenjars_75:
(Start: 10 @51562 has 101 MA's), (22, 51619), (30, 51670),

Gene: Citrus_75 Start: 51612, Stop: 51731, Start Num: 10
Candidate Starts for Citrus_75:
(Start: 10 @51612 has 101 MA's), (22, 51669), (30, 51720),

Gene: Crocheter_77 Start: 51226, Stop: 51345, Start Num: 10
Candidate Starts for Crocheter_77:
(Start: 10 @51226 has 101 MA's), (25, 51292), (30, 51334),

Gene: Daddyjeff_44 Start: 31430, Stop: 31570, Start Num: 10
Candidate Starts for Daddyjeff_44:
(Start: 10 @31430 has 101 MA's), (21, 31469), (23, 31484),

Gene: Dancer_78 Start: 50684, Stop: 50800, Start Num: 10
Candidate Starts for Dancer_78:
(Start: 10 @50684 has 101 MA's), (30, 50789),

Gene: Darby_47 Start: 34661, Stop: 34786, Start Num: 10
Candidate Starts for Darby_47:
(Start: 10 @34661 has 101 MA's), (31, 34766),

Gene: DevitoJr_48 Start: 35053, Stop: 35178, Start Num: 10
Candidate Starts for DevitoJr_48:
(Start: 10 @35053 has 101 MA's), (31, 35158),

Gene: Dialga_78 Start: 51325, Stop: 51444, Start Num: 10
Candidate Starts for Dialga_78:
(Start: 10 @51325 has 101 MA's), (26, 51403), (30, 51433),

Gene: Dinallo_48 Start: 35925, Stop: 36050, Start Num: 10
Candidate Starts for Dinallo_48:
(3, 35871), (Start: 10 @35925 has 101 MA's), (31, 36030),

Gene: Djungelskog_48 Start: 32580, Stop: 32705, Start Num: 10
Candidate Starts for Djungelskog_48:
(Start: 10 @32580 has 101 MA's), (18, 32607), (21, 32619),

Gene: DoctorPepper_47 Start: 32285, Stop: 32410, Start Num: 10
Candidate Starts for DoctorPepper_47:
(Start: 10 @32285 has 101 MA's), (18, 32312), (21, 32324),

Gene: Duffington_76 Start: 51530, Stop: 51649, Start Num: 10
Candidate Starts for Duffington_76:
(Start: 10 @51530 has 101 MA's), (26, 51608), (30, 51638),

Gene: Eddiemania_77 Start: 51804, Stop: 51923, Start Num: 10
Candidate Starts for Eddiemania_77:
(Start: 10 @51804 has 101 MA's), (22, 51861), (30, 51912),

Gene: Eevee_45 Start: 34471, Stop: 34590, Start Num: 12
Candidate Starts for Eevee_45:
(Start: 12 @34471 has 3 MA's), (19, 34501), (29, 34561), (30, 34573),

Gene: Egad_48 Start: 32582, Stop: 32707, Start Num: 10
Candidate Starts for Egad_48:
(Start: 10 @32582 has 101 MA's), (18, 32609), (21, 32621),

Gene: ElephantMan_48 Start: 35339, Stop: 35464, Start Num: 10
Candidate Starts for ElephantMan_48:
(Start: 10 @35339 has 101 MA's), (31, 35444),

Gene: Elver_98 Start: 54542, Stop: 54664, Start Num: 10
Candidate Starts for Elver_98:
(Start: 10 @54542 has 101 MA's),

Gene: EndAve_77 Start: 51506, Stop: 51625, Start Num: 10
Candidate Starts for EndAve_77:
(Start: 10 @51506 has 101 MA's), (22, 51563), (30, 51614),

Gene: Fazel_80 Start: 51692, Stop: 51811, Start Num: 10
Candidate Starts for Fazel_80:
(Start: 10 @51692 has 101 MA's), (30, 51800),

Gene: Figliar_74 Start: 51330, Stop: 51449, Start Num: 10
Candidate Starts for Figliar_74:
(Start: 10 @51330 has 101 MA's), (22, 51387), (30, 51438),

