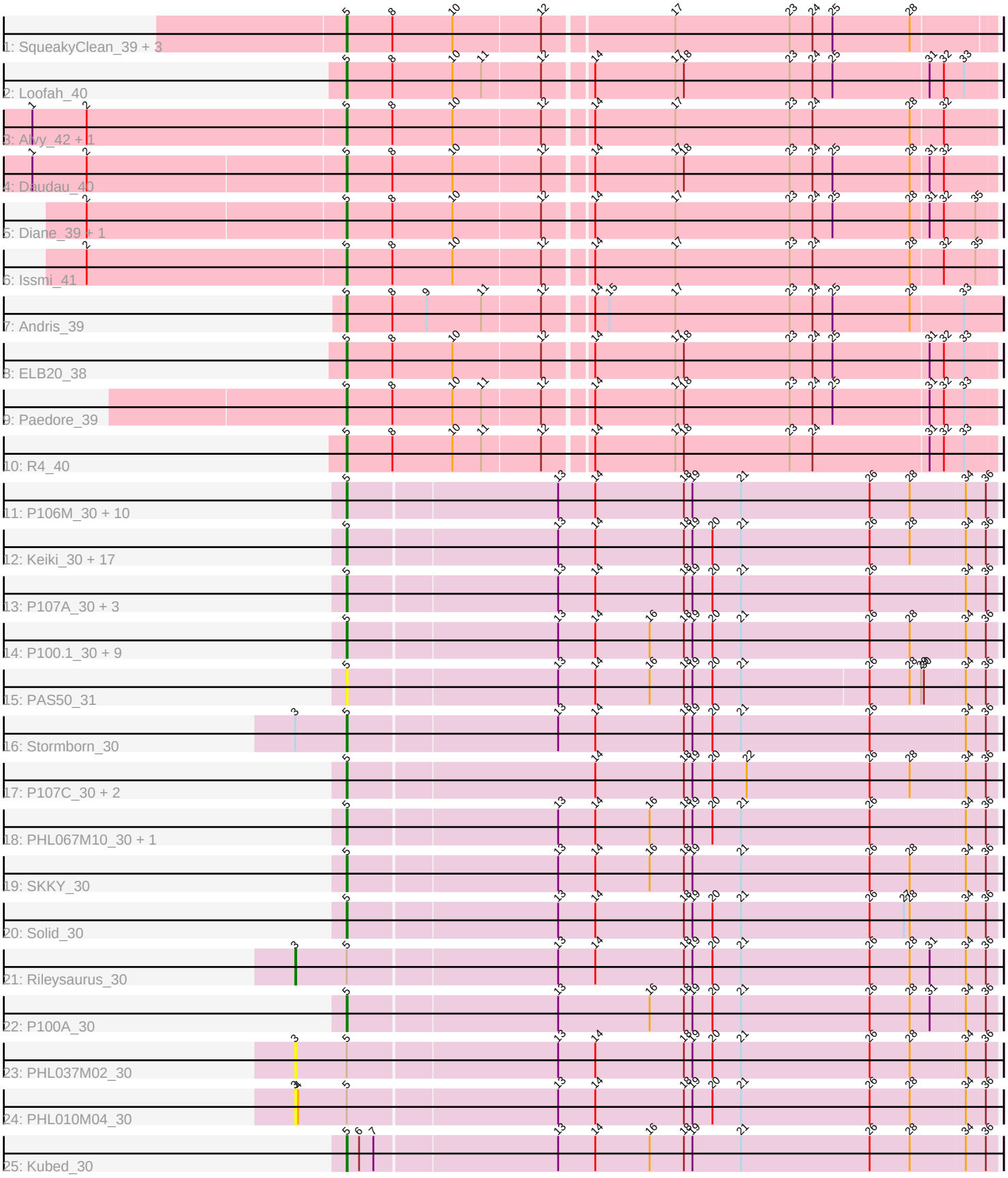
# Pham 296534


1: SqueakyClean_39 + 3
2: Loofah_40
3: Alvy_42 + 1
4: Daudau_40
5: Diane_39 + 1
6: Issmi_41
7: Andris_39
8: ELB20_38
9: Paedore_39
10: R4_40
11: P106M_30 + 10
12: Keiki_30 + 17
13: P107A_30 + 3
14: P100.1_30 + 9
15: PAS50_31
16: Stormborn_30
17: P107C_30 + 2
18: PHL067M10_30 + 1
19: SKKY_30
20: Solid_30
21: Rileysaurus_30
22: P100A_30
23: PHL037M02_30
24: PHL010M04_30
25: Kubed_30

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 296534 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296534 has 72 members, 12 are drafts.

