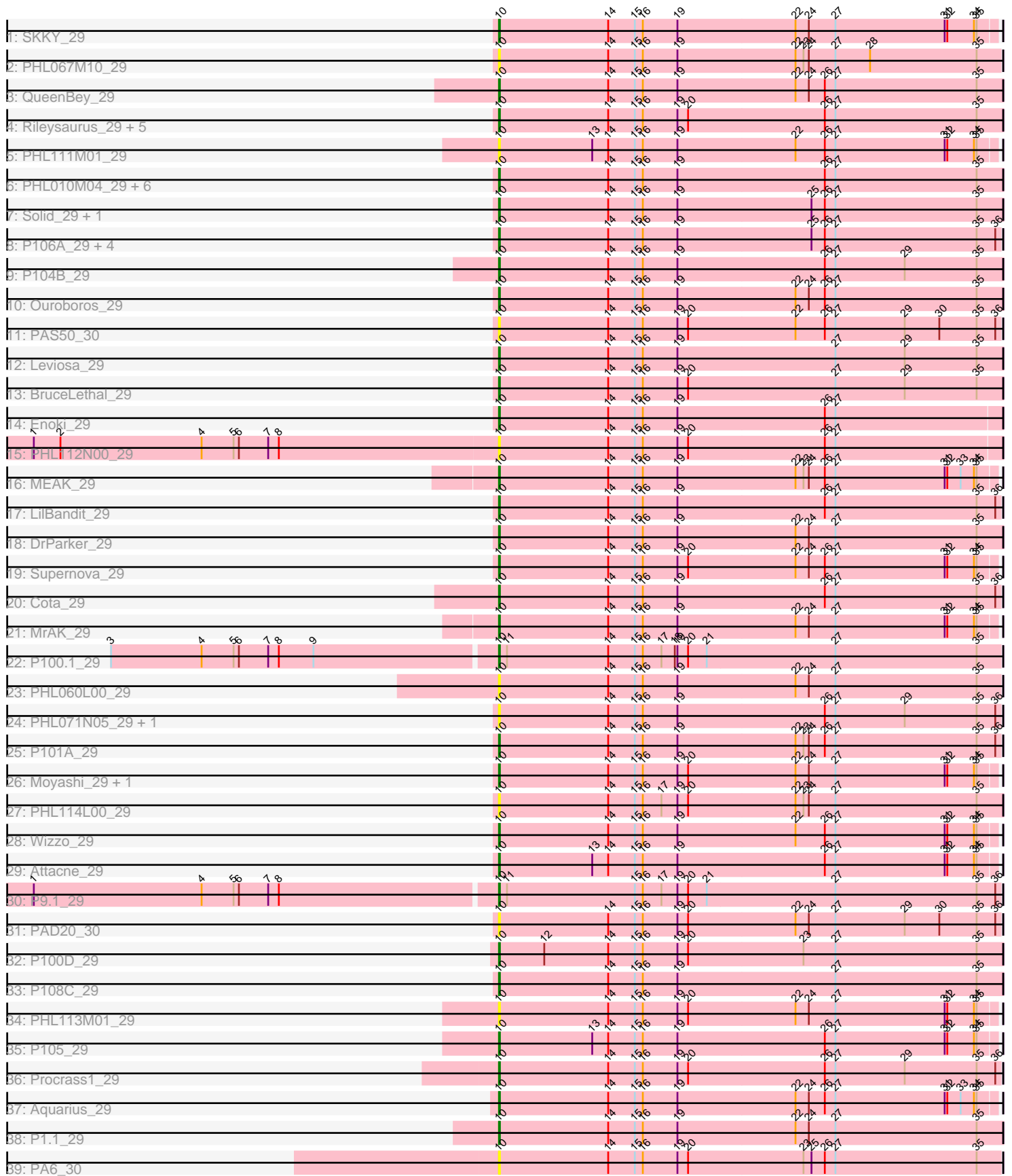


# Pham 1582



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 1582 Report

This analysis was run 04/28/24 on database version 559.

Pham number 1582 has 57 members, 14 are drafts.

