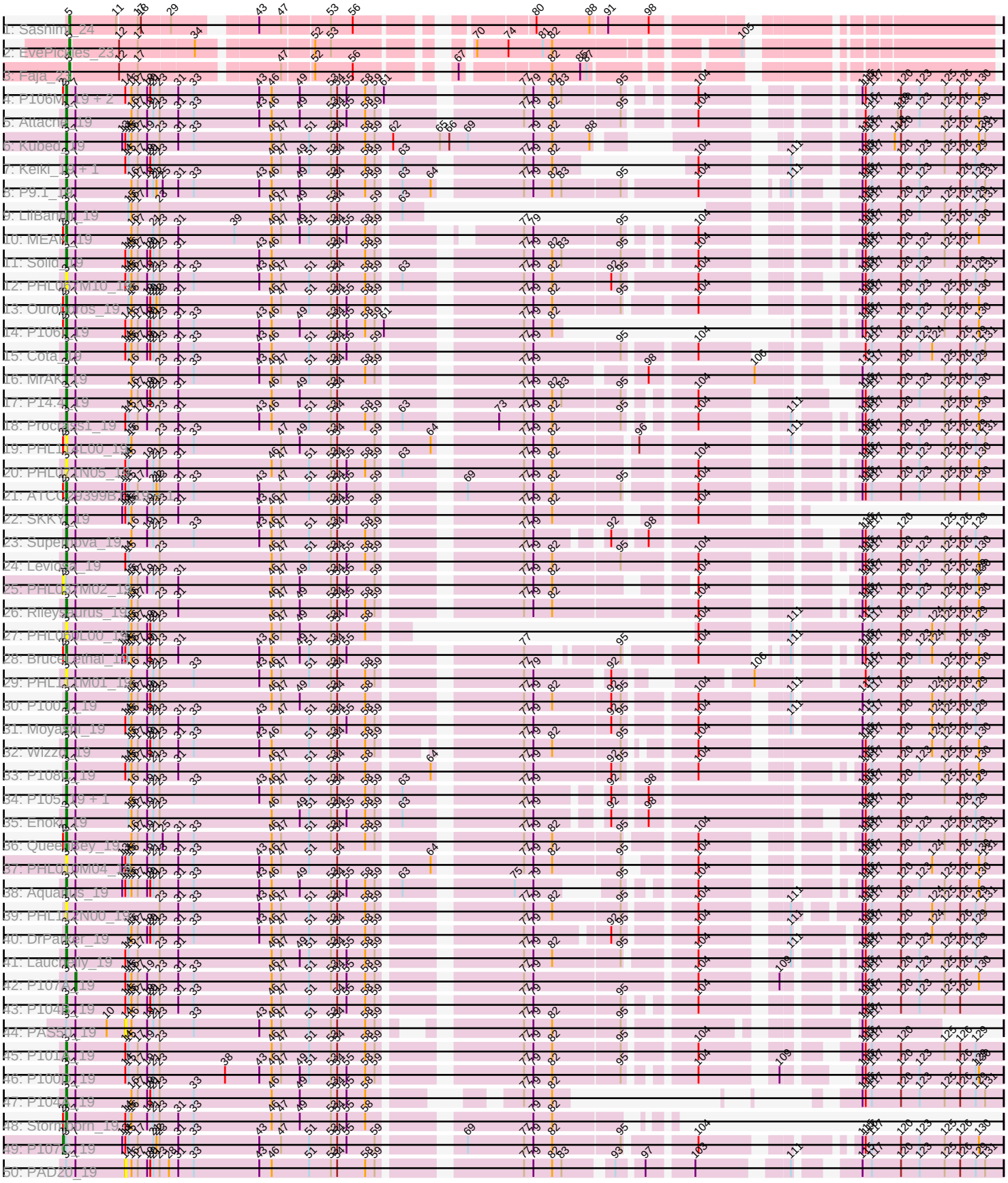
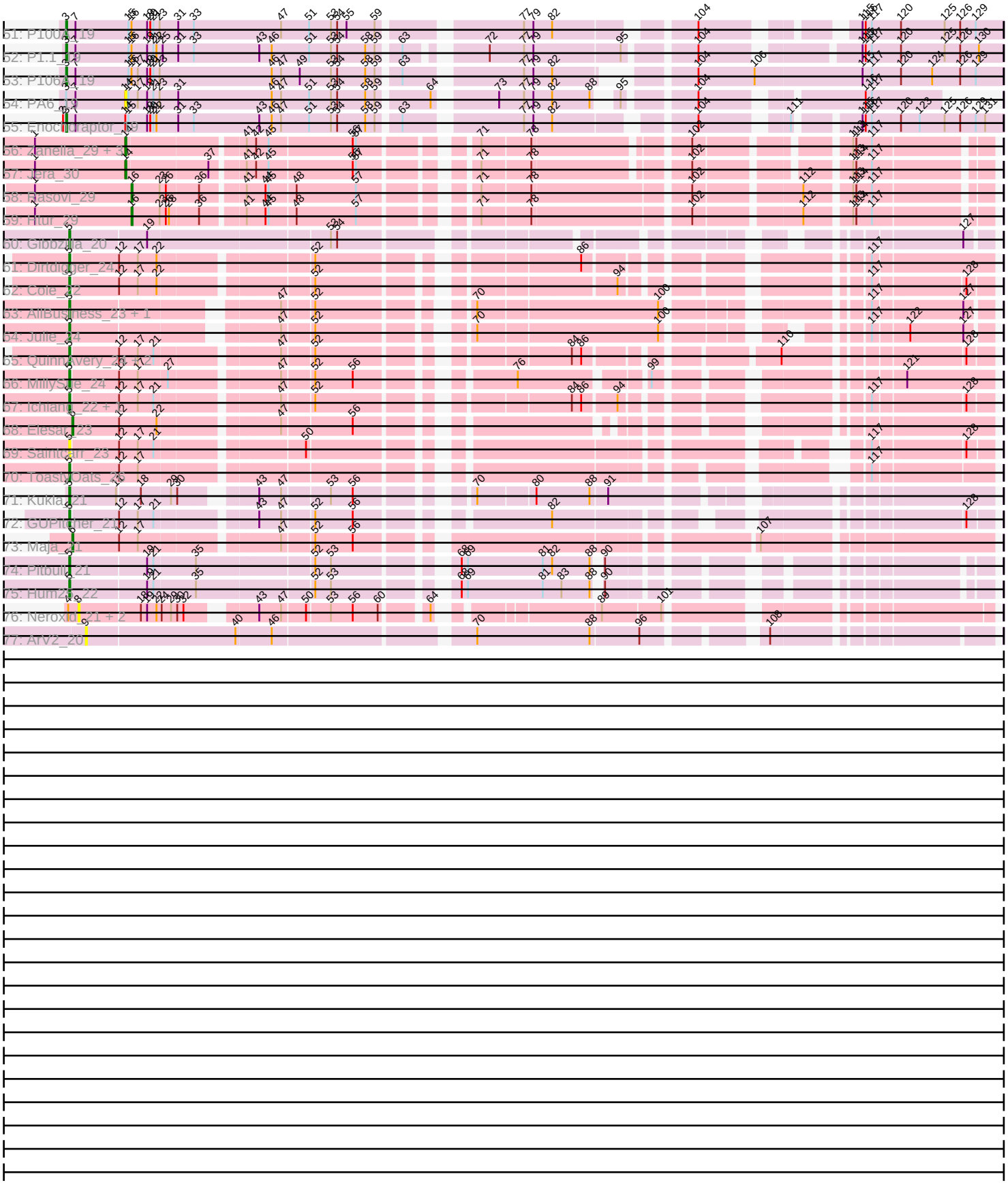
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51: P100A_19
52: P1.1_19
53: P106A_19
54: PA6_19
55: Enochtraptor_19
56: Zanella_29 + 3
57: Jera_30
58: Basovi_29
59: Htur_29
60: Gibbzilla_20
61: Dirtdigger_24
62: Cole_22
63: AllBusiness_23 + 1
64: Julie_24
65: QuinnAvery_24 + 2
66: MillySue_24
67: Ichiant_22 + 1
68: Elesa_23
69: Saintcam_23
70: ToastyOats_23
71: Kukla_21
72: GUPfisher_21
73: Maja_21
74: Pitbull_21
75: Hum23_22
76: Neroxia_21 + 2
77: Arv2_20

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 347483 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347483 has 91 members, 17 are drafts.

