

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 171416 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171416 has 76 members, 9 are drafts.

Phages represented in each track:

- Track 1 : LestyG_59, Tydolla_58, Morty007_60, Marley1013_61, Neos5_60, Yahalom_59, Baloo_60
- Track 2 : MmasiCarm_62, Obutu_62, Heathcliff_61, Jackstina_57, Nozo_61, GlenHope_62, Chandler_61, SynergyX_61, Compostia_61, ChaChing_61, OrangeOswald_61, RagingRooster_60, Corofin_61, Athena_63, Gervas_62, RomaT_61, HarveySr_60, Deenasa_61, Akoma_61, Philly_60, Devonte_60, Audrey_61, Kamiyu_61, Rita1961_62, SlippinJimmy_63, Phaedrus_57
- Track 3 : Bernardo_62, Mortcellus_61, Ben11_61, Kronus_61
- Track 4 : Yinz_61
- Track 5 : Abinghost_61, Daisy_60
- Track 6 : Phayeta_63, Briakila_60, Casbah_61
- Track 7 : Gadjet_62, Halfpint_60
- Track 8 : Pipefish_62
- Track 9 : Phlyer_61
- Track 10 : Frederick_54
- Track 11 : BobbyK_55
- Track 12 : Prince_55, Fortunato_55, ChrisnMich_54, Heath_53, Magpie_53
- Track 13 : Stinger_55
- Track 14 : Apex_55, Mudslide_54, Austelle_55, JaguarMi_56
- Track 15 : Zemanar_55
- Track 16 : BrownCNA_56, Hangman_54
- Track 17 : AlanGrant_58, Vincenzo_57
- Track 18 : Mithril_54
- Track 19 : Lolalove_55
- Track 20 : Hydro_54, Poster_53, Ahwei_53, Nanao_53
- Track 21 : Cooper_55
- Track 22 : Waleliano_54
- Track 23 : JAMaL_54
- Track 24 : RawrgerThat_55
- Track 25 : Nigel_55
- Track 26 : VioletZ_56

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

The start number called the most often in the published annotations is 22, it was called in 44 of the 67 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abinghost_61, Akoma_61, Athena_63, Audrey_61, Baloo_60, Ben11_61, Bernardo_62, Briakila_60, Casbah_61, ChaChing_61, Chandler_61, Compostia_61, Corofin_61, Daisy_60, Deenasa_61, Devonte_60, Gadget_62, Gervas_62, GlenHope_62, Halfpint_60, HarveySr_60, Heathcliff_61, Jackstina_57, Kamiyu_61, Kronus_61, LestyG_59, Marley1013_61, MmasiCarm_62, Mortcellus_61, Morty007_60, Neos5_60, Nozo_61, Obutu_62, OrangeOswald_61, Phaedrus_57, Phayeta_63, Philly_60, Phlyer_61, Pipefish_62, RagingRooster_60, Rita1961_62, RomaT_61, SlippinJimmy_63, SynergyX_61, Tydolla_58, Yahalom_59, Yinz_61,

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

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

- Ahwei_53, AlanGrant_58, Apex_55, Austelle_55, BobbyK_55, BrownCNA_56, ChrisnMich_54, Cooper_55, Fortunato_55, Frederick_54, Hangman_54, Heath_53, Hydro_54, JAMaL_54, JaguarMi_56, Lolalove_55, Magpie_53, Mithril_54, Mudslide_54, Nanao_53, Nigel_55, Poster_53, Prince_55, RawrgerThat_55, Stinger_55, Vincenzo_57, VioletZ_56, Waleliano_54, Zemanar_55,

Summary by start number:

Start 5:

- Found in 2 of 76 (2.6%) of genes in pham
- Manual Annotations of this start: 2 of 67
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cooper_55 (B4), JAMaL_54 (B4),

Start 6:

- Found in 16 of 76 (21.1%) of genes in pham
- Manual Annotations of this start: 14 of 67
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apex_55 (B4), Austelle_55 (B4), BrownCNA_56 (B4), ChrisnMich_54 (B4), Fortunato_55 (B4), Hangman_54 (B4), Heath_53 (B4), JaguarMi_56 (B4), Magpie_53 (B4), Mithril_54 (B4), Mudslide_54 (B4), Prince_55 (B4), RawrgerThat_55 (B4), VioletZ_56 (B4), Waleliano_54 (B4), Zemanar_55 (B4),

