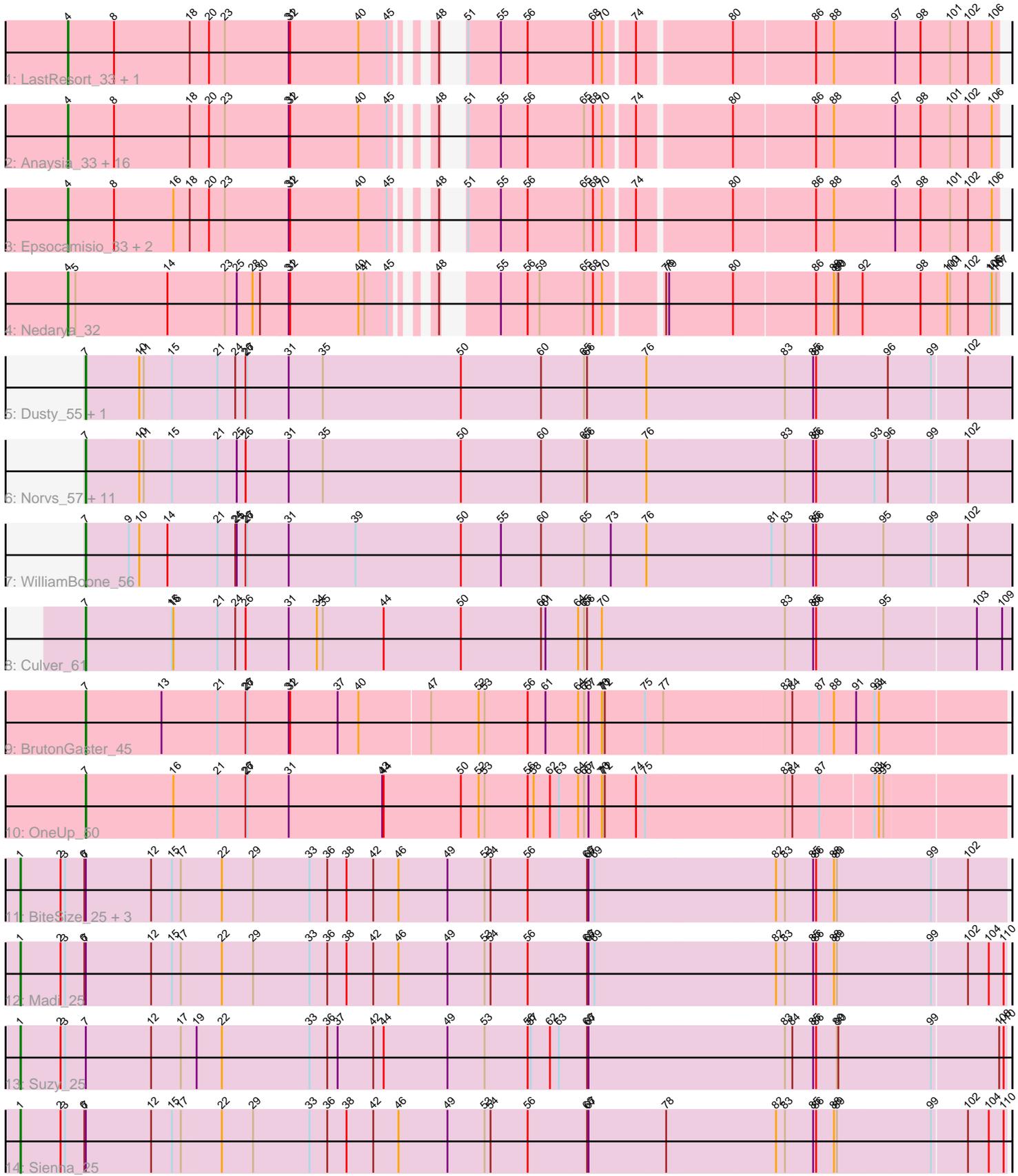# Pham 289505

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 289505 Report

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

Pham number 289505 has 48 members, 2 are drafts.

Phages represented in each track:
• Track 1 : LastResort_33, ReMo_33
• Track 2 : Anaysia_33, JSwag_33, Strosahl_33, Oofda_33, Nebulosus_33, KatherineG_33, Looper_34, MinecraftSteve_34, DekHockey33_33, Switzerland_33, Rosalind_33, Soups_33, Boohoo_33, Warrior24_33, ShayRa_34, Remus_33, Battleship_34
• Track 3 : Epsocamisio_33, Ravana_34, Waits_33
• Track 4 : Nedarya_32
• Track 5 : Dusty_55, Abscondus_55
• Track 6 : Norvs_57, Geeche_55, Cucurbita_58, Bachita_58, Miskis_54, ClubL_56, Toniann_56, Aphelion_56, Engineer_58, Lozinak_57, PhinkBoden_56, Smoothie_58
• Track 7 : WilliamBoone_56
• Track 8 : Culver_61
• Track 9 : BrutonGaster_45
• Track 10 : OneUp_50
• Track 11 : BiteSize_25, Beyoncage_25, Terapin_25, Djokovic_25
• Track 12 : Madi_25
• Track 13 : Suzy_25
• Track 14 : Sienna_25

