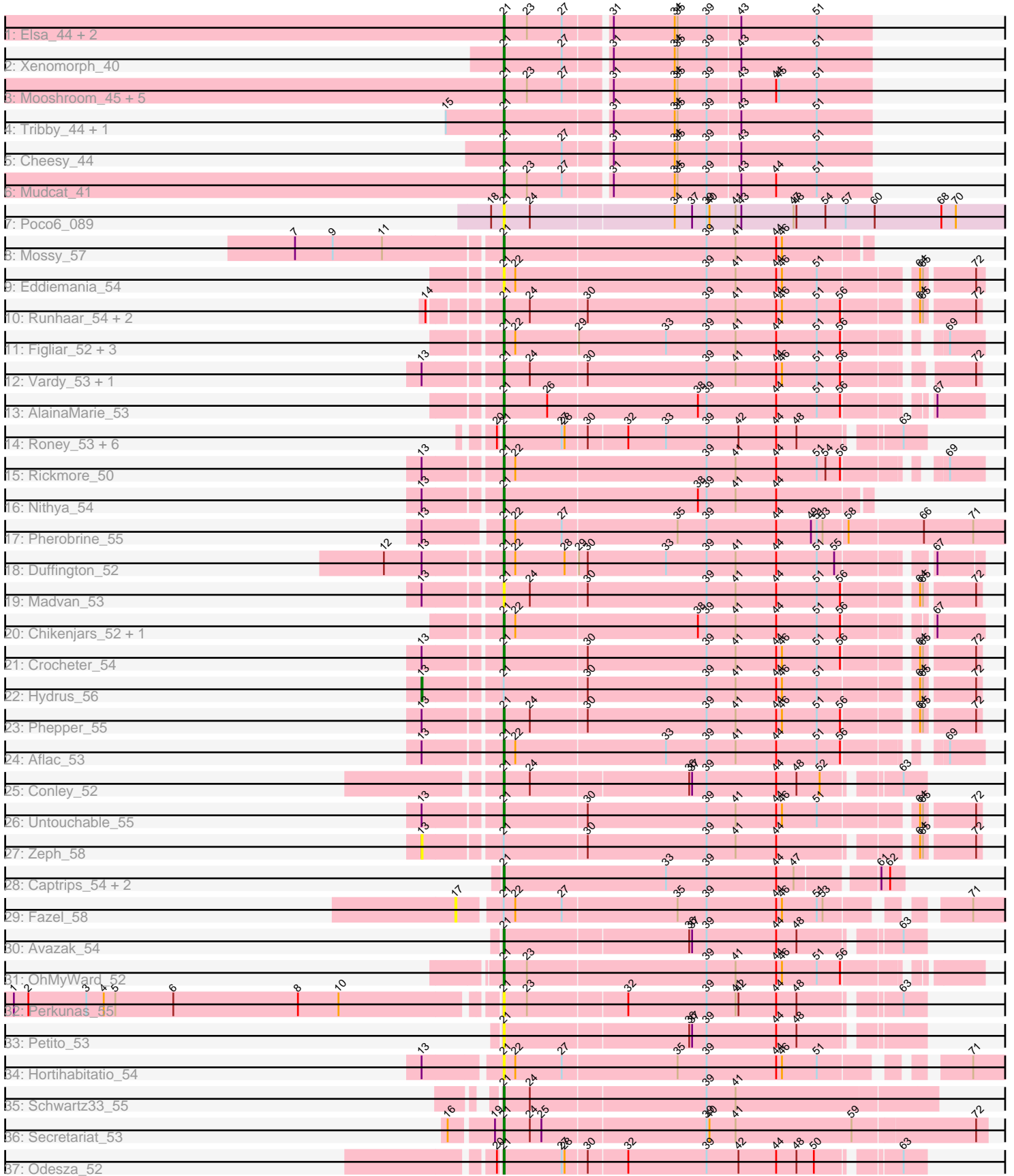


Pham 157878



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 157878 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157878 has 60 members, 14 are drafts.

