



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 194009 Report

This analysis was run 11/02/24 on database version 579.

Pham number 194009 has 63 members, 14 are drafts.

Phages represented in each track:

- Track 1 : AbbyDaisy\_99
- Track 2 : Raqqa\_101
- Track 3 : QueenBey\_43, Attacne\_45, Stormborn\_46
- Track 4 : PHL111M01\_45, Cota\_45, Supernova\_45, Wizzo\_44
- Track 5 : Moyashi\_44
- Track 6 : Solid\_45
- Track 7 : Enoki\_45, P104B\_44, P104A\_45, LilBandit\_45, Kubed\_44, P100D\_47, Procrass1\_45
- Track 8 : P106I\_46, P100.1\_47, P106L\_45, P106M\_45, P106C\_46, P106A\_45
- Track 9 : Leviosa\_44, Aquarius\_48, PHL060L00\_46, PHL112N00\_46, P101A\_47
- Track 10 : Pirate\_44
- Track 11 : Lauchelly\_45
- Track 12 : P14.4\_47
- Track 13 : DrParker\_45
- Track 14 : BruceLethal\_44, PHL010M04\_45
- Track 15 : ATCC29399BC\_46, ATCC29399BT\_46, P107C\_44
- Track 16 : PHL067M10\_45
- Track 17 : PA6\_48
- Track 18 : MrAK\_46, Spartoi\_56
- Track 19 : PAS50\_48
- Track 20 : P107A\_45
- Track 21 : PHL113M01\_44
- Track 22 : PHL071N05\_45
- Track 23 : PHL037M02\_45
- Track 24 : P9.1\_45
- Track 25 : Ouroboros\_45
- Track 26 : P1.1\_45
- Track 27 : MEAK\_44
- Track 28 : P100A\_45
- Track 29 : P108C\_44, P105\_45
- Track 30 : PAD20\_48
- Track 31 : Keiki\_45
- Track 32 : SKKY\_47
- Track 33 : E6\_60, G4\_69, Doucette\_61, B22\_61
- Track 34 : BlackSpider\_87
- Track 35 : MrSmee\_78

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

The start number called the most often in the published annotations is 6, it was called in 45 of the 49 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ATCC29399BC\_46, ATCC29399BT\_46, Aquarius\_48, Attacne\_45, B22\_61, BlackSpider\_87, BruceLethal\_44, Cota\_45, Doucette\_61, DrParker\_45, E6\_60, Enoki\_45, G4\_69, Kubed\_44, Lauchelly\_45, Leviosa\_44, LilBandit\_45, MEAK\_44, Moyashi\_44, MrAK\_46, Ouroboros\_45, P100.1\_47, P100A\_45, P100D\_47, P101A\_47, P104A\_45, P104B\_44, P105\_45, P106A\_45, P106C\_46, P106I\_46, P106L\_45, P106M\_45, P107A\_45, P107C\_44, P108C\_44, P9.1\_45, PA6\_48, PAD20\_48, PHL010M04\_45, PHL037M02\_45, PHL060L00\_46, PHL067M10\_45, PHL071N05\_45, PHL111M01\_45, PHL112N00\_46, Pirate\_44, Procrass1\_45, QueenBey\_43, Raqqa\_101, SKKY\_47, Solid\_45, Spartoi\_56, Stormborn\_46, Supernova\_45, Wizzo\_44,

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

- AbbyDaisy\_99, Keiki\_45, MrSmee\_78, P1.1\_45, P14.4\_47, PAS50\_48, PHL113M01\_44,

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

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### **Summary by start number:**

Start 5:

- Found in 21 of 63 ( 33.3% ) of genes in pham
- Manual Annotations of this start: 3 of 49
- Called 23.8% of time when present
- Phage (with cluster) where this start called: Keiki\_45 (BU), P1.1\_45 (BU), P14.4\_47 (BU), PAS50\_48 (BU), PHL113M01\_44 (BU),

Start 6:

- Found in 63 of 63 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 45 of 49
- Called 88.9% of time when present
- Phage (with cluster) where this start called: ATCC29399BC\_46 (BU), ATCC29399BT\_46 (BU), Aquarius\_48 (BU), Attacne\_45 (BU), B22\_61 (BW), BlackSpider\_87 (FN), BruceLethal\_44 (BU), Cota\_45 (BU), Doucette\_61 (BW), DrParker\_45 (BU), E6\_60 (BW), Enoki\_45 (BU), G4\_69 (BW), Kubed\_44 (BU), Lauchelly\_45 (BU), Leviosa\_44 (BU), LilBandit\_45 (BU), MEAK\_44 (BU), Moyashi\_44 (BU), MrAK\_46 (BU), Ouroboros\_45 (BU), P100.1\_47 (BU), P100A\_45 (BU), P100D\_47 (BU), P101A\_47 (BU), P104A\_45 (BU), P104B\_44 (BU), P105\_45 (BU), P106A\_45 (BU), P106C\_46 (BU), P106I\_46 (BU), P106L\_45 (BU), P106M\_45 (BU), P107A\_45 (BU), P107C\_44 (BU), P108C\_44 (BU), P9.1\_45 (BU), PA6\_48 (BU), PAD20\_48 (BU), PHL010M04\_45 (BU), PHL037M02\_45 (BU), PHL060L00\_46 (BU), PHL067M10\_45 (BU), PHL071N05\_45 (BU), PHL111M01\_45 (BU), PHL112N00\_46 (BU), Pirate\_44 (BU), Procrass1\_45 (BU), QueenBey\_43 (BU), Raqqa\_101 (AY), SKKY\_47 (BU), Solid\_45 (BU), Spartoi\_56 (singleton), Stormborn\_46 (BU),

Supernova\_45 (BU), Wizzo\_44 (BU),

Start 8:

- Found in 1 of 63 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AbbyDaisy\_99 (AY),

Start 13:

- Found in 5 of 63 ( 7.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: MrSmee\_78 (UNK),

### **Summary by clusters:**

There are 6 clusters represented in this pham: singleton, BU, BW, AY, UNK, FN,

Info for manual annotations of cluster AY:

- Start number 8 was manually annotated 1 time for cluster AY.

Info for manual annotations of cluster BU:

- Start number 5 was manually annotated 3 times for cluster BU.
- Start number 6 was manually annotated 40 times for cluster BU.

Info for manual annotations of cluster BW:

- Start number 6 was manually annotated 4 times for cluster BW.

### **Gene Information:**

Gene: ATCC29399BC\_46 Start: 29152, Stop: 29454, Start Num: 6

Candidate Starts for ATCC29399BC\_46:

(1, 29134), (Start: 6 @29152 has 45 MA's),

Gene: ATCC29399BT\_46 Start: 29152, Stop: 29454, Start Num: 6

Candidate Starts for ATCC29399BT\_46:

(1, 29134), (Start: 6 @29152 has 45 MA's),

Gene: AbbyDaisy\_99 Start: 54512, Stop: 54778, Start Num: 8

Candidate Starts for AbbyDaisy\_99:

(Start: 6 @54473 has 45 MA's), (Start: 8 @54512 has 1 MA's), (9, 54554), (11, 54575), (12, 54578), (17, 54716),

Gene: Aquarius\_48 Start: 29747, Stop: 30049, Start Num: 6

Candidate Starts for Aquarius\_48:

(Start: 6 @29747 has 45 MA's),

Gene: Attacne\_45 Start: 28511, Stop: 28813, Start Num: 6

Candidate Starts for Attacne\_45:

(Start: 5 @28508 has 3 MA's), (Start: 6 @28511 has 45 MA's), (18, 28799),

Gene: B22\_61 Start: 36822, Stop: 37160, Start Num: 6

Candidate Starts for B22\_61:

(1, 36804), (Start: 6 @36822 has 45 MA's), (7, 36855), (13, 36930),

Gene: BlackSpider\_87 Start: 50168, Stop: 50473, Start Num: 6

Candidate Starts for BlackSpider\_87:

(Start: 6 @50168 has 45 MA's), (14, 50357), (15, 50372),

Gene: BruceLethal\_44 Start: 28884, Stop: 29186, Start Num: 6

Candidate Starts for BruceLethal\_44:

(Start: 6 @28884 has 45 MA's),

Gene: Cota\_45 Start: 29185, Stop: 29487, Start Num: 6

Candidate Starts for Cota\_45:

(Start: 5 @29182 has 3 MA's), (Start: 6 @29185 has 45 MA's), (18, 29473),

Gene: Doucette\_61 Start: 37032, Stop: 37370, Start Num: 6

Candidate Starts for Doucette\_61:

(1, 37014), (Start: 6 @37032 has 45 MA's), (7, 37065), (13, 37140),

Gene: DrParker\_45 Start: 29378, Stop: 29680, Start Num: 6

Candidate Starts for DrParker\_45:

(Start: 5 @29375 has 3 MA's), (Start: 6 @29378 has 45 MA's), (18, 29666),

Gene: E6\_60 Start: 37670, Stop: 38008, Start Num: 6

Candidate Starts for E6\_60:

(1, 37652), (Start: 6 @37670 has 45 MA's), (7, 37703), (13, 37778),

Gene: Enoki\_45 Start: 28982, Stop: 29284, Start Num: 6

Candidate Starts for Enoki\_45:

(Start: 6 @28982 has 45 MA's), (18, 29270),

Gene: G4\_69 Start: 38158, Stop: 38496, Start Num: 6

Candidate Starts for G4\_69:

(1, 38140), (Start: 6 @38158 has 45 MA's), (7, 38191), (13, 38266),

Gene: Keiki\_45 Start: 28972, Stop: 29277, Start Num: 5

Candidate Starts for Keiki\_45:

(Start: 5 @28972 has 3 MA's), (Start: 6 @28975 has 45 MA's), (10, 29071), (18, 29263),

Gene: Kubed\_44 Start: 29097, Stop: 29399, Start Num: 6

Candidate Starts for Kubed\_44:

(Start: 6 @29097 has 45 MA's), (18, 29385),

Gene: Lauchelly\_45 Start: 29153, Stop: 29455, Start Num: 6

Candidate Starts for Lauchelly\_45:

(Start: 6 @29153 has 45 MA's), (18, 29441),

Gene: Leviosa\_44 Start: 29089, Stop: 29391, Start Num: 6

Candidate Starts for Leviosa\_44:

(Start: 6 @29089 has 45 MA's),

Gene: LilBandit\_45 Start: 28677, Stop: 28979, Start Num: 6  
Candidate Starts for LilBandit\_45:  
(Start: 6 @28677 has 45 MA's), (18, 28965),

Gene: MEAK\_44 Start: 28859, Stop: 29161, Start Num: 6  
Candidate Starts for MEAK\_44:  
(Start: 5 @28856 has 3 MA's), (Start: 6 @28859 has 45 MA's),

Gene: Moyashi\_44 Start: 28889, Stop: 29191, Start Num: 6  
Candidate Starts for Moyashi\_44:  
(Start: 6 @28889 has 45 MA's),

Gene: MrAK\_46 Start: 29362, Stop: 29664, Start Num: 6  
Candidate Starts for MrAK\_46:  
(Start: 6 @29362 has 45 MA's),

Gene: MrSmee\_78 Start: 40846, Stop: 41043, Start Num: 13  
Candidate Starts for MrSmee\_78:  
(Start: 6 @40738 has 45 MA's), (9, 40819), (13, 40846), (16, 40978), (17, 40981), (19, 41020),

Gene: Ouroboros\_45 Start: 29142, Stop: 29444, Start Num: 6  
Candidate Starts for Ouroboros\_45:  
(Start: 6 @29142 has 45 MA's), (10, 29238), (18, 29430),

Gene: P1.1\_45 Start: 28981, Stop: 29286, Start Num: 5  
Candidate Starts for P1.1\_45:  
(3, 28969), (Start: 5 @28981 has 3 MA's), (Start: 6 @28984 has 45 MA's), (18, 29272),

Gene: P100.1\_47 Start: 29248, Stop: 29550, Start Num: 6  
Candidate Starts for P100.1\_47:  
(4, 29236), (Start: 6 @29248 has 45 MA's), (18, 29536),