Phages represented in each track:
- Track 1 : Sashimi_24
- Track 2 : EvePickles_23
- Track 3 : Faja_23
- Track 4 : P106M_19, P106C_19, P106L_19
- Track 5 : Attacne_19
- Track 6 : Kubed_19
- Track 7 : Keiki_19, Pirate_19
- Track 8 : P9.1_19
- Track 9 : LilBandit_19
- Track 10 : MEAK_19
- Track 11 : Solid_19
- Track 12 : PHL067M10_19
- Track 13 : Ouroboros_19
- Track 14 : P106I_19
- Track 15 : Cota_19
- Track 16 : MrAK_19
- Track 17 : P14.4_19
- Track 18 : Procrass1_19
- Track 19 : PHL114L00_19
- Track 20 : PHL071N05_19
- Track 21 : ATCC29399BT_19, ATCC29399BC_19
- Track 22 : SKKY_19
- Track 23 : Supernova_19
- Track 24 : Leviosa_19
- Track 25 : PHL037M02_19
- Track 26 : Rileysaurus_19
- Track 27 : PHL060L00_19
- Track 28 : BruceLethal_19
- Track 29 : PHL111M01_19
- Track 30 : P100.1_19
- Track 31 : Moyashi_19
- Track 32 : Wizzo_19
- Track 33 : P108C_19
- Track 34 : P105_19, PHL113M01_19
- Track 35 : Enoki_19
- Track 36 : QueenBey_19
- Track 37 : PHL010M04_19

• Track 38 : Aquarius_19
• Track 39 : PHL112N00_19
• Track 40 : DrParker_19
• Track 41 : Lauchelly_19
• Track 42 : P107A_19
• Track 43 : P104B_19
• Track 44 : PAS50_19
• Track 45 : P101A_19
• Track 46 : P100D_19
• Track 47 : P104A_19
• Track 48 : Stormborn_19
• Track 49 : P107C_19
• Track 50 : PAD20_19
• Track 51 : P100A_19
• Track 52 : P1.1_19
• Track 53 : P106A_19
• Track 54 : PA6_19
• Track 55 : Enochoraptor_19
• Track 56 : Zanella_29, Alove_29, AyoTeo_31, Rootkit7_29
• Track 57 : Jera_30
• Track 58 : Rasovi_29
• Track 59 : Htur_29
• Track 60 : Gibbzilla_20
• Track 61 : Dirtdigger_24
• Track 62 : Cole_22
• Track 63 : AllBusiness_23, Toodles_24
• Track 64 : Julie_24
• Track 65 : QuinnAvery_24, BigSherm_24, Halloweekend_22
• Track 66 : MillySue_24
• Track 67 : Ichiang_22, Donatella_23
• Track 68 : Elesar_23
• Track 69 : Saintcarr_23
• Track 70 : ToastyOats_26
• Track 71 : Kukla_21
• Track 72 : GUPitcher_21
• Track 73 : Maja_21
• Track 74 : Pitbull_21
• Track 75 : Hum25_22
• Track 76 : Neroxid_21, Raya_21, Skyerus_21
• Track 77 : ArV2_20

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

The start number called the most often in the published annotations is 3, it was called in 43 of the 74 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• ATCC29399BC_19, ATCC29399BT_19, Aquarius_19, Attacne_19, BruceLethal_19, Cota_19, DrParker_19, Enochoraptor_19, Enoki_19, Keiki_19, Kubed_19, Lauchelly_19, Leviosa_19, LilBandit_19, MEAK_19, Moyashi_19, MrAK_19,

Ouroboros_19, P1.1_19, P100.1_19, P100A_19, P100D_19, P101A_19, P104A_19, P104B_19, P105_19, P106A_19, P106C_19, P106I_19, P106L_19, P106M_19, P108C_19, P14.4_19, P9.1_19, PHL010M04_19, PHL060L00_19, PHL067M10_19, PHL071N05_19, PHL111M01_19, PHL112N00_19, PHL113M01_19, PHL114L00_19, Pirate_19, Procrass1_19, QueenBey_19, Rileysaurus_19, SKKY_19, Solid_19, Stormborn_19, Supernova_19, Wizzo_19,

Genes that have the "Most Annotated" start but do not call it:
• P107A_19, P107C_19, PA6_19, PAD20_19, PAS50_19, PHL037M02_19,

Genes that do not have the "Most Annotated" start:
• AllBusiness_23, Alove_29, ArV2_20, AyoTeo_31, BigSherm_24, Cole_22, Dirtdigger_24, Donatella_23, Elesar_23, EvePickles_23, Faja_23, GUPitcher_21, Gibbzilla_20, Halloweekend_22, Htur_29, Hum25_22, Ichiang_22, Jera_30, Julie_24, Kukla_21, Maja_21, MillySue_24, Neroxid_21, Pitbull_21, QuinnAvery_24, Rasovi_29, Raya_21, Rootkit7_29, Saintcarr_23, Sashimi_24, Skyerus_21, ToastyOats_26, Toodles_24, Zanella_29,

Summary by start number:

Start 2:
• Found in 15 of 91 (16.5%) of genes in pham
• Manual Annotations of this start: 1 of 74
• Called 13.3% of time when present
• Phage (with cluster) where this start called: P107C_19 (BU), PHL037M02_19 (BU),

Start 3:
• Found in 57 of 91 (62.6%) of genes in pham
• Manual Annotations of this start: 43 of 74
• Called 89.5% of time when present
• Phage (with cluster) where this start called: ATCC29399BC_19 (BU), ATCC29399BT_19 (BU), Aquarius_19 (BU), Attacne_19 (BU), BruceLethal_19 (BU), Cota_19 (BU), DrParker_19 (BU), Enochoraptor_19 (BU), Enoki_19 (BU), Keiki_19 (BU), Kubed_19 (BU), Lauchelly_19 (BU), Leviosa_19 (BU), LilBandit_19 (BU), MEAK_19 (BU), Moyashi_19 (BU), MrAK_19 (BU), Ouroboros_19 (BU), P1.1_19 (BU), P100.1_19 (BU), P100A_19 (BU), P100D_19 (BU), P101A_19 (BU), P104A_19 (BU), P104B_19 (BU), P105_19 (BU), P106A_19 (BU), P106C_19 (BU), P106I_19 (BU), P106L_19 (BU), P106M_19 (BU), P108C_19 (BU), P14.4_19 (BU), P9.1_19 (BU), PHL010M04_19 (BU), PHL060L00_19 (BU), PHL067M10_19 (BU), PHL071N05_19 (BU), PHL111M01_19 (BU), PHL112N00_19 (BU), PHL113M01_19 (BU), PHL114L00_19 (BU), Pirate_19 (BU), Procrass1_19 (BU), QueenBey_19 (BU), Rileysaurus_19 (BU), SKKY_19 (BU), Solid_19 (BU), Stormborn_19 (BU), Supernova_19 (BU), Wizzo_19 (BU),

Start 5:
• Found in 21 of 91 (23.1%) of genes in pham
• Manual Annotations of this start: 20 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: AllBusiness_23 (FF), BigSherm_24 (FF), Cole_22 (FF), Dirtdigger_24 (FF), Donatella_23 (FF), EvePickles_23 (AY), Faja_23 (AY), GUPitcher_21 (FJ), Gibbzilla_20 (FB), Halloweekend_22 (FF), Hum25_22 (FQ1), Ichiang_22 (FF), Julie_24 (FF), Kukla_21 (FJ), MillySue_24 (FF), Pitbull_21 (FQ1), QuinnAvery_24 (FF), Saintcarr_23 (FF), Sashimi_24 (AY), ToastyOats_26

(FF), Toodles_24 (FF),

Start 6:
• Found in 2 of 91 (2.2%) of genes in pham
• Manual Annotations of this start: 2 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Elesar_23 (FF), Maja_21 (FO),

Start 7:
• Found in 57 of 91 (62.6%) of genes in pham
• Manual Annotations of this start: 1 of 74
• Called 1.8% of time when present
• Phage (with cluster) where this start called: P107A_19 (BU),

Start 8:
• Found in 3 of 91 (3.3%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Neroxid_21 (FQ2), Raya_21 (FQ2), Skyerus_21 (FQ2),

Start 9:
• Found in 1 of 91 (1.1%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: ArV2_20 (singleton),

Start 14:
• Found in 37 of 91 (40.7%) of genes in pham
• Manual Annotations of this start: 5 of 74
• Called 21.6% of time when present
• Phage (with cluster) where this start called: Alove_29 (EJ), AyoTeo_31 (EJ), Jera_30 (EJ), PA6_19 (BU), PAD20_19 (BU), PAS50_19 (BU), Rootkit7_29 (EJ), Zanella_29 (EJ),

Start 16:
• Found in 45 of 91 (49.5%) of genes in pham
• Manual Annotations of this start: 2 of 74
• Called 4.4% of time when present
• Phage (with cluster) where this start called: Htur_29 (EJ), Rasovi_29 (EJ),

Summary by clusters:

There are 10 clusters represented in this pham: singleton, EJ, BU, FB, AY, FF, FQ2, FJ, FQ1, FO,

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

Info for manual annotations of cluster BU:
•Start number 2 was manually annotated 1 time for cluster BU.
•Start number 3 was manually annotated 43 times for cluster BU.
•Start number 7 was manually annotated 1 time for cluster BU.

Info for manual annotations of cluster EJ:
•Start number 14 was manually annotated 5 times for cluster EJ.
•Start number 16 was manually annotated 2 times for cluster EJ.

Info for manual annotations of cluster FB:
•Start number 5 was manually annotated 1 time for cluster FB.

Info for manual annotations of cluster FF:
•Start number 5 was manually annotated 12 times for cluster FF.
•Start number 6 was manually annotated 1 time for cluster FF.