Phages represented in each track:

- Track 1 : Elsa_44, Arcadia_44, Nason_44
- Track 2 : Xenomorph_40
- Track 3 : Mooshroom_45, BenitoAntonio_44, Heisenberger_43, Kardesai_45, Benllo_43, JEGGS_43
- Track 4 : Tribby_44, Correa_42
- Track 5 : Cheesy_44
- Track 6 : Mudcat_41
- Track 7 : Poco6_089
- Track 8 : Mossy_57
- Track 9 : Eddiemania_54
- Track 10 : Runhaar_54, Kenosha_53, Nadmeg_55
- Track 11 : Figliar_52, Jodelie19_53, TenaciousP_59, OlgasClover_55
- Track 12 : Vardy_53, Burley_54
- Track 13 : AlainaMarie_53
- Track 14 : Roney_53, Kerry_52, Tanis_53, Gravy_52, Capybara_53, Gill_53, Magel_54
- Track 15 : Rickmore_50
- Track 16 : Nithya_54
- Track 17 : Pherobrine_55
- Track 18 : Duffington_52
- Track 19 : Madvan_53
- Track 20 : Chikenjars_52, EndAve_55
- Track 21 : Crocheter_54
- Track 22 : Hydrus_56
- Track 23 : Phepper_55
- Track 24 : Aflac_53
- Track 25 : Conley_52
- Track 26 : Untouchable_55
- Track 27 : Zeph_58
- Track 28 : Captrips_54, Artorias_53, FortCran_57
- Track 29 : Fazel_58
- Track 30 : Avazak_54
- Track 31 : OhMyWard_52
- Track 32 : Perkunas_55
- Track 33 : Petite_53
- Track 34 : Hortihabitatio_54
- Track 35 : Schwartz33_55

- Track 36 : Secretariat_53
- Track 37 : Odesza_52

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

The start number called the most often in the published annotations is 21, it was called in 45 of the 46 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aflac_53, AlainaMarie_53, Arcadia_44, Artorias_53, Avazak_54, BenitoAntonio_44, Benllo_43, Burley_54, Captrips_54, Capybara_53, Cheesy_44, Chikenjars_52, Conley_52, Correa_42, Crocheter_54, Duffington_52, Eddiemania_54, Elsa_44, EndAve_55, Figliar_52, FortCran_57, Gill_53, Gravy_52, Heisenberger_43, Hortihabitatio_54, JEGGS_43, Jodelie19_53, Kardesai_45, Kenosha_53, Kerry_52, Madvan_53, Magel_54, Mooshroom_45, Mossy_57, Mudcat_41, Nadmeg_55, Nason_44, Nithya_54, Odesza_52, OhMyWard_52, OlgasClover_55, Perkunas_55, Petite_53, Phepper_55, Pherobrine_55, Poco6_089, Rickmore_50, Roney_53, Runhaar_54, Schwartz33_55, Secretariat_53, Tanis_53, TenaciousP_59, Tribby_44, Untouchable_55, Vardy_53, Xenomorph_40,

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

- Fazel_58, Hydrus_56, Zeph_58,

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

-

Summary by start number:

Start 13:

- Found in 14 of 60 (23.3%) of genes in pham
- Manual Annotations of this start: 1 of 46
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Hydrus_56 (DJ), Zeph_58 (DJ),

Start 17:

- Found in 1 of 60 (1.7%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fazel_58 (DJ),

Start 21:

- Found in 60 of 60 (100.0%) of genes in pham
- Manual Annotations of this start: 45 of 46
- Called 95.0% of time when present
- Phage (with cluster) where this start called: Aflac_53 (DJ), AlainaMarie_53 (DJ), Arcadia_44 (AM), Artorias_53 (DJ), Avazak_54 (DJ), BenitoAntonio_44 (AM), Benllo_43 (AM), Burley_54 (DJ), Captrips_54 (DJ), Capybara_53 (DJ), Cheesy_44 (AM), Chikenjars_52 (DJ), Conley_52 (DJ), Correa_42 (AM), Crocheter_54 (DJ), Duffington_52 (DJ), Eddiemania_54 (DJ), Elsa_44 (AM), EndAve_55 (DJ), Figliar_52 (DJ), FortCran_57 (DJ), Gill_53 (DJ), Gravy_52 (DJ), Heisenberger_43 (AM),