Phages represented in each track:
- Track 1 : SqueakyClean_39, Janus_40, GirlDinner_39, Animus_39
- Track 2 : Loofah_40
- Track 3 : Alvy_42, BartholomewSD_42
- Track 4 : Daudau_40
- Track 5 : Diane_39, Nishikigoi_41
- Track 6 : Issmi_41
- Track 7 : Andris_39
- Track 8 : ELB20_38
- Track 9 : Paedore_39
- Track 10 : R4_40
- Track 11 : P106M_30, P106L_30, Attacne_30, Aquarius_30, P9.1_30, Procrass1_30, P106I_30, P106C_31, PHL060L00_30, DrParker_30, P106A_30
- Track 12 : Keiki_30, Enochoraptor_30, PHL071N05_30, Lauchelly_30, Moyashi_30, Ouroboros_30, P100D_30, MEAK_30, PA6_31, QueenBey_30, Pirate_30, BruceLethal_30, MrAK_30, P14.4_30, Enoki_30, Cota_30, P108C_30, Supernova_30
- Track 13 : P107A_30, P105_30, PHL113M01_30, PHL111M01_30
- Track 14 : P100.1_30, PHL114L00_30, P101A_30, P1.1_30, PAD20_31, LilBandit_30, P104A_30, Leviosa_30, PHL112N00_30, Wizzo_30
- Track 15 : PAS50_31
- Track 16 : Stormborn_30
- Track 17 : P107C_30, ATCC29399BT_30, ATCC29399BC_30
- Track 18 : PHL067M10_30, P104B_30
- Track 19 : SKKY_30
- Track 20 : Solid_30
- Track 21 : Rileysaurus_30
- Track 22 : P100A_30
- Track 23 : PHL037M02_30
- Track 24 : PHL010M04_30
- Track 25 : Kubed_30

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

The start number called the most often in the published annotations is 5, it was called in 59 of the 60 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• ATCC29399BC_30, ATCC29399BT_30, Alvy_42, Andris_39, Animus_39, Aquarius_30, Attacne_30, BartholomewSD_42, BruceLethal_30, Cota_30, Daudau_40, Diane_39, DrParker_30, ELB20_38, Enochoraptor_30, Enoki_30, GirlDinner_39, Issmi_41, Janus_40, Keiki_30, Kubed_30, Lauchelly_30, Leviosa_30, LilBandit_30, Loofah_40, MEAK_30, Moyashi_30, MrAK_30, Nishikigoi_41, Ouroboros_30, P1.1_30, P100.1_30, P100A_30, P100D_30, P101A_30, P104A_30, P104B_30, P105_30, P106A_30, P106C_31, P106I_30, P106L_30, P106M_30, P107A_30, P107C_30, P108C_30, P14.4_30, P9.1_30, PA6_31, PAD20_31, PAS50_31, PHL060L00_30, PHL067M10_30, PHL071N05_30, PHL111M01_30, PHL112N00_30, PHL113M01_30, PHL114L00_30, Paedore_39, Pirate_30, Procrass1_30, QueenBey_30, R4_40, SKKY_30, Solid_30, SqueakyClean_39, Stormborn_30, Supernova_30, Wizzo_30,

Genes that have the "Most Annotated" start but do not call it:
• PHL010M04_30, PHL037M02_30, Rileysaurus_30,

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

**Summary by start number:**

Start 3:
• Found in 4 of 72 ( 5.6% ) of genes in pham
• Manual Annotations of this start: 1 of 60
• Called 75.0% of time when present
• Phage (with cluster) where this start called: PHL010M04_30 (BU), PHL037M02_30 (BU), Rileysaurus_30 (BU),