Phages represented in each track:

- Track 1 : SKKY\_29
- Track 2 : PHL067M10\_29
- Track 3 : QueenBey\_29
- Track 4 : Rileysaurus\_29, ATCC29399BC\_29, ATCC29399BT\_29, Lauchelly\_29, P107C\_29, PHL037M02\_29
- Track 5 : PHL111M01\_29
- Track 6 : PHL010M04\_29, P104A\_29, P100A\_29, P14.4\_29, Keiki\_29, P107A\_29, Pirate\_29
- Track 7 : Solid\_29, Kubed\_29
- Track 8 : P106A\_29, P106I\_29, P106L\_29, P106C\_30, P106M\_29
- Track 9 : P104B\_29
- Track 10 : Ouroboros\_29
- Track 11 : PAS50\_30
- Track 12 : Leviosa\_29
- Track 13 : BruceLethal\_29
- Track 14 : Enoki\_29
- Track 15 : PHL112N00\_29
- Track 16 : MEAK\_29
- Track 17 : LilBandit\_29
- Track 18 : DrParker\_29
- Track 19 : Supernova\_29
- Track 20 : Cota\_29
- Track 21 : MrAK\_29
- Track 22 : P100.1\_29
- Track 23 : PHL060L00\_29
- Track 24 : PHL071N05\_29, Enochoraptor\_30
- Track 25 : P101A\_29
- Track 26 : Moyashi\_29, Stormborn\_29
- Track 27 : PHL114L00\_29
- Track 28 : Wizzo\_29
- Track 29 : Attacne\_29
- Track 30 : P9.1\_29
- Track 31 : PAD20\_30
- Track 32 : P100D\_29
- Track 33 : P108C\_29
- Track 34 : PHL113M01\_29
- Track 35 : P105\_29

- Track 36 : Procrass1\_29
- Track 37 : Aquarius\_29
- Track 38 : P1.1\_29
- Track 39 : PA6\_30

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

The start number called the most often in the published annotations is 10, it was called in 43 of the 43 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ATCC29399BC\_29, ATCC29399BT\_29, Aquarius\_29, Attacne\_29, BruceLethal\_29, Cota\_29, DrParker\_29, Enochoraptor\_30, Enoki\_29, Keiki\_29, Kubed\_29, Lauchelly\_29, Leviosa\_29, LilBandit\_29, MEAK\_29, Moyashi\_29, MrAK\_29, Ouroboros\_29, P1.1\_29, P100.1\_29, P100A\_29, P100D\_29, P101A\_29, P104A\_29, P104B\_29, P105\_29, P106A\_29, P106C\_30, P106I\_29, P106L\_29, P106M\_29, P107A\_29, P107C\_29, P108C\_29, P14.4\_29, P9.1\_29, PA6\_30, PAD20\_30, PAS50\_30, PHL010M04\_29, PHL037M02\_29, PHL060L00\_29, PHL067M10\_29, PHL071N05\_29, PHL111M01\_29, PHL112N00\_29, PHL113M01\_29, PHL114L00\_29, Pirate\_29, Procrass1\_29, QueenBey\_29, Rileysaurus\_29, SKKY\_29, Solid\_29, Stormborn\_29, Supernova\_29, Wizzo\_29,

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 10:

- Found in 57 of 57 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 43 of 43
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ATCC29399BC\_29 (BU), ATCC29399BT\_29 (BU), Aquarius\_29 (BU), Attacne\_29 (BU), BruceLethal\_29 (BU), Cota\_29 (BU), DrParker\_29 (BU), Enochoraptor\_30 (BU), Enoki\_29 (BU), Keiki\_29 (BU), Kubed\_29 (BU), Lauchelly\_29 (BU), Leviosa\_29 (BU), LilBandit\_29 (BU), MEAK\_29 (BU), Moyashi\_29 (BU), MrAK\_29 (BU), Ouroboros\_29 (BU), P1.1\_29 (BU), P100.1\_29 (BU), P100A\_29 (BU), P100D\_29 (BU), P101A\_29 (BU), P104A\_29 (BU), P104B\_29 (BU), P105\_29 (BU), P106A\_29 (BU), P106C\_30 (BU), P106I\_29 (BU), P106L\_29 (BU), P106M\_29 (BU), P107A\_29 (BU), P107C\_29 (BU), P108C\_29 (BU), P14.4\_29 (BU), P9.1\_29 (BU), PA6\_30 (BU), PAD20\_30 (BU), PAS50\_30 (BU), PHL010M04\_29 (BU), PHL037M02\_29 (BU), PHL060L00\_29 (BU), PHL067M10\_29 (BU), PHL071N05\_29 (BU), PHL111M01\_29 (BU), PHL112N00\_29 (BU), PHL113M01\_29 (BU), PHL114L00\_29 (BU), Pirate\_29 (BU), Procrass1\_29 (BU), QueenBey\_29 (BU), Rileysaurus\_29 (BU), SKKY\_29 (BU), Solid\_29 (BU), Stormborn\_29 (BU), Supernova\_29 (BU), Wizzo\_29 (BU),