Hortihabitatio_54 (DJ), JEGGS_43 (AM), Jodelie19_53 (DJ), Kardesai_45 (AM), Kenosha_53 (DJ), Kerry_52 (DJ), Madvan_53 (DJ), Magel_54 (DJ), Mooshroom_45 (AM), Mossy_57 (DJ), Mudcat_41 (AM), Nadmeg_55 (DJ), Nason_44 (AM), Nithya_54 (DJ), Odesza_52 (DJ), OhMyWard_52 (DJ), OlgasClover_55 (DJ), Perunas_55 (DJ), Petite_53 (DJ), Phepper_55 (DJ), Pherobrine_55 (DJ), Poco6_089 (CC), Rickmore_50 (DJ), Roney_53 (DJ), Runhaar_54 (DJ), Schwartz33_55 (DJ), Secretariat_53 (DJ), Tanis_53 (DJ), TenaciousP_59 (DJ), Tribby_44 (AM), Untouchable_55 (DJ), Vardy_53 (DJ), Xenomorph_40 (AM),

Summary by clusters:

There are 3 clusters represented in this pham: CC, AM, DJ,

Info for manual annotations of cluster AM:

- Start number 21 was manually annotated 12 times for cluster AM.

Info for manual annotations of cluster DJ:

- Start number 13 was manually annotated 1 time for cluster DJ.
- Start number 21 was manually annotated 33 times for cluster DJ.

Gene Information:

Gene: Aflac_53 Start: 37122, Stop: 37580, Start Num: 21

Candidate Starts for Aflac_53:

(Start: 13 @37050 has 1 MA's), (Start: 21 @37122 has 45 MA's), (22, 37134), (33, 37287), (39, 37329), (41, 37359), (44, 37401), (51, 37443), (56, 37467), (69, 37545),

Gene: AlainaMarie_53 Start: 37102, Stop: 37566, Start Num: 21

Candidate Starts for AlainaMarie_53:

(Start: 21 @37102 has 45 MA's), (26, 37147), (38, 37300), (39, 37309), (44, 37381), (51, 37423), (56, 37447), (67, 37519),

Gene: Arcadia_44 Start: 30490, Stop: 30855, Start Num: 21

Candidate Starts for Arcadia_44:

(Start: 21 @30490 has 45 MA's), (23, 30514), (27, 30550), (31, 30592), (34, 30655), (35, 30658), (39, 30688), (43, 30721), (51, 30799),

Gene: Artorias_53 Start: 36489, Stop: 36887, Start Num: 21

Candidate Starts for Artorias_53:

(Start: 21 @36489 has 45 MA's), (33, 36657), (39, 36699), (44, 36771), (47, 36789), (61, 36864), (62, 36873),

Gene: Avazak_54 Start: 36834, Stop: 37244, Start Num: 21

Candidate Starts for Avazak_54:

(Start: 21 @36834 has 45 MA's), (36, 37020), (37, 37023), (39, 37038), (44, 37110), (48, 37131), (63, 37221),

Gene: BenitoAntonio_44 Start: 30067, Stop: 30432, Start Num: 21

Candidate Starts for BenitoAntonio_44:

(Start: 21 @30067 has 45 MA's), (23, 30091), (27, 30127), (31, 30169), (34, 30232), (35, 30235), (39, 30265), (43, 30298), (44, 30334), (45, 30337), (51, 30376),

Gene: Benllo_43 Start: 30751, Stop: 31116, Start Num: 21

Candidate Starts for Benllo_43:

(Start: 21 @30751 has 45 MA's), (23, 30775), (27, 30811), (31, 30853), (34, 30916), (35, 30919), (39, 30949), (43, 30982), (44, 31018), (45, 31021), (51, 31060),

Gene: Burley_54 Start: 36888, Stop: 37352, Start Num: 21

Candidate Starts for Burley_54:

(Start: 13 @36816 has 1 MA's), (Start: 21 @36888 has 45 MA's), (24, 36915), (30, 36972), (39, 37095), (41, 37125), (44, 37167), (46, 37173), (51, 37209), (56, 37233), (72, 37344),

Gene: Captrips_54 Start: 35964, Stop: 36362, Start Num: 21

Candidate Starts for Captrips_54:

(Start: 21 @35964 has 45 MA's), (33, 36132), (39, 36174), (44, 36246), (47, 36264), (61, 36339), (62, 36348),

Gene: Capybara_53 Start: 36333, Stop: 36743, Start Num: 21

Candidate Starts for Capybara_53:

(20, 36330), (Start: 21 @36333 has 45 MA's), (27, 36393), (28, 36396), (30, 36417), (32, 36456), (33, 36495), (39, 36537), (42, 36570), (44, 36609), (48, 36630), (63, 36720),

Gene: Cheesy_44 Start: 30188, Stop: 30553, Start Num: 21

Candidate Starts for Cheesy_44:

