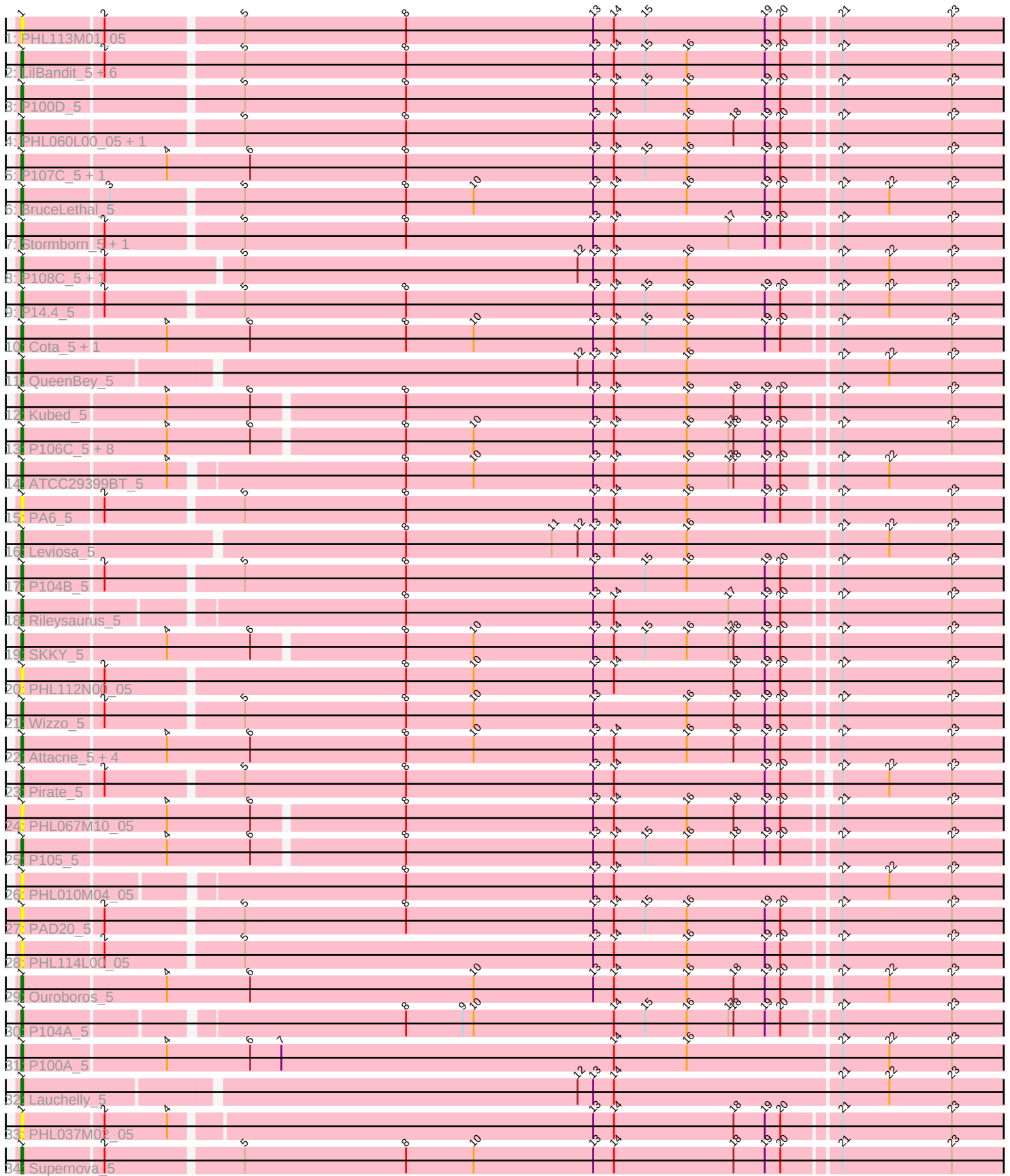


Pham 323303



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 323303 Report

This analysis was run 09/05/26 on database version 662.

Pham number 323303 has 57 members, 12 are drafts.