### **Summary by clusters:**

There is one cluster represented in this pham: BU

Info for manual annotations of cluster BU:

- Start number 10 was manually annotated 43 times for cluster BU.

**Gene Information:**

Gene: ATCC29399BC\_29 Start: 20609, Stop: 20046, Start Num: 10

Candidate Starts for ATCC29399BC\_29:

(Start: 10 @20609 has 43 MA's), (14, 20486), (15, 20456), (16, 20447), (19, 20408), (20, 20396), (26, 20243), (27, 20231), (35, 20072),

Gene: ATCC29399BT\_29 Start: 20609, Stop: 20046, Start Num: 10

Candidate Starts for ATCC29399BT\_29:

(Start: 10 @20609 has 43 MA's), (14, 20486), (15, 20456), (16, 20447), (19, 20408), (20, 20396), (26, 20243), (27, 20231), (35, 20072),

Gene: Aquarius\_29 Start: 20074, Stop: 19517, Start Num: 10

Candidate Starts for Aquarius\_29:

(Start: 10 @20074 has 43 MA's), (14, 19951), (15, 19921), (16, 19912), (19, 19873), (22, 19741), (24, 19726), (26, 19708), (27, 19696), (31, 19573), (32, 19570), (33, 19555), (34, 19540), (35, 19537),

Gene: Attacne\_29 Start: 20093, Stop: 19536, Start Num: 10

Candidate Starts for Attacne\_29:

(Start: 10 @20093 has 43 MA's), (13, 19988), (14, 19970), (15, 19940), (16, 19931), (19, 19892), (26, 19727), (27, 19715), (31, 19592), (32, 19589), (34, 19559), (35, 19556),

Gene: BruceLethal\_29 Start: 20617, Stop: 20051, Start Num: 10

Candidate Starts for BruceLethal\_29:

(Start: 10 @20617 has 43 MA's), (14, 20494), (15, 20464), (16, 20455), (19, 20416), (20, 20404), (27, 20239), (29, 20161), (35, 20080),

Gene: Cota\_29 Start: 20658, Stop: 20095, Start Num: 10

Candidate Starts for Cota\_29:

(Start: 10 @20658 has 43 MA's), (14, 20535), (15, 20505), (16, 20496), (19, 20457), (26, 20292), (27, 20280), (35, 20121), (36, 20100),

Gene: DrParker\_29 Start: 20711, Stop: 20145, Start Num: 10

Candidate Starts for DrParker\_29:

(Start: 10 @20711 has 43 MA's), (14, 20588), (15, 20558), (16, 20549), (19, 20510), (22, 20378), (24, 20363), (27, 20333), (35, 20174),

Gene: Enochoraptor\_30 Start: 20631, Stop: 20068, Start Num: 10

Candidate Starts for Enochoraptor\_30:

(Start: 10 @20631 has 43 MA's), (14, 20508), (15, 20478), (16, 20469), (19, 20430), (26, 20265), (27, 20253), (29, 20175), (35, 20094), (36, 20073),

Gene: Enoki\_29 Start: 20642, Stop: 20079, Start Num: 10

Candidate Starts for Enoki\_29:

(Start: 10 @20642 has 43 MA's), (14, 20519), (15, 20489), (16, 20480), (19, 20441), (26, 20276), (27, 20264),

Gene: Keiki\_29 Start: 20557, Stop: 19991, Start Num: 10

Candidate Starts for Keiki\_29:

(Start: 10 @20557 has 43 MA's), (14, 20434), (15, 20404), (16, 20395), (19, 20356), (26, 20191), (27, 20179), (35, 20020),

Gene: Kubed\_29 Start: 20612, Stop: 20046, Start Num: 10

Candidate Starts for Kubed\_29:

(Start: 10 @20612 has 43 MA's), (14, 20489), (15, 20459), (16, 20450), (19, 20411), (25, 20261), (26, 20246), (27, 20234), (35, 20075),

Gene: Lauchelly\_29 Start: 20661, Stop: 20095, Start Num: 10

Candidate Starts for Lauchelly\_29:

(Start: 10 @20661 has 43 MA's), (14, 20538), (15, 20508), (16, 20499), (19, 20460), (20, 20448), (26, 20295), (27, 20283), (35, 20124),

Gene: Leviosa\_29 Start: 20658, Stop: 20092, Start Num: 10

Candidate Starts for Leviosa\_29:

(Start: 10 @20658 has 43 MA's), (14, 20535), (15, 20505), (16, 20496), (19, 20457), (27, 20280), (29, 20202), (35, 20121),

Gene: LilBandit\_29 Start: 20452, Stop: 19889, Start Num: 10

Candidate Starts for LilBandit\_29:

(Start: 10 @20452 has 43 MA's), (14, 20329), (15, 20299), (16, 20290), (19, 20251), (26, 20086), (27, 20074), (35, 19915), (36, 19894),

Gene: MEAK\_29 Start: 20319, Stop: 19762, Start Num: 10

Candidate Starts for MEAK\_29:

(Start: 10 @20319 has 43 MA's), (14, 20196), (15, 20166), (16, 20157), (19, 20118), (22, 19986), (23, 19977), (24, 19971), (26, 19953), (27, 19941), (31, 19818), (32, 19815), (33, 19800), (34, 19785), (35, 19782),

Gene: Moyashi\_29 Start: 20423, Stop: 19866, Start Num: 10

Candidate Starts for Moyashi\_29:

(Start: 10 @20423 has 43 MA's), (14, 20300), (15, 20270), (16, 20261), (19, 20222), (20, 20210), (22, 20090), (24, 20075), (27, 20045), (31, 19922), (32, 19919), (34, 19889), (35, 19886),

Gene: MrAK\_29 Start: 20429, Stop: 19872, Start Num: 10

Candidate Starts for MrAK\_29:

(Start: 10 @20429 has 43 MA's), (14, 20306), (15, 20276), (16, 20267), (19, 20228), (22, 20096), (24, 20081), (27, 20051), (31, 19928), (32, 19925), (34, 19895), (35, 19892),

Gene: Ouroboros\_29 Start: 20638, Stop: 20072, Start Num: 10

Candidate Starts for Ouroboros\_29:

(Start: 10 @20638 has 43 MA's), (14, 20515), (15, 20485), (16, 20476), (19, 20437), (22, 20305), (24, 20290), (26, 20272), (27, 20260), (35, 20101),

Gene: P1.1\_29 Start: 20649, Stop: 20083, Start Num: 10

Candidate Starts for P1.1\_29:

(Start: 10 @20649 has 43 MA's), (14, 20526), (15, 20496), (16, 20487), (19, 20448), (22, 20316), (24, 20301), (27, 20271), (35, 20112),

Gene: P100.1\_29 Start: 20699, Stop: 20136, Start Num: 10

Candidate Starts for P100.1\_29:

(3, 21128), (4, 21026), (5, 20990), (6, 20984), (7, 20951), (8, 20939), (9, 20900), (Start: 10 @20699 has 43 MA's), (11, 20690), (14, 20576), (15, 20546), (16, 20537), (17, 20516), (18, 20501), (19, 20498), (20, 20486), (21, 20465), (27, 20321), (35, 20162),

Gene: P100A\_29 Start: 20644, Stop: 20078, Start Num: 10

Candidate Starts for P100A\_29:

(Start: 10 @20644 has 43 MA's), (14, 20521), (15, 20491), (16, 20482), (19, 20443), (26, 20278), (27, 20266), (35, 20107),

Gene: P100D\_29 Start: 20628, Stop: 20062, Start Num: 10

Candidate Starts for P100D\_29:

(Start: 10 @20628 has 43 MA's), (12, 20577), (14, 20505), (15, 20475), (16, 20466), (19, 20427), (20, 20415), (23, 20286), (27, 20250), (35, 20091),

Gene: P101A\_29 Start: 20663, Stop: 20100, Start Num: 10

Candidate Starts for P101A\_29:

(Start: 10 @20663 has 43 MA's), (14, 20540), (15, 20510), (16, 20501), (19, 20462), (22, 20330), (23, 20321), (24, 20315), (26, 20297), (27, 20285), (35, 20126), (36, 20105),

Gene: P104A\_29 Start: 20432, Stop: 19866, Start Num: 10

Candidate Starts for P104A\_29:

(Start: 10 @20432 has 43 MA's), (14, 20309), (15, 20279), (16, 20270), (19, 20231), (26, 20066), (27, 20054), (35, 19895),

Gene: P104B\_29 Start: 20619, Stop: 20053, Start Num: 10

Candidate Starts for P104B\_29:

(Start: 10 @20619 has 43 MA's), (14, 20496), (15, 20466), (16, 20457), (19, 20418), (26, 20253), (27, 20241), (29, 20163), (35, 20082),

Gene: P105\_29 Start: 20289, Stop: 19732, Start Num: 10

Candidate Starts for P105\_29:

(Start: 10 @20289 has 43 MA's), (13, 20184), (14, 20166), (15, 20136), (16, 20127), (19, 20088), (26, 19923), (27, 19911), (31, 19788), (32, 19785), (34, 19755), (35, 19752),

Gene: P106A\_29 Start: 20718, Stop: 20155, Start Num: 10

Candidate Starts for P106A\_29:

(Start: 10 @20718 has 43 MA's), (14, 20595), (15, 20565), (16, 20556), (19, 20517), (25, 20367), (26, 20352), (27, 20340), (35, 20181), (36, 20160),

Gene: P106C\_30 Start: 20656, Stop: 20093, Start Num: 10

Candidate Starts for P106C\_30:

(Start: 10 @20656 has 43 MA's), (14, 20533), (15, 20503), (16, 20494), (19, 20455), (25, 20305), (26, 20290), (27, 20278), (35, 20119), (36, 20098),

Gene: P106I\_29 Start: 20485, Stop: 19922, Start Num: 10

Candidate Starts for P106I\_29:

(Start: 10 @20485 has 43 MA's), (14, 20362), (15, 20332), (16, 20323), (19, 20284), (25, 20134), (26, 20119), (27, 20107), (35, 19948), (36, 19927),

Gene: P106L\_29 Start: 20656, Stop: 20093, Start Num: 10

Candidate Starts for P106L\_29:

(Start: 10 @20656 has 43 MA's), (14, 20533), (15, 20503), (16, 20494), (19, 20455), (25, 20305), (26, 20290), (27, 20278), (35, 20119), (36, 20098),

Gene: P106M\_29 Start: 20656, Stop: 20093, Start Num: 10

Candidate Starts for P106M\_29:

(Start: 10 @20656 has 43 MA's), (14, 20533), (15, 20503), (16, 20494), (19, 20455), (25, 20305), (26, 20290), (27, 20278), (35, 20119), (36, 20098),

Gene: P107A\_29 Start: 20672, Stop: 20106, Start Num: 10

Candidate Starts for P107A\_29:

(Start: 10 @20672 has 43 MA's), (14, 20549), (15, 20519), (16, 20510), (19, 20471), (26, 20306), (27, 20294), (35, 20135),

Gene: P107C\_29 Start: 20609, Stop: 20046, Start Num: 10

Candidate Starts for P107C\_29:

(Start: 10 @20609 has 43 MA's), (14, 20486), (15, 20456), (16, 20447), (19, 20408), (20, 20396), (26, 20243), (27, 20231), (35, 20072),

Gene: P108C\_29 Start: 20623, Stop: 20057, Start Num: 10

Candidate Starts for P108C\_29:

(Start: 10 @20623 has 43 MA's), (14, 20500), (15, 20470), (16, 20461), (19, 20422), (27, 20245), (35, 20086),