(Start: 21 @30188 has 45 MA's), (27, 30248), (31, 30290), (34, 30353), (35, 30356), (39, 30386), (43, 30419), (51, 30497),

Gene: Chikenjars_52 Start: 37114, Stop: 37578, Start Num: 21

Candidate Starts for Chikenjars_52:

(Start: 21 @37114 has 45 MA's), (22, 37126), (38, 37312), (39, 37321), (41, 37351), (44, 37393), (51, 37435), (56, 37459), (67, 37531),

Gene: Conley_52 Start: 37120, Stop: 37530, Start Num: 21

Candidate Starts for Conley_52:

(Start: 21 @37120 has 45 MA's), (24, 37147), (36, 37306), (37, 37309), (39, 37324), (44, 37396), (48, 37417), (52, 37441), (63, 37507),

Gene: Correa_42 Start: 29373, Stop: 29738, Start Num: 21

Candidate Starts for Correa_42:

(15, 29313), (Start: 21 @29373 has 45 MA's), (31, 29475), (34, 29538), (35, 29541), (39, 29571), (43, 29604), (51, 29682),

Gene: Crocheter_54 Start: 37278, Stop: 37745, Start Num: 21

Candidate Starts for Crocheter_54:

(Start: 13 @37206 has 1 MA's), (Start: 21 @37278 has 45 MA's), (30, 37362), (39, 37485), (41, 37515), (44, 37557), (46, 37563), (51, 37599), (56, 37623), (64, 37689), (65, 37692), (72, 37740),

Gene: Duffington_52 Start: 36809, Stop: 37273, Start Num: 21

Candidate Starts for Duffington_52:

(12, 36698), (Start: 13 @36737 has 1 MA's), (Start: 21 @36809 has 45 MA's), (22, 36821), (28, 36872), (29, 36884), (30, 36893), (33, 36974), (39, 37016), (41, 37046), (44, 37088), (51, 37130), (55, 37148), (67, 37229),

Gene: Eddiemania_54 Start: 38023, Stop: 38493, Start Num: 21

Candidate Starts for Eddiemania_54:

(Start: 21 @38023 has 45 MA's), (22, 38035), (39, 38230), (41, 38260), (44, 38302), (46, 38308), (51, 38344), (64, 38434), (65, 38437), (72, 38485),

Gene: Elsa_44 Start: 30490, Stop: 30855, Start Num: 21

Candidate Starts for Elsa_44:

(Start: 21 @30490 has 45 MA's), (23, 30514), (27, 30550), (31, 30592), (34, 30655), (35, 30658), (39, 30688), (43, 30721), (51, 30799),

Gene: EndAve_55 Start: 37282, Stop: 37746, Start Num: 21

Candidate Starts for EndAve_55:

(Start: 21 @37282 has 45 MA's), (22, 37294), (38, 37480), (39, 37489), (41, 37519), (44, 37561), (51, 37603), (56, 37627), (67, 37699),

Gene: Fazel_58 Start: 36698, Stop: 37225, Start Num: 17

Candidate Starts for Fazel_58:

(17, 36698), (Start: 21 @36737 has 45 MA's), (22, 36749), (27, 36797), (35, 36914), (39, 36944), (44, 37016), (46, 37022), (51, 37058), (53, 37064), (71, 37175),

Gene: Figliar_52 Start: 37190, Stop: 37648, Start Num: 21

Candidate Starts for Figliar_52:

(Start: 21 @37190 has 45 MA's), (22, 37202), (29, 37265), (33, 37355), (39, 37397), (41, 37427), (44, 37469), (51, 37511), (56, 37535), (69, 37613),

Gene: FortCran_57 Start: 36489, Stop: 36887, Start Num: 21

Candidate Starts for FortCran_57:

(Start: 21 @36489 has 45 MA's), (33, 36657), (39, 36699), (44, 36771), (47, 36789), (61, 36864), (62, 36873),

Gene: Gill_53 Start: 36350, Stop: 36760, Start Num: 21

Candidate Starts for Gill_53:

(20, 36347), (Start: 21 @36350 has 45 MA's), (27, 36410), (28, 36413), (30, 36434), (32, 36473), (33, 36512), (39, 36554), (42, 36587), (44, 36626), (48, 36647), (63, 36737),

Gene: Gravy_52 Start: 36023, Stop: 36433, Start Num: 21

Candidate Starts for Gravy_52:

(20, 36020), (Start: 21 @36023 has 45 MA's), (27, 36083), (28, 36086), (30, 36107), (32, 36146), (33, 36185), (39, 36227), (42, 36260), (44, 36299), (48, 36320), (63, 36410),

Gene: Heisenberger_43 Start: 29931, Stop: 30296, Start Num: 21

Candidate Starts for Heisenberger_43:

(Start: 21 @29931 has 45 MA's), (23, 29955), (27, 29991), (31, 30033), (34, 30096), (35, 30099), (39, 30129), (43, 30162), (44, 30198), (45, 30201), (51, 30240),

Gene: Hortihabitatio_54 Start: 36942, Stop: 37460, Start Num: 21

Candidate Starts for Hortihabitatio_54:

(Start: 13 @36870 has 1 MA's), (Start: 21 @36942 has 45 MA's), (22, 36954), (27, 37002), (35, 37119), (39, 37149), (44, 37221), (46, 37227), (51, 37263), (71, 37380),

Gene: Hydrus_56 Start: 37978, Stop: 38517, Start Num: 13

Candidate Starts for Hydrus_56:

(Start: 13 @37978 has 1 MA's), (Start: 21 @38050 has 45 MA's), (30, 38134), (39, 38257), (41, 38287), (44, 38329), (46, 38335), (51, 38371), (64, 38461), (65, 38464), (72, 38512),

Gene: JEGGS_43 Start: 29985, Stop: 30350, Start Num: 21

Candidate Starts for JEGGS_43:

(Start: 21 @29985 has 45 MA's), (23, 30009), (27, 30045), (31, 30087), (34, 30150), (35, 30153), (39, 30183), (43, 30216), (44, 30252), (45, 30255), (51, 30294),

Gene: Jodelie19_53 Start: 38594, Stop: 39052, Start Num: 21

Candidate Starts for Jodelie19_53:

(Start: 21 @38594 has 45 MA's), (22, 38606), (29, 38669), (33, 38759), (39, 38801), (41, 38831), (44, 38873), (51, 38915), (56, 38939), (69, 39017),

Gene: Kardesai_45 Start: 30651, Stop: 31016, Start Num: 21

Candidate Starts for Kardesai_45:

(Start: 21 @30651 has 45 MA's), (23, 30675), (27, 30711), (31, 30753), (34, 30816), (35, 30819), (39, 30849), (43, 30882), (44, 30918), (45, 30921), (51, 30960),

Gene: Kenosha_53 Start: 37509, Stop: 37976, Start Num: 21

Candidate Starts for Kenosha_53:

(14, 37449), (Start: 21 @37509 has 45 MA's), (24, 37536), (30, 37593), (39, 37716), (41, 37746), (44, 37788), (46, 37794), (51, 37830), (56, 37854), (64, 37920), (65, 37923), (72, 37971),

Gene: Kerry_52 Start: 36023, Stop: 36433, Start Num: 21

Candidate Starts for Kerry_52:

(20, 36020), (Start: 21 @36023 has 45 MA's), (27, 36083), (28, 36086), (30, 36107), (32, 36146), (33, 36185), (39, 36227), (42, 36260), (44, 36299), (48, 36320), (63, 36410),

Gene: Madvan_53 Start: 36919, Stop: 37386, Start Num: 21

Candidate Starts for Madvan_53:

(Start: 13 @36847 has 1 MA's), (Start: 21 @36919 has 45 MA's), (24, 36946), (30, 37003), (39, 37126), (41, 37156), (44, 37198), (51, 37240), (56, 37264), (64, 37330), (65, 37333), (72, 37381),

Gene: Magel_54 Start: 36254, Stop: 36676, Start Num: 21

Candidate Starts for Magel_54:

(20, 36251), (Start: 21 @36254 has 45 MA's), (27, 36314), (28, 36317), (30, 36338), (32, 36377), (33, 36416), (39, 36458), (42, 36491), (44, 36530), (48, 36551), (63, 36653),

Gene: Mooshroom_45 Start: 30651, Stop: 31016, Start Num: 21

Candidate Starts for Mooshroom_45:

(Start: 21 @30651 has 45 MA's), (23, 30675), (27, 30711), (31, 30753), (34, 30816), (35, 30819), (39, 30849), (43, 30882), (44, 30918), (45, 30921), (51, 30960),