Start 5:
• Found in 72 of 72 ( 100.0% ) of genes in pham
• Manual Annotations of this start: 59 of 60
• Called 95.8% of time when present
• Phage (with cluster) where this start called: ATCC29399BC_30 (BU), ATCC29399BT_30 (BU), Alvy_42 (BD2), Andris_39 (BD2), Animus_39 (BD2), Aquarius_30 (BU), Attacne_30 (BU), BartholomewSD_42 (BD2), BruceLethal_30 (BU), Cota_30 (BU), Daudau_40 (BD2), Diane_39 (BD2), DrParker_30 (BU), ELB20_38 (BD2), Enochoraptor_30 (BU), Enoki_30 (BU), GirlDinner_39 (BD2), Issmi_41 (BD2), Janus_40 (BD2), Keiki_30 (BU), Kubed_30 (BU), Lauchelly_30 (BU), Leviosa_30 (BU), LilBandit_30 (BU), Loofah_40 (BD2), MEAK_30 (BU), Moyashi_30 (BU), MrAK_30 (BU), Nishikigoi_41 (BD2), Ouroboros_30 (BU), P1.1_30 (BU), P100.1_30 (BU), P100A_30 (BU), P100D_30 (BU), P101A_30 (BU), P104A_30 (BU), P104B_30 (BU), P105_30 (BU), P106A_30 (BU), P106C_31 (BU), P106I_30 (BU), P106L_30 (BU), P106M_30 (BU), P107A_30 (BU), P107C_30 (BU), P108C_30 (BU), P14.4_30 (BU), P9.1_30 (BU), PA6_31 (BU), PAD20_31 (BU), PAS50_31 (BU), PHL060L00_30 (BU), PHL067M10_30 (BU), PHL071N05_30 (BU), PHL111M01_30 (BU), PHL112N00_30 (BU), PHL113M01_30 (BU), PHL114L00_30 (BU), Paedore_39 (BD2), Pirate_30 (BU), Procrass1_30 (BU), QueenBey_30 (BU), R4_40 (BD2), SKKY_30 (BU), Solid_30 (BU), SqueakyClean_39 (BD2), Stormborn_30 (BU), Supernova_30 (BU), Wizzo_30 (BU),

**Summary by clusters:**

There are 2 clusters represented in this pham: BU, BD2,

Info for manual annotations of cluster BD2:
•Start number 5 was manually annotated 15 times for cluster BD2.

Info for manual annotations of cluster BU:
•Start number 3 was manually annotated 1 time for cluster BU.
•Start number 5 was manually annotated 44 times for cluster BU.

***Gene Information:***

Gene: ATCC29399BC_30 Start: 21324, Stop: 20653, Start Num: 5
Candidate Starts for ATCC29399BC_30:
(Start: 5 @21324 has 59 MA's), (14, 21072), (18, 20979), (19, 20970), (20, 20949), (22, 20913), (26, 20784), (28, 20742), (34, 20685), (36, 20664),

Gene: ATCC29399BT_30 Start: 21324, Stop: 20653, Start Num: 5
Candidate Starts for ATCC29399BT_30:
(Start: 5 @21324 has 59 MA's), (14, 21072), (18, 20979), (19, 20970), (20, 20949), (22, 20913), (26, 20784), (28, 20742), (34, 20685), (36, 20664),

Gene: Alvy_42 Start: 29365, Stop: 30027, Start Num: 5
Candidate Starts for Alvy_42:
(1, 29038), (2, 29095), (Start: 5 @29365 has 59 MA's), (8, 29413), (10, 29476), (12, 29566), (14, 29611), (17, 29695), (23, 29815), (24, 29839), (28, 29941), (32, 29974),

Gene: Andris_39 Start: 28789, Stop: 29460, Start Num: 5
Candidate Starts for Andris_39:
(Start: 5 @28789 has 59 MA's), (8, 28837), (9, 28873), (11, 28930), (12, 28990), (14, 29035), (15, 29050), (17, 29119), (23, 29239), (24, 29263), (25, 29284), (28, 29365), (33, 29419),

Gene: Animus_39 Start: 29205, Stop: 29864, Start Num: 5
Candidate Starts for Animus_39:
(Start: 5 @29205 has 59 MA's), (8, 29253), (10, 29316), (12, 29406), (17, 29535), (23, 29655), (24, 29679), (25, 29700), (28, 29781),

Gene: Aquarius_30 Start: 20797, Stop: 20126, Start Num: 5
Candidate Starts for Aquarius_30:
(Start: 5 @20797 has 59 MA's), (13, 20584), (14, 20545), (18, 20452), (19, 20443), (21, 20392), (26, 20257), (28, 20215), (34, 20158), (36, 20137),

Gene: Attacne_30 Start: 20812, Stop: 20141, Start Num: 5
Candidate Starts for Attacne_30:
(Start: 5 @20812 has 59 MA's), (13, 20599), (14, 20560), (18, 20467), (19, 20458), (21, 20407), (26, 20272), (28, 20230), (34, 20173), (36, 20152),

Gene: BartholomewSD_42 Start: 29364, Stop: 30026, Start Num: 5
Candidate Starts for BartholomewSD_42:
(1, 29037), (2, 29094), (Start: 5 @29364 has 59 MA's), (8, 29412), (10, 29475), (12, 29565), (14, 29610), (17, 29694), (23, 29814), (24, 29838), (28, 29940), (32, 29973),