Info for manual annotations of cluster FJ:
•Start number 5 was manually annotated 2 times for cluster FJ.

Info for manual annotations of cluster FO:
•Start number 6 was manually annotated 1 time for cluster FO.

Info for manual annotations of cluster FQ1:
•Start number 5 was manually annotated 2 times for cluster FQ1.

Gene Information:

Gene: ATCC29399BC_19 Start: 14535, Stop: 15341, Start Num: 3
Candidate Starts for ATCC29399BC_19:
(Start: 2 @14532 has 1 MA's), (Start: 3 @14535 has 43 MA's), (Start: 7 @14544 has 1 MA's), (13, 14589), (Start: 14 @14592 has 5 MA's), (15, 14595), (17, 14604), (21, 14619), (22, 14622), (23, 14625), (31, 14643), (33, 14658), (43, 14721), (47, 14742), (51, 14769), (53, 14790), (54, 14796), (55, 14805), (59, 14832), (69, 14895), (77, 14949), (79, 14958), (82, 14976), (95, 15039), (104, 15096), (115, 15207), (116, 15210), (117, 15216), (120, 15243), (123, 15261), (125, 15285), (126, 15300), (130, 15318),

Gene: ATCC29399BT_19 Start: 14535, Stop: 15341, Start Num: 3
Candidate Starts for ATCC29399BT_19:
(Start: 2 @14532 has 1 MA's), (Start: 3 @14535 has 43 MA's), (Start: 7 @14544 has 1 MA's), (13, 14589), (Start: 14 @14592 has 5 MA's), (15, 14595), (17, 14604), (21, 14619), (22, 14622), (23, 14625), (31, 14643), (33, 14658), (43, 14721), (47, 14742), (51, 14769), (53, 14790), (54, 14796), (55, 14805), (59, 14832), (69, 14895), (77, 14949), (79, 14958), (82, 14976), (95, 15039), (104, 15096), (115, 15207), (116, 15210), (117, 15216), (120, 15243), (123, 15261), (125, 15285), (126, 15300), (130, 15318),

Gene: AllBusiness_23 Start: 18192, Stop: 18935, Start Num: 5
Candidate Starts for AllBusiness_23:
(Start: 5 @18192 has 20 MA's), (47, 18366), (52, 18393), (70, 18510), (100, 18678), (117, 18831), (127, 18912),

Gene: Alove_29 Start: 21809, Stop: 22519, Start Num: 14
Candidate Starts for Alove_29:
(1, 21722), (Start: 14 @21809 has 5 MA's), (41, 21911), (42, 21920), (45, 21932), (56, 22010), (57, 22013), (71, 22100), (78, 22145), (102, 22277), (113, 22400), (114, 22403), (117, 22418),

Gene: Aquarius_19 Start: 14558, Stop: 15319, Start Num: 3
Candidate Starts for Aquarius_19:
(Start: 3 @14558 has 43 MA's), (Start: 7 @14567 has 1 MA's), (13, 14612), (Start: 14 @14615 has 5 MA's), (15, 14618), (Start: 16 @14621 has 2 MA's), (17, 14627), (19, 14636), (20, 14639), (21, 14642), (23, 14648), (31, 14666), (33, 14681), (43, 14744), (46, 14756), (49, 14783), (53, 14813), (54, 14819), (55, 14828), (58, 14846), (59, 14855), (63, 14873), (75, 14963), (79, 14981), (95, 15026), (104, 15074), (115, 15185), (116, 15188), (117, 15194), (120, 15221), (123, 15239), (125, 15263), (126, 15278), (130, 15296),

Gene: ArV2_20 Start: 16169, Stop: 16945, Start Num: 9
Candidate Starts for ArV2_20:
(9, 16169), (40, 16310), (46, 16343), (70, 16517), (88, 16625), (96, 16670), (108, 16763),

Gene: Attacne_19 Start: 14541, Stop: 15347, Start Num: 3
Candidate Starts for Attacne_19:
(Start: 3 @14541 has 43 MA's), (Start: 7 @14550 has 1 MA's), (Start: 16 @14604 has 2 MA's), (17, 14610), (19, 14619), (21, 14625), (23, 14631), (31, 14649), (33, 14664), (43, 14727), (46, 14739), (49, 14766), (53, 14796), (54, 14802), (55, 14811), (58, 14829), (59, 14838), (77, 14955), (79, 14964), (82, 14982), (95, 15045), (104, 15102), (116, 15216), (117, 15222), (119, 15246), (120, 15249), (123, 15267), (125, 15291), (126, 15306), (130, 15324),

Gene: AyoTeo_31 Start: 21942, Stop: 22643, Start Num: 14
Candidate Starts for AyoTeo_31:
(1, 21855), (Start: 14 @21942 has 5 MA's), (41, 22044), (42, 22053), (45, 22065), (56, 22143), (57, 22146), (71, 22233), (78, 22278), (102, 22401), (113, 22524), (114, 22527), (117, 22542),

Gene: BigSherm_24 Start: 18034, Stop: 18771, Start Num: 5
Candidate Starts for BigSherm_24:
(Start: 5 @18034 has 20 MA's), (12, 18079), (17, 18097), (21, 18112), (47, 18217), (52, 18244), (84, 18445), (86, 18454), (110, 18598), (128, 18748),

Gene: BruceLethal_19 Start: 14542, Stop: 15321, Start Num: 3
Candidate Starts for BruceLethal_19:
(Start: 2 @14539 has 1 MA's), (Start: 3 @14542 has 43 MA's), (Start: 7 @14551 has 1 MA's), (13, 14596), (Start: 14 @14599 has 5 MA's), (15, 14602), (Start: 16 @14605 has 2 MA's), (17, 14611), (19, 14620), (20, 14623), (23, 14632), (31, 14650), (43, 14728), (46, 14740), (49, 14767), (51, 14776), (53, 14797), (54, 14803), (55, 14812), (77, 14956), (95, 15028), (104, 15085), (111, 15145), (115, 15187), (116, 15190), (117, 15196), (120, 15223), (123, 15241), (124, 15253), (126, 15280), (130, 15298),

Gene: Cole_22 Start: 17696, Stop: 18433, Start Num: 5
Candidate Starts for Cole_22:
(Start: 5 @17696 has 20 MA's), (12, 17741), (17, 17759), (22, 17777), (52, 17906), (94, 18146), (117, 18329), (128, 18410),

Gene: Cota_19 Start: 14559, Stop: 15365, Start Num: 3
Candidate Starts for Cota_19:
(Start: 3 @14559 has 43 MA's), (Start: 7 @14568 has 1 MA's), (Start: 14 @14616 has 5 MA's), (15, 14619), (Start: 16 @14622 has 2 MA's), (17, 14628), (19, 14637), (20, 14640), (21, 14643), (23, 14649), (31, 14667), (33, 14682), (43, 14745), (46, 14757), (51, 14793), (53, 14814), (54, 14820), (55, 14829), (59, 14856), (77, 14973), (79, 14982), (95, 15063), (104, 15120), (116, 15234), (117, 15240), (120, 15267), (123, 15285), (124, 15297), (126, 15324), (129, 15339), (131, 15348),

Gene: Dirtdigger_24 Start: 18014, Stop: 18757, Start Num: 5
Candidate Starts for Dirtdigger_24:
(Start: 5 @18014 has 20 MA's), (12, 18059), (17, 18077), (22, 18095), (52, 18224), (86, 18434), (117, 18647),

Gene: Donatella_23 Start: 18160, Stop: 18897, Start Num: 5
Candidate Starts for Donatella_23:
(Start: 5 @18160 has 20 MA's), (12, 18205), (17, 18223), (21, 18238), (47, 18343), (52, 18370), (84, 18571), (86, 18580), (94, 18610), (117, 18793), (128, 18874),

Gene: DrParker_19 Start: 14592, Stop: 15398, Start Num: 3
Candidate Starts for DrParker_19:
(Start: 3 @14592 has 43 MA's), (Start: 7 @14601 has 1 MA's), (15, 14652), (Start: 16 @14655 has 2 MA's), (17, 14661), (19, 14670), (20, 14673), (21, 14676), (23, 14682), (31, 14700), (33, 14715), (43, 14778), (46, 14790), (47, 14799), (51, 14826), (53, 14847), (54, 14853), (58, 14880), (59, 14889), (77, 15006), (79, 15015), (92, 15078), (95, 15087), (104, 15144), (111, 15213), (115, 15264), (116, 15267), (117, 15273), (120, 15300), (124, 15330), (126, 15357), (129, 15372),

Gene: Elesar_23 Start: 18090, Stop: 18818, Start Num: 6
Candidate Starts for Elesar_23:
(Start: 6 @18090 has 2 MA's), (12, 18135), (22, 18171), (47, 18273), (56, 18336),