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

The start number called the most often in the published annotations is 4, it was called in 22 of the 46 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Anaysia_33, Battleship_34, Boohoo_33, DekHockey33_33, Epsocamisio_33, JSwag_33, KatherineG_33, LastResort_33, Looper_34, MinecraftSteve_34, Nebulosus_33, Nedarya_32, Oofda_33, Ravana_34, ReMo_33, Remus_33, Rosalind_33, ShayRa_34, Soups_33, Strosahl_33, Switzerland_33, Waits_33, Warrior24_33,

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

Genes that do not have the "Most Annotated" start:
• Abscondus_55, Aphelion_56, Bachita_58, Beyoncage_25, BiteSize_25, BrutonGaster_45, ClubL_56, Cucurbita_58, Culver_61, Djokovic_25, Dusty_55, Engineer_58, Geeche_55, Lozinak_57, Madi_25, Miskis_54, Norvs_57, OneUp_50, PhinkBoden_56, Sienna_25, Smoothie_58, Suzy_25, Terapin_25, Toniann_56, WilliamBoone_56,

Summary by start number:

Start 1:
• Found in 7 of 48 (14.6%) of genes in pham
• Manual Annotations of this start: 7 of 46
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Beyoncage_25 (DG1), BiteSize_25 (DG1), Djokovic_25 (DG1), Madi_25 (DG1), Sienna_25 (DG1), Suzy_25 (DG1), Terapin_25 (DG1),

Start 4:
• Found in 23 of 48 (47.9%) of genes in pham
• Manual Annotations of this start: 22 of 46
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Anaysia_33 (A15), Battleship_34 (A15), Boohoo_33 (A15), DekHockey33_33 (A15), Epsocamisio_33 (A15), JSwag_33 (A15), KatherineG_33 (A15), LastResort_33 (A15), Looper_34 (A15), MinecraftSteve_34 (A15), Nebulosus_33 (A15), Nedarya_32 (A15), Oofda_33 (A15), Ravana_34 (A15), ReMo_33 (A15), Remus_33 (A15), Rosalind_33 (A15), ShayRa_34 (A15), Soups_33 (A15), Strosahl_33 (A15), Switzerland_33 (A15), Waits_33 (A15), Warrior24_33 (A15),

Start 7:
• Found in 25 of 48 (52.1%) of genes in pham
• Manual Annotations of this start: 17 of 46
• Called 72.0% of time when present
• Phage (with cluster) where this start called: Abscondus_55 (CQ1), Aphelion_56 (CQ1), Bachita_58 (CQ1), BrutonGaster_45 (CQ2), ClubL_56 (CQ1), Cucurbita_58 (CQ1), Culver_61 (CQ1), Dusty_55 (CQ1), Engineer_58 (CQ1), Geeche_55 (CQ1), Lozinak_57 (CQ1), Miskis_54 (CQ1), Norvs_57 (CQ1), OneUp_50 (CQ2), PhinkBoden_56 (CQ1), Smoothie_58 (CQ1), Toniann_56 (CQ1), WilliamBoone_56 (CQ1),

Summary by clusters:

There are 4 clusters represented in this pham: A15, CQ2, CQ1, DG1,

Info for manual annotations of cluster A15:
•Start number 4 was manually annotated 22 times for cluster A15.

Info for manual annotations of cluster CQ1:
•Start number 7 was manually annotated 15 times for cluster CQ1.

Info for manual annotations of cluster CQ2:
•Start number 7 was manually annotated 2 times for cluster CQ2.

Info for manual annotations of cluster DG1:
•Start number 1 was manually annotated 7 times for cluster DG1.