Gene: Football_81 Start: 50574, Stop: 50690, Start Num: 10
Candidate Starts for Football_81:
(Start: 10 @50574 has 101 MA's), (30, 50679),

Gene: FortCran_78 Start: 50947, Stop: 51063, Start Num: 10
Candidate Starts for FortCran_78:
(Start: 10 @50947 has 101 MA's), (30, 51052),

Gene: Gandionco_95 Start: 53398, Stop: 53520, Start Num: 10
Candidate Starts for Gandionco_95:
(Start: 10 @53398 has 101 MA's),

Gene: Gill_76 Start: 50642, Stop: 50758, Start Num: 10
Candidate Starts for Gill_76:
(Start: 10 @50642 has 101 MA's), (30, 50747),

Gene: Glintora_77 Start: 51707, Stop: 51826, Start Num: 10
Candidate Starts for Glintora_77:
(Start: 10 @51707 has 101 MA's), (22, 51764), (30, 51815),

Gene: Gravy_75 Start: 50304, Stop: 50420, Start Num: 10
Candidate Starts for Gravy_75:
(Start: 10 @50304 has 101 MA's), (30, 50409),

Gene: Gusicorn_78 Start: 51133, Stop: 51252, Start Num: 10
Candidate Starts for Gusicorn_78:
(Start: 10 @51133 has 101 MA's), (25, 51199), (30, 51241),

Gene: Hemma_45 Start: 31669, Stop: 31785, Start Num: 13
Candidate Starts for Hemma_45:
(7, 31639), (Start: 13 @31669 has 2 MA's),

Gene: HerbBucket_49 Start: 32280, Stop: 32405, Start Num: 10
Candidate Starts for HerbBucket_49:
(Start: 10 @32280 has 101 MA's), (18, 32307), (21, 32319),

Gene: Hortihabitatio_79 Start: 52082, Stop: 52201, Start Num: 10
Candidate Starts for Hortihabitatio_79:
(Start: 10 @52082 has 101 MA's), (30, 52190),

Gene: Hydrus_76 Start: 51523, Stop: 51642, Start Num: 10
Candidate Starts for Hydrus_76:
(Start: 10 @51523 has 101 MA's), (30, 51631),

Gene: Issa_47 Start: 34704, Stop: 34829, Start Num: 10
Candidate Starts for Issa_47:
(Start: 10 @34704 has 101 MA's), (31, 34809),

Gene: JeNeSaisPas_93 Start: 53972, Stop: 54094, Start Num: 10
Candidate Starts for JeNeSaisPas_93:
(Start: 10 @53972 has 101 MA's),

Gene: Jeremy4pt0_48 Start: 32280, Stop: 32405, Start Num: 10
Candidate Starts for Jeremy4pt0_48:
(Start: 10 @32280 has 101 MA's), (18, 32307), (21, 32319),

Gene: Jodelie19_74 Start: 52497, Stop: 52616, Start Num: 10

Candidate Starts for Jodelie19_74:
(Start: 10 @52497 has 101 MA's), (22, 52554), (30, 52605),

Gene: JoyLin_45 Start: 34591, Stop: 34710, Start Num: 12
Candidate Starts for JoyLin_45:
(Start: 12 @34591 has 3 MA's), (19, 34621), (29, 34681), (30, 34693),

Gene: JulesRay_78 Start: 51296, Stop: 51412, Start Num: 10
Candidate Starts for JulesRay_78:
(Start: 10 @51296 has 101 MA's), (30, 51401),

Gene: Kenosha_75 Start: 51351, Stop: 51470, Start Num: 10
Candidate Starts for Kenosha_75:
(Start: 10 @51351 has 101 MA's), (30, 51459),

Gene: Kerry_75 Start: 50367, Stop: 50483, Start Num: 10
Candidate Starts for Kerry_75:
(Start: 10 @50367 has 101 MA's), (30, 50472),

Gene: Kureo_97 Start: 53552, Stop: 53674, Start Num: 10
Candidate Starts for Kureo_97:
(Start: 10 @53552 has 101 MA's),