Phages represented in each track:

- Track 1 : PHL113M01_05
- Track 2 : LilBandit_5, P1.1_5, PAS50_5, PHL111M01_05, MEAK_5, Solid_5, PHL071N05_05
- Track 3 : P100D_5
- Track 4 : PHL060L00_05, Enoki_5
- Track 5 : P107C_5, ATCC29399BC_5
- Track 6 : BruceLethal_5
- Track 7 : Stormborn_5, P107A_5
- Track 8 : P108C_5, Enochoraptor_5
- Track 9 : P14.4_5
- Track 10 : Cota_5, Keiki_5
- Track 11 : QueenBey_5
- Track 12 : Kubed_5
- Track 13 : P106C_5, P9.1_5, Moyashi_5, P106L_5, P101A_5, P106I_5, P100.1_5, P106A_5, P106M_5
- Track 14 : ATCC29399BT_5
- Track 15 : PA6_5
- Track 16 : Leviösa_5
- Track 17 : P104B_5
- Track 18 : Rileysaurus_5
- Track 19 : SKKY_5
- Track 20 : PHL112N00_05
- Track 21 : Wizzo_5
- Track 22 : Attacne_5, DrParker_5, Aquarius_5, MrAK_5, Procrass1_5
- Track 23 : Pirate_5
- Track 24 : PHL067M10_05
- Track 25 : P105_5
- Track 26 : PHL010M04_05
- Track 27 : PAD20_5
- Track 28 : PHL114L00_05
- Track 29 : Ouroboros_5
- Track 30 : P104A_5
- Track 31 : P100A_5
- Track 32 : Lauchelly_5
- Track 33 : PHL037M02_05
- Track 34 : Supernova_5

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

The start number called the most often in the published annotations is 1, it was called in 45 of the 45 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ATCC29399BC_5, ATCC29399BT_5, Aquarius_5, Attacne_5, BruceLethal_5, Cota_5, DrParker_5, Enochoraptor_5, Enoki_5, Keiki_5, Kubed_5, Lauchelly_5, Leviosa_5, LilBandit_5, MEAK_5, Moyashi_5, MrAK_5, Ouroboros_5, P1.1_5, P100.1_5, P100A_5, P100D_5, P101A_5, P104A_5, P104B_5, P105_5, P106A_5, P106C_5, P106I_5, P106L_5, P106M_5, P107A_5, P107C_5, P108C_5, P14.4_5, P9.1_5, PA6_5, PAD20_5, PAS50_5, PHL010M04_05, PHL037M02_05, PHL060L00_05, PHL067M10_05, PHL071N05_05, PHL111M01_05, PHL112N00_05, PHL113M01_05, PHL114L00_05, Pirate_5, Procrass1_5, QueenBey_5, Rileysaurus_5, SKKY_5, Solid_5, Stormborn_5, Supernova_5, Wizzo_5,

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

-

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

-

Summary by start number:

Start 1:

- Found in 57 of 57 (100.0%) of genes in pham
- Manual Annotations of this start: 45 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ATCC29399BC_5 (BU), ATCC29399BT_5 (BU), Aquarius_5 (BU), Attacne_5 (BU), BruceLethal_5 (BU), Cota_5 (BU), DrParker_5 (BU), Enochoraptor_5 (BU), Enoki_5 (BU), Keiki_5 (BU), Kubed_5 (BU), Lauchelly_5 (BU), Leviosa_5 (BU), LilBandit_5 (BU), MEAK_5 (BU), Moyashi_5 (BU), MrAK_5 (BU), Ouroboros_5 (BU), P1.1_5 (BU), P100.1_5 (BU), P100A_5 (BU), P100D_5 (BU), P101A_5 (BU), P104A_5 (BU), P104B_5 (BU), P105_5 (BU), P106A_5 (BU), P106C_5 (BU), P106I_5 (BU), P106L_5 (BU), P106M_5 (BU), P107A_5 (BU), P107C_5 (BU), P108C_5 (BU), P14.4_5 (BU), P9.1_5 (BU), PA6_5 (BU), PAD20_5 (BU), PAS50_5 (BU), PHL010M04_05 (BU), PHL037M02_05 (BU), PHL060L00_05 (BU), PHL067M10_05 (BU), PHL071N05_05 (BU), PHL111M01_05 (BU), PHL112N00_05 (BU), PHL113M01_05 (BU), PHL114L00_05 (BU), Pirate_5 (BU), Procrass1_5 (BU), QueenBey_5 (BU), Rileysaurus_5 (BU), SKKY_5 (BU), Solid_5 (BU), Stormborn_5 (BU), Supernova_5 (BU), Wizzo_5 (BU),

Summary by clusters:

There is one cluster represented in this pham: BU

Info for manual annotations of cluster BU:

- Start number 1 was manually annotated 45 times for cluster BU.