Gene: Enochoraptor_19 Start: 14537, Stop: 15343, Start Num: 3
Candidate Starts for Enochoraptor_19:
(Start: 2 @14534 has 1 MA's), (Start: 3 @14537 has 43 MA's), (Start: 7 @14546 has 1 MA's), (Start: 14 @14594 has 5 MA's), (15, 14597), (19, 14615), (20, 14618), (21, 14621), (22, 14624), (31, 14645), (33, 14660), (43, 14723), (46, 14735), (47, 14744), (51, 14771), (53, 14792), (54, 14798), (58, 14825), (59, 14834), (63, 14852), (77, 14951), (79, 14960), (82, 14978), (104, 15089), (111, 15158), (115, 15209), (116, 15212), (117, 15218), (120, 15245), (123, 15263), (125, 15287), (126, 15302), (129, 15317), (131, 15326),

Gene: Enoki_19 Start: 14535, Stop: 15341, Start Num: 3
Candidate Starts for Enoki_19:
(Start: 3 @14535 has 43 MA's), (Start: 7 @14544 has 1 MA's), (15, 14595), (Start: 16 @14598 has 2 MA's), (17, 14604), (19, 14613), (21, 14619), (23, 14625), (46, 14733), (49, 14760), (51, 14769), (53, 14790), (54, 14796), (55, 14805), (58, 14823), (59, 14832), (63, 14850), (77, 14949), (79, 14958), (92, 15012), (98, 15039), (115, 15207), (116, 15210), (117, 15216), (120, 15243), (126, 15300), (129, 15315),

Gene: EvePickles_23 Start: 17293, Stop: 18039, Start Num: 5
Candidate Starts for EvePickles_23:
(Start: 5 @17293 has 20 MA's), (12, 17338), (17, 17356), (34, 17407), (52, 17503), (53, 17518), (70, 17617), (74, 17647), (81, 17680), (82, 17689), (105, 17842),

Gene: Faja_23 Start: 17189, Stop: 17932, Start Num: 5
Candidate Starts for Faja_23:
(Start: 5 @17189 has 20 MA's), (12, 17234), (17, 17252), (47, 17372), (52, 17399), (56, 17435), (67, 17504), (82, 17579), (85, 17606), (87, 17612),

Gene: GUPitcher_21 Start: 17047, Stop: 17781, Start Num: 5
Candidate Starts for GUPitcher_21:
(Start: 5 @17047 has 20 MA's), (12, 17092), (17, 17110), (21, 17125), (43, 17209), (47, 17230), (52, 17257), (56, 17293), (82, 17443), (128, 17758),

Gene: Gibbzilla_20 Start: 15169, Stop: 15900, Start Num: 5
Candidate Starts for Gibbzilla_20:
(Start: 5 @15169 has 20 MA's), (19, 15241), (53, 15406), (54, 15412), (127, 15877),

Gene: Halloweekend_22 Start: 17660, Stop: 18397, Start Num: 5
Candidate Starts for Halloweekend_22:
(Start: 5 @17660 has 20 MA's), (12, 17705), (17, 17723), (21, 17738), (47, 17843), (52, 17870), (84, 18071), (86, 18080), (110, 18224), (128, 18374),

Gene: Htur_29 Start: 21999, Stop: 22724, Start Num: 16
Candidate Starts for Htur_29:
(1, 21906), (Start: 16 @21999 has 2 MA's), (23, 22026), (26, 22032), (28, 22035), (36, 22062), (41, 22098), (44, 22116), (45, 22119), (48, 22143), (57, 22200), (71, 22287), (78, 22332), (102, 22473), (112, 22566), (113, 22605), (114, 22608), (117, 22623),

Gene: Hum25_22 Start: 16282, Stop: 17019, Start Num: 5
Candidate Starts for Hum25_22:
(Start: 5 @16282 has 20 MA's), (19, 16354), (21, 16360), (35, 16399), (52, 16504), (53, 16519), (68, 16612), (69, 16618), (81, 16690), (83, 16708), (88, 16735), (90, 16738),

Gene: Ichiang_22 Start: 17677, Stop: 18414, Start Num: 5
Candidate Starts for Ichiang_22:
(Start: 5 @17677 has 20 MA's), (12, 17722), (17, 17740), (21, 17755), (47, 17860), (52, 17887), (84, 18088), (86, 18097), (94, 18127), (117, 18310), (128, 18391),

Gene: Jera_30 Start: 21056, Stop: 21766, Start Num: 14
Candidate Starts for Jera_30:
(1, 20969), (Start: 14 @21056 has 5 MA's), (37, 21131), (41, 21158), (42, 21167), (45, 21179), (56, 21257), (57, 21260), (71, 21347), (78, 21392), (102, 21524), (113, 21647), (114, 21650), (117, 21665),

Gene: Julie_24 Start: 18358, Stop: 19083, Start Num: 5
Candidate Starts for Julie_24:
(Start: 5 @18358 has 20 MA's), (47, 18532), (52, 18559), (70, 18676), (100, 18844), (117, 18979), (122, 19009), (127, 19060),

Gene: Keiki_19 Start: 14555, Stop: 15289, Start Num: 3
Candidate Starts for Keiki_19:
(Start: 3 @14555 has 43 MA's), (Start: 7 @14564 has 1 MA's), (Start: 14 @14612 has 5 MA's), (15, 14615), (17, 14624), (19, 14633), (20, 14636), (21, 14639), (23, 14645), (46, 14753), (47, 14762), (49, 14780), (51, 14789), (53, 14810), (54, 14816), (58, 14843), (59, 14852), (63, 14870), (77, 14969), (79, 14978), (82, 14996), (104, 15035), (111, 15104), (115, 15155), (116, 15158), (117, 15164), (120, 15191), (123, 15209), (125, 15233), (126, 15248), (129, 15263),

Gene: Kubed_19 Start: 14536, Stop: 15333, Start Num: 3
Candidate Starts for Kubed_19:
(Start: 3 @14536 has 43 MA's), (Start: 7 @14545 has 1 MA's), (13, 14590), (Start: 14 @14593 has 5 MA's), (15, 14596), (Start: 16 @14599 has 2 MA's), (17, 14605), (19, 14614), (23, 14626), (31, 14644), (33, 14659), (46, 14734), (47, 14743), (51, 14770), (53, 14791), (54, 14797), (58, 14824), (59, 14833), (62, 14851), (65, 14896), (66, 14905), (69, 14923), (79, 14986), (82, 15004), (88, 15040), (115, 15199), (116, 15202), (117, 15208), (118, 15229), (120, 15235), (125, 15277), (126, 15292), (130, 15310), (131, 15316),

Gene: Kukla_21 Start: 16686, Stop: 17423, Start Num: 5
Candidate Starts for Kukla_21:
(Start: 5 @16686 has 20 MA's), (11, 16731), (18, 16752), (29, 16779), (30, 16785), (43, 16839), (47, 16860), (53, 16902), (56, 16923), (70, 17004), (80, 17055), (88, 17106), (91, 17121),

Gene: Lauchelly_19 Start: 14562, Stop: 15368, Start Num: 3
Candidate Starts for Lauchelly_19:
(Start: 3 @14562 has 43 MA's), (Start: 7 @14571 has 1 MA's), (Start: 14 @14619 has 5 MA's), (15, 14622), (17, 14631), (23, 14652), (31, 14670), (46, 14760), (47, 14769), (49, 14787), (51, 14796), (53, 14817), (54, 14823), (55, 14832), (58, 14850), (59, 14859), (77, 14976), (79, 14985), (82, 15003), (95, 15066), (104, 15123), (111, 15192), (115, 15234), (116, 15237), (117, 15243), (120, 15270), (123, 15288), (125, 15312), (126, 15327), (129, 15342),

Gene: Leviosa_19 Start: 14567, Stop: 15382, Start Num: 3
Candidate Starts for Leviosa_19:
(Start: 3 @14567 has 43 MA's), (Start: 7 @14576 has 1 MA's), (Start: 14 @14624 has 5 MA's), (15, 14627), (23, 14657), (46, 14765), (47, 14774), (51, 14801), (53, 14822), (54, 14828), (55, 14837), (58, 14855), (59, 14864), (77, 14981), (79, 14990), (82, 15008), (95, 15071), (104, 15137), (115, 15248), (116, 15251), (117, 15257), (120, 15284), (123, 15302), (125, 15326), (126, 15341), (130, 15359),

Gene: LilBandit_19 Start: 14554, Stop: 15135, Start Num: 3
Candidate Starts for LilBandit_19:
(Start: 3 @14554 has 43 MA's), (Start: 7 @14563 has 1 MA's), (15, 14614), (Start: 16 @14617 has 2 MA's), (17, 14623), (23, 14644), (46, 14752), (47, 14761), (49, 14779), (53, 14809), (54, 14815), (59, 14851), (63, 14869), (115, 15001), (116, 15004), (117, 15010), (120, 15037), (123, 15055), (125, 15079), (126, 15094), (129, 15109), (131, 15118),

Gene: MEAK_19 Start: 14535, Stop: 15323, Start Num: 3
Candidate Starts for MEAK_19:
(Start: 2 @14532 has 1 MA's), (Start: 3 @14535 has 43 MA's), (Start: 7 @14544 has 1 MA's), (Start: 16 @14598 has 2 MA's), (17, 14604), (21, 14619), (23, 14625), (31, 14643), (39, 14697), (46, 14733), (47, 14742), (49, 14760), (51, 14769), (53, 14790), (54, 14796), (55, 14805), (58, 14823), (59, 14832), (77, 14931), (79, 14940), (95, 15021), (104, 15069), (115, 15189), (116, 15192), (117, 15198), (120, 15225), (125, 15267), (126, 15282), (130, 15300),