Gene: BruceLethal_30 Start: 21333, Stop: 20662, Start Num: 5
Candidate Starts for BruceLethal_30:
(Start: 5 @21333 has 59 MA's), (13, 21120), (14, 21081), (18, 20988), (19, 20979), (20, 20958), (21, 20928), (26, 20793), (28, 20751), (34, 20694), (36, 20673),

Gene: Cota_30 Start: 21373, Stop: 20702, Start Num: 5
Candidate Starts for Cota_30:
(Start: 5 @21373 has 59 MA's), (13, 21160), (14, 21121), (18, 21028), (19, 21019), (20, 20998), (21, 20968), (26, 20833), (28, 20791), (34, 20734), (36, 20713),

Gene: Daudau_40 Start: 29122, Stop: 29784, Start Num: 5
Candidate Starts for Daudau_40:
(1, 28798), (2, 28855), (Start: 5 @29122 has 59 MA's), (8, 29170), (10, 29233), (12, 29323), (14, 29368), (17, 29452), (18, 29461), (23, 29572), (24, 29596), (25, 29617), (28, 29698), (31, 29716), (32, 29731),

Gene: Diane_39 Start: 28959, Stop: 29621, Start Num: 5
Candidate Starts for Diane_39:
(2, 28692), (Start: 5 @28959 has 59 MA's), (8, 29007), (10, 29070), (12, 29160), (14, 29205), (17, 29289), (23, 29409), (24, 29433), (25, 29454), (28, 29535), (31, 29553), (32, 29568), (35, 29601),

Gene: DrParker_30 Start: 21427, Stop: 20756, Start Num: 5
Candidate Starts for DrParker_30:
(Start: 5 @21427 has 59 MA's), (13, 21214), (14, 21175), (18, 21082), (19, 21073), (21, 21022), (26, 20887), (28, 20845), (34, 20788), (36, 20767),

Gene: ELB20_38 Start: 29365, Stop: 30027, Start Num: 5
Candidate Starts for ELB20_38:
(Start: 5 @29365 has 59 MA's), (8, 29413), (10, 29476), (12, 29566), (14, 29611), (17, 29695), (18, 29704), (23, 29815), (24, 29839), (25, 29860), (31, 29959), (32, 29974), (33, 29995),

Gene: Enochoraptor_30 Start: 21346, Stop: 20675, Start Num: 5
Candidate Starts for Enochoraptor_30:
(Start: 5 @21346 has 59 MA's), (13, 21133), (14, 21094), (18, 21001), (19, 20992), (20, 20971), (21, 20941), (26, 20806), (28, 20764), (34, 20707), (36, 20686),

Gene: Enoki_30 Start: 21357, Stop: 20686, Start Num: 5
Candidate Starts for Enoki_30:
(Start: 5 @21357 has 59 MA's), (13, 21144), (14, 21105), (18, 21012), (19, 21003), (20, 20982), (21, 20952), (26, 20817), (28, 20775), (34, 20718), (36, 20697),

Gene: GirlDinner_39 Start: 28706, Stop: 29365, Start Num: 5
Candidate Starts for GirlDinner_39:
(Start: 5 @28706 has 59 MA's), (8, 28754), (10, 28817), (12, 28907), (17, 29036), (23, 29156), (24, 29180), (25, 29201), (28, 29282),

Gene: Issmi_41 Start: 29674, Stop: 30336, Start Num: 5
Candidate Starts for Issmi_41:
(2, 29404), (Start: 5 @29674 has 59 MA's), (8, 29722), (10, 29785), (12, 29875), (14, 29920), (17, 30004), (23, 30124), (24, 30148), (28, 30250), (32, 30283), (35, 30316),

Gene: Janus_40 Start: 29046, Stop: 29705, Start Num: 5

Candidate Starts for Janus_40:
(Start: 5 @29046 has 59 MA's), (8, 29094), (10, 29157), (12, 29247), (17, 29376), (23, 29496), (24, 29520), (25, 29541), (28, 29622),

Gene: Keiki_30 Start: 21272, Stop: 20601, Start Num: 5
Candidate Starts for Keiki_30:
(Start: 5 @21272 has 59 MA's), (13, 21059), (14, 21020), (18, 20927), (19, 20918), (20, 20897), (21, 20867), (26, 20732), (28, 20690), (34, 20633), (36, 20612),

Gene: Kubed_30 Start: 21328, Stop: 20657, Start Num: 5
Candidate Starts for Kubed_30:
(Start: 5 @21328 has 59 MA's), (6, 21316), (7, 21301), (13, 21115), (14, 21076), (16, 21019), (18, 20983), (19, 20974), (21, 20923), (26, 20788), (28, 20746), (34, 20689), (36, 20668),