Gene: LilHuddy_50 Start: 34898, Stop: 35011, Start Num: 13
Candidate Starts for LilHuddy_50:
(Start: 13 @34898 has 2 MA's), (18, 34922), (25, 34955), (30, 34997),

Gene: Linda_48 Start: 32578, Stop: 32703, Start Num: 10
Candidate Starts for Linda_48:
(Start: 10 @32578 has 101 MA's), (18, 32605), (21, 32617),

Gene: LucySwiss_48 Start: 34506, Stop: 34631, Start Num: 10
Candidate Starts for LucySwiss_48:
(Start: 10 @34506 has 101 MA's), (27, 34584), (31, 34611),

Gene: Luthien_76 Start: 51501, Stop: 51620, Start Num: 10
Candidate Starts for Luthien_76:
(Start: 10 @51501 has 101 MA's), (22, 51558), (30, 51609),

Gene: Madvan_76 Start: 50818, Stop: 50937, Start Num: 10
Candidate Starts for Madvan_76:
(Start: 10 @50818 has 101 MA's), (26, 50896), (30, 50926),

Gene: Magel_77 Start: 50557, Stop: 50673, Start Num: 10
Candidate Starts for Magel_77:
(Start: 10 @50557 has 101 MA's), (30, 50662),

Gene: MajinBuu_76 Start: 51712, Stop: 51831, Start Num: 10
Candidate Starts for MajinBuu_76:
(Start: 10 @51712 has 101 MA's), (22, 51769), (30, 51820),

Gene: Makai_48 Start: 34863, Stop: 34988, Start Num: 10
Candidate Starts for Makai_48:

(2, 34791), (4, 34818), (5, 34833), (Start: 10 @34863 has 101 MA's), (24, 34920), (31, 34968),

Gene: Marianna39_96 Start: 53967, Stop: 54089, Start Num: 10
Candidate Starts for Marianna39_96:
(Start: 10 @53967 has 101 MA's),

Gene: MediumFry_46 Start: 34186, Stop: 34311, Start Num: 10
Candidate Starts for MediumFry_46:
(Start: 10 @34186 has 101 MA's), (31, 34291),

Gene: Michelle_48 Start: 32580, Stop: 32705, Start Num: 10
Candidate Starts for Michelle_48:
(Start: 10 @32580 has 101 MA's), (18, 32607), (21, 32619),

Gene: MiniBagel_48 Start: 35598, Stop: 35723, Start Num: 10
Candidate Starts for MiniBagel_48:
(3, 35544), (Start: 10 @35598 has 101 MA's), (31, 35703),

Gene: Mossy_77 Start: 52440, Stop: 52559, Start Num: 10
Candidate Starts for Mossy_77:
(Start: 10 @52440 has 101 MA's), (30, 52548),

Gene: MrAaronian_48 Start: 32580, Stop: 32705, Start Num: 10
Candidate Starts for MrAaronian_48:
(Start: 10 @32580 has 101 MA's), (18, 32607), (21, 32619),

Gene: Muglass_53 Start: 34506, Stop: 34646, Start Num: 8
Candidate Starts for Muglass_53:
(6, 34503), (8, 34506), (Start: 14 @34539 has 1 MA's), (17, 34557), (22, 34581), (28, 34617), (30, 34632),

Gene: Nadmeg_76 Start: 51821, Stop: 51940, Start Num: 10
Candidate Starts for Nadmeg_76:
(Start: 10 @51821 has 101 MA's), (26, 51899), (30, 51929),

Gene: Natasha_49 Start: 32374, Stop: 32499, Start Num: 10
Candidate Starts for Natasha_49:
(Start: 10 @32374 has 101 MA's), (30, 32476),

Gene: Nightmare_50 Start: 35895, Stop: 36020, Start Num: 10
Candidate Starts for Nightmare_50:
(Start: 10 @35895 has 101 MA's), (31, 36000),