Gene: P14.4\_29 Start: 20625, Stop: 20059, Start Num: 10

Candidate Starts for P14.4\_29:

(Start: 10 @20625 has 43 MA's), (14, 20502), (15, 20472), (16, 20463), (19, 20424), (26, 20259), (27, 20247), (35, 20088),

Gene: P9.1\_29 Start: 20658, Stop: 20095, Start Num: 10

Candidate Starts for P9.1\_29:

(1, 21174), (4, 20985), (5, 20949), (6, 20943), (7, 20910), (8, 20898), (Start: 10 @20658 has 43 MA's), (11, 20649), (15, 20505), (16, 20496), (17, 20475), (19, 20457), (20, 20445), (21, 20424), (27, 20280), (35, 20121), (36, 20100),

Gene: PA6\_30 Start: 20616, Stop: 20053, Start Num: 10

Candidate Starts for PA6\_30:

(Start: 10 @20616 has 43 MA's), (14, 20493), (15, 20463), (16, 20454), (19, 20415), (20, 20403), (23, 20274), (25, 20265), (26, 20250), (27, 20238), (35, 20079),

Gene: PAD20\_30 Start: 20396, Stop: 19833, Start Num: 10

Candidate Starts for PAD20\_30:

(Start: 10 @20396 has 43 MA's), (14, 20273), (15, 20243), (16, 20234), (19, 20195), (20, 20183), (22, 20063), (24, 20048), (27, 20018), (29, 19940), (30, 19901), (35, 19859), (36, 19838),

Gene: PAS50\_30 Start: 20564, Stop: 20001, Start Num: 10

Candidate Starts for PAS50\_30:

(Start: 10 @20564 has 43 MA's), (14, 20441), (15, 20411), (16, 20402), (19, 20363), (20, 20351), (22, 20231), (26, 20198), (27, 20186), (29, 20108), (30, 20069), (35, 20027), (36, 20006),

Gene: PHL010M04\_29 Start: 20636, Stop: 20070, Start Num: 10

Candidate Starts for PHL010M04\_29:

(Start: 10 @20636 has 43 MA's), (14, 20513), (15, 20483), (16, 20474), (19, 20435), (26, 20270), (27, 20258), (35, 20099),

Gene: PHL037M02\_29 Start: 20620, Stop: 20054, Start Num: 10

Candidate Starts for PHL037M02\_29:

(Start: 10 @20620 has 43 MA's), (14, 20497), (15, 20467), (16, 20458), (19, 20419), (20, 20407), (26, 20254), (27, 20242), (35, 20083),

Gene: PHL060L00\_29 Start: 20466, Stop: 19903, Start Num: 10

Candidate Starts for PHL060L00\_29:

(Start: 10 @20466 has 43 MA's), (14, 20343), (15, 20313), (16, 20304), (19, 20265), (22, 20133), (24, 20118), (27, 20088), (35, 19929),

Gene: PHL067M10\_29 Start: 20587, Stop: 20024, Start Num: 10

Candidate Starts for PHL067M10\_29:

(Start: 10 @20587 has 43 MA's), (14, 20464), (15, 20434), (16, 20425), (19, 20386), (22, 20254), (23, 20245), (24, 20239), (27, 20209), (28, 20170), (35, 20050),

Gene: PHL071N05\_29 Start: 20646, Stop: 20083, Start Num: 10

Candidate Starts for PHL071N05\_29:

(Start: 10 @20646 has 43 MA's), (14, 20523), (15, 20493), (16, 20484), (19, 20445), (26, 20280), (27, 20268), (29, 20190), (35, 20109), (36, 20088),

Gene: PHL111M01\_29 Start: 20341, Stop: 19784, Start Num: 10

Candidate Starts for PHL111M01\_29:

(Start: 10 @20341 has 43 MA's), (13, 20236), (14, 20218), (15, 20188), (16, 20179), (19, 20140), (22, 20008), (26, 19975), (27, 19963), (31, 19840), (32, 19837), (34, 19807), (35, 19804),

Gene: PHL112N00\_29 Start: 20653, Stop: 20090, Start Num: 10

Candidate Starts for PHL112N00\_29:

(1, 21175), (2, 21145), (4, 20986), (5, 20950), (6, 20944), (7, 20911), (8, 20899), (Start: 10 @20653 has 43 MA's), (14, 20530), (15, 20500), (16, 20491), (19, 20452), (20, 20440), (26, 20287), (27, 20275),

Gene: PHL113M01\_29 Start: 20390, Stop: 19833, Start Num: 10

Candidate Starts for PHL113M01\_29:

(Start: 10 @20390 has 43 MA's), (14, 20267), (15, 20237), (16, 20228), (19, 20189), (20, 20177), (22, 20057), (24, 20042), (27, 20012), (31, 19889), (32, 19886), (34, 19856), (35, 19853),

Gene: PHL114L00\_29 Start: 20609, Stop: 20043, Start Num: 10

Candidate Starts for PHL114L00\_29:

(Start: 10 @20609 has 43 MA's), (14, 20486), (15, 20456), (16, 20447), (17, 20426), (19, 20408), (20, 20396), (22, 20276), (23, 20267), (24, 20261), (27, 20231), (35, 20072),

Gene: Pirate\_29 Start: 20542, Stop: 19976, Start Num: 10

Candidate Starts for Pirate\_29:

(Start: 10 @20542 has 43 MA's), (14, 20419), (15, 20389), (16, 20380), (19, 20341), (26, 20176), (27, 20164), (35, 20005),

Gene: Procrass1\_29 Start: 20615, Stop: 20052, Start Num: 10

Candidate Starts for Procrass1\_29:

(Start: 10 @20615 has 43 MA's), (14, 20492), (15, 20462), (16, 20453), (19, 20414), (20, 20402), (26, 20249), (27, 20237), (29, 20159), (35, 20078), (36, 20057),



Gene: QueenBey\_29 Start: 20599, Stop: 20033, Start Num: 10

Candidate Starts for QueenBey\_29:

(Start: 10 @20599 has 43 MA's), (14, 20476), (15, 20446), (16, 20437), (19, 20398), (22, 20266), (24, 20251), (26, 20233), (27, 20221), (35, 20062),

Gene: Rileysaurus\_29 Start: 20646, Stop: 20080, Start Num: 10

Candidate Starts for Rileysaurus\_29:

(Start: 10 @20646 has 43 MA's), (14, 20523), (15, 20493), (16, 20484), (19, 20445), (20, 20433), (26, 20280), (27, 20268), (35, 20109),

Gene: SKKY\_29 Start: 20398, Stop: 19841, Start Num: 10

Candidate Starts for SKKY\_29:

(Start: 10 @20398 has 43 MA's), (14, 20275), (15, 20245), (16, 20236), (19, 20197), (22, 20065), (24, 20050), (27, 20020), (31, 19897), (32, 19894), (34, 19864), (35, 19861),

Gene: Solid\_29 Start: 20628, Stop: 20062, Start Num: 10

Candidate Starts for Solid\_29:

(Start: 10 @20628 has 43 MA's), (14, 20505), (15, 20475), (16, 20466), (19, 20427), (25, 20277), (26, 20262), (27, 20250), (35, 20091),

Gene: Stormborn\_29 Start: 20236, Stop: 19679, Start Num: 10

Candidate Starts for Stormborn\_29:

(Start: 10 @20236 has 43 MA's), (14, 20113), (15, 20083), (16, 20074), (19, 20035), (20, 20023), (22, 19903), (24, 19888), (27, 19858), (31, 19735), (32, 19732), (34, 19702), (35, 19699),

Gene: Supernova\_29 Start: 20399, Stop: 19842, Start Num: 10

Candidate Starts for Supernova\_29:

(Start: 10 @20399 has 43 MA's), (14, 20276), (15, 20246), (16, 20237), (19, 20198), (20, 20186), (22, 20066), (24, 20051), (26, 20033), (27, 20021), (31, 19898), (32, 19895), (34, 19865), (35, 19862),

Gene: Wizzo\_29 Start: 20122, Stop: 19565, Start Num: 10

Candidate Starts for Wizzo\_29:

(Start: 10 @20122 has 43 MA's), (14, 19999), (15, 19969), (16, 19960), (19, 19921), (22, 19789), (26, 19756), (27, 19744), (31, 19621), (32, 19618), (34, 19588), (35, 19585),