Gene Information:

Gene: ATCC29399BC_5 Start: 4077, Stop: 4637, Start Num: 1

Candidate Starts for ATCC29399BC_5:

(Start: 1 @4077 has 45 MA's), (4, 4158), (6, 4206), (8, 4296), (13, 4404), (14, 4416), (15, 4434), (16, 4458), (19, 4503), (20, 4512), (21, 4542), (23, 4605),

Gene: ATCC29399BT_5 Start: 4085, Stop: 4633, Start Num: 1

Candidate Starts for ATCC29399BT_5:

(Start: 1 @4085 has 45 MA's), (4, 4166), (8, 4295), (10, 4334), (13, 4403), (14, 4415), (16, 4457), (17, 4481), (18, 4484), (19, 4502), (20, 4511), (21, 4538), (22, 4565),

Gene: Aquarius_5 Start: 4076, Stop: 4630, Start Num: 1

Candidate Starts for Aquarius_5:

(Start: 1 @4076 has 45 MA's), (4, 4157), (6, 4205), (8, 4289), (10, 4328), (13, 4397), (14, 4409), (16, 4451), (18, 4478), (19, 4496), (20, 4505), (21, 4535), (23, 4598),

Gene: Attacne_5 Start: 4078, Stop: 4638, Start Num: 1

Candidate Starts for Attacne_5:

(Start: 1 @4078 has 45 MA's), (4, 4159), (6, 4207), (8, 4297), (10, 4336), (13, 4405), (14, 4417), (16, 4459), (18, 4486), (19, 4504), (20, 4513), (21, 4543), (23, 4606),

Gene: BruceLethal_5 Start: 4070, Stop: 4627, Start Num: 1

Candidate Starts for BruceLethal_5:

(Start: 1 @4070 has 45 MA's), (3, 4118), (5, 4190), (8, 4283), (10, 4322), (13, 4391), (14, 4403), (16, 4445), (19, 4490), (20, 4499), (21, 4532), (22, 4559), (23, 4595),

Gene: Cota_5 Start: 4081, Stop: 4641, Start Num: 1

Candidate Starts for Cota_5:

(Start: 1 @4081 has 45 MA's), (4, 4162), (6, 4210), (8, 4300), (10, 4339), (13, 4408), (14, 4420), (15, 4438), (16, 4462), (19, 4507), (20, 4516), (21, 4546), (23, 4609),

Gene: DrParker_5 Start: 4077, Stop: 4631, Start Num: 1

Candidate Starts for DrParker_5:

(Start: 1 @4077 has 45 MA's), (4, 4158), (6, 4206), (8, 4290), (10, 4329), (13, 4398), (14, 4410), (16, 4452), (18, 4479), (19, 4497), (20, 4506), (21, 4536), (23, 4599),

Gene: Enochoraptor_5 Start: 4091, Stop: 4648, Start Num: 1

Candidate Starts for Enochoraptor_5:

(Start: 1 @4091 has 45 MA's), (2, 4136), (5, 4211), (12, 4403), (13, 4412), (14, 4424), (16, 4466), (21, 4553), (22, 4580), (23, 4616),

Gene: Enoki_5 Start: 4075, Stop: 4629, Start Num: 1

Candidate Starts for Enoki_5:

(Start: 1 @4075 has 45 MA's), (5, 4195), (8, 4288), (13, 4396), (14, 4408), (16, 4450), (18, 4477), (19, 4495), (20, 4504), (21, 4534), (23, 4597),

Gene: Keiki_5 Start: 4081, Stop: 4641, Start Num: 1

Candidate Starts for Keiki_5:

(Start: 1 @4081 has 45 MA's), (4, 4162), (6, 4210), (8, 4300), (10, 4339), (13, 4408), (14, 4420), (15, 4438), (16, 4462), (19, 4507), (20, 4516), (21, 4546), (23, 4609),

Gene: Kubed_5 Start: 4081, Stop: 4635, Start Num: 1

Candidate Starts for Kubed_5:

(Start: 1 @4081 has 45 MA's), (4, 4162), (6, 4210), (8, 4294), (13, 4402), (14, 4414), (16, 4456), (18, 4483), (19, 4501), (20, 4510), (21, 4540), (23, 4603),

Gene: Lauchelly_5 Start: 4076, Stop: 4630, Start Num: 1

Candidate Starts for Lauchelly_5:

(Start: 1 @4076 has 45 MA's), (12, 4385), (13, 4394), (14, 4406), (21, 4535), (22, 4562), (23, 4598),

Gene: Leviosa_5 Start: 4081, Stop: 4635, Start Num: 1

Candidate Starts for Leviosa_5:

(Start: 1 @4081 has 45 MA's), (8, 4291), (11, 4375), (12, 4390), (13, 4399), (14, 4411), (16, 4453), (21, 4540), (22, 4567), (23, 4603),

Gene: LilBandit_5 Start: 4080, Stop: 4634, Start Num: 1

Candidate Starts for LilBandit_5:

(Start: 1 @4080 has 45 MA's), (2, 4125), (5, 4200), (8, 4293), (13, 4401), (14, 4413), (15, 4431), (16, 4455), (19, 4500), (20, 4509), (21, 4539), (23, 4602),

Gene: MEAK_5 Start: 4079, Stop: 4633, Start Num: 1

Candidate Starts for MEAK_5:

(Start: 1 @4079 has 45 MA's), (2, 4124), (5, 4199), (8, 4292), (13, 4400), (14, 4412), (15, 4430), (16, 4454), (19, 4499), (20, 4508), (21, 4538), (23, 4601),

Gene: Moyashi_5 Start: 4077, Stop: 4631, Start Num: 1

Candidate Starts for Moyashi_5:

(Start: 1 @4077 has 45 MA's), (4, 4158), (6, 4206), (8, 4290), (10, 4329), (13, 4398), (14, 4410), (16, 4452), (17, 4476), (18, 4479), (19, 4497), (20, 4506), (21, 4536), (23, 4599),

Gene: MrAK_5 Start: 4077, Stop: 4640, Start Num: 1

Candidate Starts for MrAK_5:

(Start: 1 @4077 has 45 MA's), (4, 4158), (6, 4206), (8, 4296), (10, 4335), (13, 4404), (14, 4416), (16, 4458), (18, 4485), (19, 4503), (20, 4512), (21, 4545), (23, 4608),

Gene: Ouroboros_5 Start: 4081, Stop: 4638, Start Num: 1

Candidate Starts for Ouroboros_5:

(Start: 1 @4081 has 45 MA's), (4, 4162), (6, 4210), (10, 4339), (13, 4408), (14, 4420), (16, 4462), (18, 4489), (19, 4507), (20, 4516), (21, 4543), (22, 4570), (23, 4606),

Gene: P1.1_5 Start: 4084, Stop: 4638, Start Num: 1

Candidate Starts for P1.1_5:

(Start: 1 @4084 has 45 MA's), (2, 4129), (5, 4204), (8, 4297), (13, 4405), (14, 4417), (15, 4435), (16, 4459), (19, 4504), (20, 4513), (21, 4543), (23, 4606),

Gene: P100.1_5 Start: 4077, Stop: 4631, Start Num: 1

Candidate Starts for P100.1_5:

(Start: 1 @4077 has 45 MA's), (4, 4158), (6, 4206), (8, 4290), (10, 4329), (13, 4398), (14, 4410), (16, 4452), (17, 4476), (18, 4479), (19, 4497), (20, 4506), (21, 4536), (23, 4599),

Gene: P100A_5 Start: 4086, Stop: 4649, Start Num: 1

Candidate Starts for P100A_5:

(Start: 1 @4086 has 45 MA's), (4, 4167), (6, 4215), (7, 4233), (14, 4425), (16, 4467), (21, 4554), (22, 4581), (23, 4617),

Gene: P100D_5 Start: 4078, Stop: 4632, Start Num: 1

Candidate Starts for P100D_5:

(Start: 1 @4078 has 45 MA's), (5, 4198), (8, 4291), (13, 4399), (14, 4411), (15, 4429), (16, 4453), (19, 4498), (20, 4507), (21, 4537), (23, 4600),