Gene: Niktson_48 Start: 35339, Stop: 35464, Start Num: 10
Candidate Starts for Niktson_48:
(Start: 10 @35339 has 101 MA's), (31, 35444),

Gene: Nithya_75 Start: 51204, Stop: 51323, Start Num: 10
Candidate Starts for Nithya_75:
(Start: 10 @51204 has 101 MA's), (26, 51282), (30, 51312),

Gene: Nivinsha_50 Start: 34832, Stop: 34957, Start Num: 10
Candidate Starts for Nivinsha_50:

(Start: 10 @34832 has 101 MA's), (31, 34937),

Gene: NoPickles_77 Start: 50463, Stop: 50579, Start Num: 10
Candidate Starts for NoPickles_77:
(Start: 10 @50463 has 101 MA's), (30, 50568),

Gene: Odesza_75 Start: 50501, Stop: 50617, Start Num: 10
Candidate Starts for Odesza_75:
(Start: 10 @50501 has 101 MA's), (30, 50606),

Gene: OhMyWard_73 Start: 52199, Stop: 52318, Start Num: 10
Candidate Starts for OhMyWard_73:
(Start: 10 @52199 has 101 MA's), (30, 52307),

Gene: OlgasClover_77 Start: 52120, Stop: 52239, Start Num: 10
Candidate Starts for OlgasClover_77:
(Start: 10 @52120 has 101 MA's), (26, 52198), (30, 52228),

Gene: Onestar_47 Start: 32126, Stop: 32251, Start Num: 10
Candidate Starts for Onestar_47:
(1, 32051), (Start: 10 @32126 has 101 MA's), (18, 32153), (21, 32165),

Gene: Paella_99 Start: 55132, Stop: 55254, Start Num: 10
Candidate Starts for Paella_99:
(Start: 10 @55132 has 101 MA's),

Gene: Perkunas_78 Start: 50566, Stop: 50679, Start Num: 10
Candidate Starts for Perkunas_78:
(Start: 10 @50566 has 101 MA's), (26, 50638), (30, 50668),

Gene: PerroGrande22_105 Start: 67639, Stop: 67743, Start Num: 15
Candidate Starts for PerroGrande22_105:
(11, 67624), (15, 67639), (17, 67654),

Gene: PestoPenguin_81 Start: 51133, Stop: 51252, Start Num: 10
Candidate Starts for PestoPenguin_81:
(Start: 10 @51133 has 101 MA's), (25, 51199), (30, 51241),

Gene: Phaby_51 Start: 35428, Stop: 35553, Start Num: 10
Candidate Starts for Phaby_51:
(Start: 10 @35428 has 101 MA's), (30, 35530), (31, 35533),

Gene: Phepper_77 Start: 51060, Stop: 51179, Start Num: 10
Candidate Starts for Phepper_77:
(Start: 10 @51060 has 101 MA's), (22, 51117), (30, 51168),

Gene: Pippin15_45 Start: 31372, Stop: 31491, Start Num: 10
Candidate Starts for Pippin15_45:
(5, 31342), (9, 31354), (Start: 10 @31372 has 101 MA's),

Gene: PoeMe_51 Start: 33929, Stop: 34045, Start Num: 14
Candidate Starts for PoeMe_51:
(Start: 14 @33929 has 1 MA's), (17, 33947), (22, 33974), (30, 34025),

Gene: ProfFrink_48 Start: 32581, Stop: 32706, Start Num: 10
Candidate Starts for ProfFrink_48:
(Start: 10 @32581 has 101 MA's), (18, 32608), (21, 32620),

Gene: Qui_99 Start: 55132, Stop: 55254, Start Num: 10
Candidate Starts for Qui_99:
(Start: 10 @55132 has 101 MA's),

Gene: Raunak_51 Start: 32278, Stop: 32403, Start Num: 10
Candidate Starts for Raunak_51:
(Start: 10 @32278 has 101 MA's), (18, 32305), (21, 32317),

Gene: Rickmore_74 Start: 49877, Stop: 49996, Start Num: 10
Candidate Starts for Rickmore_74:
(Start: 10 @49877 has 101 MA's), (22, 49934), (30, 49985),