Gene Information:

Gene: Abscondus_55 Start: 35127, Stop: 36959, Start Num: 7
Candidate Starts for Abscondus_55:
(Start: 7 @35127 has 17 MA's), (10, 35232), (11, 35241), (15, 35295), (21, 35385), (24, 35421), (26, 35442), (27, 35445), (31, 35526), (35, 35595), (50, 35865), (60, 36027), (65, 36111), (66, 36117), (76, 36237), (83, 36513), (85, 36570), (86, 36576), (96, 36720), (99, 36804), (102, 36873),

Gene: Anaysia_33 Start: 21746, Stop: 23458, Start Num: 4
Candidate Starts for Anaysia_33:
(Start: 4 @21746 has 22 MA's), (8, 21839), (18, 21989), (20, 22028), (23, 22058), (31, 22184), (32, 22187), (40, 22325), (45, 22382), (48, 22427), (51, 22433), (55, 22499), (56, 22553), (65, 22667), (68, 22685), (70, 22703), (74, 22760), (80, 22937), (86, 23096), (88, 23132), (97, 23249), (98, 23300), (101, 23360), (102, 23396), (106, 23444),

Gene: Aphelion_56 Start: 35396, Stop: 37228, Start Num: 7
Candidate Starts for Aphelion_56:
(Start: 7 @35396 has 17 MA's), (10, 35501), (11, 35510), (15, 35564), (21, 35654), (25, 35693), (26, 35711), (31, 35795), (35, 35864), (50, 36134), (60, 36296), (65, 36380), (66, 36386), (76, 36506), (83, 36782), (85, 36839), (86, 36845), (93, 36962), (96, 36989), (99, 37073), (102, 37142),

Gene: Bachita_58 Start: 35829, Stop: 37661, Start Num: 7
Candidate Starts for Bachita_58:
(Start: 7 @35829 has 17 MA's), (10, 35934), (11, 35943), (15, 35997), (21, 36087), (25, 36126), (26, 36144), (31, 36228), (35, 36297), (50, 36567), (60, 36729), (65, 36813), (66, 36819), (76, 36939), (83, 37215), (85, 37272), (86, 37278), (93, 37395), (96, 37422), (99, 37506), (102, 37575),

Gene: Battleship_34 Start: 21858, Stop: 23570, Start Num: 4
Candidate Starts for Battleship_34:
(Start: 4 @21858 has 22 MA's), (8, 21951), (18, 22101), (20, 22140), (23, 22170), (31, 22296), (32, 22299), (40, 22437), (45, 22494), (48, 22539), (51, 22545), (55, 22611), (56, 22665), (65, 22779), (68, 22797), (70, 22815), (74, 22872), (80, 23049), (86, 23208), (88, 23244), (97, 23361), (98, 23412), (101, 23472), (102, 23508), (106, 23556),

Gene: Beyoncage_25 Start: 21340, Stop: 23304, Start Num: 1
Candidate Starts for Beyoncage_25:
(Start: 1 @21340 has 7 MA's), (2, 21421), (3, 21430), (6, 21469), (Start: 7 @21472 has 17 MA's), (12, 21604), (15, 21646), (17, 21664), (22, 21742), (29, 21805), (33, 21919), (36, 21955), (38, 21994), (42, 22048), (46, 22099), (49, 22198), (53, 22273), (54, 22285), (56, 22360), (66, 22477), (67, 22480), (69, 22492), (82, 22849), (83, 22867), (85, 22924), (86, 22930), (88, 22966), (89, 22972), (99, 23158), (102, 23227),

Gene: BiteSize_25 Start: 21340, Stop: 23304, Start Num: 1
Candidate Starts for BiteSize_25:
(Start: 1 @21340 has 7 MA's), (2, 21421), (3, 21430), (6, 21469), (Start: 7 @21472 has 17 MA's), (12, 21604), (15, 21646), (17, 21664), (22, 21742), (29, 21805), (33, 21919), (36, 21955), (38, 21994), (42, 22048), (46, 22099), (49, 22198), (53, 22273), (54, 22285), (56, 22360), (66, 22477), (67, 22480), (69, 22492), (82, 22849), (83, 22867), (85, 22924), (86, 22930), (88, 22966), (89, 22972), (99, 23158), (102,

23227),

Gene: Boohoo_33 Start: 21746, Stop: 23458, Start Num: 4
Candidate Starts for Boohoo_33:
(Start: 4 @21746 has 22 MA's), (8, 21839), (18, 21989), (20, 22028), (23, 22058), (31, 22184), (32, 22187), (40, 22325), (45, 22382), (48, 22427), (51, 22433), (55, 22499), (56, 22553), (65, 22667), (68, 22685), (70, 22703), (74, 22760), (80, 22937), (86, 23096), (88, 23132), (97, 23249), (98, 23300), (101, 23360), (102, 23396), (106, 23444),

Gene: BrutonGaster_45 Start: 32466, Stop: 34274, Start Num: 7
Candidate Starts for BrutonGaster_45:
(Start: 7 @32466 has 17 MA's), (13, 32613), (21, 32724), (26, 32781), (27, 32784), (31, 32865), (32, 32868), (37, 32964), (40, 33006), (47, 33144), (52, 33237), (53, 33249), (56, 33336), (61, 33372), (64, 33429), (65, 33441), (67, 33450), (70, 33477), (71, 33480), (72, 33483), (75, 33564), (77, 33600), (83, 33834), (84, 33849), (87, 33903), (88, 33933), (91, 33978), (93, 34014), (94, 34023),