Gene: Maja_21 Start: 16955, Stop: 17737, Start Num: 6
Candidate Starts for Maja_21:
(Start: 6 @16955 has 2 MA's), (12, 17000), (17, 17018), (47, 17138), (52, 17165), (56, 17201), (107, 17534),

Gene: MillySue_24 Start: 18036, Stop: 18773, Start Num: 5
Candidate Starts for MillySue_24:
(Start: 5 @18036 has 20 MA's), (12, 18081), (17, 18099), (27, 18126), (47, 18219), (52, 18246), (56, 18282), (76, 18399), (99, 18507), (121, 18690),

Gene: Moyashi_19 Start: 14593, Stop: 15417, Start Num: 3
Candidate Starts for Moyashi_19:
(Start: 3 @14593 has 43 MA's), (Start: 7 @14602 has 1 MA's), (Start: 14 @14650 has 5 MA's), (15, 14653), (Start: 16 @14656 has 2 MA's), (19, 14671), (21, 14677), (23, 14683), (31, 14701), (33, 14716), (43, 14779), (47, 14800), (51, 14827), (53, 14848), (54, 14854), (55, 14863), (58, 14881), (59, 14890), (77, 15007), (79, 15016), (92, 15088), (95, 15097), (104, 15154), (111, 15223), (115, 15283), (117, 15292), (120, 15319), (124, 15349), (125, 15361), (126, 15376), (129, 15391),

Gene: MrAK_19 Start: 14604, Stop: 15419, Start Num: 3
Candidate Starts for MrAK_19:
(Start: 3 @14604 has 43 MA's), (Start: 7 @14613 has 1 MA's), (Start: 16 @14667 has 2 MA's), (23, 14694), (31, 14712), (33, 14727), (43, 14790), (46, 14802), (47, 14811), (51, 14838), (53, 14859), (54, 14865), (58, 14892), (59, 14901), (77, 15018), (79, 15027), (98, 15117), (106, 15210), (115, 15285), (117, 15294), (120, 15321), (125, 15363), (126, 15378), (129, 15393),

Gene: Neroxid_21 Start: 15690, Stop: 16421, Start Num: 8
Candidate Starts for Neroxid_21:
(4, 15681), (8, 15690), (18, 15747), (19, 15753), (22, 15762), (24, 15765), (29, 15774), (30, 15780), (32, 15786), (43, 15834), (47, 15855), (50, 15876), (53, 15897), (56, 15918), (60, 15942), (64, 15978), (89, 16104), (101, 16158),

Gene: Ouroboros_19 Start: 14536, Stop: 15342, Start Num: 3
Candidate Starts for Ouroboros_19:
(Start: 2 @14533 has 1 MA's), (Start: 3 @14536 has 43 MA's), (Start: 7 @14545 has 1 MA's), (15, 14596), (Start: 16 @14599 has 2 MA's), (19, 14614), (20, 14617), (21, 14620), (22, 14623), (23, 14626), (31, 14644), (46, 14734), (47, 14743), (51, 14770), (53, 14791), (54, 14797), (55, 14806), (58, 14824), (59, 14833), (77, 14950), (79, 14959), (82, 14977), (95, 15040), (104, 15097), (115, 15208), (116, 15211), (117, 15217), (120, 15244), (123, 15262), (125, 15286), (126, 15301), (130, 15319),

Gene: P1.1_19 Start: 14561, Stop: 15376, Start Num: 3
Candidate Starts for P1.1_19:
(Start: 3 @14561 has 43 MA's), (Start: 7 @14570 has 1 MA's), (15, 14621), (Start: 16 @14624 has 2 MA's), (19, 14639), (21, 14645), (22, 14648), (25, 14654), (31, 14669), (33, 14684), (43, 14747), (46, 14759), (51, 14795), (53, 14816), (54, 14822), (58, 14849), (59, 14858), (63, 14876), (72, 14933), (77, 14966), (79, 14975), (95, 15056), (104, 15113), (115, 15242), (116, 15245), (117, 15251), (120, 15278), (125, 15320), (126, 15335), (130, 15353),

Gene: P100.1_19 Start: 14565, Stop: 15389, Start Num: 3
Candidate Starts for P100.1_19:
(Start: 3 @14565 has 43 MA's), (Start: 7 @14574 has 1 MA's), (15, 14625), (Start: 16 @14628 has 2 MA's), (17, 14634), (19, 14643), (20, 14646), (21, 14649), (23, 14655), (46, 14763), (47, 14772), (49, 14790), (53, 14820), (54, 14826), (58, 14853), (77, 14979), (79, 14988), (82, 15006), (92, 15060), (95, 15069), (104, 15126), (111, 15195), (115, 15255), (117, 15264), (120, 15291), (124, 15321), (125, 15333), (126, 15348), (129, 15363),

Gene: P100A_19 Start: 14565, Stop: 15362, Start Num: 3
Candidate Starts for P100A_19:
(Start: 3 @14565 has 43 MA's), (Start: 7 @14574 has 1 MA's), (15, 14625), (Start: 16 @14628 has 2 MA's), (19, 14643), (20, 14646), (21, 14649), (23, 14655), (31, 14673), (33, 14688), (47, 14772), (51, 14799), (53, 14820), (54, 14826), (55, 14835), (59, 14862), (77, 14979), (79, 14988), (82, 15006), (104, 15117), (115, 15228), (116, 15231), (117, 15237), (120, 15264), (125, 15306), (126, 15321), (129, 15336),

Gene: P100D_19 Start: 14551, Stop: 15339, Start Num: 3
Candidate Starts for P100D_19:
(Start: 3 @14551 has 43 MA's), (Start: 7 @14560 has 1 MA's), (Start: 14 @14608 has 5 MA's), (15, 14611), (17, 14620), (19, 14629), (21, 14635), (23, 14641), (38, 14704), (43, 14737), (46, 14749), (47, 14758), (49, 14776), (51, 14785), (53, 14806), (54, 14812), (55, 14821), (58, 14839), (59, 14848), (77, 14965), (79, 14974), (82, 14992), (95, 15055), (104, 15103), (109, 15163), (115, 15205), (116, 15208), (117, 15214), (120, 15241), (123, 15259), (126, 15298), (129, 15313), (130, 15316),

Gene: P101A_19 Start: 14557, Stop: 15363, Start Num: 3
Candidate Starts for P101A_19:
(Start: 3 @14557 has 43 MA's), (Start: 7 @14566 has 1 MA's), (Start: 14 @14614 has 5 MA's), (15, 14617), (17, 14626), (19, 14635), (23, 14647), (46, 14755), (47, 14764), (51, 14791), (53, 14812), (54, 14818), (58, 14845), (59, 14854), (77, 14971), (79, 14980), (82, 14998), (95, 15061), (104, 15118), (115, 15229), (116, 15232), (117, 15238), (120, 15265), (125, 15307), (126, 15322), (129, 15337),

Gene: P104A_19 Start: 14538, Stop: 15128, Start Num: 3
Candidate Starts for P104A_19:
(Start: 3 @14538 has 43 MA's), (Start: 7 @14547 has 1 MA's), (Start: 16 @14601 has 2 MA's), (17, 14607), (19, 14616), (20, 14619), (21, 14622), (23, 14628), (33, 14661), (46, 14736), (49, 14763), (53, 14793), (54, 14799), (55, 14808), (58, 14826), (77, 14916), (79, 14925), (82, 14943), (115, 14994), (116, 14997), (117, 15003), (120, 15030), (123, 15048), (125, 15072), (126, 15087), (129, 15102), (131, 15111),

Gene: P104B_19 Start: 14554, Stop: 15360, Start Num: 3
Candidate Starts for P104B_19:
(Start: 3 @14554 has 43 MA's), (Start: 7 @14563 has 1 MA's), (Start: 14 @14611 has 5 MA's), (15, 14614), (Start: 16 @14617 has 2 MA's), (17, 14623), (19, 14632), (20, 14635), (21, 14638), (23, 14644), (31, 14662), (33, 14677), (46, 14752), (47, 14761), (51, 14788), (54, 14815), (55, 14824), (58, 14842), (59, 14851), (77, 14968), (79, 14977), (95, 15058), (104, 15106), (115, 15226), (116, 15229), (117, 15235), (120, 15262), (123, 15280), (125, 15304), (126, 15319),

Gene: P105_19 Start: 14475, Stop: 15299, Start Num: 3
Candidate Starts for P105_19:
(Start: 3 @14475 has 43 MA's), (Start: 7 @14484 has 1 MA's), (Start: 16 @14538 has 2 MA's), (19, 14553), (21, 14559), (23, 14565), (33, 14598), (43, 14661), (46, 14673), (47, 14682), (51, 14709), (53, 14730), (54, 14736), (58, 14763), (59, 14772), (63, 14790), (77, 14889), (79, 14898), (92, 14952), (98, 14979), (115, 15165), (116, 15168), (117, 15174), (120, 15201), (125, 15243), (126, 15258), (129, 15273),