Start 7:

- Found in 11 of 76 (14.5%) of genes in pham
- Manual Annotations of this start: 7 of 67
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ahwei_53 (B4), AlanGrant_58 (B4), BobbyK_55 (B4), Frederick_54 (B4), Hydro_54 (B4), Lolalove_55 (B4), Nanao_53 (B4), Nigel_55 (B4), Poster_53 (B4), Stinger_55 (B4), Vincenzo_57 (B4),

Start 22:

- Found in 47 of 76 (61.8%) of genes in pham
- Manual Annotations of this start: 44 of 67
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Abinghost_61 (B3), Akoma_61 (B3), Athena_63 (B3), Audrey_61 (B3), Baloo_60 (B3), Ben11_61 (B3), Bernardo_62 (B3), Briakila_60 (B3), Casbah_61 (B3), ChaChing_61 (B3), Chandler_61 (B3), Compostia_61 (B3), Corofin_61 (B3), Daisy_60 (B3), Deenasa_61 (B3), Devonte_60 (B3), Gadget_62 (B3), Gervas_62 (B3), GlenHope_62 (B3), Halfpint_60 (B3), HarveySr_60 (B3), Heathcliff_61 (B3), Jackstina_57 (B3), Kamiyu_61 (B3), Kronus_61 (B3), LestyG_59 (B3), Marley1013_61 (B3), MmasiCarm_62 (B3), Mortcellus_61 (B3), Morty007_60 (B3), Neos5_60 (B3), Nozo_61 (B3), Obutu_62 (B3), OrangeOswald_61 (B3), Phaedrus_57 (B3), Phayeta_63 (B3), Philly_60 (B3), Phlyer_61 (B3), Pipefish_62 (B3), RagingRooster_60 (B3), Rita1961_62 (B3), RomaT_61 (B3), SlippinJimmy_63 (B3), SynergyX_61 (B3), Tydolla_58 (B3), Yahalom_59 (B3), Yinz_61 (B3),

Summary by clusters:

There are 2 clusters represented in this pham: B4, B3,

Info for manual annotations of cluster B3:

- Start number 22 was manually annotated 44 times for cluster B3.

Info for manual annotations of cluster B4:

- Start number 5 was manually annotated 2 times for cluster B4.
- Start number 6 was manually annotated 14 times for cluster B4.
- Start number 7 was manually annotated 7 times for cluster B4.

Gene Information:

Gene: Abinghost_61 Start: 54489, Stop: 54043, Start Num: 22

Candidate Starts for Abinghost_61:

(2, 54903), (3, 54798), (12, 54603), (20, 54522), (Start: 22 @54489 has 44 MA's), (29, 54408), (39, 54147), (43, 54078), (45, 54054),

Gene: Ahwei_53 Start: 53560, Stop: 52982, Start Num: 7

Candidate Starts for Ahwei_53:

(Start: 7 @53560 has 7 MA's), (10, 53524), (14, 53494), (16, 53473), (17, 53461), (30, 53260), (32, 53233), (34, 53161), (38, 53086), (40, 53062), (44, 52993),

Gene: Akoma_61 Start: 54537, Stop: 54091, Start Num: 22

Candidate Starts for Akoma_61:

(2, 54951), (3, 54846), (12, 54651), (20, 54570), (Start: 22 @54537 has 44 MA's), (29, 54456), (39, 54195), (42, 54135), (43, 54126), (45, 54102),

Gene: AlanGrant_58 Start: 55697, Stop: 55113, Start Num: 7

Candidate Starts for AlanGrant_58:

(Start: 7 @55697 has 7 MA's), (10, 55661), (14, 55631), (16, 55610), (17, 55598), (21, 55559), (28, 55487), (30, 55403), (34, 55304), (36, 55274), (37, 55229), (41, 55184), (44, 55124),

Gene: Apex_55 Start: 54771, Stop: 54196, Start Num: 6

Candidate Starts for Apex_55:

(4, 54786), (Start: 6 @54771 has 14 MA's), (10, 54723), (14, 54693), (16, 54672), (17, 54660), (31, 54459), (32, 54447), (34, 54375), (38, 54300), (40, 54276), (44, 54207),

Gene: Athena_63 Start: 55272, Stop: 54826, Start Num: 22

Candidate Starts for Athena_63:

(2, 55686), (3, 55581), (12, 55386), (20, 55305), (Start: 22 @55272 has 44 MA's), (29, 55191), (39, 54930), (42, 54870), (43, 54861), (45, 54837),

Gene: Audrey_61 Start: 54528, Stop: 54082, Start Num: 22

Candidate Starts for Audrey_61:

(2, 54942), (3, 54837), (12, 54642), (20, 54561), (Start: 22 @54528 has 44 MA's), (29, 54447), (39, 54186), (42, 54126), (43, 54117), (45, 54093),

Gene: Austelle_55 Start: 55224, Stop: 54649, Start Num: 6

Candidate Starts for Austelle_55:

(4, 55239), (Start: 6 @55224 has 14 MA's), (10, 55176), (14, 55146), (16, 55125), (17, 55113), (31, 54912), (32, 54900), (34, 54828), (38, 54753), (40, 54729), (44, 54660),

Gene: Baloo_60 Start: 54388, Stop: 53945, Start Num: 22

Candidate Starts for Baloo_60:

(Start: 22 @54388 has 44 MA's), (26, 54358), (28, 54319), (29, 54307), (33, 54202), (46, 53956),

Gene: Ben11_61 Start: 54743, Stop: 54297, Start Num: 22

Candidate Starts for Ben11_61:

(2, 55157), (3, 55052), (12, 54857), (20, 54776), (Start: 22 @54743 has 44 MA's), (29, 54662), (39, 54401), (42, 54341), (43, 54332), (45, 54308),

Gene: Bernardo_62 Start: 54880, Stop: 54434, Start Num: 22

Candidate Starts for Bernardo_62:

(2, 55297), (3, 55192), (12, 54994), (20, 54913), (Start: 22 @54880 has 44 MA's), (29, 54799), (39, 54538), (42, 54478), (43, 54469), (45, 54445),

Gene: BobbyK_55 Start: 54543, Stop: 53965, Start Num: 7

Candidate Starts for BobbyK_55:

(Start: 7 @54543 has 7 MA's), (10, 54507), (14, 54477), (16, 54456), (17, 54444), (24, 54381), (30, 54243), (32, 54216), (34, 54144), (35, 54126), (38, 54069), (40, 54045), (44, 53976),

Gene: Briakila_60 Start: 54501, Stop: 54055, Start Num: 22

Candidate Starts for Briakila_60:

(1, 55095), (2, 54915), (3, 54810), (12, 54615), (20, 54534), (Start: 22 @54501 has 44 MA's), (29, 54420), (39, 54159), (42, 54099), (43, 54090), (45, 54066),

Gene: BrownCNA_56 Start: 54882, Stop: 54307, Start Num: 6

Candidate Starts for BrownCNA_56:

(4, 54897), (Start: 6 @54882 has 14 MA's), (10, 54834), (14, 54804), (16, 54783), (17, 54771), (31, 54570), (32, 54558), (34, 54486), (35, 54468), (40, 54387), (44, 54318),

Gene: Casbah_61 Start: 54846, Stop: 54400, Start Num: 22

Candidate Starts for Casbah_61:

(1, 55440), (2, 55260), (3, 55155), (12, 54960), (20, 54879), (Start: 22 @54846 has 44 MA's), (29, 54765), (39, 54504), (42, 54444), (43, 54435), (45, 54411),

Gene: ChaChing_61 Start: 54548, Stop: 54102, Start Num: 22

Candidate Starts for ChaChing_61:

(2, 54962), (3, 54857), (12, 54662), (20, 54581), (Start: 22 @54548 has 44 MA's), (29, 54467), (39, 54206), (42, 54146), (43, 54137), (45, 54113),