Gene: Lauchelly_30 Start: 21377, Stop: 20706, Start Num: 5
Candidate Starts for Lauchelly_30:
(Start: 5 @21377 has 59 MA's), (13, 21164), (14, 21125), (18, 21032), (19, 21023), (20, 21002), (21, 20972), (26, 20837), (28, 20795), (34, 20738), (36, 20717),

Gene: Leviosa_30 Start: 21373, Stop: 20702, Start Num: 5
Candidate Starts for Leviosa_30:
(Start: 5 @21373 has 59 MA's), (13, 21160), (14, 21121), (16, 21064), (18, 21028), (19, 21019), (20, 20998), (21, 20968), (26, 20833), (28, 20791), (34, 20734), (36, 20713),

Gene: LilBandit_30 Start: 21167, Stop: 20496, Start Num: 5
Candidate Starts for LilBandit_30:
(Start: 5 @21167 has 59 MA's), (13, 20954), (14, 20915), (16, 20858), (18, 20822), (19, 20813), (20, 20792), (21, 20762), (26, 20627), (28, 20585), (34, 20528), (36, 20507),

Gene: Loofah_40 Start: 29235, Stop: 29897, Start Num: 5
Candidate Starts for Loofah_40:
(Start: 5 @29235 has 59 MA's), (8, 29283), (10, 29346), (11, 29376), (12, 29436), (14, 29481), (17, 29565), (18, 29574), (23, 29685), (24, 29709), (25, 29730), (31, 29829), (32, 29844), (33, 29865),

Gene: MEAK_30 Start: 21034, Stop: 20363, Start Num: 5
Candidate Starts for MEAK_30:
(Start: 5 @21034 has 59 MA's), (13, 20821), (14, 20782), (18, 20689), (19, 20680), (20, 20659), (21, 20629), (26, 20494), (28, 20452), (34, 20395), (36, 20374),

Gene: Moyashi_30 Start: 21139, Stop: 20468, Start Num: 5
Candidate Starts for Moyashi_30:
(Start: 5 @21139 has 59 MA's), (13, 20926), (14, 20887), (18, 20794), (19, 20785), (20, 20764), (21, 20734), (26, 20599), (28, 20557), (34, 20500), (36, 20479),

Gene: MrAK_30 Start: 21144, Stop: 20473, Start Num: 5
Candidate Starts for MrAK_30:
(Start: 5 @21144 has 59 MA's), (13, 20931), (14, 20892), (18, 20799), (19, 20790), (20, 20769), (21, 20739), (26, 20604), (28, 20562), (34, 20505), (36, 20484),

Gene: Nishikigoi_41 Start: 29074, Stop: 29736, Start Num: 5
Candidate Starts for Nishikigoi_41:
(2, 28807), (Start: 5 @29074 has 59 MA's), (8, 29122), (10, 29185), (12, 29275), (14, 29320), (17, 29404), (23, 29524), (24, 29548), (25, 29569), (28, 29650), (31, 29668), (32, 29683), (35, 29716),

Gene: Ouroboros_30 Start: 21354, Stop: 20683, Start Num: 5
Candidate Starts for Ouroboros_30:
(Start: 5 @21354 has 59 MA's), (13, 21141), (14, 21102), (18, 21009), (19, 21000), (20, 20979), (21, 20949), (26, 20814), (28, 20772), (34, 20715), (36, 20694),

Gene: P1.1_30 Start: 21372, Stop: 20701, Start Num: 5
Candidate Starts for P1.1_30:
(Start: 5 @21372 has 59 MA's), (13, 21159), (14, 21120), (16, 21063), (18, 21027), (19, 21018), (20, 20997), (21, 20967), (26, 20832), (28, 20790), (34, 20733), (36, 20712),

Gene: P100.1_30 Start: 21409, Stop: 20738, Start Num: 5
Candidate Starts for P100.1_30:
(Start: 5 @21409 has 59 MA's), (13, 21196), (14, 21157), (16, 21100), (18, 21064), (19, 21055), (20, 21034), (21, 21004), (26, 20869), (28, 20827), (34, 20770), (36, 20749),

Gene: P100A_30 Start: 21359, Stop: 20688, Start Num: 5
Candidate Starts for P100A_30:
(Start: 5 @21359 has 59 MA's), (13, 21146), (16, 21050), (18, 21014), (19, 21005), (20, 20984), (21, 20954), (26, 20819), (28, 20777), (31, 20756), (34, 20720), (36, 20699),