Gene: Roney_75 Start: 50667, Stop: 50783, Start Num: 10
Candidate Starts for Roney_75:
(Start: 10 @50667 has 101 MA's), (30, 50772),

Gene: Runhaar_75 Start: 50869, Stop: 50988, Start Num: 10
Candidate Starts for Runhaar_75:
(Start: 10 @50869 has 101 MA's), (26, 50947), (30, 50977),

Gene: RustyBoy_49 Start: 32355, Stop: 32480, Start Num: 10
Candidate Starts for RustyBoy_49:
(Start: 10 @32355 has 101 MA's), (30, 32457),

Gene: Salk_48 Start: 32578, Stop: 32703, Start Num: 10
Candidate Starts for Salk_48:
(Start: 10 @32578 has 101 MA's), (18, 32605), (21, 32617),

Gene: Schwartz33_77 Start: 51200, Stop: 51319, Start Num: 10
Candidate Starts for Schwartz33_77:
(Start: 10 @51200 has 101 MA's), (30, 51308),

Gene: ScienceWizSam_49 Start: 34940, Stop: 35065, Start Num: 10
Candidate Starts for ScienceWizSam_49:
(Start: 10 @34940 has 101 MA's), (31, 35045),

Gene: Serenabean_44 Start: 31433, Stop: 31573, Start Num: 10
Candidate Starts for Serenabean_44:
(Start: 10 @31433 has 101 MA's), (21, 31472), (23, 31487),

Gene: ShaggyRogers_76 Start: 50863, Stop: 50982, Start Num: 10
Candidate Starts for ShaggyRogers_76:
(Start: 10 @50863 has 101 MA's), (25, 50929), (30, 50971),

Gene: Shiba_47 Start: 32278, Stop: 32403, Start Num: 10
Candidate Starts for Shiba_47:
(Start: 10 @32278 has 101 MA's), (18, 32305), (21, 32317),

Gene: Sloopyjoe_48 Start: 32582, Stop: 32707, Start Num: 10
Candidate Starts for Sloopyjoe_48:
(Start: 10 @32582 has 101 MA's), (18, 32609), (21, 32621),

Gene: Spain_51 Start: 32580, Stop: 32705, Start Num: 10
Candidate Starts for Spain_51:
(Start: 10 @32580 has 101 MA's), (18, 32607), (21, 32619),

Gene: Sporto_49 Start: 34042, Stop: 34167, Start Num: 10
Candidate Starts for Sporto_49:
(Start: 10 @34042 has 101 MA's), (18, 34069), (21, 34081), (27, 34120),

Gene: Sprinkle_47 Start: 33056, Stop: 33181, Start Num: 10
Candidate Starts for Sprinkle_47:
(Start: 10 @33056 has 101 MA's), (16, 33074), (17, 33080), (22, 33107), (30, 33158),

Gene: StarLord_48 Start: 32581, Stop: 32706, Start Num: 10
Candidate Starts for StarLord_48:
(Start: 10 @32581 has 101 MA's), (18, 32608), (21, 32620),

Gene: Stayer_48 Start: 32578, Stop: 32703, Start Num: 10
Candidate Starts for Stayer_48:
(Start: 10 @32578 has 101 MA's), (18, 32605), (21, 32617),

Gene: SweetCrkHerbs_79 Start: 50579, Stop: 50692, Start Num: 10
Candidate Starts for SweetCrkHerbs_79:
(Start: 10 @50579 has 101 MA's), (26, 50651), (30, 50681),

Gene: Sweetclover_43 Start: 30218, Stop: 30346, Start Num: 10
Candidate Starts for Sweetclover_43:
(Start: 10 @30218 has 101 MA's), (32, 30329),

Gene: Synepsis_47 Start: 35008, Stop: 35133, Start Num: 10
Candidate Starts for Synepsis_47:
(Start: 10 @35008 has 101 MA's), (31, 35113),