Gene: P100A\_45 Start: 29140, Stop: 29442, Start Num: 6  
Candidate Starts for P100A\_45:  
(Start: 6 @29140 has 45 MA's), (18, 29428),

Gene: P100D\_47 Start: 29142, Stop: 29444, Start Num: 6  
Candidate Starts for P100D\_47:  
(Start: 6 @29142 has 45 MA's), (18, 29430),

Gene: P101A\_47 Start: 29210, Stop: 29512, Start Num: 6  
Candidate Starts for P101A\_47:  
(Start: 6 @29210 has 45 MA's),

Gene: P104A\_45 Start: 29007, Stop: 29309, Start Num: 6  
Candidate Starts for P104A\_45:  
(Start: 6 @29007 has 45 MA's), (18, 29295),

Gene: P104B\_44 Start: 28966, Stop: 29268, Start Num: 6  
Candidate Starts for P104B\_44:  
(Start: 6 @28966 has 45 MA's), (18, 29254),

Gene: P105\_45 Start: 28838, Stop: 29140, Start Num: 6  
Candidate Starts for P105\_45:  
(Start: 5 @28835 has 3 MA's), (Start: 6 @28838 has 45 MA's),

Gene: P106A\_45 Start: 29190, Stop: 29492, Start Num: 6  
Candidate Starts for P106A\_45:  
(4, 29178), (Start: 6 @29190 has 45 MA's), (18, 29478),

Gene: P106C\_46 Start: 29277, Stop: 29579, Start Num: 6  
Candidate Starts for P106C\_46:  
(4, 29265), (Start: 6 @29277 has 45 MA's), (18, 29565),

Gene: P106I\_46 Start: 29106, Stop: 29408, Start Num: 6  
Candidate Starts for P106I\_46:  
(4, 29094), (Start: 6 @29106 has 45 MA's), (18, 29394),

Gene: P106L\_45 Start: 29277, Stop: 29579, Start Num: 6  
Candidate Starts for P106L\_45:  
(4, 29265), (Start: 6 @29277 has 45 MA's), (18, 29565),

Gene: P106M\_45 Start: 29277, Stop: 29579, Start Num: 6  
Candidate Starts for P106M\_45:  
(4, 29265), (Start: 6 @29277 has 45 MA's), (18, 29565),

Gene: P107A\_45 Start: 29101, Stop: 29403, Start Num: 6  
Candidate Starts for P107A\_45:  
(Start: 6 @29101 has 45 MA's), (10, 29197),

Gene: P107C\_44 Start: 29152, Stop: 29454, Start Num: 6  
Candidate Starts for P107C\_44:  
(1, 29134), (Start: 6 @29152 has 45 MA's),

Gene: P108C\_44 Start: 29130, Stop: 29432, Start Num: 6  
Candidate Starts for P108C\_44:  
(Start: 5 @29127 has 3 MA's), (Start: 6 @29130 has 45 MA's),

Gene: P14.4\_47 Start: 29362, Stop: 29667, Start Num: 5  
Candidate Starts for P14.4\_47:  
(Start: 5 @29362 has 3 MA's), (Start: 6 @29365 has 45 MA's), (18, 29653),

Gene: P9.1\_45 Start: 28850, Stop: 29152, Start Num: 6  
Candidate Starts for P9.1\_45:  
(4, 28838), (Start: 5 @28847 has 3 MA's), (Start: 6 @28850 has 45 MA's), (18, 29138),

Gene: PA6\_48 Start: 29388, Stop: 29690, Start Num: 6  
Candidate Starts for PA6\_48:  
(1, 29370), (Start: 6 @29388 has 45 MA's), (18, 29676),

Gene: PAD20\_48 Start: 28723, Stop: 29025, Start Num: 6  
Candidate Starts for PAD20\_48:  
(Start: 6 @28723 has 45 MA's), (18, 29011),

Gene: PAS50\_48 Start: 28663, Stop: 28968, Start Num: 5

Candidate Starts for PAS50\_48:  
(4, 28654), (Start: 5 @28663 has 3 MA's), (Start: 6 @28666 has 45 MA's), (18, 28954),