Gene: ClubL_56 Start: 35318, Stop: 37150, Start Num: 7
Candidate Starts for ClubL_56:
(Start: 7 @35318 has 17 MA's), (10, 35423), (11, 35432), (15, 35486), (21, 35576), (25, 35615), (26, 35633), (31, 35717), (35, 35786), (50, 36056), (60, 36218), (65, 36302), (66, 36308), (76, 36428), (83, 36704), (85, 36761), (86, 36767), (93, 36884), (96, 36911), (99, 36995), (102, 37064),

Gene: Cucurbita_58 Start: 36688, Stop: 38520, Start Num: 7
Candidate Starts for Cucurbita_58:
(Start: 7 @36688 has 17 MA's), (10, 36793), (11, 36802), (15, 36856), (21, 36946), (25, 36985), (26, 37003), (31, 37087), (35, 37156), (50, 37426), (60, 37588), (65, 37672), (66, 37678), (76, 37798), (83, 38074), (85, 38131), (86, 38137), (93, 38254), (96, 38281), (99, 38365), (102, 38434),

Gene: Culver_61 Start: 38678, Stop: 40513, Start Num: 7
Candidate Starts for Culver_61:
(Start: 7 @38678 has 17 MA's), (15, 38846), (16, 38849), (21, 38936), (24, 38972), (26, 38993), (31, 39077), (34, 39134), (35, 39146), (44, 39269), (50, 39416), (60, 39578), (61, 39587), (64, 39650), (65, 39662), (66, 39668), (70, 39698), (83, 40064), (85, 40121), (86, 40127), (95, 40262), (103, 40442), (109, 40493),

Gene: DekHockey33_33 Start: 21865, Stop: 23577, Start Num: 4
Candidate Starts for DekHockey33_33:
(Start: 4 @21865 has 22 MA's), (8, 21958), (18, 22108), (20, 22147), (23, 22177), (31, 22303), (32, 22306), (40, 22444), (45, 22501), (48, 22546), (51, 22552), (55, 22618), (56, 22672), (65, 22786), (68, 22804), (70, 22822), (74, 22879), (80, 23056), (86, 23215), (88, 23251), (97, 23368), (98, 23419), (101, 23479), (102, 23515), (106, 23563),

Gene: Djokovic_25 Start: 21340, Stop: 23304, Start Num: 1
Candidate Starts for Djokovic_25:
(Start: 1 @21340 has 7 MA's), (2, 21421), (3, 21430), (6, 21469), (Start: 7 @21472 has 17 MA's), (12, 21604), (15, 21646), (17, 21664), (22, 21742), (29, 21805), (33, 21919), (36, 21955), (38, 21994), (42, 22048), (46, 22099), (49, 22198), (53, 22273), (54, 22285), (56, 22360), (66, 22477), (67, 22480), (69, 22492), (82, 22849), (83, 22867), (85, 22924), (86, 22930), (88, 22966), (89, 22972), (99, 23158), (102, 23227),

Gene: Dusty_55 Start: 35127, Stop: 36959, Start Num: 7
Candidate Starts for Dusty_55:

(Start: 7 @35127 has 17 MA's), (10, 35232), (11, 35241), (15, 35295), (21, 35385), (24, 35421), (26, 35442), (27, 35445), (31, 35526), (35, 35595), (50, 35865), (60, 36027), (65, 36111), (66, 36117), (76, 36237), (83, 36513), (85, 36570), (86, 36576), (96, 36720), (99, 36804), (102, 36873),

Gene: Engineer_58 Start: 35802, Stop: 37634, Start Num: 7
Candidate Starts for Engineer_58:
(Start: 7 @35802 has 17 MA's), (10, 35907), (11, 35916), (15, 35970), (21, 36060), (25, 36099), (26, 36117), (31, 36201), (35, 36270), (50, 36540), (60, 36702), (65, 36786), (66, 36792), (76, 36912), (83, 37188), (85, 37245), (86, 37251), (93, 37368), (96, 37395), (99, 37479), (102, 37548),

Gene: Epsocamisio_33 Start: 21743, Stop: 23455, Start Num: 4
Candidate Starts for Epsocamisio_33:
(Start: 4 @21743 has 22 MA's), (8, 21836), (16, 21953), (18, 21986), (20, 22025), (23, 22055), (31, 22181), (32, 22184), (40, 22322), (45, 22379), (48, 22424), (51, 22430), (55, 22496), (56, 22550), (65, 22664), (68, 22682), (70, 22700), (74, 22757), (80, 22934), (86, 23093), (88, 23129), (97, 23246), (98, 23297), (101, 23357), (102, 23393), (106, 23441),