Gene: Tairn4Wing_81 Start: 50785, Stop: 50901, Start Num: 10
Candidate Starts for Tairn4Wing_81:
(Start: 10 @50785 has 101 MA's), (30, 50890),

Gene: Talon44_80 Start: 51415, Stop: 51531, Start Num: 10
Candidate Starts for Talon44_80:
(Start: 10 @51415 has 101 MA's), (30, 51520),

Gene: Tanis_76 Start: 50487, Stop: 50603, Start Num: 10
Candidate Starts for Tanis_76:
(Start: 10 @50487 has 101 MA's), (30, 50592),

Gene: Tatanka_46 Start: 35128, Stop: 35253, Start Num: 10
Candidate Starts for Tatanka_46:
(Start: 10 @35128 has 101 MA's), (31, 35233),

Gene: Teacup_49 Start: 35368, Stop: 35493, Start Num: 10

Candidate Starts for Teacup_49:
(Start: 10 @35368 has 101 MA's), (31, 35473),

Gene: TenaciousP_76 Start: 52459, Stop: 52578, Start Num: 10
Candidate Starts for TenaciousP_76:
(Start: 10 @52459 has 101 MA's), (22, 52516), (30, 52567),

Gene: Tenney120_52 Start: 33971, Stop: 34087, Start Num: 14
Candidate Starts for Tenney120_52:
(Start: 14 @33971 has 1 MA's), (17, 33989), (22, 34016), (30, 34067),

Gene: Tenno_49 Start: 35671, Stop: 35796, Start Num: 10
Candidate Starts for Tenno_49:
(Start: 10 @35671 has 101 MA's), (31, 35776),

Gene: Tokki_53 Start: 35062, Stop: 35187, Start Num: 10
Candidate Starts for Tokki_53:
(Start: 10 @35062 has 101 MA's), (30, 35164), (31, 35167),

Gene: Tonaltzin_79 Start: 51027, Stop: 51146, Start Num: 10
Candidate Starts for Tonaltzin_79:
(Start: 10 @51027 has 101 MA's), (22, 51084), (26, 51105), (30, 51135),

Gene: Truckee_46 Start: 34653, Stop: 34778, Start Num: 10
Candidate Starts for Truckee_46:
(2, 34581), (4, 34608), (5, 34623), (Start: 10 @34653 has 101 MA's), (24, 34710), (31, 34758),

Gene: Trufflozitus_83 Start: 51300, Stop: 51416, Start Num: 10
Candidate Starts for Trufflozitus_83:
(Start: 10 @51300 has 101 MA's), (20, 51339), (30, 51405),

Gene: Trustiboi_48 Start: 35209, Stop: 35334, Start Num: 10
Candidate Starts for Trustiboi_48:
(Start: 10 @35209 has 101 MA's), (31, 35314),

Gene: Untouchable_78 Start: 52057, Stop: 52176, Start Num: 10
Candidate Starts for Untouchable_78:
(Start: 10 @52057 has 101 MA's), (26, 52135), (30, 52165),

Gene: Vardy_75 Start: 50756, Stop: 50875, Start Num: 10
Candidate Starts for Vardy_75:
(Start: 10 @50756 has 101 MA's), (22, 50813), (30, 50864),

Gene: Westerlin_47 Start: 36222, Stop: 36347, Start Num: 10
Candidate Starts for Westerlin_47:
(Start: 10 @36222 has 101 MA's), (31, 36327),

Gene: Yotsuba_45 Start: 34609, Stop: 34728, Start Num: 12
Candidate Starts for Yotsuba_45:
(Start: 12 @34609 has 3 MA's), (19, 34639), (29, 34699), (30, 34711),

Gene: Zeph_78 Start: 51894, Stop: 52013, Start Num: 10
Candidate Starts for Zeph_78:

(Start: 10 @51894 has 101 MA's), (22, 51951), (30, 52002),

Gene: Zippen_50 Start: 35509, Stop: 35622, Start Num: 13
Candidate Starts for Zippen_50:
(Start: 13 @35509 has 2 MA's), (18, 35533), (25, 35566),