Gene: Chandler_61 Start: 55316, Stop: 54870, Start Num: 22

Candidate Starts for Chandler_61:

(2, 55730), (3, 55625), (12, 55430), (20, 55349), (Start: 22 @55316 has 44 MA's), (29, 55235), (39, 54974), (42, 54914), (43, 54905), (45, 54881),

Gene: ChrisnMich_54 Start: 53551, Stop: 52961, Start Num: 6

Candidate Starts for ChrisnMich_54:

(4, 53566), (Start: 6 @53551 has 14 MA's), (10, 53503), (14, 53473), (16, 53452), (17, 53440), (30, 53239), (32, 53212), (34, 53140), (38, 53065), (40, 53041), (44, 52972),

Gene: Compostia_61 Start: 54935, Stop: 54489, Start Num: 22

Candidate Starts for Compostia_61:

(2, 55349), (3, 55244), (12, 55049), (20, 54968), (Start: 22 @54935 has 44 MA's), (29, 54854), (39, 54593), (42, 54533), (43, 54524), (45, 54500),

Gene: Cooper_55 Start: 53843, Stop: 53226, Start Num: 5

Candidate Starts for Cooper_55:

(Start: 5 @53843 has 2 MA's), (8, 53819), (9, 53804), (11, 53786), (16, 53738), (28, 53588), (30, 53504), (32, 53477), (34, 53405), (35, 53387), (38, 53330), (40, 53306), (44, 53237),

Gene: Corofin_61 Start: 54559, Stop: 54113, Start Num: 22

Candidate Starts for Corofin_61:

(2, 54973), (3, 54868), (12, 54673), (20, 54592), (Start: 22 @54559 has 44 MA's), (29, 54478), (39, 54217), (42, 54157), (43, 54148), (45, 54124),

Gene: Daisy_60 Start: 54092, Stop: 53646, Start Num: 22

Candidate Starts for Daisy_60:

(2, 54506), (3, 54401), (12, 54206), (20, 54125), (Start: 22 @54092 has 44 MA's), (29, 54011), (39, 53750), (43, 53681), (45, 53657),

Gene: Deenasa_61 Start: 55397, Stop: 54951, Start Num: 22

Candidate Starts for Deenasa_61:

(2, 55811), (3, 55706), (12, 55511), (20, 55430), (Start: 22 @55397 has 44 MA's), (29, 55316), (39, 55055), (42, 54995), (43, 54986), (45, 54962),

Gene: Devonte_60 Start: 54171, Stop: 53725, Start Num: 22

Candidate Starts for Devonte_60:

(2, 54585), (3, 54480), (12, 54285), (20, 54204), (Start: 22 @54171 has 44 MA's), (29, 54090), (39, 53829), (42, 53769), (43, 53760), (45, 53736),

Gene: Fortunato_55 Start: 54580, Stop: 53990, Start Num: 6

Candidate Starts for Fortunato_55:

(4, 54595), (Start: 6 @54580 has 14 MA's), (10, 54532), (14, 54502), (16, 54481), (17, 54469), (30, 54268), (32, 54241), (34, 54169), (38, 54094), (40, 54070), (44, 54001),

Gene: Frederick_54 Start: 54486, Stop: 53908, Start Num: 7

Candidate Starts for Frederick_54:

(Start: 7 @54486 has 7 MA's), (10, 54450), (14, 54420), (16, 54399), (17, 54387), (24, 54324), (30, 54186), (34, 54087), (35, 54069), (38, 54012), (40, 53988), (44, 53919),

Gene: Gadget_62 Start: 54864, Stop: 54418, Start Num: 22

Candidate Starts for Gadget_62:

(1, 55461), (2, 55281), (3, 55176), (12, 54978), (20, 54897), (Start: 22 @54864 has 44 MA's), (29, 54783), (39, 54522), (42, 54462), (43, 54453), (45, 54429),

Gene: Gervas_62 Start: 54953, Stop: 54507, Start Num: 22

Candidate Starts for Gervas_62:

(2, 55367), (3, 55262), (12, 55067), (20, 54986), (Start: 22 @54953 has 44 MA's), (29, 54872), (39, 54611), (42, 54551), (43, 54542), (45, 54518),