Gene: P106A_19 Start: 14582, Stop: 15406, Start Num: 3
Candidate Starts for P106A_19:
(Start: 3 @14582 has 43 MA's), (Start: 7 @14591 has 1 MA's), (15, 14642), (Start: 16 @14645 has 2 MA's), (17, 14651), (19, 14660), (20, 14663), (21, 14666), (23, 14672), (46, 14780), (47, 14789), (49, 14807), (53, 14837), (54, 14843), (58, 14870), (59, 14879), (63, 14897), (77, 14996), (79, 15005), (82, 15023), (104, 15116), (106, 15170), (115, 15272), (117, 15281), (120, 15308), (124, 15338), (126, 15365), (129, 15380),

Gene: P106C_19 Start: 14576, Stop: 15382, Start Num: 3
Candidate Starts for P106C_19:
(Start: 2 @14573 has 1 MA's), (Start: 3 @14576 has 43 MA's), (Start: 7 @14585 has 1 MA's), (Start: 14 @14633 has 5 MA's), (Start: 16 @14639 has 2 MA's), (17, 14645), (19, 14654), (20, 14657), (21, 14660), (23, 14666), (31, 14684), (33, 14699), (43, 14762), (46, 14774), (49, 14801), (53, 14831), (54, 14837), (55, 14846), (58, 14864), (59, 14873), (61, 14882), (77, 14999), (79, 15008), (82, 15026), (83, 15035), (95, 15089), (104, 15137), (115, 15248), (116, 15251), (117, 15257), (120, 15284), (123, 15302), (125, 15326), (126, 15341), (130, 15359),

Gene: P106I_19 Start: 14576, Stop: 15211, Start Num: 3
Candidate Starts for P106I_19:
(Start: 2 @14573 has 1 MA's), (Start: 3 @14576 has 43 MA's), (Start: 7 @14585 has 1 MA's), (Start: 14 @14633 has 5 MA's), (Start: 16 @14639 has 2 MA's), (17, 14645), (19, 14654), (20, 14657), (21, 14660), (23, 14666), (31, 14684), (33, 14699), (43, 14762), (46, 14774), (49, 14801), (53, 14831), (54,

14837), (55, 14846), (58, 14864), (59, 14873), (61, 14882), (77, 14999), (79, 15008), (82, 15026), (115, 15077), (116, 15080), (117, 15086), (120, 15113), (123, 15131), (125, 15155), (126, 15170), (130, 15188),

Gene: P106L_19 Start: 14576, Stop: 15382, Start Num: 3
Candidate Starts for P106L_19:
(Start: 2 @14573 has 1 MA's), (Start: 3 @14576 has 43 MA's), (Start: 7 @14585 has 1 MA's), (Start: 14 @14633 has 5 MA's), (Start: 16 @14639 has 2 MA's), (17, 14645), (19, 14654), (20, 14657), (21, 14660), (23, 14666), (31, 14684), (33, 14699), (43, 14762), (46, 14774), (49, 14801), (53, 14831), (54, 14837), (55, 14846), (58, 14864), (59, 14873), (61, 14882), (77, 14999), (79, 15008), (82, 15026), (83, 15035), (95, 15089), (104, 15137), (115, 15248), (116, 15251), (117, 15257), (120, 15284), (123, 15302), (125, 15326), (126, 15341), (130, 15359),

Gene: P106M_19 Start: 14576, Stop: 15382, Start Num: 3
Candidate Starts for P106M_19:
(Start: 2 @14573 has 1 MA's), (Start: 3 @14576 has 43 MA's), (Start: 7 @14585 has 1 MA's), (Start: 14 @14633 has 5 MA's), (Start: 16 @14639 has 2 MA's), (17, 14645), (19, 14654), (20, 14657), (21, 14660), (23, 14666), (31, 14684), (33, 14699), (43, 14762), (46, 14774), (49, 14801), (53, 14831), (54, 14837), (55, 14846), (58, 14864), (59, 14873), (61, 14882), (77, 14999), (79, 15008), (82, 15026), (83, 15035), (95, 15089), (104, 15137), (115, 15248), (116, 15251), (117, 15257), (120, 15284), (123, 15302), (125, 15326), (126, 15341), (130, 15359),

Gene: P107A_19 Start: 14571, Stop: 15377, Start Num: 7
Candidate Starts for P107A_19:
(Start: 3 @14562 has 43 MA's), (Start: 7 @14571 has 1 MA's), (Start: 14 @14619 has 5 MA's), (15, 14622), (Start: 16 @14625 has 2 MA's), (17, 14631), (19, 14640), (23, 14652), (31, 14670), (33, 14685), (46, 14760), (47, 14769), (51, 14796), (53, 14817), (54, 14823), (55, 14832), (58, 14850), (59, 14859), (77, 14976), (79, 14985), (104, 15132), (109, 15192), (115, 15243), (116, 15246), (117, 15252), (120, 15279), (123, 15297), (125, 15321), (126, 15336), (130, 15354),

Gene: P107C_19 Start: 14532, Stop: 15341, Start Num: 2
Candidate Starts for P107C_19:
(Start: 2 @14532 has 1 MA's), (Start: 3 @14535 has 43 MA's), (Start: 7 @14544 has 1 MA's), (13, 14589), (Start: 14 @14592 has 5 MA's), (15, 14595), (17, 14604), (21, 14619), (22, 14622), (23, 14625), (31, 14643), (33, 14658), (43, 14721), (47, 14742), (51, 14769), (53, 14790), (54, 14796), (55, 14805), (59, 14832), (69, 14895), (77, 14949), (79, 14958), (82, 14976), (95, 15039), (104, 15096), (115, 15207), (116, 15210), (117, 15216), (120, 15243), (123, 15261), (125, 15285), (126, 15300), (130, 15318),

Gene: P108C_19 Start: 14559, Stop: 15365, Start Num: 3
Candidate Starts for P108C_19:
(Start: 3 @14559 has 43 MA's), (Start: 7 @14568 has 1 MA's), (Start: 14 @14616 has 5 MA's), (15, 14619), (Start: 16 @14622 has 2 MA's), (17, 14628), (19, 14637), (21, 14643), (23, 14649), (31, 14667), (46, 14757), (47, 14766), (51, 14793), (53, 14814), (54, 14820), (58, 14847), (64, 14901), (77, 14973), (79, 14982), (92, 15054), (95, 15063), (104, 15120), (115, 15231), (116, 15234), (117, 15240), (120, 15267), (123, 15285), (125, 15309), (126, 15324), (130, 15342),

Gene: P14.4_19 Start: 14550, Stop: 15338, Start Num: 3
Candidate Starts for P14.4_19:
(Start: 3 @14550 has 43 MA's), (Start: 7 @14559 has 1 MA's), (Start: 16 @14613 has 2 MA's), (17, 14619), (19, 14628), (20, 14631), (21, 14634), (23, 14640), (31, 14658), (46, 14748), (49, 14775), (53, 14805), (54, 14811), (77, 14964), (79, 14973), (82, 14991), (83, 15000), (95, 15054), (104, 15102), (115, 15204), (116, 15207), (117, 15213), (120, 15240), (123, 15258), (125, 15282), (126, 15297),

(130, 15315),

Gene: P9.1_19 Start: 14545, Stop: 15351, Start Num: 3
Candidate Starts for P9.1_19:
(Start: 3 @14545 has 43 MA's), (Start: 7 @14554 has 1 MA's), (Start: 16 @14608 has 2 MA's), (17, 14614), (19, 14623), (21, 14629), (22, 14632), (25, 14638), (31, 14653), (33, 14668), (43, 14731), (46, 14743), (49, 14770), (53, 14800), (54, 14806), (58, 14833), (59, 14842), (63, 14860), (64, 14887), (77, 14959), (79, 14968), (82, 14986), (83, 14995), (95, 15049), (104, 15115), (111, 15175), (115, 15217), (116, 15220), (117, 15226), (120, 15253), (123, 15271), (126, 15310), (129, 15325), (131, 15334),

Gene: PA6_19 Start: 14630, Stop: 15319, Start Num: 14
Candidate Starts for PA6_19:
(Start: 3 @14573 has 43 MA's), (Start: 7 @14582 has 1 MA's), (Start: 14 @14630 has 5 MA's), (15, 14633), (17, 14642), (19, 14651), (21, 14657), (23, 14663), (31, 14681), (46, 14771), (47, 14780), (51, 14807), (53, 14828), (54, 14834), (58, 14861), (59, 14870), (64, 14915), (73, 14963), (77, 14987), (79, 14996), (82, 15014), (88, 15050), (95, 15059), (104, 15116), (116, 15248), (117, 15254),