Gene: Geeche_55 Start: 35218, Stop: 37050, Start Num: 7
Candidate Starts for Geeche_55:
(Start: 7 @35218 has 17 MA's), (10, 35323), (11, 35332), (15, 35386), (21, 35476), (25, 35515), (26, 35533), (31, 35617), (35, 35686), (50, 35956), (60, 36118), (65, 36202), (66, 36208), (76, 36328), (83, 36604), (85, 36661), (86, 36667), (93, 36784), (96, 36811), (99, 36895), (102, 36964),

Gene: JSwag_33 Start: 21729, Stop: 23441, Start Num: 4
Candidate Starts for JSwag_33:
(Start: 4 @21729 has 22 MA's), (8, 21822), (18, 21972), (20, 22011), (23, 22041), (31, 22167), (32, 22170), (40, 22308), (45, 22365), (48, 22410), (51, 22416), (55, 22482), (56, 22536), (65, 22650), (68, 22668), (70, 22686), (74, 22743), (80, 22920), (86, 23079), (88, 23115), (97, 23232), (98, 23283), (101, 23343), (102, 23379), (106, 23427),

Gene: KatherineG_33 Start: 21865, Stop: 23577, Start Num: 4
Candidate Starts for KatherineG_33:
(Start: 4 @21865 has 22 MA's), (8, 21958), (18, 22108), (20, 22147), (23, 22177), (31, 22303), (32, 22306), (40, 22444), (45, 22501), (48, 22546), (51, 22552), (55, 22618), (56, 22672), (65, 22786), (68, 22804), (70, 22822), (74, 22879), (80, 23056), (86, 23215), (88, 23251), (97, 23368), (98, 23419), (101, 23479), (102, 23515), (106, 23563),

Gene: LastResort_33 Start: 21746, Stop: 23458, Start Num: 4
Candidate Starts for LastResort_33:
(Start: 4 @21746 has 22 MA's), (8, 21839), (18, 21989), (20, 22028), (23, 22058), (31, 22184), (32, 22187), (40, 22325), (45, 22382), (48, 22427), (51, 22433), (55, 22499), (56, 22553), (68, 22685), (70, 22703), (74, 22760), (80, 22937), (86, 23096), (88, 23132), (97, 23249), (98, 23300), (101, 23360), (102, 23396), (106, 23444),

Gene: Looper_34 Start: 21743, Stop: 23455, Start Num: 4
Candidate Starts for Looper_34:
(Start: 4 @21743 has 22 MA's), (8, 21836), (18, 21986), (20, 22025), (23, 22055), (31, 22181), (32, 22184), (40, 22322), (45, 22379), (48, 22424), (51, 22430), (55, 22496), (56, 22550), (65, 22664), (68, 22682), (70, 22700), (74, 22757), (80, 22934), (86, 23093), (88, 23129), (97, 23246), (98, 23297), (101, 23357), (102, 23393), (106, 23441),

Gene: Lozinak_57 Start: 35857, Stop: 37689, Start Num: 7
Candidate Starts for Lozinak_57:

(Start: 7 @35857 has 17 MA's), (10, 35962), (11, 35971), (15, 36025), (21, 36115), (25, 36154), (26, 36172), (31, 36256), (35, 36325), (50, 36595), (60, 36757), (65, 36841), (66, 36847), (76, 36967), (83, 37243), (85, 37300), (86, 37306), (93, 37423), (96, 37450), (99, 37534), (102, 37603),

Gene: Madi_25 Start: 21340, Stop: 23304, Start Num: 1
Candidate Starts for Madi_25:
(Start: 1 @21340 has 7 MA's), (2, 21421), (3, 21430), (6, 21469), (Start: 7 @21472 has 17 MA's), (12, 21604), (15, 21646), (17, 21664), (22, 21742), (29, 21805), (33, 21919), (36, 21955), (38, 21994), (42, 22048), (46, 22099), (49, 22198), (53, 22273), (54, 22285), (56, 22360), (66, 22477), (67, 22480), (69, 22492), (82, 22849), (83, 22867), (85, 22924), (86, 22930), (88, 22966), (89, 22972), (99, 23158), (102, 23227), (104, 23269), (110, 23299),

Gene: MinecraftSteve_34 Start: 21865, Stop: 23577, Start Num: 4
Candidate Starts for MinecraftSteve_34:
(Start: 4 @21865 has 22 MA's), (8, 21958), (18, 22108), (20, 22147), (23, 22177), (31, 22303), (32, 22306), (40, 22444), (45, 22501), (48, 22546), (51, 22552), (55, 22618), (56, 22672), (65, 22786), (68, 22804), (70, 22822), (74, 22879), (80, 23056), (86, 23215), (88, 23251), (97, 23368), (98, 23419), (101, 23479), (102, 23515), (106, 23563),