Gene: GlenHope_62 Start: 54527, Stop: 54081, Start Num: 22

Candidate Starts for GlenHope_62:

(2, 54941), (3, 54836), (12, 54641), (20, 54560), (Start: 22 @54527 has 44 MA's), (29, 54446), (39, 54185), (42, 54125), (43, 54116), (45, 54092),

Gene: Halfpint_60 Start: 54267, Stop: 53821, Start Num: 22

Candidate Starts for Halfpint_60:

(1, 54864), (2, 54684), (3, 54579), (12, 54384), (20, 54303), (Start: 22 @54267 has 44 MA's), (29, 54186), (39, 53925), (42, 53865), (43, 53856), (45, 53832),

Gene: Hangman_54 Start: 54625, Stop: 54050, Start Num: 6

Candidate Starts for Hangman_54:

(4, 54640), (Start: 6 @54625 has 14 MA's), (10, 54577), (14, 54547), (16, 54526), (17, 54514), (31, 54313), (32, 54301), (34, 54229), (35, 54211), (40, 54130), (44, 54061),

Gene: HarveySr_60 Start: 54117, Stop: 53671, Start Num: 22

Candidate Starts for HarveySr_60:

(2, 54531), (3, 54426), (12, 54231), (20, 54150), (Start: 22 @54117 has 44 MA's), (29, 54036), (39, 53775), (42, 53715), (43, 53706), (45, 53682),

Gene: Heath_53 Start: 54251, Stop: 53661, Start Num: 6

Candidate Starts for Heath_53:

(4, 54266), (Start: 6 @54251 has 14 MA's), (10, 54203), (14, 54173), (16, 54152), (17, 54140), (30, 53939), (32, 53912), (34, 53840), (38, 53765), (40, 53741), (44, 53672),

Gene: Heathcliff_61 Start: 54494, Stop: 54048, Start Num: 22

Candidate Starts for Heathcliff_61:

(2, 54908), (3, 54803), (12, 54608), (20, 54527), (Start: 22 @54494 has 44 MA's), (29, 54413), (39, 54152), (42, 54092), (43, 54083), (45, 54059),

Gene: Hydro_54 Start: 54620, Stop: 54042, Start Num: 7

Candidate Starts for Hydro_54:

(Start: 7 @54620 has 7 MA's), (10, 54584), (14, 54554), (16, 54533), (17, 54521), (30, 54320), (32, 54293), (34, 54221), (38, 54146), (40, 54122), (44, 54053),

Gene: JAMaL_54 Start: 54791, Stop: 54189, Start Num: 5

Candidate Starts for JAMaL_54:

(Start: 5 @54791 has 2 MA's), (9, 54752), (11, 54734), (13, 54716), (16, 54686), (19, 54656), (23, 54611), (28, 54551), (30, 54467), (34, 54368), (35, 54350), (38, 54293), (44, 54200),

Gene: Jackstina_57 Start: 54419, Stop: 53973, Start Num: 22

Candidate Starts for Jackstina_57:

(2, 54833), (3, 54728), (12, 54533), (20, 54452), (Start: 22 @54419 has 44 MA's), (29, 54338), (39, 54077), (42, 54017), (43, 54008), (45, 53984),

Gene: JaguarMi_56 Start: 55675, Stop: 55100, Start Num: 6

Candidate Starts for JaguarMi_56:

(4, 55690), (Start: 6 @55675 has 14 MA's), (10, 55627), (14, 55597), (16, 55576), (17, 55564), (31, 55363), (32, 55351), (34, 55279), (38, 55204), (40, 55180), (44, 55111),

Gene: Kamiyu_61 Start: 54496, Stop: 54050, Start Num: 22

Candidate Starts for Kamiyu_61:

(2, 54910), (3, 54805), (12, 54610), (20, 54529), (Start: 22 @54496 has 44 MA's), (29, 54415), (39, 54154), (42, 54094), (43, 54085), (45, 54061),

Gene: Kronus_61 Start: 55581, Stop: 55135, Start Num: 22

Candidate Starts for Kronus_61:

(2, 55995), (3, 55890), (12, 55695), (20, 55614), (Start: 22 @55581 has 44 MA's), (29, 55500), (39, 55239), (42, 55179), (43, 55170), (45, 55146),

Gene: LestyG_59 Start: 54041, Stop: 53598, Start Num: 22

Candidate Starts for LestyG_59:

(Start: 22 @54041 has 44 MA's), (26, 54011), (28, 53972), (29, 53960), (33, 53855), (46, 53609),

Gene: Lolalove_55 Start: 54603, Stop: 54013, Start Num: 7

Candidate Starts for Lolalove_55:

(Start: 7 @54603 has 7 MA's), (10, 54567), (14, 54537), (16, 54516), (17, 54504), (24, 54441), (30, 54303), (34, 54204), (37, 54129),

Gene: Magpie_53 Start: 54495, Stop: 53905, Start Num: 6

Candidate Starts for Magpie_53:

(4, 54510), (Start: 6 @54495 has 14 MA's), (10, 54447), (14, 54417), (16, 54396), (17, 54384), (30, 54183), (32, 54156), (34, 54084), (38, 54009), (40, 53985), (44, 53916),

Gene: Marley1013_61 Start: 55239, Stop: 54796, Start Num: 22

Candidate Starts for Marley1013_61:

(Start: 22 @55239 has 44 MA's), (26, 55209), (28, 55170), (29, 55158), (33, 55053), (46, 54807),

Gene: Mithril_54 Start: 54577, Stop: 54002, Start Num: 6

Candidate Starts for Mithril_54:

(4, 54592), (Start: 6 @54577 has 14 MA's), (10, 54529), (14, 54499), (16, 54478), (17, 54466), (25, 54400), (27, 54394), (31, 54265), (32, 54253), (34, 54181), (38, 54106), (40, 54082), (44, 54013),

Gene: MmasiCarm_62 Start: 54941, Stop: 54495, Start Num: 22

Candidate Starts for MmasiCarm_62:

(2, 55355), (3, 55250), (12, 55055), (20, 54974), (Start: 22 @54941 has 44 MA's), (29, 54860), (39, 54599), (42, 54539), (43, 54530), (45, 54506),

Gene: Mortcellus_61 Start: 55596, Stop: 55150, Start Num: 22

Candidate Starts for Mortcellus_61:

(2, 56013), (3, 55908), (12, 55713), (20, 55632), (Start: 22 @55596 has 44 MA's), (29, 55515), (39, 55254), (42, 55194), (43, 55185), (45, 55161),

Gene: Morty007_60 Start: 55239, Stop: 54796, Start Num: 22

Candidate Starts for Morty007_60:

(Start: 22 @55239 has 44 MA's), (26, 55209), (28, 55170), (29, 55158), (33, 55053), (46, 54807),

Gene: Mudslide_54 Start: 54844, Stop: 54260, Start Num: 6

Candidate Starts for Mudslide_54:

(4, 54859), (Start: 6 @54844 has 14 MA's), (10, 54796), (14, 54766), (16, 54745), (17, 54733), (31, 54523), (32, 54511), (34, 54439), (38, 54364), (40, 54340), (44, 54271),

Gene: Nanao_53 Start: 53563, Stop: 52985, Start Num: 7

Candidate Starts for Nanao_53:

(Start: 7 @53563 has 7 MA's), (10, 53527), (14, 53497), (16, 53476), (17, 53464), (30, 53263), (32, 53236), (34, 53164), (38, 53089), (40, 53065), (44, 52996),

Gene: Neos5_60 Start: 54701, Stop: 54258, Start Num: 22

Candidate Starts for Neos5_60:

(Start: 22 @54701 has 44 MA's), (26, 54671), (28, 54632), (29, 54620), (33, 54515), (46, 54269),

Gene: Nigel_55 Start: 54169, Stop: 53585, Start Num: 7

Candidate Starts for Nigel_55:

(Start: 7 @54169 has 7 MA's), (10, 54133), (14, 54103), (16, 54082), (17, 54070), (21, 54031), (28, 53959), (30, 53875), (34, 53776), (36, 53746), (37, 53701), (41, 53656),