Gene: P100D_30 Start: 21352, Stop: 20681, Start Num: 5
Candidate Starts for P100D_30:
(Start: 5 @21352 has 59 MA's), (13, 21139), (14, 21100), (18, 21007), (19, 20998), (20, 20977), (21, 20947), (26, 20812), (28, 20770), (34, 20713), (36, 20692),

Gene: P101A_30 Start: 21378, Stop: 20707, Start Num: 5
Candidate Starts for P101A_30:
(Start: 5 @21378 has 59 MA's), (13, 21165), (14, 21126), (16, 21069), (18, 21033), (19, 21024), (20, 21003), (21, 20973), (26, 20838), (28, 20796), (34, 20739), (36, 20718),

Gene: P104A_30 Start: 21147, Stop: 20476, Start Num: 5
Candidate Starts for P104A_30:
(Start: 5 @21147 has 59 MA's), (13, 20934), (14, 20895), (16, 20838), (18, 20802), (19, 20793), (20, 20772), (21, 20742), (26, 20607), (28, 20565), (34, 20508), (36, 20487),

Gene: P104B_30 Start: 21342, Stop: 20671, Start Num: 5
Candidate Starts for P104B_30:
(Start: 5 @21342 has 59 MA's), (13, 21129), (14, 21090), (16, 21033), (18, 20997), (19, 20988), (20, 20967), (21, 20937), (26, 20802), (34, 20703), (36, 20682),

Gene: P105_30 Start: 21007, Stop: 20336, Start Num: 5
Candidate Starts for P105_30:
(Start: 5 @21007 has 59 MA's), (13, 20794), (14, 20755), (18, 20662), (19, 20653), (20, 20632), (21, 20602), (26, 20467), (34, 20368), (36, 20347),

Gene: P106A_30 Start: 21433, Stop: 20762, Start Num: 5
Candidate Starts for P106A_30:
(Start: 5 @21433 has 59 MA's), (13, 21220), (14, 21181), (18, 21088), (19, 21079), (21, 21028), (26, 20893), (28, 20851), (34, 20794), (36, 20773),

Gene: P106C_31 Start: 21371, Stop: 20700, Start Num: 5
Candidate Starts for P106C_31:

(Start: 5 @21371 has 59 MA's), (13, 21158), (14, 21119), (18, 21026), (19, 21017), (21, 20966), (26, 20831), (28, 20789), (34, 20732), (36, 20711),

Gene: P106I_30 Start: 21200, Stop: 20529, Start Num: 5
Candidate Starts for P106I_30:
(Start: 5 @21200 has 59 MA's), (13, 20987), (14, 20948), (18, 20855), (19, 20846), (21, 20795), (26, 20660), (28, 20618), (34, 20561), (36, 20540),

Gene: P106L_30 Start: 21371, Stop: 20700, Start Num: 5
Candidate Starts for P106L_30:
(Start: 5 @21371 has 59 MA's), (13, 21158), (14, 21119), (18, 21026), (19, 21017), (21, 20966), (26, 20831), (28, 20789), (34, 20732), (36, 20711),

Gene: P106M_30 Start: 21371, Stop: 20700, Start Num: 5
Candidate Starts for P106M_30:
(Start: 5 @21371 has 59 MA's), (13, 21158), (14, 21119), (18, 21026), (19, 21017), (21, 20966), (26, 20831), (28, 20789), (34, 20732), (36, 20711),

Gene: P107A_30 Start: 21387, Stop: 20716, Start Num: 5
Candidate Starts for P107A_30:
(Start: 5 @21387 has 59 MA's), (13, 21174), (14, 21135), (18, 21042), (19, 21033), (20, 21012), (21, 20982), (26, 20847), (34, 20748), (36, 20727),

Gene: P107C_30 Start: 21324, Stop: 20653, Start Num: 5
Candidate Starts for P107C_30:
(Start: 5 @21324 has 59 MA's), (14, 21072), (18, 20979), (19, 20970), (20, 20949), (22, 20913), (26, 20784), (28, 20742), (34, 20685), (36, 20664),

Gene: P108C_30 Start: 21338, Stop: 20667, Start Num: 5
Candidate Starts for P108C_30:
(Start: 5 @21338 has 59 MA's), (13, 21125), (14, 21086), (18, 20993), (19, 20984), (20, 20963), (21, 20933), (26, 20798), (28, 20756), (34, 20699), (36, 20678),

Gene: P14.4_30 Start: 21340, Stop: 20669, Start Num: 5
Candidate Starts for P14.4_30:
(Start: 5 @21340 has 59 MA's), (13, 21127), (14, 21088), (18, 20995), (19, 20986), (20, 20965), (21, 20935), (26, 20800), (28, 20758), (34, 20701), (36, 20680),