Gene: Miskis_54 Start: 35162, Stop: 36994, Start Num: 7
Candidate Starts for Miskis_54:
(Start: 7 @35162 has 17 MA's), (10, 35267), (11, 35276), (15, 35330), (21, 35420), (25, 35459), (26, 35477), (31, 35561), (35, 35630), (50, 35900), (60, 36062), (65, 36146), (66, 36152), (76, 36272), (83, 36548), (85, 36605), (86, 36611), (93, 36728), (96, 36755), (99, 36839), (102, 36908),

Gene: Nebulosus_33 Start: 21743, Stop: 23455, Start Num: 4
Candidate Starts for Nebulosus_33:
(Start: 4 @21743 has 22 MA's), (8, 21836), (18, 21986), (20, 22025), (23, 22055), (31, 22181), (32, 22184), (40, 22322), (45, 22379), (48, 22424), (51, 22430), (55, 22496), (56, 22550), (65, 22664), (68, 22682), (70, 22700), (74, 22757), (80, 22934), (86, 23093), (88, 23129), (97, 23246), (98, 23297), (101, 23357), (102, 23393), (106, 23441),

Gene: Nedarya_32 Start: 22359, Stop: 24071, Start Num: 4
Candidate Starts for Nedarya_32:
(Start: 4 @22359 has 22 MA's), (5, 22374), (14, 22557), (23, 22671), (25, 22695), (28, 22725), (30, 22740), (31, 22797), (32, 22800), (40, 22938), (41, 22950), (45, 22995), (48, 23040), (55, 23112), (56, 23166), (59, 23190), (65, 23280), (68, 23298), (70, 23316), (78, 23418), (79, 23424), (80, 23550), (86, 23709), (88, 23745), (89, 23751), (90, 23754), (92, 23799), (98, 23913), (100, 23967), (101, 23973), (102, 24009), (105, 24054), (106, 24057), (107, 24066),

Gene: Norvs_57 Start: 35401, Stop: 37233, Start Num: 7
Candidate Starts for Norvs_57:
(Start: 7 @35401 has 17 MA's), (10, 35506), (11, 35515), (15, 35569), (21, 35659), (25, 35698), (26, 35716), (31, 35800), (35, 35869), (50, 36139), (60, 36301), (65, 36385), (66, 36391), (76, 36511), (83, 36787), (85, 36844), (86, 36850), (93, 36967), (96, 36994), (99, 37078), (102, 37147),

Gene: OneUp_50 Start: 32790, Stop: 34595, Start Num: 7
Candidate Starts for OneUp_50:
(Start: 7 @32790 has 17 MA's), (16, 32961), (21, 33048), (26, 33105), (27, 33108), (31, 33189), (43, 33378), (44, 33381), (50, 33531), (52, 33567), (53, 33579), (56, 33666), (58, 33678), (62, 33708), (63, 33723), (64, 33759), (65, 33771), (67, 33780), (70, 33807), (71, 33810), (72, 33813), (74, 33876), (75, 33894), (83, 34167), (84, 34182), (87, 34236), (93, 34341), (94, 34350), (95, 34359),

Gene: Oofda_33 Start: 21717, Stop: 23429, Start Num: 4
Candidate Starts for Oofda_33:
(Start: 4 @21717 has 22 MA's), (8, 21810), (18, 21960), (20, 21999), (23, 22029), (31, 22155), (32, 22158), (40, 22296), (45, 22353), (48, 22398), (51, 22404), (55, 22470), (56, 22524), (65, 22638), (68, 22656), (70, 22674), (74, 22731), (80, 22908), (86, 23067), (88, 23103), (97, 23220), (98, 23271), (101, 23331), (102, 23367), (106, 23415),

Gene: PhinkBoden_56 Start: 35782, Stop: 37614, Start Num: 7
Candidate Starts for PhinkBoden_56:
(Start: 7 @35782 has 17 MA's), (10, 35887), (11, 35896), (15, 35950), (21, 36040), (25, 36079), (26, 36097), (31, 36181), (35, 36250), (50, 36520), (60, 36682), (65, 36766), (66, 36772), (76, 36892), (83, 37168), (85, 37225), (86, 37231), (93, 37348), (96, 37375), (99, 37459), (102, 37528),

Gene: Ravana_34 Start: 21707, Stop: 23419, Start Num: 4
Candidate Starts for Ravana_34:
(Start: 4 @21707 has 22 MA's), (8, 21800), (16, 21917), (18, 21950), (20, 21989), (23, 22019), (31, 22145), (32, 22148), (40, 22286), (45, 22343), (48, 22388), (51, 22394), (55, 22460), (56, 22514), (65, 22628), (68, 22646), (70, 22664), (74, 22721), (80, 22898), (86, 23057), (88, 23093), (97, 23210), (98, 23261), (101, 23321), (102, 23357), (106, 23405),