Gene: Nozo_61 Start: 55295, Stop: 54849, Start Num: 22

Candidate Starts for Nozo_61:

(2, 55709), (3, 55604), (12, 55409), (20, 55328), (Start: 22 @55295 has 44 MA's), (29, 55214), (39, 54953), (42, 54893), (43, 54884), (45, 54860),

Gene: Obutu_62 Start: 54894, Stop: 54448, Start Num: 22

Candidate Starts for Obutu_62:

(2, 55308), (3, 55203), (12, 55008), (20, 54927), (Start: 22 @54894 has 44 MA's), (29, 54813), (39, 54552), (42, 54492), (43, 54483), (45, 54459),

Gene: OrangeOswald_61 Start: 54536, Stop: 54090, Start Num: 22

Candidate Starts for OrangeOswald_61:

(2, 54950), (3, 54845), (12, 54650), (20, 54569), (Start: 22 @54536 has 44 MA's), (29, 54455), (39, 54194), (42, 54134), (43, 54125), (45, 54101),

Gene: Phaedrus_57 Start: 53969, Stop: 53523, Start Num: 22

Candidate Starts for Phaedrus_57:

(2, 54383), (3, 54278), (12, 54083), (20, 54002), (Start: 22 @53969 has 44 MA's), (29, 53888), (39, 53627), (42, 53567), (43, 53558), (45, 53534),

Gene: Phayeta_63 Start: 54796, Stop: 54350, Start Num: 22

Candidate Starts for Phayeta_63:

(1, 55390), (2, 55210), (3, 55105), (12, 54910), (20, 54829), (Start: 22 @54796 has 44 MA's), (29, 54715), (39, 54454), (42, 54394), (43, 54385), (45, 54361),

Gene: Philly_60 Start: 54356, Stop: 53910, Start Num: 22

Candidate Starts for Philly_60:

(2, 54770), (3, 54665), (12, 54470), (20, 54389), (Start: 22 @54356 has 44 MA's), (29, 54275), (39, 54014), (42, 53954), (43, 53945), (45, 53921),

Gene: Phlyer_61 Start: 55238, Stop: 54792, Start Num: 22

Candidate Starts for Phlyer_61:

(2, 55664), (3, 55559), (12, 55358), (20, 55277), (Start: 22 @55238 has 44 MA's), (29, 55157), (39, 54896), (43, 54827), (45, 54803),

Gene: Pipefish_62 Start: 55267, Stop: 54821, Start Num: 22

Candidate Starts for Pipefish_62:

(1, 55882), (2, 55687), (3, 55582), (12, 55384), (20, 55303), (Start: 22 @55267 has 44 MA's), (29, 55186), (39, 54925), (43, 54856), (45, 54832),

Gene: Poster_53 Start: 53564, Stop: 52986, Start Num: 7

Candidate Starts for Poster_53:

(Start: 7 @53564 has 7 MA's), (10, 53528), (14, 53498), (16, 53477), (17, 53465), (30, 53264), (32, 53237), (34, 53165), (38, 53090), (40, 53066), (44, 52997),

Gene: Prince_55 Start: 54757, Stop: 54167, Start Num: 6

Candidate Starts for Prince_55:

(4, 54772), (Start: 6 @54757 has 14 MA's), (10, 54709), (14, 54679), (16, 54658), (17, 54646), (30, 54445), (32, 54418), (34, 54346), (38, 54271), (40, 54247), (44, 54178),

Gene: RagingRooster_60 Start: 54184, Stop: 53738, Start Num: 22

Candidate Starts for RagingRooster_60:

(2, 54598), (3, 54493), (12, 54298), (20, 54217), (Start: 22 @54184 has 44 MA's), (29, 54103), (39, 53842), (42, 53782), (43, 53773), (45, 53749),

Gene: RawrgerThat_55 Start: 54597, Stop: 54022, Start Num: 6

Candidate Starts for RawrgerThat_55:

(4, 54612), (Start: 6 @54597 has 14 MA's), (10, 54549), (14, 54519), (16, 54498), (17, 54486), (31, 54285), (32, 54273), (34, 54201), (40, 54102), (44, 54033),