Gene: P9.1_30 Start: 21368, Stop: 20697, Start Num: 5
Candidate Starts for P9.1_30:
(Start: 5 @21368 has 59 MA's), (13, 21155), (14, 21116), (18, 21023), (19, 21014), (21, 20963), (26, 20828), (28, 20786), (34, 20729), (36, 20708),

Gene: PA6_31 Start: 21332, Stop: 20661, Start Num: 5
Candidate Starts for PA6_31:
(Start: 5 @21332 has 59 MA's), (13, 21119), (14, 21080), (18, 20987), (19, 20978), (20, 20957), (21, 20927), (26, 20792), (28, 20750), (34, 20693), (36, 20672),

Gene: PAD20_31 Start: 21112, Stop: 20441, Start Num: 5
Candidate Starts for PAD20_31:
(Start: 5 @21112 has 59 MA's), (13, 20899), (14, 20860), (16, 20803), (18, 20767), (19, 20758), (20, 20737), (21, 20707), (26, 20572), (28, 20530), (34, 20473), (36, 20452),

Gene: PAS50_31 Start: 21277, Stop: 20609, Start Num: 5
Candidate Starts for PAS50_31:
(Start: 5 @21277 has 59 MA's), (13, 21064), (14, 21025), (16, 20968), (18, 20932), (19, 20923), (20, 20902), (21, 20872), (26, 20740), (28, 20698), (29, 20686), (30, 20683), (34, 20641), (36, 20620),

Gene: PHL010M04_30 Start: 21406, Stop: 20681, Start Num: 3
Candidate Starts for PHL010M04_30:
(Start: 3 @21406 has 1 MA's), (4, 21403), (Start: 5 @21352 has 59 MA's), (13, 21139), (14, 21100), (18, 21007), (19, 20998), (20, 20977), (21, 20947), (26, 20812), (28, 20770), (34, 20713), (36, 20692),

Gene: PHL037M02_30 Start: 21390, Stop: 20665, Start Num: 3
Candidate Starts for PHL037M02_30:
(Start: 3 @21390 has 1 MA's), (Start: 5 @21336 has 59 MA's), (13, 21123), (14, 21084), (18, 20991), (19, 20982), (20, 20961), (21, 20931), (26, 20796), (28, 20754), (34, 20697), (36, 20676),

Gene: PHL060L00_30 Start: 21182, Stop: 20511, Start Num: 5
Candidate Starts for PHL060L00_30:
(Start: 5 @21182 has 59 MA's), (13, 20969), (14, 20930), (18, 20837), (19, 20828), (21, 20777), (26, 20642), (28, 20600), (34, 20543), (36, 20522),

Gene: PHL067M10_30 Start: 21302, Stop: 20631, Start Num: 5
Candidate Starts for PHL067M10_30:
(Start: 5 @21302 has 59 MA's), (13, 21089), (14, 21050), (16, 20993), (18, 20957), (19, 20948), (20, 20927), (21, 20897), (26, 20762), (34, 20663), (36, 20642),

Gene: PHL071N05_30 Start: 21361, Stop: 20690, Start Num: 5
Candidate Starts for PHL071N05_30:
(Start: 5 @21361 has 59 MA's), (13, 21148), (14, 21109), (18, 21016), (19, 21007), (20, 20986), (21, 20956), (26, 20821), (28, 20779), (34, 20722), (36, 20701),

Gene: PHL111M01_30 Start: 21059, Stop: 20388, Start Num: 5
Candidate Starts for PHL111M01_30:
(Start: 5 @21059 has 59 MA's), (13, 20846), (14, 20807), (18, 20714), (19, 20705), (20, 20684), (21, 20654), (26, 20519), (34, 20420), (36, 20399),

Gene: PHL112N00_30 Start: 21369, Stop: 20698, Start Num: 5
Candidate Starts for PHL112N00_30:
(Start: 5 @21369 has 59 MA's), (13, 21156), (14, 21117), (16, 21060), (18, 21024), (19, 21015), (20, 20994), (21, 20964), (26, 20829), (28, 20787), (34, 20730), (36, 20709),

Gene: PHL113M01_30 Start: 21108, Stop: 20437, Start Num: 5
Candidate Starts for PHL113M01_30:
(Start: 5 @21108 has 59 MA's), (13, 20895), (14, 20856), (18, 20763), (19, 20754), (20, 20733), (21, 20703), (26, 20568), (34, 20469), (36, 20448),

Gene: PHL114L00_30 Start: 21324, Stop: 20653, Start Num: 5
Candidate Starts for PHL114L00_30:
(Start: 5 @21324 has 59 MA's), (13, 21111), (14, 21072), (16, 21015), (18, 20979), (19, 20970), (20, 20949), (21, 20919), (26, 20784), (28, 20742), (34, 20685), (36, 20664),