Gene: PHL010M04\_45 Start: 29157, Stop: 29459, Start Num: 6  
Candidate Starts for PHL010M04\_45:  
(Start: 6 @29157 has 45 MA's),

Gene: PHL037M02\_45 Start: 29090, Stop: 29392, Start Num: 6  
Candidate Starts for PHL037M02\_45:  
(Start: 6 @29090 has 45 MA's), (10, 29186), (18, 29378),

Gene: PHL060L00\_46 Start: 29161, Stop: 29463, Start Num: 6  
Candidate Starts for PHL060L00\_46:  
(Start: 6 @29161 has 45 MA's),

Gene: PHL067M10\_45 Start: 29024, Stop: 29326, Start Num: 6  
Candidate Starts for PHL067M10\_45:  
(Start: 6 @29024 has 45 MA's), (18, 29312),

Gene: PHL071N05\_45 Start: 29114, Stop: 29416, Start Num: 6  
Candidate Starts for PHL071N05\_45:  
(Start: 5 @29111 has 3 MA's), (Start: 6 @29114 has 45 MA's), (18, 29402),

Gene: PHL111M01\_45 Start: 28787, Stop: 29089, Start Num: 6  
Candidate Starts for PHL111M01\_45:  
(Start: 5 @28784 has 3 MA's), (Start: 6 @28787 has 45 MA's), (18, 29075),

Gene: PHL112N00\_46 Start: 28913, Stop: 29215, Start Num: 6  
Candidate Starts for PHL112N00\_46:  
(Start: 6 @28913 has 45 MA's),

Gene: PHL113M01\_44 Start: 28844, Stop: 29149, Start Num: 5  
Candidate Starts for PHL113M01\_44:  
(Start: 5 @28844 has 3 MA's), (Start: 6 @28847 has 45 MA's), (18, 29135),

Gene: Pirate\_44 Start: 28960, Stop: 29262, Start Num: 6  
Candidate Starts for Pirate\_44:  
(Start: 5 @28957 has 3 MA's), (Start: 6 @28960 has 45 MA's), (10, 29056), (18, 29248),

Gene: Procrass1\_45 Start: 28983, Stop: 29285, Start Num: 6  
Candidate Starts for Procrass1\_45:  
(Start: 6 @28983 has 45 MA's), (18, 29271),

Gene: QueenBey\_43 Start: 28974, Stop: 29276, Start Num: 6  
Candidate Starts for QueenBey\_43:  
(Start: 5 @28971 has 3 MA's), (Start: 6 @28974 has 45 MA's), (18, 29262),

Gene: Raqqa\_101 Start: 53739, Stop: 54044, Start Num: 6  
Candidate Starts for Raqqa\_101:  
(Start: 6 @53739 has 45 MA's), (17, 53982),

Gene: SKKY\_47 Start: 29230, Stop: 29532, Start Num: 6  
Candidate Starts for SKKY\_47:



(2, 29215), (Start: 5 @29227 has 3 MA's), (Start: 6 @29230 has 45 MA's),

Gene: Solid\_45 Start: 29077, Stop: 29379, Start Num: 6

Candidate Starts for Solid\_45:

(Start: 5 @29074 has 3 MA's), (Start: 6 @29077 has 45 MA's), (18, 29365),

Gene: Spartoi\_56 Start: 34706, Stop: 35032, Start Num: 6

Candidate Starts for Spartoi\_56:

(Start: 6 @34706 has 45 MA's),

Gene: Stormborn\_46 Start: 28966, Stop: 29268, Start Num: 6

Candidate Starts for Stormborn\_46:

(Start: 5 @28963 has 3 MA's), (Start: 6 @28966 has 45 MA's), (18, 29254),

Gene: Supernova\_45 Start: 28853, Stop: 29155, Start Num: 6

Candidate Starts for Supernova\_45:

(Start: 5 @28850 has 3 MA's), (Start: 6 @28853 has 45 MA's), (18, 29141),

Gene: Wizzo\_44 Start: 29099, Stop: 29401, Start Num: 6

Candidate Starts for Wizzo\_44:

(Start: 5 @29096 has 3 MA's), (Start: 6 @29099 has 45 MA's), (18, 29387),