Gene: PAD20_19 Start: 14599, Stop: 15339, Start Num: 14
Candidate Starts for PAD20_19:
(Start: 3 @14542 has 43 MA's), (Start: 7 @14551 has 1 MA's), (Start: 14 @14599 has 5 MA's), (Start: 16 @14605 has 2 MA's), (17, 14611), (19, 14620), (20, 14623), (21, 14626), (23, 14632), (28, 14641), (31, 14650), (33, 14665), (43, 14728), (46, 14740), (51, 14776), (53, 14797), (54, 14803), (58, 14830), (59, 14839), (77, 14956), (79, 14965), (82, 14983), (83, 14992), (93, 15031), (97, 15052), (103, 15091), (111, 15163), (115, 15205), (117, 15214), (120, 15241), (123, 15259), (125, 15283), (126, 15298), (129, 15313), (131, 15322),

Gene: PAS50_19 Start: 14607, Stop: 15269, Start Num: 14
Candidate Starts for PAS50_19:
(Start: 3 @14550 has 43 MA's), (Start: 7 @14559 has 1 MA's), (10, 14589), (Start: 14 @14607 has 5 MA's), (Start: 16 @14613 has 2 MA's), (19, 14628), (21, 14634), (23, 14640), (33, 14673), (43, 14736), (46, 14748), (47, 14757), (51, 14784), (53, 14805), (54, 14811), (58, 14838), (59, 14847), (77, 14937), (79, 14946), (82, 14964), (95, 15027), (115, 15195), (116, 15198), (117, 15204),

Gene: PHL010M04_19 Start: 14541, Stop: 15347, Start Num: 3
Candidate Starts for PHL010M04_19:
(Start: 3 @14541 has 43 MA's), (Start: 7 @14550 has 1 MA's), (13, 14595), (Start: 14 @14598 has 5 MA's), (15, 14601), (Start: 16 @14604 has 2 MA's), (19, 14619), (21, 14625), (23, 14631), (31, 14649), (33, 14664), (43, 14727), (46, 14739), (47, 14748), (51, 14775), (54, 14802), (64, 14883), (77, 14955), (79, 14964), (82, 14982), (95, 15045), (104, 15093), (115, 15213), (116, 15216), (117, 15222), (120, 15249), (124, 15279), (126, 15306), (130, 15324), (131, 15330),

Gene: PHL037M02_19 Start: 14540, Stop: 15331, Start Num: 2
Candidate Starts for PHL037M02_19:
(Start: 2 @14540 has 1 MA's), (Start: 3 @14543 has 43 MA's), (Start: 7 @14552 has 1 MA's), (15, 14603), (Start: 16 @14606 has 2 MA's), (17, 14612), (19, 14621), (21, 14627), (23, 14633), (31, 14651), (46, 14741), (47, 14750), (49, 14768), (53, 14798), (54, 14804), (55, 14813), (59, 14840), (77, 14957), (79, 14966), (82, 14984), (104, 15086), (115, 15197), (116, 15200), (117, 15206), (120, 15233), (123, 15251), (125, 15275), (126, 15290), (129, 15305), (130, 15308),

Gene: PHL060L00_19 Start: 14561, Stop: 15151, Start Num: 3
Candidate Starts for PHL060L00_19:
(Start: 3 @14561 has 43 MA's), (Start: 7 @14570 has 1 MA's), (15, 14621), (Start: 16 @14624 has 2 MA's), (17, 14630), (19, 14639), (20, 14642), (21, 14645), (23, 14651), (46, 14759), (47, 14768), (49,

14786), (53, 14816), (54, 14822), (58, 14849), (104, 14888), (111, 14957), (115, 15017), (117, 15026), (120, 15053), (124, 15083), (125, 15095), (126, 15110), (129, 15125),

Gene: PHL067M10_19 Start: 14524, Stop: 15339, Start Num: 3
Candidate Starts for PHL067M10_19:
(Start: 3 @14524 has 43 MA's), (Start: 7 @14533 has 1 MA's), (Start: 14 @14581 has 5 MA's), (15, 14584), (Start: 16 @14587 has 2 MA's), (17, 14593), (19, 14602), (21, 14608), (23, 14614), (31, 14632), (33, 14647), (43, 14710), (46, 14722), (47, 14731), (51, 14758), (53, 14779), (54, 14785), (58, 14812), (59, 14821), (63, 14839), (77, 14938), (79, 14947), (82, 14965), (92, 15019), (95, 15028), (104, 15094), (115, 15205), (116, 15208), (117, 15214), (120, 15241), (123, 15259), (126, 15298), (129, 15313), (131, 15322),

Gene: PHL071N05_19 Start: 14549, Stop: 15355, Start Num: 3
Candidate Starts for PHL071N05_19:
(Start: 3 @14549 has 43 MA's), (Start: 7 @14558 has 1 MA's), (Start: 14 @14606 has 5 MA's), (15, 14609), (19, 14627), (21, 14633), (23, 14639), (31, 14657), (46, 14747), (47, 14756), (51, 14783), (53, 14804), (54, 14810), (55, 14819), (58, 14837), (59, 14846), (63, 14864), (77, 14963), (79, 14972), (82, 14990), (104, 15110), (115, 15221), (116, 15224), (117, 15230), (120, 15257), (123, 15275), (125, 15299), (126, 15314), (130, 15332),

Gene: PHL111M01_19 Start: 14544, Stop: 15341, Start Num: 3
Candidate Starts for PHL111M01_19:
(Start: 3 @14544 has 43 MA's), (Start: 7 @14553 has 1 MA's), (Start: 16 @14607 has 2 MA's), (19, 14622), (21, 14628), (23, 14634), (33, 14667), (43, 14730), (46, 14742), (47, 14751), (51, 14778), (53, 14799), (54, 14805), (58, 14832), (59, 14841), (77, 14958), (79, 14967), (92, 15030), (106, 15123), (116, 15210), (117, 15216), (120, 15243), (125, 15285), (126, 15300), (130, 15318),

Gene: PHL112N00_19 Start: 14546, Stop: 15361, Start Num: 3
Candidate Starts for PHL112N00_19:
(Start: 3 @14546 has 43 MA's), (Start: 7 @14555 has 1 MA's), (23, 14636), (31, 14654), (33, 14669), (43, 14732), (46, 14744), (47, 14753), (51, 14780), (53, 14801), (54, 14807), (58, 14834), (59, 14843), (77, 14960), (79, 14969), (82, 14987), (95, 15050), (104, 15107), (111, 15176), (115, 15227), (116, 15230), (117, 15236), (120, 15263), (124, 15293), (125, 15305), (126, 15320), (129, 15335), (131, 15344),

Gene: PHL113M01_19 Start: 14579, Stop: 15385, Start Num: 3
Candidate Starts for PHL113M01_19:
(Start: 3 @14579 has 43 MA's), (Start: 7 @14588 has 1 MA's), (Start: 16 @14642 has 2 MA's), (19, 14657), (21, 14663), (23, 14669), (33, 14702), (43, 14765), (46, 14777), (47, 14786), (51, 14813), (53, 14834), (54, 14840), (58, 14867), (59, 14876), (63, 14894), (77, 14993), (79, 15002), (92, 15056), (98, 15083), (115, 15251), (116, 15254), (117, 15260), (120, 15287), (125, 15329), (126, 15344), (129, 15359),

Gene: PHL114L00_19 Start: 14540, Stop: 15355, Start Num: 3
Candidate Starts for PHL114L00_19:
(Start: 2 @14537 has 1 MA's), (Start: 3 @14540 has 43 MA's), (Start: 7 @14549 has 1 MA's), (15, 14600), (Start: 16 @14603 has 2 MA's), (23, 14630), (31, 14648), (33, 14663), (47, 14747), (49, 14765), (53, 14795), (54, 14801), (59, 14837), (64, 14882), (77, 14954), (79, 14963), (82, 14981), (96, 15053), (111, 15170), (115, 15221), (116, 15224), (117, 15230), (120, 15257), (123, 15275), (125, 15299), (126, 15314), (129, 15329), (131, 15338),

Gene: Pirate_19 Start: 14540, Stop: 15274, Start Num: 3
Candidate Starts for Pirate_19:

(Start: 3 @14540 has 43 MA's), (Start: 7 @14549 has 1 MA's), (Start: 14 @14597 has 5 MA's), (15, 14600), (17, 14609), (19, 14618), (20, 14621), (21, 14624), (23, 14630), (46, 14738), (47, 14747), (49, 14765), (51, 14774), (53, 14795), (54, 14801), (58, 14828), (59, 14837), (63, 14855), (77, 14954), (79, 14963), (82, 14981), (104, 15020), (111, 15089), (115, 15140), (116, 15143), (117, 15149), (120, 15176), (123, 15194), (125, 15218), (126, 15233), (129, 15248),

Gene: Pitbull_21 Start: 15912, Stop: 16649, Start Num: 5
Candidate Starts for Pitbull_21:
(Start: 5 @15912 has 20 MA's), (19, 15984), (21, 15990), (35, 16029), (52, 16134), (53, 16149), (68, 16242), (69, 16248), (81, 16320), (82, 16329), (88, 16365), (90, 16368),