Gene: Paedore_39 Start: 29220, Stop: 29882, Start Num: 5
Candidate Starts for Paedore_39:

(Start: 5 @29220 has 59 MA's), (8, 29268), (10, 29331), (11, 29361), (12, 29421), (14, 29466), (17, 29550), (18, 29559), (23, 29670), (24, 29694), (25, 29715), (31, 29814), (32, 29829), (33, 29850),

Gene: Pirate_30 Start: 21257, Stop: 20586, Start Num: 5
Candidate Starts for Pirate_30:
(Start: 5 @21257 has 59 MA's), (13, 21044), (14, 21005), (18, 20912), (19, 20903), (20, 20882), (21, 20852), (26, 20717), (28, 20675), (34, 20618), (36, 20597),

Gene: Procrass1_30 Start: 21331, Stop: 20660, Start Num: 5
Candidate Starts for Procrass1_30:
(Start: 5 @21331 has 59 MA's), (13, 21118), (14, 21079), (18, 20986), (19, 20977), (21, 20926), (26, 20791), (28, 20749), (34, 20692), (36, 20671),

Gene: QueenBey_30 Start: 21314, Stop: 20643, Start Num: 5
Candidate Starts for QueenBey_30:
(Start: 5 @21314 has 59 MA's), (13, 21101), (14, 21062), (18, 20969), (19, 20960), (20, 20939), (21, 20909), (26, 20774), (28, 20732), (34, 20675), (36, 20654),

Gene: R4_40 Start: 29375, Stop: 30037, Start Num: 5
Candidate Starts for R4_40:
(Start: 5 @29375 has 59 MA's), (8, 29423), (10, 29486), (11, 29516), (12, 29576), (14, 29621), (17, 29705), (18, 29714), (23, 29825), (24, 29849), (31, 29969), (32, 29984), (33, 30005),

Gene: Rileysaurus_30 Start: 21416, Stop: 20691, Start Num: 3
Candidate Starts for Rileysaurus_30:
(Start: 3 @21416 has 1 MA's), (Start: 5 @21362 has 59 MA's), (13, 21149), (14, 21110), (18, 21017), (19, 21008), (20, 20987), (21, 20957), (26, 20822), (28, 20780), (31, 20759), (34, 20723), (36, 20702),

Gene: SKKY_30 Start: 21113, Stop: 20442, Start Num: 5
Candidate Starts for SKKY_30:
(Start: 5 @21113 has 59 MA's), (13, 20900), (14, 20861), (16, 20804), (18, 20768), (19, 20759), (21, 20708), (26, 20573), (28, 20531), (34, 20474), (36, 20453),

Gene: Solid_30 Start: 21344, Stop: 20673, Start Num: 5
Candidate Starts for Solid_30:
(Start: 5 @21344 has 59 MA's), (13, 21131), (14, 21092), (18, 20999), (19, 20990), (20, 20969), (21, 20939), (26, 20804), (27, 20768), (28, 20762), (34, 20705), (36, 20684),

Gene: SqueakyClean_39 Start: 29137, Stop: 29796, Start Num: 5
Candidate Starts for SqueakyClean_39:
(Start: 5 @29137 has 59 MA's), (8, 29185), (10, 29248), (12, 29338), (17, 29467), (23, 29587), (24, 29611), (25, 29632), (28, 29713),

Gene: Stormborn_30 Start: 20951, Stop: 20280, Start Num: 5
Candidate Starts for Stormborn_30:
(Start: 3 @21005 has 1 MA's), (Start: 5 @20951 has 59 MA's), (13, 20738), (14, 20699), (18, 20606), (19, 20597), (20, 20576), (21, 20546), (26, 20411), (34, 20312), (36, 20291),

Gene: Supernova_30 Start: 21115, Stop: 20444, Start Num: 5
Candidate Starts for Supernova_30:
(Start: 5 @21115 has 59 MA's), (13, 20902), (14, 20863), (18, 20770), (19, 20761), (20, 20740), (21, 20710), (26, 20575), (28, 20533), (34, 20476), (36, 20455),

Gene: Wizzo_30 Start: 20840, Stop: 20169, Start Num: 5
Candidate Starts for Wizzo_30:
(Start: 5 @20840 has 59 MA's), (13, 20627), (14, 20588), (16, 20531), (18, 20495), (19, 20486), (20, 20465), (21, 20435), (26, 20300), (28, 20258), (34, 20201), (36, 20180),