Gene: P101A_5 Start: 4077, Stop: 4631, Start Num: 1

Candidate Starts for P101A_5:

(Start: 1 @4077 has 45 MA's), (4, 4158), (6, 4206), (8, 4290), (10, 4329), (13, 4398), (14, 4410), (16, 4452), (17, 4476), (18, 4479), (19, 4497), (20, 4506), (21, 4536), (23, 4599),

Gene: P104A_5 Start: 4081, Stop: 4629, Start Num: 1

Candidate Starts for P104A_5:

(Start: 1 @4081 has 45 MA's), (8, 4288), (9, 4321), (10, 4327), (14, 4408), (15, 4426), (16, 4450), (17, 4474), (18, 4477), (19, 4495), (20, 4504), (21, 4534), (23, 4597),

Gene: P104B_5 Start: 4079, Stop: 4633, Start Num: 1

Candidate Starts for P104B_5:

(Start: 1 @4079 has 45 MA's), (2, 4124), (5, 4199), (8, 4292), (13, 4400), (15, 4430), (16, 4454), (19, 4499), (20, 4508), (21, 4538), (23, 4601),

Gene: P105_5 Start: 4069, Stop: 4623, Start Num: 1

Candidate Starts for P105_5:

(Start: 1 @4069 has 45 MA's), (4, 4150), (6, 4198), (8, 4282), (13, 4390), (14, 4402), (15, 4420), (16, 4444), (18, 4471), (19, 4489), (20, 4498), (21, 4528), (23, 4591),

Gene: P106A_5 Start: 4077, Stop: 4631, Start Num: 1

Candidate Starts for P106A_5:

(Start: 1 @4077 has 45 MA's), (4, 4158), (6, 4206), (8, 4290), (10, 4329), (13, 4398), (14, 4410), (16, 4452), (17, 4476), (18, 4479), (19, 4497), (20, 4506), (21, 4536), (23, 4599),

Gene: P106C_5 Start: 4077, Stop: 4631, Start Num: 1

Candidate Starts for P106C_5:

(Start: 1 @4077 has 45 MA's), (4, 4158), (6, 4206), (8, 4290), (10, 4329), (13, 4398), (14, 4410), (16, 4452), (17, 4476), (18, 4479), (19, 4497), (20, 4506), (21, 4536), (23, 4599),

Gene: P106I_5 Start: 4077, Stop: 4631, Start Num: 1

Candidate Starts for P106I_5:

(Start: 1 @4077 has 45 MA's), (4, 4158), (6, 4206), (8, 4290), (10, 4329), (13, 4398), (14, 4410), (16, 4452), (17, 4476), (18, 4479), (19, 4497), (20, 4506), (21, 4536), (23, 4599),

Gene: P106L_5 Start: 4077, Stop: 4631, Start Num: 1

Candidate Starts for P106L_5:

(Start: 1 @4077 has 45 MA's), (4, 4158), (6, 4206), (8, 4290), (10, 4329), (13, 4398), (14, 4410), (16, 4452), (17, 4476), (18, 4479), (19, 4497), (20, 4506), (21, 4536), (23, 4599),

Gene: P106M_5 Start: 4077, Stop: 4631, Start Num: 1

Candidate Starts for P106M_5:

(Start: 1 @4077 has 45 MA's), (4, 4158), (6, 4206), (8, 4290), (10, 4329), (13, 4398), (14, 4410), (16, 4452), (17, 4476), (18, 4479), (19, 4497), (20, 4506), (21, 4536), (23, 4599),

Gene: P107A_5 Start: 4087, Stop: 4641, Start Num: 1

Candidate Starts for P107A_5:

(Start: 1 @4087 has 45 MA's), (2, 4132), (5, 4207), (8, 4300), (13, 4408), (14, 4420), (17, 4486), (19, 4507), (20, 4516), (21, 4546), (23, 4609),

Gene: P107C_5 Start: 4077, Stop: 4637, Start Num: 1

Candidate Starts for P107C_5:

(Start: 1 @4077 has 45 MA's), (4, 4158), (6, 4206), (8, 4296), (13, 4404), (14, 4416), (15, 4434), (16, 4458), (19, 4503), (20, 4512), (21, 4542), (23, 4605),

Gene: P108C_5 Start: 4084, Stop: 4641, Start Num: 1

Candidate Starts for P108C_5:

(Start: 1 @4084 has 45 MA's), (2, 4129), (5, 4204), (12, 4396), (13, 4405), (14, 4417), (16, 4459), (21, 4546), (22, 4573), (23, 4609),

Gene: P14.4_5 Start: 4077, Stop: 4631, Start Num: 1

Candidate Starts for P14.4_5:

(Start: 1 @4077 has 45 MA's), (2, 4122), (5, 4197), (8, 4290), (13, 4398), (14, 4410), (15, 4428), (16, 4452), (19, 4497), (20, 4506), (21, 4536), (22, 4563), (23, 4599),

Gene: P9.1_5 Start: 4072, Stop: 4626, Start Num: 1

Candidate Starts for P9.1_5:

(Start: 1 @4072 has 45 MA's), (4, 4153), (6, 4201), (8, 4285), (10, 4324), (13, 4393), (14, 4405), (16, 4447), (17, 4471), (18, 4474), (19, 4492), (20, 4501), (21, 4531), (23, 4594),

Gene: PA6_5 Start: 4084, Stop: 4638, Start Num: 1

Candidate Starts for PA6_5:

(Start: 1 @4084 has 45 MA's), (2, 4129), (5, 4204), (8, 4297), (13, 4405), (14, 4417), (16, 4459), (19, 4504), (20, 4513), (21, 4543), (23, 4606),

Gene: PAD20_5 Start: 4084, Stop: 4638, Start Num: 1

Candidate Starts for PAD20_5:

(Start: 1 @4084 has 45 MA's), (2, 4129), (5, 4204), (8, 4297), (13, 4405), (14, 4417), (15, 4435), (16, 4459), (19, 4504), (20, 4513), (21, 4543), (23, 4606),

Gene: PAS50_5 Start: 4081, Stop: 4635, Start Num: 1

Candidate Starts for PAS50_5:

(Start: 1 @4081 has 45 MA's), (2, 4126), (5, 4201), (8, 4294), (13, 4402), (14, 4414), (15, 4432), (16, 4456), (19, 4501), (20, 4510), (21, 4540), (23, 4603),

Gene: PHL010M04_05 Start: 4079, Stop: 4630, Start Num: 1

Candidate Starts for PHL010M04_05:

(Start: 1 @4079 has 45 MA's), (8, 4286), (13, 4394), (14, 4406), (21, 4535), (22, 4562), (23, 4598),

Gene: PHL037M02_05 Start: 4081, Stop: 4632, Start Num: 1

Candidate Starts for PHL037M02_05:

(Start: 1 @4081 has 45 MA's), (2, 4126), (4, 4162), (13, 4399), (14, 4411), (18, 4480), (19, 4498), (20, 4507), (21, 4537), (23, 4600),

Gene: PHL060L00_05 Start: 4072, Stop: 4626, Start Num: 1

Candidate Starts for PHL060L00_05:

(Start: 1 @4072 has 45 MA's), (5, 4192), (8, 4285), (13, 4393), (14, 4405), (16, 4447), (18, 4474), (19, 4492), (20, 4501), (21, 4531), (23, 4594),

Gene: PHL067M10_05 Start: 4074, Stop: 4628, Start Num: 1

Candidate Starts for PHL067M10_05:

(Start: 1 @4074 has 45 MA's), (4, 4155), (6, 4203), (8, 4287), (13, 4395), (14, 4407), (16, 4449), (18, 4476), (19, 4494), (20, 4503), (21, 4533), (23, 4596),

Gene: PHL071N05_05 Start: 4079, Stop: 4633, Start Num: 1

Candidate Starts for PHL071N05_05:

(Start: 1 @4079 has 45 MA's), (2, 4124), (5, 4199), (8, 4292), (13, 4400), (14, 4412), (15, 4430), (16, 4454), (19, 4499), (20, 4508), (21, 4538), (23, 4601),

Gene: PHL111M01_05 Start: 4084, Stop: 4638, Start Num: 1

Candidate Starts for PHL111M01_05:

(Start: 1 @4084 has 45 MA's), (2, 4129), (5, 4204), (8, 4297), (13, 4405), (14, 4417), (15, 4435), (16, 4459), (19, 4504), (20, 4513), (21, 4543), (23, 4606),