Gene: ReMo_33 Start: 21743, Stop: 23455, Start Num: 4
Candidate Starts for ReMo_33:
(Start: 4 @21743 has 22 MA's), (8, 21836), (18, 21986), (20, 22025), (23, 22055), (31, 22181), (32, 22184), (40, 22322), (45, 22379), (48, 22424), (51, 22430), (55, 22496), (56, 22550), (68, 22682), (70, 22700), (74, 22757), (80, 22934), (86, 23093), (88, 23129), (97, 23246), (98, 23297), (101, 23357), (102, 23393), (106, 23441),

Gene: Remus_33 Start: 21707, Stop: 23419, Start Num: 4
Candidate Starts for Remus_33:
(Start: 4 @21707 has 22 MA's), (8, 21800), (18, 21950), (20, 21989), (23, 22019), (31, 22145), (32, 22148), (40, 22286), (45, 22343), (48, 22388), (51, 22394), (55, 22460), (56, 22514), (65, 22628), (68, 22646), (70, 22664), (74, 22721), (80, 22898), (86, 23057), (88, 23093), (97, 23210), (98, 23261), (101, 23321), (102, 23357), (106, 23405),

Gene: Rosalind_33 Start: 21865, Stop: 23577, Start Num: 4
Candidate Starts for Rosalind_33:
(Start: 4 @21865 has 22 MA's), (8, 21958), (18, 22108), (20, 22147), (23, 22177), (31, 22303), (32, 22306), (40, 22444), (45, 22501), (48, 22546), (51, 22552), (55, 22618), (56, 22672), (65, 22786), (68, 22804), (70, 22822), (74, 22879), (80, 23056), (86, 23215), (88, 23251), (97, 23368), (98, 23419), (101, 23479), (102, 23515), (106, 23563),

Gene: ShayRa_34 Start: 21865, Stop: 23577, Start Num: 4
Candidate Starts for ShayRa_34:
(Start: 4 @21865 has 22 MA's), (8, 21958), (18, 22108), (20, 22147), (23, 22177), (31, 22303), (32, 22306), (40, 22444), (45, 22501), (48, 22546), (51, 22552), (55, 22618), (56, 22672), (65, 22786), (68, 22804), (70, 22822), (74, 22879), (80, 23056), (86, 23215), (88, 23251), (97, 23368), (98, 23419), (101, 23479), (102, 23515), (106, 23563),

Gene: Sienna_25 Start: 21340, Stop: 23304, Start Num: 1
Candidate Starts for Sienna_25:
(Start: 1 @21340 has 7 MA's), (2, 21421), (3, 21430), (6, 21469), (Start: 7 @21472 has 17 MA's), (12, 21604), (15, 21646), (17, 21664), (22, 21742), (29, 21805), (33, 21919), (36, 21955), (38, 21994), (42, 22048), (46, 22099), (49, 22198), (53, 22273), (54, 22285), (56, 22360), (66, 22477), (67, 22480), (78,

22636), (82, 22849), (83, 22867), (85, 22924), (86, 22930), (88, 22966), (89, 22972), (99, 23158), (102, 23227), (104, 23269), (110, 23299),

Gene: Smoothie_58 Start: 35857, Stop: 37689, Start Num: 7
Candidate Starts for Smoothie_58:
(Start: 7 @35857 has 17 MA's), (10, 35962), (11, 35971), (15, 36025), (21, 36115), (25, 36154), (26, 36172), (31, 36256), (35, 36325), (50, 36595), (60, 36757), (65, 36841), (66, 36847), (76, 36967), (83, 37243), (85, 37300), (86, 37306), (93, 37423), (96, 37450), (99, 37534), (102, 37603),

Gene: Soups_33 Start: 21865, Stop: 23577, Start Num: 4
Candidate Starts for Soups_33:
(Start: 4 @21865 has 22 MA's), (8, 21958), (18, 22108), (20, 22147), (23, 22177), (31, 22303), (32, 22306), (40, 22444), (45, 22501), (48, 22546), (51, 22552), (55, 22618), (56, 22672), (65, 22786), (68, 22804), (70, 22822), (74, 22879), (80, 23056), (86, 23215), (88, 23251), (97, 23368), (98, 23419), (101, 23479), (102, 23515), (106, 23563),