Gene: Mossy_57 Start: 39044, Stop: 39415, Start Num: 21

Candidate Starts for Mossy_57:

(7, 38843), (9, 38882), (11, 38933), (Start: 21 @39044 has 45 MA's), (39, 39251), (41, 39281), (44, 39323), (46, 39329),

Gene: Mudcat_41 Start: 31344, Stop: 31709, Start Num: 21

Candidate Starts for Mudcat_41:

(Start: 21 @31344 has 45 MA's), (23, 31368), (27, 31404), (31, 31446), (34, 31509), (35, 31512), (39, 31542), (43, 31575), (44, 31611), (51, 31653),

Gene: Nadmeg_55 Start: 38165, Stop: 38632, Start Num: 21

Candidate Starts for Nadmeg_55:

(14, 38105), (Start: 21 @38165 has 45 MA's), (24, 38192), (30, 38249), (39, 38372), (41, 38402), (44, 38444), (46, 38450), (51, 38486), (56, 38510), (64, 38576), (65, 38579), (72, 38627),

Gene: Nason_44 Start: 30490, Stop: 30855, Start Num: 21

Candidate Starts for Nason_44:

(Start: 21 @30490 has 45 MA's), (23, 30514), (27, 30550), (31, 30592), (34, 30655), (35, 30658), (39, 30688), (43, 30721), (51, 30799),

Gene: Nithya_54 Start: 37126, Stop: 37497, Start Num: 21

Candidate Starts for Nithya_54:

(Start: 13 @37054 has 1 MA's), (Start: 21 @37126 has 45 MA's), (38, 37324), (39, 37333), (41, 37363), (44, 37405),

Gene: Odesza_52 Start: 36078, Stop: 36488, Start Num: 21

Candidate Starts for Odesza_52:

(20, 36075), (Start: 21 @36078 has 45 MA's), (27, 36138), (28, 36141), (30, 36162), (32, 36201), (39, 36282), (42, 36315), (44, 36354), (48, 36375), (50, 36393), (63, 36465),

Gene: OhMyWard_52 Start: 38137, Stop: 38601, Start Num: 21

Candidate Starts for OhMyWard_52:

(Start: 21 @38137 has 45 MA's), (23, 38161), (39, 38344), (41, 38374), (44, 38416), (46, 38422), (51, 38458), (56, 38482),

Gene: OlgasClover_55 Start: 38175, Stop: 38633, Start Num: 21

Candidate Starts for OlgasClover_55:

(Start: 21 @38175 has 45 MA's), (22, 38187), (29, 38250), (33, 38340), (39, 38382), (41, 38412), (44, 38454), (51, 38496), (56, 38520), (69, 38598),

Gene: Perkunas_55 Start: 36360, Stop: 36770, Start Num: 21

Candidate Starts for Perkunas_55:

(1, 35874), (2, 35889), (3, 35949), (4, 35967), (5, 35979), (6, 36039), (8, 36168), (10, 36210), (Start: 21 @36360 has 45 MA's), (23, 36384), (32, 36483), (39, 36564), (41, 36594), (42, 36597), (44, 36636), (48, 36657), (63, 36747),

Gene: Petite_53 Start: 38180, Stop: 38590, Start Num: 21

Candidate Starts for Petite_53:

(Start: 21 @38180 has 45 MA's), (36, 38366), (37, 38369), (39, 38384), (44, 38456), (48, 38477),

Gene: Phepper_55 Start: 37181, Stop: 37648, Start Num: 21

Candidate Starts for Phepper_55:

(Start: 13 @37109 has 1 MA's), (Start: 21 @37181 has 45 MA's), (24, 37208), (30, 37265), (39, 37388), (41, 37418), (44, 37460), (46, 37466), (51, 37502), (56, 37526), (64, 37592), (65, 37595), (72, 37643),

Gene: Pherobrine_55 Start: 38033, Stop: 38560, Start Num: 21

Candidate Starts for Pherobrine_55:

(Start: 13 @37961 has 1 MA's), (Start: 21 @38033 has 45 MA's), (22, 38045), (27, 38093), (35, 38210), (39, 38240), (44, 38312), (49, 38348), (51, 38354), (53, 38360), (58, 38384), (66, 38459), (71, 38510),

Gene: Poco6_089 Start: 48918, Stop: 49439, Start Num: 21

Candidate Starts for Poco6_089:

(18, 48906), (Start: 21 @48918 has 45 MA's), (24, 48945), (34, 49089), (37, 49107), (39, 49122), (40, 49125), (41, 49152), (43, 49158), (47, 49212), (48, 49215), (54, 49245), (57, 49266), (60, 49296), (68, 49365), (70, 49380),

Gene: Rickmore_50 Start: 34982, Stop: 35440, Start Num: 21

Candidate Starts for Rickmore_50:

(Start: 13 @34910 has 1 MA's), (Start: 21 @34982 has 45 MA's), (22, 34994), (39, 35189), (41, 35219), (44, 35261), (51, 35303), (54, 35312), (56, 35327), (69, 35405),

Gene: Roney_53 Start: 36376, Stop: 36786, Start Num: 21

Candidate Starts for Roney_53:

(20, 36373), (Start: 21 @36376 has 45 MA's), (27, 36436), (28, 36439), (30, 36460), (32, 36499), (33, 36538), (39, 36580), (42, 36613), (44, 36652), (48, 36673), (63, 36763),

Gene: Runhaar_54 Start: 36981, Stop: 37448, Start Num: 21

Candidate Starts for Runhaar_54:

(14, 36921), (Start: 21 @36981 has 45 MA's), (24, 37008), (30, 37065), (39, 37188), (41, 37218), (44, 37260), (46, 37266), (51, 37302), (56, 37326), (64, 37392), (65, 37395), (72, 37443),

Gene: Schwartz33_55 Start: 37144, Stop: 37581, Start Num: 21

Candidate Starts for Schwartz33_55:

(Start: 21 @37144 has 45 MA's), (24, 37171), (39, 37348), (41, 37378),

Gene: Secretariat_53 Start: 36006, Stop: 36494, Start Num: 21

Candidate Starts for Secretariat_53:

(16, 35955), (19, 35997), (Start: 21 @36006 has 45 MA's), (24, 36033), (25, 36045), (39, 36210), (40, 36213), (41, 36240), (59, 36360), (72, 36483),

Gene: Tanis_53 Start: 36196, Stop: 36606, Start Num: 21

Candidate Starts for Tanis_53:

(20, 36193), (Start: 21 @36196 has 45 MA's), (27, 36256), (28, 36259), (30, 36280), (32, 36319), (33, 36358), (39, 36400), (42, 36433), (44, 36472), (48, 36493), (63, 36583),

Gene: TenaciousP_59 Start: 38556, Stop: 39014, Start Num: 21

Candidate Starts for TenaciousP_59:

(Start: 21 @38556 has 45 MA's), (22, 38568), (29, 38631), (33, 38721), (39, 38763), (41, 38793), (44, 38835), (51, 38877), (56, 38901), (69, 38979),

Gene: Tribby_44 Start: 30206, Stop: 30571, Start Num: 21

Candidate Starts for Tribby_44:

(15, 30146), (Start: 21 @30206 has 45 MA's), (31, 30308), (34, 30371), (35, 30374), (39, 30404), (43, 30437), (51, 30515),

Gene: Untouchable_55 Start: 37530, Stop: 37997, Start Num: 21

Candidate Starts for Untouchable_55:

(Start: 13 @37458 has 1 MA's), (Start: 21 @37530 has 45 MA's), (30, 37614), (39, 37737), (41, 37767), (44, 37809), (46, 37815), (51, 37851), (64, 37941), (65, 37944), (72, 37992),

Gene: Vardy_53 Start: 36877, Stop: 37338, Start Num: 21

Candidate Starts for Vardy_53:

(Start: 13 @36805 has 1 MA's), (Start: 21 @36877 has 45 MA's), (24, 36904), (30, 36961), (39, 37084), (41, 37114), (44, 37156), (46, 37162), (51, 37198), (56, 37222), (72, 37333),

Gene: Xenomorph_40 Start: 29917, Stop: 30282, Start Num: 21

Candidate Starts for Xenomorph_40:

(Start: 21 @29917 has 45 MA's), (27, 29977), (31, 30019), (34, 30082), (35, 30085), (39, 30115), (43, 30148), (51, 30226),

Gene: Zeph_58 Start: 37958, Stop: 38485, Start Num: 13

Candidate Starts for Zeph_58:

(Start: 13 @37958 has 1 MA's), (Start: 21 @38030 has 45 MA's), (30, 38114), (39, 38237), (41, 38267), (44, 38309), (64, 38429), (65, 38432), (72, 38480),