Gene: Rita1961_62 Start: 54894, Stop: 54448, Start Num: 22

Candidate Starts for Rita1961_62:

(2, 55308), (3, 55203), (12, 55008), (20, 54927), (Start: 22 @54894 has 44 MA's), (29, 54813), (39, 54552), (42, 54492), (43, 54483), (45, 54459),

Gene: RomaT_61 Start: 55093, Stop: 54647, Start Num: 22

Candidate Starts for RomaT_61:

(2, 55507), (3, 55402), (12, 55207), (20, 55126), (Start: 22 @55093 has 44 MA's), (29, 55012), (39, 54751), (42, 54691), (43, 54682), (45, 54658),

Gene: SlippinJimmy_63 Start: 55694, Stop: 55248, Start Num: 22

Candidate Starts for SlippinJimmy_63:

(2, 56108), (3, 56003), (12, 55808), (20, 55727), (Start: 22 @55694 has 44 MA's), (29, 55613), (39, 55352), (42, 55292), (43, 55283), (45, 55259),

Gene: Stinger_55 Start: 53491, Stop: 52907, Start Num: 7

Candidate Starts for Stinger_55:

(Start: 7 @53491 has 7 MA's), (10, 53455), (14, 53425), (15, 53416), (16, 53404), (17, 53392), (21, 53353), (30, 53197), (34, 53098), (36, 53068), (37, 53023), (41, 52978),

Gene: SynergyX_61 Start: 54533, Stop: 54087, Start Num: 22

Candidate Starts for SynergyX_61:

(2, 54947), (3, 54842), (12, 54647), (20, 54566), (Start: 22 @54533 has 44 MA's), (29, 54452), (39, 54191), (42, 54131), (43, 54122), (45, 54098),

Gene: Tydolla_58 Start: 54593, Stop: 54150, Start Num: 22

Candidate Starts for Tydolla_58:

(Start: 22 @54593 has 44 MA's), (26, 54563), (28, 54524), (29, 54512), (33, 54407), (46, 54161),

Gene: Vincenzo_57 Start: 55727, Stop: 55143, Start Num: 7

Candidate Starts for Vincenzo_57:

(Start: 7 @55727 has 7 MA's), (10, 55691), (14, 55661), (16, 55640), (17, 55628), (21, 55589), (28, 55517), (30, 55433), (34, 55334), (36, 55304), (37, 55259), (41, 55214), (44, 55154),

Gene: VioletZ_56 Start: 54661, Stop: 54086, Start Num: 6

Candidate Starts for VioletZ_56:

(4, 54676), (Start: 6 @54661 has 14 MA's), (10, 54613), (14, 54583), (16, 54562), (17, 54550), (32, 54337), (34, 54265), (35, 54247), (38, 54190), (40, 54166), (44, 54097),

Gene: Waleliano_54 Start: 54614, Stop: 54039, Start Num: 6

Candidate Starts for Waleliano_54:

(4, 54629), (Start: 6 @54614 has 14 MA's), (10, 54566), (16, 54515), (17, 54503), (31, 54302), (32, 54290), (34, 54218), (35, 54200), (40, 54119), (44, 54050),

Gene: Yahalom_59 Start: 54367, Stop: 53924, Start Num: 22

Candidate Starts for Yahalom_59:

(Start: 22 @54367 has 44 MA's), (26, 54337), (28, 54298), (29, 54286), (33, 54181), (46, 53935),

Gene: Yinz_61 Start: 54389, Stop: 53943, Start Num: 22

Candidate Starts for Yinz_61:

(1, 54995), (2, 54815), (3, 54710), (12, 54515), (18, 54446), (20, 54434), (Start: 22 @54389 has 44 MA's), (29, 54308), (39, 54047), (42, 53987), (43, 53978), (45, 53954),

Gene: Zemanar_55 Start: 54446, Stop: 53871, Start Num: 6

Candidate Starts for Zemanar_55:

(4, 54461), (Start: 6 @54446 has 14 MA's), (10, 54398), (16, 54347), (17, 54335), (31, 54134), (32, 54122), (34, 54050), (35, 54032), (40, 53951),