Gene: Strosahl_33 Start: 21707, Stop: 23419, Start Num: 4
Candidate Starts for Strosahl_33:
(Start: 4 @21707 has 22 MA's), (8, 21800), (18, 21950), (20, 21989), (23, 22019), (31, 22145), (32, 22148), (40, 22286), (45, 22343), (48, 22388), (51, 22394), (55, 22460), (56, 22514), (65, 22628), (68, 22646), (70, 22664), (74, 22721), (80, 22898), (86, 23057), (88, 23093), (97, 23210), (98, 23261), (101, 23321), (102, 23357), (106, 23405),

Gene: Suzy_25 Start: 22501, Stop: 24465, Start Num: 1
Candidate Starts for Suzy_25:
(Start: 1 @22501 has 7 MA's), (2, 22582), (3, 22591), (Start: 7 @22633 has 17 MA's), (12, 22765), (17, 22825), (19, 22852), (22, 22903), (33, 23080), (36, 23116), (37, 23137), (42, 23209), (44, 23230), (49, 23359), (53, 23434), (56, 23521), (57, 23527), (62, 23566), (63, 23584), (66, 23638), (67, 23641), (83, 24028), (84, 24043), (85, 24085), (86, 24091), (89, 24133), (90, 24136), (99, 24319), (108, 24451), (110, 24460),

Gene: Switzerland_33 Start: 21858, Stop: 23570, Start Num: 4
Candidate Starts for Switzerland_33:
(Start: 4 @21858 has 22 MA's), (8, 21951), (18, 22101), (20, 22140), (23, 22170), (31, 22296), (32, 22299), (40, 22437), (45, 22494), (48, 22539), (51, 22545), (55, 22611), (56, 22665), (65, 22779), (68, 22797), (70, 22815), (74, 22872), (80, 23049), (86, 23208), (88, 23244), (97, 23361), (98, 23412), (101, 23472), (102, 23508), (106, 23556),

Gene: Terapin_25 Start: 21340, Stop: 23304, Start Num: 1
Candidate Starts for Terapin_25:
(Start: 1 @21340 has 7 MA's), (2, 21421), (3, 21430), (6, 21469), (Start: 7 @21472 has 17 MA's), (12, 21604), (15, 21646), (17, 21664), (22, 21742), (29, 21805), (33, 21919), (36, 21955), (38, 21994), (42, 22048), (46, 22099), (49, 22198), (53, 22273), (54, 22285), (56, 22360), (66, 22477), (67, 22480), (69, 22492), (82, 22849), (83, 22867), (85, 22924), (86, 22930), (88, 22966), (89, 22972), (99, 23158), (102, 23227),

Gene: Toniann_56 Start: 35344, Stop: 37176, Start Num: 7
Candidate Starts for Toniann_56:
(Start: 7 @35344 has 17 MA's), (10, 35449), (11, 35458), (15, 35512), (21, 35602), (25, 35641), (26, 35659), (31, 35743), (35, 35812), (50, 36082), (60, 36244), (65, 36328), (66, 36334), (76, 36454), (83, 36730), (85, 36787), (86, 36793), (93, 36910), (96, 36937), (99, 37021), (102, 37090),

Gene: Waits_33 Start: 21713, Stop: 23425, Start Num: 4

Candidate Starts for Waits_33:
(Start: 4 @21713 has 22 MA's), (8, 21806), (16, 21923), (18, 21956), (20, 21995), (23, 22025), (31, 22151), (32, 22154), (40, 22292), (45, 22349), (48, 22394), (51, 22400), (55, 22466), (56, 22520), (65, 22634), (68, 22652), (70, 22670), (74, 22727), (80, 22904), (86, 23063), (88, 23099), (97, 23216), (98, 23267), (101, 23327), (102, 23363), (106, 23411),

Gene: Warrior24_33 Start: 21717, Stop: 23429, Start Num: 4
Candidate Starts for Warrior24_33:
(Start: 4 @21717 has 22 MA's), (8, 21810), (18, 21960), (20, 21999), (23, 22029), (31, 22155), (32, 22158), (40, 22296), (45, 22353), (48, 22398), (51, 22404), (55, 22470), (56, 22524), (65, 22638), (68, 22656), (70, 22674), (74, 22731), (80, 22908), (86, 23067), (88, 23103), (97, 23220), (98, 23271), (101, 23331), (102, 23367), (106, 23415),

Gene: WilliamBoone_56 Start: 34690, Stop: 36522, Start Num: 7
Candidate Starts for WilliamBoone_56:
(Start: 7 @34690 has 17 MA's), (9, 34774), (10, 34795), (14, 34849), (21, 34948), (24, 34984), (25, 34987), (26, 35005), (27, 35008), (31, 35089), (39, 35224), (50, 35428), (55, 35509), (60, 35590), (65, 35674), (73, 35728), (76, 35800), (81, 36049), (83, 36076), (85, 36133), (86, 36139), (95, 36274), (99, 36367), (102, 36436),