Gene: Procrass1_19 Start: 14547, Stop: 15344, Start Num: 3
Candidate Starts for Procrass1_19:
(Start: 3 @14547 has 43 MA's), (Start: 7 @14556 has 1 MA's), (Start: 14 @14604 has 5 MA's), (15, 14607), (17, 14616), (19, 14625), (23, 14637), (31, 14655), (43, 14733), (46, 14745), (51, 14781), (53, 14802), (54, 14808), (58, 14835), (59, 14844), (63, 14862), (73, 14937), (77, 14961), (79, 14970), (82, 14988), (95, 15051), (104, 15099), (111, 15168), (115, 15210), (116, 15213), (117, 15219), (120, 15246), (125, 15288), (126, 15303), (130, 15321),

Gene: QueenBey_19 Start: 14541, Stop: 15347, Start Num: 3
Candidate Starts for QueenBey_19:
(Start: 2 @14538 has 1 MA's), (Start: 3 @14541 has 43 MA's), (Start: 7 @14550 has 1 MA's), (Start: 16 @14604 has 2 MA's), (17, 14610), (19, 14619), (21, 14625), (25, 14634), (31, 14649), (33, 14664), (46, 14739), (47, 14748), (51, 14775), (53, 14796), (54, 14802), (58, 14829), (59, 14838), (77, 14955), (79, 14964), (82, 14982), (95, 15045), (104, 15102), (115, 15213), (116, 15216), (117, 15222), (120, 15249), (123, 15267), (125, 15291), (126, 15306), (129, 15321), (131, 15330),

Gene: QuinnAvery_24 Start: 18034, Stop: 18780, Start Num: 5
Candidate Starts for QuinnAvery_24:
(Start: 5 @18034 has 20 MA's), (12, 18079), (17, 18097), (21, 18112), (47, 18217), (52, 18244), (84, 18445), (86, 18454), (110, 18607), (128, 18757),

Gene: Rasovi_29 Start: 21999, Stop: 22724, Start Num: 16
Candidate Starts for Rasovi_29:
(1, 21906), (Start: 16 @21999 has 2 MA's), (23, 22026), (26, 22032), (36, 22062), (41, 22098), (44, 22116), (45, 22119), (48, 22143), (57, 22200), (71, 22287), (78, 22332), (102, 22473), (112, 22566), (113, 22605), (114, 22608), (117, 22623),

Gene: Raya_21 Start: 15690, Stop: 16421, Start Num: 8
Candidate Starts for Raya_21:
(4, 15681), (8, 15690), (18, 15747), (19, 15753), (22, 15762), (24, 15765), (29, 15774), (30, 15780), (32, 15786), (43, 15834), (47, 15855), (50, 15876), (53, 15897), (56, 15918), (60, 15942), (64, 15978), (89, 16104), (101, 16158),

Gene: Rileysaurus_19 Start: 14544, Stop: 15359, Start Num: 3
Candidate Starts for Rileysaurus_19:
(Start: 3 @14544 has 43 MA's), (Start: 7 @14553 has 1 MA's), (15, 14604), (Start: 16 @14607 has 2 MA's), (17, 14613), (23, 14634), (31, 14652), (46, 14742), (47, 14751), (49, 14769), (53, 14799), (54, 14805), (55, 14814), (58, 14832), (59, 14841), (77, 14958), (79, 14967), (82, 14985), (104, 15114), (115, 15225), (116, 15228), (117, 15234), (120, 15261), (123, 15279), (125, 15303), (126, 15318), (130, 15336),

Gene: Rootkit7_29 Start: 21809, Stop: 22519, Start Num: 14

Candidate Starts for Rootkit7_29:
(1, 21722), (Start: 14 @21809 has 5 MA's), (41, 21911), (42, 21920), (45, 21932), (56, 22010), (57, 22013), (71, 22100), (78, 22145), (102, 22277), (113, 22400), (114, 22403), (117, 22418),

Gene: SKKY_19 Start: 14598, Stop: 15227, Start Num: 3
Candidate Starts for SKKY_19:
(Start: 3 @14598 has 43 MA's), (Start: 7 @14607 has 1 MA's), (13, 14652), (Start: 14 @14655 has 5 MA's), (15, 14658), (Start: 16 @14661 has 2 MA's), (19, 14676), (21, 14682), (23, 14688), (31, 14706), (43, 14784), (46, 14796), (47, 14805), (53, 14853), (54, 14859), (55, 14868), (59, 14895), (77, 15012), (79, 15021), (82, 15039), (104, 15150),

Gene: Saintcarr_23 Start: 18044, Stop: 18778, Start Num: 5
Candidate Starts for Saintcarr_23:
(Start: 5 @18044 has 20 MA's), (12, 18089), (17, 18107), (21, 18122), (50, 18248), (117, 18674), (128, 18755),

Gene: Sashimi_24 Start: 17313, Stop: 18059, Start Num: 5
Candidate Starts for Sashimi_24:
(Start: 5 @17313 has 20 MA's), (11, 17358), (17, 17376), (18, 17379), (29, 17406), (43, 17466), (47, 17487), (53, 17529), (56, 17550), (80, 17682), (88, 17733), (91, 17748), (98, 17787),

Gene: Skyerus_21 Start: 15690, Stop: 16421, Start Num: 8
Candidate Starts for Skyerus_21:
(4, 15681), (8, 15690), (18, 15747), (19, 15753), (22, 15762), (24, 15765), (29, 15774), (30, 15780), (32, 15786), (43, 15834), (47, 15855), (50, 15876), (53, 15897), (56, 15918), (60, 15942), (64, 15978), (89, 16104), (101, 16158),

Gene: Solid_19 Start: 14535, Stop: 15341, Start Num: 3
Candidate Starts for Solid_19:
(Start: 3 @14535 has 43 MA's), (Start: 7 @14544 has 1 MA's), (Start: 14 @14592 has 5 MA's), (15, 14595), (Start: 16 @14598 has 2 MA's), (17, 14604), (19, 14613), (20, 14616), (21, 14619), (23, 14625), (31, 14643), (43, 14721), (46, 14733), (53, 14790), (54, 14796), (58, 14823), (59, 14832), (77, 14949), (79, 14958), (82, 14976), (83, 14985), (95, 15039), (104, 15096), (115, 15207), (116, 15210), (117, 15216), (120, 15243), (123, 15261), (125, 15285), (126, 15300),

Gene: Stormborn_19 Start: 14562, Stop: 15086, Start Num: 3
Candidate Starts for Stormborn_19:
(Start: 2 @14559 has 1 MA's), (Start: 3 @14562 has 43 MA's), (Start: 7 @14571 has 1 MA's), (Start: 14 @14619 has 5 MA's), (15, 14622), (Start: 16 @14625 has 2 MA's), (19, 14640), (21, 14646), (23, 14652), (31, 14670), (33, 14685), (46, 14760), (47, 14769), (49, 14787), (53, 14817), (54, 14823), (55, 14832), (58, 14850), (79, 14985), (82, 15003),

Gene: Supernova_19 Start: 14570, Stop: 15376, Start Num: 3
Candidate Starts for Supernova_19:
(Start: 3 @14570 has 43 MA's), (Start: 7 @14579 has 1 MA's), (Start: 16 @14633 has 2 MA's), (19, 14648), (21, 14654), (23, 14660), (33, 14693), (43, 14756), (46, 14768), (47, 14777), (51, 14804), (53, 14825), (54, 14831), (58, 14858), (59, 14867), (77, 14984), (79, 14993), (92, 15047), (98, 15074), (115, 15242), (116, 15245), (117, 15251), (120, 15278), (125, 15320), (126, 15335), (129, 15350),

Gene: ToastyOats_26 Start: 18499, Stop: 19236, Start Num: 5
Candidate Starts for ToastyOats_26:
(Start: 5 @18499 has 20 MA's), (12, 18544), (17, 18562), (117, 19129),

Gene: Toodles_24 Start: 18331, Stop: 19065, Start Num: 5
Candidate Starts for Toodles_24:
(Start: 5 @18331 has 20 MA's), (47, 18505), (52, 18532), (70, 18649), (100, 18817), (117, 18961), (127, 19042),

Gene: Wizzo_19 Start: 14571, Stop: 15386, Start Num: 3
Candidate Starts for Wizzo_19:
(Start: 3 @14571 has 43 MA's), (Start: 7 @14580 has 1 MA's), (15, 14631), (Start: 16 @14634 has 2 MA's), (17, 14640), (19, 14649), (20, 14652), (21, 14655), (23, 14661), (31, 14679), (33, 14694), (43, 14757), (46, 14769), (51, 14805), (53, 14826), (54, 14832), (58, 14859), (59, 14868), (77, 14976), (79, 14985), (82, 15003), (95, 15066), (104, 15114), (115, 15252), (116, 15255), (117, 15261), (120, 15288), (124, 15318), (125, 15330), (126, 15345), (130, 15363),

Gene: Zanella_29 Start: 21811, Stop: 22521, Start Num: 14
Candidate Starts for Zanella_29:
(1, 21724), (Start: 14 @21811 has 5 MA's), (41, 21913), (42, 21922), (45, 21934), (56, 22012), (57, 22015), (71, 22102), (78, 22147), (102, 22279), (113, 22402), (114, 22405), (117, 22420),