Gene: PHL112N00_05 Start: 4084, Stop: 4638, Start Num: 1

Candidate Starts for PHL112N00_05:

(Start: 1 @4084 has 45 MA's), (2, 4129), (8, 4297), (10, 4336), (13, 4405), (14, 4417), (18, 4486), (19, 4504), (20, 4513), (21, 4543), (23, 4606),

Gene: PHL113M01_05 Start: 4084, Stop: 4638, Start Num: 1

Candidate Starts for PHL113M01_05:

(Start: 1 @4084 has 45 MA's), (2, 4129), (5, 4204), (8, 4297), (13, 4405), (14, 4417), (15, 4435), (19, 4504), (20, 4513), (21, 4543), (23, 4606),

Gene: PHL114L00_05 Start: 4083, Stop: 4637, Start Num: 1

Candidate Starts for PHL114L00_05:

(Start: 1 @4083 has 45 MA's), (2, 4128), (5, 4203), (13, 4404), (14, 4416), (16, 4458), (19, 4503), (20, 4512), (21, 4542), (23, 4605),

Gene: Pirate_5 Start: 4079, Stop: 4630, Start Num: 1

Candidate Starts for Pirate_5:

(Start: 1 @4079 has 45 MA's), (2, 4124), (5, 4199), (8, 4292), (13, 4400), (14, 4412), (19, 4499), (20, 4508), (21, 4535), (22, 4562), (23, 4598),

Gene: Procrass1_5 Start: 4079, Stop: 4633, Start Num: 1

Candidate Starts for Procrass1_5:

(Start: 1 @4079 has 45 MA's), (4, 4160), (6, 4208), (8, 4292), (10, 4331), (13, 4400), (14, 4412), (16, 4454), (18, 4481), (19, 4499), (20, 4508), (21, 4538), (23, 4601),

Gene: QueenBey_5 Start: 4077, Stop: 4631, Start Num: 1

Candidate Starts for QueenBey_5:

(Start: 1 @4077 has 45 MA's), (12, 4386), (13, 4395), (14, 4407), (16, 4449), (21, 4536), (22, 4563), (23, 4599),

Gene: Rileysaurus_5 Start: 4077, Stop: 4625, Start Num: 1

Candidate Starts for Rileysaurus_5:

(Start: 1 @4077 has 45 MA's), (8, 4284), (13, 4392), (14, 4404), (17, 4470), (19, 4491), (20, 4500), (21, 4530), (23, 4593),

Gene: SKKY_5 Start: 4084, Stop: 4638, Start Num: 1

Candidate Starts for SKKY_5:

(Start: 1 @4084 has 45 MA's), (4, 4165), (6, 4213), (8, 4297), (10, 4336), (13, 4405), (14, 4417), (15, 4435), (16, 4459), (17, 4483), (18, 4486), (19, 4504), (20, 4513), (21, 4543), (23, 4606),

Gene: Solid_5 Start: 4083, Stop: 4637, Start Num: 1

Candidate Starts for Solid_5:

(Start: 1 @4083 has 45 MA's), (2, 4128), (5, 4203), (8, 4296), (13, 4404), (14, 4416), (15, 4434), (16, 4458), (19, 4503), (20, 4512), (21, 4542), (23, 4605),

Gene: Stormborn_5 Start: 4080, Stop: 4634, Start Num: 1

Candidate Starts for Stormborn_5:

(Start: 1 @4080 has 45 MA's), (2, 4125), (5, 4200), (8, 4293), (13, 4401), (14, 4413), (17, 4479), (19, 4500), (20, 4509), (21, 4539), (23, 4602),

Gene: Supernova_5 Start: 4079, Stop: 4633, Start Num: 1

Candidate Starts for Supernova_5:

(Start: 1 @4079 has 45 MA's), (2, 4124), (5, 4199), (8, 4292), (10, 4331), (13, 4400), (14, 4412), (18, 4481), (19, 4499), (20, 4508), (21, 4538), (23, 4601),

Gene: Wizzo_5 Start: 4084, Stop: 4638, Start Num: 1

Candidate Starts for Wizzo_5:

(Start: 1 @4084 has 45 MA's), (2, 4129), (5, 4204), (8, 4297), (10, 4336), (13, 4405), (16, 4459), (18, 4486), (19, 4504), (20, 4513), (21, 4543), (23, 4606),